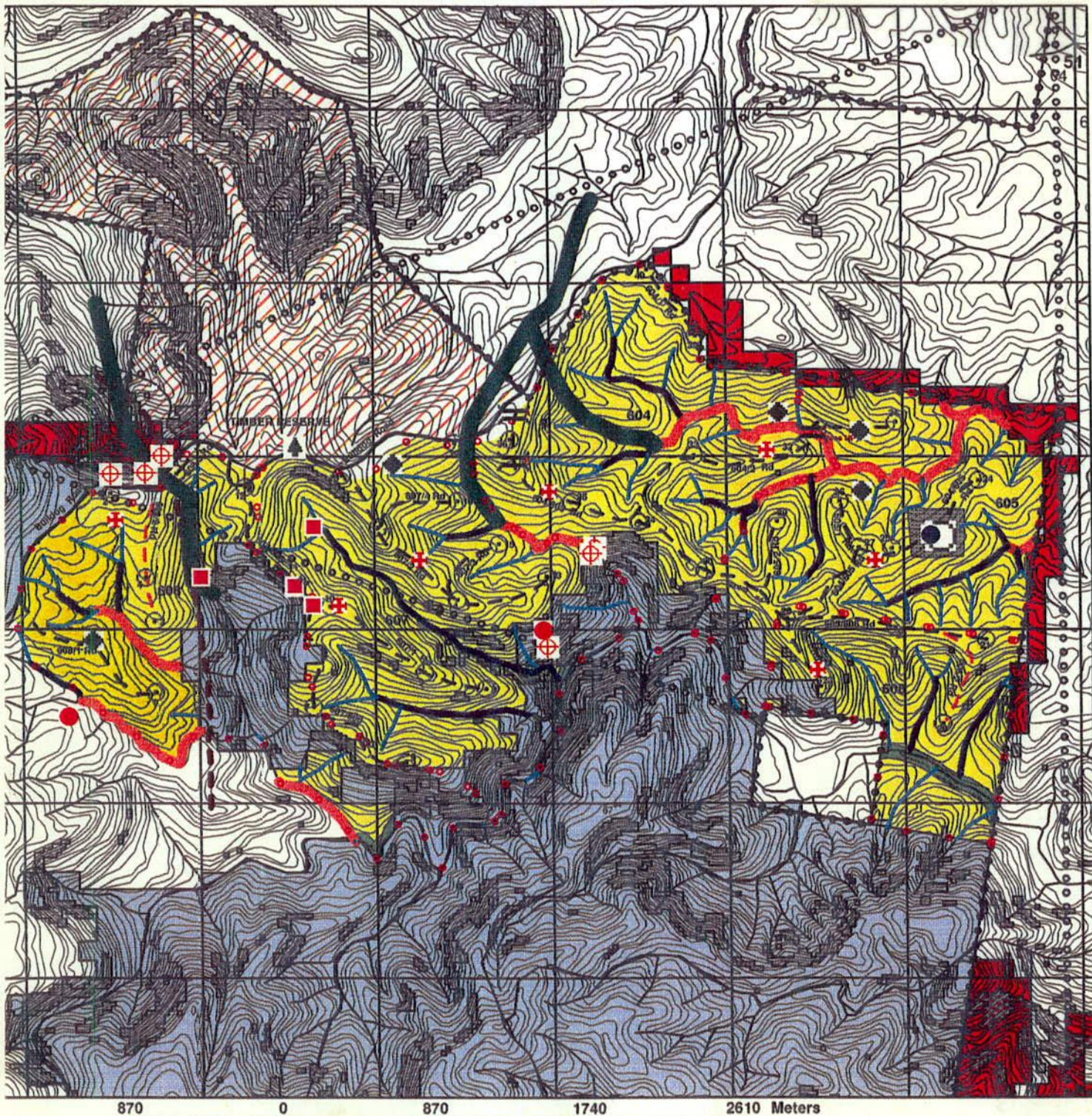


NORTHERN RIVERS REGION - CASINO MANAGEMENT AREA
HARVEST PLAN OPERATIONAL MAP

COMPARTMENTS 604-608
EWINGAR STATE FOREST
BULLDOG ROCK MAP SHEET
HARVEST PLAN NUMBER CAS604-608
SCALE 1:32 000, DATE 28/01/98, V2

Georgia Beyer



BOUNDARIES

- State Forest Boundary
- ○ Compartment Boundaries

ROADS

- - - Natural Surface
- Sealed or Gravelled
- · · Four Wheel Drive
- - - Proposed Rd

NORMAL PRESCRIPTIONS

- Yellow Harvestable Area

NON HARVEST AREAS

- Dark Green Flora and Fauna Protect
- Dark Grey Connection Corridor (80m)
- Diagonal Lines Slopes likely over 30 degrees
- Light Blue Fauna Protection (Owl Habitat)
- Dark Blue Fauna Protection (Squirrel Glider Protection 8ha)
- Red Old Growth

DRAINAGE

- Blue External Drainage
- Thick Blue 1st Order Stream (10m buffer)
- Thick Blue 2nd Order Stream (20m buffer)
- Thick Blue 3rd Order Stream (40m buffer)

DUMP SITES OR FEATURES

- Temporary Dry
- Temporary Wet
- ✕ Soil Sample
- Soil Boundary
- || Approved Crossings

RECORDED SPECIES

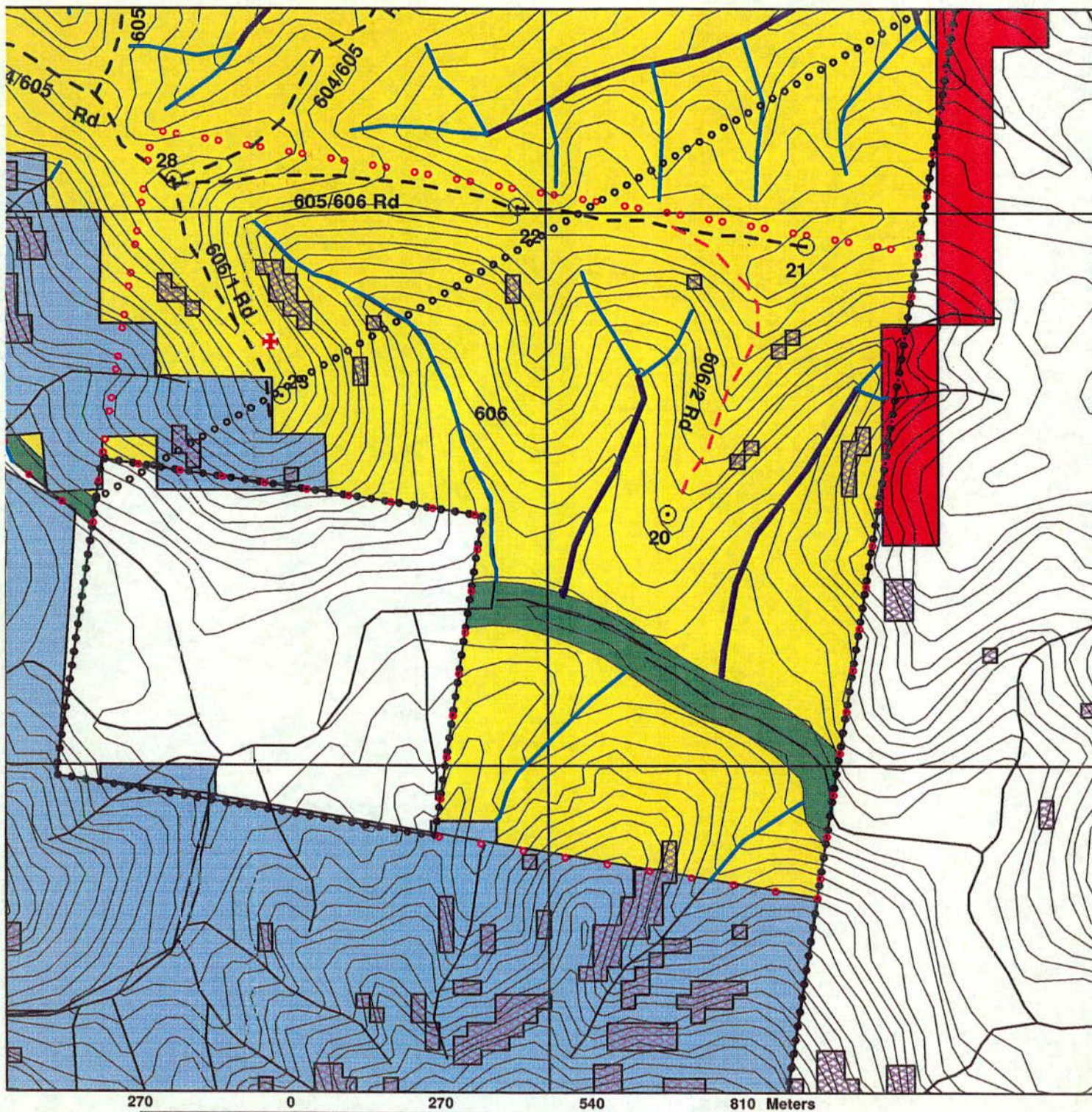
- Red Square Sooty Owl
- Black Diamond Masked Owl
- Black Triangle V-notch Tree
- Black Circle Squirrel Glider
- Red Circle Squirrel Glider
- Red Circle Glossy Black Cockatoo
- Open Circle Masked Owl Nest Site

MN

BTAW

NORTHERN RIVERS REGION - CASINO MANAGEMNET AREA
HARVEST PLAN OPERATIONAL MAP

COMPARTMENT 606
EWINGAR STATE FOREST
BULLDOG ROCK MAP SHEET
HARVEST PLAN NUMBER CAS604-608
SCALE 1:10 000, DATE 28/01/98, V2



BOUNDARIES

- State Forest Boundary
- Compartment Boundaries

ROADS

- Natural Surface
- Sealed or Gravelled
- Four Wheel Drive
- - - Proposed Rd

NORMAL PRESCRIPTIONS

- Yellow Harvestable Area

NON HARVEST AREAS

- Green Flora and Fauna Protect
- Dark Green Connection Corridor (80m)
- Blue-hatched Slopes likely over 30 degrees
- Light Blue Fauna Protection (Owl Habitat)
- Dark Blue-hatched Fauna Protection (Squirrel Glider Protection 8ha)
- Red Old Growth

DRAINAGE

- Blue External Drainage
- Thick Blue 1st Order Stream (10m buffer)
- Thick Dark Blue 2nd Order Stream (20m buffer)
- Thick Red 3rd Order Stream (40m buffer)

DUMP SITES OR FEATURES

- Temporary Dry
- Temporary Wet
- ✱ Soil Sample
- Soil Boundary
- || Approved Crossings

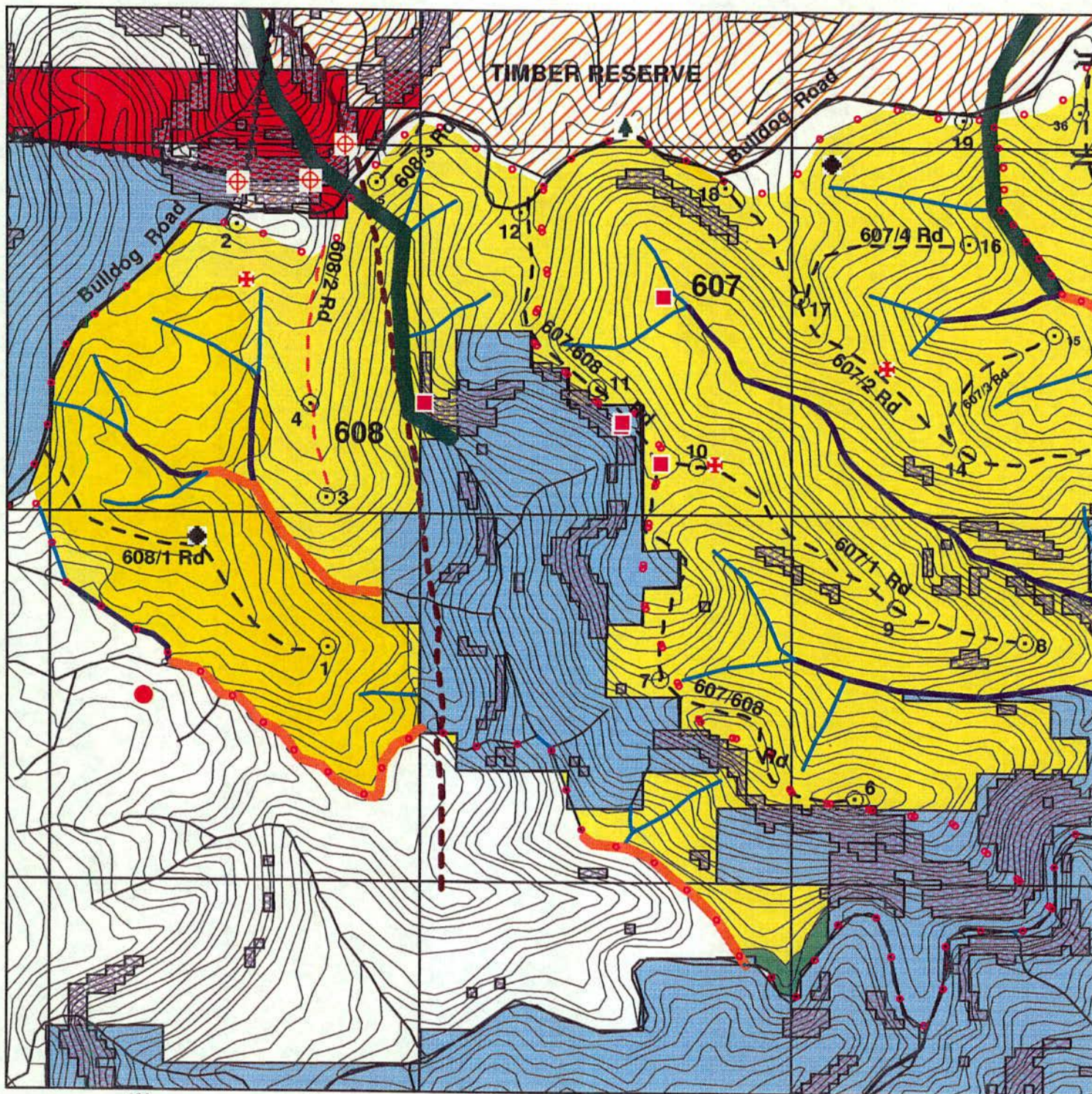
RECORDED SPECIES

- Red Square Sooty Owl
- Black Diamond Masked Owl
- Green Triangle V-notch Tree
- Blue Circle Squirrel Glider
- Red Circle with Cross Squirrel Glider
- Red Circle Glossy Black Cockatoo
- White Circle Masked Owl Nest Site

MN

NORTHERN RIVERS REGION - CASINO MANAGEMENT AREA
HARVEST PLAN OPERATIONAL MAP

COMPARTMENT 608
EWINGAR STATE FOREST
BULLDOG ROCK MAP SHEET
HARVEST PLAN NUMBER CAS604-608
SCALE 1:15000, DATE 28/01/98, V2



BOUNDARIES

- State Forest Boundary
- Compartment Boundaries

ROADS

- - - Natural Surface
- Sealed or Gravelled
- · - · - Four Wheel Drive
- - - Proposed Rd

NORMAL PRESCRIPTIONS

- Yellow box: Harvestable Area

NON HARVEST AREAS

- Green box: Flora and Fauna Protect
- Dark green box: Connection Corridor (80m)
- Patterned box: Slopes likely over 30 degrees
- Blue box: Fauna Protection (Owl Habitat)
- Dark blue box: Fauna Protection (Squirrel Glider Protection 8ha)
- Red box: Old Growth

DRAINAGE

- Blue line: External Drainage
- Thick blue line: 1st Order Stream (10m buffer)
- Thicker blue line: 2nd Order Stream (20m buffer)
- Orange line: 3rd Order Stream (40m buffer)

DUMP SITES OR FEATURES

- Temporary Dry
- Temporary Wet
- ✕ Soil Sample
- Soil Boundary
- || Approved Crossings

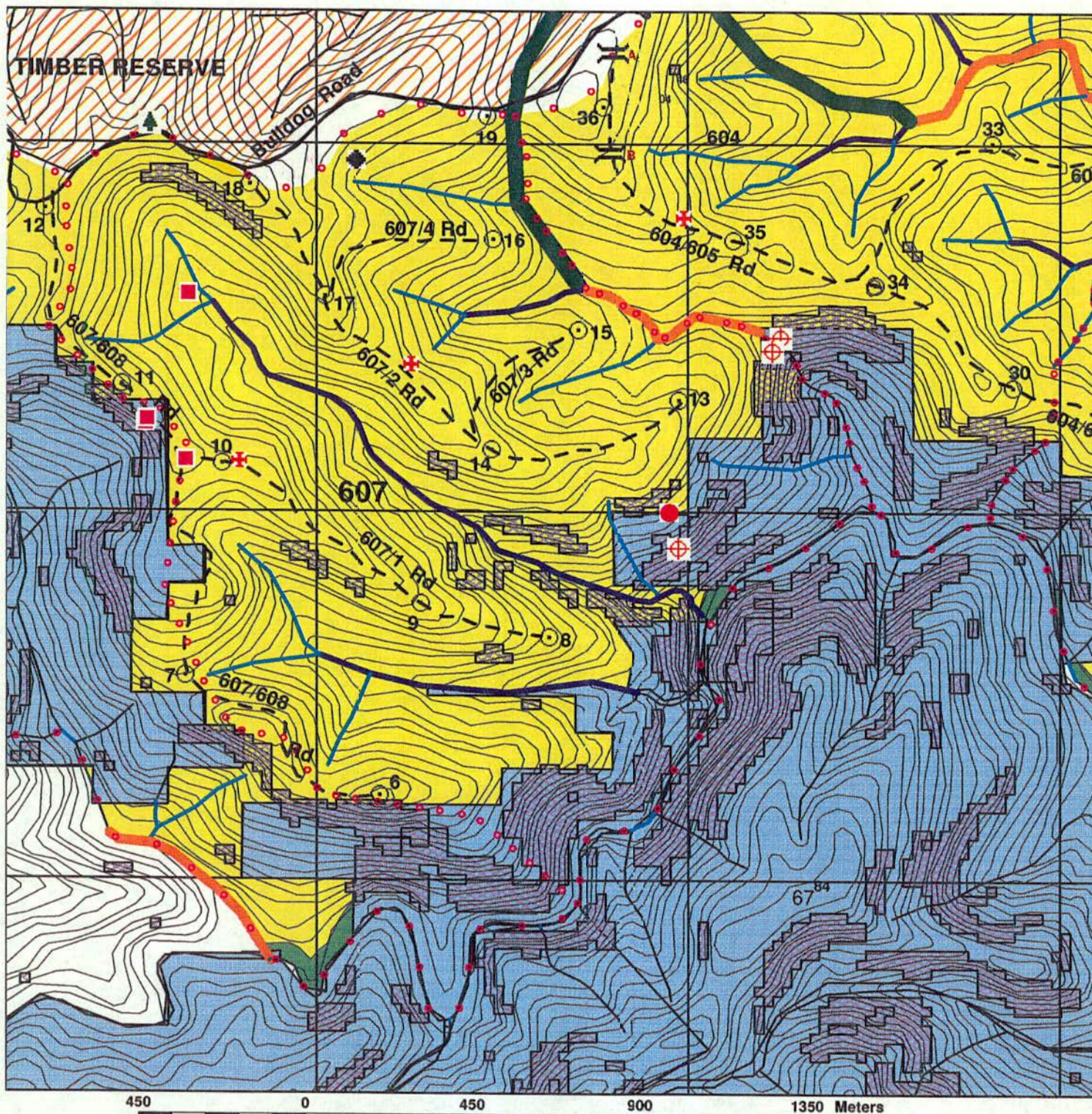
RECORDED SPECIES

- Red square: Sooty Owl
- Black diamond: Masked Owl
- Green triangle: V-notch Tree
- Blue circle: Squirrel Glider
- Red circle with cross: Squirrel Glider
- Red circle: Glossy Black Cockatoo
- White circle: Masked Owl Nest Site

MN
11

NORTHERN RIVERS REGION - CASINO MANAGEMENT AREA
HARVEST PLAN OPERATIONAL MAP

COMPARTMENT 607
EWINGAR STATE FOREST
BULLDOG ROCK MAP SHEET
HARVEST PLAN NUMBER CAS604-608
SCALE 1:15000, DATE 28/01/98, V2



BOUNDARIES

- State Forest Boundary
- Compartment Boundaries

ROADS

- - - Natural Surface
- Sealed or Gravelled
- · · · Four Wheel Drive
- - - Proposed Rd

NORMAL PRESCRIPTIONS

- Yellow Harvestable Area

NON HARVEST AREAS

- Green Flora and Fauna Protect
- Dark Green Connection Corridor (80m)
- Blue-hatched Slopes likely over 30 degrees
- Light Blue Fauna Protection (Owl Habitat)
- Dark Blue-hatched Fauna Protection (Squirrel Glider Protection 8ha)
- Red Old Growth

DRAINAGE

- Blue External Drainage
- Thick Blue 1st Order Stream (10m buffer)
- Thick Dark Blue 2nd Order Stream (20m buffer)
- Thick Red 3rd Order Stream (40m buffer)

DUMP SITES OR FEATURES

- Temporary Dry
- Temporary Wet
- ✕ Soil Sample
- Soil Boundary
- Approved Crossings

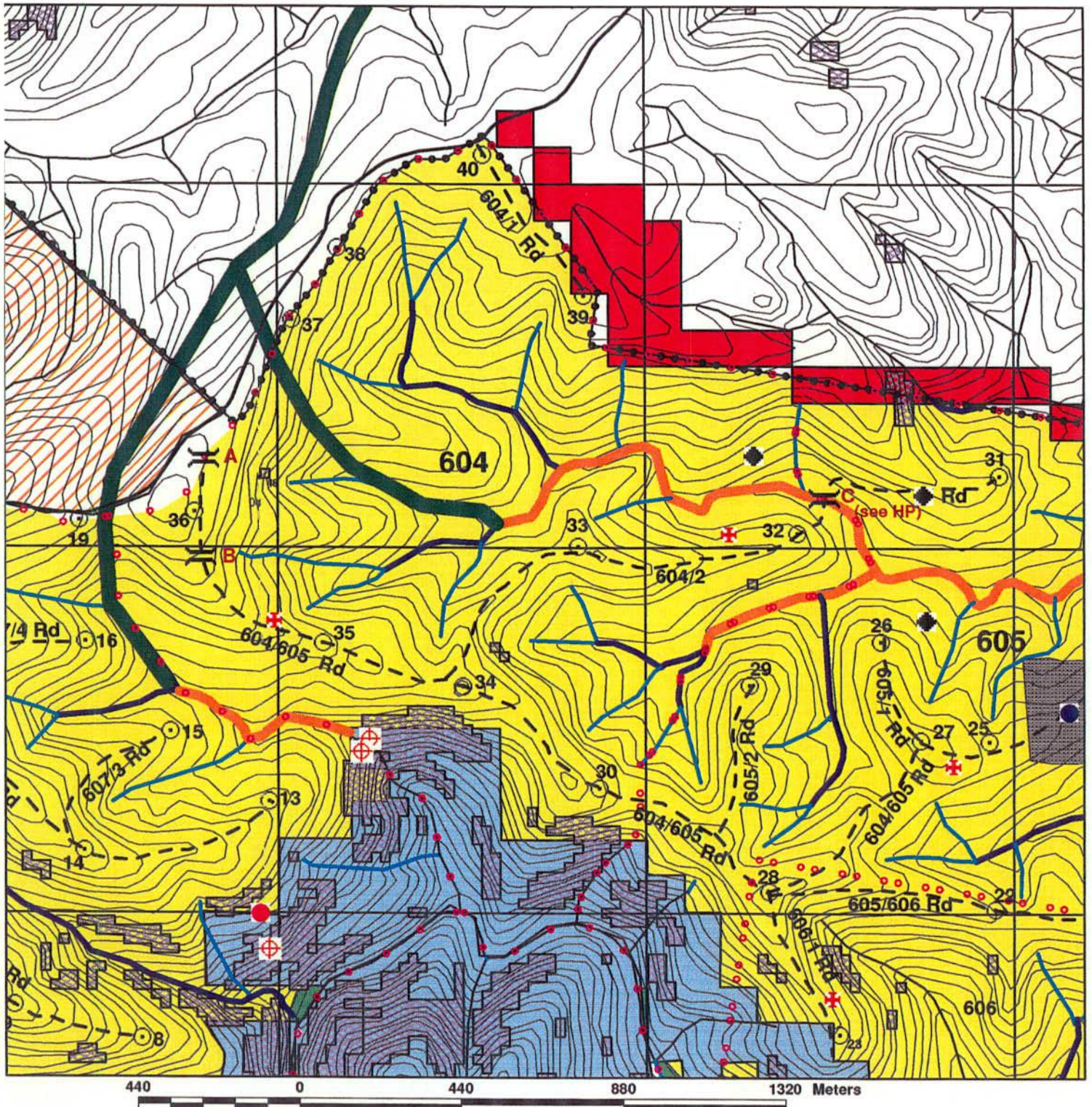
RECORDED SPECIES

- Red Square Sooty Owl
- Black Diamond Masked Owl
- Green Triangle V-notch Tree
- Blue Circle Squirrel Glider
- Red Circle with Cross Squirrel Glider
- Red Circle Glossy Black Cockatoo
- White Circle Masked Owl Nest Site

MN
11

NORTHERN RIVERS REGION - CASINO MANAGEMENT AREA
HARVEST PLAN OPERATIONAL MAP

COMPARTMENT 604
EWINGAR STATE FOREST
BULLDOG ROCK MAP SHEET
HARVEST PLAN NUMBER CAS604-608
SCALE 1:15000, DATE 28/01/98, V2



BOUNDARIES

- State Forest Boundary
- Compartment Boundaries

ROADS

- Natural Surface
- Sealed or Gravelled
- Four Wheel Drive
- Proposed Rd

NORMAL PRESCRIPTIONS

- Yellow Harvestable Area

NON HARVEST AREAS

- Green Flora and Fauna Protect
- Dark Green Connection Corridor (80m)
- White Slopes likely over 30 degrees
- Blue Fauna Protection (Owl Habitat)
- Dark Blue Fauna Protection (Squirrel Glider Protection 8ha)
- Red Old Growth

DRAINAGE

- External Drainage
- Blue 1st Order Stream (10m buffer)
- Dark Blue 2nd Order Stream (20m buffer)
- Orange 3rd Order Stream (40m buffer)

DUMP SITES OR FEATURES

- Temporary Dry
- Temporary Wet
- ✱ Soil Sample
- Soil Boundary
- Approved Crossings

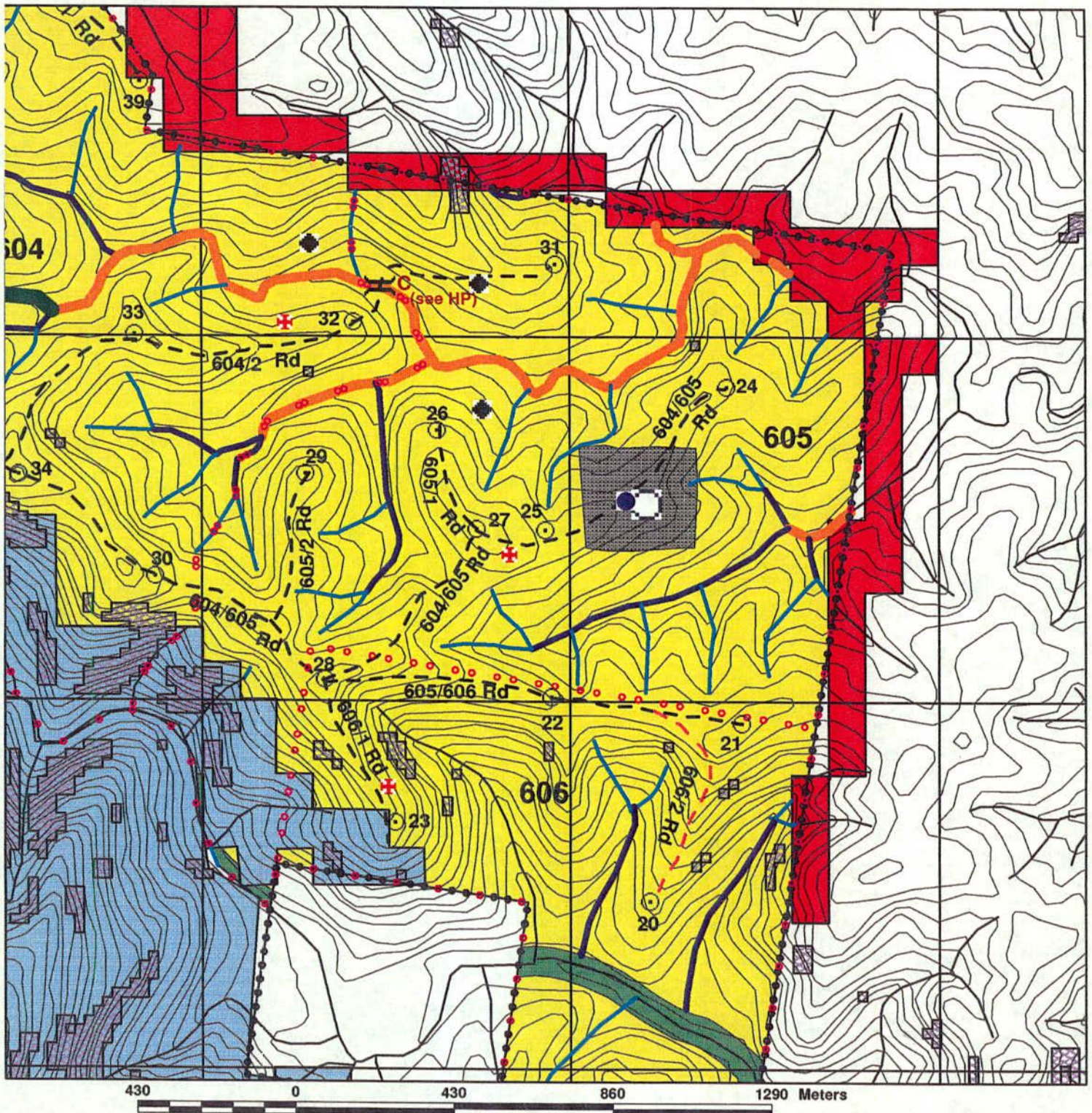
RECORDED SPECIES

- Red Square Sooty Owl
- Black Diamond Masked Owl
- Black Triangle V-notch Tree
- Blue Circle Squirrel Glider
- Red Circle Squirrel Glider
- Red Circle Glossy Black Cockatoo
- White Circle Masked Owl Nest Site

MN
11

NORTHERN RIVERS REGION - CASINO MANAGEMENT AREA
HARVEST PLAN OPERATIONAL MAP

COMPARTMENT 605
EWINGAR STATE FOREST
BULLDOG ROCK MAP SHEET
HARVEST PLAN NUMBER CAS604-608
SCALE 1:15000, DATE 28/01/98, V2



BOUNDARIES

- State Forest Boundary
- Compartment Boundaries

ROADS

- - - Natural Surface
- Sealed or Gravelled
- · · · Four Wheel Drive
- - - Proposed Rd

NORMAL PRESCRIPTIONS

- Yellow Harvestable Area

NON HARVEST AREAS

- Green Flora and Fauna Protect
- Dark Green Connection Corridor (80m)
- White Slopes likely over 30 degrees
- Blue Fauna Protection (Owl Habitat)
- Grey Fauna Protection (Squirrel Glider Protection 8ha)
- Red Old Growth

DRAINAGE

- Blue External Drainage
- Blue 1st Order Stream (10m buffer)
- Dark Blue 2nd Order Stream (20m buffer)
- Orange 3rd Order Stream (40m buffer)

DUMP SITES OR FEATURES

- Temporary Dry
- Temporary Wet
- ✕ Soil Sample
- Soil Boundary
- || Approved Crossings

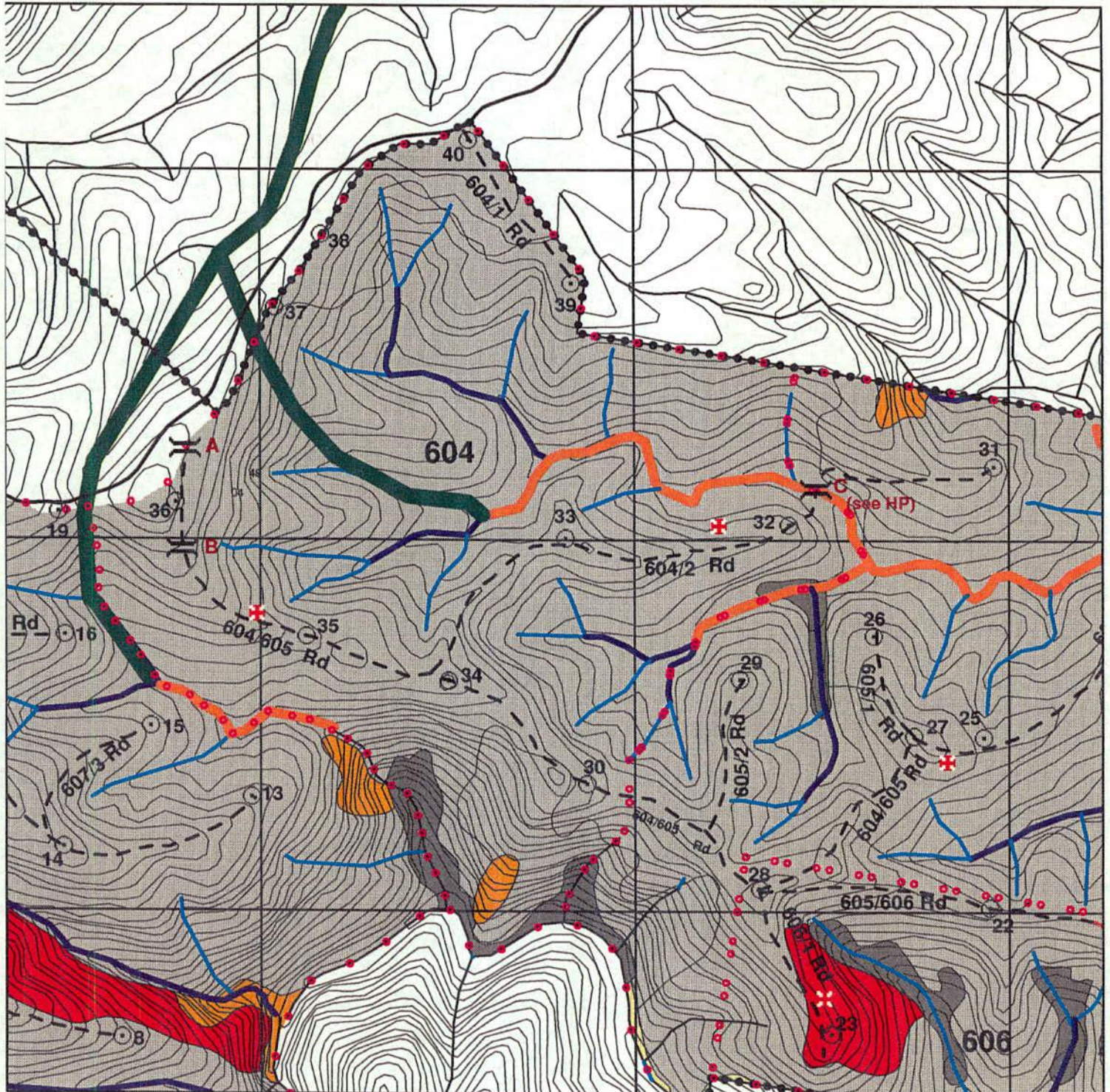
RECORDED SPECIES

- Red Square Sooty Owl
- Black Diamond Masked Owl
- Black Triangle V-notch Tree
- Blue Circle Squirrel Glider
- Red Square with Cross Squirrel Glider
- Red Circle Glossy Black Cockatoo
- White Circle Masked Owl Nest Site

MN

NORTHERN RIVERS REGION - CASINO MANAGEMENT AREA

FOREST TYPES MAP
COMPARTMENT 604
 EWINGAR STATE FOREST
 BULLDOG MAP SHEET
 HARVEST PLAN NUMBER CAS604-608
 SCALE 1:15 000, DATE 28/01/98, V2



660 0 660 1320 Meters

BOUNDARIES

- • • • • Compartment Boundaries
- • • • • State Forest Boundary

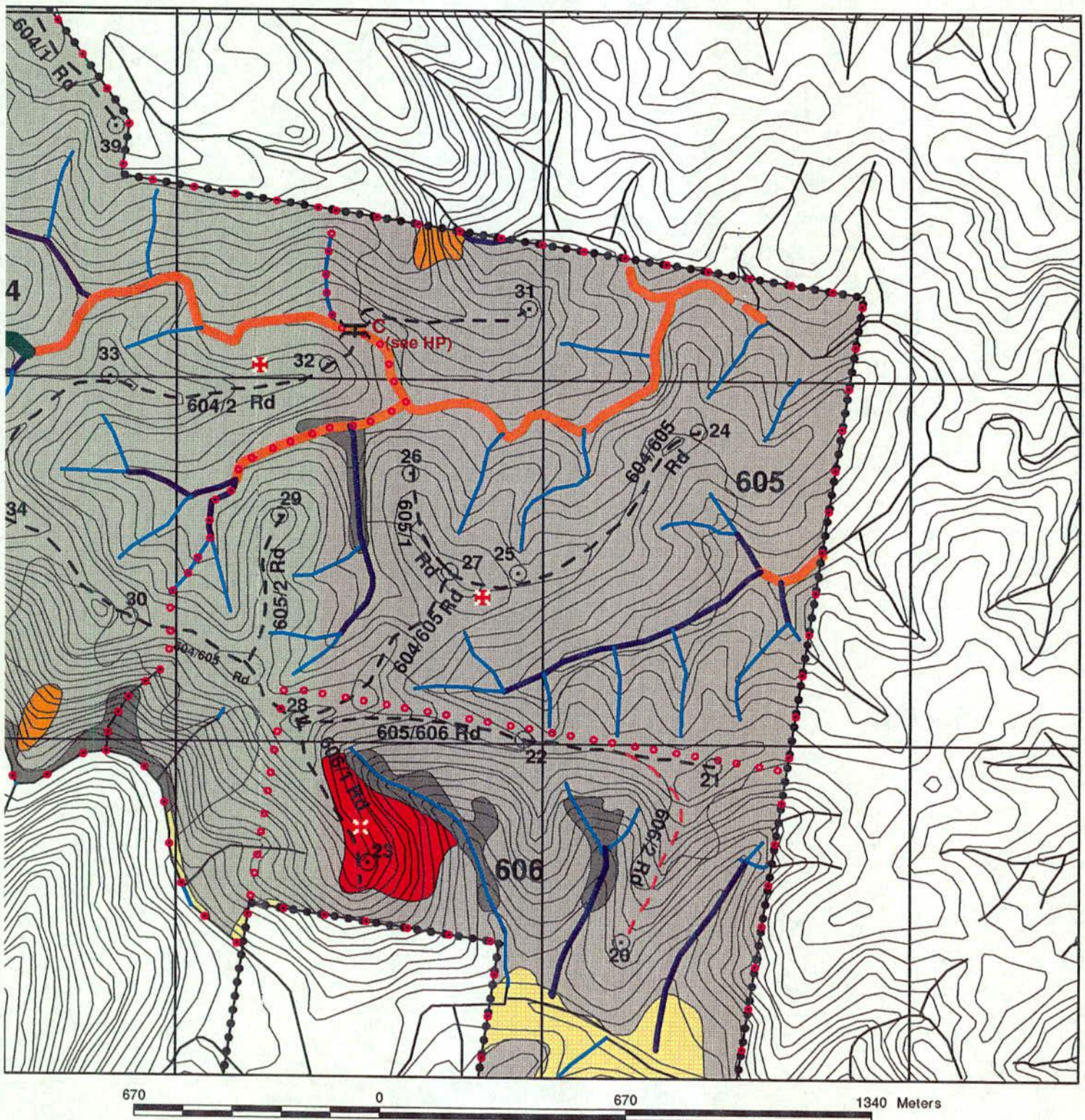
FOREST TYPES

- Cleared / Partially Cleared (FT 220)
- Rock (FT 234)
- Brush Box (FT 53)
- Forest Red Gum (FT 92)
- Dry Blackbutt (FT 37)
- Grey Gum - Grey Ironbark - White Mahogany (FT 62)
- Spotted Gum-Iron Bark/Grey Gum (FT 74)



NORTHERN RIVERS REGION - CASINO MANAGEMENT AREA

FOREST TYPES MAP
 COMPARTMENT 605
 EWINGAR STATE FOREST
 BULLDOG MAP SHEET
 HARVEST PLAN NUMBER CAS604-608
 SCALE 1:15 000, DATE 28/01/98, V2



BOUNDARIES

- • Compartment Boundaries
- • • State Forest Boundary

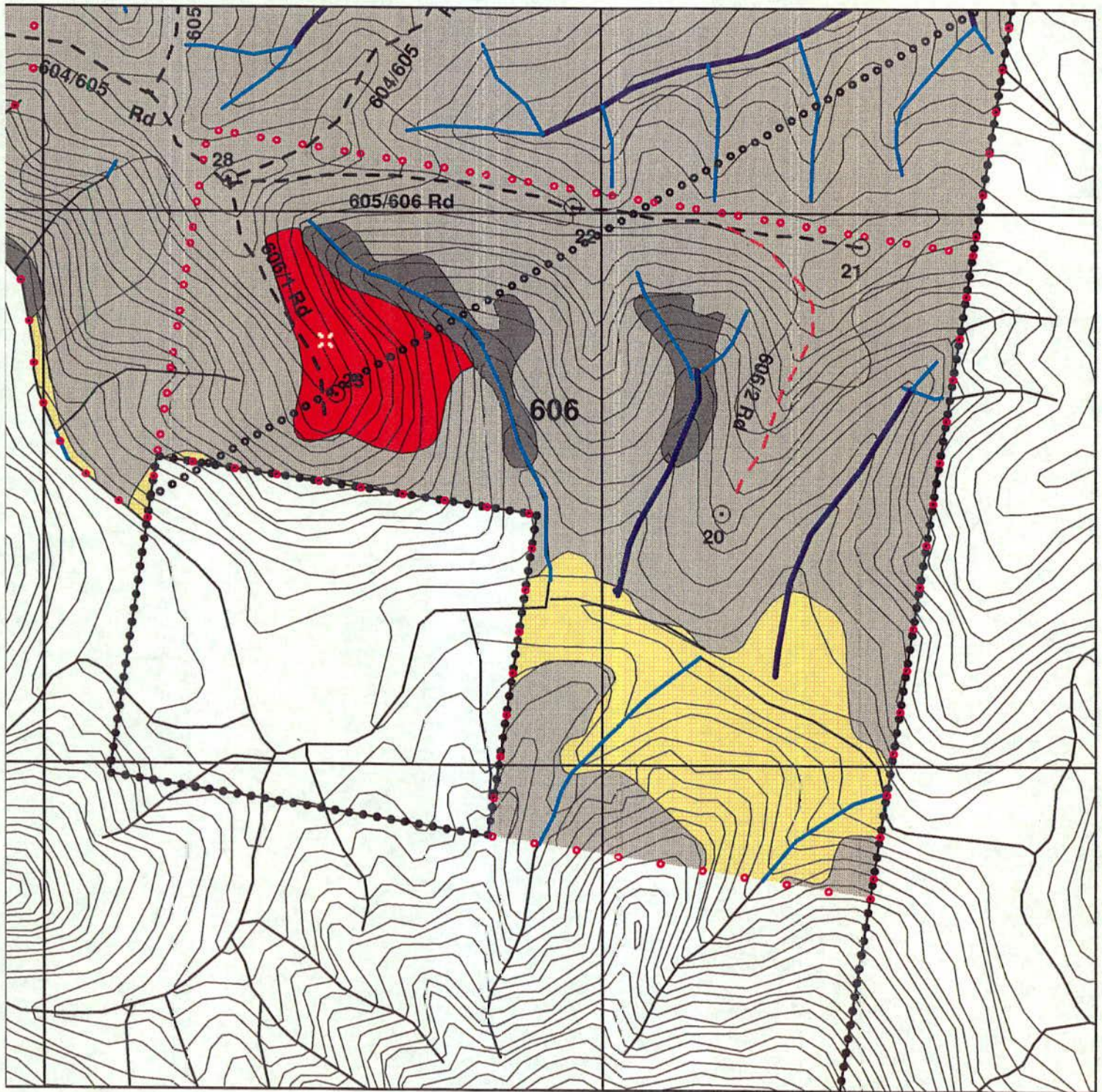
FOREST TYPES

- Cleared / Partially Cleared (FT 220)
- Rock (FT 234)
- Brush Box (FT 53)
- Forest Red Gum (FT 92)
- Dry Blackbutt (FT 37)
- Grey Gum - Grey Ironbark - White Mahogany (FT 62)
- Spotted Gum-Iron Bark/Grey Gum (FT 74)



NORTHERN RIVERS REGION - CASINO MANAGEMENT AREA

FOREST TYPES MAP
COMPARTMENT 606
 EWINGAR STATE FOREST
 BULLDOG MAP SHEET
 HARVEST PLAN NUMBER CAS604-608
 SCALE 1:10 000, DATE 28/01/98, V2



450 0 450 900 Meters

BOUNDARIES

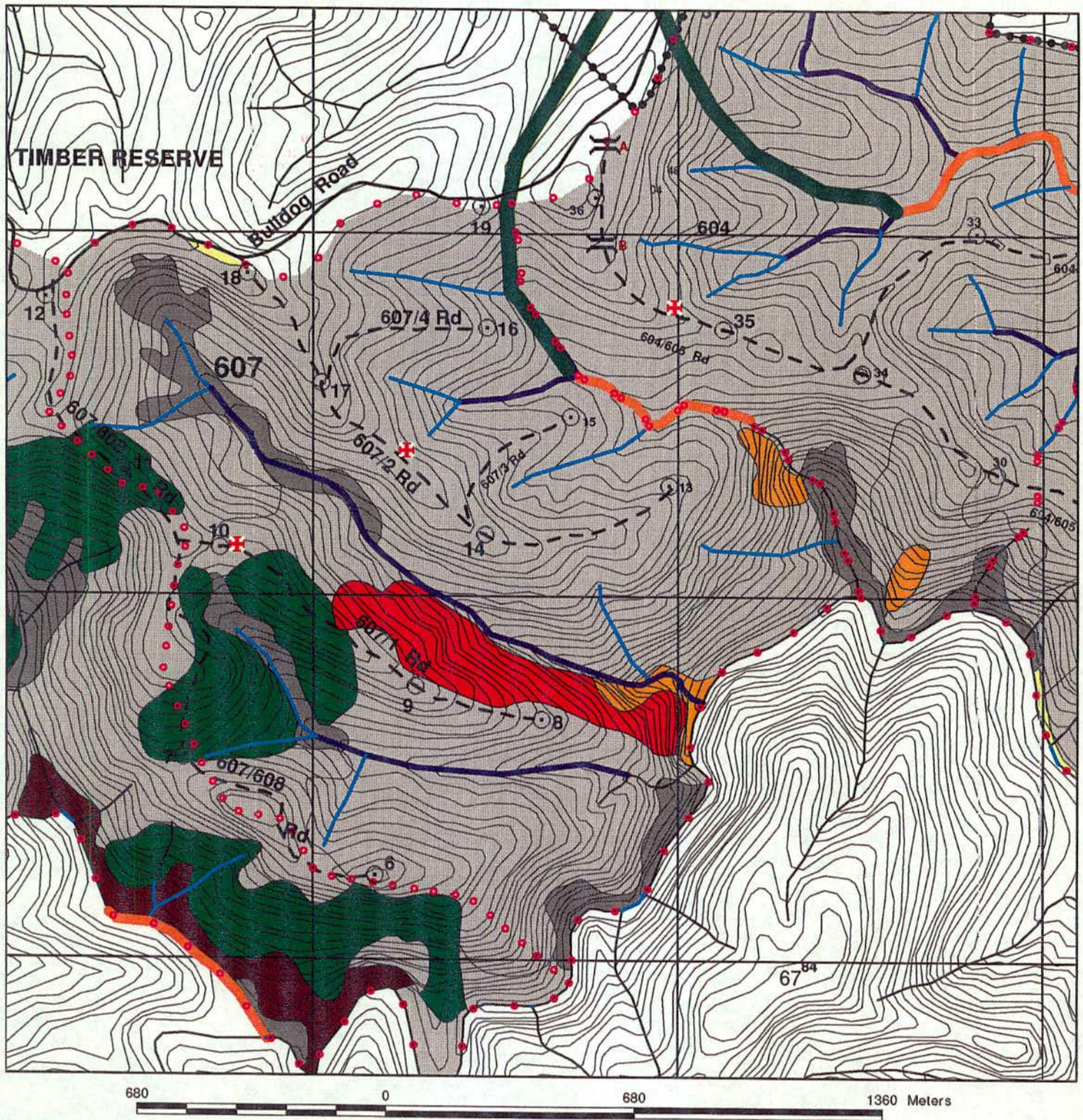
- • • • • Compartment Boundaries
- • — • — State Forest Boundary

FOREST TYPES

- Cleared / Partially Cleared (FT 220)
- Rock (FT 234)
- Brush Box (FT 53)
- Forest Red Gum (FT 92)
- Dry Backbutt (FT 37)
- Grey Gum - Grey Ironbark - White Mahogany (FT 62)
- Spotted Gum-Iron Bark/Grey Gum (FT 74)

NORTHERN RIVERS REGION - CASINO MANAGEMENT AREA

FOREST TYPES MAP
 COMPARTMENT 607
 EWINGAR STATE FOREST
 BULLDOG MAP SHEET
 HARVEST PLAN NUMBER CAS604-608
 SCALE 1:15 000, DATE 28/01/98, V2



BOUNDARIES

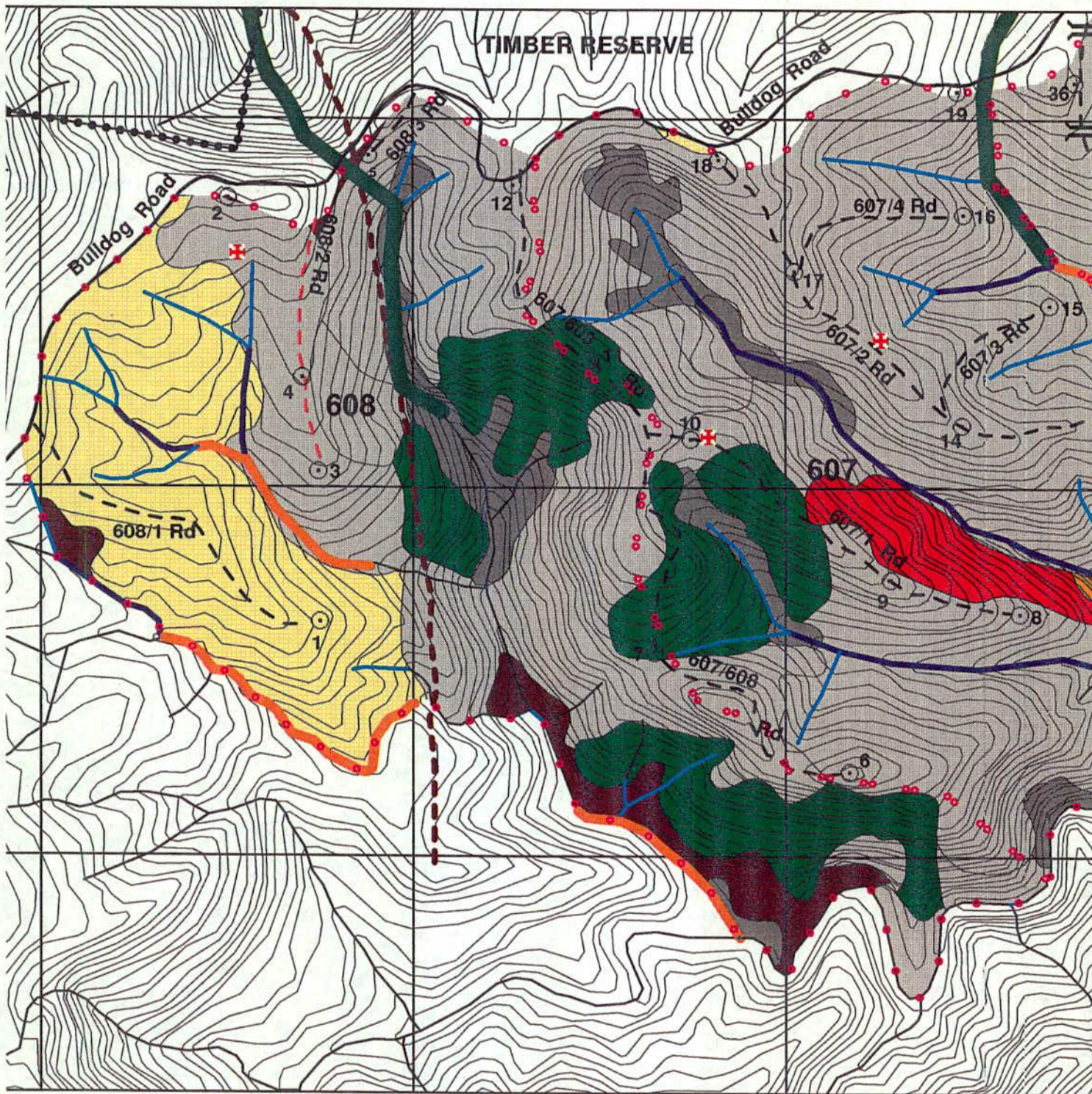
- • • • • Compartment Boundaries
- — — — — State Forest Boundary

FOREST TYPES

- Cleared / Partially Cleared (FT 220)
- Rock (FT 234)
- Brush Box (FT 53)
- Forest Red Gum (FT 92)
- Dry Blackbutt (FT 37)
- Grey Gum - Grey Ironbark - White Mahogany (FT 62)
- Spotted Gum-Iron Bark/Grey Gum (FT 74)



FOREST TYPES MAP
 COMPARTMENT 608
 EWINGAR STATE FOREST
 BULLDOG MAP SHEET
 HARVEST PLAN NUMBER CAS604-608
 SCALE 1:15 000, DATE 28/01/98, V2



650 0 650 1300 Meters

BOUNDARIES

- • • • • Compartment Boundaries
- — — — — State Forest Boundary

FOREST TYPES

- Cleared / Partially Cleared (FT 220)
- Rock (FT 234)
- Brush Box (FT 53)
- Forest Red Gum (FT 92)
- Dry Blackbutt (FT 37)
- Grey Gum - Grey Ironbark - White Mahogany (FT 62)
- Spotted Gum-Iron Bark/Grey Gum (FT 74)



FLORA and FAUNA SURVEY of COMPARTMENTS 604 -608, EWINGAR STATE FOREST.

-prepared by Robert M. Kooyman, [FA- flora and fauna] Casino District. 8/97.

Results of field surveys are provided as field diary notes, data sheets, and species lists, with scheduled and target species records provided as AMG co-ordinants. Maps provide details of sample sites, playback locations, harp trap locations, sonar detection sites, species records and distributions, and extent and location of the various transects and traverses undertaken.

Introduction:

Flora and Fauna Surveys were conducted by Kooyman, [19/8/97 to 29/8/97], with Harvey and Douglas, et al [SFNSW] 19/8/97 to 28/8/97, assisting with the integrated koala transects, and the general and target species fauna surveys.

Assisting the core survey team [with surveys of all fauna groups] were Robyn Herklots, and Nicole Harvey.

Andrew Benwell [consultant botanist] assisted with the identification of a number of prepared botanical specimens of dry forest taxa.

Brad Law [SFNSW-Research] assisted by checking sonar recordings, and providing comment on the preliminary results and interpretations, of recorded microchiropteran bat calls.

General Description of Survey Area:

The five compartments cover an area of 1114 hectares, with the proposed net loggable area adjusted to approx. 733 hectares, after deletion of cleared areas, Ft.220, mapped Old-growth, and standard riparian exclusions.

Geology appears to be dominated by two main elements: the dominant uplifted and variously eroded meta-sediments, and the igneous intrusion of granitic rock in the north-west of the survey area. Soils are predominantly of shallow to moderate depth, with varying amounts of exposed rock, [mostly on steeper slopes]. Soils of granitic origin vary from grey, to yellow-brown sandy clay, to clay loams, in the north-west corner of cmpt. 608, with the more extensive areas of meta-sediment rock [parent material] forming mostly grey-brown, [fine textured] clay, to clay loam soils.

Altitudinal range varies from 630m. to 190m. Slopes are generally moderate, to very steep.

The vegetation of the area is generally illustrated by the forest type map [SFNSW]. Species lists for each forest type have been compiled and are appended to this report as field notes. These provide an indicative sample of the various habitats, floristic alliances, forest types, transitional boundaries and overlaps.

The sequence of forest types largely follows the altitudinal, topographical, and soil gradients, and variations, with most areas dominated by Ft.74 - Spotted-gum / Iron-bark / Grey-gum / Stringy-bark, with smaller areas of Ft.65 - Red-gum, Iron-bark, Grey-gum, Rough-barked Apple. Rainforest vegetation is generally restricted to the gully heads and creek-lines occurring adjacent to, and in association with Ft.53, [Lophostemon confertus]. Along the rocky, creek edges there is a distinct riparian alliance of Ft.53 with *Tristania laurina*, *Backhousia myrtifolia*, *Acmena smithii* var. *minor*, -[see species lists for details]

Flora survey methodology: Plant species recorded from each forest type [and habitat] were listed, and frequency of occurrence and stratum [canopy, sub-canopy] indicated. Walked traverses were mapped . [See field notes attached.] Particular attention was directed to locating and recording the distribution and numbers of ROTAP plant species [Briggs and Leigh, 1995 Revised], and Schedules 1&2 [NSW Threatened Species Act, 1995] plant [and animal] species.

Fauna survey methodology: Includes application of the pre-logging / roading survey design forming part of the Threatened Species Protocol [3/6/97], incidental records collected during flora survey and habitat assessments, as well as the results of integrated koala transect surveys, and includes -:

1. walked spotlight transects, one kilometre long [minimum], 100 watt light, [with dimmers fitted].
minimum 10 minute listen at start and finish.

2. call playback for target species. Nocturnal -: powerful owl, masked owl, sooty owl, yellow bellied glider, koala, squirrel glider.

Diurnal -: bush thick-knee, regent honeyeater.

Calls are started after a substantial listening period and played briefly at low volume. This is done to avoid disrupting localised activity of the target or other species which may respond, [or be disturbed], and to maximise knowledge of actual habitat use, rather than gaining responses from further afield, [at least initially]. Louder playback calls are then initiated if no clear response is heard.

3. transect and incidental scat collection and identification. - results of predator, and [remaining unidentified] non-predator scat analysis provided by Barbara Triggs. - **not yet available.**

4. track identification on sandy or soft sections of roads, tracks and creek areas.

5. extended listening time for calls, [variable sample length, and dependent on conditions], targetting all playback target species listed above, and including other seasonally variable species such as swift parrot, and regent honeyeater.

6. harp trapping and sonar detection for bat species.

7. frog surveys - creek transects, and habitat searches.

8. search for all other features listed in the Threatened Species Protocol Survey Design while applying the above flora and fauna surveys. [this will be supplemented by the SFO while marking out and supervising harvesting operations. For an example see yellow- bellied glider section below].

9. hair-tube sampling - no hair-tube sampling was undertaken on this survey, thus potentially under sampling for a number of terrestrial and arboreal species, eg. tiger quoll, rufous bettong, brush-tailed phascogale. Conservation protocols should be applied for these species, to ameliorate potential impacts of proposed operations

10. one of us, [Kooyman], camps out in the survey area every night, moving from site to site, [habitat to habitat] during the course of the survey. This provides a substantial increase in; listening time, incidental and opportunistic scheduled species records, diurnal and nocturnal survey effort, and overall survey time/effort.

Rare, Threatened, or Significant Plants recorded in Ewingar SF. compartments 604-608.

Isotoma armstrongii - a specimen resembling this species was collected during the survey. Specimen will be sent to Herbarium for identification/opinion on taxonomy.

Arthraxon hispidus - [sch.2, V] ROTAP - [3VC+]. Not recorded on this survey, but the area provides possible habitat. All collected specimens were *Oplismenus aemulus*.

Results of Fauna Surveys:

The survey was limited to winter, thus missing the optimum seasonal sample for some species groups, eg. bats, frogs, reptiles, and seasonal diurnal birds.

1. Glossy Black Cockatoo [*Calyptorhynchus lathami*] - sch.2, this species was located in all of the surveyed compartments either by identification of feed sites or actual sightings. Suitable habitat includes much of the spotted-gum, grey-gum, ironbark, stringy-bark, association [Ft.74], the red-gum [Ft.65], and blackbutt [Ft.37] associations, and areas in the other forest types where *Casuarina* and *Allocasuarina* species are present, [for example the riparian associations]. Several sites with evidence of extensive Glossy-black cockatoo feeding activity were located and marked in the field. No nest hollows were located. Application of the Conservation Protocol and retention of all known feed trees, together with searches for all these features by SFO during mark up stage of operations, should assist this species.

2. Square tailed Kite [*Lophoictinia isura*] - sch.2, not recorded on this survey, but is likely to use the larger river valleys, flood plains, and woodlands of this area. Generally good potential habitat, however this species is thought to prefer less steep terrain.

3. Red Goshawk [*Erythrorhynchus radiatus*] - sch.1, not recorded on this survey, but there are records for this species from the Clarence and Richmond River valleys and associated forests. This species is thought to favour the higher nutrient / higher productivity tall open forests and riparian vegetation of the larger river valleys, where prey species are abundant. However, it extends up to 1000 metres in altitude in suitable forest. [Debus et al, 1991]

4. Bush Thick-knee [*Burhinus grallarius*] - sch.1, not seen or heard on this survey but excellent habitat occurs over much of the survey area.

Searches for this species were incorporated into the general flora traverses. Playback sampling was undertaken at a number of sites in these compartments, and one of us [Kooyman] camped in suitable habitat over the two week survey to extend available listening time.

5. Regent Honey-eater [*Xanthomyza phrygia*]- sch.1, not recorded on this survey. Nectar resources were limited at the time of survey to several species of *Acacia* and a limited number of larger diameter *Eucalyptus fibrosa*, which were visited by a large number of honeyeaters, [yellow tufted, fuscous, white-cheeked, etc.] and other species by day, and a number of arboreal mammals by night.

6. Swift Parrot [*Lathamus discolor*]- sch.2, not recorded on this survey. As described above [Regent honeyeater], the nectar resource was limited to just a few species during the survey time, [and one species of ironbark in particular]. Only the larger trees of this species were providing the nectar resource, and several of these were surveyed in the early morning hours for diurnal bird activity, [see species lists].

7. **Powerful owl** [*Ninox strenua*] - sch.2, no records for this species on this survey. Extensive playback and listening was conducted for this species over the survey period. There are records for this species nearby and it remains likely to occur, [in what appears to be good powerful owl habitat in these compartments].

8. **Masked owl** [*Tyto novaehollandiae*] - sch.2, Recorded on several occasions during this survey from unprompted calling in cmpts. 604, 605, 606, and 607. [see AMG records and field notes for details]. This area provides excellent open woodland and dry forest habitat for the Masked Owl. A roost/nest site was located, marked, and photographed in Cmp.605. The roost/nest site is located in a *Eucalyptus/ Corymbia maculata*, Spotted-gum, approx. 80cm D.B.H., with a large, main stem hollow. Photographs are available, clearly showing the bird at its nest/roost site. Masked owls occupy large home-ranges [min.500-1000ha], with the resident pair utilizing separate roost sites in the home-range area.

9. **Sooty owl** [*Tyto tenebricosa*] - sch.2.- recorded on this survey in Cmp.608, and adjacent in 607, [see records and mapping for details]. The habitat in this area is in the drier extreme for Sooty-owl, and appears to be the most northerly distribution of this species in the Gibraltar Range/ Washpool/ Ewingar complex. Records on this survey were from listening only, with a few playback calls [<10secs], used to draw the bird in for visual confirmation, and for species identification training for two of the surveyors in the team who had heard but not seen this species. Visual records were obtained on two occasions, with approx. 30, and 10 minutes of viewing time, respectively. [see maps and field notes for details]

10. **Brush-tailed Rock Wallaby** [*Petrogale penicellata*] - sch.2. This species was located in the north of Cmp.608, adjacent to Bulldog Rocks, [on granite, in the Timbarra River catchment], and across into the top end of cmpt.608, where a potential connecting corridor of habitat extends down one side of the Ewingar Creek tributary. Brush-tailed rock wallaby scats from this area were collected and compared to known brush-tailed rock wallaby scats from the Bulldog Rock area, providing evidence of a possible link with several other small populations of Rock Wallaby located on meta-sediments in Cmpts.604, and 607, in the Ewingar Creek catchment. [sample scats also sent onto Barbara Triggs for confirmation]. The records from these compartments constitute a localised range extension for this species. [see maps and species records for details]. Observations included individual adults, and groups with females with pouch young, both at the Bulldog Rock and other sites. At night, small, grazing groups of brush-tailed rock wallabies [occasionally forming mixed grazing groups with whip-tail wallabies] were observed grazing in the less steep and rocky areas approx. 100 - 200metres from the steep rock areas regarded as the rock wallabies core habitat. By day, and if disturbed at night, the rock wallabies retreat to the shelter of the very steep, and rocky terrain.

11. **Tiger Quoll** [*Dasyurus maculatus*] - sch.2, suitable habitat occurs in the area [particularly the higher altitude and old-growth areas of cmpt.608], but no tracks or sightings were recorded on this survey. Searches of rocky areas suitable for latrine sites or den areas were integrated into the general flora and fauna surveys, and the transect based 'integrated Koala surveys', and target species surveys. These will be

supplemented by SFO habitat and 'fauna features' searches during mark up stage of operations.

12. Yellow bellied Glider [*Petaurus australis*] - sch.2, this species was recorded in cmpts.604, 605, 607, and 608. Retention of suitable habitat trees, and all feed trees.[v-notch], together with the maintenance of floristic diversity in the *Eucalyptus* spp. to maintain essential winter feeding nectar resources, and the riparian exclusions, will help ameliorate further potential impacts on this species. Records accumulated for the species during this study provide an indication of current distribution of yellow-bellied gliders in this forest area, [given the limitations of a single season sample], and subsequently may indicate the possible location of potential nest/den trees and feeding sites and areas. [refer to AMG's for locations of feed sites and animal vocalisation records]. The provision of this data should allow the S.F.O. to concentrate searches for V-notch feeding incisions, and potential den-site hollows, in areas of known habitat and surrounding areas of the same forest type, greatly increasing the likelihood of locating such sites.

In this part of Ewingar SF yellow-bellied glider incisions have been located on Spotted-gum and Grey-gum, indicating these species as preferred, but this may vary across the survey area.

At the time of the survey, winter feeding nectar resources [for a number of species including yellow-bellied glider] were apparently limited to the larger sized ironbarks, with smaller trees of this species either still in bud or showing no sign of flowering. Buds were forming on *Eucalyptus* [*Corymbia*] *maculata*, though these were immature.

13. Squirrel Glider [*Petaurus norfolcensis*] - sch.2. Recorded in cmpt.605 on this survey. No response to playback calls. Habitat is excellent, but survey results show only one record for Squirrel Glider on this survey, possibly indicating the difficulty in detecting this species, [either visually or by vocalisations or responses to playback], more than an actual indication of presence or absence over the remainder of the survey area. It is interesting to note that there were no records for Sugar Glider from this survey. Sugar Gliders are generally very vocal and the detection rate is subsequently high, both from audible calls and visual/spotlight sightings, indicating the possible absence [of sugar glider] from the survey area, in what appears to be high quality Squirrel Glider habitat.

14. Koala [*Phascolarctos cinereus*] - sch.2, - pellets/scats, sightings, and vocalisations, were recorded for this species, during this survey. Results of Koala transect surveys are provided separate to this report, but indicate relatively low, to intermediate use over most of the area. Cmpts.606, and 608 are regarded as intermediate use areas as they have records of sightings, vocalisations and scats, while the other compartments had only a low incidence of scats along transect lines. Habitat appears excellent with a relatively high number of primary and secondary browse species such as -: *Eucalyptus microcorys*, *E.propinqua*, *E.seeana*, *E.acmenoides*, *E.fibrosa*, *E.umbra*, *E.saligna*.

15. Rufous Bettong [*Aepyprymnus rufescens*] - sch.2. Recorded several times during this survey. Generally good to excellent habitat throughout the survey area. A range of non predator scats were collected. **Scat analysis results are not yet available**, [only those not identified in the field by comparison to labelled scat specimens

provided by Barbara Triggs, or the scat keys in her book, have been sent on for identification].

16. Brush tailed Phascogale [*Phascogale tapoatofa*] - sch.2, not recorded this survey but the area has excellent dry woodland /open forest habitat. No hair-tubing or trapping was undertaken on this survey, thus effectively undersampling for a species which is otherwise difficult to detect.

17. Long-nosed Potoroo [*Potorous tridactylus*] - sch.2, not recorded in the survey area. The area is very open, with only limited areas of low, dense, vegetation to provide suitable habitat. Scat analysis results not yet available.
Note record from moister area of Ewingar SF from a road sighting during travel, this survey.

18. Parma Wallaby [*Macropus parma*] - sch.2, recorded on a number of occasions both in vehicle based spotlight surveys and walking spotlight transects, grazing in drier forest types [Ft.37,74], but still relatively close to gully-lines or gully-heads with thicker, moist forest vegetation.

19. Black-striped Wallaby [*Macropus dorsalis*] - sch.1, not recorded this survey. A number of runways and tracks were investigated as possibly indicating this species, however all scats, tracks, and sightings appeared to be of the swamp wallaby, red-necked wallaby, whip-tail wallaby, brush-tailed rock wallaby, wallaroo, and eastern grey kangaroo. This species was not detected visually, and on-site scat analysis did not indicate its presence, [other collected but not identified scats have been sent to Barbara Triggs for identification].

20. Red-legged Pademelon [*Thylogale stigmatica*] - sch.2. Not recorded this survey. Possible habitat in the moist forest gullies and adjoining forest types, however the area is generally very open, and lacks some of the critical moist forest habitat components generally associated with this species. These gully areas were relatively under sampled by the walking spotlight transects.

21. Microchiropteran Bats - [optimum survey season Oct. to late March. Survey Protocol requires a minimum of two harp traps for two nights per. 200ha in suitable habitat]. In this case extra Anabat Sonar sites were sampled to overcome the lack of accessible *Myotis adversus* and *Kerivoula papuensis* habitat, and to provide a better overall sample of microchiropteran bats. Overall, a six night winter sample was conducted, with records for possibly eight species, three confirmed to species, and five possible. [see maps and data sheets for details]

Miniopterus australis -sch2, sonar [Anabat 5] records.

Miniopterus schreibersii - sch.2, Harp trap record, and Anabat sonar - release call.

Mormopterus spp. - sonar records - possible

Mormopterus norfolcensis - sonar records - possible

Vespadelus pumilus - sonar record - possible

Nyctophilus gouldi - spotlight/ visual record [probable]

Vespadelus spp. - sonar record - possible

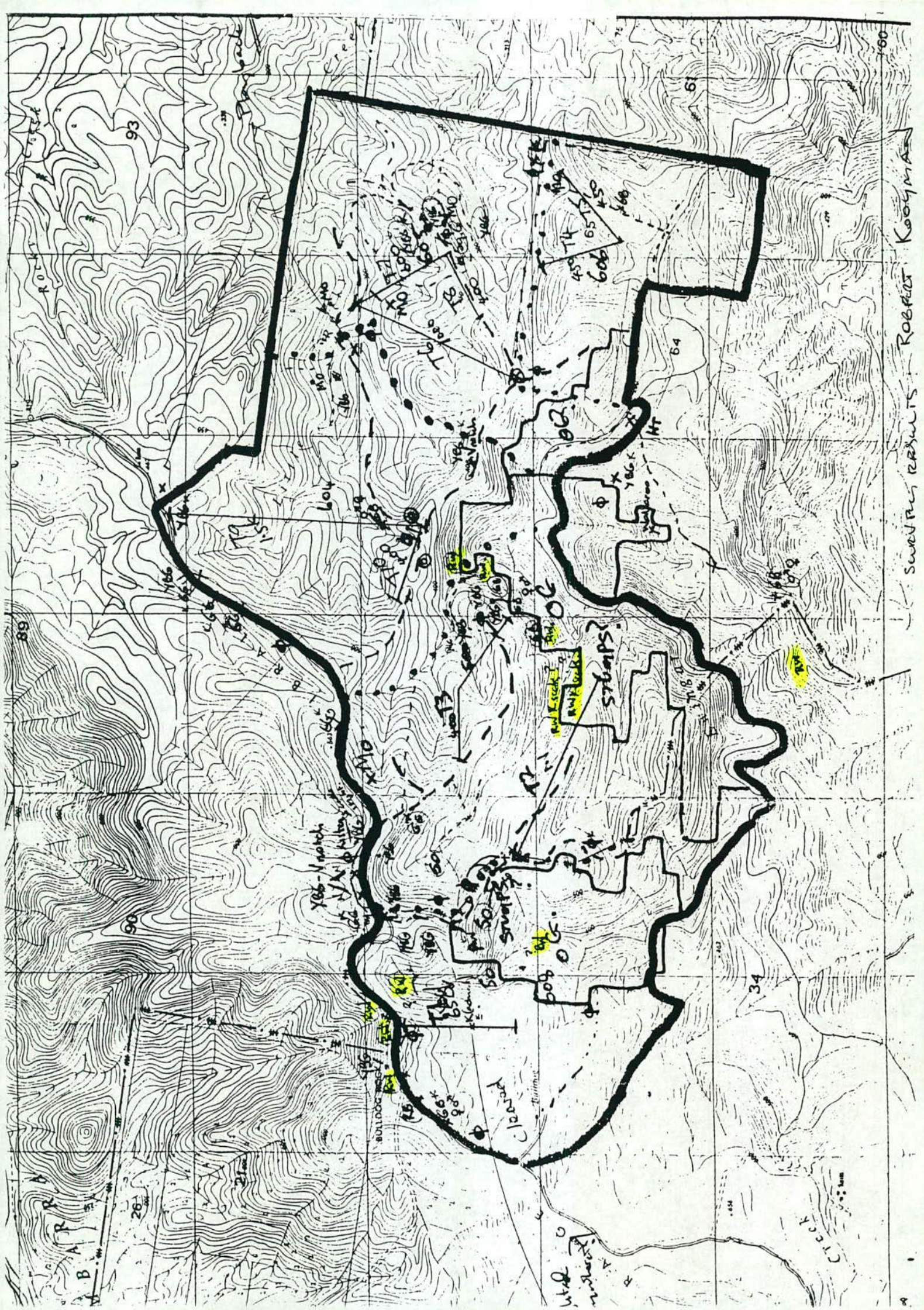
Rhinolophus megaphyllus - sonar record

Bat work was done by Noel Douglas [and assisted by Harvey, N., Harvey, K., Herklots, R., and Kooyman]. Sonar calls were recorded directly onto laptop computer and later compared to library calls by Noel Douglas, and verified [where possible] by SFNSW Research Division - Brad Law. Sonar calls are ascribed file names and are retained for future reference or verification. A comprehensive library of calls for the NE of NSW is not yet available, limiting our ability in many cases to ascribe species names to recorded calls. We are currently expanding our call library and this situation should steadily improve to the limits of the technology, [and with all survey calls retained for future review.]

No mine shaft or cave areas were detected. Any such sites located during operations should be buffered from proposed operations to ameliorate potential impacts on roost/maternity/torpor sites.

Harp trapping for *Kerivoula papuensis* and *Myotis adversus* in suitable habitat, [flyways and larger pools along rainforest creeks], resulted in nil captures for these species. One harp trap was located upstream on Ewingar Creek, [outside the survey area, sensu-stricto], in known *Kerivoula papuensis* habitat, to obtain experience with this species. [no captures of this species, *Miniopterus schreibersii* record above from this location]

22. Frog species - Seasonal constraints were a limiting factor and resulted in only two call records for frogs. [*Crinia signifera*, and *Litoria* sp.] Frog habitat searches were conducted on several of the major creeks and gullies, with no result. Temperatures were low, [$<10^{\circ}\text{C}$ at night, -see field notes for daily records], and conditions were dry.



Swelling results - Robert Koyma

9/87.

SURVEY EFFORT (DISTANCES IN KMS.)

5

Casino District
Reporting of Scheduled - Fauna Sightings

EWINGAR S.F. CMPTS. 604-608

August, 1997.

OBSERVER: ROBERT KOOMAN

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMG Reference	General Comments (eg at log dump, road side, Forest Type etc)
14/8/97	EWING.	604	1	GREATER GLIDER	ADULT in Gray-gum.	4 48650	67 86725
19/8/97	EWING.	608	1	RUFous BETTING	ADULT / Gummy near.	4 45300	67 85700
20/8	EWING.	BULLDOCK ROCK (adj. for)	11	BROWN-TAILED ROCK WALLABY	Adults - pouchyong	4 45500	67 85900
20/8	EWING.	"	" 11	BTRW	Adult	4 45700	67 85900
20/8	EWING.	"	" 11	BTRW	Adult with pouchyong	4 45800	67 86000
20/8	EWING.	607	1	GREATER GLIDER	Adult in (two).	4 46900	67 85730
20/8	EWING.	607	1	Yellow-bellied Glid.	calls	4 48150	67 85350
20/8	EWING.	607	1	YBG	calls & spotlighted.	4 48100	67 85250
21/8	EWING.	607	11	BTRW	Adult & pouchyong	4 48225	67 85400
21/8	EWING.	607	11	Glossy-Black Cockatoo	Feed tree.	4 48200	67 85200
21/8	EWING.	607	11	BTRW	Adult ...	4 47975	67 84900
21/8	EWING.	607	11	GB C	Q ♂ - feeding.	4 47950	67 85000
21/8	EWING.	607/8	1	Sooty OWL	calls.. (dive bomb).	4 46000	67 85300
21/8	EWING.	607/8	1	Sooty OWL	calls.. chattering. SPOTLIGHT - 520m.	4 46540	67 85250
21/8	EWING.	608	1	YBG	calls	4 46200	67 85650
21/8	EWING.	607	1	YBG	calls	4 46450	67 85820
21/8	EWING.	?	1	GB (c).	Q ♂ Adult - pair.	4 48150	67 83650.
25/8	EWING.	605/6	1	KOALA	calls ... > 20m...	4 45050	67 84975
26/8	EWING.	605/6	1	MASKED OWL	calls, brief spotlight.	4 45400	67 84925
26/8	EWING.	606	11	GB(c)	FEED SITE.	4 45250	67 84500
26/8	EWING.	607/8	1	Sooty OWL	calls, then spotlight...	4 46540	67 85250
26/8	EWING.	607	1	Sooty OWL	calls,	4 46650	67 85600
26/8	EWING.	608	1	YBG	calls	4 46200	67 85750
26/8	EWING.	607	1	YBG	calls	4 46680	67 85900
26/8	EWING.	607	1	MASKED OWL	calls (repeated)	4 47100	67 85950.
26/8	EWING.	604	1	MASKED OWL	calls	4 49300	67 86250
26/8	EWING.	605	1	MASKED OWL	calls	4 49750	67 85800
26/8	EWING.	605	1	MASKED OWL	calls	4 49750	67 86150

adjacent
c 608.

daylight
in rocky
area.

5:19am.

perched
then flying
two birds...

1st call...
2nd call...
flying.

(*) Type of inspection

1. Night Time Surveys
2. Follow-up Clearance Inspection
3. Rejects Inspection
4. Regeneration Inspection
5. Road Line, Dump Sites Inspection
6. Timber Assessment

7. Marking Boundaries, Filter Strip or Conservation Areas
 8. Reports from Log Faller
 9. Head Disposal Burning
 10. Harvesting Planning
 11. Other
- FLORA & FAUNA surveys.

GG - Greater Glider

SO - Sooty owl

YBG - Yellow-bellied Glider

MO - Masked owl

K - Koala

RB - Rufous Betting

BTRW - Brown-tailed Rock wallaby (ew)

PN - Parma Wallaby

GB(c) - Glossy Black Cockatoo

Casino District Reporting of Scheduled - Fauna Sightings

EWINGAR S.F. Cmptrs. 604-608

AUGUST, 1997

OBSERVER: Robert Kooyman.

[illegible]

possible
DEN SITE ?

1BX
blossom.
Sp. Gum.

Noel Douglas
me had...

• • • Type of Impression

- | | | | |
|----|----------------------------------|-----|------------------------------------|
| 1. | Night Time Surveys | - | Marking Boundaries, Filter Smas or |
| 2. | Follow-up Clearance Inspection | | Conservation Areas |
| 3. | Rejects Inspection | 8. | Reports from Log Faller |
| 4. | Regeneration Inspection | 9. | Head Disposal Burning |
| 5. | Road Line, Dump Sites Inspection | 10. | Harvesting Planning |
| 6. | Timber Assessment | 11. | Other |
| | | | FLORA & FAUNA SURVEYS. |

EWINGAR SF.

Cnpt. 604 - 608.

Harvey & Douglas records.....

Casino District
Reporting of Schedule 12 Fauna Sightings

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMC Reference	General Comments (eg at log dump, road side, Forest Type etc)
19-8-97	Ewingar	605	Kalk	GBC FT		4-49-380	67-85-260
21-8-97	Ewingar	604	10	V-Notch Tree		4-49-840	67-85-350
21-8-97	"	608	10	GBC	2 adults	4-45-030	67-85-220
19-8-97	"	604	1	Greater Glider	1 adult	4-48-080	67-86-700
19-8	"	604	1	"	1 adult white color	4-48-150	67-86-850
19-8	"	607	1	"	1 adult	4-47-410	67-86-100
19-8	"	607	1	"	1 adult	4-46-350	67-85-900
26-8	Ewingar	604	10	Glossy Black Cuckoo	2 adults	4-48-500	67-85-700
26-8	"	608	1	Sooty owl	2 adults	4-46-650	67-85-130
26-8	"	607	1	Parma walkley	1	4-46-320	67-85-920
25-8	"	"	1	YBG	1 (heard calling)	4-48-770	67-84-540
27-8	"	608	1	YBG	1 (heard call)	4-45-900	67-85-550
26-8	"	"	1	Parma walkley	1 sighting	4-44-700	67-80-740
26-8	"	"	1	Parma walkley	2 sighting	4-46-770	67-80-550
27-8	"	"	1	Kooka	sighting	4-45-700	67-85-470
27-8	"	"	1	Brown-backed	sighting	4-45-570	67-85-900
				rock walkley			
27-8	"	"	1	long-nosed pteropus	sighting	4-43-460	67-82-820
27-8	"	"	1	YBG	heard call	4-45-650	67-85-950
26-8	"	"		G.B.C.F.S		4-47-350	67-84-800
				G.B.C.F.S		4-47-320	67-85-440
				G.B.C.F.S		4-47-370	67-85-450
				G.B.C.F.S		4-47-560	67-85-430
				G.B.C.F.S		4-49-400	67-85-260
						4-48-800	67-85-140
						4-48-500	67-85-010
						4-48-510	67-85-950
						4-48-500	67-85-920
						4-48-500	67-85-880

(*) Type of Inspection

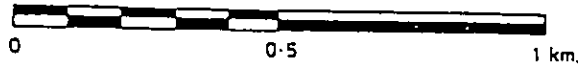
1. Night Time Surveys
2. Follow-up Clearance Inspection
3. Rejects Inspection
4. Regeneration Inspection
5. Road Line, Dump Sites Inspection
6. Timber Assessment

7. Marking Boundaries, Filter Strips or Conservation Areas
8. Reports from Log Faller
9. Head Disposal Burning
10. Harvesting Planning
11. Other

Check my other records - Rock Walkley? KH.

Compartment 604

Scale — 1 : 15 000



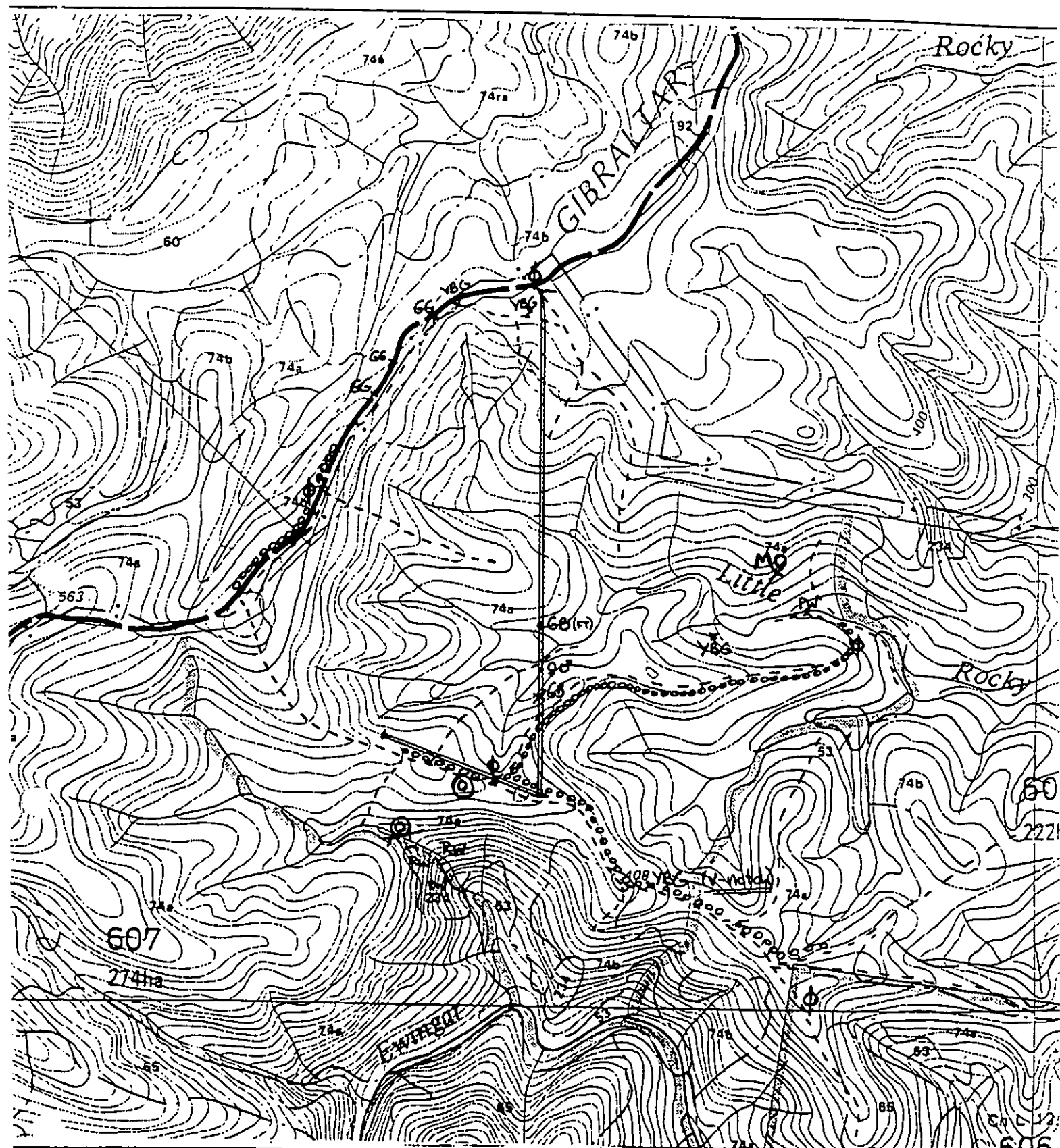
CB / 845

G- 231

N 186

Contour interval 10m

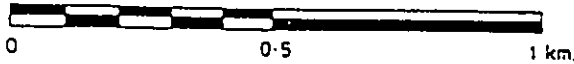
G N



- | | |
|---|---|
| Compartment boundary | Special emphasis |
| Filter strips | ----- random transect - Flora & Fauna. |
| Protection strips | ===== Integrated Koala transects. |
| Road, minor road, dump site | ⊕ - playback/listening site. RW - Rock Wallaby... |
| Wet weather dumps shown in red | YBG - yellow bellied Glider. GG - Greater Glider. |
| ⊙ ANABAT - SONAR SITE. X HP - Harp-trap Site. | MO - Masked Owl. PW - Pariah wallaby |
| 00000000 - SPOTLIGHT TRANSECT (walking). | GB - Glossy Black Cuckoos. FT = Feed Tree |

Compartment 605

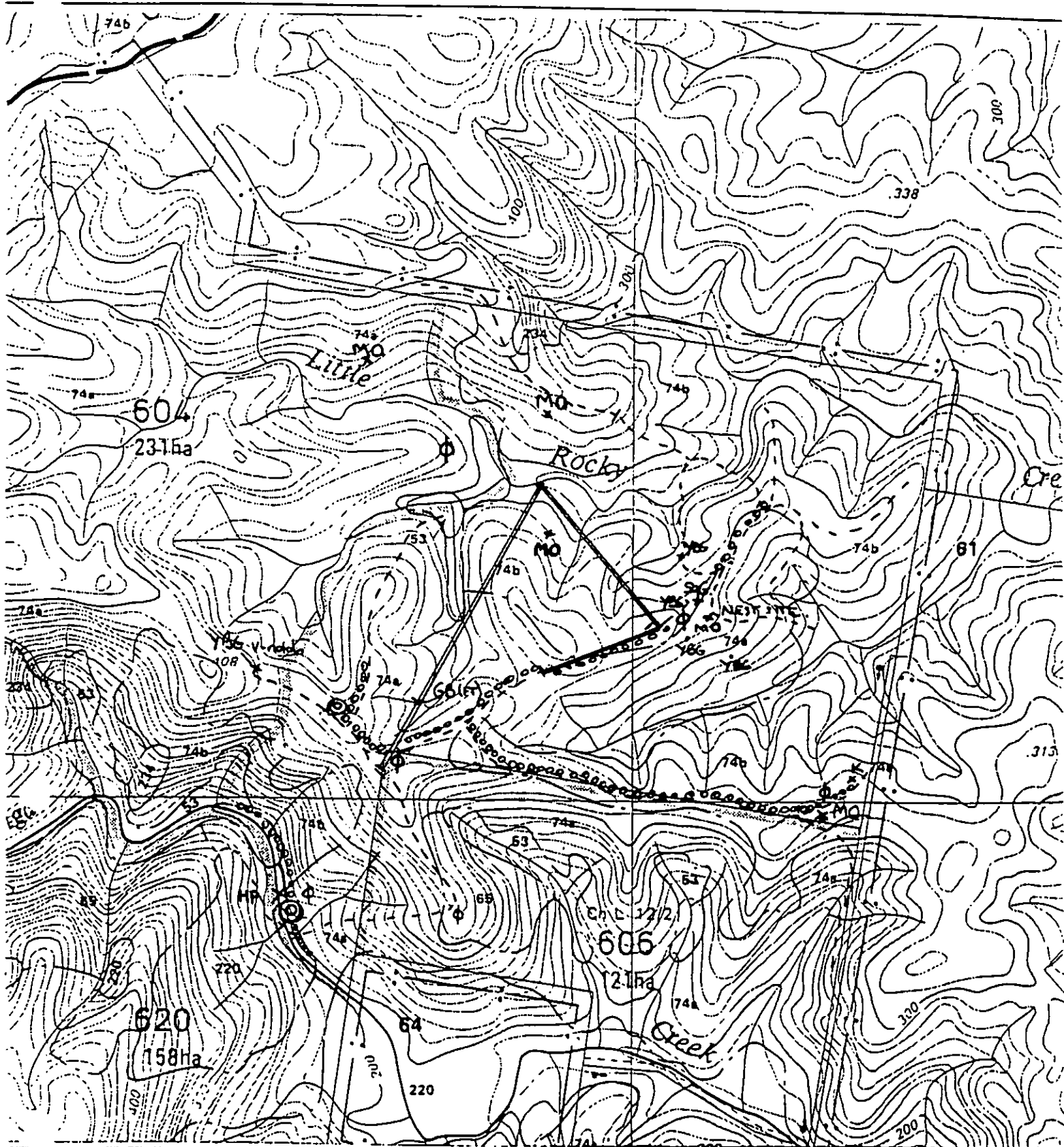
Scale — 1:15 000



CB / 845

G 231
N 195

Contour interval 10m



Compartment boundary

Filter strips

Protection strips

Road, minor road, dump site.

Wet weather dumps shown in red

Special emphasis

----- random flora & fauna transects

———— Integrated Koala transects.

φ - Playback & listening site.

MO - Masked owl (nest site).

YBG - Yellow-bellied Glider K - Koala

Sq.G. - Squirrel Glider GB(n) - Glossy Black Cockatoo

⊙ - ANAGAT SONAR SITE. X HP - HARP TRAP.

oooooooooooo - SPOTLIGHT TRANSECT (walking).

Compartment 606

Scale — 1:15 000

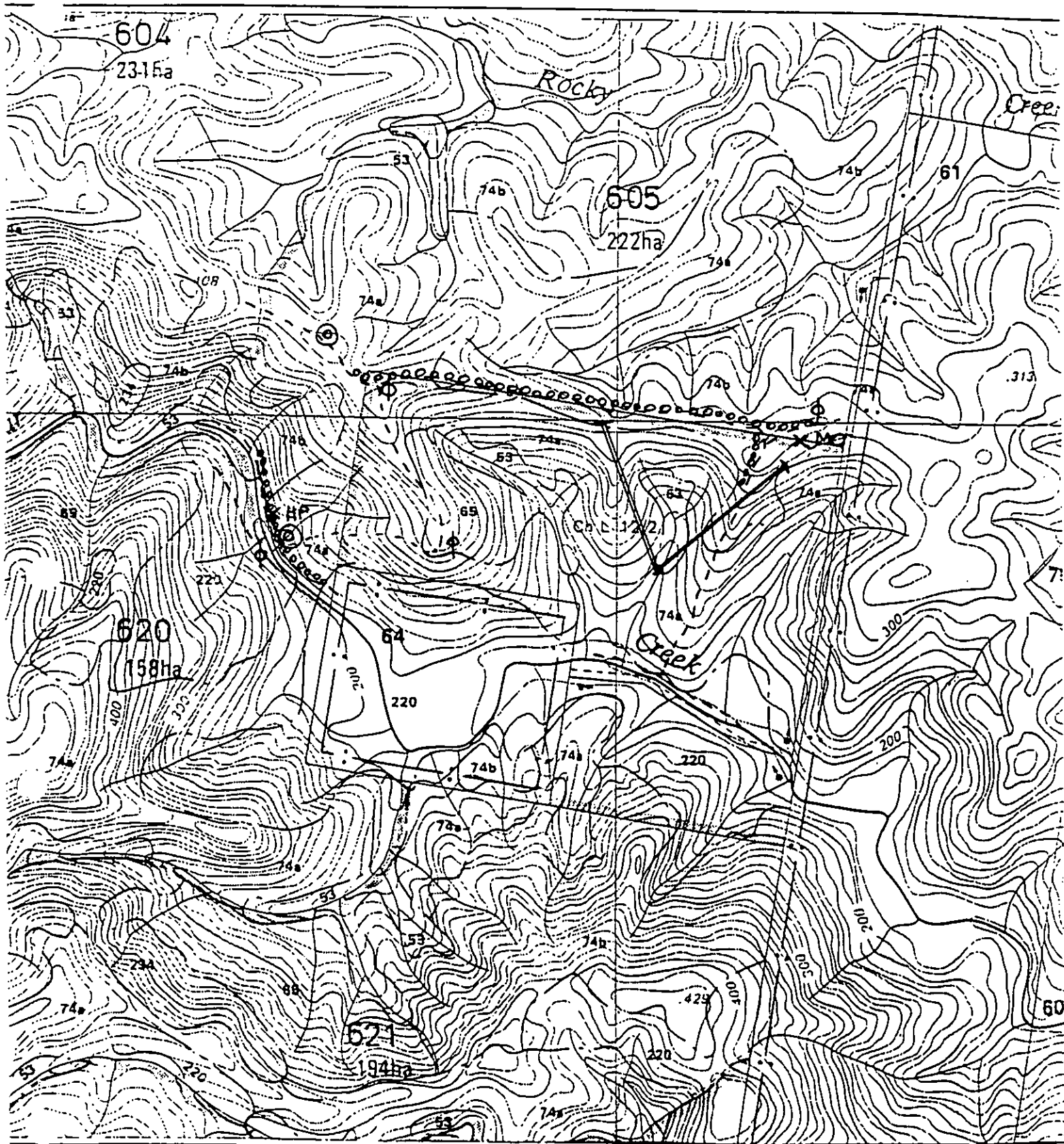
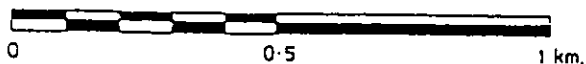
CB / 845

C-124

N 93

Contour interval 10m

G N

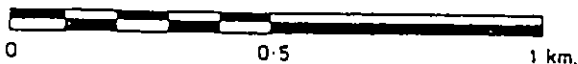


- Compartment boundary Special emphasis
- Filter strips random flora & fauna transects
- Protection strips Integrated Koola transects.
- Road, minor road, dump site ϕ - Playback & listening site.
- Wet weather dumps shown in red MO - Masked Owl
- © - ANABAT SONAL SITE. X HP - HARD TRAP
- 0000000000 - SPOTLIGHT TRANSECT (WALKING)

CS / 845

Q. 275
N. 195

Contour interval 10 m



Special emphasis

- random flora & fauna transects.

Integrated Koala transects



⊗ ϕ - Playback and listening site.

⊗ MO - MASKED OWL

⊗ MO - MASKED OWL SO - South Owl

RW - ROCK WALLABY

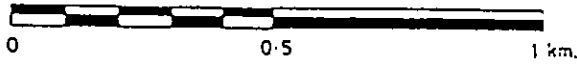
RW - Rock Wallaby GB - Glossy Black Cockatoo

000000000 - SPOTLIGHT TRANSFER (WALKING).

YBB - Yellow bellied glider
PW - Parma wallaby

↑
G N

CB/845 C-25²
N 04..
Contour interval 10m



Special emphasis

----- random flora & fauna transects

Integrated Koola transects

⊗ Φ - Playback and listening site.

SO - sooty owl. RB - Rufous Bunting

YBG - Yellow-bellied Glider K - Koala
RW - Rock Wallaby (RW) - scats.

GB - Glossy Black Cuckoo

c. *Lophostemon confertus* (c-vc)

c/c. *Angaphala subvelutina* (o-vo).

c/c. *Tristemonia laurina* (o).

sc. *Acnema smithii* (var. minor) (o-c).

sc. *Glochidion fitchii* (o-c).

sc/c. *Acacia melanoxylon* (o-d).

sc/c. *Allocasuarina torulosa* (o-c).

Pittosporum revolutum (o-vo).

Dodaea triquetra (vo-c).

Notera longifolia var. ... (vo).

± *Eucalyptus intermedia* (vol)

E. (corymbosa) *maculata* (o).

E. *fibrosa* (o)

E. *microcarpa* (o)

E. *zealandica* (vol).

Persoonia media (vo).

sc. *Acacia irrorata* var. *irrorata* (o)

Trema aspera (o).

sc. *Ficus coronata* (o).

Clerodendron binnatum (vol).

sc. *Acnema smithii* (vol).

Viola hederacea (o).

sc. *Calliandra serratifolia* (2-vo) ...

Ozothamnus diosmifolius (o-vo).

Sigabackia ... (o).

sc. *Archanthophaea cunninghamiana* (2).

sc. *Callistemon salignus* (2-).

Pratia purpurascens (o-vo).

Indigofera australis (vo).

sc. *Elaeocarpus doorenbosii* (vo)

sc. *Trochocarpa laurina* (vo).

Rapanea variabile (o).

Carlyline stricta (o-a).

sc. *Hodgkinsonia ovaliflora* (vo).

Verbera sp. *rigida* (vo).

sc. *Euroschium falcatus* (o-vo).

sc. *Callistemon* sp. *viridatus*? (2-o), check specimen for *C. pallidus*...

Breyeria oblongifolia (o).

Alyxia racifolia (2) near waterfall....

Viola betanidisfolia (vo-o).

Cissus antarctica (o)

Smilax australis (o).

Stephanandra japonica var. *discolor* (o).

Lantana camara (vo-c).

Cephaelis corymbosa (vo).

Glycine clauseniana (o).

Eucrochys latifolia (vo-o).

Lomandra longifolia (o-c).

Diarella canerula (o).

Entolasia marginata (o).

Oplismenus sp. *semulatus* (o).

Blechnum minus (vo).

Doodia aspera (o-c).

Christella dentata (o-).

Adiantum hispidulum (o-vo).

Cyathea cooperi (2-vo).

Adiantum formosum (vo).

Blechnum cartilagineum (o-)

Calochlaena dubia (o-)

Lantreopsis sp. (small).

Asplenium australicum (vol).

Celastrus subspicatus (vo-o).

Cucumis dipsacifolius (2) introduced. Fr. 74...

Diarella canerula (vo-c).

Parsonsia parsoniana (vo-o).

Lomandra multiflora (supra) (vo).

Juncus sp. (o).

Lepidosperma laterale (vo).

Dendrobium kingianum (2) on rocks...

Asplenium flabellifolium (2)

Dendrobium gracilicaule (vo-c).

Peperomia tetraphyllus (vo).

Davallia pyxidata (vo).

(c). *Canescina cunninghamiana* (2-c) along lower Ewing Gk. ... ? check specimen...

Diocorys australis (2-vo).

... on rocks near gorge...

c. *Ficus obliqua* (2).

Road area: *Baccharis myrsinifolia* (vo-o).

sc. *Pittosporum undulatum* (vo).

sc. *Dryopteris australis* (vo).

Ozothamnus doorenbosii (vo).

Wikstroemia indica (2).

Pittosporum revolutum (vo).

Manisuris sp. *bilocularis* (2-o).

Gully / Riparian aff. to Ft. 74.

Robert Kooyman
8/97.

simple until. / additional species from western end ...
major gully Cnpt 608.

Sesuvium arborescens (vot. o).

Rubus hillii (o)

Rubus mowrii (o).

Kennedia rubicunda (o-c).

Larrea decumbens (o-e).

Dioscorea transversa (o-c).

- *Stephania juncea* var. *discolor* (o).

Embellia cuneolata (o-c).

Cayratia clematidea (o-c).

Alpinia canaliculata (vo-o).

Tetrastichus nitens (vo-o).

Dendrobium densum (o-vo).

Pterostichus pedunculata (n). usque...

Clematis crinita (o).

Tylophora paniculata (o).

Entolasia stricta (o).

Synonym glandulosum (R-o).

sc. *Polyxan elegans* (o-vo).

sc. *Rhodanthe rubescens* (o).

sc. *Clasmylon australe* (vo-o).

sc. *Cryptocarya micrantha* (o).

sc. *Neolitsea dealbata* (o).

sc. *Clerodendron tonianthum* (o).

sc. *Alectryon subaerane* (o-vo).

Brayna dolanifolia (c).

Psychotria lanicoides (o-c).

sc. *Acronychia dolanifolia* (vo-o).

Euphorbia laurina (o).

Wilkiea huegeliana (o-c).

Denthamia celastroides (vo-o).

Gymnostachyum anceps (vo).

Citriobathus paniculatus (o-c).

Tabernaemontana paradagui (vo).

Aneides biflorus (vo).

Plectranthus parviflorus (X) (vo).

Indigofera australis (o-vo).

Stellaria flaccida (vo).

C. Eucalyptus (Corymbia) maculata (o-v)

C. E. propinqua (o-c)

C. E. microcarpa (o)

C. E. serena (narrow leaved) (vo-c)

C. E. acuminata (vo-r)

C. E. carnea (o-vo).

C. E. fibrosa (vo-c).

C. Angaphara subvelutina (check) (vo-o)

sc. Allocasuarina torulata (o-c).

C. E. melanophloea (R-o-c)

C. E. umbra (R-o) ✓

Acacia diphylla (o-vo).

Acacia viridata (vo-o). ADD:

Acacia melanoxylon (vo-o). * Eucalyptus tincta (o).

Acacia sp. (thin leaved).

Acacia granitica (vo).

Solanum densicarpum (vo-o).

Persoonia stricklandii (vo).

Pratia purpurea (o)

Senecio ^{sp.} amygdalifolius (R-o).

Geranium solanderi (o) (rechecked check sp.)

Walterbergia ^{sp.} gracilis (o)

Dichandra sp. (o).

Geranium sp. solanderi. (vo).

Viola betanifolia (o).

Excoecarpus sp. cuneiformis (c).

Isotoma sp. armstrongii (R) specimen / Roden... lower slope / but dry...

Hibbertia obtusifolia (vo-).

Plectranthus perfoliatus (vo-o).

Pseudosolanum variable (o) Roden...

Oxalis sp. (vo).

Macrozamia fawcettii (vo-o).

* Plectranthus ^{sp.} sumatranus (Roden areas only) ... > 100 plants... Granite

Isotria medeoloides (vo)

Xanthorrhoea (glauca) (vo-c).

Brachycombe microcarpa (vo-o).

Oxylobium ilicifolia (vo-c).

Ozothamnus diosmifolius (R-vo).

Daviesia ^{sp.} genitifolia (vo-c).

Pultanea ^{sp.} villosa (vo-) specimen.

Pultanea cunninghamii (vo-c).

Hardenbergia violacea (o-c)

Glycine clarkiana (o)

Dermolium rhytidophyllum (o-vo).

Galactia ^{sp.} (tiny bracts) (vo) check...

Kennedia rubicunda (vo).

Hibbertia scaberrima (vo-o) Roden.

Rubus pervigilans (o).

Themeda australis (c)

Poa latifolia var. lat. (c).

Diastella canaliculata (vo-a) Roden...

Lomandra ^{sp.} (specimen) ✓

L. multiflora (vo).

Chaetanthes distans (vo-o).

C. sieberiana (vo)

Adiantum hispidulum (vo-a) Roden...

Davallia pyxidata (vo-a) Roden...

Pyrosoma rupestris (o-a) Roden...

Platynerium superbum (Roden vo)

P. bifurcatum (Roden vo)

Dendrobium speciosum x (Roden - a).

* Plectranthus ^{sp. aff.} graveolans (specimen... > 1m. note - sediment (Roden, near creek).

Roden: Liperis swainsonii (R-vo). Roden.

Hakea ^{sp.} eriantha (R) (specimen... ✓)

Senecio ^{sp.} E? check (R-vo)

Olearia ^{sp.} glandulosa (a) check specimen...

(sc. Acacia blakeyi (o). check specimen... ✓)

Gonocarpus micranthus (vo-a) ? check...

Cayratia clausenii (R-vo) Roden...

Eustrephus latifolia (vo).

Banksia scaberrima (vo).

Cucumis dipsacatus (a)

Trachymene incisa var. incisa (a) ?

Excoecarpus cuneiformis (o).

Daviesia genitifolia (o-c).

Persoonia decurva (vo).

Malickia woorabara (vo-o).

Jacksonia scoparia (vo-c).

Alphitonia excelsa (R-o).

Persoonia oleoides (check (vo).

Galium ^{sp.} propinquum (R-o) Roden...

Crasula sieberiana (o).

Bracteantha bracteata (vo-c).

Graphium sphaerium (vo-o).

Veronica plebeia (vo-o).

Robert Keayman
8/17Caladenia ^{to (vo) x (specimen)}
carnea

Doodia candelata var. candelata (2) etc.

Aristida ramosa (o-c).

Glossogyne tamentis (vo-)

Eragrostis elageta (o-c).

Borriodon decipiens (b-a).

Spermacoce brachystema (vo).

Cymbopogon refractus (o-vo).

Aristida (vagan) (vo-).

Microlaena stipoides (vo-?).

Paspalum sp. (vo-o).

Eragrostis (4.28). leptostachya (o-).

Digitaria longiflora (o-vo).

Chloris sp. (vo-e) chach.

Enneapogon nigricans (R-?).

Heteropogon contortus (L) = ?

Hyparrhenia filipendula (vo-e).

Fimbristylis sp. dichotoma (R-vo).

Pterostylis pedunculata (2).

Tylophora paniculata (vo-e).

Entolasia stricta (o)

Oxalanthus doocheus (R-vo) near creek.

Pimelea linifolia (vo).

Monotoca scoparia (vo).

Cassinia compacta (vo).

Leptopogon variabile (R-a) w. o. etc. ?

Ranunculus sp. lappaceus (vo-e) specimen.

Leucopogon virgatus (-vo).

Gnaphalium sphaerocarpum (o).

Plantago debilis (R-vo)

Cymbopogon kwisanianus (vo-)

Pterocaulon reddense (vo).

Pimelea sp. glauca (b-o). (specimen) 604/606

Persoonia sp. aff. sericea (o) ⁶⁰⁴ by 2.5g - to ch. ^{specimen} ^{sp. small plant} ^{< 1m.}

Conosperma ericinum (vo).

Opercularia diphyllo (vo).

Goodenia rotundifolia (vo).

Goodenia heteraceae subsp. heteraceae (vo).

Wikstroemia indica (L).

Muelleria eucalyptoides (o).

Brunoniella australis (vo).

Ajuga australis (et. o).

Anigmum? (all the same)...

Pultanea retusa (R-o) (cont. 604).

Rubiaceae: Galium sp. (vo).

Notothixos subaureus (R-?).

Cardamine paucijuga (vo-). specimen...

Olearia oppositifolia (o-R) - narrow leaved form (specimens retained)....

Gonocarpus tetragynus (o)

Monotoca scoparia (o).

Platysace ericoides (vo-)

Notolea longifolia (R-vo) close to creek...

Charizema parviflorum (R-vo) specimen...

Stellaria flaccida (vo-o) rocky - gulley...

EWING, S.F.

Ft. 37 (DRY BLACKHILL)

DRY RIDGE-TOP SAMPLER. (Add species from Ft. 74 ...)

Robert Kooyman
5/97.

- C. Eucalyptus ptilularis (vc).
- C. E. (Corymbia) gumifera (o-c)
- C. E. microcarpa (vo).
- ± C. E. (Corymbia) maculata (r-vo) type adg. m.
- ± C. E. Schizae (o) julifolia var. ...

- Hardenbergia violacea (o-c).
- Kanadiah subcylindrica (o-vo)
- Glycine clarkiana (o).

- sc. Allocasuarina tarulosa (o-).
- Hibbertia obtusifolia (vo-o).
- Davallia genitifolia (o-c), in fr. ...
- Oxyblum ilicifolium (vc-c)
- Pulterea villosa (o-c).
- Macrozamia fawcettii (vo-o).
- Persoonia dioidea (o)
- Hibbertia dentata (r-vo).
- Lomatia villosifolia (o-vo).
- Conosperma ericinum (o-vo).
- Galium sp. prorepens (vo-o) rosette ...
- Persoonia media (vo-r).
- Pattersonia sp. straminea (vo).
- (Olearia sp. (o-c).
- Ozothamnus dioscoreus (o-c) decumbent, low, to 1m.
- Persoonia sericea (o).
- ... then overlaps to a limited extent with Ft. 74 ...

- Themeda australis (c-vo)
- Poa latiusculum var. lat. ? (vo-o).
- Entolasia stricta (o).

- Pterostylis sp. pedunculata (r).

- Pteris esculentum (r-o).
- Calochkera dubia (vo-c).
- Lindaea microphylla (r-o).

leatherhead (noisy friar bird) (less...)
 Satin bower-bird
 Little lorikeet
 Scaly-breasted lorikeet
 Pied curlew
 Bell Miner
 Brown Quail
 King Parrot (rare).
 Crimson rattle
 White eared honeyeater
 Yellow tuffed honeyeater (nesting...
 yellow robin
 white bellied cuckoo-shrike
 Variegated wren.
 pied butcherbird
 Willy wagtail
 mistle-toe bird
 laughing kookaburra
 brown thornbill
 yellow rumped thornbill
 striped thornbill
 Gerygone
 little friar bird
 silver-eye
 weebill
 Glossy Black Cuckoo
 White Cuckoo
 Magpie
 black faced cuckoo shrike
 forest raven.
 Red-backed Wren
 Rainbow lorikeet
 Gray-thrush
 Furcous Honeyeater
 Scarlet honeyeater
 Eastern spine-bill
 brown honeyeater
 brown flycatcher
 peaceful dove (d) fr.
 diamond dove
 Flycatcher (rethra) ...

Rufous Batwing
 Rock wallaby (Petrogale puniceolata).
 Red-necked wallaby
 Whip-tail wallabies ...
 long nosed bandicoot ... noister areas...
 Wallaroo ... (Pseudo potoroo ... pair...)
 Eastern grey Kangaroo
 Bandicoots (brown)
 Parma wallaby
 (Red necked pademelon -
 in Feb. 74
 (Thomomys, Aristida, Cyathophorum,)
 Grana ..

* Sooty owl - heard, seen.
 Boodie owl - heard, seen.
 Tawny Frogmouth - seen,
 * MASKED OWL - heard, seen
 & nest site located....

Crinia signifera
 Litoria ? (calls only).

- moist gully:-
 Sooty owl
 Whip-bird
 Lewis's honeyeater.

KOONA (scrub, windbreaks & calls)
 (common). Bush-tailed possum, heard seen.
 YBC - heard, seen.
 Greater Glider - seen.
 Squirrel Glider - heard, seen.

Wedge-tailed eagle
 brown garbade
 (large) kite ... ? (whistling or possible square tailed)

✓ M. schreibersii (Ewing's Gl.
 pos. Marmoptera norfolkensis - Anabat.
 pos. Marmoptera sp. ? Anabat.
 pos. Vespertilio pusillus ... Anabat.
 pos. Vespertilio sp. (P. macul.) Anabat.
 ✓ Rhinolophus megaphyllus - Anabat.
 pos. Nyctophilus gouldi - vined/spot.

... grinders...

Tuesday 19th August, 1997.

EWINGAR S.F.
Cmpt. 604-608.

Robert Kooyman

arrive: Ewingar S.F. 6:00pm. —

listen: Boobook owl 7:00pm.

7:30pm.

PLAYBACK CALLS —:

P.O. — no response.

M.O. — no response

Boobooks calling — (2).

Koala — no response

Sq. Glider — no response

YBG — no response.

listen: 15 mins....

8:30pm. — with: Kevin et al, driving spotlight transect along Bulldog Rd... target *Tharrogata* etc.....

then 5km driving spotlight transect —: 66⁺ (areas marked)

listen: Boobook owls.

10:30pm: Finish... set up camp — near S.F. Bombers....

— Rufous Belling — grassy area....

— possible Rock Wallaby — steep rocky area....

— Rock wallaby confirmed in morning — climbed down rocks — (counted '5')

— Whiptails & rock wallabies....

(note: SF area overgrazed — P.P. more grass sward....)

Wed. 20/8/97: Cmpt. 608. near Bulldog Rocks —

— Rock wallabies (>5)... & Whiptail wallabies...

— Veg. samples.....

move to.... Cmpts. 604, 605, part 606. to creek... Riparian Alliance... Fr. 53.

— Veg. samples to dunk.... (see species lists.... collect specimens etc...).

φ Track into Cmpt. 604 — Playbade Site.... ANASAT SAMPLE — (2 species +).

6:30pm — listen — Boobook owl (c). Bandicoot (heavily — spotlighted & heard).

PLAYBACK — Masked owl — no response

TEMP. +14°C. (7pm)

Powerful owl — no response

☉ — FULL MOON — RISE: 7:50PM.

YBG — no response

— LIGHT WIND, CLOUD COVER, NO RAIN.

Koala — no response

TEMP. +12°C 10:00pm.

7:40pm: end.... listen: Boobook owl....

SHIFT TO CMPT. 607 — bottom...

DRIVING SPOTLIGHT TRANSECT — (1.5km).

down — Greater Glider.. (two).

listen every 500 metres — 5 mins...

Boobook owl — calling...

1.5km — end.

* WIND increasing to Moderate.... (gusty...)

φ — Playbade calls —: 9:00pm

Koala — no response

Powerful owl — no response

YBG — no response

Masked owl — no response

Sq. G — no response

listen: —

9:45

Walking spotlight transect —

10:15pm —

set up camp — 10:30pm

THURS. 22nd AUGUST.

ERINGALL S.F. 604-608.

Robert Koenig.

Th. / morning - (3am - YBG calling near camp... see map).

I.D. Specimens, (Vegetation). LISTEN FOR: Bush-thicket... ..

Veg. Surveys - Cnpt. 607... down to creek, to edge of 'Old Growth', steep canyon... ..
Rocky boulder... .. Rake... .. disturbed along top of gorge... .. see map...

... continue Veg. surveys... .. Yellow tufted honeyeater - nesting, & watering at creek

Glossy Black Cuckoo - Field Site. edge of O.G. area - C. 607.

END: 5:00pm. KEVIN et al departed for casino → home...

NIGHT SURVEYS - START 6:00pm - LISTEN

Boundary Cnpts: 608, 607, Track on Ridge - edge of Old Growth area.

WEATHER: CLEAR, NO CLOUD, MODERATE WIND (>10-15k) - Gusty... ..

TEMP: +10°C. at 6:30pm. ~~Full moon~~ - rising around 9:15pm? - ..
short...

LISTEN: Sooty owl - calling in valley - S.W.

Short Playback - : immediate response - flew up to Blackbutt

(E. pilularia) - nearby - Spotlit - continued calling - sat on branch

calling to me, soft... screech type call - clear sighting - !!! >15m... !!
... still calling and talking to me after 5 mins... suspend playback until he goes

- BOOBOOK OWL - calling... ..

- sooty owl still calling at 6:50pm from Blackbutt - < 25m away... ..

will have to shift to other side of valley to continue playback for M.O., P.O. etc...

* S.O. - goes wild if I start anything on the tape-player... ..

- nesting hollow could be nearby... .. bird seems reluctant to move... ..

- START WALKING SPOTLIGHT TRANSECT - : BBT. area... .. 7:10pm... ..

- white throated nightjar - calling... ..

- CLOUD COVER - DARK to VERY DARK... ..

- BOOBOOK OWL - calling... ..

WIND - : LIGHT, occasional gust... ..

- Sooty-owl, - still calling... .. Bandicoot -

- Sooty owl following me along ridge... .. occasional screech call... to let me know!!

- disturbed small macropod... .. Fleeting glirice - Rufous Bettong... too fast! ?

- larger macropod... .. no clear sighting... Redneck wallaby... ?

SOON - 7:40pm. return... move uphill for M.O., P.O., YBG playback... driving spotlight -

Playback calls - : Masked owl - no response... then YBG calling (see map).
8:00pm. Powerful owl - no response... ..
Farm wallaby.

... then Sooty owl - dive bomb calls... ..

NB: Check out S.O. habitat tomorrow... ..

8:30pm - DRIVING SPOTLIGHT TRANSECT - 2km. [8:55pm - Moonrise].

- nil.

9:00pm - END..

DRIVING SPOTLIGHT TRANSECT - into Cnpt. 607. 1.5km... - nil.

9:30pm - END. (bottom of track - C607).

* Set up camp - 10:00pm. 10:30pm - YBG calling - downslope, BIG MISTLE TREE →

FLORA & FAUNA SURVEYS

EWINGAR S.F. Cnpt. 604-608.

Robert Keayman
8/97

Fri. 22nd August, 1997.

7:30am - : I.D. Specimens, Diurnal bird sample, Bush-thicketnee playback - no response

Veg. Surveys - 608, 607, 606, 605 part. 604.

Glossy Black Cuckoo - ♀ ♂ (outside Cnpt. survey area) ... see map.

Return via Casino Office → home... END. 2:30pm...

EWINGAR S.P. FLORA & FAUNA SURVEYS.
Cmpt. 604-608.

Robert Kooyman
25/8/97.

Mon. 25/8/97. arrive evening....

temp. 7:00 p.m. + 10°C. (falling).

Kev, Noel, Nicole, Rayn.

wind. - gusty, westerly... 10-30km.
(too strong for ridge samples)... W.S.W.

ANABAT sample - very windy
(BBT Ridge Cmpt. 608).

☉ - moon $< \frac{1}{2}$, waning, rise late....
(very dark).

PLAYBACK SAMPLE: Cmpt. 604 (606, 605) --- trade, ridge above creek... (wind 10-25k).
8:30pm. Marked owl - no response

Powerful owl - no response

Sooty owl - no response (too windy to hear).

Sq. Glider - no response

Kooka - no response

YBG - no response.

9:30pm

LISTEN: 10 mins - BOO300K OWL.

Drive down to creek - frog sample - 400m drive walk. (Harvey et al).

ANABAT Sample. 10:00pm Wind easing....

Drive back up to track dividing 606/605. Camp out at end /

Kooka - calling.... 10:30pm. 20kms.

Set up camp.... END.

* MARKED OWL CALLING - repeated (> 4)^{calls} -- pre-dawn listening - (1 hour).

26/8. time 5:19 am --- Cmpt. 605/606. (unprompted calling...)

- calling from tree near my camp --- spotlighted --- didn't see ---

then several more calls... same spot... (naked, cold, with spotlight in hand... M.O. flew off....
- a personal moment!!

START: Veg. survey. 7:30am Sort out grass specimens... SEE SPECIES LISTS...

(WEDNESDAY - 26/8/97. Sample areas Cmpt. 606/605....)

* Spotted-gum - budding - p.c. flowering...

Polygala sp. (specimen)? NO.... X

Marked Glossy Black Cuckoo - Feed Tree... C.606. long-ridge...

- Spend time with Kev, Noel etc... sort out maps, remaining surveys etc....

5:30pm. - dinner.... Sample BBT. (O.G.) area - Cmpt 607/608 (near S.O. site).

Cmpt. 608. BBT. area....

6:00pm - START NIGHT SAMPLE --- LISTEN: BOO300K OWL.

☉ - $< \frac{1}{2}$ moon, rising after 12:00pm. WIND: WSW. increasing in evening - 10kms.
VERY DARK....

TEMP: 6:00pm - +12°C. - falling....

6:13pm - Sooty OWL - calling - (several bomb drops)... and very brief playback to call
- 2 (two) sooty-owls calling - spotlighted both - in BBT. nearby

and flying.... trilling calls... (Kevin and Rayn present - training/familiarity
(original calls came from both sides of ridge) MAP. with S.O. - visual & call variations).

--- drive up road - YBG^s calling - see map. 150m from Bulldog Rd.

Flora & Fauna Surveys.
Ewingale S.F. Cnpt. 604-608.

Robert Kooyman
8/97.

Tues. 26/8/97 cont'd: NZ4 survey...

350m from intersection Bulley Rd. & O.G. BBT track.... (western track).

8:00pm. - Masked owl - several calls... while listening for YBG^{E.(s.a.)}
Cnpt. 607. - light breeze only... then wind gusts....
(checked with Noel - no other playbacks in use.....)

9:15pm - end driving Spotlight transect 5.2kms.

results: - YBG^s heard
- S.O. heard.) see map...
* - M.O. heard.

END transect at Playback Site above Little Rocky Crk.

listen: 10 mins. ... set up gear. - Target S.O., P.O. Sq.G.

* M.O. - started calling - toward Creek. continues calling
intermittantly.... flying around area... (see map).

9:20pm - still calling... then wait... attempt P.O. / S.O. / YBG playbacks....

S.O. - no response - M.O. returned - recommenced calling....

9:30pm - abandon playback... M.O. still 'screeching'.... flying around....
E.S.E.

... then quiet - 9:32pm....

YBG - no response. Sq.G. - no response

10:00pm - then YBG calling - see map.

Driving Transect (Spotlight) to C.607. track.... meet up with Noel & Nicole... ANABAT sample.

11:00pm - END ... set up camp 11:30pm - END.

WED. 27/8/97 - Flora & Fauna Survey....

* NB: This site looks good for Microchip. bats.
... creek flyway, cliff area, and
escarpment..... organize Noel / tonight!

8:00am. start - Mapping, Flora etc....

Veg. Surveys. & walk down to check (RK) Petrogale pericellata (Rock Wallaby)
scats & brief sighting.... confirmed Rock Wallaby - ♀ + juvenile....
pouch young....

- several other animals lower down - couldn't do any more without disturbing
them.... & other sightings through Ewingale Crk (steep crean), linking to Bulley Rocks
then Rocky (Timbarra) River, population.... actual Coexistence / (potential) for Planning...?

Move onto Bulley Rocks..... 12:30pm. Sample creek line & adjacent Rocky crean.

- Rock Wallaby scats.... (Cnpt. 608). (S.O. habitat....)

- finish veg. sample.

- move to Cnpt. 607 - set up ANABAT on creek / cliff line.... 5:00pm.

cont'd: →

EWINGORE S.F. Cnpts. 604-608.

FLORA & FAUNA SURVEYS -

Robert Kooyman
8/97.

Wed. 27/8/97 - ANABAT sample - cke. Cnpt. 607. near cliff line....

2:00pm. LISTEN: 15 mins - YBG calling. (see map for location). - toward creek on dusk

WEATHER: Fine, clear, light breeze (WSW)., cool - Temp. +11°C at 6:30pm..

○ - $< \frac{1}{2}$ - moonrise after midnight....

- move to Cnpt. 604 ~~and eastern end~~....

Listen at 500m. intervals -:

1. Boobook(s) - 3 - calling....

2. Boobook (2) - calling..

3. Intersection with Building Rd - Boobook.... ~~turn east onto Building Rd.~~

- then travel back to see Noel & Nicole at ANABAT site (Cnpt. 604/607
looks like additional species, possible - *Vercalotus regularis*? Cke/Rexford side)
definite - *Rhinodaphne megacalyx*...

- travel back to Building Road - ANABAT site....

- Tawny Freymouth

Cnpt. 607/new end... END: 9:30pm set up camp 10:00pm.

Thursday 28/8/97 - my camp in Cnpt. 607 (bottom end of track, near creek).

8:00am - Eastern Gray Kangaroos

* Glary Black Cockatoos - ♀♂ around site. (see map. - flying around area
- settling / feeding - intermittently...)

- I.D. Plant Specimens etc... ^{sch.2} *Arthrocaryon hispidus* - Cnpt. 608, rocky areas on lower
slopes / mid slopes down to more mesic gully lines. Predominantly in the
Fr. 74 areas, extending upshore. Elsewhere more restricted to lower slopes,
rocky areas, toward larger creeks.... No: * *Oplismenus cernuus* ✓

* Left to do -:

1. Part Cnpt. 606/605/604 - Nth & eastern boundary areas ^{Part done!}
2. Complete BBT. sample 608/607. Friday morning! ^{Finish Friday morning!}
3. C 607 - from track to creek (western). ✓
4. Nth. point C 604 - walk boundary area.... ✓
5. *Arthrocaryon hispidus* - search creek areas... Ewingore Creek. ✓ ~~part collected~~ specimens...

Terrain	Species	
very steep, rocky	- Rock wallaby	Granite, Meta-sed.
steep, partly rocky	- Wallaroo	Open woodland, DSF.
steep, to moderate slopes, grassy	- Whip tail wallaby	
& flats...	- Whiptail	
	- Eastern Gray Kangaroo	Refuge setting
lower slopes, gullies	- Red necked wallaby	
& above...	- Swamp wallaby,	red necked population.

THURS. 28th AUGUST, 1997.

EWINGAR S.F. CMPTS. 604-608.

cont'd.

FLORA & FAUNA SURVEYS.

Robert Kooyman.

NIGHT SURVEYS: CMPT. 605.

START 6:00. LISTEN: 30min...
SITE

WEATHER: Fine, clear, light breeze - no wind.

① - $< \frac{1}{2}$ moon, after midnight. dark,

TEMP. +13°C 6:30pm. falling away...
+10°C 9:00pm.

BOOBIE OWL - spotlighted near listening site... (my camp) CMPT. 605. track...
(typical phase).

YBG - calling - 50m at 320° - NW.

BOOBIE CALLING -

WALKING SPOTLIGHT TRANSECT -: targeting - Koala, Phascogale, YBG, Squirrel Glider,
CAMP... ALIVE. along ridge... Rufous Belling, GG, etc...

- macropods (large) - moving - not seen...

- probable Rufous Belling - but too quiet to be sure...

white throated nightjar - several calls...

1 KM... END. 9:00pm. return to camp...

LISTEN: * YBG calling at camp... 9:20pm. (measure distances tomorrow - mark on map).

* 9:45pm. Koala - 60m \pm 10 \rightarrow long session of calling - sounds like big male... (several minutes).

* 9:55pm - Squirrel Glider calls - vocalised for 2 mins... intermittently... then glided to feed...
very close... spotlighted Sq.G. in IRONBARK -

< 15m down road - approx. 12m. up... IBK are beginning to flower...

YBG was in on this area also... Acacia spp. & Euc. fibrosa... only blossom...

... Walked over 1km and saw nothing... but back at camp it's another story...!!

10:30pm. END. Only Large IBK are providing (the major) blossom resource at present

(critical winter blossom). Bird activity at dawn quite remarkable on these trees.

* Demonstrates importance of large tree retention for many species, early & prolonged flowering etc...

Friday: 1. Check Loranthaceae ... & other mistletoes... - one marked at end of track... Nabalua sp?

2. Measure Road distance for Sq.G., K., YBG... from last night..

3. Finish Veg. sample - BBT. (Fr. 37).

Sq.G - only ⁽¹⁾ record - no playback responses - calls rarely - difficult to detect...

Phascogale - excellent habitat, known from area... difficult to detect... no records!

2:00 am - YBG^s calling from IBK near camp (blossom).

* Squirrel Glider - when calling was approx. 12m up IBK, head down (tail up),
calling - - - - - stopped calling when he changed position...
Clarifying overall Sq.G. distribution would require more survey effort.

Fri. 25th August, 1997

EWINGARS.F. Cnpt. 604-608.

Robert Kooyman

Flora & Fauna Surveys.

6:00 am. — Diurnal Bird Survey — on flowering IBK.
target — swift parrot, honeyeaters etc...

ADD TO REPORT — Methodology..... 'one of us', (Kooyman), camps out in the survey area every night, moving from site to site (habitat to habitat) during the course of the survey. This provides extended listening time, a higher incidence of incidental / opportunistic records (sightings, calls etc.), and overall, a substantial increase in 'survey time / effort'.

NOTE: no records for SuperGlider — no calls at all.

Conduct search for 'V'-notch trees adjacent to last night's records.....

Sq. Glider hollows etc.... Koala etc. This area has — Koala

* LOCATED MARKED OWL NESTING HOLLOW. (trunk hollow... large / exposed... Sq. G. Y36 M.O.)
large Spotted-gum. ^{80m} = 30m to road (30m to my camp!!). (HOTSPOT!!).
M.O. sitting at edge of hollow — (no calls but night!).

motionless, dark face mask, including line from top of head to beak....
spotted chest / underparts, dark back,

face mask — dark brown, edged with tan / buff colour. (darker grey / brown on top of head and onto back.) leading edge of folded wings / tan-buff, then darker grey..... will mark out!

(Shot off a roll of 24 / 400 a.s.a. with Telephoto fitted to camera....
(hope they work!!).....

NB: Appears very sensitive to any noise or disturbance, comes out to investigate as soon as I walk down towards tree

* All Marked Owl records this trip were from unprompted calling (no playback),
or 'daylight' sighting at nest / hollow. (and subsequent spotlight / visual in flight) 25/8.

1. 850 metres to minor track intersection

2. Cnpt. 606 / 605 boundary — 900m from M.O. site.

3. 1.1 kms from start of track to M.O. site. & (Sq. G. Y36. Koala) area....

(605 / 606 Boundary.... on main track ...

**Results of Surveys to determine the status of Marbled Frogmouth -
Podargus ocellatus, in compartment 663, Ewingar SF.**

Report prepared by: Robert Kooyman 3/98

During pre-logging fauna surveys conducted by Kooyman et al [SFNSW] in July 1997, [refer to Flora and Fauna Survey Report, Ewingar SF cmpts.656-7, 660-4], a possible record for *Podargus ocellatus* was obtained by Harvey, K. & Herklots, R., [in cmpt 663] while conducting a walking spotlight survey. The record was given a 'possible' ranking only, as it was from a brief duration call, and extensive surveys and playback sampling of this survey area and the extensive areas of suitable habitat in the Ewingar / Billilimbra / Washpool / Gibraltar Range, over a number of years [NEFBS, SF EIS, SF pre-logging surveys, etc], have failed to locate the species.

A follow up target species survey in cmpt 663 was conducted by Kooyman and Harvey, K. in the month following the original survey [*Podargus ocellatus* was not recorded]. This survey involved playback calls being used at three sites along the nearby creek, and several in the vicinity of the original record. As well, Kooyman camped close to the record site for several nights, and near the major creek crossing just upstream. Extensive listening was undertaken interspersed with occasional playbacks.

NPWS Nth. Zone were notified of the record when the Pre-logging Flora and Fauna Report was completed and passed on to them. Kooyman later communicated to Nth. Zone (through phone and fax) the fact that the record for *Podargus ocellatus* was a 'possible' only, and that follow up survey had failed to detect the species, thus requiring its deletion from the data bases as a confirmed record, [for the time being].

Note:

- Kooyman has not followed up in writing regarding subsequent target surveys, until now requested to do so.
- confirmation of the deletion of the record from the NPWS & SFNSW data bases has not been secured to date.
- Kevin Harvey and Robin Herklots, who obtained the original record, are still convinced that it was *Podargus ocellatus* they heard. Harvey has heard and seen the species on a number of occasions on surveys in the Mt. Warning Caldera with Kooyman, and therefore it is not possible to simply refute the record as superficially erroneous.

Your reference 479E
Our reference
PSTC:mb

5 August, 1997

North East Forest Alliance
127 Keen Street
LISMORE NSW 2480

Attention: Georgia Beyer

Dear Georgia

RE: FLORA & FAUNA REPORT EWINGAR STATE FOREST

COMPARTMENTS 656-7, 660-664

Please find enclosed report for the above prepared by R Kooyman for State Forests.

Our survey team consists of Rob Kooyman, Noel Douglas and Kevin Harvey. They are assisted by two casuals who are graduates or undergraduates of SCU in the Land Management area.

Rob Kooyman has included in his report a brief CV for Noel Douglas and Kevin Harvey.

Enclosed is an A3 colour map of forest types and locations of Owl records obtained during survey.

1. Powerful Owl

There are two records:

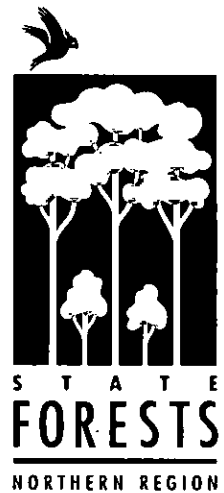
a) In the North East of Cpt 657.

There is no IAP modelled powerful Owl habitat within a 2km radius. An area of 300ha has been reserved in suitable forest types, and old growth.

b) To the south of Cpt 662

This record is in Private Property and there is no IAP modelled Powerful Owl habitat within a 2km radius.

Substantial areas of suitable forest type have previously been set aside for the Masked Owl in Cpt 673, Cpt 672, Cpt 671 and Jerrawarrah Flora Reserve.



State Forests of
New South Wales

Casino District
PO Box 688
Casino NSW 2470
Phone (066) 62 4499
Fax (066) 62 5826

2 Sooty Owl

The protocol will be applied in Cpt 656 and Cpt 662.

3 Masked Owl

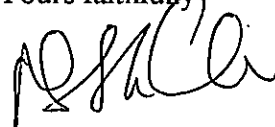
Not recorded on this survey.

Also enclosed are results of Koala and Old Growth Protocols.

Licensing of this area is considered urgent.

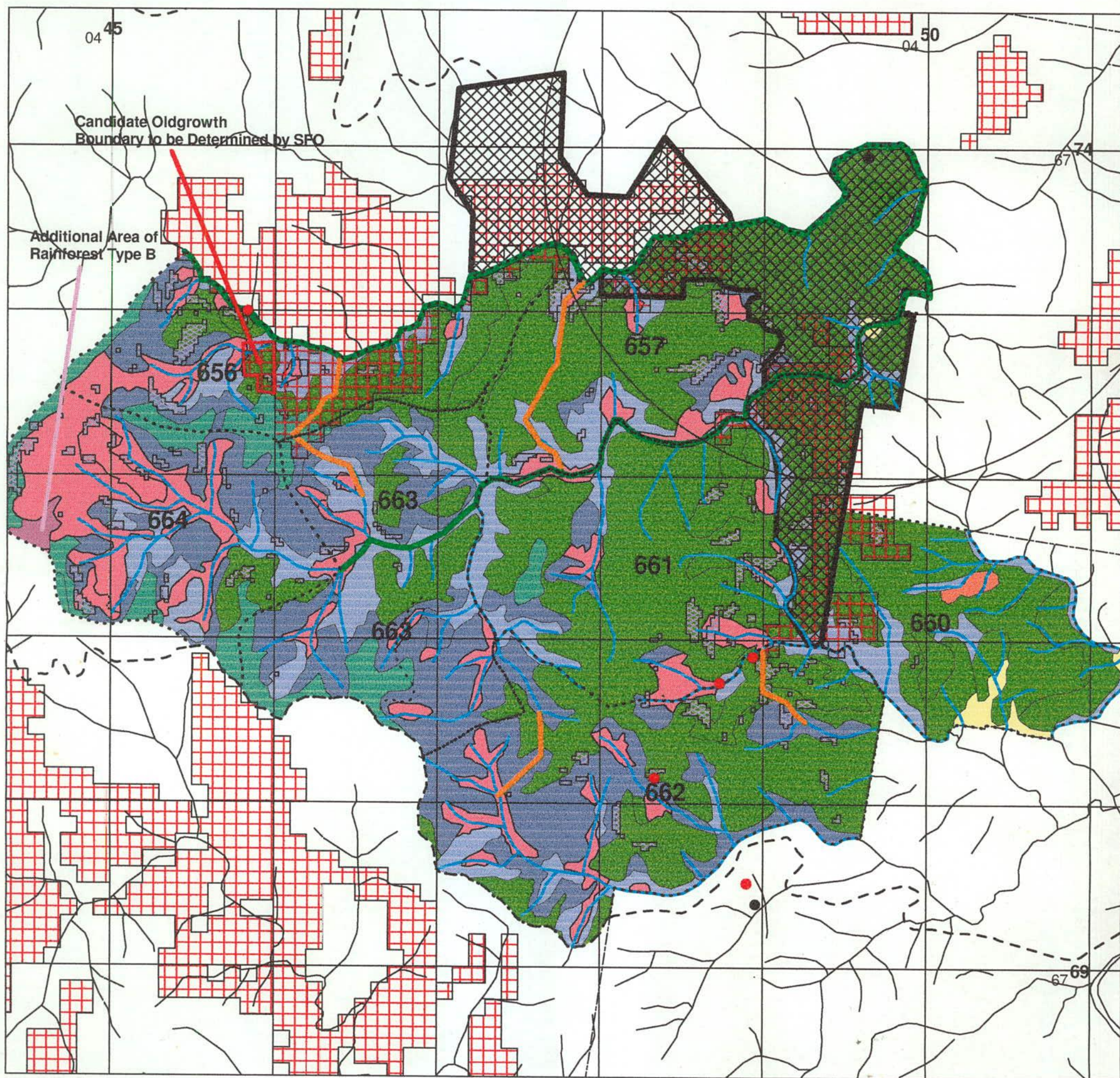
Thank you.

Yours faithfully

A handwritten signature in black ink, appearing to read 'P St Clair', written over the typed name.

P St Clair
for R Fussell
District Forester
CASINO DISTRICT

**NORTHERN REGION - CASINO DISTRICT
FOREST TYPE MAP
COMPARTMENTS 656, 657, 660, 661, 662, 663, AND 664
EWINGAR STATE FOREST
MALARA CREEK MAP SHEET
SCALE 1 : 25 000
01/08/1997**



1 0 1 2 3 4 Kilometers

BOUNDARIES

..... Compartment Boundaries

FLORA AND FAUNA

Powerful Owl Reserve

Sooty Owl Record

Powerful Owl Record

Candidate Oldgrowth

Connection Corridors

Wildlife Corridor

FOREST TYPES

NPWS Rainforest Type B

Coachwood - Crabapple

Myrtle

Viney Scrub

Brush Box
Narrowleaved White Mahogany - Red Mahogany
- Grey Ironbark - Grey Gum

Forest Red Gum

Spotted Gum - Ironbark / Grey Gum

FOREST TYPES

Silverleaved Ironbark

Cleared / Partially Cleared

Rock

New England Blackbutt
Yellow Carrabeen / (Corkwood - Sassafras -
Crabapple - Silver Sycamore)

Myrtle / (Viney Scrub)

Dry Blackbutt

Tallowwood - Sydney Blue Gum

Grey Gum - Grey Ironbark - White Mahogany

MN

**FLORA and FAUNA SURVEY of COMPARTMENTS 656-7, 660-664,
EWINGAR STATE FOREST.**

-prepared by Robert M. Kooyman, [FA- flora and fauna] Casino District. 7/97.

Results of field surveys are provided as field data sheets and species lists, with scheduled and target species records provided as AMG co-ordinants. Maps provide details of sample sites, playback locations, harp trap locations, sonar detection sites, species distributions, and extent and location of traverses.

Introduction:

Flora and Fauna Surveys were conducted by Kooyman, [8/7/97 to 25/7/97] and includes integrated koala transects and fauna surveys by Harvey and Douglas [SFNSW], over the same period.

The six compartments cover over 1600 hectares. Surveys have recently been conducted in adjacent areas of cmpts. 671, 673-5, and 684-5. [Kooyman 1997]

General Description of Survey Area:

Geology appears complex with soils of granitic origin varying from brown clay loams to free draining red soils formed by basic hornfels and /or granidiorites, as well as areas of meta-sediments. Altitudinal range varies from 875m. to 130m. Slopes are generally moderate to steep.

The vegetation of the area is generally illustrated by the forest type map [SFNSW]. Species lists for each forest type have been compiled and are appended to this report as field notes. These provide an indicative sample of the various habitats, floristic alliances, forest types, transitional boundaries and overlaps.

The sequence of forest types largely follows the altitudinal, topographical, and soil gradients, and variations, with Ft. 163 [New England Blackbutt] on the escarpment ridges and adjacent slopes grading into Ft. 23/26, 2/3, or Ft. 47 [Sydney Blue-gum / Tallowwood] on the mid slopes, with Ft. 53 [Brush- Box] mostly [but not exclusively] on lower slopes where it grades into, and may be part of, the rainforest communities. Rainforest [Ft. 23/26, 2/3] occurs as a larger massiff in the higher altitude areas of cmpts. 656, and 664, but is generally restricted to the lower slopes and riparian situations elsewhere. In these areas there may be a well developed rainforest canopy below the emergent *Lophostemon confertus*, and *Eucalyptus* spp.

The drier ridges and slopes support Ft. 62 [Grey-Gum, Ironbark, White Mahogany] with considerable variation in the species mix of this forest type between sites. Ft. 92 [Redgum] occurs on the low flats around and in cmpts. 660 and 657, with redgum [*Eucalyptus tereticornis*] persisting into upslope areas on [generally] higher fertility soils in cmpts. 660, 657, and 661.

Flora survey methodology: Plant species recorded from each forest type [and habitat] were listed, and frequency of occurrence and stratum [canopy, sub-canopy] indicated. Walked traverses were mapped. [See field notes attached.] Particular attention was directed to locating and recording the distribution and numbers of ROTAP plant species [Briggs and Leigh, 1995 Revised], and Schedules 1&2 [NSW Threatened Species Act, 1995] plant [and animal] species.

Fauna survey methodology: Includes application of the pre-logging / roading survey design forming part of the Threatened Species Protocol [3/6/97], incidental records collected during flora survey and habitat assessments, as well as the results of integrated koala transect surveys, and includes -:

1. walked spotlight transects, one kilometre long [minimum], 100 watt light. 10 minute listen at start and finish.
2. call playback for target species -: powerful owl, masked owl, sooty owl, yellow bellied glider, koala, marbled frogmouth, squirrel glider.
3. incidental scat collection and identification. [results of predator and non-predator scat analysis provided by Barbara Triggs] **not yet available.**
4. track identification on sandy or soft sections of roads, tracks and creek areas.
5. extended listening time for calls, [variable sample length, and dependent on conditions.]
6. harp trapping and sonar detection for bat species [very limited winter sample only].
7. frogs surveys [extremely limited winter sample only]
8. search for all other features listed in the Threatened Species Protocol Survey Design while applying the above flora and fauna surveys. [this will be supplemented by the SFO while marking out and supervising harvesting operations.
9. no hair-tube sampling was undertaken during this survey, thus potentially under sampling for potoroo, bettong, quoll, and phascogale.

NB: The survey was limited to winter, thus missing the optimum seasonal sample for some species groups, eg. bats, frogs, reptiles, and seasonal diurnal birds. Refer to previous report cmpts. 671, 673..... for incidental records in similar habitat.

Rare, Threatened, or Significant Plants recorded in Ewingar SF cmpts. 656-7, 660-664.

Dodonea megazygha - [sig. plant] - occurs in the higher altitude areas of cmpts. 656, 664, in association with Ft. 163, and the adjacent edges of the rainforest types. This species tends to regenerate well after disturbance.

Acomis acoma - [3RC] ROTAP listed. Occurs very occasionally from mid to higher altitudes, along roads and in association with fire or disturbance [generally].

→ NB: a number of specimens are still awaiting identification. Any additions to the results will be forwarded to SFNSW and NPWS as soon as received.

Results of Fauna Surveys:

Seasonality of sample means a paucity of records for amphibians, reptiles, [in particular *Hoplocephalus stephensii*], bats, and seasonal avi-fauna.

1. **Glossy Black Cockatoo** [*Calyptrorhynchus lathami*] - this species was located or sighted in a number of the surveyed compartments [cmpts. 660, 661, 662, 657]. Suitable habitat includes much of the grey-gum, ironbark, white mahogany, association, and includes areas in the other forest types. Notable concentrations of *Allocasuarina* spp. occur both toward the drainage lines and lower slopes and the ridges and top slopes. Several sites with evidence of extensive Glossy-black cockatoo feeding activity were located and marked in the field. Recommend retention of

feeding activity were located and marked in the field. Recommend retention of Allocasuarina spp. [where possible] over whole of proposal area, with care to avoid disturbing current feeding locations.

2. **Square tailed Kite** [*Lophoictinia isura*] - not recorded on this survey.
3. **Red Goshawk** [*Erythrorhynchus radiatus*] - not recorded on this survey, but these forest areas could provide suitable habitat.
4. **Bush Thick-knee** [*Burhinus grallarius*] - not seen or heard on this survey but suitable habitat occurs in the lower altitude areas of cmpts. 657, 660, 661 and 662 . Searches for this species were incorporated into the general flora traverses. No playback sampling was undertaken.
5. **Regent Honey-eater** [*Xanthomyza phrygia*]- not recorded on this survey.
6. **Swift Parrot** [*Lathamus discolor*]- not recorded on this survey.
7. **Powerful owl** [*Ninox strenua*] - a record for this species was obtained by Douglas, in private property adjacent to the S.E. corner of cmpt.662, and by Kooyman in the N.E. corner of cmpt.657.
8. **Masked owl** [*Tyto novaehollandiae*] - not recorded on this survey.
9. **Sooty owl** [*Tyto tenebricosa*] - recorded in all the major rainforest areas and associated drainage systems [Nogrigar and Solferino creeks], and extending from the higher altitude upper catchments, to the lower altitude eastern escarpment and associated drainage lines, near Washpool Creek. Most records were obtained in the eastern part of the survey area.
10. **Olive Whistler** [*Pachycephala olivacea*] - not recorded on this survey.
11. **Tiger Quoll** [*Dasyurus maculatus*] - suitable habitat occurs in the area [particularly the higher altitude areas of cmpts. 656 and 664] but no tracks, sightings or scats were recorded on this survey. The tiger quoll could be disadvantaged in the lowland areas, by predation and competition from feral predators such as the dog and fox.
12. **Yellow bellied Glider** [*Petaurus australis*] - this species was recorded in cmpts. 656, 657, 660-663. Retention of suitable habitat trees, and all recognisable feed trees [v-notch], together with the maintenance of floristic diversity, and the forest type, riparian, and old growth exclusions, will help ameliorate further potential impacts on this species. Records accumulated for the species during this study provide an indication of current distribution of yellow-bellied gliders in this forest area, and subsequently the likely location of potential nest/den trees and feeding sites and areas. [refer to AMGs].
13. **Squirrel Glider** [*Petaurus norfolcensis*] - not recorded on this survey.

separate to this report, but indicate relatively low usage over most of the area, with cmpt. 660 recognised as an intermediate use area.

15. Rufous Bettong [*Aepyprymnus rufescens*] - not recorded on this survey. Generally good to excellent habitat in the lower altitude areas of cmpts. 657, 660, 661, 662. No hair-tubing was undertaken on this survey. A range of non predator and predator scats were collected in the compartments listed above, targeting both bettong and potoroo. **Scat analysis results are not yet available.**

16. Brush tailed Phascogale [*Phascogale tapoatofa*] - not recorded this survey but the area has excellent habitat. No hair-tubing undertaken on this survey.

17. Long-nosed Potoroo [*Potorous tridactylus*] - not recorded on this survey, however footprints and diggings indicate possible presence. No hair-tubing was undertaken on this survey. Scat analysis results not yet available.

18. Parma Wallaby [*Macropus parma*] - recorded on a number of occasions both in vehicle based spotlight surveys and walking spotlight transects.

19. Black-striped Wallaby [*Macropus dorsalis*] - not recorded this survey.

20. Red-legged Pademelon [*Thylogale stigmatica*] - recorded crossing track in cmpt. 664. [late afternoon, rainforest / wet sclerophyll area]

21. Microchiropteran Bats - only a limited winter sample was conducted with records for five species -:

Miniopterus australis - cave search, harp trap, and sonar [Anabat 5] records.

Rhinolophus megaphyllus - cave search, sonar, and harp trap record.

Vespadelus regulus - sonar record.

Vespadelus pumilus - sonar record.

Nyctophilus spp. [likely - *gouldi*] - spotlight/ visual record.

Bat work was done by Noel Douglas [and assisted by R. Kooyman]. Sonar calls were recorded directly onto laptop computer and later compared to library calls by Noel Douglas, and verified by SFNSW Research Division - Brad Law.

Cave and mine-shaft searches were conducted, with sonar detection carried out on one site only in cmpt. 657. Recommend all mine shaft and cave areas be buffered from proposed operations to ameliorate potential impacts on roost sites.

Harp trapping for *Kerivoula papuensis* and *Myotis adversus* in suitable habitat, [flyways and larger pools along rainforest creeks], yielded no result.

22. Frog species - no records this survey. Seasonal constraints.

23. Marbled Frogmouth - [*Podargus ocellatus*] - results of extra survey work for this species will be available soon.

24. Rufous Scrub Bird - [*Atrichornis rufescens*] - two evenings were spent walking in areas of suitable habitat for this species, listening for calls. [higher altitude areas of cmpts. 656, & 664] No records this survey.

Surveyor Experience :

Kevin Harvey - SFNSW. Class B NPWS General Fauna Licence/ Consent.
Successfully completed SFNSW Frog and Bat School, and several Wildlife Schools.
Assisted with CSIRO fauna surveys for the Murwillumbah Management Area EIS, including Herpetological Surveys, Fauna Transect establishment, and the Hair-tube component of the Terrestrial mammal surveys.

Specialty area of interest and experience is with amphibians [frogs], and reptiles, as well as extensive experience with Koala transect based survey methodology. Currently involved with the application of the integrated Threatened Species Survey Design as part of the team working with Robert Kooyman [FA - Flora and Fauna], Casino District, SFNSW. This work is an extension of previous pre-logging surveys for Casino District undertaken by Kooyman, and assisted by Harvey and Douglas, eg., Camira SF.

Noel Douglas - SFNSW. Class B NPWS General Fauna Licence/ Consent.
Successfully completed SFNSW Frog and Bat School, and several Wildlife Schools.
Attended recent ANABAT sonar detection Training School at Qld. Dept. Natural Resources, Brisbane.

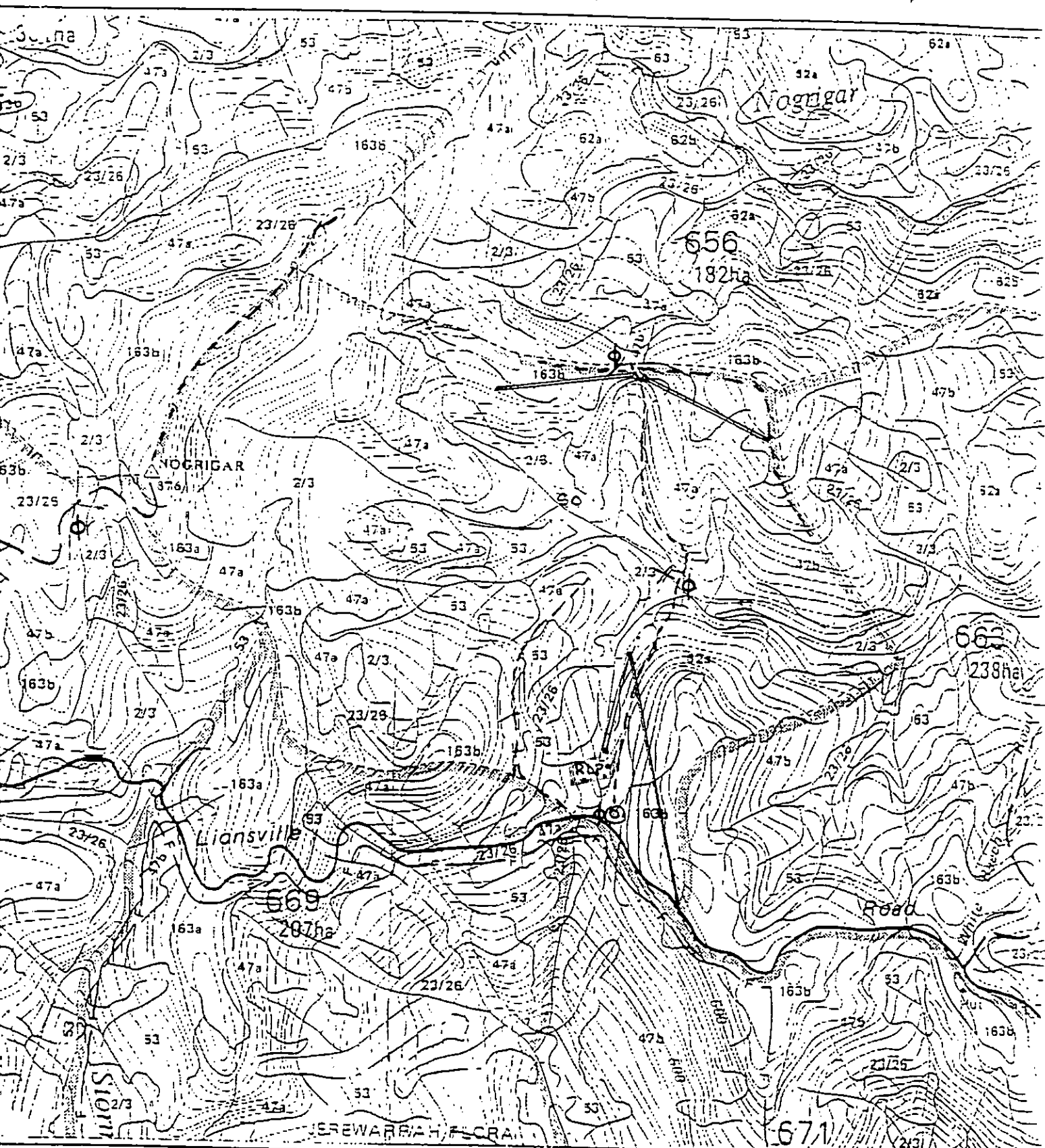
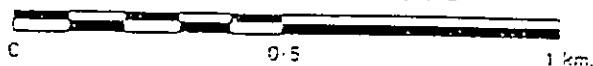
Specialty area of interest and experience is with Microchiropteran Bats, as well as extensive experience with Koala transect based survey methodology. Currently involved with the application of the integrated Threatened Species Survey Design as part of the team working with Robert Kooyman [FA - Flora and Fauna], Casino District, SFNSW. This work is an extension of previous pre-logging surveys for Casino District undertaken by Kooyman, and assisted by Harvey and Douglas, eg., Camira SF.

Compartment 664

Scale — 1:15 000

CB. 645

Contour interval 10m



Compartment boundary
Filter strips
Protection strips
Road, minor road, dump site
Wet weather dumas shown in red
SPOTLIGHT TRANSECTS - : walk - 3kms.
drive - 2.0kms.

Special emphasis

integrated Kona transects, 1.8kms.
random transect (Flora & Fauna) 4.2kms.
RLP Red legged Podemelan
So = Sooty owl
Φ = Playback site.
X = HAZP TRAP SITE
⊙ = ANABAT SITE.

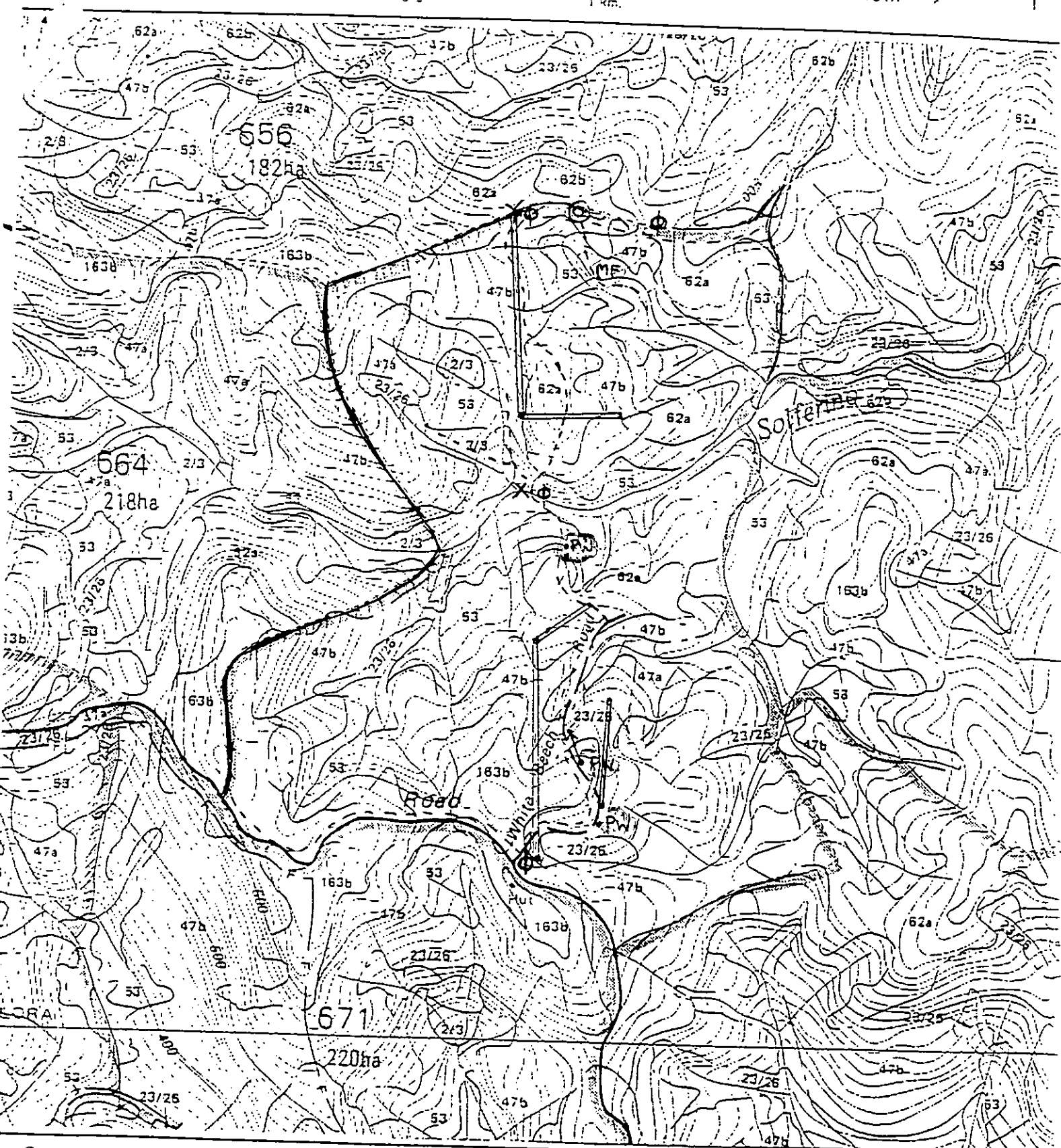
Compartment 663

Scale — 1:15 000

03/8-5

Contour interval 10m

G N



Compartment boundary
 Filter strips
 Protection strips
 Road, minor road, dump site
 Wet weather dumps shown in red
 SPOTLIGHT TRANSECTS:- walk - 3.0 kms.
 drive - 4.2 kms.

Special emphasis
 — integrated KONA transect, 2.1 kms
 — random transect (Flora & Fauna) 4 kms
 P.W. = Parma wallaby
 MF = Marbled Frogmouth (K. Harvey... et al) ? check....
 ⊙ ANABAT SITE
 ⊕ PLAYBACK SITE X HARP TRAP SITE.

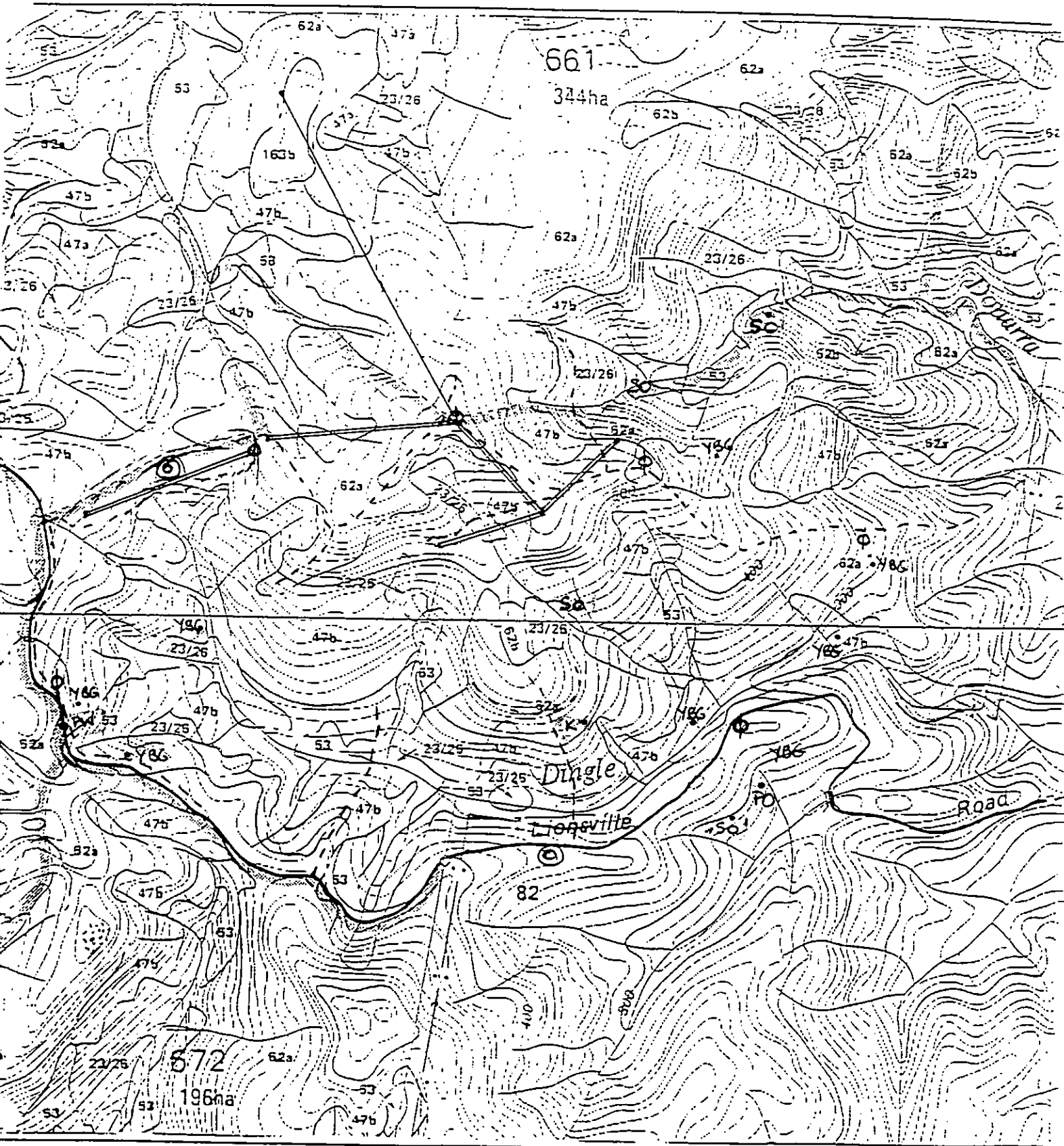
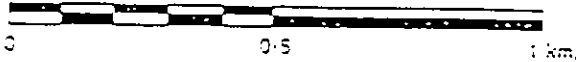
Compartment 662

Scale — 1:15 000

CE/645

Contour interval 10m

G N



Compartment boundary

Inter strips

Protection strips

Road, minor road, dump site

Weather dumps shown in red

SPOTLIGHT TRANSECTS: walk - 2.5km.
drive - 4.5km.

Special emphasis

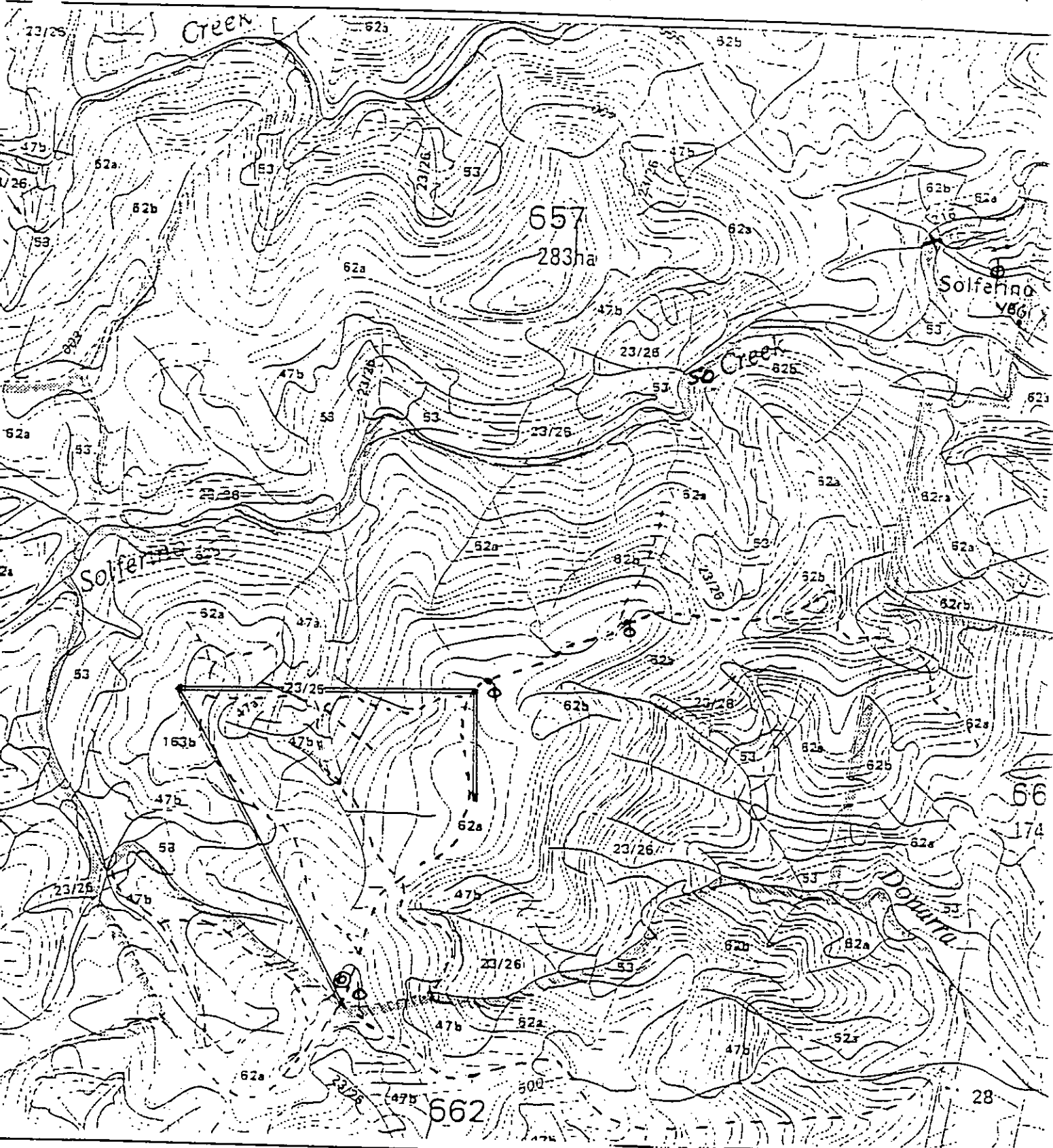
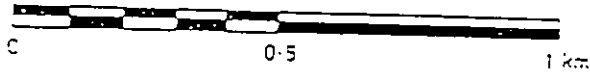
- integrated Koala transects, 2km
- - - random transect (Flora & Fauna) 4km
- (S0) = Sooty owl
- (IK) = Koala (pellets only)
- (Y86) = Yellow bellied Glider
- (PW) = Parma wallaby
- ⊙ = ANBAT site
- φ = Playouck site

Compartment 661

Scale — 1:15 000

CB / 645

Contour interval 10m



- Compartment boundary
 Filter strips
 Protection strips
 Road, minor road, dump site.
 Wet weather dumps shown in red
- Special emphasis
 — integrated Koma transects 2.1km
 - - - random transect (Flora & Fauna) 4km
- SPOTLIGHT TRANSECTS —: walk- 2.0km.
 drive- 1.5km.
- YBG - Yellow bellied Glider
 SOJ - Sooty-owl.
 ⊕ PLACACH SITE
 ⊙ ANACAT SITE.

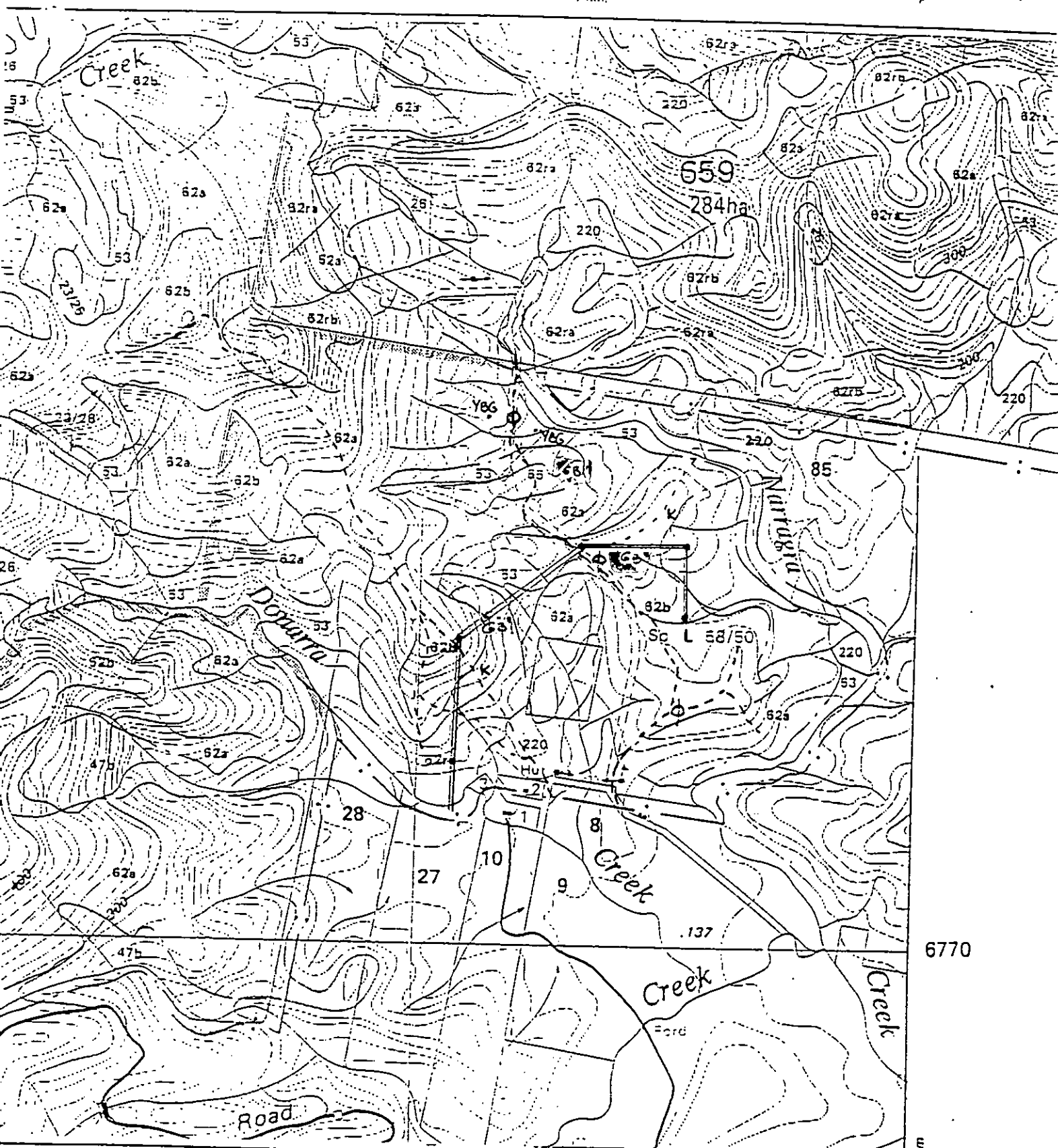
Compartment 660

Scale — 1:15 000

CB/845

Contour interval 10m

G N



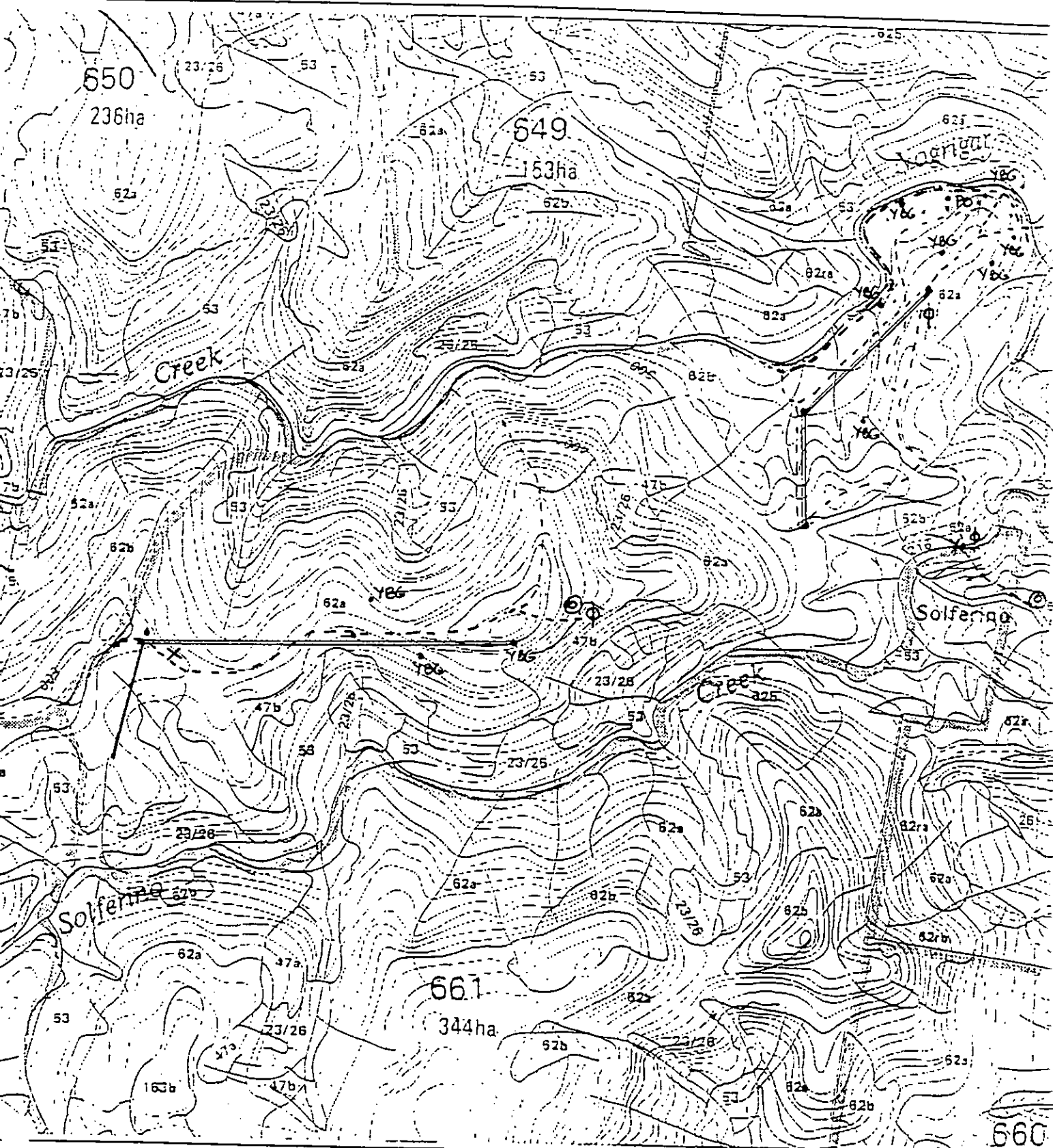
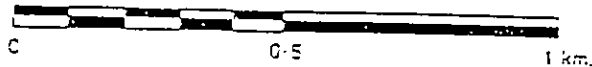
- Compartment boundary
 Filter strips
 Protection strips
 Road, minor road, dump site
 Wet weather dumps shown in red
 SPOTLIGHT TRANSECTS: walk - 2.2km, drive - 1.5kms.
- Special emphasis
 — integrated KOALA transect, 1-3kms.
 — random transect, (Flora & Fauna), 4-1kms.
 Y86: Yellow bellied Glider
 G81: Glossy black Cockatoo
 K = Koala (pellets only)
 φ Playence site.

Compartment 657

Scale — 1:15 000

CB / SLE

Contour interval 10m



- Compartment boundary
 Filter strips
 Protection strips
 Road, minor road, dump site.
 Wet weather dumps shown in red
 SPOTLIGHT TRANSECTS - : walk - 2.0kms.
 drive - 2.5kms.
- Special emphasis
 = integrated KoorA transect, 2kms.
 = random transect - 3.8kms. (Road & Farm)
 PD = Powerful owl
 Y66 = Yellowbellied Glider
 X = Herp trap Site.
 @ = ANACAT SITE (CAVE/MINE)
 φ = PLAMBACK SITE

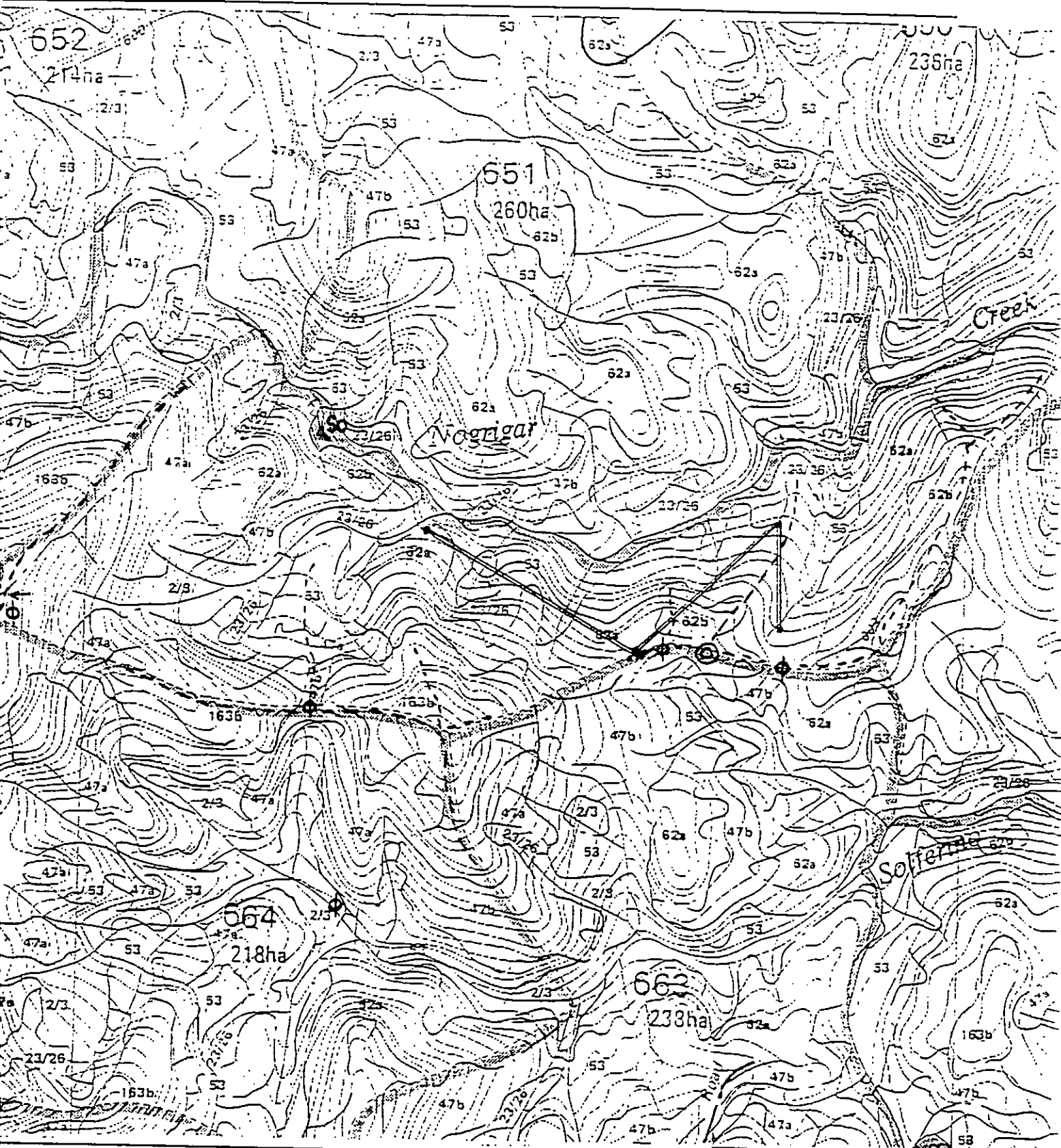
Compartment 656

Scale — 1:15 000

CS / 845

Contour interval 10 m

G N



boundary
 ditches
 road dump site
 dumps shown in red
 POTLIGHT TRADSECTS - :
 Walk - 2.2 kms
 drive - 1.1 kms.

Special emphasis
 φ = PLAYBACK SITE
 © = ANABAT SITE

SOOT: Sooty owl

3 kms.

1.5 kms.

— random survey
 (FLORA & FAUNA).
 — Integrated KORA
 transect sample.

EWINGAR S.F. CMPTS: 656-7, 660-664.

SURVEY EFFORT (DISTANCE IN KMS.)

COMPARTMENT	SPOTLIGHT SAMPLE		FLORA & FAUNA (random)	INTEGRATED KOALA TRANSECT.	BAT SAMPLE		FROG GENERAL TARGET CONCENTRATION	HAIR-TUDES	CALL PLAYBACK		SCATS		DIURNAL BIRDS	SEASONALITY CONSTRAINTS YES/NO./SPECIES.
	WALKED	DRIVEN			HARP	ANABAT			NO. OF SITES	2 nd phy	Prod.	Other	Target species.	
656 (182ha)	2.2	1.1	3.0	1.5	✓	✓	-	-	2	1		✓	RSB ✓ etc.	FROGS BATS DIURNAL - (seasonal) BIRDS YES
657 (288ha)	2.0	2.5	3.8	2.0	✓	✓	-	-	3	-	✓	✓	(general)	YES
660 (174ha)	2.2	1.5	4.1	1.3	-	-	-	-	2	1	✓	✓	✓(general)	YES
661 (344ha)	2.0	1.5	4.0	2.1	✓	✓	-	-	4	1	✓	✓	✓(general)	YES
662 (200ha)	2.5	4.5	4.0	2.0	-	✓ _{x2}	-	-	5	1		✓	✓(general)	YES
663 (238ha)	3.0	4.2	4.0	2.1	✓	✓ _{x2}	-	-	4	3		✓	RSB ✓ etc.	YES
664 (218ha)	3.0	2.0	4.2	1.8	✓	✓	-	-	2	2	✓		RSB ✓ etc.	YES
TOTALS: 1639ha gross area. 1280 net harvestable?	16.9 kms.	17.3 kms.	27.1 kms.	12.8 kms.	5 sites	7 sites. (1 cave/mine site).	-	-	22 sites.	9				
													Rufous Scrub Bird Wompoo/Rose crowned fruit-lover Olive whistler Sulph parrot.. Dark thick-knee	

FAX: 066/525826

TO: SFNSW, CASINO DISTRICT.

ATTN: PETER STCLAIR

FROM: Robert Kooyman.

Casino District

Reporting of Schedule 12 Fauna Sightings

Pg. 1 of 2.

EWINGAR S.F.

CMPTS: 656, 657, 660 - 664.

Observer: ROBERT KOOYMAN - RK

(unless specified... eg. ND - Noel Douglas).

KH - Kevin Harvey.

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMG Reference	General Comments (eg at log dump, road side, Forest Type etc)	
21/7/97	EWINGAR	657	1	Powerful owl	calls, (> 30 min)	4 49625	6773950	R.K.
16/7/97	EWING.	662 ⁽⁴⁵⁾	1	Powerful owl	calls, (permitted).	4 48975	6769390	(Douglas, ^
16/7/97	EWING.	662 ⁽⁴⁵⁾	1	Sooty owl	calls, (playback)	4 48860	6769550	N.D.
16/7/97	EWING.	662	1	Yellow bellied Glider	calls, (response)	4 49000	6769600	N.D.
16/7/97	EWINGAR	662	1	YBG	calls,	4 48675	6769710	N.D.
21/7/97	EWING	657	1	YBG	calls (playback).	4 49500	6773950	R.K.
21/7/97	EWING.	657	1	YBG	calls "	4 49800	6774000	R.K.
21/7/97	EWING.	657	1	YBG	calls (PO response).	4 49650	6773800	RK
21/7/97	EWING.	657	1	YBG	calls "	4 49800	6773875	RK
21/7/97	EWING.	657	1	YBG	calls "	4 49900	6773800	RK
21/7/97	EWING.	657	1	YBG	calls (playback)	4 49450	6773300	RK
23/7/97	EWING.	662	11	Greater gliders.	scats (around TWO)	4 48300	6769700	RK.
23/7/97	EWING.	662	11	Koala	scats (TWO) & G.G.	4 48375	6769675	RK
23/7/97	EWING.	664	1	Parma wallaby	sighted on road.	4 44300	6771025	RK
22/7/97	EWING.	662	1	YBG		4 47020	6769800	RK
22/7/97	EWING.	662	1	YBG		4 47175	6769620	RK
22/7/97	EWING.	664	1	Greater gliders (1)	spotlight sighting.	4 44375	6772050	RK
22/7/97	EWING.	664	1	Greater glider	spotlight (walk).	4 44600	6772500	RK
16/7/97	EWING.	663	1	YBG.	calls	4 46875	6772350	RK.
16/7/97	EWING.	656	1	YBG (1)	calls	4 46750	6772550	RK.
17/7/97	EWING.	664	1	Parma wallaby	seen on road.	4 43675	6771180	RK.
17/7/97	EWING.	663	1	Parma wallaby	seen on road.	4 46750	6770900	RK.
15/7/97	EWING.	657/661	1	Sooty owl	heard/calls.	4 49200	6772650	RK
15/7/97	EWING.	657	1	YBG (1)	calls, (playback)	4 48700	6772800	RK.
15/7/97	EWING.	662	1	Sooty owl (1)	calls	4 48325	6770150	RK.
15/7/97	EWING.	662/661	1	Sooty owl	calls	4 48700	6770700	RK & KH
15/7/97	EWING.	662/661	1	Sooty owl	calls (playback)	4 48950	6770900	RK & KH
15/7/97	EWING.	662	1	YBG.	calls (playback).	4 48820	6770520	RK.

* Type of Inspection

Night Time Surveys
 Follow-up Clearance Inspection
 Rejects Inspection
 Regeneration Inspection
 Road Line, Dump Sites Inspection
 Timber Assessment

Marking Boundaries, Filter Intox or
 Conservation Areas
 Reports from Log Piler
 Head Disposal Burning
 Harvesting Planning
 Street Floor & Fauna Surveys...

Casino District
Reporting of Schedule 12 Fauna Sightings

EWINGAR S.F.

CMPTS: 656, 657, 660 - 664.

OBSERVER: ROBERT KOYMAN (LH)

or Noel Douglas - NO

Kevin Harvey - KH.

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMG Reference	General Comments (eg at log dump, road side, Forest Type etc)	
15/7/97	EWING	662	1	YBG	calls	449275	6770200	ru.
8/7/97	EWING	663	1	Parma wallaby	sighted, walk, spotlight.	446850	6770720	ru.
8/7/97	EWING	656	1	Sooty owl	distant calls	445850	6773000	ru.
10/7/97	EWING	664	11	Red leaved pademelon	- sighted / on track.	445620	6771100	ru.
8/7/97	EWING	662	1	YBG	calls	447350	6769920	ru.
9/7/97	EWING	660	1	YBG	calls (owl playback)	450200	6771500	ru.
9/7/97	EWING	660	1	YBG		450400	6771325	ru.
9/7/97	EWING	660	1	Greater Glider	spotlight.	450200	6771325	ru.
9/7/97	EWING	660	11	Glossy Black	crushed cones	450250	6771250	ru.
				Cockatoo (feed site)	birds heard.			
8/7/97	EWING	660	11	Glossy-black		450190	6770900	KH.
				Cockatoo (feed site)				
15/7/97	EWING	657	1	YBG	calls	448500	6772640	ru.
15/7/97	EWING	657	1	YBG	calls	448260	6772600	ru.
15/7/97	EWING	657	1	YBG	calls	448100	6772780	KH
15/7/97	EWING	663	1	Parma wallaby	sighted / on road	446600	6771410	ru.
16/7/97	EWING	661	11	Greater glider (area)	scats	447800	6771050	ru.
9/7/97	EWING	660	11	KOALA	scats	450600	6771200	ru.
NB: SEE KOALA DATA SHEETS FOR OTHER LOCATIONS.								
9/7/97	EWING	661 (PP)	1	YBG	calls (playback)	449925	6772680	ru.
9/7/97	EWING	661 (PP)	1	YBG	calls (playback)	450225	6772640	ru.
9/7/97	EWING	661	1	YBG	heard calling	449850	6772780	ru.
	EWING	663	1	MARBLED FROGMOUTH	calls.			K.H.
				- to be confirmed	YES/NO ?	446770	6772300	

SCAT ANALYSIS MAY ADD (EXTRA) SPECIES AND LOCATIONS currently awaiting results from B. Triggs.

SONAL (GAT) ANALYSIS -

Type of Inspection

- | | | | |
|---|----------------------------------|----|-------------------------------------|
| 1 | Night Time Surveys | 7 | Marking Boundaries, Filter Sites or |
| 2 | Follow-up Clearance Inspection | | Conservation Areas |
| 3 | Rejects Inspection | 8 | Reports from Log Faller |
| 4 | Regeneration Inspection | 9 | Dead Disposal Burnings |
| 5 | Road Line, Dump Sites Inspection | 10 | Harvesting Planning |
| 6 | Timber Assessment | 11 | Other Flora & Fauna. |

Rupert Kooyman
7/97

Grey thrush
King Parrot
Mtn Lorikeet (common rosella).
Scaly breasted Lorikeet
Little Lorikeet
Rainbow Lorikeet (occasional - R).
Yellow tailed black cockatoo
Glossy Black Cockatoo
White-throated treecreeper
brown treecreeper
yellow throated scrubwren.
white breasted scrubwren.
silvereyes.
white cockatoo
whip bird
brown cuckoo dove
white headed pigeon
wonga pigeon.
lawin's honeyeater
laughing kookaburra
pied currawong
bell-miner
grey fantail
eastern rosella
wedge tailed eagle
grey goshawk
Aust. kestrel (low alt.)
grey thrush
variegated triller.
treecreeper (white throated)
yellow Robin
pale-yellow Robin (RF area).
Paruline Rifle-bird.
brown treecreeper
leatherhead (frill bird).
Superb lyre-bird.
Scrub turkey...
brown quail

bandicoot (long nosed)
Palmc wattabey
red necked pademelon, red legged pademelon.
swamp wattabey
lower alt: eastern grey
wallaroo
(red neck wattabey)?
whip-tail wallaby
Swamp chick for Black striped wallaby...

YBG

Koda

Mtn Bobwh
common ringtail (low alt.).
common brushtail (low alt.).

NO:
Black necked stork (near Tabulam - Sandy Crk. lagoon) late June... & July. 1997.
& Stockyard Crk.

- c. *Lophospermum carpatum* (vc-o)
- c. *Elaeocarpus grandis* (argutifolia) (o)
- c/sc. *Baccharis myrtifolia* (vc-c)
- c/sc. *Acacia smithii* var. *minor* (vc-c)
- c/sc. *Syzygium australe* (c-o)
- c/sc. *Livistona australis* (o-vc)
- c/sc. *Melia azedarach* var. *austrel.* (vo-o).
- c/sc. *Tristania lamarina* (vo)
- c/sc. *Acacia melanoxylon* (o).
- sc/c. *Balgia inophylla* (o-c)
- c/sc. *Elaeocarpus doavatus* (vo).
- sc. *Glochidion ferdinandii* (o).
- c/sc. *Alphitonia excelsa* (o).
- sc. *Neotinea dealbata* (o-c)
- c/sc. *Schizomeria ovata* (o-vo)
- c/sc. *Caldcluvia paniculata* (o)
- c/sc. *Cryptocarya glaucescens* (o-vo).
- sc/c. *Rhodanthe rubescens* (o).
- sc/c. *Hymenocarpus flavum* (o-vo).
- c/sc. *Ficus watkinsiana* (vo).
- Eupomatia lamarina* (o-c).
- c/sc. *Diospyros pentanera* (o).
- Cardyline stricta* (o-c)
- c/sc. *Ceratopetalum apetalum* (vo-o).
- sc. *Acradenia endodermis* (o).
- sc/c. *Guioa semiglanca* (o-vo).
- sc. *Claytonia australis* (o).
- c/sc. *Ficus caranata* (o-c).
- sc. *Liriodendron macrostachyum* (o).
- c/sc. *Eurosclerolobus falcatus* (o-c)
- c/sc. *Melicope micrococca* (o-c)
- c/sc. *Alectryon subcinerens* (o-c).
- sc. *Trochocarpa lamarina* (o-c).
- Breynia oblongifolia* (o-vo).
- sc/c. *Acacia smithii* (vo).

- Lomandra longifolia* (c)
- Lantana canera* (x-c).
- Smilax australis* (o).
- Smilax glycyphyla* (o)
- Marinda jasminoides* (o-c)
- Cissus antarctica* (o-).
- Dioscorea transversa* (o).
- Gleichenia cymosa* (o)
- Sarcopetalum harveyanum* (o).
- Rubus hillii* (o).
- Rubus rosifolius* (o-c).
- Oplismenus* sp. (o).
- Cyperus tetraphyllus* (o).
- Gahnia aspera* (o-c).
- Adiantum formosum* (o-c).
- Davallia pyxidata* (vo-o)
- Dendrobium aciculatum* (o-vo)
- Dendrobium gracilicaule* (vo)
- Laurencia sp. marginans* (o).
- L. decomposita* (o-c).
- compositae: *Anelloma biflorum* (o).
- Tripladeria cunninghamii* (o).
- Viola (heteranema)* (o).
- V. betanica* (o-c).
- Cyathia australis* (o).
- Pseudanthemum varicillata* (o)
- Doodia aspera* (o-c).
- Alpinia canerula* (o).
- Hibbertia scandens* (o).
- Polia crispata* (o).
- Allocasia bricbarensis* (o-vo).
- Doodia caudata* (vo-o).
- sc. *Clerodendron tomentosum* (o).
- Trema aspera* (o).
- Tabernaemontana padequi* (o).
- Craton verreauxii* (o).
- Cyathia cooperi* (o).
- Cissus hypoglauca* (o).
- Leptocarpus moorei* (vo).
- Carreria multipecta* - chad.
- Rapanea varicillata* (o-vo).
- Rauvolfia leichardiana* (o-).
- Solanum aviculare* (x)
- S. *mauritanum* (x-o). disturbance
- Maclura cochinchinensis* (vo-o).
- Amorpha blackii* (vo).

Ft. 62 Cnpt. 657
-g. (92).

Flora Sample

Robert Koenig
9/7/97.

- c/f. *Eucalyptus sideroxyloides* (o-c)
c/f. *E. microcarpa* (o)
c/f. *E. propinqua* (o-c)
c. *E. carnea* (o-a).
c. *E. acuminatoides* (vo-)
c. *E. intermedia* (o)
c. *E. saligna*
c. *E. tereticornis*
c. *E. campanulata* (vo-o).
sc. *Allocasuarina turatana* (o-vc)
sc. *Trichocarpa laurina* (o-vc)
sc. *Acacia biervastata* (vo).
sc. *Acacia melanoxylon* (vo)
A. *irratata* var. *irratata* (o-).
c/sc. *Angaphora* 4. *subvelutina*. (vo-).
sc/c. *Laphroglossum confertum* (r-).
Passonia straboikensis x (vo).
sc. *Tristeriopsis laurina* (2) *ovata*.
Protia purpurascens (o).
Hibbertia obtusifolia (o).
Clerodendron tomentosum
Leucopogon juniperinus (vo-).
Pimelea liliifolia (o-vo).
Glochidion fedinardii (vo-o).
Breynia oblongifolia (vo).
Gesnerium sp. *solanoides* (o-).
compositae: specimen....
Veleia sp. (o-).
Psychotria lanicerosides (vo-).
* *Aconit acana* (vo-).
Viola sp.
Oxalis (chroocarpa) (o).
Verbena rigida (o-vo).
Jackmania scaparia (vo-o).
sc. *Alphitonia excelsa*.
Goodenia sp. *ovatifolia*.
Pomadour umbellata (vo).
Xanthorrhoea sp. (R-o).
Phyllanthus sp.
Tiana aspera (o-r).
Zulingia dasyphylla (vo).

- Themeda australis* (c-)
Imperata cylindrica (vc)
Oplismenus sp. *caeruleum* (o)
Dianella caerulea var. (vo).
Poa labillardiera (vo-)
var. *lata*.
Lomandra multiflora (vo).
Lomandra longifolia (a-).
Digitaria sp. (2-vo).
Rubus rosifolius
Rubus parviflorus (o).
Rubus hillii (vo)
Lantana camara (o-c).
Celastrus subspicatus (vo-o).
Desmodium rhytidifolium (o-c).
Hibbertia scandens (o-vo).
Hardebergia violacea (o-).
Glycine clandestina (vo-o).
Plectranthus parviflorus (o-)
Cheilanthes distans (o).
Cheilanthes sieberiana (o).
Pteris esculentum (vo-c).
Calochortus dubius (vo-o).
Cymbopogon refractus (2-vo).
Cymbidium (suave *maledum* (o-vo).

Love grass -

- Lepidosperma laterale* (o-r).
Kennedia rubicunda (e).
Eustrephus latifolius (o).
Ground orchid - sp.
Pimelea sp. (o-c) *glauca*?
Clematis aristata (vo).
Crassula sieberiana (o-c)

- Naegelia burs* (r).
Livistona australis
Seringia arborescens (r).

moist rock - *Schoenoplectus mucronatus*? check!

EWING, S.F.

emrs. 662/663.

Fr. 47, sample. (soils - rid/imp).
(add R.F. sample into lower
slope & gullies).

Robert Kooyman
7/97.

- C. Eucalyptus saligna (c)
- C. E. microcarpa (c)
- C. E. acuminata (o)
- C. E. intermedia (vo).
- C. Lepostemon confertus (vo).
- sc. Livistana australis (o-c).
- sc. Allocasuarina teretis (o).
- Trochocarpa lawina (o-c)
- Bursera spinosa (o).
- sc. Neolitsea dealbata (o-c)
- sc. Caldeuia paniculata (o)
- Cryptocarya rigida (o-c)
- sc. Tristemonia collina (o-c).
- sc. Acacia melanoxylon (o)
- sc. A. irrorata var. irrorata (vo-o).
- Carlyline stricta (o).
- Archirodonia beckeri (o-c).
- Psychotria loniceroides (o-c).
- sc. Synoum glandulosum (vo-o).
- sc. Rhodonia rubra (o).
- sc. Guiera senegalensis (o)
- sc. Cryptocarya micrantha (o).
- Solanum cinereum (tail) (o).
- sc. Cryptocarya glaucescens (vo-o).
- Eupomatia lawina (o-c).
- Pittosporum revolutum (o).
- Liaspasia manetadynus (vo).
- Leucopogon lanceolatus (o).
- Flacocarpus reticulatus (o).
- sc. Polyscias elegans (o)-vo.
- Wikstroemia indica (vo-o).
- Pimelia latifolia var. alba (o).
- Zizania smithii (o-vo).
- Maytenus (o).
- Solanum densiventum (o-vo).
- Rapanea variabilis (o).
- Olea neriifolia (vo).
- Citriobathus paniculatus (vo).
- Breynia distachya (o-c).
- Viola botanifolia (vo-o). (Eucalyptus)
- sc. Eriandra setacea (vo).
- sc. Pittosporum undulatum (o-o).

- Clematis aristata (o-c)
- Smilax australis (o-c)
- S. styphillia (o).
- Kennedia rubicunda (o).
- Rubus hillii (o)
- Rubus rosifolius (o-c).
- Celastrum subspicatus (o).
- Europhorus latifolius (o)
- Gonolobus cynosuroides (o).
- Blechnum caritagenum (o-c)
- Adiantum hispidulum (o).
- A. farosum (o)
- Calochortus dubia (c-o)
- Cyathocarpa australis (vo).
- Billerbeckia scandens (vo-o).
- Gymnocladia dioica (vo).
- Dianella caerulea var. ? (o).
- Alpinia caerulea (o-vo).
- Entolasia stricta (o).
- Triplaris cunninghamii (o-o).
- Stephania japonica var. diandra (o).
- Piptocarya mossii (o).
- Hibbertia scandens (o).
- Cissampelos antarctica (o)
- C. hypoglauca (o).
- Morinda jasminoides (o).
- Glycine clarkiana (vo-o).
- Morinda sp.
- Lantana camara (vo-vo). (check).
- Scheuchzeria sp.
- Dioscorea tenuis (o-vo).
- Streptocarpus moorei (o-vo).
- Cymbidium (mailed) (vo-o).
- Platycentrum bifurcatum (vo-o)
- Davallia pyxidata (vo)
- Dendrobium acuminatum (o-vo).
- D. speciosum (vo)
- D. gracilicaulis (vo).
- Pyrrhia rufescens (o).
- sc. orchid....
- Calanthe triplicata (o-o).
- Pteris tremula (vo)
- Pteris umbrosa (o-vo).
- Hydrocotyle pedicellata (vo-o).

Crauntha sideraria (o).

disturbed areas:-

- Lantana camara (c-vo)
- Diplocephala palmata (o-c)
- Polyscias sambucifolia (vo-o).
- Eupomatia lawina (vo-o).
- Carlyline stricta (o-c)
- C. palmata (vo-o).
- Cassine australis (vo-o).
- Dendrobium celandroides (o).
- Carrea laurifolia (B-o)
- Asterolaia sp. (A-vo).
- * Aconitum acutum (A-vo).
- Prostanthera incisa (o).
- Scutellaria humilis (A).

soils/ red to brown.

ELVINOR S.F. Cmt. 661 / 662 (part).

Robert Koenig
Fr. 62 (dry ridge top, > 500m alt.) 7/97.

- C. Eucalyptus praeinqua (o-c)
- C. E. acuminatoides (o)
- C. E. siderophloia (o-c)
- C. E. tereticornis (o-vo)
- C. E. (Corymba) intermedia (o)
- (C. E. campanulata (vo-r)
- (C. E. laevopinnata (r)
- C. E. microcarpa (vo-o)
- C. E. saligna (vo-r).
- o-rs. C. E. (Liriodendron) melanophloia (r-c) localized, steep rocky areas...
- C. Angaphara subvelutina (vo-o).
- sc. Laphostemon confertus (r)
- sc. Allocasuarina twolara (c-vc).
- sc. Acacia melanoxylon (o)
- sc. A. virata var. virata (o-vo)

Persoonia attenuata (o)

P. (stricklandensis)?

Solanum densiveritum (o)

Oxylobium ilicifolium (vo-vc).

Elaeocharis reticulata (vo-r).

Trochocarpa laurina (o-

Hibbertia strobilifera (o-

Geranium sp.

Xanthorrhoea sp. (glauca) (o-c).

Maytenus sp. (o).

Pratia purpurea (o-c).

Diospyros australis (r-vo).

Indigofera australis (o).

Ozothamnus diosmifolius (vo).

Macrozamia fawcettii (vo-c) in fruit...

Cordyline stricta (r).

Oxalis sp. (o).

Vellum sp.

sc. Callistemon salignus (r-vo) restricted sites...

Viola betanica (o-c).

Hibbertia aspera (vo-o).

H. dentata (vo).

Serecio amygdalifolius (r-o).

Viola hederacea (o).

Viola betanica (o-c).

Cranium richardsonii (o-r).

Banksia/Pteris insignis!

Imperata cylindrica (c-vo)

Poa labillardiera var. lab. (c)

Themeda australis (c)

Dermolium rhytidifolium (o)

Lantana camara (o-vc).

Lomandra longifolia (o)

Lomandra multiflora (o-)

Hibbertia scandens (o-

Hardenbergia violacea (o-c).

Kennedia rubicunda (r-o).

Rubus parvifl. (o-c)

Rubus rosifolius (vo-o) disturbance...

Commelina cyanea (r-vo).

* Botrychium australe (r-vo).

Chaetanthes sidericum (o)

C. distans (o)

Caladenia (caladenia) (r-vo).

Angem. caryoph. (o) Allocasuarina torulosa.

C. Eucalyptus carnea (o)

C. E. sesona (r-vo) chalk

C. E. melanophloia (r-o) on rocky, steep areas.

Rocky areas

Pilea paradoxa (vo-c) rocky slopes.

Peperomia sp.

Plectranthus sp. succulent/grassland.

Hypericum sp.

Gonocarpus micranthus var. vanderisima (o).

Asclepias curassavica

Gomphocarpus sp.

- c/c. *Ceratopetalum apetalum* (o-
c). *Schizomeria ovata* (o)
c/c. *Daphnandra micrantha* (o-v)
c/c. *Doryphora saxifraga* (o)
sc/c. *Archontophoenix cunninghamii* (o+c)
sc/c. *Livistona australis* (o-c).
sc. *Ficus coronata* (o).
Baehmeria platyphylla (vo-o).
sc. *Acrocladia enodigermis* (o-c).
c/c. *Diplazium australe* (o)
c/c. *Sloanea woollsii* (vo-c).
Lindopanax nanantadhyus (o-c).
c/c. *Cinnamomum oliverii* (o)
c/c. *Litsea reticulata* (o).
sc. *Chorizanthe australis* (o).
sc/c. *Aymoniasperum flavum* (o).
sc/c. *Rhodanthe rubescens* (o-c).
sc. (*Aborophyllum ornata* (o).
sc. *Quintinia verdonii* (o).
sc/c. *Sloanea australis* (o-c) creeds...
c. *Polyscias murrayii* (o-c) disturbance...
c. *Dendrocinide excelsa* (o-
sc/c. *Dendrocinide photinophylla* (o-)
c/c. *Cryptocarya glaucescens* (o-c)
c/c. *Calochortus paniculata* (o-c)
c/c. *Endiandra nerioides* (o).
c. *Cryptocarya erythroxylon* (vo-o).
Archirodomyrtus beckeri (o).
Ptilotus glabrum (vo-o).
c/c. *Stenocarpus salignus* (o).
Cryptocarya macrocarpa (c).
sc. *Nolitza decumbens* (o-c).
c/c. *Dysoxylum fraserianum* (vo-o).
c. *Toona ciliata* (o)
c. *Dysoxylum mollissimum* (vo).
c. *Syzygium oleaceum* (o-c).
S. *crebrinerve* (o)
S. *corymbosum* (vo-o).
Ellettostema reticulata (o-c).
Alocasia brisbanensis (vo-o).
Arthropodium beckeri (o)
A. *terrestris* (o)
Microsorum scandens (o)
Pollia crispata (o)
Asplenium australasicum (o).
Ripogonum album (o).
Ripogonum elaeagnum (o)
Maranta jasminoides (o-c)
Metallina australis (o).
Blechnum pattersenii (o-c) creeds...
Adiantum formosum (o)
Lactuca decumbens (o-c)
L. *marginata* (o).
Cyathea australis (o).
C. *cooperi* (vo)
C. *leichtwardiana* (o)
Cissus hypoglauca (o-c)
C. *antarctica* (o-c)
Tetrastigma nitens (o).
Gahnia aspera (o)
G. *sieberiana* (vo) c/c. adsp...
Lomandra longifolia (o)
L. *spicata* (o-)
Gymnostachyum anceps (vo).
Matricaria scandens (o)
Renealmia leichtwardiana (o-c).
Parsania fulva (o-c).
Parsania straminea (o+vo).
Marsdenia flavescens (o)
M. *sp.* (vo-)
Alpinia canaliculata (vo).
Pandorea pandorana (o-c).
Marsdenia reducta (o-).
Cephalanthus cephalanthus (o).
Piper novae-hollandiae (o).
Blechnum cartilagineum (vo-o).
Hydrocotyle pedicellata (o-c).
Entolasia marginata (vo).
Dawsonia superba (o-c).
Cyperus tetraphyllus (o-vo).
Dianella caerulea (o).
Piptocarpha macleayana (o)
Patersonia scandens (o-c).

- Phrynosoma loricatus* (o).
 c/. *Diospyros pentanera* (o).
Pseudanthemum variabile (vo).
 c/. *Oreococcus* (o-c).
Tamarix insipida (o-c).
 sc. *Elaeagnus reticulatus* (vo).
 c/. *Balgia inaequalis* (vo-o).
 sc. *Onoclea sensibilis* (vo-e) - c. *diandra*.
Trema aspera
Diospyros myrsinoides
Zieria smithii
 sc. *Albizia subincana* (vo-).
 s. *Gleditsia sinensis* (vo-).
 sc. *Polygala chinensis* (o-).
 c. *Ficus obliqua* (vo).
 c. *F. watschiana* (o).
 c/. *Endiandra sibirica* (vo-a).
Euphorbia berrutina (a).
Cardinalis striata (o-c).
Cardinalis patula (o-c).
 sc. *Pennisetum chinensis* (vo-c).
 e/. *Ehretia laevis* (o-vo).
 c/. *Endiandra discolor* (vo-).
Wilkiea hirsuta (o).
 sc. *Anaplectrum chinensis* (vo-c).
 s. *Gleditsia sinensis* (vo-o).
 c/. *Eurodium falcatum* (o-vo).
 c/. *Cryptocarya densata* (vo-o).
Citrus aurantium (vo-c).
 sc. *Parasponia chinensis* (a-vo).
 sc. *Acronychia obtusifolia* (o-vo).
 sc. *Hedyotis corymbosa* (a-o).
 c. *Elaeagnus argentea* (vo).
 sc. *Symplocos chinensis* (vo).
 sc. *Acronychia obtusifolia* (vo-o).
 sc. *Carthagenia alphonse* (vo-o).
Parietaria sp. (a-o).
 c/. *Diospyros rufum* (a).
 sc. *Cryptocarya micrantha* (vo).
 c/. *Gleditsia leichardiana* (vo).
 sc. *Decaspermum humile* (a).
Sarcocolla harveyana (vo-o).
Legnephora mearnsii (vo-).
Cayratia denatidea (o).
Cayratia zeyheri (vo-).
Hibbertia scandens (o).
Opismius sp. (vo).
Rubus mearnsii (o).
R. hillii (o).
R. canaliculatus (o-c).
Stephania japonica var. *diversa* (o-).
Ciss.
Dendrobium semulatum (vo).
D. gracilicarpum (o-).
D. speciosum (o-).
Embellia andersonii (o).
Triplaris chinensis (vo).
Dioscorea transversa (vo).
Streptocarpus mearnsii (o-vo).
Calanthe triplicata (vo-o).
Vittaria elongata (vo).
Pteris tremula (vo-o).
 * ~~*Marsdenia longistylis* (vo) specimen damaged.~~
 (not with foliage).

N.E. BOT /
Fr. 163 to Fr. 47

EWINGAE S.F.
(soils very from Red - Grind white / Basic lavas
to brown - Granite / Gneiss)

Robert Kooyman

- c. Eucalyptus campanulata (c)
- c. E. laevopinia (vo-o)
- c. E. microcarpa (o).
- c. E. intermedia (vo).
- c. E. saligna (R-vo).
- sc. Livistana australis (2).
- sc. Lophostemon confertus (vo).
- sc. Albocaulis tarata (c-o)
- sc. Acacia melanoxylon (o)
- specimen / Acacia sp. Pateiformis (o)
- A. b. nevada.
- Eucalyptus sp. (specimen) - R. inbriata (vo).
- sc. Acacia falcata (R-o).
- A. adunca (vo) inbriata!
- Lomatia (o-vo)
- Hakea sp. florulenta (2).
- Oxylobium discifolium (o-vo).

Trochocarpa lawina (o-c)

Elaeocarpus reticulatus (o).

sc. Calceolaria peniculata (o-vo).

Macrozamia lawsonii (o).

Personia media (o) [P. media X cleoides]

Xanthorrhoea sp. (o-c).

Ptychocheilus lanceolatus (o-c).

Lanceopogon lanceolatus (o).

Viola betanifolia (o).

Polyscias sambucifolia (vo-o).

Wetter area Fr. 163 merges/overlaps with Fr. 47 & Fr. 23/26 (reigning types). *

— higher alt:

Carex lawsoniana (o-c)

* Dodaea megarhypha (R-o).

Asterolasia sp. (R-vo).

Prostanthera ovalifolia (vo-c).

Ozothamnus diosmifolius (vo-c).

Archichodomyces becleri (o-c).

Cordylus stricta (o-c).

Niktozenia indica (o-vo).

Zieria smithii (vo-o).

Gonocarpus sp. microanthus (o-c) specimen.

Personia sp. olivacea (o-vo) specimen (small leaf).

sc. Tritanopsis collina (R-o).

Senecio amygdalifolius (o).

Solanum densiventris (vo-o).

Rapanea variabilis (vo-o).

Maytenus sp. (o).

sc. Callicoma australis (R-c).

* Marsdenia longistylis (R) specimen

Hibbertia scandens (o).

Desmodium rhytidophyllum (o).

Glycine clandestina (o)

Hibbertia aspera (o)

Kinnesia rubicunda (vo).

Palmeria scandens (vo-c).

Hibbertia dentata (o).

Billaeria scandens (o-c).

Smilax australis (o-c)

S. glaucophyllus (vo).

Calochortus dubius (o-c)

Pteris esculentum (vo-c).

Geitneria cymosa (o-vo).

Poa labillardiera var. (o-c)

Imperata cylindrica (o-c)

Themeda australis (o-c).

Entolasia stricta (o).

Poa (siberica)? (R-o).

Lomatia spicata (o).

L. longifolia (o-c).

Dianella caerulea (vo-o).

Gymnastichus anceps (R-o).

Luzula (Ptilopus) (R-o).

Lepidosperma latiale (vo).

Gahnia aspera (o)

G. siberica (o).

Geranium sp. (vo).

Pteris esculentum (vo-c)

Cyathea australis (R-vo).

sc. Cryptocarya rigida (vo-c).

Amegilla

Sticherus lobatus

S. Pteris

Hovea sp. aff. linearis (vo-o).

Muehlenbergia eucalyptioides (o-c).

* Aconitum acoma (R-vo).

SEE PREVIOUS RIPARIAN SAMPLE (Fr. 53).

EWINGAL S.F.
Cmpt. 657.

(Redgum / Riparian assoc. Box)

Nagyer Gte.

Robert Koenig
7/97.

- c. *Eucalyptus tereticornis* (o-c).
c. E. *saligna* (R). sc. *Allocasuarina teretata* (ol).
c. E. *microcarpa* (R).
c. *Lophortyx carterii* (R-o-c).
c/sc *Angaphara subvelutina* (vo-o).
sc/c *Livistana australis* (vo-c). sc. *Saxea pseudharum* (o-vo).
sc. *Acacia melanoxylon* (o-c). sc. *Elaeocarpus reticulatus* (ol).
c. *Eucalyptus intermedius* (vo). sc. *Symplocos tuckermanni* (vo).
c. *Ficus obligna* (ol).
sc. *Cryptocarya glaucocarpa* (o-)
sc. *Synoum glandulosum* (o-c) sc/c *Melicope microcarpa* (vo).
sc. *Gmelina leichhardtiana* (vo-o). c. *Elaeocarpus grandis* (R-vo).
sc. *Elaeocarpus kirtlandii* (vo-o). c. *Toona ciliata* (vol).
sc. *Glochidion solidum* (ol). sc/c *Baileya inaequalis* (vo).
sc. *Trochocarpa laurina* (o-c). *Hovea* sp. (2).
c. *Carlyle stricta* (o-c). sc. *Onoseris papulifolia* (ol).
c. *Catriobatus paniculatus* (ol). sc. *Syzygium oleaceum* (o-vo).
sc. *Neolitsea dealbata* (o-c) sc/c *Diplotaxis australis* (o-vo).
sc. *Acmena smithii* (ol). *Eupomatia bennettii* (vo-a).
c. *Diospyros australis* (o-c). *Hibiscus heterophyllus* (vo).
sc. *Psychotria laurifolia* (o-c). *Goodia latifolia* (vol).
sc. *Baccharis myrtifolia* (o-c). *Bregnia oblongifolia* (ol).
sc/c *Elaeocarpus doakii* (vo-o). *Denhamia celsoides* (ol).
c. *Eupomatia laurina* (o-c) sc/c *Syzygium australe* (vo).
c. *Cryptocarya rigida* (ol). sc. *Alectryon subcinerus* (o-vo).
c. *Cryptocarya meisneriana* (vo). sc. *Guioa semiglandulosa* (o-vo).
c. *micrantha* (ol). *Tasmanian insipida* (vo).
sc/c *Ceratopetalum apetalum* (o-vo). *Wilkiea hughesiana* (o-vo).
sc. *Ficus coronata* (o-c). sc/c *Cryptocarya obovata* (vo-).
sc/c. *Tristanopsis laurina* (ol). sc/c *Litsea reticulata* (vo-a).
c. *Abrophyllum ornans* (o-c). sc. *Chorizanthe australis* (vo-o).
sc. *Calliandra serratifolia* (ol).
sc. *Rhodanthe rubescens* (ol).
c. *Rapanea variabilis* (ol).
c. *Pseuderanthemum variabile* (vo-o).
sc/c *Schizomeria ovata* (vol).
c. *Pittosporum revolutum* (vo-o).
c. *Croton verreauxii* (o-c).
c. *Pittosporum undulatum* (vo-o).
sc/c *Eurosclerolobium falcatus* (o-vo).
c. *Archanthophorites curvicauda* (2).
sc/c *Dysoxylum rufum* (ol).
c. *Hymenoparum flavum* (vo-o).
Lantana camara (o-vc).
Marinella jamaicensis (o-c).
Hibbertia scandens (o-c).
Ambrosia blakei (vo-).
Cissus antarctica (c).
c. *hypantha* (o-c).
Pandanus pandanus (ol).
Riparianum album (ol).
Ellatostema reticulata (o-vo).
Alpinia canaliculata (o-c). (Sax on c/c: 1. D. specimen)
Calanthe triplacata (o-) *Cyperus tetraphyllus* (c).
Lomandra (lysteria) (o-c).
Dianella caerulea (o-c). *Pericaria* sp. (a).
Tetrastigma nitens (vo-o).
Celastrus subspicatus (vo-o).
Bledium caribaeum (o-c).
Doodia aspera (c-vc).
Cyathus cooperi (vo-o).
Christella dentata (o-c).
Bledium patersonii (o-vo).
Todea barbara (o-vo).
Calochortus dubia (vo-o).
Adiantum formosum (ol).
A. *hippidium* (ol).
c. *aethiopicum* (vol).
Allocaria brisbanensis (ol).
Vittaria elongata (o-vo).
Platycaium superbum (ol).
b. *biguttatum* (o-c).
Pyrrhoxylum rufum (ol).
c. *conglutens* (ol). *Leptocarpus marginatus* (vo-c).
Asplenium australasicum (o-c).
Amelasma biflorum (ol). *Marsdenia vestita* (ol).
Pollicia crispata (ol). *Persicaria straminea* (ol).
Viola hederacea (ol). *Smilax glycyphyllos* (vo-o).
Glycine clandestina (vo-o). *Riparianum dasyrrhynchum* (ol).
Clematis cristata (o-). *Dioscorea transversa* (o-vo).
Cayratia clematidea (ol). *Davallia pyxidata* (vo).
Plectranthus perfoliatus (vo). *Gasteroplerium cynosuroides* (ol).
Smilax australis (vo-o). *Milletia negasparma* (o-vo).
Macliwa cochinchinensis (o-vo).
Stephania japonica var. *discolor* (vo-c).
Citrus limon (R-vo).
Dendrobium aemulum (ol).
D. *gracilicaule* (vo-o).
Rubus hillii (vo).
R. *maasai* (vo).
R. *rafflesiae* (o-c). upstream coast (NUP)
(sub-montane).

EWINGALE S.F. [Cmpt. 664/5] Famula Sueray

Robert Kooyman

WED. 22nd July, 1967.

weather: light rain/drizzle during morning... clearing to
light cloud cover. (21°C) max.
night: dark (early → to 8:30 →) 6 pm/10°C.
light cloud cover,

6:00 pm. 664/665.

N.E. BBT. / Ft. 163 (moist) high. alt.

LISTEN: 20 mins... Bandicoots -- moving around (snuffle/crunch noises).

PLAYBACK CALLS: Powerful owl - no response
Sooty owl - no response.
YBG - no response

Marked owl - no response.
Kook - no response.

7 pm - Listen - 10 mins - ringtail possum (spotlight/noises)
then walking spotlight transect - out to Nagaiya Trig....

- 50m - Sugar-glider - calls (20m trade) .. the spotlighted - 10m up *Acacia irrorata*.
- 300m - Mtn. Bobwhite possum - 15m up *Acacia irrorata* (edge of tree). N.E. BBT / Ft. 163 (a).
- 500m - Greater glider
- 750 - GG.

8:30 pm - end at vande...

- drive to White Birch Rd (Lionsville Rd)

- wet corner --- Puma walking on road - clear sighting...

8:00 pm - Playback Site (400m down from str. boundary of 663, edge of Cmpt. 662
Lionsville Rd).

Powerful owl - no response, then YBG^s calling (several locations < 50m, < 100m
see Map for locations).

Marked owl - no response.

9:45 pm - Playback site (Cmpt. 661)

Powerful owl - no response

Marked owl - no response

YBG^s - no response.

- drive to White Birch Rd - across Solferino Ck - large, pale, frogmouth owl.

Playback - Marbled Frogmouth - no response.

EWING & S.F.

FAUNA SURVEYS.

21/7/97.

Robert Kauffman.

Tuesday: 21/7/97.

weather: fine, clear, light breeze, (sw), temp. $> 20^{\circ}\text{C}$. Moon: \bullet - full.
N.E. Corner Cnpt. 657. night temp. (dusk) $< 10^{\circ}\text{C}$. (upslope). (frost on grass) (just past).
6:00 pm - LISTEN 30 mins. (v. dark. (pre-moonrise) distant Boobook owl.

6:30 pm - PLAYBACK CALLS - : Powerful owl - no response, 5 mins. then YBG^s calling
(just above Nagrijer Creek). $20^{\circ}, 80^{\circ} \dots$ toward creek \dots

P.O. : AMG^s: 449625 6773950

---the Powerful owl --- calling down slope 40° --- (air c-
6:42 pm ... still calling 6:45 pm ... σ 100 m \dots

--- 6:50 pm - P.O. still calling intermittently...
YBG^s calling - 210° ... > 100 m.

6:51 pm - P.O. stops calling...
start Masked owl - : no response

7:00 pm. (pre moonrise) - P.O. - couple of short calls... then called for another few minutes
Temp. 6°C ... light breeze..

start: KATLA - : no response

MARBLED FROGMOUTH - no response.

7:30 pm - : start walking spotlight transect ... down to open Redgum / grassy area...
- macrogod survey... pademelton (red necked)
whip tail wallaby...
bandicoot..

back on road - YBG^s calling... moonrise 8:10 pm. then quiet....
(2 calls - sound like Masked owl - not confirmed) : getting lighter.

YBG^s still calling....

Drive out to Cnpt. 660 (near Grave site track). -

Playback calls - : Masked owl - no response.
9:30 pm. YBG - no response.

- drive back to Joffero's Ck (100 m back up hill)... 10:00 pm. Cnpt. 657.

Playback calls - : P.O. - no response
Sooty owl - no response
Marbled Frogmouth - no response
YBG - no response.

10:45 pm.

Drive to top and Cnpt. 657 - set up camp... 11:30 pm. END.
YBG^s calling... close to camp area... both sides track...

FLORA & FAUNA SURVEYS - EWINGAR S.F.
Wed. 16th July.

Robert Kavanagh:
16/7/97.

Cmpt. 661 veg. surveys - & integrated surveys... Possible Pataroo diggings...
Cmpt. 662 as above.

Weather: fine, warm, partly cloudy, $> \frac{1}{2}$ moon, cool (after warm day).

Night Survey - Cmpt. 664 - gully crossing

Playback calls: Marbled Frogmouth - no response
Sooty owl - no response
Powerful owl - no response
YBG - no response Koala - no response...

LISTEN: 0
Check HEEP TARS IN GULLY....

Walking spotlight transect: Cmpt. 664 up to boundary Cmpt. 656 - R.F. / Ft. 67 / Ft. 163 (Ft. 62).
- sugar gliders (calls)
- bandicoot(s)
- small macropods (heard).

return to White Beech Rd (camp site).

10:30pm Playback calls: PO - no response Marbled Frogmouth - no response.
MO - no response
YBG - no response distant calls later in night....
(this record repeated 21/7/97)....

11:00 pm - END.

Thurs. 17th July - Cmpt. 656 and 664 Veg. Surveys (Flora, Fauna Surveys)....

Weather: fine, clear, warm day, cool to very cool at night. $\frac{1}{2}$ to $\frac{3}{4}$ moon.

Night Survey:

START: Cmpt. 656, 664... Boundary (Site 16).

LISTEN: 30 mins... bandicoot (calls.... snore/cuddle).

PLAYBACK CALLS - : P.O. - no response Marbled Frogmouth - no response
S.O. - no response YBG - no response
M.O. - no response Koala - no response

7:15pm and. travel to - : Parma walking on road - near Liansville Rd / Ewingar Rd intersect.
PLAYBACK SITE: Nogahore A (664 cmpt.) (in headlight.... & spotlight -

Powerful owl - no response Sooty owl - no response
Masked owl - no response Koala - no response.
YBG - no response.

LISTEN - : sugar glider(s) - calling. || White Beech Rd - Parma walking on Rd.
spotlight/headlight - clear sighting....

PLAYBACK SITE: Cmpt. 656 - Ridge down to Negriger Creek....

Mon. 14th July, 1977 Ewinga S.F.

Robert Kooyman. 7/77.

NIGHT SURVEY - : ANASAT SAMPLE - (ABCL).

DEIVING SPOTLIGHT - (KEV). f PLAYBACK CALLS...

WALKING SPOTLIGHT TRANSECTS - :

Start of Road: LISTEN: 30 min - Bardicoot(c) - snuffle/cough noises... (

7:30pm. Walking spotlight transect - 1 hr. (1 km approx.) - sugar glider. (calls)

8:30pm - : walking spotlight transect - 1st Rd. - Boobook owl. (calls)

9:30pm - end of road.... 10:00 pm EVO. set up camp etc..

6:30 : EVO.

Miniopterus australis / schrebersei (ANASAT).

Rhinolophus megastylus - HAEP TRAPS

Tues. 15th July -

9 am. - walk from (site 7) Cnpt. 661 - Fr. 62 (± 1 kg) sample....

12 noon - White Beech Rd - end - Flora Surveys.

1pm - ANASAT - Bat Roost Sites (caves, mine shafts etc) ... inspect : Miniopterus sp.
SITES Rhinolophus sp.
ROOSTS:

2pm → veg. surveys - set up HAEP TRAPS etc...

5:30pm 'ANASAT' SAMPLE - MINE SHAFT OPENING - KOYMAN/DOUGLAS.

6:45pm - ... shift gear →

PLAYBACK CALLS - : Powerful owl - no response Cnpt. 657.

Masked owl - no response

Sooty owl - distant (possible only) - heard again - ✓.

20 min. LISTEN: YBG^s calling.... upslope 5°. 50m.

8:00pm. Cnpt. 662 - Playback calls - : Sooty owl - no response.

Gully on White Beech Rd.

Marbled Frogmouth - no response

8:45pm. - Cnpt. 662 - track (steep) down to P.P. Boundary.

1st - walking spotlight transect -

- playback calls - YBG - no response -
MO - no response -

2nd - downslope playback - MO - no response (sooty owls calling)
YBG - distant calls

LISTEN: YBG calls downslope...

Sooty owl(s) - calling - ... (from lower slope.... see MAPS....

drive back up - 11:00pm. EVO..

set up camp - 11:30pm.

FAUNA SURVEY

8-7-97

EWINGAR S.F.

cmpt. 663

Robert Kooyman
(with Harvey (Douglas).
et al.

6pm - Playback sample

cnr. White Beech Rd & Lionsville Rd.

SET UP ANABAT.

7:15pm - Walking spotlight transect 1.6 kms. (cnr. then to Creek)
(Herp Trap sites on creek).

S.O.
P.O.
M.O.
YBG: } no response
K

6:45pm - distant YBG
c.n. s.e.

9:15pm - complete walk - Sugar gliders
Parma wallabey

9:30pm - drive back up.

10:00 - relocate to northern ridge -

10:30 - Playback sample - YBG - no response cmpt. 663/656

PO - " "

MO - " "

SO - " " > 5mins. later distant drive-bank calls -
Nogger Cn.

finish 11:15pm - set up camp - 11:30pm END.

W. 9-7-97 - Driven & walked spotlight transects, Playback calls, check herp traps etc...
(see data sheets).

Th. 10-7-97 - Red legged Pademelon - cmpt. 664 - creek track (top toward Serravallo F.R.)
(R.K. visual record - 5:00 pm). Lionsville Rd.

possible/ Potoroo (footprints - front/rear, in mud).....

SITE 5: Playback calls - YBG - no response later after calls - distant YBG calls.
cmpt. 662.
PO - no response
MO - no response
K - no response

LISTEN: small macropod - heard
bandicoot - heard
distant calls - YBG. - 140°.

DRIVEN SPOTLIGHT SAMPLE - cmpt. 662 - (Solferino track) off Lionsville Rd.

weather: fine, clear, light breeze - no wind, cloud clearing, ☺ 1/4 moon dusk to 8:30pm.
cool/cold ... < 10°C.

SITE 6: Playback calls - K - no response
YBG - no
PO - no
MO - no.

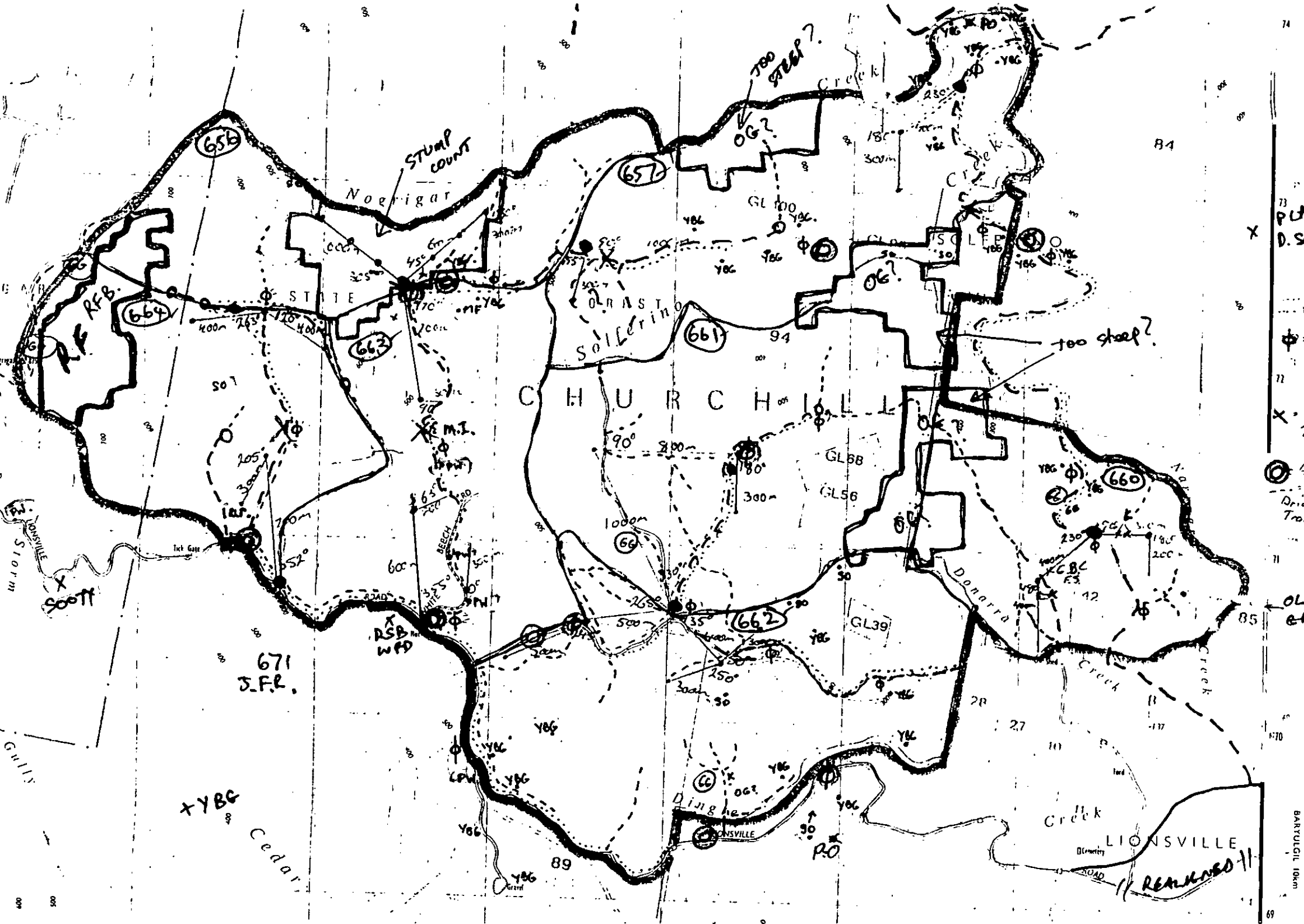
LISTEN: Bandicoot, small macropod (red necked pademelon).

DRIVE SPOTLIGHT:

SITE 7: (2.9 kms) - Playback calls - YBG - no
K - no
PO - no
MO - no

9:45pm - listen.

set up camp - 10:00 pm.





INTEGRATED ASSESSMENT- SAMPLE REGION

OBSERVER(S) <u>Robert Kooyman</u>		DATE <u>10-7-97</u>	START TIME	REGION CODE
MANAGEMENT AREA <u>NORTHERN REGION - CASINO</u>		TRANSECT BEARING	TRANSECT LENGTH	TRANSECT NUMBER <u>of</u>
STATE FOREST <u>EWINGAR</u>		COMPT <u>660</u>	START	EASTING
LOCATION DETAILS SURVEY NAME		NORTHING		
(A) THREATENED FLORA - OBSERVATIONS				
SPECIES SEARCHED FOR:				
TRANSECT DISTANCE	FLORA SPECIES	NUMBER	AREA SIZE	SITE DESCRIPTION &/OR EVIDENCE OF DISTURBANCE
				MAP NOTED?
(B) THREATENED FAUNA - SIGHTING OR FEATURE#				
TRANSECT DISTANCE	SPECIES OR FEATURE TYPE	NUMBER	SITE DESCRIPTION (MICROHABITAT)	MAP NOTED?
<u>20m</u>	<u>Glossy Black Cockatoo FEED SITE.</u>	<u>(2) Allocas.</u>	<u>Ft. 62 1BK, WM, SWD, Redgum, Grey-gum.</u>	
<u>30m</u>	<u>YBG ^{old V-notch?} fresh digs (exploratory incisions)</u>		<u>Ft. 62 (as above) Grey-gum.</u>	
<u>60m</u>			<u>marked habitat trees etc....</u>	
#THREATENED SPECIES FEATURES				
<ul style="list-style-type: none">• DIURNAL BIRD spp. _____• TIGER QUOLL LATRINE AND DEN SITES• NESTS, DENS & ROOSTS OF LARGE BIRDS, (RAPTORS & OWLS) BATS, & HOLLOW DEPENDENT SPECIES• GLOSSY BLACK COCKATOO, ALBERTS LYREBIRD & BUSH THICK-KNEE NESTS• OWL PELLETS (& WHITE WASH)• DIURNAL BIRD spp. _____• CAVES, TUNNELS & DISUSED MINES• DISTINCTIVE SCATS (TIQU, KOAL, & BRUSH-TAILED ROCK WALLABY)• PERMANENT SOAKS AND SEEPAGES• YEBG 'V-NOTCH' TREES & incision.				
(C) GENERAL COMMENTS* & ARCHAEOLOGICAL ARTEFACTS				
*RECORD FEATURES: EG. UNMAPPED CHANGE IN STRATA OR FOREST TYPE, ROCKY OUTCROPS ETC.				
TRANSECT DISTANCE	OBSERVATION OF			

INTEGRATED ASSESSMENT - CONTINUED

(A) THREATENED FLORA - OBSERVATIONS

SPECIES SEARCHED FOR:

TRANSECT DISTANCE	FLORA SPECIES	NUMBER	AREA SIZE	SITE DESCRIPTION &/OR EVIDENCE OF DISTURBANCE	MAP NOTED?

(B) THREATENED FAUNA - SIGHTING OR FEATURE#

TRANSECT DISTANCE	SPECIES OR FEATURE TYPE	NUMBER	SITE DESCRIPTION (MICROHABITAT)	MAP NOTED?

(C) GENERAL COMMENTS* & ARCHAEOLOGICAL ARTEFACTS

*RECORD FEATURES: EG. UNMAPPED CHANGE IN STRATA OR FOREST TYPE. ROCKY OUTCROPS ETC.

TRANSECT DISTANCE	OBSERVATION OF

LAST SHEET? YES / NO	TOTAL TIME HRS MIN
TRANSECT FINISH GRID CO-ORDINATES	EASTING NORTHING



CALL PLAYBACK- SAMPLE REGION

OBSERVER(S) <u>Robert Kooyman</u>		1ST DATE <u>8-8-97</u>	REGION			
STATE FOREST <u>EWINGAR</u>		2ND DATE	CODE			
SURVEY NAME <u>PRE-LOGGING 'PROTOCOL'</u>		M.A. <u>CASINO</u>	COMPT. <u>663</u>			
NO. OF PLAYBACK SITES						
DETECTION METHOD(S) <u>LISTEN</u> <u>PLAYBACK (SPOTLIGHT)</u>		<input checked="" type="checkbox"/> arboreal mammals <input type="checkbox"/> diurnal birds <input type="checkbox"/> other <input checked="" type="checkbox"/> nocturnal birds				
DAY <u>1</u>		Start Time: <u>6:00 pm.</u>	Finish Time <u>11:30 pm</u>			
Species Targeted		<u>YBG, PO, MO, SO, SaG., K, MF</u>	Calls Played <u>YBG, PO, MO, SO, K.</u>			
AMG	Site <u>1</u>	Easting <u>446600</u>	Site <u>2</u>			
COORDINATES		Northing <u>6770825</u>	Northing			
BROAD FOREST TYPE		Rainforest: <input type="checkbox"/> Subtropical <input type="checkbox"/> Dry <input type="checkbox"/> Temperate				
		Sclerophyll: <input checked="" type="checkbox"/> Wet Sclerophyll <input checked="" type="checkbox"/> Dry Sclerophyll <input type="checkbox"/> Swamp Sclerophyll				
		Woodland: <input type="checkbox"/> Shrub Woodland <input type="checkbox"/> Heath Woodland <input type="checkbox"/> Tall Woodland				
FOREST TYPE NUMBER(S) <u>47/163, 62.</u>						
LOCATION DESCRIPTION <u>1. near corner of (Ewingar) Lionsville Rd - cur. with White Beach Rd.</u> <u>2. ridge above Nagricas Gk.</u>						
WEATHER <u>cool, part cloudy</u>		Temperature <u>< 15°</u>	Time <u>6:45 am / pm</u>			
Wind		<input checked="" type="checkbox"/> calm <input checked="" type="checkbox"/> light - leaves rustle	<input type="checkbox"/> moderate - moves branches <input type="checkbox"/> strong - impedes progress			
Rain		<input type="checkbox"/> rain during survey <input type="checkbox"/> evidence of rain in last 24 hrs	<input type="checkbox"/> no evidence of rain in the last 24 hrs			
Night light		<input checked="" type="checkbox"/> very dark - no moon+cloud <input checked="" type="checkbox"/> dark - quarter moon or moon with heavy cloud	<input type="checkbox"/> detail seen - moon and clear sky <input type="checkbox"/> bright - half moon or more and no cloud			
DAY <u>2</u>		Start Time: <u>9:00 pm.</u>	Finish Time <u>10:00 pm.</u>			
Species Targeted		Calls Played				
AMG	Site <u>4</u>	Northing <u>449950</u>	Site			
COORDINATES		Easting <u>6772800</u>	Northing			
BROAD FOREST TYPE		Rainforest: <input type="checkbox"/> Subtropical <input type="checkbox"/> Dry <input type="checkbox"/> Temperate				
		Sclerophyll: <input type="checkbox"/> Wet Sclerophyll <input checked="" type="checkbox"/> Dry Sclerophyll <input type="checkbox"/> Swamp Sclerophyll				
		Woodland: <input type="checkbox"/> Shrub Woodland <input type="checkbox"/> Heath Woodland <input type="checkbox"/> Tall Woodland				
FOREST TYPE NUMBER(S) <u>F. 62</u>						
LOCATION DESCRIPTION - <u>P.P. near Forest Boundary - above Solferino Gk. (600m).</u>						
WEATHER		Temperature <u>15°c.</u>	Time <u>9 am / pm</u>			
Wind		<input checked="" type="checkbox"/> calm <input checked="" type="checkbox"/> light - leaves rustle	<input type="checkbox"/> moderate - moves branches <input type="checkbox"/> strong - impedes progress			
Rain		<input type="checkbox"/> rain during survey <input checked="" type="checkbox"/> evidence of rain in last 24 hrs	<input type="checkbox"/> no evidence of rain in the last 24 hrs			
Night light		<input checked="" type="checkbox"/> very dark - no moon+cloud <input type="checkbox"/> dark - quarter moon or moon with heavy cloud	<input type="checkbox"/> detail seen - moon and clear sky <input type="checkbox"/> bright - half moon or more and no cloud			
OBSERVATION DETAILS						
DAY	SITE NO.	SPECIES	OBS. TYPE	RESPONSE (ESTIMATE) DISTANCE	BEARING	NOTES ie appearance, sex, etc.
<u>8/7</u>	<u>2</u>	<u>SOOTY OWL</u>	<u>calls</u>	<u>200 (-1) 100</u>	<u>NW 290°</u>	<u>dive-bomb calls - 'distant' over Nagricas Gk (toward headwaters).</u>
				<u>(-1)</u>		
				<u>(-1)</u>		

OVERLEAF? YES / ~~NO~~ SKETCH MAP OVERLEAF? YES / NO

P.T.O.

OBSERVATION DETAILS						
DAY	SITE NO.	SPECIES	OBS. TYPE	RESPONSE (ESTIMATE)		NOTES ie appearance, sex, etc.
				DISTANCE	BEARING	
8/12	1	White-throated Nighthawk	calls	30m (+/-) 10m	340°	
				(+/-)		
				(+/-)		
9/7	4	YBG	calls	30m (+/-) 10m	100°	calls after owl playback sequence. (number of other YBG calls nearby).
				(+/-)		
				(+/-)		
9/7	4	Sooty owl		? (+/-)	WSW.	distant dive-bomb calls ... Safford's Crk. (Harvey - second).
				(+/-)		
				(+/-)		
				(+/-)		
				(+/-)		
				(+/-)		
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				(+/-)		
				(+/-)		
				(+/-)		

SKETCH MAP (INCLUDE DRAINAGE, ROADS AND TRACKS, DISTANCES, BEARINGS)

NORTH
[TOP]



CALL PLAYBACK- SAMPLE REGION

OBSERVER(S) <u>Rocket Kooyman</u>		1ST DATE <u>8-8-97</u>	REGION		
STATE FOREST <u>EWINGAR S.F.</u>		2ND DATE	CODE		
SURVEY NAME <u>PRE-LOGGING 'PROTOCOL' SURVEYS</u>		M.A. <u>CASINO</u>	COMPT. <u>663/656</u>		
DETECTION METHOD(S) LISTEN PLAYBACK (SCOTLIGHT).		<input checked="" type="checkbox"/> arboreal mammals <input type="checkbox"/> diurnal birds <input type="checkbox"/> other <input checked="" type="checkbox"/> nocturnal birds			
DAY 1		Start Time: <u>10:30 pm.</u>	Finish Time <u>11:15 pm.</u>		
Species Targeted		<u>Y86, PD, MO, SO, K, MF, Sq.6.</u>	Calls Played <u>Y86, K, P.O., MO, SO.</u>		
AMG	Site	Easting <u>4 48250</u>	Site Easting		
COORDINATES	<u>2</u>	Northing <u>67 72500</u>	Northing		
BROAD FOREST TYPE		Rainforest Sclerophyll Woodland <input type="checkbox"/> Subtropical <input type="checkbox"/> Wet Sclerophyll <input type="checkbox"/> Shrub Woodland <input type="checkbox"/> Dry <input checked="" type="checkbox"/> Dry Sclerophyll <input type="checkbox"/> Heath Woodland <input type="checkbox"/> Temperate <input type="checkbox"/> Swamp Sclerophyll <input type="checkbox"/> Tall Woodland			
FOREST TYPE NUMBER(S)		<u>62. ch 47.</u>			
LOCATION DESCRIPTION <u>Ridge at back of cmpt. 663 (NW boundary) above Ngarrija Gde.</u>					
WEATHER <u>fine, clear to</u>		Temperature <u>15°C.</u>	Time <u>11:00 am / pm</u>		
Wind <u>partly cloudy</u>	<input checked="" type="checkbox"/> calm <input type="checkbox"/> moderate - moves branches <input checked="" type="checkbox"/> light - leaves rustle <input type="checkbox"/> strong - impedes progress				
Rain	<input type="checkbox"/> rain during survey <input type="checkbox"/> no evidence of rain in the last 24 hrs <input checked="" type="checkbox"/> evidence of rain in last 24 hrs				
Night light	<input checked="" type="checkbox"/> very dark - no moon+cloud <input type="checkbox"/> detail seen - moon and clear sky <input type="checkbox"/> dark - quarter moon or moon <input type="checkbox"/> bright - half moon or more and no cloud with heavy cloud				
DAY 2		Start Time: <u>6:30 pm.</u>	Finish Time <u>8:00 pm.</u>		
Species Targeted		<u>Y86, PD, MO, SO, K, MF, Sq.6.</u>	Calls Played <u>Y86, K, MO, PD</u>		
AMG	Site	Northing <u>4 50250</u>	Site Northing		
COORDINATES	<u>3</u>	Easting <u>67 71450</u>	Easting		
BROAD FOREST TYPE		Rainforest Sclerophyll Woodland <input type="checkbox"/> Subtropical <input type="checkbox"/> Wet Sclerophyll <input type="checkbox"/> Shrub Woodland <input type="checkbox"/> Dry <input checked="" type="checkbox"/> Dry Sclerophyll <input type="checkbox"/> Heath Woodland <input type="checkbox"/> Temperate <input type="checkbox"/> Swamp Sclerophyll <input type="checkbox"/> Tall Woodland			
FOREST TYPE NUMBER(S)		<u>Fr. 62... -</u>			
LOCATION DESCRIPTION					
WEATHER		Temperature	Time am / pm		
Wind	<input checked="" type="checkbox"/> calm <input type="checkbox"/> moderate - moves branches <input type="checkbox"/> light - leaves rustle <input type="checkbox"/> strong - impedes progress				
Rain	<input type="checkbox"/> rain during survey <input type="checkbox"/> no evidence of rain in the last 24 hrs <input checked="" type="checkbox"/> evidence of rain in last 24 hrs				
Night light	<input checked="" type="checkbox"/> very dark - no moon+cloud <input type="checkbox"/> detail seen - moon and clear sky <input checked="" type="checkbox"/> dark - quarter moon or moon <input type="checkbox"/> bright - half moon or more and no cloud with heavy cloud				
OBSERVATION DETAILS					
DAY	SITE NO.	SPECIES	OBS. TYPE	RESPONSE (ESTIMATE) DISTANCE BEARING	NOTES ie appearance, sex, etc.
<u>8/8</u>	<u>2</u>	<u>Sooty owl</u>	<u>calls</u>	<u>200m (-/-) 290°</u>	<u>distant dive-bomb calls... (toward headwaters)...</u>
				<u>(-/-)</u>	
				<u>(-/-)</u>	

OVERLEAF? YES / ~~NO~~ SKETCH MAP OVERLEAF? YES / NO

[illegible]

NORTH
[TOP]



INTEGRATED ASSESSMENT- SAMPLE REGION

OBSERVER(S) Kooyman		DATE 9-8-97		START TIME		REGION CODE	
MANAGEMENT AREA CASINO (N^o Rivers)		TRANSECT BEARING 230° 180°		TRANSECT LENGTH 400m 300m		TRANSECT NUMBER of	
STATE FOREST EWINGAL S.F.		COMPT 657		START EASTING NORTHING			
LOCATION DETAILS SURVEY NAME C.M.P.T. 657							
(A) THREATENED FLORA - OBSERVATIONS							
SPECIES SEARCHED FOR:							
TRANSECT DISTANCE	FLORA SPECIES	NUMBER	AREA SIZE	SITE DESCRIPTION &/OR EVIDENCE OF DISTURBANCE			MAP NOTED?
(B) THREATENED FAUNA - SIGHTING OR FEATURE#							
TRANSECT DISTANCE	SPECIES OR FEATURE TYPE	NUMBER	SITE DESCRIPTION (MICROHABITAT)			MAP NOTED?	
10m	Glossy Black Cockatoo(f)	3	flying over - Ft.62.				
70m	Possible Potoroo -/Bettong or Bandicoot diggings.	>30	scats collected at this site... Palomden, Brumtail, & ? (I.D.).				
260m	Collect scats /possible Rufous Bettong.		Rufous Glant - 50m wide. (grassy - open & small edge swamp....				
#THREATENED SPECIES FEATURES							
<ul style="list-style-type: none">• DIURNAL BIRD spp. _____• TIGER QUOLL LATRINE AND DEN SITES• NESTS, DENS & ROOSTS OF LARGE BIRDS, (RAPTORS & OWLS) BATS, & HOLLOW DEPENDENT SPECIES✗ GLOSSY BLACK COCKATOO, ALBERTS LYREBIRD & BUSH THICK-KNEE NESTS• OWL PELLETS (& WHITE WASH)				<ul style="list-style-type: none">• DIURNAL BIRD spp. _____• CAVES, TUNNELS & DISUSED MINES✗ DISTINCTIVE SCATS (TIQU, KOAL, & BRUSH-TAILED ROCK WALLABY)✗ PERMANENT SOAKS AND SEEPAGES• YEBG 'V-NOTCH' TREES			
(C) GENERAL COMMENTS* & ARCHAEOLOGICAL ARTEFACTS							
*RECORD FEATURES: EG. UNMAPPED CHANGE IN STRATA OR FOREST TYPE, ROCKY OUTCROPS ETC.							
TRANSECT DISTANCE	OBSERVATION OF						

INTEGRATED ASSESSMENT - CONTINUED[illegible]

LAST SHEET? YES / NO		TOTAL TIME		HRS	MIN
TRANSECT FINISH	EASTING	NORTHING			
GRID CO-ORDINATES					

APPLICATION OF KOALA PROTOCOL

Koala transects were performed by four District staff over 8 days in July 1997. Actual transect locations and data sheets are stored in the Compartment History Files and summarised below. Only 16 koala scats were located under a total of 7 trees over a transect length of 13.1 km and approximately 1300 trees searched. Despite low numbers of scats, Cpt 660 was an intermediate use cpt as 2 trees in a 100m segment had scats. Other cpts are low use despite presence of preferred feed trees.

Transect	Length (m)	Bearing	Species	Scats	Comment
656/1	600	305	WM,IBK,BWD	0	
656/2a	600	45	WM,TWD,BWD	1?	TWD 40-60
656/2b	300	280	TWD,OAK,GG	0	
657/1a	400	230	TWD,BW,OAK	0	200m cleared
657/1b	300	180	TWD,IBK,OAK	0	
657/2	1000	90	TWD,OAK,WM	0	
657/3	300	195	IBK,OAK,TWD	0	
660/1a	400	230	GG,BWD,WM	0	
660/1b	400	180	RG,WM,IBK	6 old	WM 40-60 (2)
					GG 40-60 (4)
660/2a	300	90	IBK,GG,WM	4	TW 20-40 (2)
					WM 20-40 (2)
660/2b	200	180	IBK,WM,TWD	2	WS 20-40 (2)
661/1	1000	330	TWD,WM,OAK	0	
661/2	800	90	TWD,IBK,WSB	3 old	TWD 20-40
661/3	300	180	TWD,IBK,OAK	0	
662/1	500	245	SBG,OAK,WM	0	
662/3	500	265	SBG,OAK,WM	0	
662/3	400	135	SBG,TWD,WM	0	
662/4	300	250	TWD,OAK,WM	0	
662/5	300	50	TWD,OAK,WM	0	
663/1	700	174	WM,IBK,TWD	0	
663/2	300	90	WM,TWD,OAK	0	
663/3	500	63	WM,BWD,OAK	0	
663/4	600	355	TWD,WM,OAK	0	
664/1	400	120	TWD,WM,STS	0	
664/2	400	263	TWD,WM,BWD	0	
664/3	700	352	TWD,WM,NEB	0	
664/4	300	205	BWD,OAK,WM	0	
TOTAL	13100			16	7 trees

OLD GROWTH PROTOCOL

Four areas larger than 25 ha appear on the BOGMAP. Areas 1, 2 and 3 were visually inspected and considered too steep and had little evidence of past disturbance. These areas are excluded from logging. Area 4 in C656 was of gentler terrain and 7 plots were located as per the plot layout shown. Summary as follows:

AREA	PLOT	Mean DBHOB	Forest Type	# Stumps/ha	Comment
4	1	93	62	2	40m from Road
4	2		62	0	200m from plot 1
4	3		62	0	200m from plot 2
4	4	101	62	8	200m from plot 3
4	5		62	0	Steep 29-30 degrees
4	6		53	0	Steep but <30 degrees
4	7		62	0	Steep but <30 degrees

The plot data is supported by field observation that there is sufficient disturbance in the vicinity of Plot 4 to warrant a minor boundary modification to the BOGMAP. This relates only to the 5ha shown on BOGMAP West of Northing 4 46 000. The precise boundary will be defined by more plot and disturbance interpretation work by the SFO when harvesting commences in this vicinity.

To R. Kooyman
File

**FLORA and FAUNA SURVEY of COMPARTMENTS 604 -608, EWINGAR
STATE FOREST.**

-prepared by Robert M. Kooyman, [FA- flora and fauna] Casino District. 8/97.

Results of field surveys are provided as field diary notes, data sheets, and species lists, with scheduled and target species records provided as AMG co-ordinants. Maps provide details of sample sites, playback locations, harp trap locations, sonar detection sites, species records and distributions, and extent and location of the various transects and traverses undertaken.

Introduction:

Flora and Fauna Surveys were conducted by Kooyman, [19/8/97 to 29/8/97], with Harvey and Douglas, et al [SFNSW] 19/8/97 to 28/8/97, assisting with the integrated koala transects, and the general and target species fauna surveys.

Assisting the core survey team [with surveys of all fauna groups] were Robyn Herklots, and Nicole Harvey.

Andrew Benwell [consultant botanist] assisted with the identification of a number of prepared botanical specimens of dry forest taxa.

Brad Law [SFNSW-Research] assisted by checking sonar recordings, and providing comment on the preliminary results and interpretations, of recorded microchiropteran bat calls.

General Description of Survey Area:

The five compartments cover an area of 1114 hectares, with the proposed net loggable area adjusted to approx. 733 hectares, after deletion of cleared areas, Ft.220, mapped Old-growth, and standard riparian exclusions.

Geology appears to be dominated by two main elements: the dominant uplifted and variously eroded meta-sediments, and the igneous intrusion of granitic rock in the north-west of the survey area. Soils are predominantly of shallow to moderate depth, with varying amounts of exposed rock, [mostly on steeper slopes]. Soils of granitic origin vary from grey, to yellow-brown sandy clay, to clay loams, in the north-west corner of cmpt. 608, with the more extensive areas of meta-sediment rock [parent material] forming mostly grey-brown, [fine textured] clay, to clay loam soils.

Altitudinal range varies from 630m. to 190m. Slopes are generally moderate, to very steep.

The vegetation of the area is generally illustrated by the forest type map [SFNSW]. Species lists for each forest type have been compiled and are appended to this report as field notes. These provide an indicative sample of the various habitats, floristic alliances, forest types, transitional boundaries and overlaps.

The sequence of forest types largely follows the altitudinal, topographical, and soil gradients, and variations, with most areas dominated by Ft. 74 - Spotted-gum / Ironbark / Grey-gum / Stringy-bark, with smaller areas of Ft.65 - Red-gum, Iron-bark, Grey-gum, Rough-barked Apple. Rainforest vegetation is generally restricted to the gully heads and creek-lines occurring adjacent to, and in association with Ft.53, [Lophostemon confertus]. Along the rocky, creek edges there is a distinct riparian alliance of Ft.53 with Tristaniopsis laurina, Backhousia myrtifolia, Acmena smithii minor, -[see species lists for details]

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STATE FOREST OF NSW

29 SEP 1997

CASINO

Flora survey methodology: Plant species recorded from each forest type [and habitat] were listed, and frequency of occurrence and stratum [canopy, sub-canopy] indicated. Walked traverses were mapped. [See field notes attached.]

Particular attention was directed to locating and recording the distribution and numbers of ROTAP plant species [Briggs and Leigh, 1995 Revised], and Schedules 1&2 [NSW Threatened Species Act, 1995] plant [and animal] species.

Fauna survey methodology: Includes application of the pre-logging / roading survey design forming part of the Threatened Species Protocol [3/6/97], incidental records collected during flora survey and habitat assessments, as well as the results of integrated koala transect surveys, and includes -:

1. walked spotlight transects, one kilometre long [minimum], 100 watt light, [with dimmers fitted].
minimum 10 minute listen at start and finish.
2. call playback for target species. Nocturnal -: powerful owl, masked owl, sooty owl, yellow bellied glider, koala, squirrel glider.
Diurnal -: bush thick-knee, regent honeyeater.
Calls are started after a substantial listening period and played briefly at low volume. This is done to avoid disrupting localised activity of the target or other species which may respond, [or be disturbed], and to maximise knowledge of actual habitat use, rather than gaining responses from further afield, [at least initially]. Louder playback calls are then initiated if no clear response is heard.
3. transect and incidental scat collection and identification. - results of predator, and [remaining unidentified] non-predator scat analysis provided by Barbara Triggs. - **not yet available.**
4. track identification on sandy or soft sections of roads, tracks and creek areas.
5. extended listening time for calls, [variable sample length, and dependent on conditions], targetting all playback target species listed above, and including other seasonally variable species such as swift parrot, and regent honeyeater.
6. harp trapping and sonar detection for bat species.
7. frog surveys - creek transects, and habitat searches.
8. search for all other features listed in the Threatened Species Protocol Survey Design while applying the above flora and fauna surveys. [this will be supplemented by the SFO while marking out and supervising harvesting operations. For an example see yellow-bellied glider section below].
9. hair-tube sampling - no hair-tube sampling was undertaken on this survey, thus potentially under sampling for a number of terrestrial and arboreal species, eg. tiger quoll, rufous bettong, brush-tailed phascogale. Conservation protocols should be applied for these species, to ameliorate potential impacts of proposed operations
10. one of us, [Kooyman], camps out in the survey area every night, moving from site to site, [habitat to habitat] during the course of the survey. This provides a substantial increase in; listening time, incidental and opportunistic scheduled species records, diurnal and nocturnal survey effort, and overall survey time/effort.

Rare, Threatened, or Significant Plants recorded in Ewingar SF. compartments 604-608.

Isotoma armstrongii - a specimen resembling this species was collected during the survey. Specimen will be sent to Herbarium for identification/opinion on taxonomy.

A. thraxon hispidus - [sch.2, V] ROTAP - [3VC+]. Not recorded on this survey, but the area provides possible habitat. All collected specimens were *Oplismenus aemulus*.

Results of Fauna Surveys:

The survey was limited to winter, thus missing the optimum seasonal sample for some species groups, eg. bats, frogs, reptiles, and seasonal diurnal birds.

1. **Glossy Black Cockatoo** [*Calyptorhynchus lathami*] - sch.2, this species was located in all of the surveyed compartments either by identification of feed sites or actual sightings. Suitable habitat includes much of the spotted-gum, grey-gum, ironbark, stringy-bark, association [Ft.74], the red-gum [Ft.65], and blackbutt [Ft.37] associations, and areas in the other forest types where *Casuarina* and *Allocasuarina* species are present, [for example the riparian associations]. Several sites with evidence of extensive Glossy-black cockatoo feeding activity were located and marked in the field. No nest hollows were located. Application of the Conservation Protocol and retention of all known feed trees, together with searches for all these features by SFO during mark up stage of operations, should assist this species.
2. **Square tailed Kite** [*Lophoictinia isura*] - sch.2, not recorded on this survey, but is likely to use the larger river valleys, flood plains, and woodlands of this area. Generally good potential habitat, however this species is thought to prefer less steep terrain.
3. **Red Goshawk** [*Erythrorhynchus radiatus*] - sch.1, not recorded on this survey, but there are records for this species from the Clarence and Richmond River valleys and associated forests. This species is thought to favour the higher nutrient / higher productivity tall open forests and riparian vegetation of the larger river valleys, where prey species are abundant. However, it extends up to 1000 metres in altitude in suitable forest. [Debus et al, 1991]
4. **Bush Thick-knee** [*Burhinus grallarius*] - sch.1, not seen or heard on this survey but excellent habitat occurs over much of the survey area. Searches for this species were incorporated into the general flora traverses. Playback sampling was undertaken at a number of sites in these compartments, and one of us [Kooyman] camped in suitable habitat over the two week survey to extend available listening time.
5. **Regent Honey-eater** [*Xanthomyza phrygia*]- sch.1, not recorded on this survey. Nectar resources were limited at the time of survey to several species of *Acacia* and a limited number of larger diameter *Eucalyptus fibrosa*, which were visited by a large number of honeyeaters, [yellow tufted, fuscous, white-cheeked, etc.] and other species by day, and a number of arboreal mammals by night.
6. **Swift Parrot** [*Lathamus discolor*]- sch.2, not recorded on this survey. As described above [Regent honeyeater], the nectar resource was limited to just a few species during the survey time, [and one species of ironbark in particular]. Only the larger trees of this species were providing the nectar resource, and several of these were surveyed in the early morning hours for diurnal bird activity, [see species lists].



011006 VOLK 1:25,000 MAP SUGAR

7. **Powerful owl** [*Ninox strenua*] - sch.2, no records for this species on this survey. Extensive playback and listening was conducted for this species over the survey period. There are records for this species nearby and it remains likely to occur, [in what appears to be good powerful owl habitat in these compartments].

8. **Masked owl** [*Tyto novaehollandiae*] - sch.2, Recorded on several occasions during this survey from unprompted calling in cmpts. 604, 605, 606, and 607. [see AMG records and field notes for details]. This area provides excellent open woodland and dry forest habitat for the Masked Owl. A roost/nest site was located, marked, and photographed in Cmp.605. The roost/nest site is located in a *Eucalyptus/Corymbia maculata*, Spotted-gum, approx. 80cm D.B.H., with a large, main stem hollow. Photographs are available, clearly showing the bird at its nest/roost site. Masked owls occupy large home-ranges [min.500-1000ha], with the resident pair utilizing separate roost sites in the home-range area.

9. **Sooty owl** [*Tyto tenebricosa*] - sch.2. - recorded on this survey in Cmp.608, and adjacent in 607, [see records and mapping for details]. The habitat in this area is in the drier extreme for Sooty-owl, and appears to be the most northerly distribution of this species in the Gibraltar Range/ Washpool/ Ewingar complex. Records on this survey were from listening only, with a few playback calls [<10secs], used to draw the bird in for visual confirmation, and for species identification training for two of the surveyors in the team who had heard but not seen this species. Visual records were obtained on two occasions, with approx. 30, and 10 minutes of viewing time, respectively. [see maps and field notes for details]

10. **Brush-tailed Rock Wallaby** [*Petrogale penicellata*] - sch.2. This species was located in the north of Cmp.608, adjacent to Bulldog Rocks, [on granite, in the Timbarra River catchment], and across into the top end of cmpt.608, where a potential connecting corridor of habitat extends down one side of the Ewingar Creek tributary. Brush-tailed rock wallaby scats from this area were collected and compared to known brush-tailed rock wallaby scats from the Bulldog Rock area, providing evidence of a possible link with several other small populations of Rock Wallaby located on meta-sediments in Cmpts.604, and 607, in the Ewingar Creek catchment. [sample scats also sent onto Barbara Triggs for confirmation]. The records from these compartments constitute a localised range extension for this species. [see maps and species records for details]. Observations included individual adults, and groups with females with pouch young, both at the Bulldog Rock and other sites. At night, small, grazing groups of brush-tailed rock wallabies [occasionally forming mixed grazing groups with whip-tail wallabies] were observed grazing in the less steep and rocky areas approx. 100 - 200metres from the steep rock areas regarded as the rock wallabies core habitat. By day, and if disturbed at night, the rock wallabies retreat to the shelter of the very steep, and rocky terrain.

11. **Tiger Quoll** [*Dasyurus maculatus*] - sch.2, suitable habitat occurs in the area [particularly the higher altitude and old-growth areas of cmpt.608], but no tracks or sightings were recorded on this survey. Searches of rocky areas suitable for latrine sites or den areas were integrated into the general flora and fauna surveys, and the transect based 'integrated Koala surveys', and target species surveys. These will be

supplemented by SFO habitat and 'fauna features' searches during mark up stage of operations.

12. Yellow bellied Glider [*Petaurus australis*] - sch.2, this species was recorded in cmpts.604, 605, 607, and 608. Retention of suitable habitat trees, and all feed trees [v-notch], together with the maintenance of floristic diversity in the *Eucalyptus* spp. to maintain essential winter feeding nectar resources, and the riparian exclusions, will help ameliorate further potential impacts on this species. Records accumulated for the species during this study provide an indication of current distribution of yellow-bellied gliders in this forest area, [given the limitations of a single season sample], and subsequently may indicate the possible location of potential nest/den trees and feeding sites and areas. [refer to AMG's for locations of feed sites and animal vocalisation records]. The provision of this data should allow the S.F.O. to concentrate searches for V-notch feeding incisions, and potential den-site hollows, in areas of known habitat and surrounding areas of the same forest type, greatly increasing the likelihood of locating such sites.

In this part of Ewingar SF yellow-bellied glider incisions have been located on Spotted-gum and Grey-gum, indicating these species as preferred, but this may vary across the survey area.

At the time of the survey, winter feeding nectar resources [for a number of species including yellow-bellied glider] were apparently limited to the larger sized ironbarks, with smaller trees of this species either still in bud or showing no sign of flowering. Buds were forming on *Eucalyptus* [*Corymbia*] *maculata*, though these were immature.

13. Squirrel Glider [*Petaurus norfolcensis*] - sch.2. Recorded in cmpt.605 on this survey. No response to playback calls. Habitat is excellent, but survey results show only one record for Squirrel Glider on this survey, possibly indicating the difficulty in detecting this species, [either visually or by vocalisations or responses to playback], more than an actual indication of presence or absence over the remainder of the survey area. It is interesting to note that there were no records for Sugar Glider from this survey. Sugar Gliders are generally very vocal and the detection rate is subsequently high, both from audible calls and visual/spotlight sightings, indicating the possible absence [of sugar glider] from the survey area, in what appears to be high quality Squirrel Glider habitat.

14. Koala [*Phascolarctos cinereus*] - sch.2, - pellets/scats, sightings, and vocalisations, were recorded for this species, during this survey. Results of Koala transect surveys are provided separate to this report, but indicate relatively low, to intermediate use over most of the area. Cmpts.606, and 608 are regarded as intermediate use areas as they have records of sightings, vocalisations and scats, while the other compartments had only a low incidence of scats along transect lines. Habitat appears excellent with a relatively high number of primary and secondary browse species such as - *Eucalyptus microcorys*, *E.propinqua*, *E.seeana*, *E.acmenoides*, *E.fibrosa*, *E.umbra*, *E.saligna*.

15. Rufous Bettong [*Aepyprymnus rufescens*] - sch.2. Recorded several times during this survey. Generally good to excellent habitat throughout the survey area. A range of non predator scats were collected. **Scat analysis results are not yet available**, [only those not identified in the field by comparison to labelled scat specimens

provided by Barbara Triggs, or the scat keys in her book, have been sent on for identification].

16. Brush tailed Phascogale [*Phascogale tapoatofa*] - sch.2, not recorded this survey but the area has excellent dry woodland /open forest habitat. No hair-tubing or trapping was undertaken on this survey, thus effectively undersampling for a species which is otherwise difficult to detect.

17. Long -nosed Potoroo [*Potorous tridactylus*] - sch.2, not recorded in the survey area. The area is very open, with only limited areas of low, dense, vegetation to provide suitable habitat. Scat analysis results not yet available.
Note record from moister area of Ewingar SF from a road sighting during travel, this survey.

18. Parma Wallaby [*Macropus parma*] - sch.2, recorded on a number of occasions both in vehicle based spotlight surveys and walking spotlight transects, grazing in drier forest types [Ft.37,74], but still relatively close to gully-lines or gully-heads with thicker, moist forest vegetation.

19. Black-striped Wallaby [*Macropus dorsalis*] - sch.1, not recorded this survey. A number of runways and tracks were investigated as possibly indicating this species, however all scats, tracks, and sightings appeared to be of the swamp wallaby, red-necked wallaby, whip-tail wallaby, brush-tailed rock wallaby, wallaroo, and eastern grey kangaroo. This species was not detected visually, and on-site scat analysis did not indicate its presence, [other collected but not identified scats have been sent to Barbara Triggs for identification].

20. Red-legged Pademelon [*Thylogale stigmatica*] - sch.2. Not recorded this survey. Possible habitat in the moist forest gullies and adjoining forest types, however the area is generally very open, and lacks some of the critical moist forest habitat components generally associated with this species. These gully areas were relatively under sampled by the walking spotlight transects.

21. Microchiropteran Bats - [optimum survey season Oct. to late March. Survey Protocol requires a minimum of two harp traps for two nights per. 200ha in suitable habitat]. In this case extra Anabat Sonar sites were sampled to overcome the lack of accessible *Myotis adversus* and *Kerivoula papuensis* habitat, and to provide a better overall sample of microchiropteran bats. Overall, a six night winter sample was conducted, with records for possibly eight species, three confirmed to species, and five possible. [see maps and data sheets for details]

Miniopterus australis -sch2, sonar [Anabat 5] records.

Miniopterus schreibersii - sch.2, Harp trap record, and Anabat sonar - release call.

Mormopterus spp. - sonar records - possible

Mormopterus norfolcensis - sonar records - possible

Vespadelus pumilus - sonar record - possible

Nyctophilus gouldi - spotlight/ visual record [probable]

Vespadelus spp. - sonar record - possible

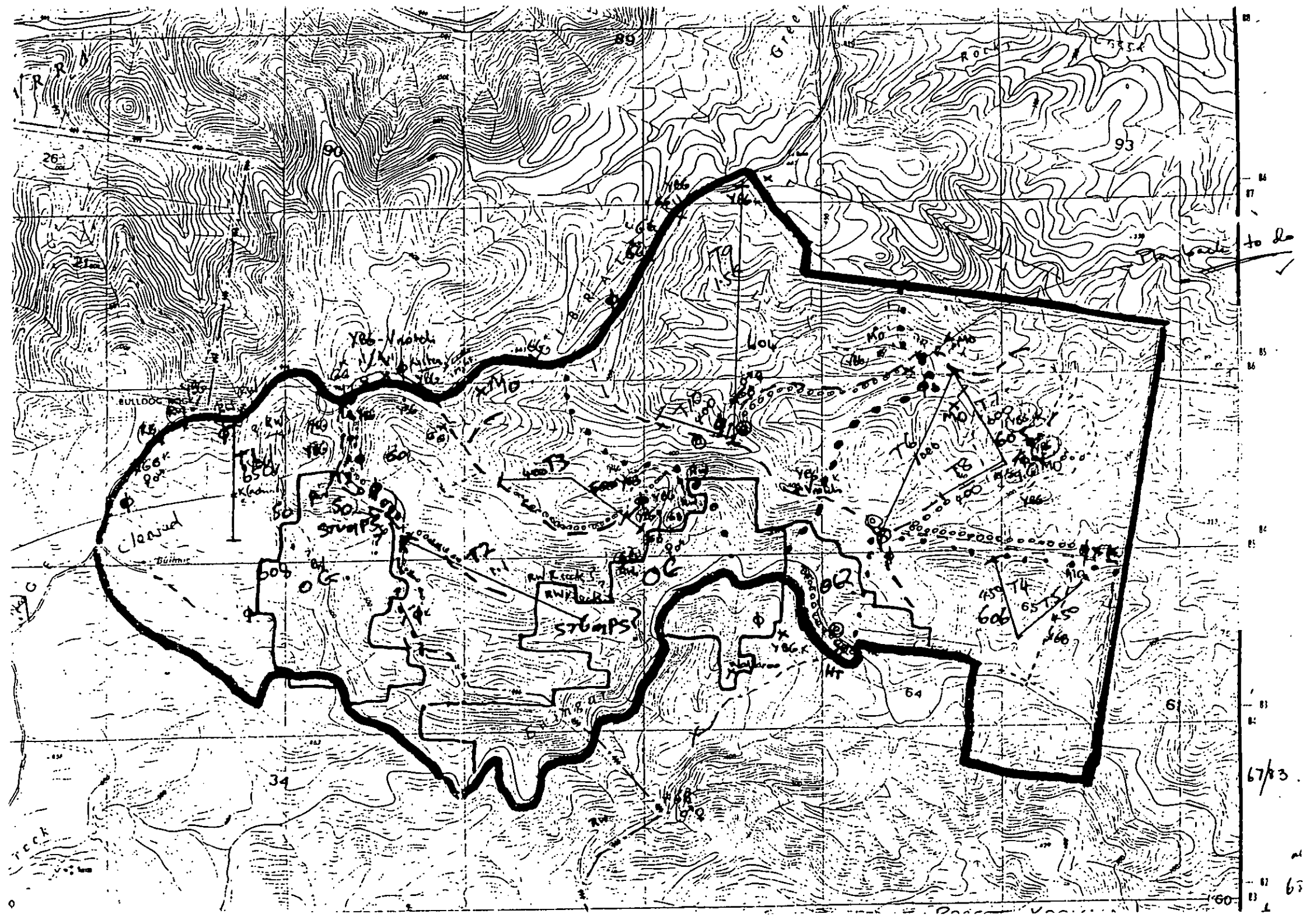
Rhinolophus megaphyllus - sonar record

Field work was done by Noel Douglas [and assisted by Harvey, N., Harvey, K., Klots, R., and Kooyman]. Sonar calls were recorded directly onto laptop computer and later compared to library calls by Noel Douglas, and verified [where possible] by SFNSW Research Division - Brad Law. Sonar calls are ascribed file names and are retained for future reference or verification. A comprehensive library of calls for the NE of NSW is not yet available, limiting our ability in many cases to ascribe species names to recorded calls. We are currently expanding our call library and this situation should steadily improve to the limits of the technology, [and with all survey calls retained for future review.]

No mine shaft or cave areas were detected. Any such sites located during operations should be buffered from proposed operations to ameliorate potential impacts on roost/maternity/torpor sites.

Harp trapping for *Kerivoula papuensis* and *Myotis adversus* in suitable habitat, [flyways and larger pools along rainforest creeks], resulted in nil captures for these species. One harp trap was located upstream on Ewingar Creek, [outside the survey area, *sensu-stricto*], in known *Kerivoula papuensis* habitat, to obtain experience with this species. [no captures of this species, *Miniopterus schreibersii* record above from this location]

22. Frog species - Seasonal constraints were a limiting factor and resulted in only two call records for frogs. [*Crinia signifera*, and *Litoria* sp.] Frog habitat searches were conducted on several of the major creeks and gullies, with no result. Temperatures were low, [$<10^{\circ}\text{C}$ at night, -see field notes for daily records], and conditions were dry.



67/3

63



FLORA & FAUNA - PROTOCOL SURVEY ASSESSMENT.

PREPARED BY: ROBERT KOOYMAN. 9/87.

EWINGAIL S.F. CMPTS: 604 - 608

SURVEY EFFORT (DISTANCES IN KMS.)

COMPARTMENT	SPOTLIGHT SAMPLE		FLORA & FAUNA (random) & habitat records	INTEGRATED KOALA TRANSECT.	BAT SAMPLE		FROG GENERAL	PROTOCOL TARGET SPECIES	CALL PLAYBACK NO. OF SITES	SCATS		DIURNAL BIRDS	SEASONALITY CONSTRAINTS YES/NO
	WALKED	DRIVEN			HARP	ANABAT				Prod.	Chlor		
604	2.0	4.1 (1.2)	4.7	1.90	✓	✓	—	✓	4	N.A.	✓	✓	YES
605	3.0	3.0 (1.2)	5.7	2.00	✓	✓	✓	✓	4 2 in. 2 adj.	N.A.	✓	✓	YES
606	1.4	2.2 (1.2)	3.5	.90	✓	✓	✓	✓	3	N.A.	✓	✓	YES
607	3.2	3.5 (1.2)	5.0	2.00	—	✓	✓	✓	4	N.A.	✓	✓	YES
608	3.6	4.0	4.0	.65 plus .80 on asterisk... C.608	—	✓	—	✓	5	N.A.	✓	✓	YES
TOTALS:	13.2 kms.	16.8 kms.	22.9 kms.	8.25 kms.	3 x 1 x 2 (7) —	1 km	* NO HAIR - TUBING.	18 (repeated sites)	✓	✓	✓	✓	Bats Frogs Reptiles Ave-fauna
unrequired:	7.5	7.5	15.0	7.5 kms	1 x 1 x 4 (outside) transect... 4 x 2 x 2 (-)	SEASONAL CONSTRAINTS	SEASONAL CONSTRAINTS	10	NONE FOUND...	SEASONAL CONSTRAINTS	SEASONAL CONSTRAINTS	SEASONAL CONSTRAINTS	WINTER SAMPLE.
4 (200ha units) x 2 (Harp Traps) x 2 nights.													

Casino District
Reporting of Scheduled - Fauna Sightings

EWINGAL S.F. CMPTS. 604 - 608

August, 1997.

OBSERVER: ROBERT KOOYMAN

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMG Reference	General Comments (eg at log dump, road side, Forest Type etc)
18/8/97	EWING.	604	1	GREATER GLIDER	ADULT in Grey-gum.	4 48650	67 86725
19/8/97	EWING.	608	1	RUFOW BETTING	ADULT / Grey-gum.	4 45300	67 85700
20/8	EWING.	BULLDOCK ROCKS (604, 608)	11	BROWN-TAILED ROCK WALLABY	Adults - pouch young	4 45500	67 85900
20/8	EWING.	"	"	BTRW	Adult	4 45700	67 85900
20/8	EWING.	"	"	BTRW	Adult with pouch young.	4 45800	67 86000
20/8	EWING.	607	1	GREATER GLIDER	Adult in (TWO).	4 46900	67 85730
20/8	EWING.	607	1	Yellow-bellied Glid.	calls	4 48150	67 85350
20/8	EWING.	607	1	YBG	calls & spotlighted.	4 48100	67 85250
21/8	EWING.	607	11	BTRW	Adult & pouch young.	4 48225	67 85400
21/8	EWING.	607	11	Glossy-Black Cockatoo	Feeds tree.	4 48200	67 85200
21/8	EWING.	607	11	BTRW	Adult ...	4 47975	67 84900
21/8	EWING.	607	11	GB C	♀ ♂ - feeding.	4 47950	67 85000
21/8	EWING.	607/8	1	SOOTY OWL	calls.. (disc bomb).	4 46000	67 85300
21/8	EWING.	607/8	1	SOOTY OWL	calls.. chatter.. SPOTLIGHT - 520m.	4 46540	67 85250
21/8	EWING.	608	1	YBG	calls	4 46200	67 85650
21/8	EWING.	607	1	YBG	calls	4 46450	67 85820
21/8	EWING.	?	1	GB (c).	♀ ♂ Adult - pair.	4 48150	67 83650.
25/8	EWING.	605/6	1	KOALA	calls ... > 20 sec...	4 45050	67 84975
26/8	EWING.	605/6	1	MASKED OWL	calls, brief spotlight.	4 45400	67 84925
26/8	EWING.	606	11	GB (c)	FEED SITE.	4 45250	67 84500
26/8	EWING.	607/8	1	SOOTY OWL	calls, then spotlight...	4 46540	67 85250
26/8	EWING.	607	1	SOOTY OWL	calls,	4 46650	67 85600
26/8	EWING.	608	1	YBG	calls	4 46200	67 85750
26/8	EWING.	607	1	YBG	calls	4 46680	67 85900
26/8	EWING.	607	1	MASKED OWL	calls (repeated)	4 47100	67 85950.
26/8	EWING.	604	1	MASKED OWL	calls	4 49300	67 86250
26/8	EWING.	605	1	MASKED OWL	calls	4 49750	67 85800
26/8	EWING.	605	1	MASKED OWL	calls	4 49750	67 86150

adjacent
C 608.

daylight
in rocky
area.

5:19am.

perched
then flying

1st call etc.
2nd call site
flying.

two birds..

flying...

(*) Type of Inspection

- 1 Night Time Surveys
- 2 Follow-up Clearance Inspection
- 3 Rejects Inspection
- 4 Regeneration Inspection
- 5 Road Line, Dump Sites Inspection
- 6 Timber Assessment

- Marking Boundaries, Filter Strip or Conservation Areas
- 8 Reports from Log Faller
- 9 Head Disposal Burning
- 10 Harvesting Planning
- 11 Other
- FLORA & FAUNA surveys.

GG - Greater Glider
YBG - Yellow-bellied Glider
K - Koala
BTRW - Brown tailed Rock wallaby (ew)
GB(c) - Glossy Black Cockatoo

SO - Sooty owl
MO - Masked owl
RB - Rufous Bettong
PW - Parma Wallaby

Casino District
Reporting of Scheduled - Fauna Sightings

EWINGAR S.F. Cmptrs. 604-608

August, 1997

ОБСЛУЖИВА: Роберт Коопман.

[illegible]

possible
DEN SITE ?

IBX
blossom.
Sp. Gum.

Noel Doyle
me back...

4. Type of Inspection

- 1 Night Time Surveys
- 2 Follow-up Clearance Inspection
- 3 Rejects Inspection
- 4 Regeneration Inspection
- 5 Road Line, Dump Sites Inspection
- 6 Timber Assessment

- Marking Boundaries, Filter Sands or Conservation Areas
 - 8. Reports from Log Fallers
 - 9. Head Disposal Burning
 - 10. Harvesting Planning
 - 11. Other
- FLORA & FAUNA SURVEYS.

EWINGAR SF.

Capt. 604 - 608.

Harvey & Douglas records

Casino District
Reporting of Schedule 12 Fauna Sightings

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMC Reference	General Comments (eg at log dump, road side, Forest Type etc)
19-8-97	Ewingar	605	Kata	GBC FT		4-49-380	67-85-260
21-8-97	Ewingar	604	10	V. Notch Tree		4-49-840	67-85-350
21-8-97	"	608	10	GBC	2 adults	4-45-030	67-85-220
19-8-97	"	604	1	Greater Glider	1 adult	4-48-080	67-86-700
19-8	"	604	1	"	1 adult white collar	4-48-150	67-86-850
19-8	"	607	1	"	1 adult	4-47-410	67-86-100
19-8	"	607	1	"	1 adult	4-46-350	67-85-900
26-8	Ewingar	604	10	Glossy Black Cuckoo	2 adults	4-48-500	67-88-700
26-8	"	608	1	Sooty owl	2 adults	4-46-650	67-85-130
26-8	"	607	1	Parma wallaby	1	4-46-320	67-85-480
25-8	"	"	1	YBC	1 (heard calling)	4-48-770	67-84-540
27-8	"	608	1	YBC	1 (heard call)	4-45-900	67-85-550
26-8	"	"	1	Parma wallaby	1 sighting	4-44-700	67-80-740
26-8	"	"	1	Parma wallaby	2 sighting	4-46-770	67-80-550
27-8	"	"	1	Kooka	sighting	4-45-700	67-85-470
27-8	"	"	1	Brush-tailed rock wallaby	sighting	4-45-570	67-85-900
27-8	"	"	1	Long-nosed potoroo	sighting	4-43-460	67-82-820
27-8	"	"	1	YBC	heard call	4-45-650	67-85-950
26-8	"	"		G.B.C.F.S		4-47-350	67-84-800
				G.B.C.F.S		4-47-320	67-85-440
				G.B.C.F.S		4-47-370	67-85-450
				G.B.C.F.S		4-47-560	67-85-430
				G.B.C.F.S		4-49-400	67-85-260
				"		4-48-500	67-86-140
				"		4-48-500	67-86-010
				"		4-48-510	67-85-950
				"		4-48-500	67-85-920
				"		4-48-500	67-85-880

(*) Type of Inspection

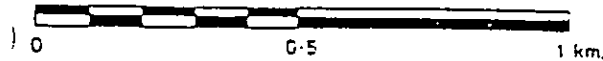
1. Night Time Surveys
2. Follow-up Clearance Inspection
3. Rejects Inspection
4. Regeneration Inspection
5. Road Line, Dump Sites Inspection
6. Timber Assessment

7. Marking Boundaries, Filter Strips or Conservation Areas
8. Reports from Log Failer
9. Head Disposal Burning
10. Harvesting Planning
11. Other

Check my other records - Rock Wallaby? KH.

Compartment 604

Scale — 1:15 000



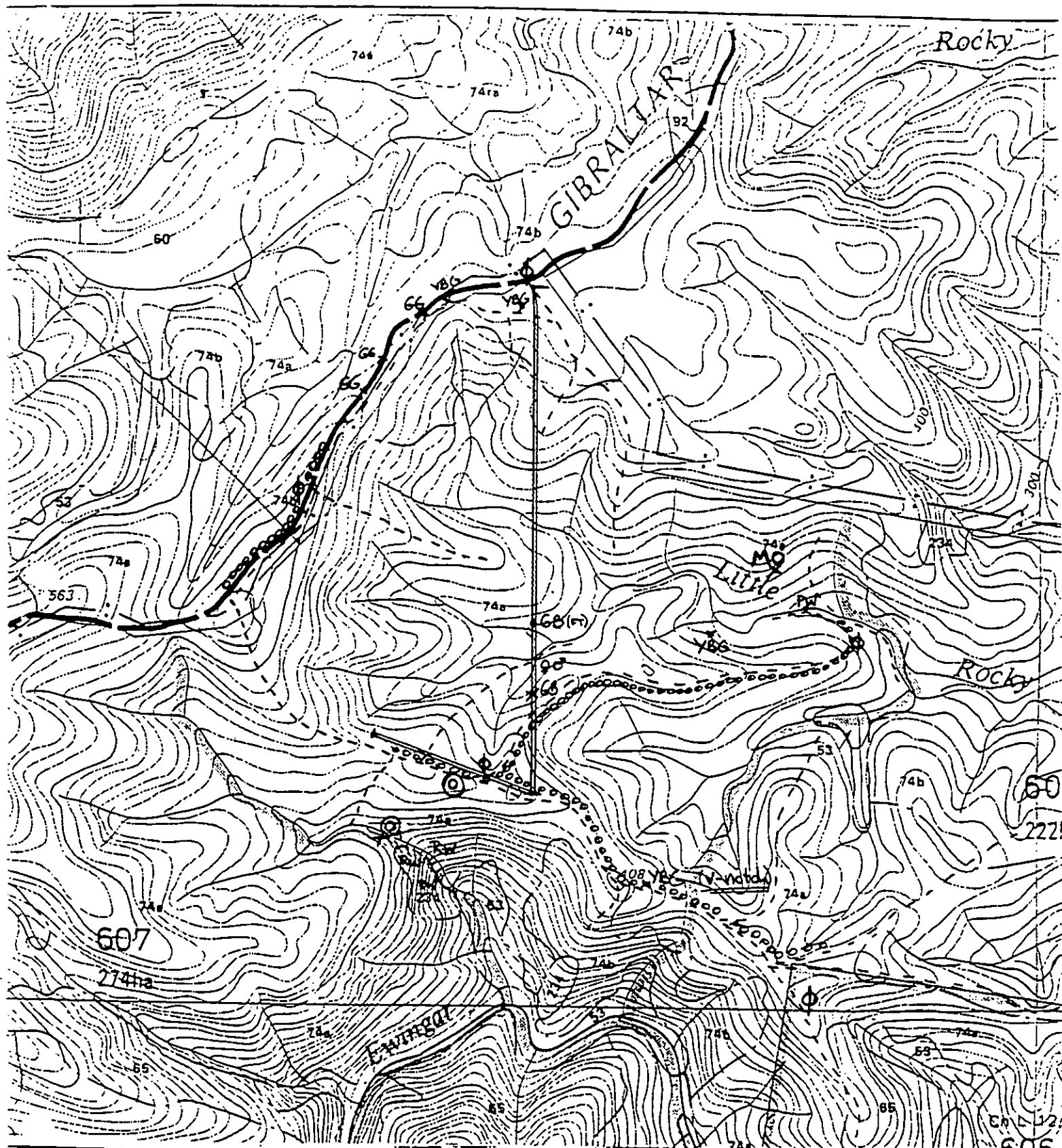
GB/845

C-231

N 156

Contour interval: 10m

G N



- Compartment boundary Special emphasis
- Filter strips random transect - Flora & Fauna.
- Protection strips Integrated Koala transects.
- Road, minor road, dump site.
- Wet weather dumps shown in red
- ⊙ ANABAT-SONAR SITE. X HP - Harp-trap Site.
- ⊙ - playback/listening site. RW - Rock Wallaby...
- YBG - yellow bellied Glider. GG - Greater Glider.
- MO - Masked Owl. PW - Parma wallaby
- GB - Glossy Black Cockatoos. FT = Feed Tree
- 00000000 - SOUTHERN TRANSECT (walking)

Compartment 605

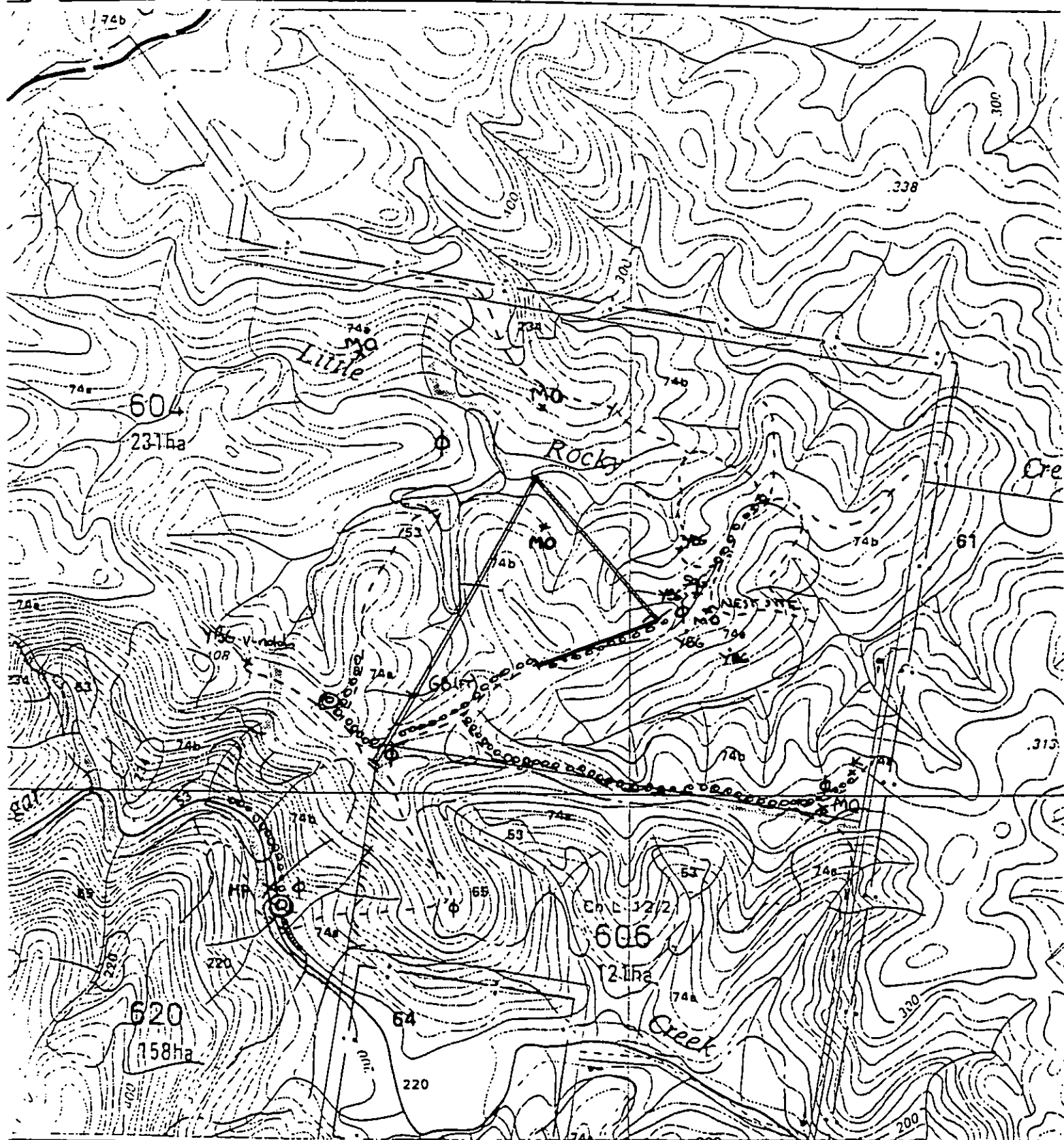
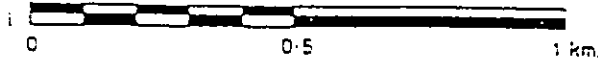
Scale — 1:15 000

GB 7845

G 231
N 195

Contour interval 10m

1
G N



Compartment boundary

Filter strips

Protection strips

Road, minor road, dump site

Wet weather dumps shown in red

© - ANABAT SONAR SITE. X HP - HARP TRAP.

00000000 - SPOTLIGHT TRANSECT (walking).

Special emphasis

random flora & fauna transects

Integrated Koala transects.

φ - Playback & listening site.

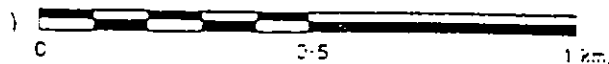
MO - Masked owl (nest site).

YB - Yellow-bellied Glider K - Koala

Sg.G. - Squirrel Glider GB(r) - Glossy Black Cockatoo

Compartment 606

Scale — 1:15 000



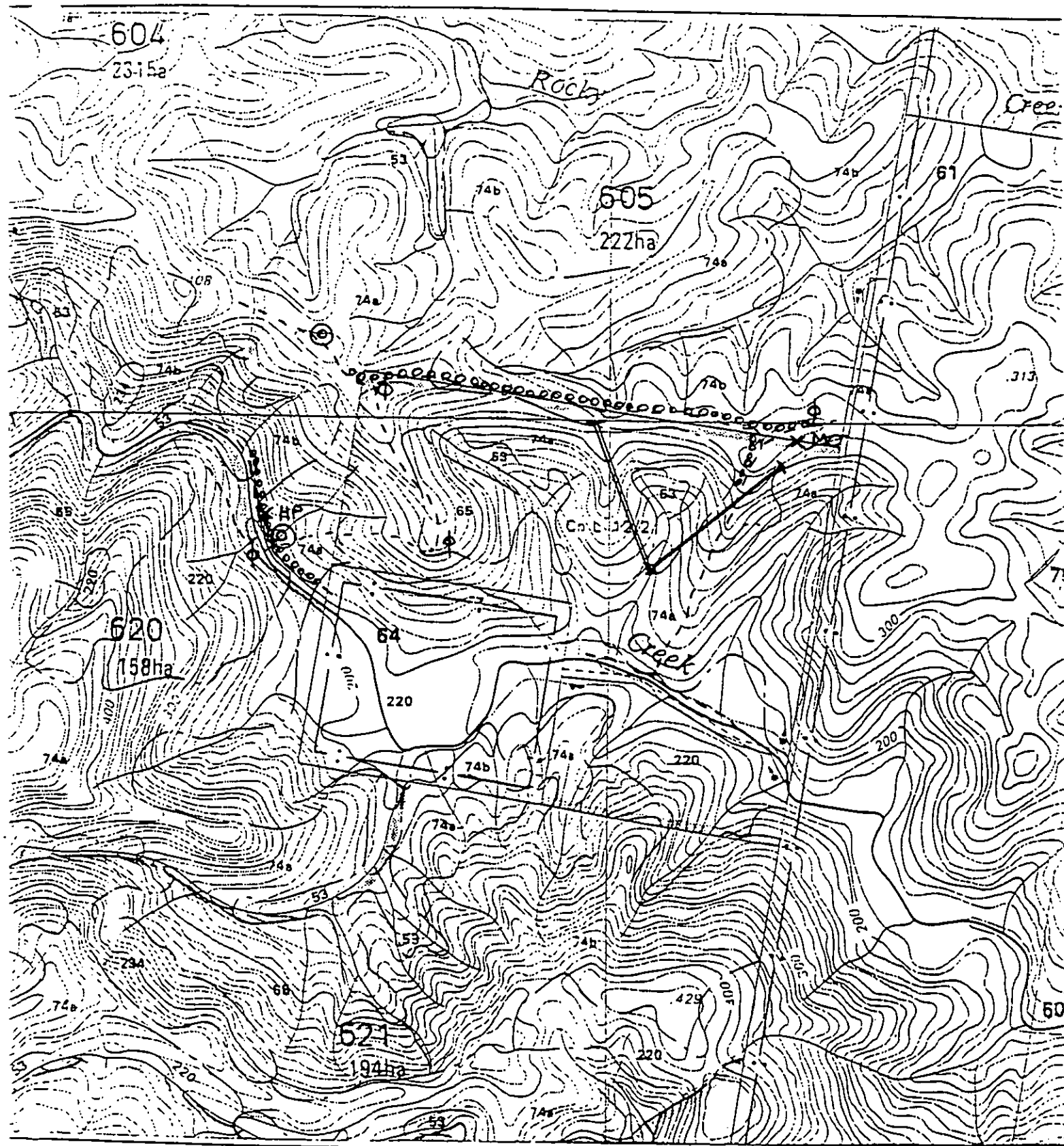
237 845

C-124

N 93

Contour interval 10m

G N



Compartment boundary

Filter strips

Protection strips

Road, minor road, dump site

Wet weather dumps shown in red

⊙ - ANABAT SONAR SITE

00000000 - SPOTLIGHT TRANSECT (WALKING)

Special emphasis

----- random flora & fauna transects

==== Integrated Koala transects

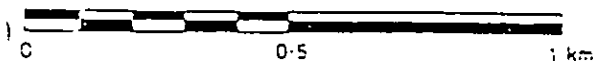
⊗ φ - Playback & listening site

MO - MASKED OWL

X HP - HARD TRAP

Compartment 607

Scale — 1:15 000



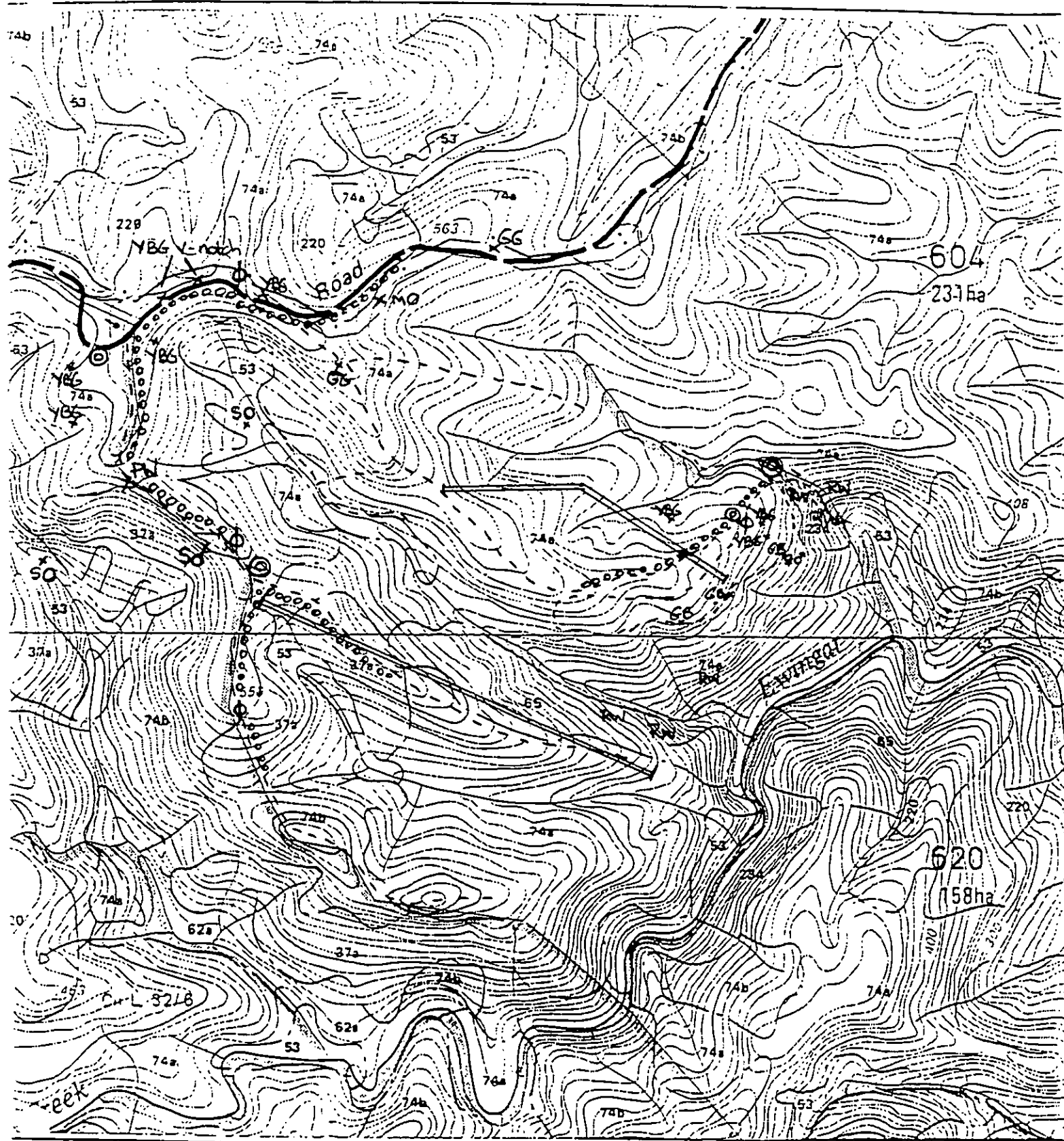
SB: 6-5

3-275

N 195

Contour interval 10m

G N



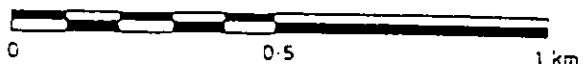
- Compartment boundary
- Filter strips
- Protection strips
- Road, minor road, dump site
- Wet weather dumps shown in red
- © - ANABAT SONAR SITE. XHP - HARP TRAP
- 0000000000 - SPOTLIGHT TRANSECT (WALKING)

- Special emphasis
- random flora & fauna transects.
- ===== Integrated Koala transects
- ⊗ - Playback and listening site.
- MO - MASKED OWL SO - Sooty Owl.
- RW - Rock Wallaby GB - Glossy Black Cockatoo
- YB6 - Yellow bellied Glider GG - Greater Glider

↑
G is

CS 184, C-253

Contour interval 10 m



Special emphasis

----- random flora & fauna transects
Integrated Kocia transects

Integrated Korda transects

④ - Playback and listening site.

SO - sooty owl. RB - Rufous Bells

YBG - Yellow-bellied Glider K - Koala

RW - Rock Wallaby (RW) - slate

c. *Lophostemon urticaria* (c-vc)

cl. *Argemone subultraria* (o-v).

cl. *Tristemonis laurina* (o).

sc. *Acinosa smithii* (var. minor) (o-c).

sc. *Glochidion fitchii* (o-c).

sc. *Acacia melanophylla* (o-d).

sc. *Allocasuarina turtosa* (o-c).

Pittosporum revolutum (o-v).

Dodaea triquetra (vo-c).

Notoclea longifolia var. c. 1 (vo).

± *Eucalyptus intermedius* (vol)

E. (Corymba) maculata (o).

E. fibrosa (o)

E. microcarpa (o)

E. secunda (vol).

Persoonia media (vo).

sc. *Acacia irrorata* var. *irrorata* (o)

Trema uspera (o).

sc. *Ficus coronata* (o).

Clerodendron bontarum (vo).

sc. *Acinosa smithii* (vo).

Viola hederacea (o).

sc. *Calliandra serratifolia* (2-vol) ...

Ozothamnus diosmifolius (o-v).

Sigesbeckia ... (o).

sc. *Archontophoenix cunninghamiana* (r).

sc. *Callistemon salignus* (r-).

Pratia purpurea (o-v).

Indigofera australis (vo).

sc. *Elaeocharis dooceta* (vo)

sc. *Trochocarpa laurina* (vo).

Ripanea variabilis (o).

Carlyline stricta (o-a).

sc. *Hodgkinsonia ovalifolia* (vo).

Verbena sp. *rigida* (vo).

sc. *Euroschinus falcatus* (o-v).

sc. *Callistemon* sp. *viridatus*? (R-o), check specimen for *C. pallidus*...

Begonia dolanifolia (o).

Alyxia rosifolia (r) near *waterfall*...

Viola betaniosifolia (vo-o).

Cissus antarctica (o)

Smilax australis (o).

Stephanandra japonica var. *discolor* (o).

Lantana camara (vo-c).

Cephalanthus ciliolobus (vo).

Gynura clausenii (o).

Eucrochus latifolia (vo-r).

Lomandra longifolia (o-c).

Dianella caerulea (o).

Entolasia marginata (o).

Optunia sp. *hemisphaerica* (o).

Blechnum minus (vo).

Doodia caesa (o-c).

Christella dentata (o-).

Adiantum hispidulum (o-v).

Cyathea cooperi (R-v).

Adiantum formosum (vo).

Blechnum caribaeum (o-)

Calochortus dubius (o-)

Lastraea sp. *hemisphaerica*.

Asplenium australicum (vol).

Celastrus subspicatus (vo-o).

Cucumis dipsacifolius (r) naturalized. Fr. 74...

Dianella caerulea (vo-c).

Parsonsia parsoniana (vo-o).

Lomandra multiflora (var. *vol.*)

Juncus sp. (o).

Lepidosperma laterale (vo).

Dendrobium kingianum (r) on rocks...

Asplenium flabellifolium (r)

Dactyloctenium aegyptium (vo-r).

Peperomia tetraphylla (vo).

Davallia pyxidata (vo).

(c). *Caesarea cunninghamiana* (R-c) along lower Ewing Crk. ... ? check specimens...

Diocorys australis (R-v).

... on rocks near gorge...

c. *Ficus obliqua* (r).

Rocks area - *Baccharis myrsinifolia* (vo-o).

sc. *Pittosporum undulatum* (vo).

sc. *Dryopteris australis* (vo).

Ozothamnus dooceta (vo).

Wikstramia indica (r).

Pittosporum revolutum (vo).

Manisuris sp. *bilocularis* (R-o).

Fr. 53.

EWING S.F. Cnpt. 604-8.

Gully / River aff. to Fr. 74.

Robert Kooyman
8/57.simple unid. / additional species from western end ...
major gully Cnpt. 608.*Sesuvium portuacastrum* (vo-o).*Syntherisma glandulosum* (R-o).sc. *Polygonum elegans* (o-c).sc. *Rhodanthe rubescens* (ol).sc. *Claoxylon australe* (vo-o).sc. *Cryptocarya micrantha* (o).sc. *Neolitsea dealbata* (ol).sc. *Clerodendron tomentosum* (o).sc. *Alectryon subaerens* (o-vo).*Breynia dolabifolia* (c).*Psychotria loricoides* (o-c).sc. *Acronychia dolabifolia* (vo-o).*Eupomatia laurina* (o).*Wilkiea huegeliana* (o-c).*Derris celtoides* (vo-o).*Gymnoschoenus aeneus* (vo).*Citriobathus paniculatus* (o-c).*Tabernaemontana parviflora* (vo).*Anacardium occidentale* (vo).*Plectranthus parviflorus* (x) (vo).*Indigofera australis* (o-vo).*Stellaria flaccida* (vo).*Rubus hillii* (o).*Rubus marsei* (o).*Kennedia rubicunda* (o-c).*Lathyrus decumbens* (o-c).*Dioscorea transversa* (o-c).- *Stephanandra japonica* var. *diversa* (o).*Emmenanthe cuneata* (o-c).*Cayratia clematidea* (o-c).*Alpinia caerulea* (vo-o).*Tetrastemon nitens* (vo-o).*Dioscorea cuneata* (o-vo).*Pterostylis pedunculata* (ol). usque...*Clematis crispa* (ol).*Tylophora paniculata* (o).*Entolasia stricta* (ol).

- C. Eucalyptus (Corymbia) maculata (o-vi)
C. E. propinquus (o-c)
C. E. microcarpa (o)
C. E. ^(narrow leaved) ~~seabra~~ (vo-c)
C. E. acuminatula (vo-r)
C. E. carnea (o-vo).
C. E. fibrosa (vo-cl).
C. Argemone subvelutina (thun) (vo-o's).
sc. Allocasuarina torulosa (o-c).
C. E. microphylla (R-o) (c)
C. E. umbra (R-o). ✓
Acacia diphylla (o-vo).
Acacia viridis var. viridis (vo-o). ADD:
* Eucalyptus tiddiae (o).
Acacia mitchellii (vo-v).
Acacia sp. (H. c. leaved).
Acacia grantii (vo).
Solanum densiventritum (vo-o).
Persoonia straboekensis (vo).
Pratia purpurea (o)
Senecio ^{amygdalifolius} (R-o).
Geranium solanderi (o) ^(recollected check sp.).
Walterbergia ^{gracilis} (o)
Dichandra sp. (o).
Geranium sp. solanderi. (vo).
Viola betaniciifolia (o).
Excoecarpus sp. cuneiformis (c).
* ~~Isotoma~~ ^{specimen/roten...} ~~sp. aff.~~ armstrongii (R) ^{lower stage/old dry...}
Hibbertia obtusifolia (vo-).
Plectranthus perflorus (vo-o).
Pseuderanthemum variable (o) ^{roten...}
Oxalis sp. (vo).
Macrozamia lawsonii (vo-o).
* Plectranthus ^{granitic} ~~sp. swainsonii~~ (Rode areas only)... > 100 plants...
Lactuca trigonocaulis (vo)
Xanthorrhoea (glauca) (vo-c).
Brachycombe microcarpa (vo-o).
Oxylobium illifolia (vo-c).
Oxycoccus ^{diospyrifolius} (R-vo).
Daviesia ^{sp. genitifolia} (vo-c).
Pultanea ^{sp. villosa} (vo-) specimen.
Pultanea cunninghamii (vo-cl).
Hardenbergia violacea (o-c)
Glycine clarkiana (o)
Desmodium rhytidophyllum (o-vo).
Galactia sp. (tiny) bract... (vo) check...
Kennedia rubicunda (vo).
Hibbertia scandens (vo-o) roten.
Rubus perflorus (o).
Thermopsis australis (c)
Poa latifolia var. latifolia (c).
Diarrhea canescens (vo-a) roten...
Lonicera ^{diversa} - ^{specimen} ✓
L. ^{multigloba} (vo). ✓
Chaetanthus distans (vo-o).
C. sieberiana (vo)
Adiantum hispidulum (vo-a) Roden...
Davallia pyxidata (vo-a) roten...
Pyrosoma superbia (o-a) roten...
Platycentrum superbum (roten vo)
P. bifurcatum (roten vo)
Dendrobium speciosum x (roten - a).
* Plectranthus ^{sp. aff.} ~~graveolens~~ (specimen... > 1m... note - sedum at roots, new cracks).
Roden. Liparis swainsonii (R-vo). roten...
Hakea ^{sp. eriantha} (R) (specimen... ✓)
Senecio ^{sp. E?} ^{check} (R-vo)
Olearia ^{sp. glandulosa} (R) check specimen...
(sc. Acacia blakeyi (o). check specimen... ✓)
Gonocarpus micranthus (vo-a) ? check...
Cayratia clematis (R-vo) roten...
Eustrephus latifolius (vo).
Banksia scandens (vo).
Cucumis dipsacatus (R)
Trachypogon incisus var. incisus (R) ?
Excoecarpus cuneiformis (o).
Daviesia genitifolia (o-c).
Persoonia decolor (vo).
Malickia wooraburra (vo-o).
Leichardia scaparia (vo-c).
Alphitania succulenta (R-o).
Persoonia oleoides ^{check (vo)}.
Galium ^{sp. propinquum} (R-o) roten...
Cresata sieberiana (o).
Bracteantha bracteata (vo-a).
Graphium sphaerium (vo-o).
Veronica plebeia (vo-o).

EWING 604 SF. 604-608.

Ft. 7th cont'd.
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2.

Robert Koenig
8/17

Caladenia ^{to} (vo)* (specimen)
carnea
Doritis candelata var. candelata (c) etc.

Aristida ramosa (o-c).

Glossogyne tannensis (vo-)

Eragrostia elegata (o-c).

Bothrioclis decipiens (b-a).

Sporacocis brachystema (vo).

Cymbopogon refractus (o-vo).

Aristida (vagan) (vo-).

Microloera stipoides (vo-?).

Paspalidium sp. (vo-o).

Eragrostia (sp. n.) leptostachya (o-?).

Digitaria longiflora (o-vo).

Chloris sp. (vo-a) check...

Enneapogon nigriscus (a-?).

Heteropogon contortus (a) = ?

Hyparrhenia filipendula (vo-a).

Fimbristylis sp. dichotoma (a-vo).

Pterostylis pedunculata (a).

Tylophora paniculata (vo-a).

Entolasia stricta (o)

Ozothamnus polystachyus (R-vo) rare etc.

Pimela linifolia (vo).

Monotoca scoparia (vo).

Cassinia compacta (vo).

Lappaceum variabile (vo-a) woody?

Ranunculus sp. lappaceus (vo-a) specimen.

Leucopogon virgatus (o-vo).

Gnaphalium sphaericum (o). ✓

Plantago debilis (R-vo)

Cymbopogon kwonganensis (vo-)

Proscanthus reddens (vo).

Pimela sp. glauca (to o). (specimen) 604/606

Personia sp. aff. sericea ✓ by fig. to ch. (o). specimen ✓
sp. minute, small plant < 1m.

Conosperma ericinum (vo).

Opercularia diphyllo (vo).

Goodenia rotundifolia (vo).

Goodenia heterocarpa subsp. heterocarpa (vo).

Wikstroemia indica (a).

Muelleria eucalyptoides (o).

Brunoniella australis (vo).

Ajuga australis (et. c).

Anyemone? (at Koenig's)...

Puttana vetula (R-o) (c-rt. 604).

Rubiacae: Galium sp. (o).

Notolixos subarcticus (R-?).

Cardamine paucijuga (vo-). specimen...

Olecrion oppositifolium (o-a) - narrow leaved form (specimens retained)....

Gonocarpus tetragynus (o)

Monotoca scoparia (o).

Platysace ericoides (vo-)

Notelea longifolia (R-vo) clau to creek...

Charizema parviflorum (R-vo) specimen...

Stellaria flaccida (vo-o) rocky - gutter...

EWING, S.F.

Fr. 37 (Dry Slackwater)

Dry Ridge-top sample. (Add species from Fr. 74 ...)

Robert Kooyman
5/97.

C. Eucalyptus pilularis (vc).

C. E. (Corymba) gymniifera (o-c)

C. E. microways (vo).

± C. E. (Corymba) maculata (o-vo) type adpress.

± C. E. Sabina (o) juliflora var. ...

sc. Allocasuarina tarulata (o-).

Hibbertia obtusifolia (vo-o).

Davallia aristifolia (o-c). in Fr. 74...

Oxylobium ilicifolium (vc-c)

Pultanea villata (o-c).

Macrozamia fawcettii (vo-o).

Persea decider (o)

Hibbertia dentata (o-vo).

Lomatia silaifolia (o-vo).

Conospermum ericifolium (o-vo).

Galium sp. prostratum (vo-o) rodent...

Persea media (vo-o).

Pattersonia sp. straminea (vo).

(Olearia sp. (o-c).

Ozothamnus diospyroides (o-c) decumbens, low to 1m.

Persea sericea (o).

... then overlaps to a limited extent with Fr. 74...

Hardenbergia violacea (o-c).

Kennedia subumbellata (o-vo)

Glycine clandestina (o).

Themeda australis (c-vc)

Poa tuberosa (o-vo) var. lat. ? (vo-o).

Entolasia striata (o).

Pterostylis sp. pedunculata (o).

Pteris esculentum (o-o).

Calochortus dubius (vo-c).

Lindaea microphylla (o-o).

Leatherhead (noisy friar bird) (lower...)

Sat. - bower bird

Little lorikeet

Scaly-breasted lorikeet

Pied curlew

Bek Miner

Brown Quail

King Parrot (rare).

Crimson rattle

White eared honeyeater

Yellow tufted honeyeater (nesting... seen at watering points - Cuss. 607)

Yellow robin

(Therapsid, Aristida, Cyrtopom.)

Granna ..

White bellied cuckoo - strike

Variegated wren.

Pied butcherbird

Willy wagtail

Mistle-toe bird

Laughing kookaburra

Brown thornbill

Yellow rumped thornbill

Striated thornbill

Gerygone

Little friar bird

Silver-eye

Weebill

Glossy Black Cuckoo

White Cuckoo

Magpie

Black faced cuckoo strike

Forest raven.

Red-backed Wren

Rainbow lorikeet

Gray-throated

Fuscous Honeyeater

Scarlet honeyeater

Eastern spine-bill

Brown honeyeater

Brown flycatcher

Peaceful dove (d) f.

Diamond dove

Flycatcher (renewal) ...

Rufous Bunting

Rock wallaby (Petrogale persimilis).

Red-necked wallaby

Whip-tail wallabier

Long necked bandicoot ...

Wallaroo ... (Pseudocheirus ...)

Eastern grey Kangaroo

Bandicoots (brown)

Parma wallaby
(Red necked pademelon -

* Sooty owl - heard, seen.

Bodyside owl - heard, seen.

Tawny Frogmouth - seen,

* MASKED OWL - heard, seen
nest site located....

- moist gully -:

Sooty owl

Whip-bird

Lewin's honeyeater.

Crinia signifera

Litoria ?

(calls only).

Koala (scats, windrears & calls)

(common). Brush-tailed possum, heard

YBG - heard, seen.

Greater Glider - seen.

Squirrel Glider - heard, seen.

✓ *Miniopterus australis* - Anabat...

✓ *M. schreibersii* (Ewing's Gl. Hop & release)

pos. *Marmoptera norfolkensis* - Anabat

pos. *Marmoptera* sp. ? Anabat.

pos. *Vespertilio pumilus* ... Anabat

pos. *Vespertilio* sp. (P. acule) Anabat

✓ *Rhinolophus megaphyllus* - Anabat.

pos. *Nyctophilus gouldi* - virel/spot.

Nedge-tailed eagle

Brown goshawk

(large) kite...? (whistling or possible square-tailed)

Tuesday 19th August, 1997.

EWINGAR S.F.
Cnpt. 604-608.

Robert Kooyman

arrive: E. - Building Rd.
Joz S.F. 6:00pm.

LISTEN: Boobook owl 7:00pm.

7:30pm.

PLAYBACK CALLS -!

P.O. - no response.

M.O. - no response

Boobooks calling - (2).

Koala - no response

Sq. Glider - no response

YBG - no response.

LISTEN: 15 mins....

8:30pm. - with: Kevin et al, driving spotlight transect along Building Rd... target *Thomomys* etc.....

then 5km driving spotlight transect - 66% (areas marked)
LISTEN: Boobook owls.

10:30pm: Finish... set up camp - near S.F. Boundary....

- Rufous Batting - grassy area...

- possible Rock Wallaby - steep rocky area....

- Rock Wallaby confirmed in morning - climbed down rocks - (counted '5')

- Whiptails & rock wallabies....

(note: SF area overgrazed - P.P. more grass sward....)

Wed. 20/8/97: Cnpt. 608. near Building Roads -

- Rock wallabies (>5)... & Whiptail wallabies..

- Veg. samples

move to Cnpts. 604, 605, part 606. to create Riparian Alliance ... Fr. 53.

- Veg. samples to dusk.... (see species lists.... collect specimens etc...).

Trade into Cnpt. 604 - Playback Site.... ANASAT SAMPLE - (2 species +).

6:30pm - LISTEN - Boobook owl(s). Bandicoot (nearby - spotlighted & heard).

PLAYBACK - Masked owl - no response

TEMP. +14°C. (7pm)

Powerful owl - no response

● - FULL MOON - RISE: 7:50PM.

YBG - no response

- LIGHT WIND, CLOUD COVER, NO RAIN.

Koala - no response

TEMP. +12°C 10:00pm.

7:40pm: end.... LISTEN: Boobook owl....

SHIFT TO CNPT. 607 - bottom ...

DRIVING SPOTLIGHT TRANSECT - (1.5km).

doom - Greater Glider.. (two).

LISTEN every 500 metres - 5 mins...

Boobook owl - calling...

1.5km - END.

* WIND increasing to Moderate.... (gusty...)

φ - Playback calls - 9:00pm

Koala - no response

Powerful owl - no response

Walking spotlight transect -

YBG - no response

Masked owl - no response

10:15pm

Sq. G - no response

LISTEN: -

9.1°C

set up camp - 10:30pm

THURS. 22nd AUGUST.

EVINGAR S.F. 604-608.

Robert Koenigman.

Th. / morning - (3am - YBG calling near camp... see map).

I.D. Specimens; (Vegetation). LISTEN FOR: Bush-thicketree ...

Veg. Surveys - Cnpt. 607 ... down to creek, to edge of 'Old Growth', steep country ...

Rodney Burger et al. ... Rake W. ... disturbed along top of gorge ... see map ...

... continue Veg. surveys ... yellow tufted honeyeaters - nesting, & watering at creek

Glossy Black Cuckoo - Faint Site. edge of O.G. area - C. 607.

END: 5:00pm. KEVIN et al. departed for casino → home ...

NIGHT SURVEYS - START 6:00pm - LISTEN

BOUNDARY CNPTS: 608, 607, Track on Ridge - edge of Old Growth area.

WEATHER: CLEAR, NO CLOUD, MODERATE WIND (>10-15k) - Gusts ...

TEMP: +10°C. at 6:30pm. ~~Full moon~~ - rising around 9:15pm? ...

LISTEN: Screech owl - calling in valley - S.W.

Short Playback - : immediate response - flew up to Blackbutt

(E. pilularia) - nearby - Spotted - continued calling ... sat on branch calling to me, soft ... screech type call ... clear sighting ... !!! > 15mins ... !!

... still calling and talking to me after 5mins ... suspend playback until he goes

- BOOBOO OWL - calling ...

- Screech owl still calling at 6:50pm from Blackbutt - < 25 metres away ...

will have to shift to other side of valley to continue playback for M.O., P.O. etc ...

* S.O. - goes wild if I start anything on the tape-player ...

- nesting hollow could be nearby ... bird seems reluctant to move ...

- START WALKING SPOTLIGHT TRANSECT - : BBT. area ... 7:10pm ...

O_m - white throated nightjar - calling ...

- CLOUD COVER - DARK to VERY DARK ...

- BOOBOO OWL - calling ...

WIND - : LIGHT, occasional gust ...

- Screech owl, - still calling ... Bandicoot -

- Screech owl following me along ridge ... occasional screech call ... to let me know !!

- disturbed small macropod ... fleeting glimpse - Rufous Bettong ... too fast! ?

- larger macropod ... no clear sighting ... Redneck wallaby ...?

Screech - 7:40pm. return ... move uphill for M.O., P.O., YBG playback ... driving spotlight

Playback calls - : Masked owl - no response ... then YBG calling (see map) ...

8:00pm. Powerful owl - no response ...

... then Screech owl - dive bomb calls ...

NB: Check out S.O. habitat tomorrow ...

8:30pm - DRIVING SPOTLIGHT TRANSECT - 2km. [8:55pm - MOONRISE].

- nil.

9:00pm - END ...

DRIVING SPOTLIGHT TRANSECT - into Cnpt. 607. 1.5km ... - nil.

9:30pm - END. (bottom of track - 607).

* set up camp - 10:00pm. 10:30pm - YBG calling - downslope, BIG HABITAT TREE →

FLODA & FAUNA SURVEYS.

EWINGAR S.F. Capt. 604-608.

Robert Kooyman
8/97

Fri. 22nd / 8, 1997.

7:30am - : I.D. Specimens, Diurnal bird sample, Bush-Mistletoe playback - no response

Veg. Surveys - 608, 607, 606, 605 part. 604.

Glossy Black Cuckoo - ♀ ♂ (outside camp. survey area) ... see map.

RETURN via Casino Office → home... END. 2:30pm...

EWINGARC S.F. FLORA & FAUNA SURVEYS.

Cmpt. 604-608.

Robert Kooyun
25/8/97.

Mon. 25/8/97. arrive evening.....

temp. 7:00 p.m. + 10°C. (falling).

wind. - gusty, westerly... 10-30km.
(too strong for ridge samples)... W.S.W.

☉ - moon $< \frac{1}{2}$, waning, rise late....
(very dark).

Kev, Noel, Nicole, Rayn.

ANABAT sample - very windy
(BBT Ridge Cmpt. 608).

PLAYBACK SAMPLE: Cmpt. 604 (606, 605) --- trade, rise above creek.... (wind 10-25k).
3:30pm. Masked owl - no response

Powdered owl - no response

Sq. Glider - no response

Sooty owl - no response (too windy to hear).

Kooka - no response

YBG - no response.

7:30pm

LISTEN: 10 mins - BOOBOOK OWL.

Drive down to creek - frog sample - 400m drive walk. (moving at all).

Anabat Sample. 10:00pm Wind easing....

Drive back up to track dividing 606/605. Camp out at end /

Kooka - calling.... 10:30pm. → 20km.

set up camp.... END.

* Masked OWL CALLING - repeated (> 4)^{calls} -- pre-dawn listening - (1 hr).

6/8. time 5:19 am - Cmpt. 605/606. (unprompted calling...)

- calling from tree near my camp --- spotlighted --- didn't see ---

her several more calls... same spot... - (naked, cold, with spotlight in hand... M.O. flew off....)

START: Veg. Survey. 7:30am Sort out grass specimens... die species lists...

Tuesday - 26/8/97. Sample areas Cmpt. 606/605....

* Spurred-gull - budding - pre-flowering.

Polygala sp (specimen)? No.... X

Masked Glimy Black Cuckoo - Feed Tree... C.606. lay-ridge...

- Spend time with Kev, Noel etc... sort out maps, remaining surveys etc....

5:30pm. - dinner.... Sample BBT. (O.G.) area - Cmpt 607/608 (near S.O. site).

Cmpt. 608. BBT. area...

6:00pm - START NIGHT SAMPLE --- LISTEN: BOOBOOK OWL.

☉ - $< \frac{1}{2}$ moon, rising after 12:00pm. WIND: WSW. increasing in evening - 10km.
VERY DARK....

TEMP: 6:00pm - +12°C. - falling....

6:13pm - Sooty OWL - calling - (several bomb drops)... used very brief playback to call
- 2 (two) sooty-owls calling - spotlighted both - in BBT. nearby

and flying.... trilling calls... (Kevin and Rayn present... training/familiarity
(original calls came from both sides of ridge) ^{see} map. with S.O. - visual & call variations).

--- drive up road - YBG calling - see map. 150m from Bulldog Rd.

Flora & Fauna Surveys.

EWING & S.F. Cnpt. 604-608.

Robert Kooyman
8/97.

Tues. 26/8, 17 cont'd: NEW survey...

350m from intersection Bulldog Rd. & O.G. BBT track.... (wasn't track).

8:00pm. - Masked owl - several calls... ^{E. (S.A.)} while listening for YBG^s
Cnpt. 607. - light breeze only... then wind gusts....
(checked with Noel - no other playbacks in use.....)

9:15pm - end driving Spotlight transect 5.2kms.

Results: - YBG^s heard
- S.O. heard. } see map...
* - M.O. heard.

END transect at Playback Site above Little Rocky Ck.

listen: 10 mins. ... set up gear. - Target S.O., P.O. Sq.G.

* M.O. - started calling - toward Creek. continues calling
intermittantly.... flying around area... (see map).

9:20pm - still calling... then wait... attempt P.O. / S.O. / YBG playbacks....

S.O. - no response - M.O. returned - recommenced calling....

9:30pm - abandon playback... M.O. still 'screeching'.... flying around....
E.S.E.

... then quiet - 9:32pm....

YBG - no response. Sq.G. - no response

10:00pm - then YBG calling - see map.

Driving Transect (Spotlight) to C.607. track.... meet up with Noel & Nicole... ANABAT sample.

11:00pm - END ... set up camp 11:30pm - END.

WED. 27/8/97 - Flora & Fauna Survey....

* NB: This site looks good for Microchiro. bats
... creek flyway, cliff area, and
escarpment..... organic Noel / tonight!

8:00am. start - Mapping, Flora ID: etc....

Veg. Surveys. & walk down to check (RK) Patagale pericellata (Rock Wallowing)
scats & brief sighting..... confirmed Rock Wallowing - ♀ + juvenile....
pouch young....

- several other animals lower down - couldn't do any more without disturbing
them.... & other sightings through Ewinger Ck (steep area), linking to Bulldog Road
than Rocky (Timber) River, population.... actual Caribbe / (potential) for Planning...?

Move up to Bulldog Road..... 12:30pm. Sample creek line & adjacent Rocky areas.

- Rock Wallowing scats.... (Cnpt. 608). (S.O. habitat....)

- finish veg. sample.

- move to Cnpt. 607 - set up ANABAT on creek / cliff line.... 5:00pm.

cont'd →

EWINGORE S.F. Cnpts. 604-608.

FLORA & Fauna SURVEYS -

Robert Kooyman
8/97.

Wed. 27/8/97 - ANABAT sample - cke. Cnpt. 607. near cliff line....

100pm. LISTEN: 15 mins - YBG calling. (see map for location). - toward creek on dusk

WEATHER: Fine, clear, light breeze (wsw)., cool - Temp. +11°C at 6:30p..

☉ - $< \frac{1}{2}$ - moonrise after midnight....

- move to Cnpt. 604 ~~and eastern end~~....

Listen at 500m. intervals -:

1. Boobook(s) - 3 - calling....
2. Boobook (2) - calling..
3. Intersection with Building Rd - Boobook.... ~~turn left onto Building Rd...~~

- then travel back to see Noel & Nicole at ANABAT site (Cnpt. 604/607
- looks like additional species, possible - *Vespertilio regularis*? Cke/Perseus site).
definite - *Rhinodaphne megalanthe*...

- travel back to Building Road - ANABAT site....

- Tawny Frogmouth

Cnpt. 607/near end... END: 9:30pm set up camp 10:00 pm.

Thursday 28/8/97 - : my camp in Cnpt. 607 (bottom end of track, near creek).

8:00am - Eastern Gray Kangaroos : note Previous Records in same area.
* Glossy Black Cockatoos - ♀♂ around site. (see maps. - flying around area
- settling / feeding - intermittently...

1.D. Plant Specimens etc... ^{sch.2} *Arctostaphylos* - Cnpt. 608, rocky areas on lower
slopes / mid slopes down to more mesic gully lines. Predominantly in the
Fr. 74 areas, extending upshore. Elsewhere more restricted to lower slopes,
rocky areas, toward larger creeks.... NO: * *Oplismenus* *serotinus* ✓

- * Left to do -:
1. Part Cnpt. 606/605/604 - Nth & eastern boundary areas ^{Part done! /}
(veg. sample). ^{finish}
 2. Complete GBT. sample 608/607. Friday morn'g! ^{- Friday morn'g!}
 3. C 607 - from track to creek (western). ✓
 4. Nth. point C 604 - walk boundary area ✓
 5. *Arctostaphylos* - search creek areas - Ewingore cree. ✓ ~~part collected~~ ^{specimens...}

Terrain	Species	
very steep, rocky	Rock wallaby	Granite, Mtn-sed.
steep, partly rocky	Wallaroo	Open woodland, DSF.
step, moderate to moderate slopes, grassy	Whiptail wallaby	
& flats...	Whiptail	
	Eastern Gray Kangaroo	Refuge Outing
	Red necked wallaby	
lower slopes, gullies & above...	Swamp wallaby,	red necked pademelon.

THURS. 28th August, 1997.

EWINGAR S.F. CMPTS. 604-608.

(cont'd.)

FLORA & FAUNA SURVEYS.

Robert Kooyman.

NIGHT SURVEY: CMPT. 605.

START 6:00. LISTENING SITE: 30 min...

* 1.1 km down track into CMPT. 605...

WEATHER: Fine, clear, light breeze - no wind.

① - < 1/2 moon, after midnight. dark,

TEMP. +13°C 6:30 pm. falling in night...
+10°C 9:00 pm.

BOOBIE OWL - spotlighted near listening site... (my camp) CMPT. 605. track...

YBG - calling - 50m at 320° - NW.

BOOBIE COWB -

WALKING SPOTLIGHT TRANSECT -: targeting - Kooka, Pterodroma, YBG, Squirrel Glider, Rufous Bunting, GG, etc...

CAMP... along ridge...

- macropods (large) - moving - not seen...

- probable Rufous Bunting - but too quiet to be sure...

- white throated nightjar - several calls...

1 km... END. 9:00 pm. return to camp...

LISTEN: * YBG calling at camp... 9:20 pm. (measure distances tomorrow - mark on map).

* 9:45 pm. Kooka - 60m ± 10 → long session of calling - sounds like big male... (several minutes).

* 9:55 pm - Squirrel Glider calls - vocalised for 2 mins... intermittently... then glided to feed... very close... spotlighted Sq. G. in IRONWOOD -

< 15m down road - approx. 12m up... IBK are beginning to flower...

YBG was in an this area also... Acacia spp. & Euc. fibrosa... only blossom...

... Walked over 1 km and saw nothing... but back at camp it's another story...!!

10:30 pm. END. Only Large IBK are providing (the major) blossom resource at present

(critical winter blossom). Bird activity at dawn quite remarkable on these trees.

* Demonstrates importance of large tree retention for many species, early & prolonged flowering etc...

FRIDAY: 1. Check Loranthaceae ... & other mistletoes... - one marked at end of track... Nabarra sp?

2. Measure Road distance for Sq. G., K., YBG... from last night...

3. Finish Veg. sample - BBT. (Fr. 37).

Sq. G - only ⁽¹⁾ record - no playback responses - calls rarely - difficult to detect...

Pterodroma - excellent habitat, known from area... difficult to detect... no records!

2:00 am - YBG^s calling from IBK near camp (blossom).

* Squirrel Glider - when calling was approx. 12m up IBK, head down (tail up), calling... stopped calling when he changed position...

Clarifying overall Sq. G. distribution would require more survey effort.

Fri. 25th August, 1997

EWINGAR S.F. Capt. 604-606.
Flora & Fauna Survey.

Robert Kooyman

6:00 am. Diurnal Bird Survey - on flowering IBK.

Hare - swift parrot, honeyeaters etc...

ADD TO REPORT - Methodology..... 'one of us, (Kooyman), camps out in the survey area every night, moving from site to site (habitat to habitat) during the course of the survey. This provides extended listening time, a higher incidence of incidental / opportunistic records (sightings, calls etc.), and overall, a substantial increase in 'survey time / effort'.

NOTE: no records for SuperGlider - no calls..... at all...

Conduct search for 'V'-notch trees adjacent to last night's records.....

Sq. Glider hollows etc.... Koala.... etc. This area has - Koala

large / exposed... Sq. G.

(trunk hollow... Y86

M.O.

* LOCATED MARKED OWL NESTING HOLLOW. (30m to road..... (30m to my camp!!) (HOTSPOT!!).
large Spotted-gum. ^{80m} 30m to road..... (no calls but right!).

M.O. sitting at edge of hollow - keeping an eye on me --- no calls, motionless, dark face mask, including line from top of head to beak....
spotted chest / underparts, dark back,

face mask - dark brown, edged with tan / buff colour. (darker grey / brown on top of head and onto back.) leading edge of folded wings / tan-buff, then darker grey..... will mark out!.....

* Shot off a roll of 24 / 400 a.s.a. with Telephoto fitted to camera....
(happy they work!!)....

NB: Appears very sensitive to any noise or disturbance, comes out to investigate as soon as I walk down towards tree.....

* All Marked Owl records this trip were from unprompted calling (no playback),
or 'daylight' sighting at nest / hollow. (and subsequent spotlight / visual... in flight)... 25/8.

850 metres to minor track intersection

Capt. 606 / 605 boundary - 900m from M.O. site.

1.1 kms from start of track to M.O. site. & (Sq. G. Y86. Koala) area....

605 / 606 Boundary.... on main track...

FLORA and FAUNA SURVEY of COMPARTMENTS 604 -608. EWINGAR STATE FOREST.

-prepared by Robert M. Kooyman, [FA- flora and fauna] Casino District. 8/97.

Results of field surveys are provided as field diary notes, data sheets, and species lists, with scheduled and target species records provided as AMG co-ordinants. Maps provide details of sample sites, playback locations, harp trap locations, sonar detection sites, species records and distributions, and extent and location of the various transects and traverses undertaken.

Introduction:

Flora and Fauna Surveys were conducted by Kooyman, [19/8/97 to 29/8/97], with Harvey and Douglas, et al [SFNSW] 19/8/97 to 28/8/97, assisting with the integrated koala transects, and the general and target species fauna surveys.

Assisting the core survey team [with surveys of all fauna groups] were Robyn Herklots, and Nicole Harvey.

Andrew Benwell [consultant botanist] assisted with the identification of a number of prepared botanical specimens of dry forest taxa.

Brad Law [SFNSW-Research] assisted by checking sonar recordings, and providing comment on the preliminary results and interpretations, of recorded microchiropteran bat calls.

General Description of Survey Area:

The five compartments cover an area of 1114 hectares, with the proposed net loggable area adjusted to approx. 733 hectares, after deletion of cleared areas, Ft.220, mapped Old-growth, and standard riparian exclusions.

Geology appears to be dominated by two main elements: the dominant uplifted and variously eroded meta-sediments, and the igneous intrusion of granitic rock in the north-west of the survey area. Soils are predominantly of shallow to moderate depth, with varying amounts of exposed rock, [mostly on steeper slopes]. Soils of granitic origin vary from grey, to yellow-brown sandy clay, to clay loams, in the north-west corner of cmpt. 608, with the more extensive areas of meta-sediment rock [parent material] forming mostly grey-brown, [fine textured] clay, to clay loam soils.

Altitudinal range varies from 630m. to 190m. Slopes are generally moderate, to very steep.

The vegetation of the area is generally illustrated by the forest type map [SFNSW]. Species lists for each forest type have been compiled and are appended to this report as field notes. These provide an indicative sample of the various habitats, floristic alliances, forest types, transitional boundaries and overlaps.

The sequence of forest types largely follows the altitudinal, topographical, and soil gradients, and variations, with most areas dominated by Ft.74 - Spotted-gum / Iron-bark / Grey-gum / Stringy-bark, with smaller areas of Ft.65 - Red-gum, Iron-bark, Grey-gum, Rough-barked Apple. Rainforest vegetation is generally restricted to the gully heads and creek-lines occurring adjacent to, and in association with Ft.53, [Lophostemon confertus]. Along the rocky, creek edges there is a distinct riparian alliance of Ft.53 with *Tristania laurina*, *Backhousia myrtifolia*, *Acmena smithii* var. *minor*, -[see species lists for details]

Flora survey methodology: Plant species recorded from each forest type [and habitat] were listed, and frequency of occurrence and stratum [canopy, sub-canopy] indicated. Walked traverses were mapped. [See field notes attached.]

Particular attention was directed to locating and recording the distribution and numbers of ROTAP plant species [Briggs and Leigh, 1995 Revised], and Schedules 1&2 [NSW Threatened Species Act, 1995] plant [and animal] species.

Fauna survey methodology: Includes application of the pre-logging / roading survey design forming part of the Threatened Species Protocol [3/6/97], incidental records collected during flora survey and habitat assessments, as well as the results of integrated koala transect surveys, and includes -:

1. walked spotlight transects, one kilometre long [minimum], 100 watt light, [with dimmers fitted].
minimum 10 minute listen at start and finish.
2. call playback for target species. Nocturnal -: powerful owl, masked owl, sooty owl, yellow bellied glider, koala, squirrel glider.
Diurnal -: bush thick-knee, regent honeyeater.
Calls are started after a substantial listening period and played briefly at low volume. This is done to avoid disrupting localised activity of the target or other species which may respond, [or be disturbed], and to maximise knowledge of actual habitat use, rather than gaining responses from further afield, [at least initially]. Louder playback calls are then initiated if no clear response is heard.
3. transect and incidental scat collection and identification. - results of predator, and [remaining unidentified] non-predator scat analysis provided by Barbara Triggs. - **not yet available.**
4. track identification on sandy or soft sections of roads, tracks and creek areas.
5. extended listening time for calls, [variable sample length, and dependent on conditions], targetting all playback target species listed above, and including other seasonally variable species such as swift parrot, and regent honeyeater.
6. harp trapping and sonar detection for bat species.
7. frog surveys - creek transects, and habitat searches.
8. search for all other features listed in the Threatened Species Protocol Survey Design while applying the above flora and fauna surveys. [this will be supplemented by the SFO while marking out and supervising harvesting operations. For an example see yellow- bellied glider section below].
9. hair-tube sampling - no hair-tube sampling was undertaken on this survey, thus potentially under sampling for a number of terrestrial and arboreal species, eg. tiger quoll, rufous bettong, brush-tailed phascogale. Conservation protocols should be applied for these species, to ameliorate potential impacts of proposed operations
10. one of us, [Kooyman], camps out in the survey area every night, moving from site to site, [habitat to habitat] during the course of the survey. This provides a substantial increase in; listening time, incidental and opportunistic scheduled species records, diurnal and nocturnal survey effort, and overall survey time/effort.

Rare, Threatened, or Significant Plants recorded in Ewingar SF. compartments 604-608.

Isotoma armstrongii - a specimen resembling this species was collected during the survey. Specimen will be sent to Herbarium for identification/opinion on taxonomy.

Arthraxon hispidus - [sch.2, V] ROTAP - [3VC+]. Not recorded on this survey, but the area provides possible habitat. All collected specimens were *Oplismenus aemulus*.

Results of Fauna Surveys:

The survey was limited to winter, thus missing the optimum seasonal sample for some species groups, eg. bats, frogs, reptiles, and seasonal diurnal birds.

1. Glossy Black Cockatoo [*Calyptorhynchus lathami*] - sch.2, this species was located in all of the surveyed compartments either by identification of feed sites or actual sightings. Suitable habitat includes much of the spotted-gum, grey-gum, ironbark, stringy-bark, association [Ft.74], the red-gum [Ft.65], and blackbutt [Ft.37] associations, and areas in the other forest types where *Casuarina* and *Allocasuarina* species are present, [for example the riparian associations]. Several sites with evidence of extensive Glossy-black cockatoo feeding activity were located and marked in the field. No nest hollows were located. Application of the Conservation Protocol and retention of all known feed trees, together with searches for all these features by SFO during mark up stage of operations, should assist this species.

2. Square tailed Kite [*Lophoictinia isura*] - sch.2, not recorded on this survey, but is likely to use the larger river valleys, flood plains, and woodlands of this area. Generally good potential habitat, however this species is thought to prefer less steep terrain.

3. Red Goshawk [*Erythrorhynchus radiatus*] - sch.1, not recorded on this survey, but there are records for this species from the Clarence and Richmond River valleys and associated forests. This species is thought to favour the higher nutrient / higher productivity tall open forests and riparian vegetation of the larger river valleys, where prey species are abundant. However, it extends up to 1000 metres in altitude in suitable forest. [Debus et al, 1991]

4. Bush Thick-knee [*Burhinus grallarius*] - sch.1, not seen or heard on this survey but excellent habitat occurs over much of the survey area.

Searches for this species were incorporated into the general flora traverses. Playback sampling was undertaken at a number of sites in these compartments, and one of us [Kooyman] camped in suitable habitat over the two week survey to extend available listening time.

5. Regent Honey-eater [*Xanthomyza phrygia*]- sch.1, not recorded on this survey. Nectar resources were limited at the time of survey to several species of *Acacia* and a limited number of larger diameter *Eucalyptus fibrosa*, which were visited by a large number of honeyeaters, [yellow tufted, fuscous, white-cheeked, etc.] and other species by day, and a number of arboreal mammals by night.

6. Swift Parrot [*Lathamus discolor*]- sch.2, not recorded on this survey. As described above [Regent honeyeater], the nectar resource was limited to just a few species during the survey time, [and one species of ironbark in particular]. Only the larger trees of this species were providing the nectar resource, and several of these were surveyed in the early morning hours for diurnal bird activity, [see species lists].

7. **Powerful owl** [*Ninox strenua*] - sch.2, no records for this species on this survey. Extensive playback and listening was conducted for this species over the survey period. There are records for this species nearby and it remains likely to occur, [in what appears to be good powerful owl habitat in these compartments].

8. **Masked owl** [*Tyto novaehollandiae*] - sch.2, Recorded on several occasions during this survey from unprompted calling in cmpts. 604, 605, 606, and 607. [see AMG records and field notes for details]. This area provides excellent open woodland and dry forest habitat for the Masked Owl. A roost/nest site was located, marked, and photographed in Cmpt.605. The roost/nest site is located in a *Eucalyptus/ Corymbia maculata*, Spotted-gum, approx. 80cm D.B.H., with a large, main stem hollow. Photographs are available, clearly showing the bird at its nest/roost site. Masked owls occupy large home-ranges [min.500-1000ha], with the resident pair utilizing separate roost sites in the home-range area.

9. **Sooty owl** [*Tyto tenebricosa*] - sch.2.- recorded on this survey in Cmpt.608, and adjacent in 607, [see records and mapping for details]. The habitat in this area is in the drier extreme for Sooty-owl, and appears to be the most northerly distribution of this species in the Gibraltar Range/ Washpool/ Ewingar complex. Records on this survey were from listening only, with a few playback calls [<10secs], used to draw the bird in for visual confirmation, and for species identification training for two of the surveyors in the team who had heard but not seen this species. Visual records were obtained on two occasions, with approx. 30, and 10 minutes of viewing time, respectively. [see maps and field notes for details]

10. **Brush-tailed Rock Wallaby** [*Petrogale penicellata*] - sch.2. This species was located in the north of Cmpt.608, adjacent to Bulldog Rocks, [on granite, in the Timbarra River catchment], and across into the top end of cmpt.608, where a potential connecting corridor of habitat extends down one side of the Ewingar Creek tributary. Brush-tailed rock wallaby scats from this area were collected and compared to known brush-tailed rock wallaby scats from the Bulldog Rock area, providing evidence of a possible link with several other small populations of Rock Wallaby located on meta-sediments in Cmpts.604, and 607, in the Ewingar Creek catchment.[sample scats also sent onto Barbara Triggs for confirmation]. The records from these compartments constitute a localised range extension for this species.[see maps and species records for details]. Observations included individual adults, and groups with females with pouch young, both at the Bulldog Rock and other sites. At night, small, grazing groups of brush-tailed rock wallabies [occasionally forming mixed grazing groups with whip-tail wallabies] were observed grazing in the less steep and rocky areas approx. 100 - 200metres from the steep rock areas regarded as the rock wallabies core habitat. By day, and if disturbed at night, the rock wallabies retreat to the shelter of the very steep, and rocky terrain.

11. **Tiger Quoll** [*Dasyurus maculatus*] - sch.2, suitable habitat occurs in the area [particularly the higher altitude and old-growth areas of cmpt.608], but no tracks or sightings were recorded on this survey. Searches of rocky areas suitable for latrine sites or den areas were integrated into the general flora and fauna surveys, and the transect based 'integrated Koala surveys', and target species surveys. These will be

supplemented by SFO habitat and 'fauna features' searches during mark up stage of operations.

12. Yellow bellied Glider [*Petaurus australis*] - sch.2, this species was recorded in cmpts.604, 605, 607, and 608. Retention of suitable habitat trees, and all feed trees [v-notch], together with the maintenance of floristic diversity in the *Eucalyptus* spp. to maintain essential winter feeding nectar resources, and the riparian exclusions, will help ameliorate further potential impacts on this species. Records accumulated for the species during this study provide an indication of current distribution of yellow-bellied gliders in this forest area, [given the limitations of a single season sample], and subsequently may indicate the possible location of potential nest/den trees and feeding sites and areas. [refer to AMGs for locations of feed sites and animal vocalisation records]. The provision of this data should allow the S.F.O. to concentrate searches for V-notch feeding incisions, and potential den-site hollows, in areas of known habitat and surrounding areas of the same forest type, greatly increasing the likelihood of locating such sites.

In this part of Ewingar SF yellow-bellied glider incisions have been located on Spotted-gum and Grey-gum, indicating these species as preferred, but this may vary across the survey area.

At the time of the survey, winter feeding nectar resources [for a number of species including yellow-bellied glider] were apparently limited to the larger sized ironbarks, with smaller trees of this species either still in bud or showing no sign of flowering. Buds were forming on *Eucalyptus* [*Corymbia*] *maculata*, though these were immature.

13. Squirrel Glider [*Petaurus norfolcensis*] - sch.2. Recorded in cmpt.605 on this survey. No response to playback calls. Habitat is excellent, but survey results show only one record for Squirrel Glider on this survey, possibly indicating the difficulty in detecting this species, [either visually or by vocalisations or responses to playback], more than an actual indication of presence or absence over the remainder of the survey area. It is interesting to note that there were no records for Sugar Glider from this survey. Sugar Gliders are generally very vocal and the detection rate is subsequently high, both from audible calls and visual/spotlight sightings, indicating the possible absence [of sugar glider] from the survey area, in what appears to be high quality Squirrel Glider habitat.

14. Koala [*Phascolarctos cinereus*] - sch.2, - pellets/scats, sightings, and vocalisations, were recorded for this species, during this survey. Results of Koala transect surveys are provided separate to this report, but indicate relatively low, to intermediate use over most of the area. Cmpts.606, and 608 are regarded as intermediate use areas as they have records of sightings, vocalisations and scats, while the other compartments had only a low incidence of scats along transect lines. Habitat appears excellent with a relatively high number of primary and secondary browse species such as -: *Eucalyptus microcorys*, *E.propinqua*, *E.seeana*, *E.acmenoides*, *E.fibrosa*, *E.umbra*, *E.saligna*.

15. Rufous Bettong [*Aepyprymnus rufescens*] - sch.2. Recorded several times during this survey. Generally good to excellent habitat throughout the survey area. A range of non predator scats were collected. **Scat analysis results are not yet available**, [only those not identified in the field by comparison to labelled scat specimens

provided by Barbara Triggs, or the scat keys in her book, have been sent on for identification].

16. Brush tailed Phascogale [*Phascogale tapoatofa*] - sch.2, not recorded this survey but the area has excellent dry woodland /open forest habitat. No hair-tubing or trapping was undertaken on this survey, thus effectively undersampling for a species which is otherwise difficult to detect.

17. Long -nosed Potoroo [*Potorous tridactylus*] - sch.2, not recorded in the survey area. The area is very open, with only limited areas of low, dense, vegetation to provide suitable habitat. Scat analysis results not yet available.
Note record from moister area of Ewingar SF from a road sighting during travel, this survey.

18. Parma Wallaby [*Macropus parma*] - sch.2, recorded on a number of occasions both in vehicle based spotlight surveys and walking spotlight transects, grazing in drier forest types [Ft.37,74], but still relatively close to gully-lines or gully-heads with thicker, moist forest vegetation.

19. Black-striped Wallaby [*Macropus dorsalis*] - sch.1, not recorded this survey. A number of runways and tracks were investigated as possibly indicating this species, however all scats, tracks, and sightings appeared to be of the swamp wallaby, red-necked wallaby, whip-tail wallaby, brush-tailed rock wallaby, wallaroo, and eastern grey kangaroo. This species was not detected visually, and on-site scat analysis did not indicate its presence, [other collected but not identified scats have been sent to Barbara Triggs for identification].

20. Red-legged Pademelon [*Thylogale stigmatica*] - sch.2. Not recorded this survey. Possible habitat in the moist forest gullies and adjoining forest types, however the area is generally very open, and lacks some of the critical moist forest habitat components generally associated with this species. These gully areas were relatively under sampled by the walking spotlight transects.

21. Microchiropteran Bats - [optimum survey season Oct. to late March. Survey Protocol requires a minimum of two harp traps for two nights per. 200ha in suitable habitat]. In this case extra Anabat Sonar sites were sampled to overcome the lack of accessible *Myotis adversus* and *Kerivoula papuensis* habitat, and to provide a better overall sample of microchiropteran bats. Overall, a six night winter sample was conducted, with records for possibly eight species, three confirmed to species, and five possible. [see maps and data sheets for details]

Miniopterus australis -sch2, sonar [Anabat 5] records.

Miniopterus schreibersii - sch.2, Harp trap record, and Anabat sonar - release call.

Mormopterus spp. - sonar records - possible

Mormopterus norfolcensis - sonar records - possible

Vespadelus pumilus - sonar record - possible

Nyctophilus gouldi - spotlight/ visual record [probable]

Vespadelus spp. - sonar record - possible

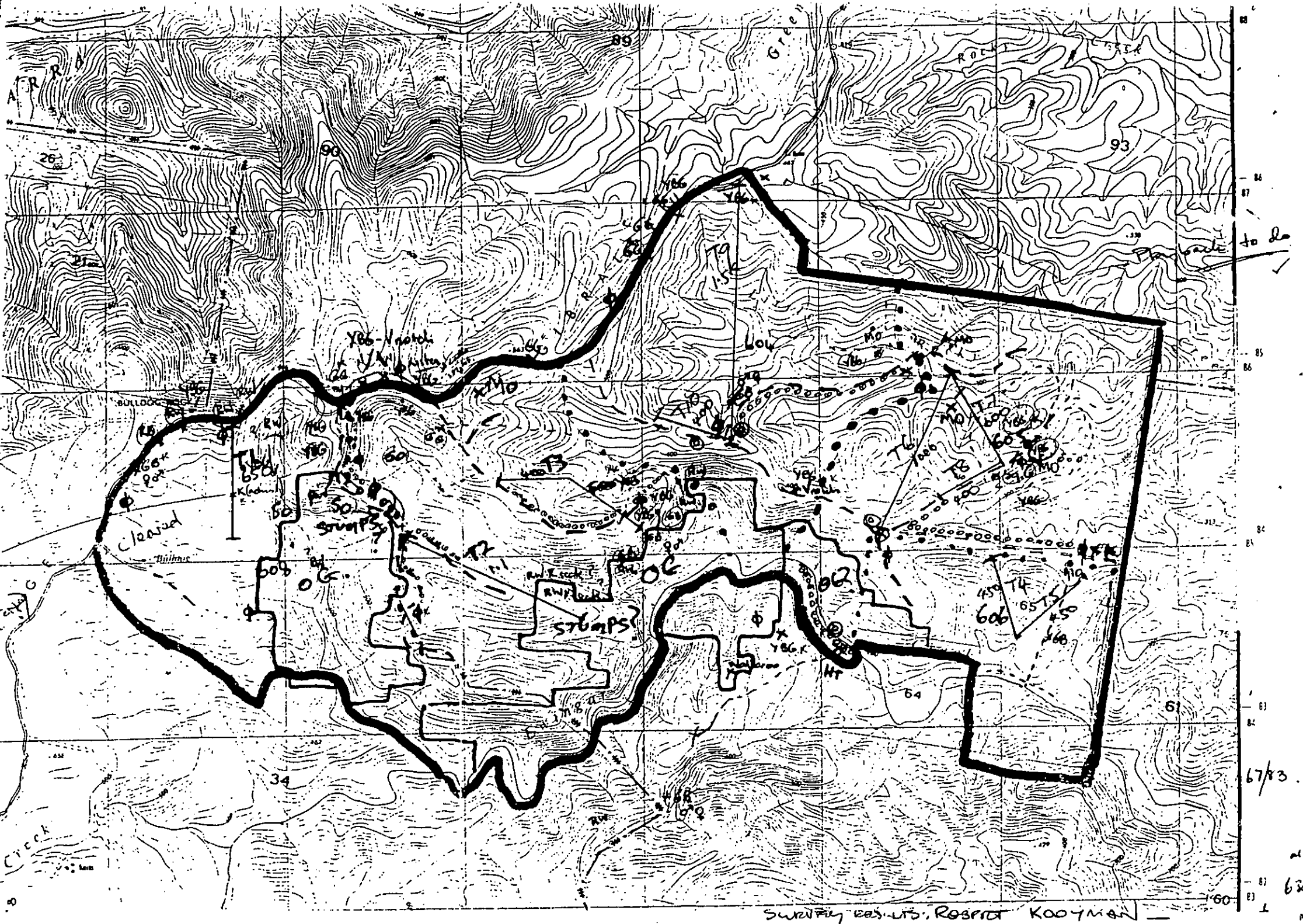
Rhinolophus megaphyllus - sonar record

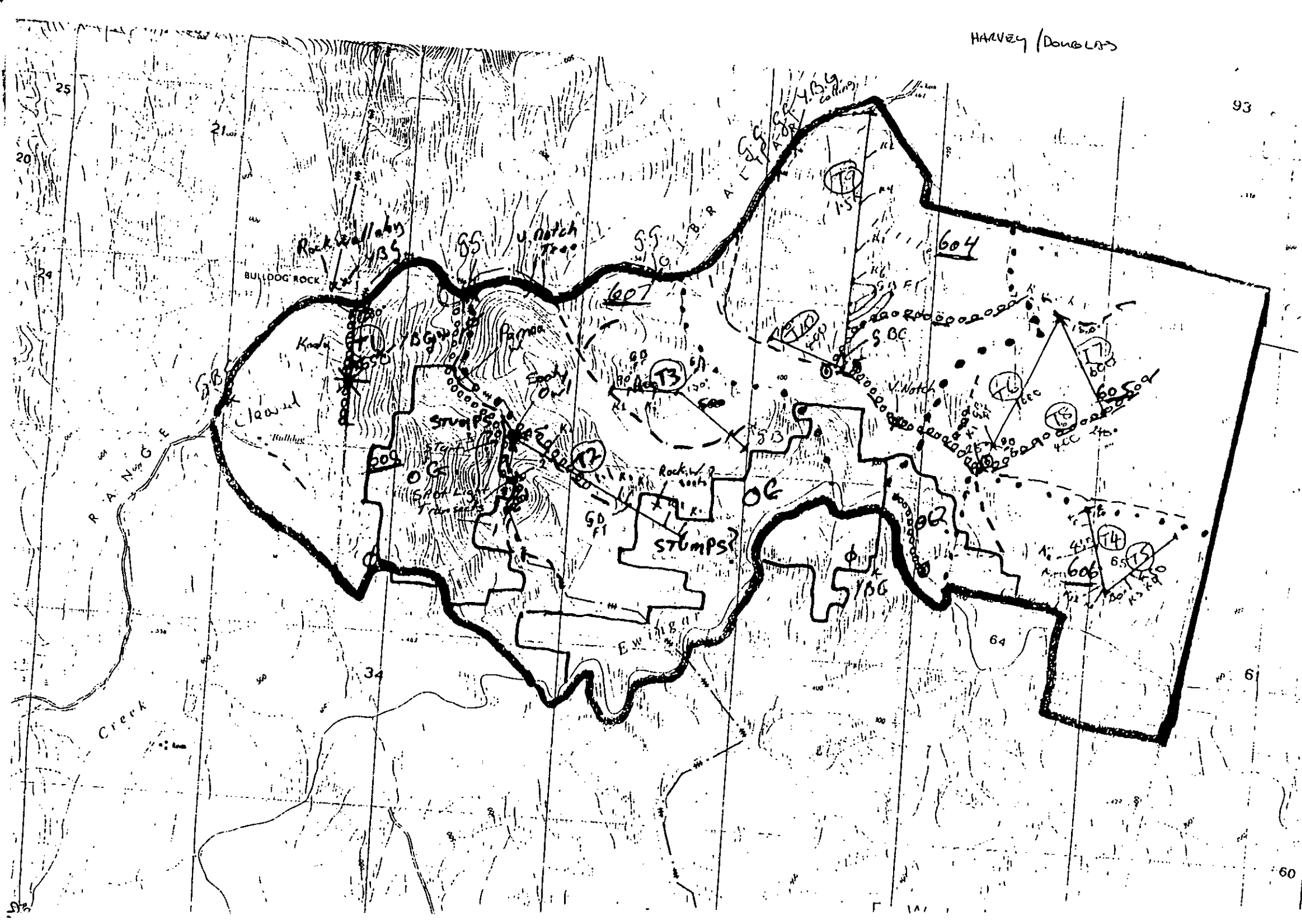
Bat work was done by Noel Douglas [and assisted by Harvey,N., Harvey,K., Herklots,R., and Kooyma]. Sonar calls were recorded directly onto laptop computer and later compared to library calls by Noel Douglas, and verified [where possible] by SFNSW Research Division - Brad Law. Sonar calls are ascribed file names and are retained for future reference or verification. A comprehensive library of calls for the NE of NSW is not yet available, limiting our ability in many cases to ascribe species names to recorded calls. We are currently expanding our call library and this situation should steadily improve to the limits of the technology,[and with all survey calls retained for future review.]

No mine shaft or cave areas were detected. Any such sites located during operations should be buffered from proposed operations to ameliorate potential impacts on roost/maternity/torpor sites.

Harp trapping for *Kerivoula papuensis* and *Myotis adversus* in suitable habitat, [flyways and larger pools along rainforest creeks], resulted in nil captures for these species. One harp trap was located upstream on Ewingar Creek, [outside the survey area, sensu-stricto], in known *Kerivoula papuensis* habitat, to obtain experience with this species.[no captures of this species, *Miniopterus schreibersii* record above from this location]

22. Frog species - Seasonal constraints were a limiting factor and resulted in only two call records for frogs.[*Crinia signifera*, and *Litoria* sp.] Frog habitat searches were conducted on several of the major creeks and gullies, with no result. Temperatures were low, [<10c at night, -see field notes for daily records],and conditions were dry.





SURVEY EFFORT (DISTANCES IN KMS.)

101

Casino District
Reporting of Scheduled - Fauna Sightings

EWINGAR S.F. Cmp. 604 - 608

August, 1997.

OBSERVER: ROBERT KOORMAN

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMG Reference	General Comments (eg at log dump, road side, Forest Type etc)
11/8/97	EWING.	604	1	GREATER GLIDER	ADULT in Grey-gum.	4 48650	67 86725
19/8/97	EWING.	608	1	RUFous BETTING	ADULT / Gummy neck.	4 45300	67 85700 -
20/8	EWING.	BULLDOCK ROCKS (adj. 608)	11	BROWN-TAILED ROCK WALLABY	Adults - pouch young	4 45500	67 85900
20/8	EWING.	"	"	BTRW	Adult	4 45700	67 85900
20/8	EWING.	"	"	BTRW	Adult with pouch young.	4 45800	67 86000
20/8	EWING.	607	1	GREATER GLIDER	Adult in (TWO).	4 46900	67 85730
20/8	EWING.	607	1	Yellow-bellied Gl.	calls	4 48150	67 85350
20/8	EWING.	607	1	YBG	calls & spotlighted.	4 48100	67 85250
21/8	EWING.	607	11	BTRW	Adult & pouch young.	4 48225	67 85400
21/8	EWING.	607	11	Glossy-Black Cockatoo	Feeds tree.	4 48200	67 85200
21/8	EWING.	607	11	BTRW	Adult ...	4 47975	67 84900
21/8	EWING.	607	11	GB C	Q O - feeding.	4 47950	67 85000
21/8	EWING.	607/8	1	Sooty OWL	calls.. (dive bomb).	4 46000	67 85300
21/8	EWING.	607/8	1	Sooty OWL	calls.. chattering. SPOTLIGHT - 50m.	4 46540	67 85250
21/8	EWING.	608	1	YBG	calls	4 46200	67 85650
21/8	EWING.	607	1	YBG	calls	4 46450	67 85820
21/8	EWING.	?	1	GB (c).	Q O Adult - pair.	4 48150	67 83650.
25/8	EWING.	605/6	1	KOALA	calls ... > 20 sec...	4 45050	67 84975
26/8	EWING.	605/6	1	MASKED OWL	calls, brief spotlight.	4 45400	67 84925 - perched then flying
26/8	EWING.	606	11	GB(c)	FEED SITE.	4 45250	67 84500 - two birds..
26/8	EWING.	607/8	1	Sooty OWL	calls, then spotlight...	4 46540	67 85250
26/8	EWING.	607	1	Sooty OWL	calls,	4 46650	67 85600
26/8	EWING.	608	1	YBG	calls	4 46200	67 85750
26/8	EWING.	607	1	YBG	calls	4 46650	67 85900
26/8	EWING.	607	1	MASKED OWL	calls (repeated)	4 47100	67 85950. flying...
26/8	EWING.	604	1	MASKED OWL	calls	4 49300	67 86250
26/8	EWING.	605	1	MASKED OWL	calls	4 49750	67 85800
26/8	EWING.	605	1	MASKED OWL	calls	4 49750	67 86150

(*) Type of Inspection

- 1. Night Time Surveys
- 2. Follow-up Clearance Inspection
- 3. Rejects Inspection
- 4. Regeneration Inspection
- 5. Road Line, Dump Sites Inspection
- 6. Timber Assessment

- Marking Boundaries, Filter Strip or Conservation Areas
- 8. Reports from Log Faller
- 9. Head Disposal Burning
- 10. Harvesting Planning
- 11. Other
- FLORA & FAUNA surveys.

GG - Greater Glider
YBG - Yellow-bellied Glider
K - Koala
BTRW - Brown tailed Rock wallaby (ew)
GB(c) - Glossy Black Cockatoo

SO - Sooty owl
MO - Masked owl
RB - Rufous Bettong
PW - Parma Wallaby

EWINGAR SF.

Cnpt. 604 - 608.

Harvey & Douglas records

Casino District
Reporting of Schedule 12 Fauna Sightings

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMC Reference	General Comments (eg at log dump, road side, Forest Type etc)
19-8-97	Ewingar	605	Koala	GBC FT		4-49-380	67-85-260
21-8-97	Ewingar	604	10	V. Notch Tree		4-49-840	67-85-350
21-8-97	"	608	10	GBC	2 adults	4-45-030	67-85-220
19-8-97	"	604	1	Greater Glider	1 adult	4-48-080	67-86-700
19-8	"	604	1	"	1 adult white color	4-48-150	67-86-850
19-8	"	607	1	"	1 adult	4-47-410	67-86-100
19-8	"	607	1	"	1 adult	4-46-350	67-85-900
26-8	Ewingar	604	10	Glossy Black cockatoo	2 adults	4-48-500	67-85-700
26-8	"	608	1	Sooty owl	2 adults	4-46-650	67-85-180
26-8	"	607	1	Parma wallaby	1	4-46-320	67-85-920
25-8	"	"	1	YBG	1 (heard calling)	4-48-770	67-84-540
27-8	"	608	1	YBG	1 (heard call)	4-45-900	67-85-550
26-8	"	"	1	Parma wallaby	1 sighting	4-44-700	67-80-740
26-8	"	"	1	Parma wallaby	2 sighting	4-46-770	67-80-550
27-8	"	"	1	Koala	sighting	4-45-700	67-85-470
27-8	"	"	1	Brown-tailed rock wallaby	sighting	4-45-570	67-85-900
27-8	"	"	1	Long-nosed potoroo	sighting	4-43-460	67-82-820
27-8	"	"	1	YBG	heard call	4-45-650	67-85-950
26-8	"	"		G.B.C.F.S		4-47-350	67-84-800
				G.B.C.F.S		4-47-320	67-85-440
				G.B.C.F.S		4-47-370	67-85-450
				G.B.C.F.S		4-47-560	67-85-430
				G.B.C.F.S		4-49-400	67-85-260
						4-48-500	67-85-140
						4-48-500	67-85-010
						4-48-510	67-85-950
						4-48-500	67-85-920
						4-48-500	67-85-880

(*) Type of Inspection

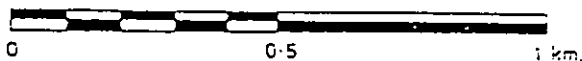
1. Night Time Surveys
2. Follow-up Clearance Inspection
3. Rejects Inspection
4. Regeneration Inspection
5. Road Line, Dump Sites Inspection
6. Timber Assessment

7. Marking Boundaries, Filter Strips or Conservation Areas
8. Reports from Log Failer
9. Head Disposal Burning
10. Pre-Harvesting Planning
11. Other

Check my other records - Rock Wallaby? KH.

Compartment 604

Scale — 1:15 000



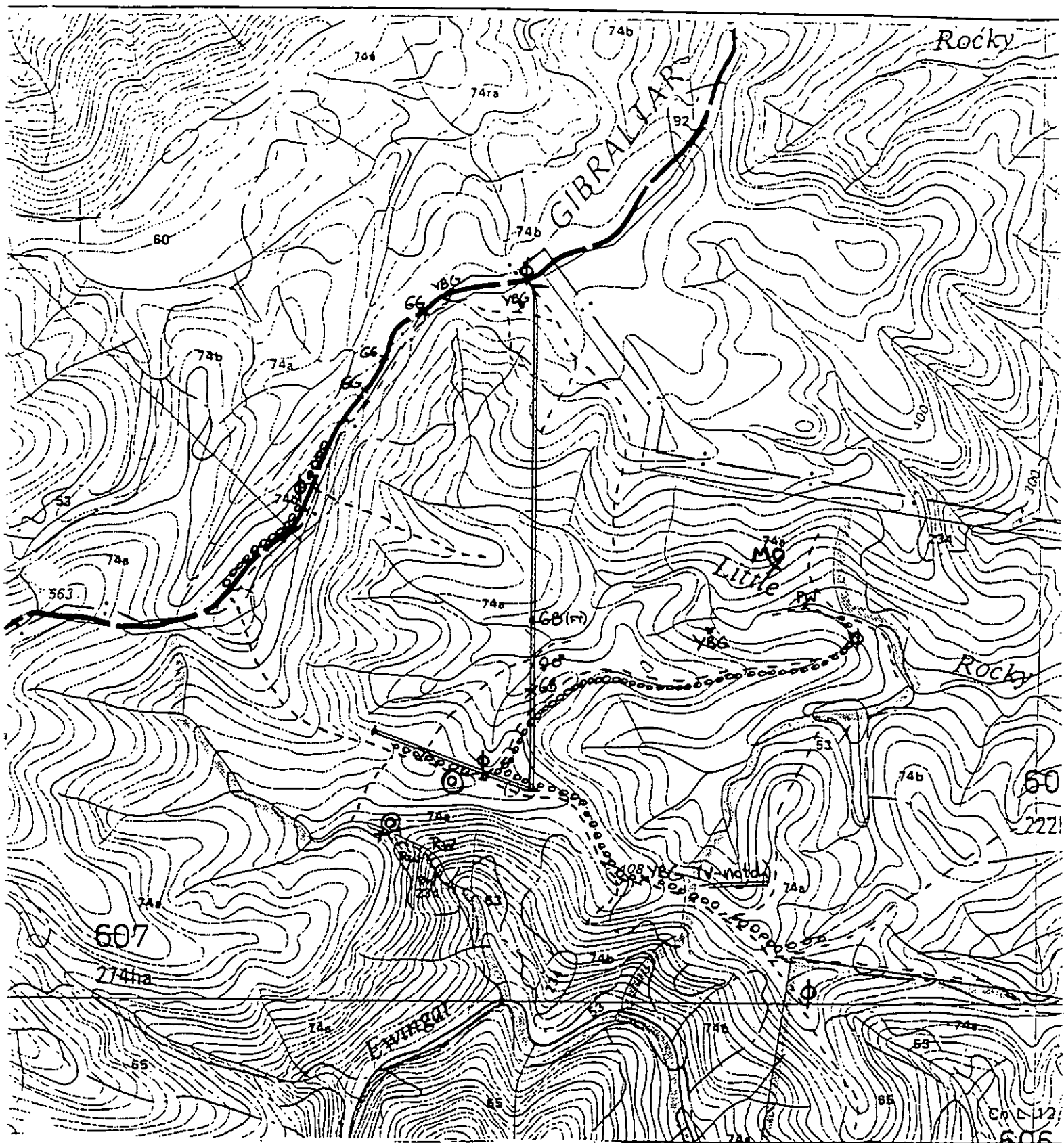
CB 1845

C-231

N 156

Contour interval 10m

G N



Compartment boundary

Filter strips

Protection strips

Road, minor road, dump site

Wet weather dumps shown in red

ANABAT - SONAR SITE. X HP - Harp-trap Site.

SPOTLIGHT TRANSECT (walking).

Special emphasis

random transect - Flora & Fauna.

Integrated Koala transects.

φ - playback/listening site. RW - Rock Wallaby...

YBG - yellow bellied Glider. GG - Greater Glider.

MO - Masked Owl. PW - Parma wallaby

GB - Glossy Black Cockatoos. FT = Feed Tree

Compartment 605

Scale — 1:15 000

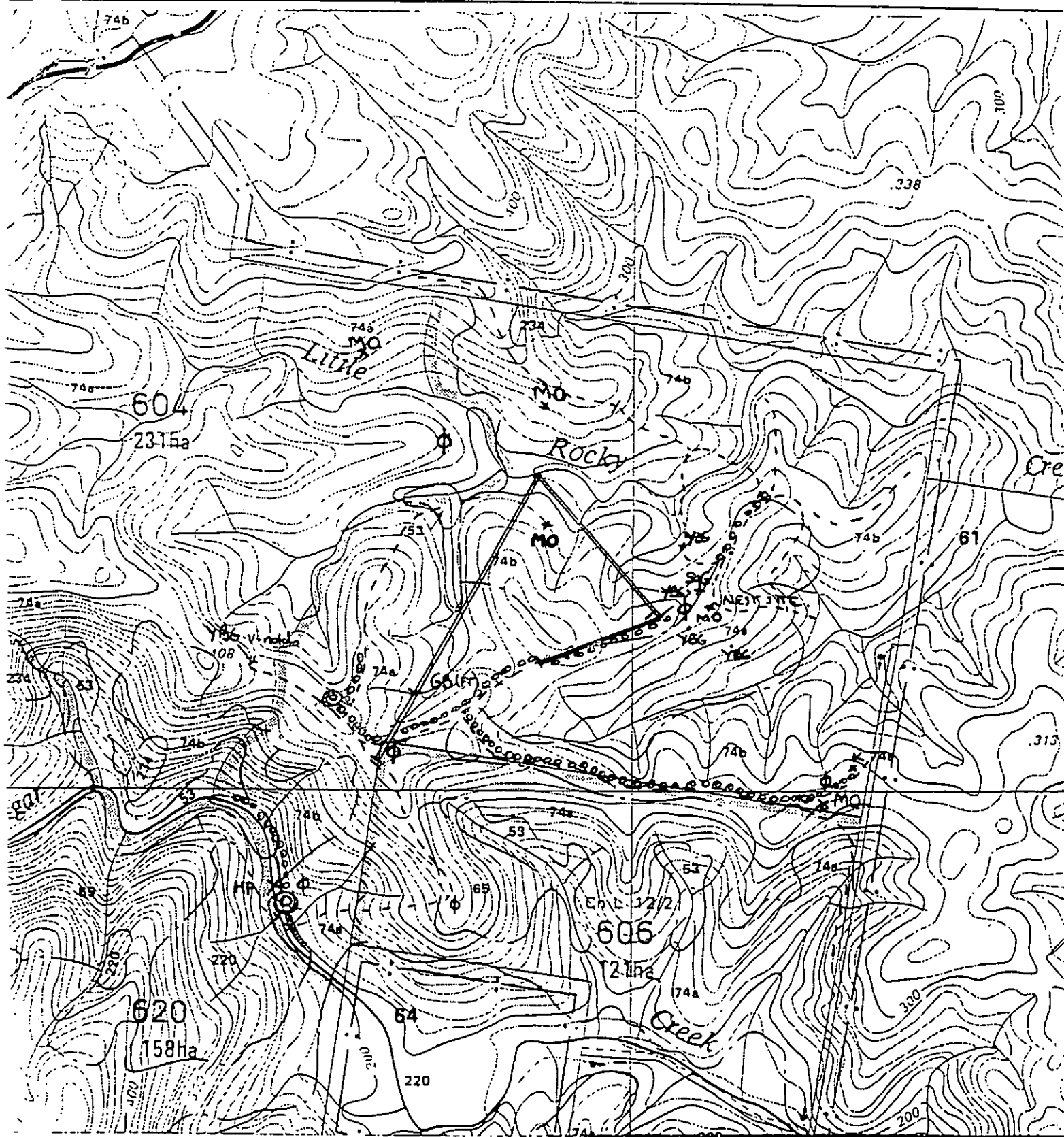
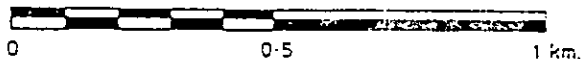
CB / 845

G 231

N 195

Contour interval 10m

G N



Compartment boundary

Filter strips

Protection strips

Road, minor road, dump site

Wet weather dumps shown in red

Special emphasis

random flora & fauna transects

Integrated Koala transects

φ - Playback & listening site

MO - Masked owl (fruit site)

YBG - Yellow-bellied Glider K - Koala

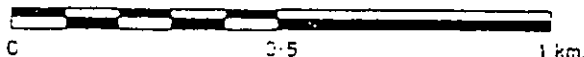
Sq.G. - Squirrel Glider GB(n) - Glossy Black Cuckoo

© - ANABAT SONAR SITE. X HP - HARP TRAP.

00000000 - SPOTLIGHT TRANSECT (walking).

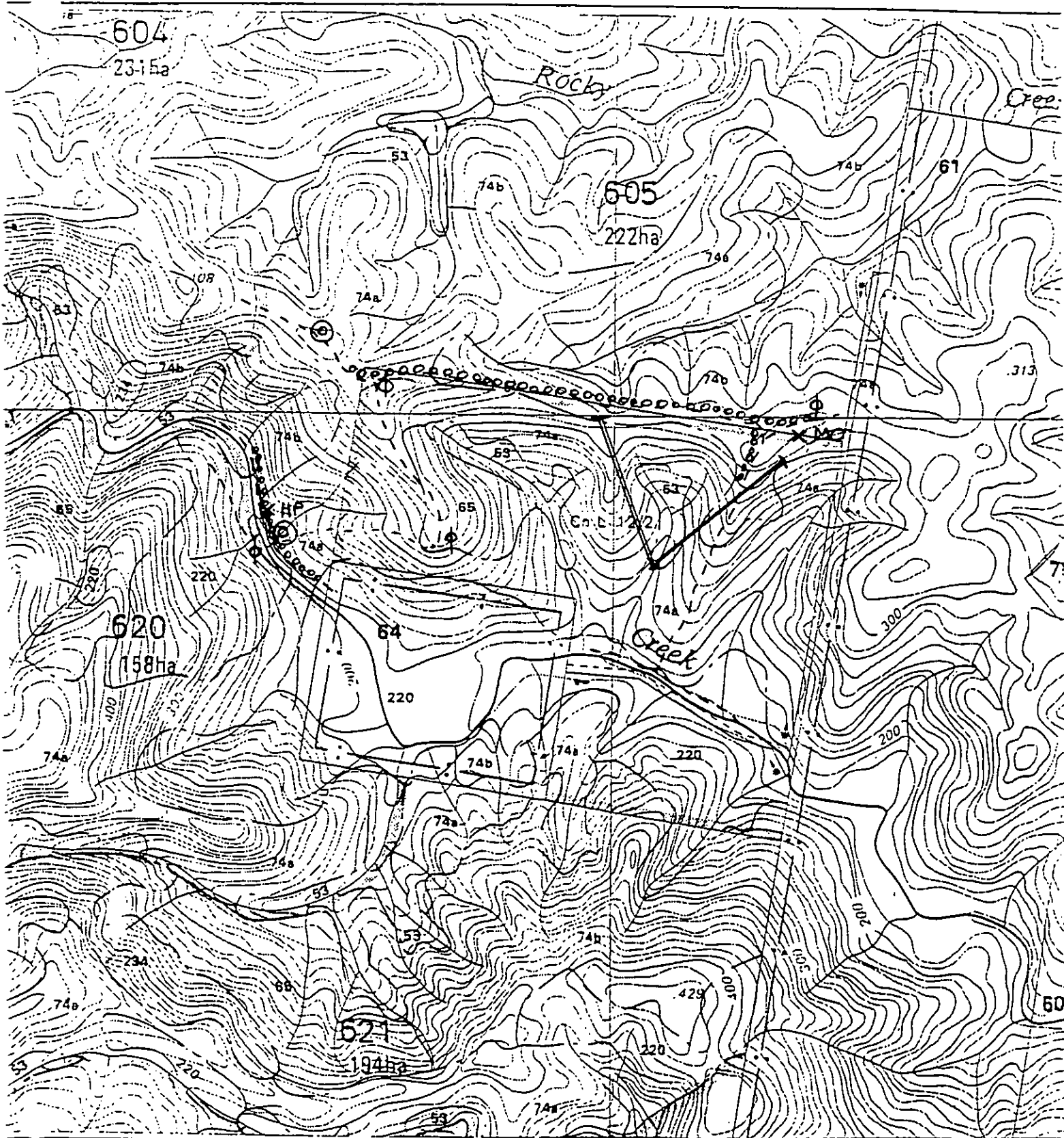
Compartment 606

Scale — 1:15 000



CE 1845 C-124
N 93
Contour interval 10m

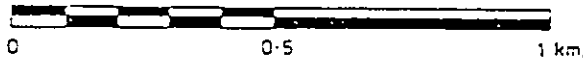
G N



- Compartment boundary Special emphasis
- Filter strips random flora & fauna transects
- Protection strips Integrated Koala transects.
- Road, minor road, dump site ϕ - Playback & listening site.
- Wet weather dumps shown in red \otimes - MASKED OWL
- \odot - ANABAT SONAR SITE. X HP - HARD TRAP
- 00000000 - SPOTLIGHT TRANSECT (WALKING)

Compartment 607

Scale — 1:15 000

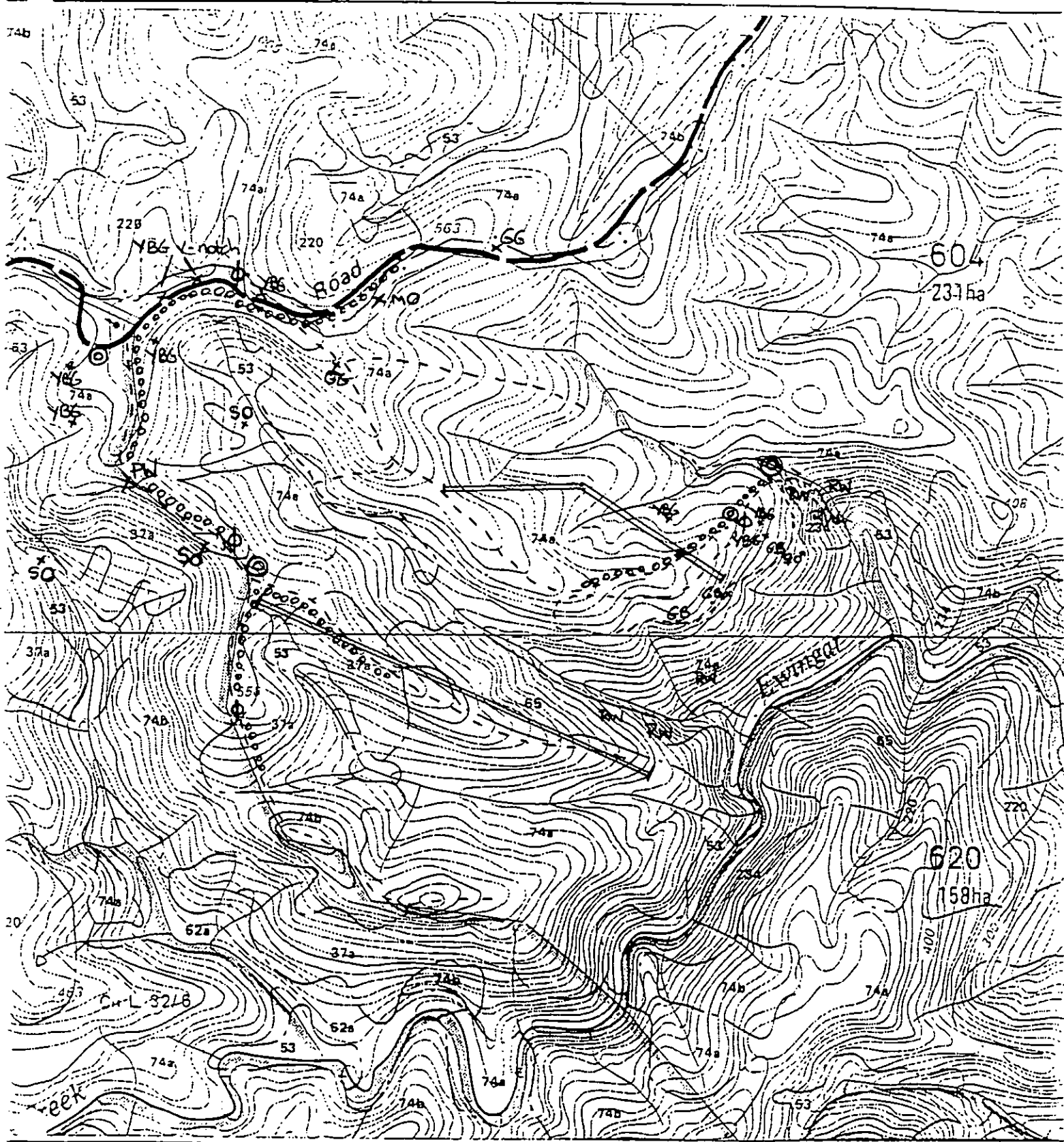


CE 8-5

275
195

Contour interval 10m

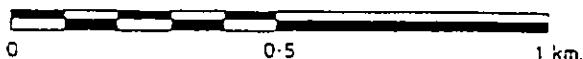
G N



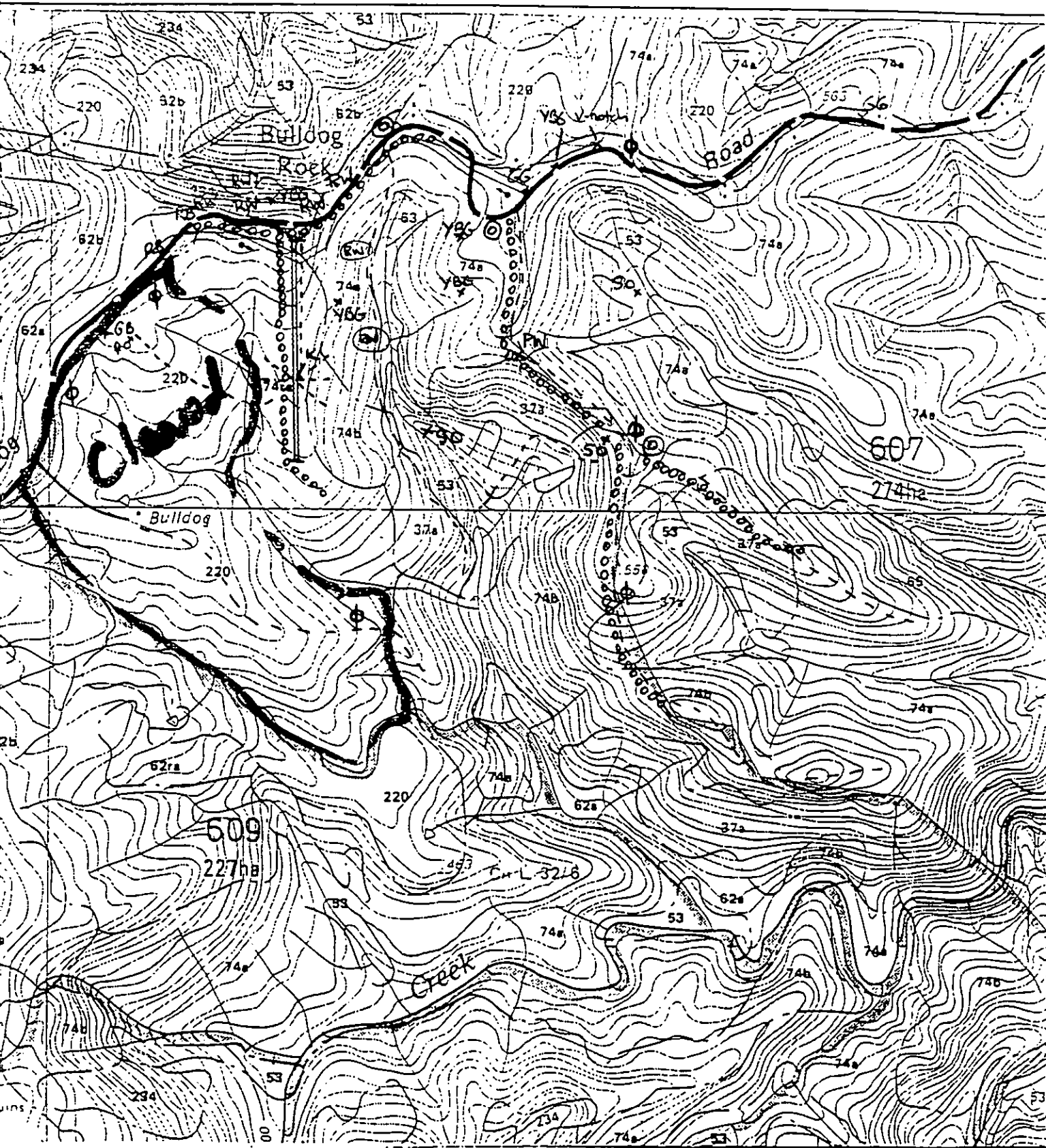
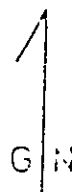
- | | |
|---|---|
| Compartment boundary | Special emphasis |
| Filter strips | random flora & fauna transects. |
| Protection strips | Integrated Koala transects |
| Road, minor road, dump site | ⊗ - Playback and listening site. |
| Wet weather dumps shown in red | MO - MASKED OWL SO - Sooty Owl. |
| ⊙ - ANABAT SONAR SITE. X HP - HARP TRAP | RW - Rock Wallaby GB - Glossy Black Cockatoo |
| ⊘ - SPOTLIGHT TRANSECT (WALKING). | YB6 - Yellow bellied Glider GG - Greater Glider |
| | PW - Parma wallaby |

Compartment 608

Scale — 1:15 000



CG 1845 C-252
N 44
Contour interval 10m



- Compartment boundary
 Filter strips
 Protection strips
 Road, minor road, dump site
 Wet weather dumps shown in red
 © - ANABAT SWAR SITE.
- Special emphasis
 - - - - - random flora & fauna transects
 ————— Integrated Koala transects
- ⊗ - Playback and listening site.
 ⊗ SO - Sooty owl. RB - Rufous Bittern
 YBG - Yellow-bellied Glider K - Koala
 RW - Rock Wallaby (RW) - ecote.
 GB - Glossy Black Cuckoo
- 0000000 SPOTLIGHT TRANSECT (WALKING).

- c. *Lophostemon confertus* (c-vc)
cl. *Argophyllum subulatum* (o-vol).
cl. *Tristanopsis laurina* (o).
sc. *Acmena smithii* (var. minor) (o-c).
sc. *Glochidion ferdinandi* (o-c).
sc. *Acacia melanoxylon* (o-c).
sc. *Allocasuarina torulosa* (o-c).
Pittosporum revolutum (o-vol).
Dodaea trigonata (vo-c).
Notela longifolia var. 1 (vo).
+ *Eucalyptus intermedia* (vol)
E. (argentea) *maculata* (o).
E. *fibrosa* (o)
E. *micrantha* (o)
E. *seabra* (vol).
Persoonia media (vo).
sc. *Acacia irrorata* var. *irrorata* (o)
Trema aspera (o).
sc. *Ficus coronata* (o).
Clerodendron bitoratum (vol).
sc. *Acmena smithii* (vol).
Viola hederacea (o).
sc. *Calliandra serratifolia* (2-vol) ...
O *dielsii* (o-vol).
Sigabackia ... (o).
sc. *Archontophoenix cunninghamiana* (R).
sc. *Callistemon salignus* (R-).
Platanus purpurascens (o-vol).
Intigolera australis (vo).
sc. *Elaeocarpus doorenbosii* (vo).
sc. *Trochocarpa laurina* (vo).
Ripanea variabilis (o).
Carlyle stricta (o-R).
sc. *Hodgkinsonia acutiflora* (vo).
Verbena sp. *rigida* (vo).
sc. *Euroschium falcatum* (o-vol).
sc. *Callistemon* sp. *viridatus*? (R-o). check specimen for *C. pallidus*....
Begonia dolanifolia (o).
Alyxia ruscifolia (R) near waterfall....
Viola betanidisfolia (vo-o).

- Cissus antarctica* (o).
Smilax australis (o).
Stephanandra japonica var. *dussumieri* (o).
Lantana camara (vo-c).
Cephaelis corymbosa (vo).
Gynerium densifolium (o).
Eucrochilus latifolius (vo-o).
Lomandra longifolia (o-c).
Diurella canaliculata (o).
Entolasia marginata (o).
Oplismenus sp. hemisphaericus (o).
Blechnum minus (vo).
Doodia aspera (o-c).
Christella dentata (o-).
Adiantum hispidulum (o-vol).
Cyathea cooperi (R-vol).
Adiantum formosum (vol).
Blechnum cartilagineum (o-)
Cochlidium dubium (o-)
Lactuca sp. (small).
Asplenium australasicum (vol).
Celastrus subspicatus (vo-o).
Cucumis dipsaceus (R) naturalized Fr. 74...
Diurella canaliculata (vo-c).
Pandorea pandorana (vo-o).
Lomandra multiflora (vol).
Juncus sp. (o).
Lepidosperma laterale (vo).
Dendrobium kingianum (R) on rocks...
Asplenium flabellifolium (R)
Dendrobium gracilicaule (vo-R).
Peperomia tetraphyllus (vo).
Davallia pyxidata (vo).
? check specimen...
(c). *Canacina cunninghamiana* (R-c) along lower Ewing's Gk....
Diocypus australis (R-vol).
... on rocks near gorge...
c. *Ficus obliqua* (R).
Rocks area -- *Baccharis myrtifolia* (vo-o).
sc. *Pittosporum undulatum* (vo).
sc. *Dryopteris australis* (vo).
Ozothamnus doorenbosii (vo).
Wikstramia indica (R).
Pittosporum revolutum (vo).
Maunus sp. *bilocularis* (R-o).

Gully / Riparian aff. to Ft. 74.

Robert Kooyman
8/57.simple antil. / additional species from western end ...
major gully Cnpt. 608.*Sesuvium rubescens* (vo-o).*Synonym glandulosum* (R-o).sc. *Polygonum elegans* (o-vo).sc. *Rhodanthe rubescens* (o).sc. *Claoxylon australe* (vo-o).sc. *Cryptocarya micrantha* (o).sc. *Neolitsea dealbata* (o).sc. *Clerodendron tomentosum* (o).sc. *Alectryon subaerens* (o-vo).*Breynia dolangifolia* (c).*Psychotria lanicerosides* (o-c).sc. *Acronychia dolangifolia* (vo-o).*Eupomatia laurina* (o).*Wilkiea huegeliana* (o-c).*Denhamia celastroides* (vo-o).*Gymnostachyum anceps* (vo).*Citriobathus pauciflorus* (o-c).*Tabernaemontana paraguayi* (vo).*Aneitena biflorum* (vo).*Plectranthus parviflorus* (x) (vo).*Indigofera australis* (o-vo).*Stellaria flaccida* (vo).*Rubus hillii* (o)*Rubus marsei* (o).*Kennedia rubicunda* (o-c).*Lantacapsis decapartita* (o-e).*Dioscorea transversa* (o-c).- *Stephania jorgensis* var. *diversa* (o).*Embellan australica* (o-c).*Cayratia clavatoides* (o-c).*Alpinia canescens* (vo-o).*Tetrastigma nitens* (vo-o).*Dactyloctenium aegyptium* (o-vo).*Prostyche pedunculata* (x). usque...*Clematis crispa* (o).*Tylophora paniculata* (o).*Entolasia stricta* (o).

- C. *Eucalyptus* (Corymbia) *maculata* (o-vol)
C. E. *propinqua* (o-c)
C. E. *micrantha* (o)
C. E. *seabra* (vo-c) (narrow leaves)
C. E. *acuminata* (vo-r)
C. E. *carnia* (o-vol).
C. E. *fibrosa* (vo-cl).
C. *Angaphora subulatum* (thru) (vo-o').
sc. *Allocasuarina tarata* (o-c).
C. E. *micrantha* (R-o) (c)
C. E. *umbra* (R-o). ✓

Acacia *diphylla* (o-vol). ADD:

Acacia *viridis* or *viridis* (vo-o). * *Eucalyptus tictalica* (o).

Acacia *melanophylla* (vo-cl).

Acacia sp. (thin leaves).
granitica (vo).

Solanum densiventritum (vo-o).

Persoonia strathbrockensis (vo).

Pratia purpurea (o)

Senecio sp. *amygdalifolia* (R-o).

Geranium solanderi (o) (recollected check sp.).

Wahlenbergia sp. *gracilis* (o)

Dichandra sp. (o).

Geranium sp. *solanderi*. (vo).

Viola betanifolia (o).

Excoecarpus sp. *cupressiformis* (c).

* *Isotoma* sp. *armstrongii* (R) specimen / rock... lower stage / bldg...

Hibbertia obtusifolia (vo-).

Plectranthus perflorus (vo-o).

Pseudoclematis variable (o) rock area

Oxalis sp. (vo).

Macrozamia fawcettii (vo-o).

* *Plectranthus* sp. *seabra* (Rock areas only) ... > 100 plants... Granite

Loxelia trigonocaulis (vo)

Xanthorrea (glauca) (vo-c).

Brachycombe microcarpa (vo-o).

Oxylobium illeifolia (vo-c).

Oxotoma *diospyllina* (R-vol).

Daviesia sp. *gustifolia*. (vo-c).

Pultanea sp. *villosa* (vo-) specimen.

Pultanea cunninghamii (vo-c).

Hardenbergia violacea (o-c)

Glycine clandestina (o)

Dermolium rhytidifolium (o-vol).

Galactia sp. (ring) brack... (vo) check...

Kennedia subulata (vo).

Hibbertia scandens (vo-o) rock.

Rubus perflorus (o).

Thymela australis (c)

Poa latifolia var. *lata*. (c).

Diarella canaliculata (vo-a) rock...

Lomandra *distans* - perenn. ✓

L. multiflora (vo). ✓

Chaetanthes distans (vo-o).

C. *sieberiana* (vo)

Adiantum hispidulum (vo-n) rock...

Davallia pyxidata (vo-a) rock...

Pyrosoma superbia (o-a) rock...

Platynerium superbum (rock vo)

P. *bifurcatum* (rock vo)

Dendrobium speciosum x (rock - a).

* *Plectranthus* sp. *graveolens* (specimen... > 1m... note - specimen at rock, near creek).

Rock: *Liparis swsonii* (R-vol). rock.

Hakea sp. *eriantha* (R) (specimen... ✓)

Senecio sp. E? check (R-vol)

Olearia sp. *glandulosa* (c). check specimen.

(sc. *Acacia blakeyi* (o). check specimen. ✓)

Gonocarpus micranthus (vota) ? check...

Cayratia clematis (e-vol) rock-

Eumrephus latifolia (vo).

Bilkeidia scandens (vo).

Cucumis dipsaceus (c).

Trachymene incisus var. *incisa* (R). ?

Excoecarpus cupressiformis (o).

Daviesia gustifolia (o-c).

Persoonia decider (vo).

Malichtus urceolatus (vo-o).

Jacksonia scaggaria (vo-c).

Alphitania succulenta (R-o).

Persoonia oleoides check (vo).

Galium sp. *propinquum* (e-o) rock... ✓

Cresata sieberiana (o).

Bracteantha bracteata (vo-c).

Gnaphalium sphaericum (vo-o).

Veronica plebeia (vo-o).

E. W. J. GARSF. 604-608.

Robert Keayman
8/17

- Oxalanthus doorechtii (R-vol) new comb.
Pimela linifolia (vo).
Monotoca superba (vo).
Cassia compacta (vo).
Leptopodium variale (R-vol) no. 100 ?
Ranunculus sp. lappaceus (vo-vol) specimen.
Lencopogon virgatus (R-vol).
Enaphalium sphaerium (o). ✓
Plantago debilis (R-vol)
Cymbopogon kusanianus (vo-)
Pterocarpus reddens (vo).
Pimela sp. glauca (R-vol). (specimen) 607/608
Persoonia sp. aff. sericea ✓ (o) by 100-1000 ft. alt. ✓
Comesperma ericinum (vo).
Opercularia diphylla (vo).
Goodenia rotundifolia (vo).
Goodenia heterocarpa subsp. heterocarpa (vo).
Wikstroemia indica (v).
Muelleria eucalyptoides (o).
Brunoniella australis (vo).
Ajuga australis (et. o).
Amygdalus (aff. Eucalyptus)...
Pultenaea retusa (R-vol) (cont. 604).
Zubacca: Galium sp. (v).
Notolixos subarcticus (R-vol).
Cardamine paucijuga (vo-) specimen...
Olearia oppositifolia (o-vol) - narrow leaved form (specimens retained)....
Gonocarpus tetragynus (o)
Monotoca superba (o).
Platysace ericoides (vo-)
Notela longifolia (R-vol) close to cret...
Charizema parviflorum (R-vol) specimen...
Stellaria flaccida (vo-o) rocky - gutter...

- Caladenia carnea (vo).
Drosera candelata var. candelata (R-vol) cret.
Aristida ramosa (o-vol).
Glossogyne tannensis (vo-)
Eragrostis elagata (o-vol).
Bothrioclis decipiens (R-vol).
Sporocoea brachystema (vo).
Cymbopogon refractus (o-vol).
Aristida (vagan) (vo-).
Microlaena stipoides (vo- ?).
Paspalidium sp. (vo- o).
Eragrostis (sp. 100) leptocladus (o-).
Digitaria longiflora (o- vo).
Chloris sp. (vo- v) chert.
Enneapogon nigricans (R- ?).
Heteropogon contortus (R- ?).
Hyparrhenia filipendula (vo-vol).
Fimbristylis sp. dichotoma (R-vol).
Pterostylis pedunculata (R).
Tylophora paniculata (vo-vol).
Entolasia striata (o)

EWING & S.F.

Fr. 37 (Dry SLACKHATT)

DRY RIDGE-TOP SAMPLER. (Add species from Fr. 74 ...)

Robert Kooyman
5/97.

C. Eucalyptus pilularis (vc).

C. E. (Corymbia) gumifera (o-c)

C. E. microcarpa (vo).

± C. E. (Corymbia) maculata (R-vo) type adges. ...

± C. E. satigna (o) jully-line very...

sc. Allocasuarina teretata (o-).

Hibbertia obtusifolia (vo-o).

Davallia densifolia (o-c). in Fr. 74...

Oxylobium ilicifolium (vc-c)

Pultenea villata (o-c).

Macrozamia fawcettii (vo-o).

Persoonia decider (o)

Hibbertia dentata (R-vo).

Lomatia silaifolia (o-vo).

Conospermum ericinum (o-vo).
land.

Galium sp. prostratum (vo-o) rosette...

Persoonia media (vo-o).

Pattersonia sp. straminea (vo).

(Olearia sp. (o-c).

Ozothamnus diosanthus (o-c) decumbent, low, to 1m.

Persoonia sericea (o).

... then overlaps to a limited extent with Fr. 74...

Hardenbergia violacea (o-c).

Kanella rotundifolia (o-vo)

Glycine clandestina (o).

Themeda australis (c-vc)

Poa tuberosa (o-c). in Fr. 74...

Entolasia stricta (o).

Pterostylis sp. pedunculata (n).

Pteris esculentum (R-o).

Calochkera dubia (vo-c).

Lindsaea microphylla (R-o).

leatherhead (noisy friar bird) (lamer...)
 Sat. bower-bird
 Little lorikeet
 Sooty-breasted lorikeet
 Pied curlew
 Bell Miner
 Brown Quail
 King Parrots (rare).
 Crimson rosella
 White eared honeyeater
 Yellow tufted honeyeater (nesting... seen at watering points - Cross 607)
 Yellow robin (in Ft. 74...
 White bellied cuckoo - strike
 Variegated wren.
 Pied butcherbird
 Willy wagtail
 Mistle-toe bird
 Laughing kookaburra
 Brown thornbill
 Yellow rumped thornbill
 Striated thornbill
 Gerygone
 Little friar bird
 Silver-eye
 Weebill
 Glossy Black Cockatoo
 White Cockatoo
 Magpie
 White faced cuckoo strike
 Forest raven.
 Red-backed wren
 Rainbow lorikeet
 Gray-throated
 Fuscous Honeyeater
 Scarlet honeyeater
 Eastern spine-bill
 Brown honeyeater
 Brown flycatcher
 Peaceful dove (d) for
 Diamond dove
 Flycatcher (rusty!)...

Rufous Bunting
 Rock wallaby (Petrogale persimilis).
 Red-necked wallaby
 Whip-tail wallabies...
 Long necked bandicoot... water clean...
 Wallaroo... (Pseudocheirus... par...)
 Eastern grey Kangaroo
 Bandicoots... (brown)
 Parma wallaby
 (Red necked pademelon -
 Gaurna...

* Sooty owl - heard, seen.
 Boodie owl - heard, seen.
 Tawny Frogmouth - seen,
 * MASKED OWL - heard, seen
 & nest site located....
 - moist gully -:
 Sooty owl
 Whip-bird
 Lewis's honeyeater.

Crinia signifera
 Litoria... (calls only).
 KOALA (scats, wind records & calls)
 (common). Brush-tailed possum, heard seen.
 YBG - heard, seen.
 Greater Glider - seen.
 Squirrel Glider - heard, seen.

✓ M. australis - Anabat...
 ✓ M. schreibersii (Ewing's Glider) (Hoop Glider & release seen)
 poss. Marmoptera novifolkensis - Anabat
 poss. Marmoptera sp. ? Anabat.
 poss. Vespertilio pernix... Anabat
 poss. Vespertilio sp. (P. pernix) Anabat
 ✓ Rhinolophus megaphyllus - Anabat.
 poss. Nyctophilus gouldi - wind/spot.

Wedge-tailed eagle
 Brown goshawk
 (large) kite...? (whistling or possible squawking)

Tuesday 19th August, 1997.

EWINGAR S.F.
Cmpt. 604-608.

Robert Kooyman

arrive: Ewingar S.F. 6:00pm. —

LISTEN: Boobook owl 7:00pm.

7:30pm.

PLAYBACK CALLS —

P.O. — no response.

M.O — no response

Boobooks calling — (2).

Koala — no response

Sq. Glider — no response

YBG — no response.

LISTEN: 15 mins....

8:30pm. — with: Kevin et al, driving spotlight transect along Bulldog Rd... target *Therapsida* etc.....

then 5km driving spotlight transect — 66% (areas marked)

LISTEN: Boobook owls.

10:30pm: Finish... set up camp — near S.F. Boundary....

— Rufous Bunting — grassy area....

— possible Rock Wallaby — steep rocky area....

— Rock Wallaby confirmed in morning — climbed down rocks — (counted 'S')

— Whiptails & rock wallabies....

(note: SF area overgrazed — P.P. more grass sward....)

Wed. 20/8/97: Cmpt. 608. near Bulldog Rocks —

— Rock wallabies (>5)... & Whiptail wallabies..

— Veg. samples

move to.... Cmpts. 604, 605, part 606. to creek.... Riparian Alliance... Fr. 53.

— Veg. samples to dusk.... (see species lists.... collect specimens etc....).

⊕ Track into Cmpt. 604 — Playback Site.... ANASAT SAMPLE — (2 species +).

6:30pm — LISTEN — Boobook owl (c). Bandicoot (nearby — spotlighted & heard).

PLAYBACK — Masked owl — no response

TEMP. +14°C. (7pm)

Powerful owl — no response

☉ — FULL MOON — RISE: 7:50pm.

YBG — no response

— LIGHT WIND, CLOUD COVER, NO RAIN.

Koala — no response

TEMP. +12°C 10:00pm.

7:40pm: end.... LISTEN: Boobook owl....

SHIFT TO CMPT. 607 — bottom ...

DRIVING SPOTLIGHT TRANSECT — (1.5km). LISTEN every 500 metres — 5 mins...

doom — Greater Glider.. (two).

Boobook owl — calling...

1.5km — END.

* WIND increasing to Moderate.... (gusty...)

⊕ Playback calls — 9:00pm

Koala — no response

Powerful owl — no response

YBG — no response

Masked owl — no response

Sq. G — no response

LISTEN: —

9:45pm

Walking spotlight transect —

10:15pm —

set up camp — 10:30pm

YBG calling — 9:00pm

THURS. 22nd AUGUST.

ENINGATE S.F. 604-608.

Robert Koenig.

Th. / morning - (3am - YBG calling near camp... see map).

I.D. Specimens, (Vegetation). LISTEN FOR: Bush-thicketree ...

Veg. Surveys - Capt. 607... down to creek, to edge of 'Old Growth', steep canyon...

Rocky Gorge etc... Rock whistling... disturbed along top of gorge... see maps...
... continue Veg. surveys... yellow tufted honeyeaters - resting, & wintering at creek

Glossy Black Cuckoo - Fair Site. edge of O.G. area - C. 607.

END: 5:00pm. KEVIN et al departed for casino → home...

NIGHT SURVEYS - START 6:00pm - LISTEN

BOUNDARY CAPS: 608, 607, Track on Ridge - edge of Old Growth area.

WEATHER: CLEAR, NO CLOUD, MODERATE WIND (>10-15k) - Gustly....

TEMP: +10°C. at 6:30pm. ~~Full moon~~ - rising around 9:15pm? - ...
about...

LISTEN: Screech owl - calling in valley - S.W.

Short Playback -: immediate response - flew up to Blackbutt

(E. pilularia) - nearby - Spotted - continued calling - sat on branch

calling to me, soft... screech type call - clear sighting - !!! > 15mins... !!
... still calling and talking to me after 5mins... suspend playback until he goes

- BOOBOOK OWL - calling...

- Screech owl still calling at 6:50pm from Blackbutt - < 25meters away...

will have to shift to other side of valley to continue playback for M.O., P.O. etc...

* S.O. - goes wild if I start anything on the tape-player...

- nesting hollow could be nearby - bird seems reluctant to move...

- START WALKING SPOTLIGHT TRANSECT -: BBT. area... 7:10pm...

0m - white-throated nightjar - calling...

- CLOUD COVER - DARK to VERY DARK...

- BOOBOOK OWL - calling...

WIND -: LIGHT, occasional gust...

- Screech owl - still calling... Bandicoot -

- Screech owl following me along ridge - occasional screech call... to let me know!!

- disturbed small macropod - fleeting glimpse - Rufous Bettong - too fast!?

- larger macropod... no clear sighting... Redneck wallaby...?

6:00pm - 7:40pm. return... move uphill for M.O., P.O., YBG playback... driving spotlight -

φ Playback calls -: Masked owl - no response... then YBG calling (see map).
8:00pm. Powerful owl - no response...
Farm wallaby.

... then Screech owl - dive bomb calls...

NB: Check out S.O. habitat tomorrow...

8:30pm - DRIVING SPOTLIGHT TRANSECT - 2km. [8:55pm - Moonrise].
- nil.

9:00pm - END...

DRIVING SPOTLIGHT TRANSECT - into Capt. 607. 1.5km... - nil.

9:30pm - END. (bottom of track - 607).

* Set up camp - 10:00pm. 10:30pm - YBG calling - downslope, BIG HABITAT TREE →

FLODA & FAUNA SURVEYS.

EWINGAR S.F. Capt. 604-608.

Robert Keayman
8/97

Fri. 22nd August, 1997.

7:30am - : I.D. Specimens, Diurnal bird sample, Bush-thicket playback - no response

Veg. Surveys - 608, 607, 606, 605 part. 604.

Glossy Black Cuckoo - ♀ ♂ (outside C.-pr. survey area) ... see map..

Return via Casino Office → home... END. 2:30pm...

EWINGAR S.F. FLORA & FAUNA SURVEYS.
Cmpt. 604-608.

Robert Kooyum
25/8/97.

Mon. 25/8/97. arrive evening.....

temp. 7:00p. - +10°C. (falling).
wind. - gusty, westerly --- 10-30km.
(too strong for ridge samples) --- W.S.W.
① - moon $< \frac{1}{2}$, waning, rise late....
(very dark).

Kev, Noel, Nicole, Robert.

ANASAT sample - very windy
(BBT Ridge Cmpt. 608).

FLORBACK SAMPLE: Cmpt. 604 (606, 605) --- trade, rising above creek.... (wind 10-25k).
3:30pm. Marked owl - no response
Pawful owl - no response
Sq. Glider - no response
Sooty owl - no response (too windy to hear).
Kook - no response
YBG - no response.

7:30pm
LISTEN: 10 mins - BOOBOOK OWL.

Drive down to creek - frog sample - 400m more walk. (harvey at al).
Anabat Sample. 10:00pm Wind easing....

Drive back up to track dividing 606/605. Camp out at end /

Kook - calling 10:30pm. >20 calls:-
set up camp BWO.

* MARKED OWL CALLING - repeated (>4) ^{calls} -- pre-dawn listening - (1 hour).
6/8. time 5:19 am --- Cmpt. 605/606. (unprompted calling...)

- calling from tree near my camp --- spotlighted --- didn't see ---
then several more calls ... same spot. ^{with me spotting around} - (naked, cold, with spotlight in hand.... spotlighted as
- a personal moment!! M.O. flew off....

START: Veg. survey. 7:30am Sort out grass specimens..... DIB SPECIES LISTS....

TUESDAY - 26/8/97. Sample areas Cmpt. 606/605.....

* Spurred-gum - budding - p.c. flowering.

Polygala sp (specimen)? NO.... X

Marked Glossy Black Cuckoo - Feed Tree... C.606. long ridge....

- Spend time with Kev, Noel etc... sort out maps, remaining surveys etc....

5:30pm. - dinner.... Sample BBT. (O.G.) area - Cmpt 607/608 (near S.O. site).

Cmpt. 608. BBT. area....

6:00pm - START NIGHT SAMPLE --- LISTEN: BOOBOOK OWL.

① - $< \frac{1}{2}$ moon, rising after 12:00pm. WIND: WSW. increasing in evening - 10km.
VERY DARK....

TEMP: 6:00pm - +12°C. - falling....

6:13pm - Sooty OWL - calling - (several bomb drops).... used very brief playback to call
- 2 (two) Sooty-owls calling - spotlighted both - in BBT. nearby
and flying.... trilling calls.... (Kevin and Robert present --- training/familiarity
(original calls came from both sides of ridge) ^{see map} with S.O. - visual & call variations).

--- drive up road - YBG calling - see map. 150m from Bulldog Rd.

Flora & Fauna Surveys.
Ewingdale S.F. Cnpt. 604-608.

Robert Koenigman
8/97.

Tues. 26/8/97 cont'd: NB4 survey...

350m from intersection Building Rd. & O.G. BBT track.... (western track).

8:00pm. - Masked owl - several calls ... while listening for YBG^s ^{E. (S.A.)}

Cnpt. 607. - light breeze only ... then wind gusts....
(checked with Noel - no other playbacks in use....)

9:15pm - end driving Spotlight transect 5.2kms.

results: - YBG^s heard
- S.O. heard. } see map...
* - M.O. heard.

END transect at Playback Site above Little Rocky Crk.

listen: 10 mins. ... set up gear. - Target S.O., P.O. Sq.G.

* M.O. - started calling - toward Creek. continues calling
intermittantly.... flying around area... (see map).

9:20pm - still calling... then wait... attempt P.O. / S.O. / YBG playbacks....

S.O. - no response - M.O. returned - recommenced calling....

9:30pm - abandon playback ... M.O. still 'screeching'.... flying around....
E.S.E.

... then quiet - 9:32pm....

YBG - no response. Sq.G. - no response

10:00pm - then YBG calling - see map.

Driving Transect (Spotlight) to C. 607. track.... meet up with Noel & Nicole... ANABAT sample.

11:00pm - END ... set up camp 11:30pm - END.

WED. 27/8/97 - Flora & Fauna Survey....

* NB: This site looks good for Microchip. bats
... creek flyway, cliff area, and
escarpment.... organise Noel / tonight!

8:00am. start - Mapping, Flora ID: etc....

Veg. Surveys. & walk down to check (RK) Petrogale pericallata (Rock wallaby)
scats & brief sighting.... confirmed Rock Wallaby - ♀ + juvenile....
pouch young....

- several other animals lower down - couldn't do any more without disturbing
them.... & other sightings through Ewing Crk (steep creek), linking to Building Road
than Rocky (Timber) River, population.... actual Coexistence / (potential) for Planning...?

Move onto Building Road.... 12:30pm. Sample creek line & adjacent Rocky areas.

- Rock Wallaby scats.... (Cnpt. 608). (S.O. habitat....)

- finish veg. sample.

- move to Cnpt. 607 - set up ANABAT on creek / cliff line.... 5:00pm.

cont'd →

Ewingdale S.F. CMPTS. 604-608.
FLORA & Fauna Surveys -

Robert Kooyman
8/97.

Wed. 27/8/97 - ANABAT sample - cke. Cmt. 607. near cliff line....

100pm. LISTEN: 15 mins - YBG calling. (see map for location) - toward creek on dusk - dense site?....

WEATHER: Fine, clear, light breeze (WSW), cool - Temp. +11°C at 6:30p..

☉ - $< \frac{1}{2}$ - moonrise after midnight....

- move to Cmt. 604 ~~and eastern end~~....

Listen at 500m. intervals -:

1. Boobook(s) - 3 - calling....

2. Boobook (2) - calling..

3. Intersection with Bulding Rd - Boobook.... ~~turn east onto Bulding Rd.~~

- then travel back to see Noel & Nicole at ANABAT site (Cmt. 604/607
- looks like additional species, possible - *Vesperugo regulus*? (cke/Reservoir side).
definite - *Rhinodaphne megascyllus*...

- travel back to Bulding Road - ANABAT site....

- Tawny Frogmouth

Cmt. 607/
Cmt. 604/near end... END: 9:30pm set up camp 10:00 pm.

Thursday 28/8/97 - my camp in Cmt. 607 (bottom end of track, near creek).

8:00am - Eastern Gray Kangaroos

* Glossy Black Cockatoos - ♀♂ around site. (see maps. - flying around area
- settling / feeding - intermittently...
: note Previous Records in same area.

- I.D. Plant Specimens etc... ^{sch.2} *Arthrocaryon hispidus* - Cmt. 608, rocky areas on lower slopes / mid slopes down to more mesic gully lines. Predominantly in the Fr. 74 areas, extending upshore. Elsewhere more restricted to lower slopes, rocky areas, toward larger creeks.... No: * *Oplismenus serratus* ✓

* Left to do -:

1. Part Cmt. 606 / 605 / 604 - Nth & eastern boundary areas ^{Part done! / finish Friday morning!}
2. Complete GBT. sample 608 / 607. Friday morning!
3. C 607 - from track to creek (western). ✓
4. Nth. point C 604 - walk boundary area ✓
5. *Arthrocaryon hispidus* - search creek areas -... Ewingdale cem. ✓ ~~part collected~~ specimens...

	<u>Terrain</u>	<u>Species</u>	
Macropods & area -	very steep, rocky	- Rock wallaby	Granite, Meta-sed.
	steep, partly rocky	- Wallaroo	Open woodland, DSF.
	steep, moderate moderate slopes, grassy & flats...	- Whip tail wallaby	
		- Whiptail	
		- Eastern Gray Kangaroo	Rufous Bunting
		- Red necked wallaby	
	lower slopes, gullies & above...	- Swamp wallaby,	red necked pademelon.

Thurs. 28th August, 1997.
cont'd.

EWINGAR S.F. CMPTS. 604-608.

FLORA & FAUNA SURVEYS.

Robert Kooyman.

NIGHT SURVEYS: CMPT. 605.

START 6:00. ^{SITE} ~~LISTEN~~: 30 min...

1.1 km down track into CMPT. 605....

WEATHER: Fine, clear, light breeze - no wind.

① - $< \frac{1}{2}$ moon, after midnight. dark,

TEMP. $+13^{\circ}\text{C}$ 6:30 pm. falling in sky....
 $+10^{\circ}\text{C}$ 9:00 pm.

BOOBIE OWL - spotlighted near listening site... (my camp) CMPT. 605. track...
(typical phase).

YBG - calling - 50m at 320° - NW.

BOOBIE CALLING -

WALKING SPOTLIGHT TRANSECT -: targeting - Koala, Presage, YBG, Squirrel Glider,
CAMP... ALIVE. along ridge... Rufous Babbler, GG, etc...

- macropods (large) - moving - not seen...
- probable Rufous Babbler - but too quiet to be sure...
- white-throated nightjar - several calls...

1 km... END. 9:00 pm. return to camp...

LISTEN: * YBG calling at camp... 9:20 pm. (measure distances tomorrow - mark on map).

* 9:45 pm. Koala - 60m ± 10 ^(several minutes) \rightarrow long session of calling - sounds like big male....

* 9:55 pm - Squirrel Glider calls - vocalised for 2 mins... intermittently... then glided to feed....
 $< 15\text{m}$ down road - approx. 12m. up... 1BK are beginning to flower....

YBG was in on this area also.... Acacia spp. & Euc. fibrosa - only blossom...

... Walked over 1 km and saw nothing.... but back at camp it's another story....!!

10:30 pm. END. Only Large 1BK's are providing (the major) ^(critical) blossom resource at present
(critical winter blossom). Bird activity at dawn quite remarkable on these trees.

* Demonstrates importance of large tree retention for many species, early & prolonged flowering etc...

Friday: 1. Check Loranthaceae ... & other mistletoes... - are marked at end of track... Nabarra? ^{Nabarra?}
2. Measure Road distance for Sq.G., K., YBG... from last night..
3. Finish Veg. sample - BBT. (Fr. 37).

Sq.G - only ⁽¹⁾ record - no playback responses - calls rarely - difficult to detect....

Presage - excellent habitat, known from area... difficult to detect.... no records!

2:00 am - YBG^s calling from 1BK near camp (blossom).

* Squirrel Glider - when calling was approx. 12m up 1BK, head down (tail up),
calling - - - - - stopped calling when he changed position...
Clarifying overall Sq.G. distribution would require more survey effort.

Fri. 25th August, 1997

EWINGARS.F. Cnpt. 604-606.

Robert Kooyman

F flora & fauna surveys.

6:00 am. — Diurnal Bird Survey — on flowering IBK.

target — swift parrot, honeyeaters etc...

ADD TO REPORT — Methodology..... 'one of us, (Kooyman), camps out in the survey area every night, moving from site to site (habitat to habitat) during the course of the survey. This provides extended listening time, a higher incidence of incidental/opportunistic records (sightings, calls etc.), and overall, a substantial increase in 'survey time/effort'.

NOTE: no records for SugarGlider — no calls at all.

Conduct search for 'V'-notch trees adjacent to last night's records.....

Sq. Glider hollows etc.... Koala etc. This area has — Koala

* LOCATED MASKED OWL NESTING HOLLOW. (trunk hollow... large/exposed... Sq. G. Y36 M.O. 30m to road (30m to my camp!!). (HOTSPOT!!).

large Spotted-gum. ^{60cm} M.O. sitting at edge of hollow — (no calls but right!!). keeping an eye on me --- no calls, motionless, dark face mask, including line from top of head to beak.... spotted chest/underparts, dark back,

face mask — dark brown, edged with tan/buff colour. (darker grey/brown on top of head and onto back.) leading edge of folded wings / tan-buff, then darker grey..... will mark out!

* Shot off a roll of 24 / 400 a.s.a. with Telephoto fitted to camera.... (happy they work!!)....

NB: Appears very sensitive to any noise or disturbance, comes out to investigate as soon as I walk down towards tree.....

* All Masked Owl records this trip were from unprompted calling (no playback), as 'daylight' sighting at nest/hollow. (and subsequent spotlight/visual... in flight) 25/8.

850 metres to inner back intercession

1. Cnpt. 606/605 boundary — 900m from M.O. site.

2. 1.1 kms from start of track to M.O. site. & (Sq. G. Y36. Koala) area....
605/606 Boundary.... on main track...

APPLICATION OF KOALA PROTOCOL

Koala transects were performed by four District staff over 8 days in July 1997. Actual transect locations and data sheets are stored in the Compartment History Files and summarised below. Only 16 koala scats were located under a total of 7 trees over a transect length of 13.1 km and approximately 1300 trees searched. Despite low numbers of scats, Cpt 660 was an intermediate use cpt as 2 trees in a 100m segment had scats. Other cpts are low use despite presence of preferred feed trees.

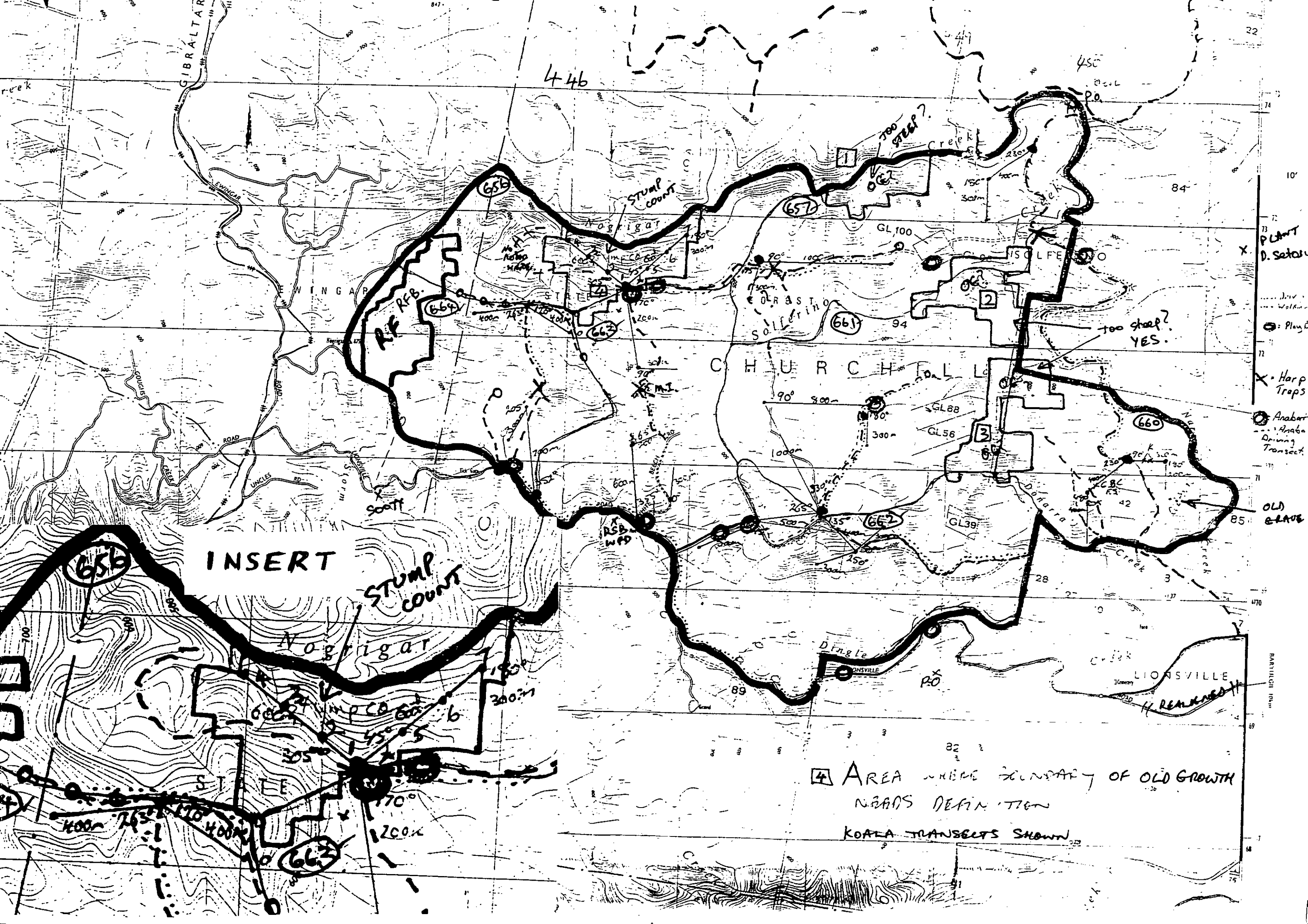
Transect	Length (m)	Bearing	Species	Scats	Comment
656/1	600	305	WM,IBK,BWD	0	
656/2a	600	45	WM,TWD,BWD	1?	TWD 40-60
656/2b	300	280	TWD,OAK,GG	0	
657/1a	400	230	TWD,BW,OAK	0	200m cleared
657/1b	300	180	TWD,IBK,OAK	0	
657/2	1000	90	TWD,OAK,WM	0	
657/3	300	195	IBK,OAK,TWD	0	
660/1a	400	230	GG,BWD,WM	0	
660/1b	400	180	RG,WM,IBK	6 old	WM 40-60 (2) GG 40-60 (4)
660/2a	300	90	IBK,GG,WM	4	TW 20-40 (2) WM 20-40 (2) WS 20-40 (2)
660/2b	200	180	IBK,WM,TWD	2	
661/1	1000	330	TWD,WM,OAK	0	
661/2	800	90	TWD,IBK,WSB	3 old	TWD 20-40
661/3	300	180	TWD,IBK,OAK	0	
662/1	500	245	SBG,OAK,WM	0	
662/3	500	265	SBG,OAK,WM	0	
662/3	400	135	SBG,TWD,WM	0	
662/4	300	250	TWD,OAK,WM	0	
662/5	300	50	TWD,OAK,WM	0	
663/1	700	174	WM,IBK,TWD	0	
663/2	300	90	WM,TWD,OAK	0	
663/3	500	63	WM,BWD,OAK	0	
663/4	600	355	TWD,WM,OAK	0	
664/1	400	120	TWD,WM,STS	0	
664/2	400	263	TWD,WM,BWD	0	
664/3	700	352	TWD,WM,NEB	0	
664/4	300	205	BWD,OAK,WM	0	
TOTAL	13100			16	7 trees

OLD GROWTH PROTOCOL

Four areas larger than 25 ha appear on the BOGMAP. Areas 1, 2 and 3 were visually inspected and considered too steep and had little evidence of past disturbance. These areas are excluded from logging. Area 4 in C656 was of gentler terrain and 7 plots were located as per the plot layout shown. Summary as follows:

AREA	PLOT	Mean DBHOB	Forest Type	# Stumps/ha	Comment
4	1	93	62	2	40m from Road
4	2		62	0	200m from plot 1
4	3		62	0	200m from plot 2
4	4	101	62	8	200m from plot 3
4	5		62	0	Steep 29-30 degrees
4	6		53	0	Steep but <30 degrees
4	7		62	0	Steep but <30 degrees

The plot data is supported by field observation that there is sufficient disturbance in the vicinity of Plot 4 to warrant a minor boundary modification to the BOGMAP. This relates only to the 5ha shown on BOGMAP West of Northing 4 46 000. The precise boundary will be defined by more plot and disturbance interpretation work by the SFO when harvesting commences in this vicinity.



INSERT

STUMP
COUNT

WINGAR

STATE

CHURCH FOLL

Dingle

LIONSVILLE

REMANES

4 AREA WHERE BOUNDARY OF OLD GROWTH
NEARS DEFINITION
KOALA TRANSECTS SHOWN

Plant
D. Setosa

Play

Harp
Trops

Anabari
Anabari
Driving
Transect

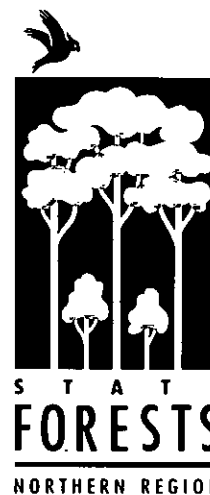
OLD
GLADE

Your reference
Our reference

PS:mb
479E

23 July, 1997

Ms Georgia Beyer
NEFA
123 Keen Street
LISMORE NSW 2470



State Forests of
New South Wales

Casino District
PO Box 688
Casino NSW 2470
Phone (066) 62 4499
Fax (066) 62 5826

Dear Georgia

Please receive Koala and Old Growth Protocol Assessment from Ewingar State Forest
Compartments 656, 657, 600 - 609

Final Flora & Fauna report will follow in the next week.

Thank you

Yours faithfully

P St Clair
for R Fussell
District Forester
CASINO DISTRICT

**FLORA and FAUNA SURVEY of COMPARTMENTS 665-668, 678-9,
EWINGAR / BILLILIMBRA STATE FOREST.**

-prepared by Robert M. Kooyman, [FA- flora and fauna] Casino District. 12/97.

Results of field surveys are provided as field diary notes, data sheets, and species lists, with scheduled and target species records provided as AMG co-ordinants. Maps provide details of sample sites, playback locations, harp trap locations, sonar detection sites, species records and distributions, and extent and location of the various transects and traverses undertaken.

Introduction:

Flora and Fauna Surveys were conducted by Kooyman, [17-22/11/97, and 24-27/11/97], with Harvey and Douglas et al [SFNSW], assisting with the integrated koala transects, and the general and target species fauna surveys, beginning the 17/11/97, and extending over the same period.

As part of the core survey team Robyn Herklots, and Nicole Harvey assisted with surveys of all fauna groups.

Detailed analysis of recorded microchiropteran bat calls was conducted by Noel Douglas and Nicole Harvey.

Consulting Botanist, Mr. John Williams is assisting with taxonomic clarification of a collected specimen [Asclepiadaceae].

General Description of Survey Area:

The six compartments cover an area of 1590 hectares, with the proposed net loggable area adjusted to approx. 1028 hectares, after deletion of mapped Rainforest types, Old-growth, and the standard riparian and other forest type exclusions.

Geology appears to be dominated by two main elements: the variously eroded granites, and the [volcanic] sediments from the main [Gibraltar] range. Granite derived soils are either siliceous and of shallow to moderate depth, with varying amounts of exposed rock, [mostly on steeper slopes], or heavier sandy clay loams. Soils of granitic origin vary from grey, to yellow-brown, sandy to clay loams. There are areas of deeper red earths [granidiorites - basic hornfels, indicating some tertiary volcanic activity] in a number of areas along the main range, particularly in association with the higher peaks. These areas are generally dominated by rainforest types, often in association with Ft.53&47. Altitudinal range varies from 1010m. to 470m. Slope classes vary from almost flat to moderate in cmpt.678, and moderate to very steep in the remainder.

The vegetation of the area is only generally illustrated by the forest type map [SFNSW]. **Species lists for each forest type have been compiled and are appended to this report as field notes.** These provide an indicative sample of the various habitats, floristic alliances, forest types, transitional boundaries and overlaps.

The sequence of forest types largely follows the altitudinal, topographical, and soil gradients, and variations. Ft.163 [*E. andrewsii* subsp. *campanulata*, with *E. laevopinea*] occurs on the higher peaks and slopes in association with the granite derived soils, and extends onto the volcanic sediments, creating diffuse type boundaries with Ft.47 [*E. microcorys*, *E. saligna*], and Ft.53 [*Lophostemon confertus*], with or without rainforest. Substantial areas of Ft.163,47, regrowth are dominated by *Eucalyptus laevopinea*, with only occasional *E. saligna*, *E. microcorys* and *E. andrewsii* subsp. *campanulata*. Rainforest, [Ft.2/3, 23/26, 11, &13], occurs on lower slopes, gully heads and creek-lines, with larger upslope areas of Ft.2/3, 23/26 dominant in

cmpts.665,678-9. Throughout the area Rainforest creates diffuse type boundaries and occurs in association with, Ft.53 [*Lophostemon confertus*], and Ft.47 [*E.microcorys*, *E.saligna*], in the moist / higher soil fertility areas of all surveyed compartments. Along the creeks, there are several distinct riparian alliances including [Ft.13, SNVF] the *Tristaniopsis laurina*, *Callicoma serratifolia*, *Ceratopetalum apetalum*, *Backhousia myrtifolia*, *Acmena smithii*, association -: with or without Ft.53, [Ft.11, SNVF] the *Ceratopetalum* / *Caldcluvia* alliances, [Ft.2/3, NVF] the *Sloanea woollsii* alliance, and the untyped *Backhousia myrtifolia* association on the rocky, exposed areas of the larger creeks, eg. Main Creek. Small areas of Ft.62, *E.siderophloia*, *E.propinqua*, *E.tindaliae*, *E.seeana*, occur in the western part of cmpt. 666.

Flora survey methodology: Plant species recorded from each forest type [and habitat] were listed, and frequency of occurrence and stratum [canopy, sub-canopy] indicated. Walked traverses were mapped . [See field notes attached.] Particular attention was directed to locating and recording the distribution and numbers of ROTAP plant species [Briggs and Leigh, 1995 Revised], and Schedules 1&2 [NSW Threatened Species Act, 1995] plant [and animal] species. Botanical references used for study: Harden,G.J. Flora of NSW. vol. 1-4. Flora of Australia. CSIRO. ABRIS-Canberra.

Fauna survey methodology: Includes application of the pre-logging / roading survey design forming part of the updated Threatened Species Protocol [8/9/97], incidental records collected during flora survey and habitat assessments, as well as the results of integrated koala transect surveys, and includes -:

1. walked spotlight transects, one kilometre long [minimum], 100 watt light, [with dimmers fitted].
minimum 10 minute listen at start and finish.
2. call playback for target species. Nocturnal -: powerful owl, masked owl, sooty owl, marbled frog-mouth, yellow bellied glider, koala, squirrel glider.
Diurnal -: Rufous Scrub-bird, Bush Thick-knee, Olive Whistler.
Calls are started after a substantial listening period and played briefly at low volume. This is done to avoid disrupting localised activity of the target or other species which may respond, [or be disturbed], and to maximise knowledge of actual habitat use, rather than gaining responses from further afield, [at least initially]. Louder playback calls are then initiated if no clear response is heard.
3. transect and incidental scat collection and identification. - results of predator, and [remaining unidentified] non-predator scat analysis provided by Barbara Triggs.
4. track identification on sandy or soft sections of roads, tracks and creek areas.
5. extended listening time for calls, [variable sample length, and dependent on conditions], targetting all playback target species listed above, and including other seasonally variable species such as Wompoo Fruit-dove.
6. harp trapping and sonar detection for bat species.
7. frog surveys - creek transects, habitat searches, and call playback and recording.
8. search for all other features listed in the Threatened Species Protocol Survey Design while applying the above flora and fauna surveys. [this will be supplemented by the SFO while marking out and supervising harvesting operations].
9. hair-tube sampling - no hair-tube sampling was undertaken on this survey, thus potentially under sampling for a number of terrestrial and arboreal species, eg. tiger

quoll, long-nosed potoroo, brush-tailed phascogale. Conservation protocols should be applied for these species, to ameliorate potential impacts of proposed operations

10. one of us, [Kooyman], camps out in the survey area every night, moving from site to site, [habitat to habitat] during the course of the survey. This provides a substantial increase in; listening time, incidental and opportunistic scheduled species records, diurnal and nocturnal survey effort, and overall survey time/effort.

Rare, Threatened, or Significant Plants recorded in Ewingar SF. compartments 665-668, 678-9.

Acomis acoma - [3RC] ROTAP - occurs at higher altitude sites in association with Ft.163, on exposed ridges and occasionally on adjacent roadsides.

Dodonea megazygha - [Sig.Plant] - occurs at high altitude in association with Ft.163, and the rainforest edges in cmpt.665. The species is rare elsewhere in the survey area.

Tylophora woollsii - [2E] ROTAP -Sch.1. - one collected specimen taxonomically similar to this species has been sent to John Williams [consultant botanist] for identification / taxonomic clarification. Specimen collected in cmpt.665, wet sclerophyll / rainforest type, on brown clay loam over volcanic sediments [meta-sed]. AMG: 443500 6770600

Marsdenia liisae - [3RC] ROTAP - not recorded this survey, but known from Bililimbra SF, including part of the survey area.

Results of Fauna Surveys:

1. **Glossy Black Cockatoo** [Calyptorhynchus lathamii] - sch.2, this species was located in only one of the surveyed compartments [667] by calls and sightings. Suitable habitat is quite scarce with an apparent paucity of Allocasuarina species in forest types in which it is normally present, [for example Ft. 163, 47]. This is due, primarily, to the dominance of the area by the moist forest types in association with rainforest, and past silvicultural treatments in regrowth stands. No sites with evidence of Glossy-black cockatoo feeding activity were located. No nest hollows were located. Application of the Conservation Protocol and retention of any feed trees or nest sites located during the mark-up phase should assist this species.

2. **Square tailed Kite** [Lophoictinia isura] - sch.2, not recorded on this survey, but is likely to use the larger river valleys, flood plains, and woodlands of this area.

3. **Red Goshawk** [Erythrorhynchus radiatus] - sch.1, not recorded on this survey, but there are records for this species from the Clarence and Richmond River valleys and associated forests. This species is thought to favour the higher nutrient / higher productivity tall open forests and riparian vegetation of the larger river valleys, where prey species are abundant. However, it extends up to 1000 metres in altitude in suitable forest.[Debus et al,1991]

4. **Bush Thick-knee** [Burhinus grallarius] - sch.1, not seen or heard on this survey. There is very little suitable habitat in the survey area.

Searches for this species were incorporated into the general flora traverses in suitable habitat [western section of cmpt.666]. Playback sampling was undertaken at a site in this compartment, and one of us [Kooyman] camped in suitable habitat over the two week survey to extend available listening time.

5. Regent Honey-eater [*Xanthomyza phrygia*]- sch.1, not recorded on this survey. Nectar resources were limited at the time of survey to *E.andrewsii* subsp. *campanulata*, and several rainforest species.

6. Swift Parrot [*Lathamus discolor*]- sch.2, not recorded on this survey. As described above [Regent honeyeater], the nectar resource was limited to just a few species during the survey time.

7. Powerful owl [*Ninox strenua*] - sch.2, this species was recorded calling on four occasions during this survey, in cmpts.678-9, and 666-7-8, in close proximity to, or in, the moist forest types [Ft.47, 53, 163, with or without rainforest]. Playback and listening was conducted for this species over the whole of the survey period, with two records from playback response in cmpts.678-9, 667, & 668, and the others from unprompted calling in cmpts. 666, & 668.

8. Masked owl [*Tyto novaehollandiae*] - sch.2, not recorded during this survey. Suitable habitat for this species occurs in the north-western part of the survey area in the drier forest types with a more open understorey in cmpt.666. However the area of more open, grassy woodland within the compartment area is quite small, and mostly protected by old-growth exclusions.

9. Sooty owl [*Tyto tenebricosa*] - sch.2.- recorded on this survey in Cmpts.679, 666, 668 and along the boundary ridge with cmpt. 667, [see records and mapping for details]. The habitat in this area is excellent with records on this survey from Goughs Creek, Main Creek, and Cedar Creek catchments. Records were from playback responses.

The large areas of moist forest and rainforest types, and the creeks draining these compartments [see above] provide excellent habitat for Sooty Owl.

10. Brush-tailed Rock Wallaby [*Petrogale penicellata*] - sch.2. This species was not observed during the course of the survey, and no scats collected could be attributed to this species. Potential habitat for brush-tailed rock wallaby was located west of the survey area, [in the Timbarra River catchment], where there are areas of steep rocky terrain. The survey area proper lacks suitable habitat [for this species].

11. Tiger Quoll [*Dasyurus maculatus*] - sch.2, suitable habitat occurs in the area [particularly the higher altitude and moist areas of the main range] however the species was not recorded during this survey, other than from a probable call record. This probably reflects a lack of survey effort [no hair-tubing or trapping was undertaken], rather than a true indication of presence or absence in what is 'known habitat', [see previous records nearby]. Searches of rocky areas suitable for latrine sites or den areas were integrated into the general flora and fauna surveys, and the transect based 'integrated Koala surveys', and target species surveys. None were located, however these searches will be supplemented by SFO habitat and 'fauna

features' searches during mark up stage of operations. Given the likely occurrence of this species in the harvestable area, and known records from nearby, SFO should be aware of the likely presence of latrine and den sites in the area.

12. Yellow bellied Glider [*Petaurus australis*] - sch.2, this species was recorded on several occasions on this survey in the western area of cmpts.666, & 667, and the northern area of cmpt.678. Generally the area lacks the critical floristic diversity apparent in areas nearby where this species appears to be more widespread and active, eg. Ft.70,74,65,&62, interspersed with the moister types such as Ft.47. However, absence at the time of survey does not indicate absence of this species from the remainder of the survey area as yellow-bellied gliders are very mobile and can cover large areas, depending on the availability of feeding resources. SFO should look for V-notch and other incisions during mark-up and supervision stages of operations.

13. Squirrel Glider [*Petaurus norfolcensis*] - sch.2. Not recorded on this survey. No response to playback calls. Habitat is generally unsuitable, particularly the moist forest / rainforest types, with the more suitable drier forest habitat occupying only a relatively small area.

14. Koala [*Phascolarctos cinereus*] - sch.2, - Results of Koala transect surveys are provided separate to this report, but indicate no, or low, use over most of the area. No evidence of scats or other indications of this species were located during the survey, either during random traverses, along transect lines, or as a result of other target species surveys. Habitat appears good to very good with a number of primary and secondary browse species such as -: *Eucalyptus microcorys*, *E.acmenoides*, *E.umbra*, *E.saligna*, *E.propinqua*, however dense mesic understoreys may impede this species movement in most parts of the survey area. Habitat assessments, this survey, and previous records, indicate the western area of cmpts.666 and 667 as most likely to have Koala activity.

15. Rufous Bettong [*Aepyprymnus rufescens*] - sch.2. Not recorded during this survey. Generally good to excellent habitat throughout the small area of drier, more open forest in the north-western part of the survey area, in cmpt.666. A range of non predator scats were collected, however none were consistent with this species.

16. Brush tailed Phascogale [*Phascogale tapoatofa*] - sch.2, not recorded this survey but the area has some good dry woodland /open forest habitat in cmpt.666. No hair-tubing or trapping was undertaken on this survey, thus effectively undersampling for a species which is otherwise difficult to detect.

17. Long -nosed Potoroo [*Potorous tridactylus*] - sch.2,- Not recorded on this survey, however habitat assessments [RK this study] indicate that it remains likely to occur in the extensive moist forest [Ft.47, &53], and rainforest types in the survey area. Protective prescriptions for CWR terrestrial vertebrates should be applied to ameliorate potential impacts of the proposal on this species.

18. Parma Wallaby [*Macropus parma*] - sch.2, recorded on a number of occasions both in vehicle based spotlight surveys and walking spotlight transects, grazing along

roadsides in the more open forest types [Ft.47, 163] along the ridges, but still relatively close to gully-lines or gully-heads with thicker, moist forest and rainforest vegetation.

19. Red-legged Pademelon [*Thylogale stigmatica*] - sch.2. Recorded on several occasions on this survey, in cmpts.678, 665. Excellent habitat in the moist forest gullies and adjoining forest types. The rainforest and gully areas were relatively under sampled by the walking spotlight transects, contributing to a paucity of records for this species in the survey area.

20. Microchiropteran Bats - [Survey Protocol requires a minimum of two harp traps for two nights per. 200ha in suitable habitat]. In this case extra Anabat Sonar sites were established to provide a more comprehensive sample of the microchiropteran bats of the study area, and to overcome a current lack of equipment [only two harp-traps and one ANABAT in operation]. Overall, a seven night sample was conducted, with records for thirteen species confirmed, including six [6] schedule 2 species. [see maps and data sheets]

Kerivoula papuensis -sch.2, [seven] harp-trap captures, at four separate sites.

Falsistrellus tasmaniensis -sch2, release call sonar record, [three] harp-trap captures.

Miniopterus schreibersii - sch.2, [six] harp trap captures, and [nine] sonar records.

Myotis adversus - sch.2, [two] harp-trap captures, and [one] sonar record.

Scoteanax rueppellii - sch.2, [one] harp-trap capture.

Mormopterus norfolkensis - sch.2, [two] sonar records.

Chalinolobus gouldi - [one] sonar record.

Scotorepens orion - [twenty-seven] sonar records.

Vespadelus pumilus - [six] sonar records and [two] harp-trap captures.

Vespadelus regulus - [seven] sonar records.

Vespadelus darlingtoni - [thirty-eight] sonar records, and [four] harp-trap captures.

Rhinolophus megaphyllus - [two] sonar records, and [two] harp-trap captures.

Nyctophilus gouldi - [three] harp-trap captures, and [one] sonar record.

Bat work was done by Noel Douglas and Nicole Harvey [assisted by Harvey,K., Herklots,R., and Kooyman]. Sonar calls were recorded directly onto laptop computer and later analysed and then compared to library calls by Noel Douglas and Nicole Harvey. This work is then reviewed and verified [where necessary] by SFNSW Research Division - Brad Law. Sonar calls are ascribed file names and are retained for future reference or verification. A comprehensive library of calls for the NE of NSW is not yet available, limiting our ability in some cases to ascribe species names to recorded calls. We are currently expanding our call library and this situation should steadily improve to the limits of the technology,[and with all survey calls retained for future review.]

No mine shafts were detected in the mapped harvestable area. No caves were detected. Any such sites located during operations should be buffered from proposed operations to ameliorate potential impacts on potential roost / maternity / torpor sites.

Harp trapping for *Kerivoula papuensis* and *Myotis adversus* in suitable habitat, [flyways and larger pools along rainforest creeks], resulted in seven captures for *Kerivoula papuensis*, and two captures of *Myotis adversus*.

Structural and floristic data, general site descriptions, and photographs of *Kerivoula papuensis* and *Myotis adversus* capture sites [harp-trap locations and habitat] have been recorded/taken, with a view to contributing to longer term research of these species in the management area.

21. Frog species - Transect and habitat based surveys were conducted at a number of sites, and habitat assessments and searches were integrated into the other surveys. [see survey sheets and maps for details] The weather was generally warm and dry, with target species/groups such as *Assa*, *Philoria*, and *Mixophyes* either very localised in occurrence, in low numbers, or undetected during this survey.

***Philoria* sp. 2** - sch.2. Not recorded on this survey but based on habitat assessments conducted by Harvey and Kooyman, this survey, and records from Main Creek on the NEFBS, it seems likely this species will occur in moist forest [Ft.47,53,2/3,23/26,11] sites where there are soaks, or moist soaks adjacent to creeks in this area. Habitat searches were not completed, but SFO should locate and buffer any other suitable habitat areas [in particular wet areas and soaks] during mark-up and supervision stages of the proposed operations. Rainforest and riparian exclusions should also assist to secure this species habitat. Application of the erosion mitigation controls, which include careful management of run-off from tracks or roads near soaks, creeks and wet areas, will further ameliorate potential impacts.

Mixophyes iteratus- sch.2, brief calls possibly of this species were heard on two occasions by Kooyman. Habitat is good to excellent for this species and it may be present along, and in proximity to, the larger creeks, [for example Main Creek]. Call records for this species must however be treated with caution as *Mixophyes balbus* is known to produce call variations similar to *Mixophyes iteratus*, and only *Mixophyes balbus* was captured and positively identified on this survey.

Mixophyes balbus - sch.2, brief calls of this species were heard on several occasions along Main Creek by Harvey, K. and Kooyman, and the species was caught in Goughs Creek in the NW of cmpt.665. Habitat is excellent and it seems likely this species will be present along and adjacent to the larger creeks; [but apparently in low numbers, Milledge, D. pers. comm., and results from this and previous surveys in the Ewingar / Bililimbra SF area]. Riparian and rainforest exclusions, together with erosion mitigation controls, should help ameliorate potential impacts of the proposed timber harvesting operations on this species.

Assa darlingtoni - sch.2. Located at several disjunct locations on this survey. Habitat seems suitable in many of the moist forest areas of the survey area, however records were obtained at only two sites in cmpts.678-9. [>10 calling at both sites]

- 22. Stephen's Banded Snake** [*Hoplocephalus stephensii*] - sch.2, not recorded this survey but excellent habitat in the survey area, particularly the moist forest and rainforest areas.
- 23. White Crowned Snake** [*Cacophis harrietae*] - sch.2, not recorded this survey. The specimen of *Cacophis* sp. identified on the survey was *Cacophis squamulosus*.
- 24. Rufous Scrub Bird** [*Atrichornis rufescens*] - sch.2, not recorded this survey. Suitable habitat occurs at altitudes in excess of 800m in the survey area. These areas have been sampled by playback calls, listening in potential habitat, and by habitat assessments [Kooyman, this survey].
- 25. Olive Whistler** [*Pachycephala olivacea*] sch.2 - not recorded this survey. Area of suitable higher altitude [= >800m asl.] moist forest habitat coincides with that of the rufous scrub-bird, so listening and playback calls for this species were included at the same time.
- 26. Wompoo Fruit-dove** [*Ptilinopus magnificus*] sch.2 - recorded in most of the rainforest, and moist forest types with rainforest, in the survey area.
- 27. Hastings River Mouse** [*Pseudomys oralis*] sch.1 - not recorded this survey. Some possible habitat in the western section of cmpt.666. No small mammal trapping or hair-tubing was conducted, making the likelihood of detection close to nil. Available habitat is largely reserved through slope in the north west of cmpt 666, other areas of F.T. 62 in the west of cmpt 666 with appropriate understorey are small in size and better represented in adjacent areas. Therefore an intensive trapping survey was considered unnecessary.

SURVEY EFFORT (DISTANCE IN KMS.)

[illegible]

EWINGAL / BILLILIMORA SF

Pg. 1-82

Cmpts. 665-668, 678-9.

Casino District
Reporting of Scheduled - Fauna Sightings

11/97.

FAUNA SURVEY RESULTS.

OBSERVER: Robert Kooyman

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMG Reference	General Comments (eg at log dump, road side, Forest Type etc)
17/11/97	Billil.	678/9	11	Asio deringtoris	>10 calling.	4 41080	67 66500
17/11	Billil.	667/678	1	Micropus itatus	calls.	4 41050	67 68030
17/11	Ewing.	665..	11	Wompos fruit dove	calls, sightings x2.	4 43650	67 71050
			11	" "	calls	4 43700	67 70950
			11	" "	calls	4 43575	67 70810
			11	" "	calls	4 44350	67 70730
			11	" "	calls, sighting. x2	4 44100	67 70550
			11	" "	calls	4 44235	67 70450
17/11	Ewing.	665	1	Parma walkleyi	♀ on road.	4 43600	67 71150
18/11	Ewing.	665.	11	Wompos Fruit dove	calls / sightings	4 42910	67 70990
			11	" "	"	4 42950	67 71350
			11	" "	"	4 42750	67 71280
			11	" "	"	4 42750	67 71400
18/11	Billil.	678/9	1	Powerful Owl	Playback response.	4 41250	67 66440
18/11	Billil.	679	1	Sooty owl.	unprompted calls.	4 41120	67 66300
18/11	Billil.	678	1	Parma walkleyi	on road / spotlight	4 40830	67 67275
18/11	Billil.	667	1	Powerful Owl.	unprompted calls.	4 41525	67 67790
18/11	Billil.	667	1	YBG	calls	4 41020	67 68120
18/11	Billil.	678	1	YBG	calls	4 40950	67 67960
18/11	Billil.	667	1	YBG	calls	4 41750	67 69250
18/11	EW/Bill	667	11	Glossy Bl. Cuckoo	calls / sighting (2)	4 42350	67 67850
19/11	Ewing.	666	1	Powerful Owl	unprompted calls.	4 41630	67 69540
19/11	Ewing.	666	1	YBG	calls (x2)	4 41340	67 69600
19/11	Ewing.	667	1	YBG	calls	4 41190	67 69500
19/11	Ewing.	666	1	Sooty Owl.	unprompted calling.	4 41800	67 69360
19/11	Ewing.	666	1	Sooty Owl	playback response.	4 42300	67 67500
19/11	Ewing.	668	1	Sooty Owl.	unprompted calls.	4 42500	67 68750
19/11	Ewing.	666	1	Parma walkleyi	on road / spotlight.	4 42510	67 69630

(*) Type of Inspection

- | | |
|-------------------------------------|--|
| 1. Night Time Surveys | 7. Marking Boundaries, Filter Strips or Conservation Areas |
| 2. Follow-up Clearance Inspection | 8. Reports from Log Faller |
| 3. Rejects Inspection | 9. Head Disposal Burning |
| 4. Regeneration Inspection | 10. Harvesting Planning |
| 5. Road Line, Dump Sites Inspection | 11. Other |
| 6. Timber Assessment | Forest & Fauna Surveys |

78.242.

Casino District
Reporting of Scheduled - Fauna Sightings

11/97.

observer: Robert Kanyman

[illegible]

1. Type of Inspection

1. Night Time Surveys
2. Follow-up Clearance Inspection
3. Rejects Inspection
4. Regeneration Inspection
5. Road Line, Dump Sites Inspection
6. Timber Assessment

7. Marking Boundaries, Filter burns or Conservation Areas
8. Reports from Log Faller
9. Head Disposal Burning
10. Harvesting Planning
11. Other

ELWINGAR / BILLILIMBRA S.F

9339-1-5

~~ENTERED INTO LOG~~ Dec 31st '97

REF:

1. Night Time Surveys
2. Follow-up Clearance Inspection
3. Rejects Inspection
4. Regeneration Inspection
5. Road Line, Dump Sites Inspection
6. Timber Assessment

7. Marking Boundaries, Filter Jams or Conservation Areas
8. Reports from Log Skidder
9. Head Discosal Burning
10. Harvesting Planning
11. Other

Casino District
Reporting of Schedule 12 Fauna Sightings

Ewingar
665

EWINGAR/BILLILIMBRA S.F (MAP 9339-1-S)

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMG Reference	General Comments (eg at log dump, road side, Forest Type etc)
17-11-97	Ewingar	665		Womoo Fruit Dove	Heard calling	4-44-250 67-70-100 N	TRA 8+5 134
17-11	Ewingar	665		Parma W-2)	Sighted	4-43-750 E 67-71-500 N	TRA - -135
17-11	Ewingar	665		Womoo Fruit Dove	Heard calling	4-44-500 67-71-500 N	TRA - -136
18-11	Ewingar	665		Womoo Fruit Dove	Heard calling	4-44-500 67-71-500 N	TRA - -136
18-11	Ewingar	665	1	Sooty Owl	Heard calling	4-44-750 E 67-70-100 N	CB-137
18-11	Ewingar	665		Parma W-2)	Sighted	4-43-750 E 67-71-500 N	TRA - -135
19-11	Ewingar	665		Womoo Fruit Dove	Heard calling	4-44-250 E 67-70-100 N	TRA-138
19-11	Billilimbra	666	1	YBG	Heard calling	4-41-500 E 67-69-500 N	SP-815-1
19-11	Billilimbra	666	1	Sooty Owl	Heard calling	4-41-500 E 67-69-500 N	CB-138
19-11	Ewingar	665	1	Kerivoula papuensis	Harp Trap	4-44-200 E 67-70-900 N	BH- -139
20-11	Billilimbra	667	1	Kerivoula papuensis	Harp Trap	4-41-150 E 67-67-900 N	BH- -140
20-11	Billilimbra	667	1	Kerivoula papuensis	Harp Trap	4-41-150 E 67-67-900 N	BH- -140 (x2) ③
20-11	Billilimbra	667	1	Miniopterus schreibersii	Harp Trap	4-41-150 E 67-67-900 N	BH- -140 ④
24-11	Billilimbra	667	1	Miniopterus schreibersii	Harp Trap	4-41-150 E 67-67-900 N	BH- -140 ⑤
25-11	Billilimbra	667	1	Falstrelus tasmanicus	Harp Trap	4-41-290 E 67-68-000 N	BH- -140 ⑥
25-11	Billilimbra	667	1	Kerivoula papuensis	Harp Trap	4-41-290 E 67-68-000 N	BH- -140 ⑦
26-11	Ewingar	665	1	Kerivoula papuensis	Harp Trap	4-42-850 E 67-70-800 N	BH- -140 ⑧
26-11	Billilimbra	679	1	Falstrelus tasmanicus	Harp Trap	4-42-850 E 67-70-800 N	BH- -140 ⑨
26-11	Billilimbra	679	1	Scotomys rueppellii	Harp Trap	4-42-850 E 67-70-800 N	BH- -140 ⑩
26-11	Billilimbra	679	1	Myotis adversus	Harp Trap	4-42-850 E 67-70-800 N	BH- -140 ⑪
26-11	Billilimbra	679	1	Kerivoula papuensis	Harp Trap	4-42-850 E 67-70-800 N	BH- -140 ⑫
17-11	Billilimbra	666		Greater Glider	Sighted	4-42-500 67-69-100 N	SP-815-2
17-11	Billilimbra	666		Greater Glider	Sighted	4-42-500 67-69-100 N	SP-815-3
17-11	Billilimbra	666		Greater Glider	Sighted	4-42-500 67-69-100 N	SP-815-4

-845-

* ENTERED INTO DB on Dec 2nd '97
RH

- | | | | | | | | | | | |
|-----------------------|-----------------------------------|-----------------------|----------------------------|-------------------------------------|----------------------|---|----------------------------|--------------------------|-------------------------|-----------|
| 1. Night Time Surveys | 2. Follow-up Clearance Inspection | 3. Rejects Inspection | 4. Regeneration Inspection | 5. Road Line, Dump Sites Inspection | 6. Timber Assessment | 7. Marking Boundaries, Filter Sites or Conservation Areas | 8. Reports from Log Faller | 9. Head Disposal Burning | 10. Harvesting Planning | 11. Other |
|-----------------------|-----------------------------------|-----------------------|----------------------------|-------------------------------------|----------------------|---|----------------------------|--------------------------|-------------------------|-----------|

Fauna surveying results.

Ewinga / Billilimera SF^s
Cnpts. 665-668, 678-9.

Robert Kooyman
11/97.

superb lyre-bird,
black tailed black cockatoo...
swain Henry-aster....
reen cat-bird
very strike-thrush
four fantail
ite throated tree creeper
ite browned scrub-wren,
my fantail
il currawong
ying kookaburra
red kingfisher
angled drongo
hip-bird
thorn Robin
black throated scrub wren
winged wren
tail finch (red brown)
le yellow Robin
Ita
small billed Cuckoo
olive Rifle-bird.
older whistler
small Thrush (Zosterops sp.).
ga Pigeon
in cuckoo dove
le pigeon
in bower-bird.
my breasted lorikeet.
le / o mure lorikeet.
reen sallow
S parrot
my-black cockatoo (very rare in
swain area).
spoo fruit-dove...

* *Myotis advenus*
Scotorepens arian
* *Miniopterus sp. schreibnerii*
* *Karivoula papuensis*
Rhinolophus megaphyllus
Vespertilio ? darlingtoni
Nyctophilus gouldi
Vespertilio pusillus
* *Falsterellus tamarianensis*
* *Scotomys rueppellii*
Vespertilio regulus
* *Marmoptera newboldi*
Chalinolobus gouldi

Bodabod owl
* Powerful owl
* Sooty owl
white throated nightjar.

Wedge-tailed eagle
Gray goshawk

Red necked pademelon
* red legged pademelon
* parma wallaby
whip-tail wallaby - (western area).
red necked wallaby
swamp wallaby
mtn. Bobule possum
ring tail possum
* yellow-bellied Glider
sugar glider
Greater-glider
* Quoll (possible from calls).

* *Acacia darlingtonii*
Litoria lewisi
Litoria chloris
Mixophyes fasciculatus
* *Mixophyes iteratus* (calls) only.... probably.
Lechriodus flackherti
Litoria pearsoniana
* *Mixophyes balloni*

Red-bellied Black snake...
Gray bellied swamp snake,
Clarence River Ranges - snake,
Cacophis squamulatus
~~Gerrhonotus~~... (possible... ? x
Egernia major
 Carpet python.
Goanna
Black bellied swamp snake

KEY TO SYMBOLS USED ON 1:15,000 MAPS.

- - FLORA AND FAUNA TRANSECTS - RANDOM
- ===== - INTEGRATED KOALA TRANSECT....
- oooooooooooo - WALKING SPOTLIGHT TRANSECT
- Ⓐ - ANABAT SONAR SAMPLER SITE
- HT - HARP-TRAP SITE
- ⊕ - CALL PLAYBACK SITE
- xxxxxx - FROG TRANSECT

N = Wompoo Fruit-dove
 N = Olive Whistler
 RB = Rufous Scrub Bird
 L = Bush Thicket-knee
 B = Glossy Black Cuckoo

PW = Parma Wallaby
 RLP = Red-legged Pademelon
 Q = Tiger Quoll
 YBG = Yellow-bellied Glider
 GG = Greater Glider

'O = Powerful Owl
 O = Sooty Owl

As = *Assa darlingtoni*
 Mi = *Mizophyes iteratus*
 MB = M. balbus

See separate sheets for Microchiropteran Bat records.... AMG's & spreadsheets...

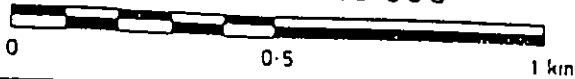
Compartment 665

Scale — 1:15 000

CB / 815 / 845

Contour interval 10m

G N



Compartment boundary

Inter strips

Protection strips

Road, minor road, dump site

Let weather dumps shown in red

ANABAT SAMPLE SITE

HARP-TRAP SITE

Special emphasis

FLORA & FAUNA TRANSECTS

Integrated Koala Transects

Walking Spotlight Transects

FROG TRANSECT

Call Playbacks Site

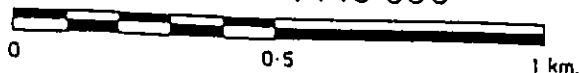
Compartment 666

Scale — 1:15 000

CB/815

Contour interval 10m

G N



Compartment boundary

Filter strips

Protection strips

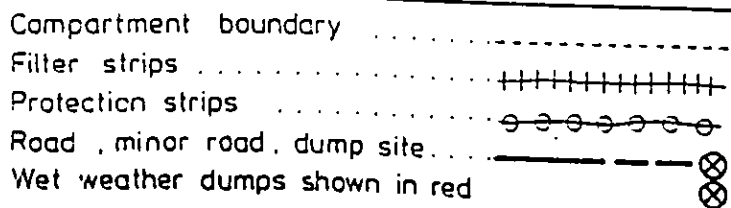
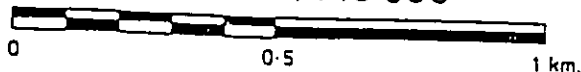
Road, minor road, dump site

Wet weather dumps shown in red

Special emphasis

CB / 815

Contour interval 10 m



Special emphasis

* C.F.C. L.A. TO C.A. 1000.

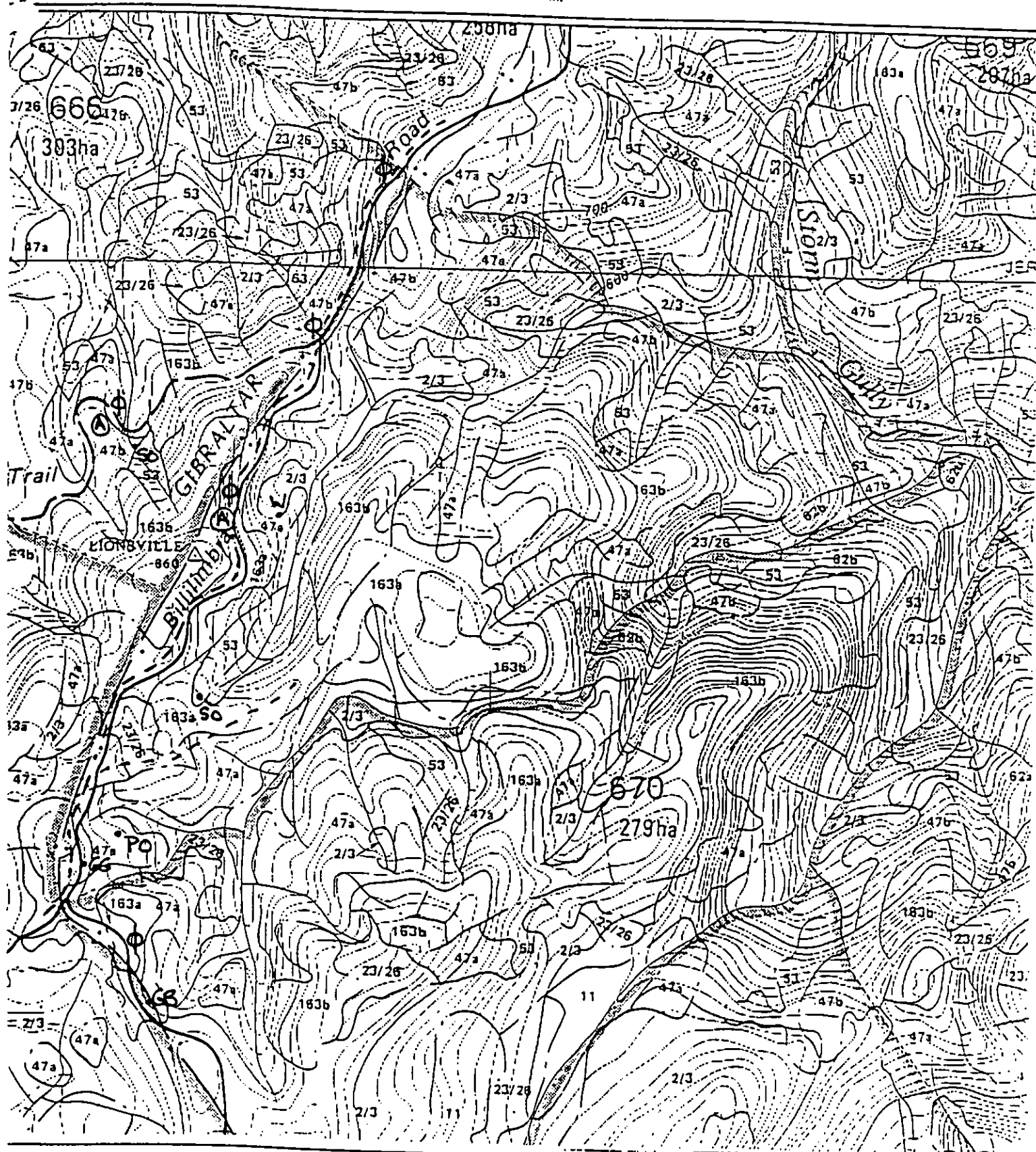
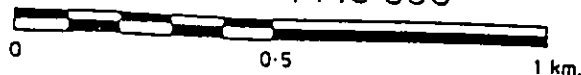
Compartment 668

Scale — 1:15 000

CB/ 845

Contour interval 10m

G N



Compartment boundary

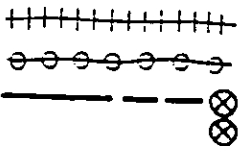
Filter strips

Protection strips

Road, minor road, dump site

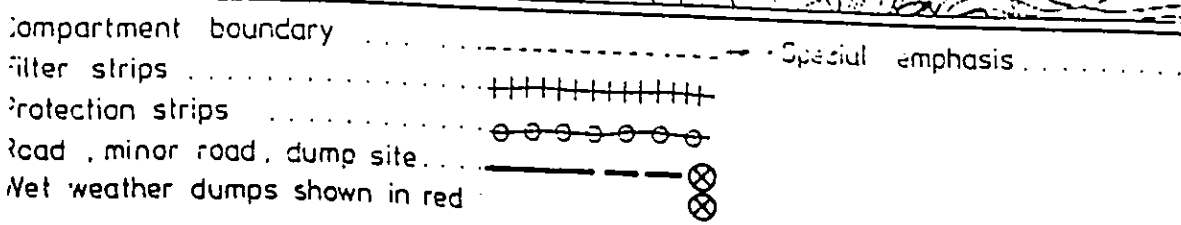
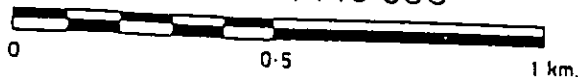
Yet weather dumps shown in red

Special emphasis



CB / 815

Contour interval 10 m



CSF 4.25m To Cerebellum

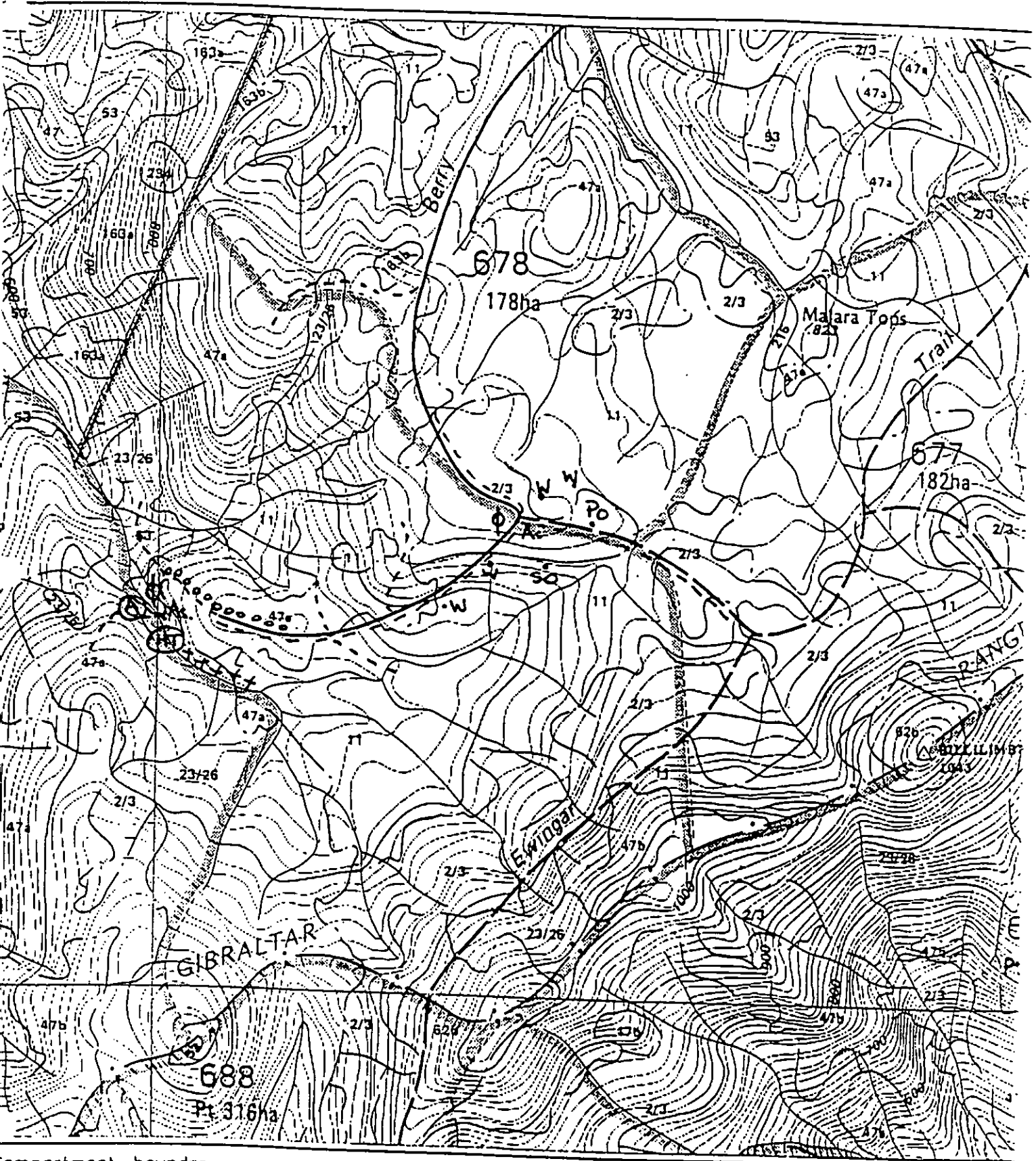
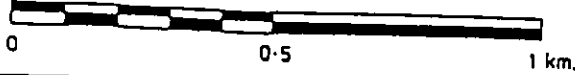
Compartment 679

Scale — 1:15 000

CB / 815

Contour interval 10m

G N



Compartment boundary
 Filter strips
 Protection strips
 Road, minor road, dump site
 Wet weather dumps shown in red

Special emphasis

* SEE KEY TO SYMBOLS

Ewingae S.F.

Cmpt. 665.

Rainforest
± Ft. 47, 53.

Types... Ft. 23/26 - 2/3. 11/97. Rhot Kaayman.

- Ficus watkinsiana (o-)
- Dendroide excelsa (o-)
- Cryptocarya glaucescens (o-c)
- Cryptocarya erythroxylon (o-vo).
- Cryptocarya doovata (o-)
- Litsea reticulata (o-)
- Cinnamomum oliverii (o-)
- Ehretia acuminata (o-)
- Chorylon australe (o-)
- Livistana australis (o-c)
- Archontophoenix cunninghamiana (o-c).
- Syzygium crebrinerve (o-)
- Syzygium corymbosum (o-)
- Syzygium oleosum (o-c).
- Synoum glandulosum (o-)
- Sloanea woodsii (o-vo).
- Orites excelsa (o-c-)
- Diplazium australe (o).
- Calceolaria paniculosa (c-)
- Neottia dealbata (o-c).
- Pteris cunninghamii (vo-c).
- Quintinia verdanii (o-)
- Doryphora senaffra (o-c).
- Elaeocarpus kirtanii (vo-o).
- Acnema smithii (o-vo).
- Striobatus paniculatus (o-c).
- Nothofagus macleayana (o-c).
- Acronychia pubescens (o)
- Melicope microcarpa (o).
- Alectryon subcinereus (o-o).
- Schizomeria ovata (o-c).
- Cryptocarya meisnerana (o-)
- Cryptocarya micrantha (o-)
- Euroschinus falcata (vo-o).
- Trochocarpa Tawiana (o-)
- Hedyocarya angustifolia (vo-o).
- Dysoxylum fraserianum (o).

- Cissus hypoglauca (c-)
- Cissus antarctica (o-c)
- Rubus moorei (o-c)
- R. sp. - sp. A. (o-c).
- Palmeria scandens (o-c).
- Rubus (vulgaris) sp. (vo-)
- Hibbertia scandens (o)
- Morinda jasminoides (o-c)
- Melodinus australis (o)
- Marsdenia flavescens (vo)
- Marsdenia rostrata (o)
- Marsdenia sp. Hayki (o-)
- Embellia australasica (o).
- Tetrastigma nitens (o-c).
- Clematis aristata (o)
- Parsonsia fulva (o-c).
- Cephaelanthus cephalanthoides (o-c).
- Gestopteris cymosa (vo-o).
- Piper naxos-hollenbergii (o-c).
- Parsonsia paniculata (o-c)
- Parsonsia undulata (vo-)
- Parsonsia sp. tenuis (q. aff.).
- Dioscorea transversa (o).
- Allocasia brisbanensis (vo-o).
- Lomandra spicata (o-vo).
- Carlyline petidaris (o-c).
- Carlyline stricta (o-c)
- Dianella canarulea (o-)
- Gymnostachya encaspa (vo-o).
- Lianopodium nanostachya (o-vo).
- Cyathea cooperi (o-vo).
- Cyathea leichhardtiana (o-c)
- Diplazium australe (o-c)
- Colobolus dubia (o-)
- Adiantum fernanum (o-c)
- Adiantum hispidulum (o)
- Pollia crispata (vo-c).
- Blechnum cartilagineum (vo-c).
- Pteris umbrosa (o-)
- Lantana marginata (o-vo)
- Lantana decomposita (o-c).

Fr. 23/26 cont'd.

EWING & AL S.F.

Cneph. 665 →

Robert Koenig
11/27

- ic/c Guisa seniglanca (vo-o).
ic. Guilfoylia monostylis (o-vo).
ic Brachyclitax acerifolia (vo-o).
ic. Onclanthus papulifolia (o).
ic. Accarychia dolanifolia (o).
ic. Diospyros pentanera (o-vo).
Polyscias murrayi (vo-o)) ditto same...
ic. Polyscias elegans (o)
ic. Rhodamnia ruberens (o)
ic. Rhodamnia argentea (vo-z).
ic. Castanopsis alphonse (o-vo).
Dysoxylum molissimum (vo-z)
ic. Canthium coprosmaoides (vo).
Alphitonia excelsa (vo).
Ficus coronata (o-c)
Abrophyllum arane (vo-).
Archirodonomyces beckeri (o-
Polysera curvianthii (o-c).
Sceloporus braunii (o).
Daphnandra Sp. A. (o-c).
Ptilospermum undulatum (p-vo).
Claoxylon amide (o-c).
Guisa seniglanca (vo-o).
Toona ciliata (vo-o).
Paraklidenanthe pruriens (vo-o).
Acroderis enodiformis (vo-c).
Balgolia inophylla (vo-o).
Ptilospermum revolutum (vo-o).
Flindesia schottiana (vo).
Symplocos thwaitesii (z).
Wilkiea huegeliana (vo-o).
Hymenoparum flavum (vo-z).
ic. Backhousia myrsinifolia (z-c) open area (road).
Gmelina leichardthiana (z-vo).
Boehmeria platyphylla (z-vo).

- Juncus sp. (o- roadside...
Gahnia aspera (o)
Gahnia sieberiana (chade....
Optunia sp. white...
Cyperus tetraphyllus (o-vo).
Lepidosperma filiformis (o).

- Dendrobium gracilicaulis (o)
D. puginiforme (o)
D. speciosum (o-)
D. sp. aff. dolichophyllum (z-)
D. acuminatum (vo-o) L. rostratum.
D. linguiforme (vo-z).
Elatostema reticulata (vo-c).
Asplenium australasicum (o-c)
Asplenium polyodon (vo-)
Dyctyna braunii (o)
Alpinia caerulea (vo).
Platyserium bifurcatum (o)
P. superbum (o)

- Tylophora paniculata (vo-o).
Stephania japonica var. diandra (o-c).
Sarcopetalum harveyanum (vo).
Maclura cochinchinensis (vo-z).
Austrocheilanthes blackii (o-).
Cayratia clematidea (o-vo).
* Asclepiadaceae: Specimen ... poss. Tylophora ...
Muehlenbeckia & (z).
Weed - * Lonicera japonica (z-o) same as from Malaya & ...
- This is ... weed same...

EWINGAE S.F.

Fr. 47. [± 23/26 ...

Robert Koenig
11/17.

- Eucalyptus saligna (c)
- E. microcarpa (o-c)
- Lophotermis conferta (vo-o).
- E. acuminoides (r-vo).

- Acacia irrorata var. irrorata (o-vc)
- A. melanophylla (o-c)
- Tristaniopsis collina (o-r)
- Livistana australis (vo-c).
- Cryptocarya microneura (vo).
- Camellia acuta (r-vo)
- Laurus densicostata (vo-o).
- C. smithii (o-c).
- Sassafras medea (vo-o).
- Ptilocarya rigida (o-c).
- Cecropia sp. amygdalifolia (vo).
- Dichodomyctus beckeri (o-c).
- Zanthoxylum sp. parviflorum (vo-c).
- Pomaria laurina (o).
- Apocynum varicillatum (o-c).
- Diospyros australis (o-vo)
- Eucalyptus lanceolata (o-c).
- Syzygium lonicerosides (o-c).
- Ostrya dioica (o-c) distributa...
- Urtica myrsinoides (vo-o).
- Ternstroemia chinensis (o-c).
- Zuccarini laurina (vo-o).
- Ternstroemia ovata (o).
- Ternstroemia scandens (o-c).
- Ternstroemia sp. debilis (o).
- Ternstroemia laurifolia (vo-o).
- Ternstroemia laurifolia (o-vo)
- Ternstroemia laurifolia (o-vo)
- Ternstroemia glandulosa (o-vo)
- Ternstroemia elatior (o). (common side)
- Ternstroemia hederacea (o-c).
- Ternstroemia latifolia (vo).
- Ternstroemia latifolia var. alba (o).
- Ternstroemia latifolia (vo).
- Ternstroemia indica (vo)...

- Doodia aspera (c)
- Gasteroplectrum cyanum (o-c)
- Rubus rosifolius (o-c)
- Rubus hillii (o)
- R. noarzi (o-c).
- Celastrum subspicatum (o).
- Cayratia clematidea (o).
- Kennedyia rubicunda (o-vo).
- Smilax australis (o-c).
- S. glycyphylla (o-vo).
- Hibbertia scandens (o).
- Clematis sp. glycinoides (vo)
- Passerina straminea (o-c).
- Embellia australasica (vo-).
- Hibbertia dentata (o-vo).
- Clematis cristata (o).
- Lepidosperma elatior (vo-o).
- Entolasia marginata (vo-)
- Galunia melanocarpa (o).
- Galunia aspera (o) ..
- Galunia sieberiana (vo-o).
- Juncus sp. confertus (c).
- Poa latifolia var. lat. (o-vo).
- Lobelia triflorocaulis (o).
- Hydrocotyle pedicellata (vo-c). not seen.
- Urtica incisa (r-vo).
- Senecio minimus (vo)
- S. amygdalifolius (vo).
- Histioglossum incisa (o-r)
- Ternstroemia (vo-).
- Celochloa dentata (vo-c)
- Zieria arborescens (o-c).
- Bursaria spinosa (vo-r)
- Prostanthera (incisa) (o-c).
- Ostrya vulgaris (r-o) distributa...
- Phyllanthus sp. (specimen collected) glossy, acuminate
subcylindrical. crenate margin. 1-2-3 tall.
- Phellodendron sp. elatior (vo-r)
- Asterolobos coriifolia (r-vo).
- Phyllanthus (gumii)? (o-c) check...
- Senecio minimus (vo-r)
- Gonocarpus areophilus (o-c)
- Bracteacanthus bracteatus (r-vo) roadside...
- Helichrysum elatum (vo-o).

ADD LIST FOR Fr. 23/26 for moist sites = 23/26 ± 47, 53.

EWING S.F. / BILLIMORA S.F. Cnpts-:

Fr. 163. NEBBT. dist sample / mult types \pm 23/26, Fr. 67, Fr 53, \pm Fr 11. (see lists...)

Robert Kington
11/97.

- Eucalyptus andrewsii var. campanulata (c-vc)
- E. laevopinnia (vo-c)
- E. microcarpa (vo-o)
- E. intermedia (vo)
- E. saligna (R-vo).

- Acacia melanoxylon (o)
- A. irrorata subsp. irrorata (o-c)
- A. falcata (o-1)
- Livistona australis (R-vo)
- Archontaphoenix cunninghamiana (R)
- Acacia falcatiformis (o)
- A. biverata (vo)

- Leucopogon lanceolatus (c)
- Phelodendron elatum subsp. bechleri (vo-a)
- Lomelia silicifolia (o-c)

- Helichrysum elatum (o-vo).
- Bracteantha bracteata (vo-a)
- Acanis acana (R-vo)

- Dodaea megazygta (R-vo)
- Gonocarpus sp. oregophilus (o-c)

- Trochocarpa larrina (o-c)

- Elaeocarpus reticulatus (o)

- Calochortus paniculatus (o-vo)

- Personia media (o)

- Psychotria laevicaulis (o-c)

- Viola betanifolia (o)

- Polycias sambucifolia (vo-o)

- Carex lauranciana (o-c)

- Asterolasia (vo-a)

- Prostanthera incisa (vo-c)

- Drosera diosmifolia (vo-c)

- Archidodonea bechleri (o-c)

- Nitrocrania indica (vo-o)

- Personia media (o-c)

- arborescens (o)

- Gonocarpus (o-c)

- micranthus (vo-o)

- Solanum densivestitum (vo-o) - - -

- Impatiens variabilis (vo-o)

- Lagotis bicoloris (o-vo)

- Personia amygdalifolia (o)

- minuta (o).

- Cissus hypoglauca (o-c)

- Cissus antarctica (o)

- Tetrastichus nitens (vo)

- Hibbertia scandens (o)

- Hibbertia dentata (vo-o).

- Kennedia rubicunda (vo)

- Palmeria scandens (vo-c).

- Geitneria cynosuroides (o-vo)

- Smilax antarctica (o-c)

- S. stygiophylla (vo).

- Gymnatactichus anceps (vo-o).

- Dicella caerulea (vo-o)

- Thamnos australis (o-c)

- Lomelia longifolia (vo-

- Entolasia stricta (vo-1).

- Gahnia aspera (o)

- Lepidosperma elatum (vo-c).

- Poa lobellodora var. lob. (o-vo)

- P. sieberiana ? chab.

- Gahnia aspera (o-c)

- Gahnia melanocarpa (o)

- G. sieberiana (

- Stichens lobatus (

- Stichens flabellatus (

- Cyathus australis (R-vo)

- Calochortus dubius (o-c)

- Flax exultans (vo-c)

- Histiopteris incisa (vo).

- Lepidosperma filiformis (o-vo).

- Solanum sp. (o-vo).

- Geranium solanderi (o)

- sc. Cryptocarya rigida (o-c).

- Hovea (sp.) linearis (vo-o)

- Glycine clandestina (o).

- Dermodromus rhytidifolius (vo-o).

- Juncus sp. (o-vo).

- Lepidosperma laterale (o-vo).

- Muelleria eucalyptoides (o-c)

EWING S.F.

Marl Ck.

Robert Kooyun.

low microphyll / notophyll vine thicket... *Baccharis myrsifolia*...

canopy ht. 5m → 15m.

- Cfr. *Baccharis myrsifolia* (vc)
Cfr. *Tristanopsis collina* (o-c)
sc/c *Conocarpus apetalus*
sc/c *Prostanthera incisa* (vo-o).
sc/c *Trachocarpa laurina* (vo-)
sc. *Phoradendron elatum* ^{subsp. beckeri} (vo-o)
sc. *Rapanea variabilis* (o-vo).
Plectranthus parviflorus (o-vo)
sc/c *Acacia melanoxylon* (vo)

figs per:

- Lepidosperma laterale* (o).
Lomandra longifolia (o-c)
Dianella caerulea (o+vo).
Extolonia stricta (vo).
Pyrosoma superba (o).
Blodinus pattersoni (o-c)
Doodia media (o).

- Sarcodites olivaceus* (o-c)
Bulbophyllum exiguum (o-c).
Stichopus flabellatus (c-vc). along creek.
Grammitis bilkieri (vo-e).

- Marsdenia coccinea* (vo).
Parrisia straminea (vo).

± F+53.

: adjacent to Ft. 11, Ft 53, Ft 163.... see species lists....

Poorly Reserved Community Type....

Diurnal S.F. Cnpt. 666.

Veg. Sample Ft. 62

Robert Koenig
11/97.

- Eucalyptus tincta* (vo-r)
- E. acuminoides* (vo-o)
- E. (corymbosa) gunnifera* (o-vo)
- E. microcarpa* (o-vo)
- E. umbra* (vo)
- E. siderophloia* (r-vo)
- E. laevipinnata* (o-c)
- Angaphora subvelutina* (o-vo)
- Allocasuarina torulata* (vo-o)
- Acacia (gracilis)* (vo-o)
- E. serena* (r-o)
- Trochocarpa laurina* (vo-o)

Hibbertia obtusifolia (o).

Erseania oleoides (vo)

media (o)

diglossa australis (r).

zanthoxylum glauca (vo-c).

ola latanifolia (vo).

canthia sieberiana (vo-o).

zyllaria bicoloris (vo).

solis latifolia (vo).

cheilanthes parvifolia (vo-o).

spike: small canthia...

rather encaserna (vo)
w. xanthoxylum.

increase: specimen...

canthia sp. (o-vo).

Glycine clandestina (o-c)

Kennedia rubicunda (vo-

Hardenbergia violacea (o)

Desmodium rhytidofolium (o)

Passerina straminea (vo).

Rubus parviflorus (vo-o).

Celastrus subspicatus (r-vo).

Hibbertia scandens (vo).

Lepidosperma laterale (r-vo).

Themeda australis (o)

Poa latifolia (vo-lab. (o-c).

Imperata cylindrica (o-c).

Lomandra multiflora (r-o).

Dianella caerulea (vo).

Poa sp. (vo-o).

Optunia sp.

Cymbopogon sp. (vo).

(ecology area). *Platycodon bifloratus* (r-o).

Davallia pyxidata (r-vo).

Dendrobium ligularia (vo).

Cheilanthes sieberiana (vo-o).

Dendrobium kiginum (vo)

Pyrostachys rupestris (vo)

P. confusa (r).

Ameyra sp. (vo-)

Dendrobium speciosum (r).

Camelotriaceae:

Andelina sp. (biflorum)? (r).

Cymbidium sp. malidum (vo-o).

Fr. 53. *Lophostemon confertus* ± Ft. 11 or 23/26. Robert Kooyman 11/97
 ♀ ... 22 ± Ft. 47....

- 2. *Lophostemon confertus* (c-vc)
- 1. *Eucalyptus saligna* (r-o)
- 1/2 *Archontophoenix cunninghamiana* (vo-c)
- 1/2 *Livistona australis* (vo-c)
- 1/2 *Caldecluvia paniculata* (o-c)
- 1/2 *Cestropetalum apetalum* (o-c)
- 1/2 *Cryptocarya micrantha* (vo).
- 1/2 *C. glaucescens* (o)
- 1/2 *Persea cunninghamii* (o-vo).
- 1/2 *Rhodomyia rubescens* (o-vo).
- 1. *Cryptocarya rigida* (o)
- 1. *Neolitsea dealata* (o).
- 1. *Trachocarpa laurina* (o).
- 1. *Maytenus bilocularis* (vo-o).
- 1. *Cryptocarya meiseriana* (o).
- 1/2 *Grewia semiglobosa* (vo).
- 1. *Syzygium deesum* (o)
- 1. *Archirhodomyia beckeri* (o-vo).
- 1. *Eucosmopsis falckiana* (o-vo).
- 1. *Psychotria loricoides* (o)
- 1/2 *Acacia irrorata* var. *irrorata* (vo-c).
- 1. *Cardyline petiolata* (o)
- 1. *C. stricta* (o-).
- 1. *Ficus coronata* (o).
- 1. *Paradiderandra pruriens* (vo).
- 1/2 *Melicope micrococca* (vo-o).
- 1. *Synoum glandulosum* (o).
- 1. *Citriobatus pauciflorus* (o-c).

- Cephaelis cephelanthus* (o)
- Cissampelos hypoglauca* (o-c)
- C. antichina* (o)
- Passerina fulva* (o)
- P. arvensis* (vo).
- Palmeria scandens* (o)
- Melaleuca australis* (o)
- Maranta jacinthoides* (o).
- Smilax australis* (o).
- Clematis cristata* (o).

- Laricopsis decapartita* (vo-c).
- Diplazium australe* (o-vo)
- Cyathea australis* (o-vo).
- Cyathea leichardtii* (o-vo)
- Blechnum cartilagineum* (o-c)
- Doodia aspera* (o).
- Platynerium bifurcatum* (o)
- Asplenium australasicum* (vo-o).
- Dendrobyssa caerulea* var. (o).
- Alpinia caerulea* (o).
- 1/2 *Polystichum elegans* (vo-o)
- 1/2 *P. murrayi* (vo-o).

) *distichum*.

-- then diffuse type boundaries with Ft. 23/26, Ft. 11, & [Ft 47 ± 2F].

Riparian sample. Ewing S.F. Ft. 11/13
Main Ck. 6/7/68. Ceratopetalum / Tristaniopsis.

SNVF

Robert Karyman
11/97.

* Kerivata papuensis Capture Site.

- c/c. *Ceratopetalum apetalum* (vc-c).
- sc. *Callicarpa serratifolia* (vo-c).
- c/c. *Tristaniopsis collina* (o).
- sc. *Taenmannia visipida* (o-c).
- c/c. *Endiandra sieberi* (vo-c).
- sc. *Archirodonomyces beckeri* (o).
- sc/c. *Quintinia verdonii* (vo-o).
- sc. *Elaeocarpus reticulatus*
- sc. *Acrocalymma nodigianum* (o-c).
- c/c. *Orites excelsa* (o-c).
- sc. *Anopterus mackayana* (o).
- sc/c. *Cryptocarya glaucescens* (o-fo).
- Coccoloba lawrenciana* (vo).
- Carlylie stricta* (o-c).
- sc/c. *Synalum glandulosum* (o).
- c/c. *Schizomeria ovata* (o-c).
- Lirapadia monastachya* (o).
- sc/c. *Acronychia pubescens* (vo-o).
- sc. *Doryphora saesalifera* (o-vo).
- sc. *Cryptocarya meisneriana* (o-c).
- Citriobatus pauciflorus* (o-c).
- sc. *Polyosma cunninghamiana* (vo-o).
- sc/c. *Acmena smithii* (vo-o).
- sc/c. *Diospyros pentanera* (z-vo).
- c/c. *Gutierrezia sericea* (z-vo).
- sc/c. *Stereocarpus salignus* (vo-o).
- c. *Denhamia calandroides* (vo).
- sc. *Notalea longifolia* (vo).
- sc. *Melicope spaff hargreavesii* (R).
- sc. *Trochocarpa lawina* (vo).
- sc. *Diplazium australe* (R).
- Wilkiea huegeliana* (vo-o).
- Fiedleria australis* (R-o). (creak/moist creek).

Canopy ht. > 30m. Main Ck - 2 heap traps / side by side....

- Smilax glycyphylla* (o-c).
- Palmeria scandens* (o-c).
- Cissus hypoglauca* (o-c).
- Cissus antarctica* (o).
- Melodinus australis* (o-c).
- Marinda janninioides* (o-vo).
- Piptocarpha naerei* (o-vo).
- Stichone flabellata* (vo-c).
- Stichone lobata* (o-c).
- Doodia media* (o).
- Blechnum cartilagineum* (vo-c).
- Cyathea leichhardtiana* (o-c).
- C. australis* (vo).
- Tmesipteris [ovata]* (R).
- Large fern - collect.... *Todea barbara*....
- Blechnum paterarifolium* (o) creak.
- Histiopteris liciia* (vo-o).
- Elatostema reticulata* (vo-c).
- Todea barbara* (vo-o) creak.
- Pteris waterhousei* (vo-c).

Davallia pyxidata (o-
Lomandra spicata (o).

Cephalanthus cephalanthus (o-

EWINGIA / BILLIMERA SF. Capt. 679 - Main Ck.
Veg. Sample. Karivola & Myotis Capture Site.

Robert Koenig.
11/97

Fr. II. - SNVF.

- C₆ *Ceratopetalum apetalum* (c-vc)
- c/cc. *Callicoma serratifolia* (o)
- =/cc *Oritia excelsa* (o-c)
- =/cc. *Caldcluvia paniculata* (o)
- /cc. *Schizomeria ovata* (vo-o)
- /cc. *Cryptocarya glaucescens* (o)
- /cc. *Acnosa smithii* (vo).
- ic. *Acradenia erodifolia*
- Calobatrachium paniculatum* (o-c)
- ic. *Pennantia cunninghamii* (vo).
- Fieldia australis* (o-c).
- ic. *Tamania hispida* (o)
- 1/2 *Doryphora saccifera* (o).
- 1/2 *Quintinia vertonii* (o).
- Cryptocarya meiseniana* (o).
- Anopterus madagascariensis* (o-vo).
- Cryptocarya crysantha* (x).
- x *Syzygium corymbosum* (x)
- c S. *crebrinerve* (x)
- x *Litsea reticulata* (vo).
- c *Stenocarpus schimperii* (vo).
- Linopodium marastachya* (o-c).

- Palmeria scandens* (o)
- Cephaelis corymbosa* (o)
- Geitonanthes cynosuroides* (o-vo).
- Cissus hypoglauca* (o).
- Cayratia spathulata* (o-vo).
- Melodinus australis* (vo).

Filices:

- Blechnum patersonii* (o).
- Microsorum scandens* (o-c)
- Arthropteris* (o-vo).
- Lactuca decurva* (o-c)
- L. *marginalis* (o).
- Cyathea leichtlinii* (o-c).

Elastomeria reticulata (o-cl).

- Lomandra spicata* (o-vo).
- L. *tangitola* (o) cret.

- Asplenium australasicum* (o-cl)
- Platynerium bifurcatum* (o).
- Davallia pyxidata* (o.)
- Vittaria elongata* (vo).

Main Ck - just below convergence of two creeks....

1) one trap width.... narrow point at end of shallow pool....

2) trap width > 40m. - narrow flyway.... Photographs taken...

Riparian Veg. Sample. Ewiger S.F. Capt. 665.

Robert Kooyman 11/97.

* *Kenilworthia papuensis* — capture site (H.T.) ^{storm gully}. NVE (23/26) canopy Ht. > 30m.

- ∴ *Orites excelsa* (o -)
- ∴ *Caldecluvia paniculata* (o -)
- ∴ *Acradenia enodiformis* (o - c).
- ∴ *Syzygium creberrimum* (o)
- ∴ *S. corymbosum* (o).
- ∴ *Sloanea woollsii* (vo)
- ∴ *Cryptocarya glaucescens* (o).
- ∴ *Archontophoenix cunninghamiana* (o - c)
- ∴ *Livistana australis* (o - vo).
- ∴ *Ceratopetalum apetalum* (vo - o).
- ∴ *Cryptocarya erythroxylon* (vo - o).
- ∴ *Doryphora saffordii* (vo - o).
- ∴ *Anaptychus nasutus* (o).
- ∴ *Cinnamomum oliverii* (vo - o).
- Liriodendron macrocarpum* (c)
- Cryptocarya meisneri* (o).
- Cryptocarya doolata* (vo).
- Schizomeria ovata* (o - vo).
- Diplazium australe* (vo - el).
- Pennantia cunninghamii* (e).
- Cardyline rubra* (vo)
- Cardyline stricta* (e).
- Tasmanian irisipida* (o - vo).
- Citriobathus paniculatus* (vo - o).
- Litsea reticulata* (R).
- Brachyclitax acicifolia* (R).
- Cinnamomum virens* (e).
- Lophoceros confertus* (R). (1 large tree).
- Ficus carinata* (vo).
- Dendrocincla excelsa* (a - o) nearby

- Palmeria scandens* (o)
- Cephaelis cephalanthus* (o)
- Cissus hypoglauca* (vo -)
- Piper novae-hollandiae* (vo - o).
- Melodinus australis* (vo - o)
- Meriania jasmimoides* (o)
- Parsavia fulva* (o - c).
- Cayratia* sp. (vo).
- Tetrastichia nitens* (vo - e).

- Asplenium australasicum*.
- Cyathea leichhardtiana* (o)
- Cyathea australis* (o - c).
- Microsorum scandens* (o)
- Todea barbara* (vo).
- Laureopsis decapartita* (o - c).
- X. marginatus* (vo - o).
- Blechnum pattersanii* (o - vo).

- Elatostema reticulata* (o - c)
- Pollia crispata* (vo - o).
- Alcea brisbanensis* (o - vo).
- Gymnostachyum anceps* (vo - o).

At height : > 35m, NVE, narrow stream (are H.T. under). water running...
0m - radius / circular plot sample..... narrow flyway

VEG. SAMPLE.

Keebunga Parkensis - Captive Site.

Robert Karyman

NVF - SNVF. / Riparian RF.
with palms.

EWINGHA S.F. Goughs Crk - Capt. 666.

11/97.

- c/c. Syzygium creberrimum (o)
- c/c. Litsea reticulata (o-v)
- c/c. Archontophoenix cunninghamiana (c-v)
- ic. Acradenia endodermis (o-c)
- c. Dendrocincla excelsa (o)
- c/c. Caldecluvia paniculata (o-c).
- c/c. Cryptocarya glaucescens (o).
- Wilkiea huegeliana (o-v).
- c/c. Cryptocarya erythroxylon (o).
- Litsea paludosa monostachya (o-c).
- c/c. Syzygium corymbosum (R).
- c/c. Ceratopetalum apetalum (vo-o).
- Cardyline petiolaris (vo).
- c. Ficus watkinsiana (vo-a).
- Tasmannia stipitata (o).
- c/c. Melicope micrococca (vo).
- c/c. Livistana australis (vo-a).
- c/c. Dysosmum rufum (R).
- c. Ficus coronata (o).
- c/c. Acmena smithii (vo).
- c. Neolitsea dealbata (vo).
- c. Gmelina leichhardtiana (R).
- c. Hodgkinsiana ovatifolia (R).
- c Penzance cunninghamii (a-vo).
- c Boleynia inaphylla (R).
- Eupomatia bennettii (R).

- Parsanisia pulva (o)
- Melolobium australe (o)
- Morinda javanica (vo-).
- Cissus hypoglauca (vo-o).
- Piper novae-hollandiae (vo).
- Makrisia scandens (o).
- Embellia australis (vo)
- Ripogonum elaeagnum (vo).
- Cephalanthus cephalanthoides (o)
- Arthropodium (small) (o)
- Lantana decumbens (o-c).
- Microsorum sp. (o).
- Cyathea cooperi (vo)
- C. leichhardtiana (o-c).
- Blechnum patersonii (R).
- Elatostema reticulata (c-v)
- Ptilis crispata (o).

- Platynerium bifurcatum (o)
- Asplenium australicum (vo-o).
- Alcania hirsuta (o).

- Citriobathus paniculatus (o).
- c/c Doryphora carnegiana (a-vo).

stream / single loop trap width....

narrow.. but often open ... flyway along Crk.
... small pools (running water).
(SEE PHOTOGRAPHS).

Fr. 83/26 (± F11). (1) NVF...

Canopy ht. 25-45m.

Forest is quite open.... captive site narrower flyway...

FIELD DIARY. EWINGAR SF / BILLILIMBARA S.F. Cnpts. 665-668, 678-9.

Monday 17th Nov. - A.M. / BSW Report Mt. Belmore SF 344 & 401. Robert Kooyman.. 11/97.
Submission for EMT.

EWINGAR S.F. - afternoon - start Cnpts. 4:00 pm. meet up with Survey Team.

- weather: light drizzle / rain warm, light breeze $> 33^{\circ}\text{C}$ diurnal temp.
- rain increasing after dark [Wompoo fruit-doves... calling... see Map. (8 sites....)]

Frog survey - *Assa darlingtoni* - numerous records... Cnpt. 678/9. *Litoria larsoni*, *Litoria chloris*,
Mixophyes fasciculatus, *M. iteratus* (calls, creek.... Main Crk...)

Drive back to Lonsville Rd - meet up with Kevin / Noel et al....

30pm... abandon survey due to rain! - Frog / herp sample on drive back.... *Parnia wallaby* (4-yr-old).
10:00pm set up camp. END.

Tues. 18th Nov. - weather - overcast, early drizzle, slowly lifting.... Temp. 26°C .

7:30 am - light drizzle... Veg. survey - Ft. 23/26, Ft. 47 etc....

Wompoo fruit-doves - calling and seen....

Plant 10 etc....

- after 6:00 pm - RSB & OW playback (Cnpts. 678/679) - NO response.

ecthes - light cloud, no rain, no / light breeze, TEMP. 15°C at 7:30 pm.

7:49 boundary) Waning moon, no moon / early night.... 11:40 pm moonrise.

PLAYBACK CALLS - : * Powerful owl - no response initially... then after dark owl P.O. calls
LISTEN: 7:45 pm - 8 pm Sooty owl - no response... then dive-bomb calls... during P.O. calls.

[START: 8:00 pm] Eno. playback 8:30 pm... brief... P.O. still calling....

P.O. started calling 8:20 pm... still going 8:40 pm... end 8:42 pm....

Driving Spotlight *Parnia wallaby* ... on road... followed for 50 mtr. (see MAP Cnpts. 678)

comes up from Main Crk (667/678) - Call Playback -:

pm. Sooty owl - no response then * P.O. heard calling - S.E. > 5 mins...
... pause, then recommence... 10:20 pm.

[YBG - calls from both sides creek]... no playback... TEMP. 14°C at 10:30 pm.

start: P.O. - still calling -

Pitta... calling.

10:35 pm.

P.O. still calling....

Driving Spotlight - : Main Crk to end Berry Rd \rightarrow . Seen from Crk - Feral cat.

- down to Lonsville Rd. Meet up with Kevin / Noel et al.

8 pm - Discuss tomorrow plans etc.... Drive back to my campsite - Safford Rd.

Set up camp - 12:00 pm. END. Sassafras Trail - Sugar Glider calling...

Wed. 19th Nov. 1967.

Ewinga / Billilimbura S.F.

Robert Karyman
Field Diary.

Cmpts: 665-668, 678-9.

8:00 am - I.D. Botanical Specimens... Samfurn Rd. Camp... Garry Blacker calling...
Veg. sample - Fr. 47, Fr. 23/26, Fr. 163. Cmpts. 666/667, 678.

Check rocks / tracks ... reconnaissance etc. Meet up with Kevin / Noel at al...

5:30 pm: end / out etc....

6:00 pm - diurnal bird survey....

7:30 - with Kevin & Robert - along Billilimbura Rd. move to Malara Fire Trail.

Site near Boundary ^{667/666} ANABAT SAMPLER SITE.

8:20 pm - : Playback not required - P.O. heard calling -- > 4 calls than quiet...
YBG⁺ calling (> 2). called several times....
[also heard by Noel / Nicole...]

PLAYBACK CALL - Scary owl - no response...

4th lister: Boobook owl - calls, YBG - brief calls, sugar gliders calling...

10:00 pm: weather: no moon (moonrise ^{very dark.} after 11:30 pm), light wind to no wind,
light overcast - no rain, TEMP. 16°C at 8 pm. 15°C at 9:00 pm.

Driving Spotlight Tract - 1 km - (notly seen)

ANABAT SITE - ϕ location - Scary owl calling - (Noel & Nicole) No playback...
near Billilimbura. YBG calling - Noel owl... (see map / Aug⁺ etc.).
1. km Malara Fire Trail.

LISTEN: Boobook owl, sugar-gliders, small macropod - palamalan, (S.O. calls
0:00 pm. (heard Kevin's playback from 4-ways / Linsville Rd.) - (dive bombers...
9 km. along Malara Cde Fire Trail - S.O. calling... Playback response....

PLAYBACK: YBG - no response... GG. - straight.

Parma wallaby - on road 450m past last ϕ site.

9:30 pm - Set up camp etc. 11:00 pm END.

Thursday 20th Nov. 1967 - : weather: overcast, light rain, light wind, approx. 15°C. (increasing steady).

5:00 am - Diurnal bird Survey - Listen for RSB & OW. (Playback) - no response..

6:30 am - Pack up camp etc. Travel to Carnio for meeting 7:15 am.

Loop Trap - Storm Gully - * Kaributa papensis.... (2 animals captured)....

Return - : to Ewinga / Billilimbura - 4:30 pm travel to Main Cde. Spm. -

Cmpt. 679 - Main Cde. 6:00 pm -> Fray survey - * Asca darlingtonii - numerous calls....

Playback for Rubric sp. 2 (complex), Mixophyes spp.... no response....

30 pm - 8:00 pm listen... Asca darlingtonii.. Boobook owl(s),
weather: fine, clear, no wind / light breeze, TEMP. 18°C at 8:00 pm. moonrise after
midnight... \odot . dark to very dark...

PLAYBACK calls - : S.O. - no response, YBG - no response Koda - no response.

LISTEN: Mtn Boobook - calls, Asca,

Thurs. 20/11/97 ^{cont'd} Field Diary...

DRIVING SPOTLIGHT TRANSECT - Main Gk to Capt. boundary.. 679/8.

- 800m (NP-Wilderness Area)

- 400m - ringtail Possum - Sm in vine tangle at edge of Rd.

- 800m - long-nosed bandicoot (on road).

- 1.6kms END... Capt. Boundary 679/8. LISTEN:

move to Main Gk.... area...

300m up local - Red legged Pademelon on road - moved ahead of vehicle then turned back to face lights - moved back to vehicle....

-- animal has skin disease, visible as warty protuberances, and some exposed

skin (lacking fur), around neck area to chin, and on one shoulder.

30pm. Sandgras Rd. - camp... 11:00pm/end.

Fri. 21st Nov. 1997 - weather: cool, cloudy, low cloud - developing to light rain later....

5:00 am - check trap-traps - 7 captures < 5 *Miniopterus* sp. - (cloud increasing)

6:00 am - return to camp (Sandgras Rd) - Bird Survey.... etc.

Veg. samples.... Fr. 67, Fr. 23/26 - Kerivoula capture site (Starm Gully) / 10am.

next week: ① trap traps - Main Gk, Gough Rd - Cke on boundary....

② Veg. sample - Main Gk capture site for *Kerivoula papuensis*.... ✓ & photographs.... ✓

③. Veg. a) ridge line (HWS) C 679 / 678. ✓

b) Crocodile Rd area.... C 667.

c) Creekline NW 666/665

d) Track into C 666

e) NE Cmp. 665 - Fr. 163 etc... refer to previous Report adjacent Cmp. ✓

f) Main Gk - waterfall rocky area and wet area below.... ✓
- opposite ridge..

ASIO office - ④ Fr. maps - Cmp. - 1:15000 for Main Gk... Cmp. 665-668, 678-9. ||

④ Noel / Nicole - pre-dawn ANBAT sampler? (trial.... ?)

⑤ Walking spotlight transects.... wherever possible! ✓

⑥ Remote area playback sites.... walk in sites.... ✓

ASIO office - ⑤ Hair-tubes^x & Elliot traps^x.... for *Glanlana* surveys.... ? X

PHOTOGRAPHS OF *Kerivoula* - capture sites / habitat.... ✓

EWINGA / BILLILIMBA SF. Cnpts. 665-8, 678-9
Field Diary.

Robert Koenig

ON: 24/11/97. - Prep. for trip. Casino Office de... arrive in evening....

6:00 pm - Listen at various sites along Billilimba / Barry Rd....
- survey team supervision etc...

Harp trap / snare locations.... driving transect etc...
Frag Survey - main Ck.

10:00 am / set up camp.

Tues. 25/11. - (1) *Miniopterus (schreibersi)* ^{microbats} (5) in Harp Trap - Main Ck... morning
7:00 am. (W & Vespertilio sp. plus (1) *Rhinolophus* sp.)
8:00 am - Specimen I.D. (veg). Species lists etc...

Sample - rocky outcrops / waterfalls along Main Ck.
Dominated by *Baccharis* / *Tristania* ^(dominant) \pm Fr 11. adjacent Fr. 53, 163.

- Fr. 47, 163, \pm RF Cnpt. 678-9 veg. sample taken....

- Cnpt. 665 - Fr. 163. \pm 23/24.

- Take photographs of *Kerivoula papuensis* capture sites....
- veg. sample

weather: fine, clear, warm $>25^{\circ}\text{C}$ at 7:00 pm. (no moon). very dark, no wind....

6:00 pm - sort botanical specimens ... etc. Sassafras Rd - camp.

listen: diurnal birds...

after dark: listen: sugar glider, Boobade owl, white throated nightjar.

Walking Spotlight transect - Sassafras Rd - P.O." - calling $280^{\circ} \rightarrow 310^{\circ}$
 $\text{♀} \text{♂}$ (500m).

- Clarence River Rainforest

- sugar glider... calls

- bandicoot..

- Mtn. Bobule possum.

NO. 9:00 pm Temp. 22°C 9:00 pm. very dark, no wind...

PLAYBACK calls: S.O. - no response

- Kooker - no response.

YB6 - no response

LISTEN: Sugar Gliders - calling (nearby)? Mtn. Bobules (calls...)

0:00 pm - meet up with Kevin & Noel et al.... Bat Survey.

end 10:30 pm - [set up camp]... Malara Ck Trail - 11:30 pm

: drive to Malara Ck Trail... Meet up with Survey Team - discuss results/plans...

Camp Lethbox Rd....

Field Diary

EWINGA/BILLUMBRA SF.
665-8, 678-9.

Robert Koenigman
11/97.

Wed. 26/11/97. Veg. Surveys - Goughs Rd C 665 -
Mclara Ck Trail to C 666 - track through (666 to 'old govt'
in NW corner - Ft. 62.

- ch/saw work - open Goughs Rd down to creek - set up Harp Trap.
- other Harp Trap on Main Ck / NP Wilkeson Boundary (near Washpool).
- ^{main} Ewinga Ck - *Falsistrellus tasmanicus*, *Kerivoula papuensis*,
Miniopterus schreibersii, *Vespadelus darlingtoni*, *V. pumilus*. & ?
C 667/678 Boundary.
- Ft. 53 - Veg. sample - diffuse type boundaries... Wampoo - 678/9... Bonyell.
I.D. plant specimens. RF.

6:00pm - I.D. specimens...

- Bat release calls - *Falsistrellus*, *Vespadelus*, / release *Kerivoula papuensis*
- 8:30pm - driving spotlight along Billumbra Rd. (RLP in rd... new previous record...)
- Bat Survey - with Noel. - release calls - *Scoteanax vuppeli*,
Falsistrellus tas.
- 11:30 - Meet up with Kevin et al. [downstream Goughs Ck - pos. *Myotis adonis*].
- Goughs Rd - at creek - release (1) *Kerivoula papuensis*...
- 12:30: END: set up camp - 1 km end.

— Thurs. 27/11 - Veg. sample - Kp - capture sites... Goughs & Main Ck. ✓
Ft. 53 - complete sample.... Wampoo... see map...
Ft. 62 - complete sample...

Complete all samples.... 3:30pm - travel to Coff. Hl. ERET meeting!

FLORA and FAUNA SURVEY of COMPARTMENTS 625 -628, EWINGAR STATE FOREST.

-prepared by Robert M. Kooyman, [FA- flora and fauna] Casino District. 11/97.

Results of field surveys are provided as field diary notes, data sheets, and species lists, with scheduled and target species records provided as AMG co-ordinants. Maps provide details of sample sites, playback locations, harp trap locations, sonar detection sites, species records and distributions, and extent and location of the various transects and traverses undertaken.

Introduction:

Flora and Fauna Surveys were conducted by Kooyman, [16&17/10/97, 21-24/10/97, and 27-29/10/97], with Harvey and Douglas, et al [SFNSW] assisting with the integrated koala transects, and the general and target species fauna surveys, beginning the 14/10/97, and extending over the same period.

As part of the core survey team Robyn Herklots, and Nicole Harvey assisted with surveys of all fauna groups.

Brad Law [SFNSW-Research] assisted by checking sonar recordings, and providing comment on the results of the detailed analysis of recorded microchiropteran bat calls conducted by Noel Douglas and Nicole Harvey.

General Description of Survey Area:

The four compartments cover an area of 1007 hectares, with the proposed net loggable area adjusted to approx. 775 hectares, after deletion of mapped Old-growth, and standard riparian and forest type exclusions.

Geology appears to be dominated by two main elements: the variously eroded granites in the northern and western part of the survey area, and the [volcanic] sediments from the main range in the south-eastern part of the survey area. Granite derived soils are predominantly siliceous and of shallow to moderate depth, with varying amounts of exposed rock, [mostly on steeper slopes]. Soils of granitic origin vary from grey, to yellow-brown, sandy to clay loams, with areas of deeper red earths [granodiorites - basic hornfels, indicating some tertiary volcanic activity] in the upper reaches of Hong Kong Creek, and Ewingar Creek [in cmpt.628]. Altitudinal range varies from 845m. to 445m.[845-570m in the harvestable area] Slope classes vary from almost flat to moderate in the north [cmpts.626,625], very steep in the south-west [cmpt.627], and moderate to steep slopes in the remainder [cmpt.628].

The vegetation of the area is only generally illustrated by the forest type map [SFNSW]. **Species lists for each forest type have been compiled and are appended to this report as field notes.** These provide an indicative sample of the various habitats, floristic alliances, forest types, transitional boundaries and overlaps.

The sequence of forest types largely follows the altitudinal, topographical, and soil gradients, and variations, with the granitic / siliceous soils dominated by Ft.37 [Eucalyptus pilularis], [with small areas of Ft.62, E.tindaliae, E.umbra], and Ft.163 [E.andrewsii subsp. campanulata], with the latter extending onto the volcanic sediments, and creating diffuse type boundaries with Ft.47 [E.microcorys, E.saligna], and Ft.53 [Lophostemon confertus], with or without rainforest. Rainforest, [Ft.2/3, 23/26, 11, &13], is generally restricted to lower slopes, gully heads and creek-lines, but occurs upslope in association with Ft.53 [Lophostemon confertus], and Ft.47 [E.microcorys, E.saligna], in the moister areas of cmpt.628. Of particular interest is the occurrence of

Acmena ingens in an area of Ft.23/26 [NVF] in the south-east corner of cmpt.628. This is the first time this species has been recorded west of the 'dry' Clarence River corridor.

Along the smaller creeks, in the drier forest types, there is a distinct riparian alliance of Tristaniopsis laurina, Callicoma serratifolia, Ceratopetalum apetalum, Backhousia myrtifolia, Acmena smithii, with or without Ft.53 -[see species lists for details].

Flora survey methodology: Plant species recorded from each forest type [and habitat] were listed, and frequency of occurrence and stratum [canopy, sub-canopy] indicated. Walked traverses were mapped . [See field notes attached.]

Particular attention was directed to locating and recording the distribution and numbers of ROTAP plant species [Briggs and Leigh, 1995 Revised], and Schedules 1&2 [NSW Threatened Species Act, 1995] plant [and animal] species.

Fauna survey methodology: Includes application of the pre-logging / roading survey design forming part of the Threatened Species Protocol [3/6/97], incidental records collected during flora survey and habitat assessments, as well as the results of integrated koala transect surveys, and includes -:

1. walked spotlight transects, one kilometre long [minimum], 100 watt light, [with dimmers fitted].
minimum 10 minute listen at start and finish.
2. call playback for target species. Nocturnal -: powerful owl, masked owl, sooty owl, marbled frog-mouth, yellow bellied glider, koala, squirrel glider.
Diurnal -: Rufous Scrub-bird, Bush Thick-knee, Olive Whistler.
Calls are started after a substantial listening period and played briefly at low volume. This is done to avoid disrupting localised activity of the target or other species which may respond, [or be disturbed], and to maximise knowledge of actual habitat use, rather than gaining responses from further afield, [at least initially]. Louder playback calls are then initiated if no clear response is heard.
3. transect and incidental scat collection and identification. - results of predator, and [remaining unidentified] non-predator scat analysis provided by Barbara Triggs. - **not yet available.**
4. track identification on sandy or soft sections of roads, tracks and creek areas.
5. extended listening time for calls, [variable sample length, and dependent on conditions], targetting all playback target species listed above, and including other seasonally variable species such as Wompoo Fruit-dove.
6. harp trapping and sonar detection for bat species.
7. frog surveys - creek transects, habitat searches, and call recording.
8. search for all other features listed in the Threatened Species Protocol Survey Design while applying the above flora and fauna surveys. [this will be supplemented by the SFO while marking out and supervising harvesting operations].
9. hair-tube sampling - no hair-tube sampling was undertaken on this survey, thus potentially under sampling for a number of terrestrial and arboreal species, eg. tiger quail, rufous bettong, brush-tailed phascogale. Conservation protocols should be applied for these species, to ameliorate potential impacts of proposed operations
10. one of us. [Kooyman], camps out in the survey area every night, moving from site to site, [habitat to habitat] during the course of the survey. This provides a substantial increase in listening time, incidental and opportunistic scheduled species records, diurnal and nocturnal survey effort, and overall survey time/effort.

Rare, Threatened, or Significant Plants recorded in Ewingar SF. compartments

604-608.

Corrected R. Kooyman 22/11/97 356E

Acomis acoma - [3RC] ROTAP - occurs at higher altitude sites in association with Ft. 163, on exposed ridges and occasionally on adjacent roadsides.

Dodonea megazygha - [Sig.Plant] - occurs at high altitude in association with Ft. 163, and the rainforest edges. Rare in the survey area.

Results of Fauna Surveys:

1. **Glossy Black Cockatoo** [*Calyptorhynchus lathami*] - sch.2, this species was located in two of the surveyed compartments [625,628] by calls and sightings. Suitable habitat includes much of the tallwood/blue-gum [Ft.47], new england blackbutt [Ft.163], and blackbutt [Ft.37] associations, and areas in the other forest types where *Allocasuarina* species are present, [for example the riparian associations]. No sites with evidence of Glossy-black cockatoo feeding activity were located. No nest hollows were located. Application of the Conservation Protocol and retention of any feed trees or nest sites located during the mark-up phase should assist this species.

2. **Square tailed Kite** [*Lophoictinia isura*] - sch.2, not recorded on this survey, but is likely to use the larger river valleys, flood plains, and woodlands of this area.

3. **Red Goshawk** [*Erythrorhynchus radiatus*] - sch.1, not recorded on this survey, but there are records for this species from the Clarence and Richmond River valleys and associated forests. This species is thought to favour the higher nutrient / higher productivity tall open forests and riparian vegetation of the larger river valleys, where prey species are abundant. However, it extends up to 1000 metres in altitude in suitable forest. [Debus et al, 1991]

4. **Bush Thick-knee** [*Burhinus grallarius*] - sch.1, not seen or heard on this survey. Good to excellent habitat occurs in the northern part of the survey area. Searches for this species were incorporated into the general flora traverses. Playback sampling was undertaken at a number of sites in these compartments, and one of us [Kooyman] camped in suitable habitat over the two week survey to extend available listening time.

5. **Regent Honey-eater** [*Xanthomyza phrygia*]- sch.1, not recorded on this survey. Nectar resources were limited at the time of survey to several *Eucalyptus* spp. [*E.andrewsii* subsp. *campanulata*, and *E.pilularis*].

6. **Swift Parrot** [*Lathamus discolor*]- sch.2, not recorded on this survey. As described above [Regent honeyeater], the nectar resource was limited to just a few species during the survey time.

7. **Powerful owl** [*Ninox strenua*] - sch.2, this species was recorded calling on two occasions during this survey, in cmpts.625 and 628, in close proximity to, or in, the

moist forest types [Ft.47, 53]. Playback and listening was conducted for this species over the whole of the survey period, with one record from a playback response in cmpt.625, and the other from unprompted calling in cmpt. 628.

8. **Masked owl** [*Tyto novaehollandiae*] - sch.2, not recorded during this survey. Suitable habitat for this species occurs in the northern part of the survey area in the drier forest types with a more open understorey. However many of these areas have a xerophytic shrub layer, and lack more extensive, open, grassy woodland areas.

9. **Sooty owl** [*Tyto tenebricosa*] - sch.2.- recorded on this survey in Cmpt.628, and along the boundary ridge with cmpt. 627, [see records and mapping for details]. The habitat in this area is excellent with records on this survey from Hong Kong Creek, [with previous records from Ewingar Creek]. Records were from playback responses. The two large creeks draining these compartments [Hong Kong and Ewingar creeks], and the associated moist forest types provide excellent habitat for Sooty Owl.

10. **Brush-tailed Rock Wallaby** [*Petrogale penicellata*] - sch.2. Potential habitat for this species was located in the west of Cmpt.627, [in the Timbarra River catchment], where there is an extensive area of steep rocky terrain in the old-growth exclusion area. This species was not observed during the course of the survey, and no scats collected could be attributed to this species.

11. **Tiger Quoll** [*Dasyurus maculatus*] - sch.2, suitable habitat occurs in the area [particularly the higher altitude and moist areas of cmpt.628,&625]. A single sighting in cmpt.628, several possible call records from cmpts.625 & 628, and a possible scat [with parrot feathers] from cmpt.627 were recorded on this survey. Searches of rocky areas suitable for latrine sites or den areas were integrated into the general flora and fauna surveys, and the transect based 'integrated Koala surveys', and target species surveys. None were located, however these searches will be supplemented by SFO habitat and 'fauna features' searches during mark up stage of operations. Given the known occurrence of this species in the harvestable area SFO should be aware of the likely presence of latrine and den sites in the area.

12. **Yellow bellied Glider** [*Petaurus australis*] - sch.2, this species was not recorded on this survey. The area lacks the critical floristic diversity apparent in areas nearby where this species is active, eg. Ft.70,74,65,&62, interspersed with the moister types such as Ft.47. Absence at the time of survey does not indicate absence of this species from the survey area as yellow-bellied gliders are very mobile and can cover large areas. depending on the availability of feeding resources. SFO should look for V-notch and other incisions during mark-up and supervision stages of operations.

13. **Squirrel Glider** [*Petaurus norfolcensis*] - sch.2. Not recorded on this survey. No response to playback calls. Habitat is generally good, particularly the drier forest types.

14. **Koala** [*Phascolarctos cinereus*] - sch.2. - Results of Koala transect surveys are provided separate to this report, but indicate no. or low, use over most of the area. No evidence of scats or other indications of this species were located during the survey, either during random traverses, along transect lines, or as a result of other target

species surveys. Habitat appears good to very good with a number of primary and secondary browse species such as -: *Eucalyptus microcorys*, *E.acmenoides*, *E.umbra*, *E.saligna*, *E.pilularis*.

15. Rufous Bettong [*Aepyprymnus rufescens*] - sch.2. Recorded several times during this survey. Generally good to excellent habitat throughout the drier, more open northern part of the survey area in cmpts.626,625,& part 627-8. A range of non predator scats were collected. **Scat analysis results are not yet available**, [only those not identified in the field by comparison to labelled scat specimens provided by Barbara Triggs, or the scat keys in her book, have been sent on for identification].

16. Brush tailed Phascogale [*Phascogale tapoatofa*] - sch.2, not recorded this survey but the area has some good dry woodland /open forest habitat. No hair-tubing or trapping was undertaken on this survey, thus effectively undersampling for a species which is otherwise difficult to detect.

17. Long -nosed Potoroo [*Potorous tridactylus*] - sch.2,- recorded in the survey area from cmpt. 628, in the moist upslope headwaters of Hong Kong Creek, close to the more extensive rainforest, and rainforest with Ft.47, &53.

18. Parma Wallaby [*Macropus parma*] - sch.2, recorded on a number of occasions both in vehicle based spotlight surveys and walking spotlight transects, grazing in drier forest types [Ft.37, 163], but still relatively close to gully-lines or gully-heads with thicker, moist forest and rainforest vegetation.

19. Red-legged Pademelon [*Thylogale stigmatica*] - sch.2. Recorded only once on this survey, in cmpt.628, in the headwaters of Hong Kong Creek.[Ft.163, adjacent to rainforest gully] Excellent habitat in the moist forest gullies and adjoining forest types. The rainforest and gully areas were relatively under sampled by the walking spotlight transects, contributing to a paucity of records for this species in the survey area.

20. Microchiropteran Bats - [Survey Protocol requires a minimum of two harp traps for two nights per. 200ha in suitable habitat]. In this case extra Anabat Sonar sites were sampled to provide a more comprehensive sample of the microchiropteran bats of the study area, and to overcome a current lack of equipment [only two harp-traps and one ANABAT in operation]. Overall, a six night sample was conducted, with records for ten species confirmed, including three[3] schedule 2 species. Several sonar records, and captures of unidentified female *Vespadelus* sp. are recorded as *Vespadelus* sp.vulturinus -possible. [see maps and data sheets]

Kerivoula papuensis -sch.2. three harp-trap captures.

Miniopterus australis -sch2. sonar [Anabat 5] records. one harp-trap capture.

Miniopterus schreibersii - sch.2. harp trap records. and [Anabat 5] sonar records.

Chalinolobus gouldi - harp-trap capture.

Chalinolobus morio - sonar records. and harp-trap capture.

Scotorepens orion - sonar records.

Vespadelus pumilus - sonar record - [probable], and harp-trap capture.
Vespadelus [sp.] vulturnus - sonar records, and harp-trap captures, [unidentified females] - possible.
Vespadelus darlingtoni - sonar record
Rhinolophus megaphyllus - sonar record
Nyctophilus gouldi - harp-trap captures.

Bat work was done by Noel Douglas and Nicole Harvey [assisted by Harvey, K., Herklots, R., and Kooyman]. Sonar calls were recorded directly onto laptop computer and later analysed and then compared to library calls by Noel Douglas and Nicole Harvey. This work is then reviewed and verified [where possible] by SFNSW Research Division - Brad Law. Sonar calls are ascribed file names and are retained for future reference or verification. A comprehensive library of calls for the NE of NSW is not yet available, limiting our ability in many cases to ascribe species names to recorded calls. We are currently expanding our call library and this situation should steadily improve to the limits of the technology, [and with all survey calls retained for future review.]

Fourty-seven [47] mine shafts were detected and searched for evidence of use by microchiropteran bat species [refer to Harvey, K. this report - Mineshafts - Bulldog Area]. No indications of presence or use of the mine site areas were detected. [refer to list of sites appended to this report] No caves were detected. Any such sites located during operations should be buffered from proposed operations to ameliorate potential impacts on potential roost / maternity / torpor sites.

Harp trapping for *Kerivoula papuensis* and *Myotis adversus* in suitable habitat, [flyways and larger pools along rainforest creeks], resulted in three captures for *Kerivoula papuensis*, and no captures of *Myotis adversus*.

Structural and floristic data, general site descriptions, and photographs of *Kerivoula papuensis* capture sites [harp-trap locations and habitat] have been recorded/taken, with a view to contributing to longer term research of this species in the management area.

21. Frog species - Transect and habitat based surveys were conducted at a number of sites, and habitat assessments and searches were integrated into the other surveys.

***Philoria* sp. 2** - sch.2, located, heard calling, and photographed during this survey, at a site along Hong Kong Creek, and at several soaks in the north-west of cmpt.628. Based on habitat assessments conducted by Harvey, and Kooyman, this survey, it seems likely this species will occur in most of the moist forest [Ft.47.53,23/26] sites where there are soaks, or moist soaks adjacent to creeks [in these moist sites]. Habitat searches were not completed, but SFO should locate and buffer any other suitable habitat areas [in particular wet areas and soaks] during mark-up and supervision stages of the proposed operations. Rainforest and riparian exclusions should also assist to secure this species habitat. Application of erosion mitigation controls and careful management of run-off from tracks or roads near soaks, creeks and wet areas will further ameliorate potential impacts.

Mixophyes iteratus- sch.2, brief calls probably of this species were heard on two occasions by Kooyman. Habitat is good to excellent and it seems likely this species is present along, and in proximity to, the larger creeks, and in particular Ewingar Creek.

Riparian and rainforest exclusions, together with erosion mitigation controls, should help ameliorate potential impacts of the proposed timber harvesting operations on this species.

Mixophyes balbus - sch.2, brief calls probably of this species were heard on several occasions along Ewingar Creek by Harvey and Herklots, and by Kooyman. Habitat is excellent and it seems likely this species will be present along and adjacent to Ewingar Creek. Riparian and rainforest exclusions, together with erosion mitigation controls, should help ameliorate potential impacts of the proposed timber harvesting operations on this species.

Assa darlingtoni - sch.2, not located this survey. Habitat seems suitable in the moist forest areas of cmpts. 625, & 628.

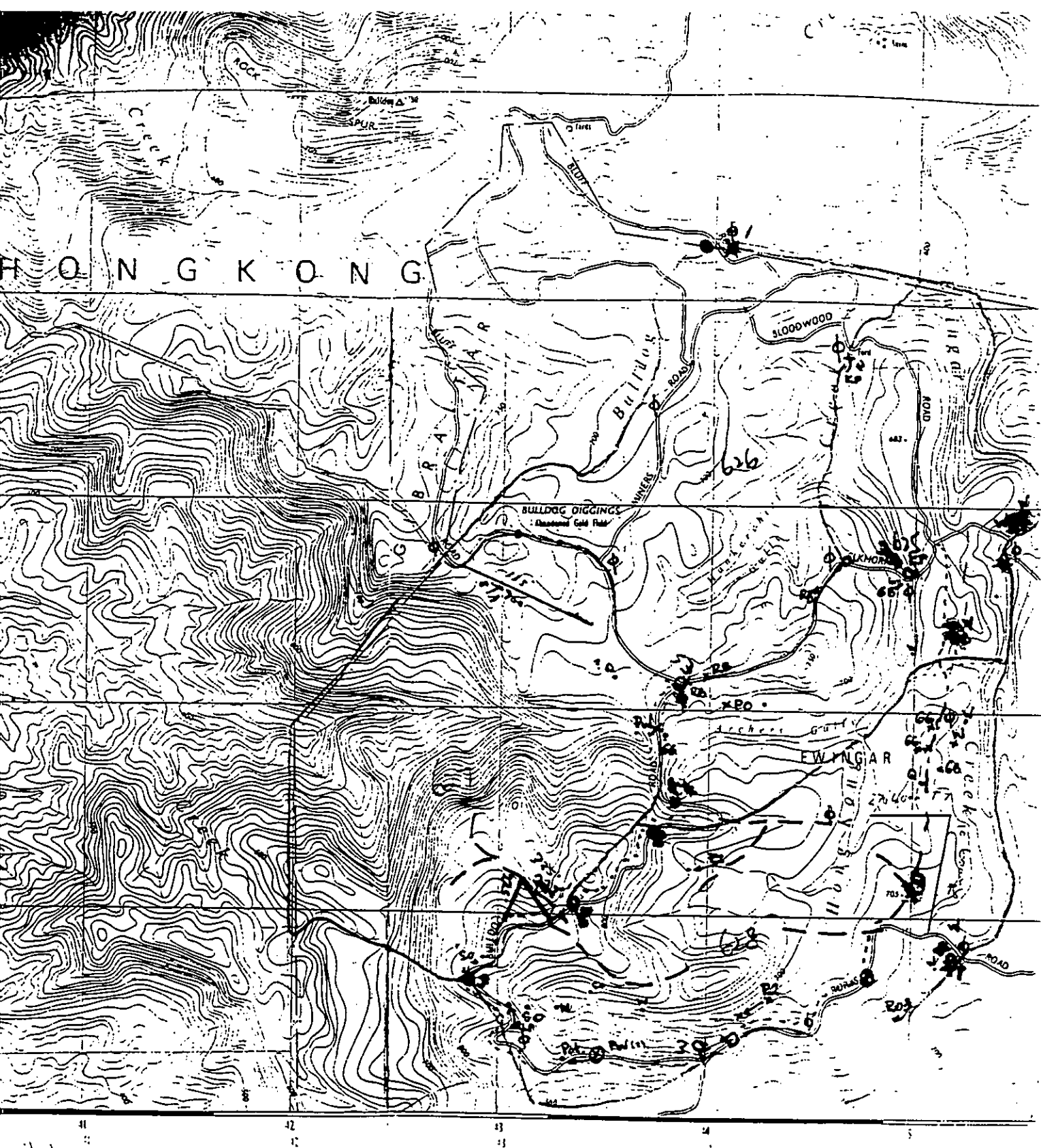
22. Stephen's Banded Snake [*Hoplocephalus stephensii*] - sch.2, not recorded this survey but excellent habitat in the survey area, particularly the moist forest areas of cmpts. 625 & 628.

23. White Crowned Snake [*Cacophis harrietae*] - sch.2, not recorded this survey. The two specimens of *Cacophis* sp. captured and identified on the survey were *Cacophis squamulosus*.

24. Rufous Scrub Bird [*Atrichornis rufescens*] - sch.2, not recorded this survey. Suitable habitat at altitudes in excess of 800m occurs in the south-west of cmpt. 628. These areas have been sampled by playback calls, listening in potential habitat, and by habitat assessments [Kooyman, this survey].

25. Olive Whistler [*Pachycephala olivacea*] sch.2 - not recorded this survey. Area of suitable higher altitude [= >800m asl.] moist forest habitat coincides with that of the rufous scrub-bird, so listening and playback calls for this species were included at the same time.

26. Wompoo Fruit-dove [*Ptilinopus magnificus*] sch.2 - recorded in most of the rainforest, and moist forest types with rainforest, in cmpts. 625 and 628.



14/1/43

25

Map for the General Mapping Authority

Revision - 100 Printing - 100
 not printed, drawn,
 in standards.

Historical Names Act, 1960 are recording

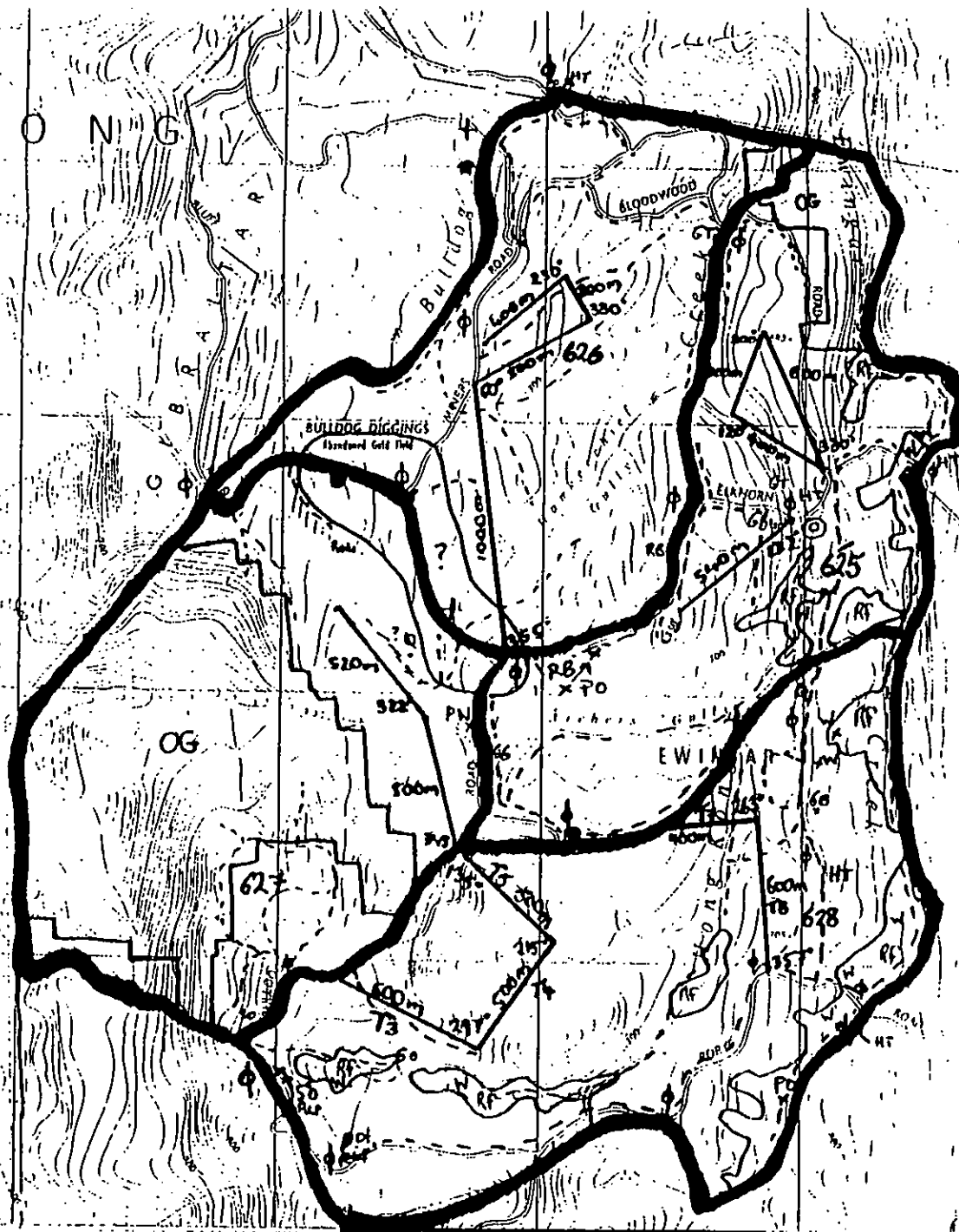
THE NORTH AND SOUTH 6° 10' 00" N
 WITH THE NORTH 21° 00' 00" N
 AND THE CENTRE OF THE 10° 00' 00" N
 WITH A CORRECT FOR 10° 00' 00" N
 (SOUTH) IN THE 10° 00' 00" N

Large number of small
 scattered small areas, numerous
 orchards, plantation, or vineyard
 mangrove forest
 forest of bamboo and other
 tall, dam, waterhole or pond, small
 intermittent watercourses with
 dam or small, large, or small
 intermittent watercourses
 forest of watercourse with
 small, large, or small
 forest of small, large, or small
 intermittent watercourses

X Harp-map sites
 O Annals Sites
 2 Common Sites

Spot lighting beam
 100m

H O N G K O N G



25'

1:25000

Ewing S.F. Capt. 625-628.

EWINGAR S.F. CMPTS: 625 - 628.

SURVEY EFFORT (DISTANCES IN KMS.)

Robert Kooyman 10/77.

IMBACTMENT	SPOTLIGHT SAMPLE		FLORA & FAUNA (random)	INTEGRATED KOALA TRANSECT.	BAT SAMPLE		FROG SAMPLE		CALL PLAYBACK NO. OF SIGHTS	SCATS		JOURNAL BIRDS	SEASONALITY CONSTRAINT YES/NO.	
	WALKED	DRIVEN			HARP	ANABAT (sites)	GENERAL	TARGET TRANSECT.		Prod.	Unprod.			
<u>625</u> S. 215 J. 195	2.5 kms.	3 kms x 2.	6.5 kms.	1.84 kms.	3x1x2	5	✓	1 x 500m.	6	5x2 1x1	✓	✓	✓	cool. temp. for frog surveys. (Good for Philoria sp. 2)
<u>626</u> S. 225 J. 210	2.5 kms.	4 kms x 2	5.0 kms	2.1 kms	2x1x2	4	✓	Habitat records (incomplete)	7	5x2 2x1	✓	✓	✓	
<u>627</u> S. 279 N. 120	2.0 kms	3.8 kms x 2	4.0 kms.	1.1 kms.	— N/A. No. sites habitat.	3	X N/A		5	4x2 2x1	✓	✓	✓	
<u>628</u> S. 298 J. 260	2.4 kms.	5 kms x 2	6.8 kms	2.6 kms.	2x1x2	4	✓	Habitat records (incomplete).	6	4x2 2x1	✓	✓	✓	
TOTALS:	9.4 kms.	15.8 (x 2)	22.3 kms:	7.6	7x1x2	10	✓	1 transect - remainder target/habitat.	18	12x2 6 x 1	✓	✓	✓	
MINIMUM REQUIRED:	7.6	7.6	15.2	7.6	6x2x2 - in suitable habitat.	as required..	✓	Playbacks, Call recording Habitat searches.	8 x 2x2		✓	✓	✓	
					No. sites	No. traps	No. days							

Casino District
Reporting of Scheduled - Fauna Sightings

EWINGAR S.F. Cmts. 625 - 628

OBSERVER: ROBERT KOOYMAN
10/97.

Date	State Forest	Cpt No.	Type of Inspection (*)	Species of Fauna Sighted	Description of Fauna Sighted - eg adult, juvenile, breeding female, call only etc	AMG Reference	General Comments (eg at log dump, road side, Forest Type etc)
15/10/97	EWING.	628	1	Tiger Quoll	Adult at rev. camp	4 45300	67 79650
21/10/97	EWING.	6	1	Rufous Bellong.	(2) on road edge.	4 44500	67 80600
16/10/97	EWING.	625	11	Glossy Black Cuckoo	7 (adults) birds ♀ ♂	4 44920	67 80630
21/10/97	EWING.	625/7	1	Parma Wallaby	Adult (road edge) ♀	4 43750	67 79900
21/10/97	EWING.	625	1	Powerful Owl	calls - Playback	4 44075	67 80020
16/10/97	EWING.	625/6	1	Rufous Bellong.	2 adults. (road edge)	4 43950	67 80175
22/10/97	EWING.	628	1	Red-lagel - Pademelon	Adult - road edge near gully-head.	4 43050	67 78550
22/10/97	EWING.	628	1	Sooty owl	calls - Adult.	4 43130	67 78560
22/10/97	EWING.	628	1	long-nosed Potaroo	-on road - RF gully nearby.	4 43300	67 78300
23/10/97	EWING.	628	11	Wompo Fruit doves (2)	calls & seen ... (2) Feeding in Ficus spp.	4 45120 4 45200	67 78750 67 78900
23/10/97	EWING.	628	11	Wompo Fruit doves (3)	R.F. Gully area & update RF trees.	4 43300 4 43700	67 78550 67 78530
28/10/97	EWING.	625	11	Wompo Fruit doves.	Fr. 47 Fr. 53 - w/ R. Rainforest.	4 45000 4 45250	67 80300 67 80450
28/10/97	EWING.	628	11	Wompo F.D.	" "	4 45250	67 79960
		628	11	" "	" "	4 45200	67 79850
		625	11	" "	Fr. 2/3, Fr. 11	4 45450	67 80920
		625	11	" "	± Fr. 47, Fr. 53.	4 45500	67 81000
28/10/97	EWING.	628	1	Powerful Owl	Fr. 47 ^{calls} w/ R.F.	4 45000	67 78600
28/10/97	EWING.	628	11	Glossy-Black Cuckoo.	Fr. 47 / Fr. 163 w/ R.F. & Allacea.	4 45150	67 79720
21/10/97	EWING.	625/7	1	Greater Glider	Fr. 47. E. edigna.	4 43800	67 79875

Types of Inspection

Night Time Surveys
Follow-up Clearance Inspection
Reptile Inspection
Regeneration Inspection
Road Side, Dump Sites Inspection
Timber Assessment

Working Boundaries of the sites of
Conservation Area
Records from Log Files
Road Disposal, Burning
Harvesting Planning
Other Fauna & Fauna

EWINGAR S.F. Cnpts. 625-628

[illegible]

- 1 Night Time Surveys
- 2 Follow-up Clearance Inspection
- 3 Rejects Inspection
- 4 Regeneration Inspection
- 5 Road Line, Dump Sites Inspection
- 6 Timber Assessment

7. Harvesting Boundaries, Filter Strips or Conservation Areas
8. Reports from Log Faller
9. Head Disposal Burning
10. Harvesting Planning
11. Other

site	species	sonar	harp	date
444950 6780650 *	Miniopterus australis	x2		14-15/10/97
	* Miniopterus schreibersii	x24		
	Scotorepens orion	x5		
	Chalinolobus morio	x1		
	Vespadelus sp.	x1		
445210 6780380 *	Miniopterus australis		x1	14/10/97
	Chalinolobus gouldi		x1	
	Vespadelus sp.		x1	
445420 6780900 *	Miniopterus schreibersii		x2	14/10/97
444700 6780700	Rhinolophus megaphyllus	x1		15/10/97
	* Miniopterus schreibersii	x13		
	Vespadelus sp.	x1		
	Vespadelus darlingtoni	x1		
444900 6780650 *	Kerivoula papuensis		x2	15/10/97
	Vespadelus sp.		x1	
445150 6778800	nil result - sonar site			21/10/97
444000 6778350	nil result - sonar site			21/10/97
445200 6778750 *	Miniopterus schreibersii		x1	21/10/97
445000 6779100	Vespadelus pumilus		x1	21/10/97
443350 6779050 *	Miniopterus schreibersii	x1		21/10/97
442800 6778650 *	Miniopterus schreibersii	prob.x19		22/10/97
444100 6782230	nil result - sonar site			27/10/97
444650 6781700	nil result - sonar site			27/10/97
443850 6780100 *	Miniopterus schreibersii	x4		27/10/97
444650 6781700	Chalinolobus morio		x1	27/10/97
	Nyctophilus gouldi		x2	
	* Kerivoula papuensis		x1	
444100 6782230	nil result - harp trap site			27-28/10/97

* - Schedule 2 - RECORDS.....

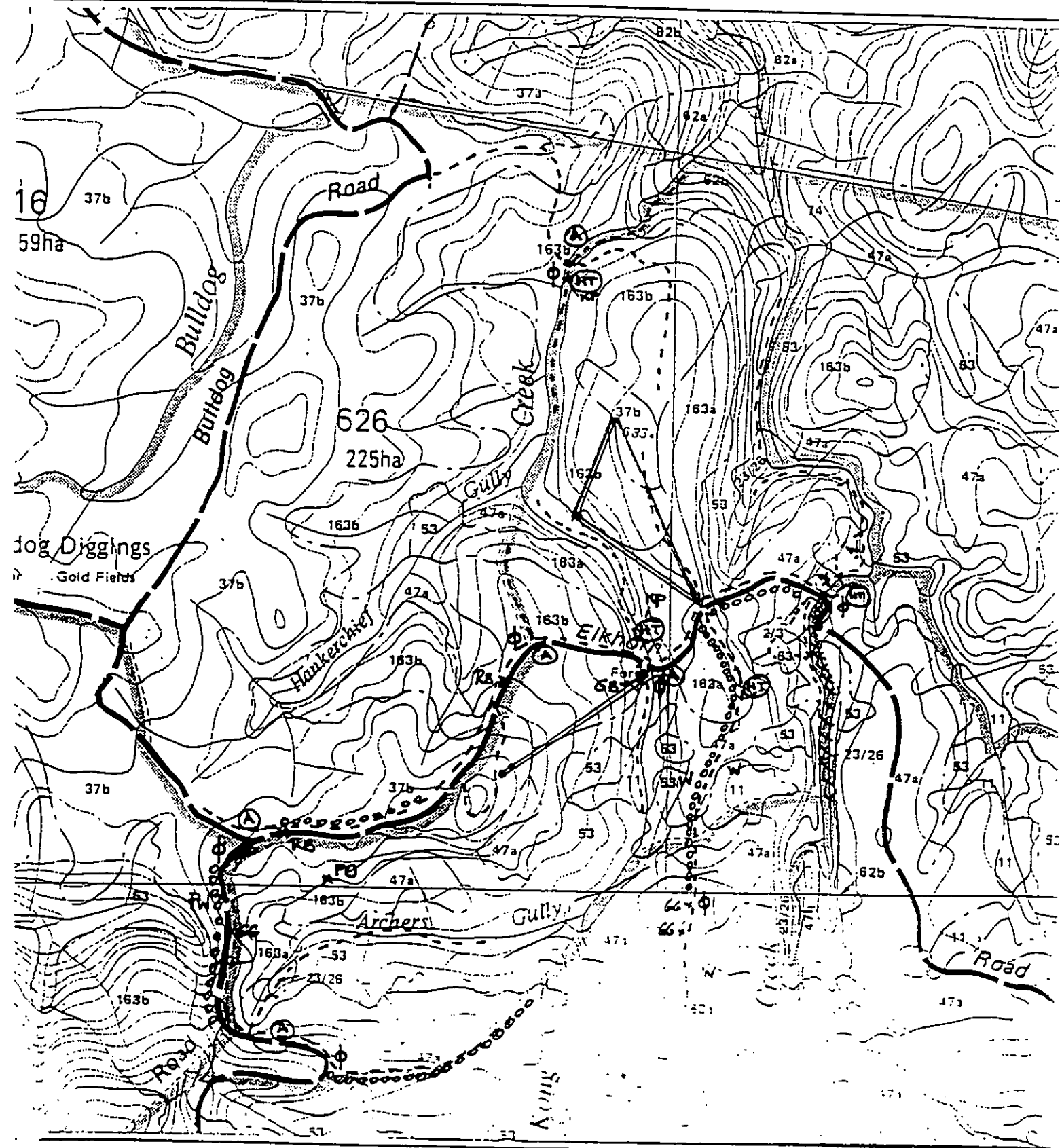
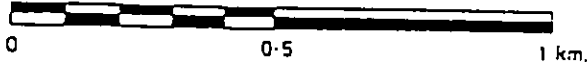
Compartment 625

Scale — 1:15 000

CB/645

Contour interval 10m

G N



Compartment boundary

Filter strips

Protection strips

Road, filter road, dump site

Wet weather dumps shown

1 - Ancient Sample Site.

2 - Harp Trap Site.

Φ - call Pteropus Site.

PW - Parma wallata

Species symbols

FLORA & FAUNA - TRANSECTS.

INTERACTED WITH TRANSECTS.

0000000 - Native Isolation Transect

XXXXXX - Flora Transect

P.O. - Powerline Owl

23 - Rufous Bat

63 - Greater Glider

11 - Common Fruit-eater

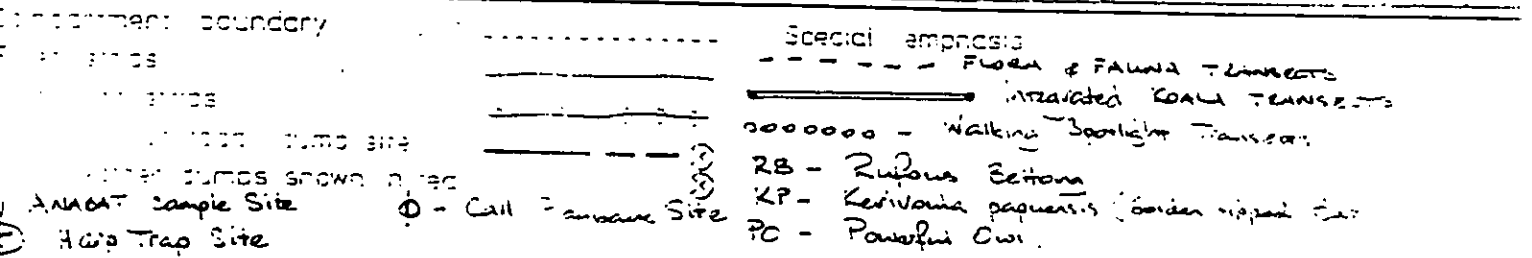
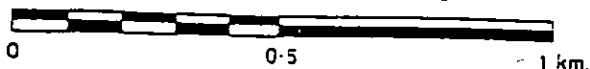
22 - Golden Whistling Boob

25 - Greater Glider

↑
G N

CB / 845

Contour interval 10 m

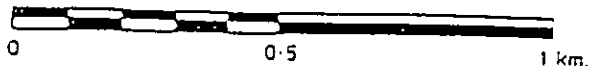


Compartment 627

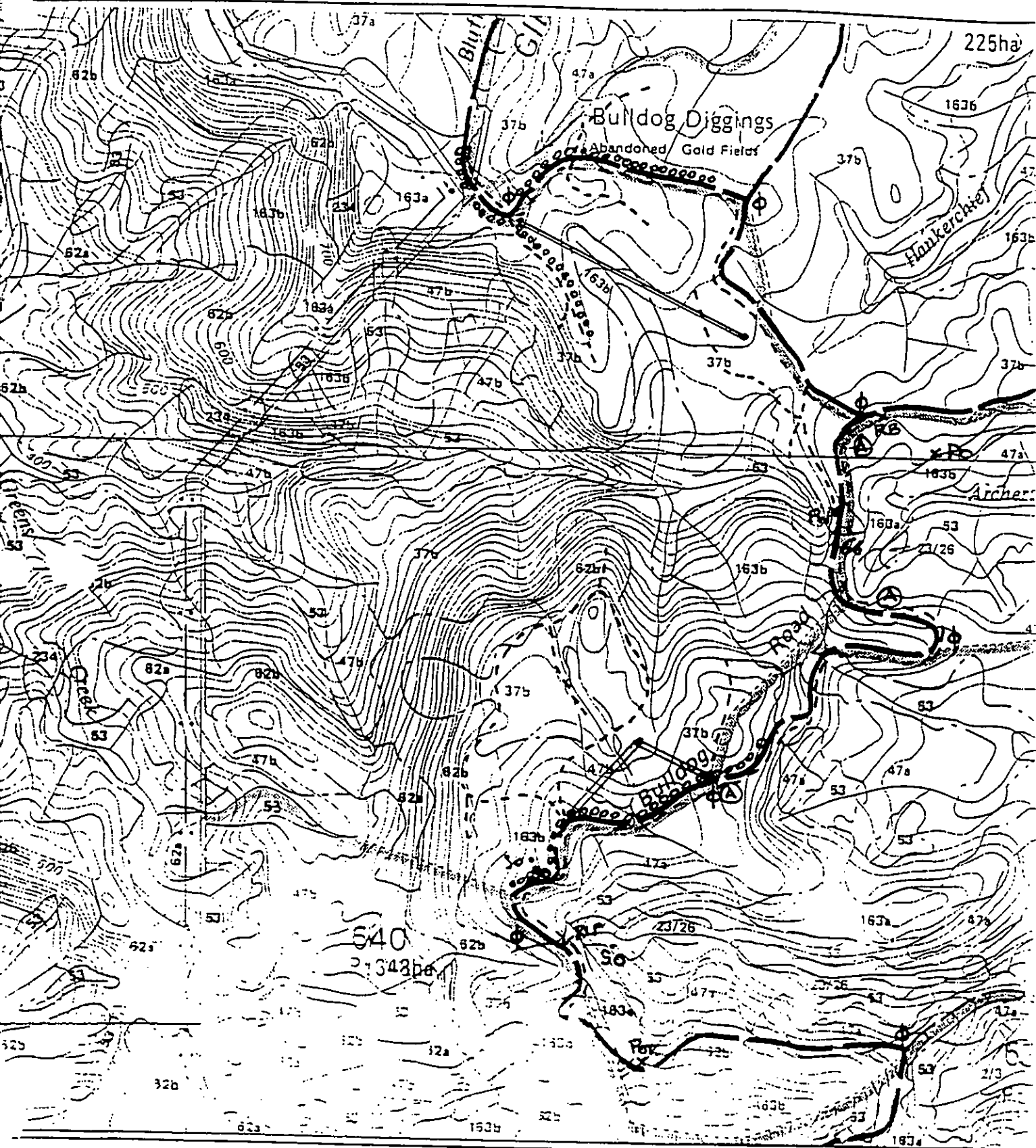
Scale — 1:15 000

CE/845

Contour interval 10m



G N



Compartment 627

FLORA & FAUNA TRANSECTS

INTEGRATED SCALE TRANSECTS

000000 - Nanking Sunlight Transects
 RB - Rains Belt
 PA - Puma Station
 RLP - Rains Belt Puma Station
 SC - Sunlight Transects
 PO - Puma Station
 SA - Sunlight Transects

ANACAT Sample Site

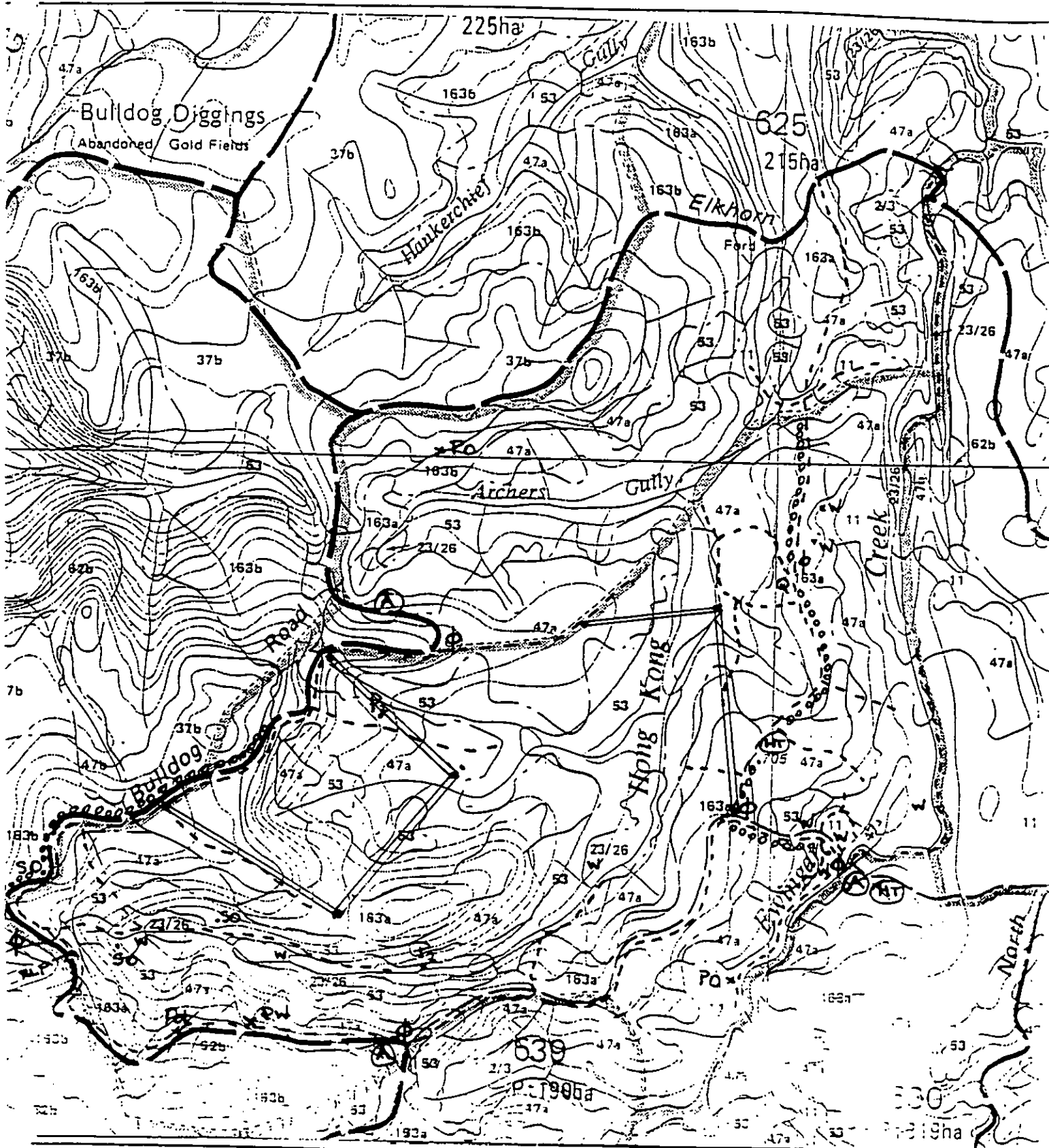
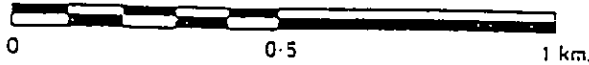
Compartment 628

Scale — 1:15 000

CE/845

Contour interval 10m

G N



Compartment 628

Scale 1:15 000

Contour interval 10m

Legend

— ANIABAT Sample Site

(HT) - Harp Trap Site

Species: amonosis

----- FLORE & FAUNA TRANSCTS

----- Integrated KALA TRANSCTS

0000000 - Watana Sooty Tern Transct

90 - Sooty Owl W - Wainoo Fruit-grove

2-2P - Red-legged Pademelon Pn - Porarua

P2 - Rilema sp. 2. G - Tiger Quail

PW - Parma Wallaby

King parrot
yellow-tailed Black Cockatoo

Rufous fantail
Gray fantail
society breasted lorikeet
rainbow lorikeet

pieb currawong
Whip-bird

Superb Lyre-Bird

white browed scrub wren

yellow throated scrub-wren

tree-creeper (white throated)

Green catbird

Paradise Rifle-bird

Wonga pigeon

Brown Cuckoo Dove

White headed pigeon

Emerald dove

Gray Goshawk

Satin Bower-bird

* Square-tailed Kite (high → west). ^{Passerine/pebble...}
_{outside Cupressus & overland.}

Pacific Baza...

Glossy Black Cockatoo

Lewins Honey-eater

Yellow Robin

gray thrush

White Cockatoo

Wampoo Fruit-dove

Gerygone.

Satin Flycatcher

Boobade owl

Tawny Freymouth

* Powerful owl

* Sooty owl

Whip-tail Wallaby
red-necked pademelon

* Parma wallaby

* long nosed potaroo

Swamp wallaby

* ~~Karta~~ ? NOT LOCATED this survey

Common Ringtail Possum

Greater Glider

Mtn. Bobwhite possum

Wallaroo (alt. Ewiger important habitat for this species)

Red-legged Pademelon.

posible: Brush-tailed Rock Wallaby

* *Philonia* sp. 2 (got description) - ✓
(undescribed).

Litoria (phyllochroa) *perssoniana*

Litoria *lesaei*

Litoria *chlaris*

Mixophyes *fasciolatus*

Crinia *signifera*...

* *Mixophyes* *iteratus* (Proc.)

* *Mixophyes* *balbus* (Proc.)

* H.T. ... *Karionia* *papuanis*...

H.T. *Chelidodone* *gouldii*

* H.T. *Miniopterus* *austrelii*?

H.T. M. *scharibersi*

* - H.T. *Vesperugo* sp. ^{pumili.}
_{redneck} *fulvus*.

Egernia sp.

Land mullet (*Egernia* *major*).

Goanna (common)...

Carpet Python

- Crown snake - *Crotaphis* *equimaculata*

Red bellied Black snake.

death - adder

Water dragon...

Rufous Parula-Bird - some potential habitat - listening conducted... no calls heard!

... - not seen, or heard...

... - not seen, or heard...

Ewing, S.F. Cnpts 625-628.

VEG. SAMPLE.

Fr. 11 - SNVF

(Riparian ... & upland)

Robert Kuyman

10/97

Custo/Calde. alliance - overlap with Fr. 23/24, Fr. 53, Fr. 47, Fr. 2/3

(N3. Cacophy sp)

- C. fr. *Ceratopetalum apetalum* (vc-o)
C. fr. *Schizomeria ovata* (c-o)
C. fr. *Caldehuvia paniculata* (c-o)
C. fr. *Quintinia verdanii* (o)
C. fr. *Stereospermum salignum* (vo)
C. fr. *Doryphora caniflora* (o-vo).
C. fr. *Orites excelsa* (o-c).
sc. *Anaplectum medeolifolium* (vo-o-).
sc. *Acrocladia erodifolia* (o-c).
C. fr. *Callicarpa serratifolia* (vc-vo).
C. fr. *Stemona woottsii* (R-o).
sc. *Backhousia myrsinifolia* (R-^{crab/riparian}).
sc. *Hedyotis angustifolia* (vo).
C. fr. *Encalypta saligna* (vo-c)
C. fr. *Lophosiphon canifolium* (vo-c).
sc. *Cryptocarya meisei* (o-c).
sc. *Guioa semiglossa* (vo).
C. fr. *Diplazium australe* (R-vo).
C. fr. *Accacia melanoxylon* (vo-o) disturbed...
Hydrocotyle pedicellata (vo-o-c).
Linosyris manihoti (vo-o).
Alcaasia briibaneensis (o).
C. fr. *Cryptocarya glaucescens* (vo-o)
Tabernaemontana pedunculata (vo).
Ozobalanus diospyroides (R-o).
C. fr. *Cinnamomum oliveri* (o-vo).
sc. *Melicope micropoda* (vo-o).
sc. *Rhodanthe rubescens* (vo-o)
C. fr. *Calophyllum inaequalis* (vo-o).
C. fr. *Enicandra muelleri* (vo).
C. fr. *Citrochloa paniculata* (o-c).
Wilkiea hirsuta (vo).
Polystichum canaliculatum (vo).
C. fr. *Acacia smithii* (vo-o).
C. fr. *Zenobia cuneata* (vo-o).
C. fr. *Stemona woottsii* (R-o)

- Cissus hypoglauca* (c)
C. *antarctica* (o-c)
Tetrastigma nitens (o-c).
Palmeria scandens (o).
Ripogonum elaeagnifolium (o-vo).
R. *discolor* (o).
Cayratia aurea (vo-R)? ch...
Morinda jasminoides (o).
Cephaelis cephalanthoides (o-vo).
Rubus sp. 'A' (maui) (o)
R. *hillii* (o).
Blechnum cartilagineum (o-
Blechnum watsonii (o-)
Cyathea leichardtii (o-
Cyathea australis (vo-
Doodia media (o-c).
Sticherum lobatum (o-c).
Diplazium australe (vo-o).
Juncus sp. (o).
Lomandra longifolia (o-c).
Rubus rosifolius (o-vo-c).
Lepidosperma laterale (o-vo).
Microsorum scandens
Lepidosperma sp. (vo-o).
Pollia crispata (o-c)
Commelina cyanea (vo-o).
Dianella caerulea (o).
Parsonsia pandurata (vo).
Clanetia aristata (vo).
Piper novae-hollandiae (vo-o).
Parsonsia fulva (o)
P. *velutina* (o)
Ellatostema (reticulata (o).
stipitata (vo)
Dendrocinis alatum (o-vo)
D. *gracile* (vo-)
Pyrrhia confusa (o-vo)
P. *superba* (o).
Cyathea cooperi (vo-o).
Blechnum patersonii (vo-o).

EWINGAE S.F. Cnpt. 625-628.

Fr. 163. N.E. BGT. overlaps with Fr. 47 ± Rainforest. 10/97

Robert Kooyman

C. Eucalyptus campanulata (c) (vc)

C. E. laevoparia (vo-c)

C. E. microcarpa (2-o).

C. E. saligna (2-vo-o).

sc. Cryptocarya rigida (o).

sc. Albeconia torulata (o-c).

sc. Acacia irrorata var. irrorata (o-

sc. Acacia melanoxylon (o-

sc. Trochocarpa lawina (o-c).

c. Elaeocarpus reticulatus (vo-o).

Eupanetia lawina (o-vo).

Cryptocarya micrantha (vo-)

Psychotria lanicoides (o-c).

Breynia oblongifolia (o-

Archirhodomyrtus beckleri (vo-o)

Maytenus silverstriis (o-

Senecio amygdalifolius (o).

Ozothamnus diosmifolius (o-

Carbyline stricta (o-vo).

Solanum cinereum (sp. aff.) - tall (o).

Solanum densiflorum (o-c).

Duboisia myoporoides (o-

Pimelea linifolia (vo-o).

Euxochinus falcata (2-vo).

Acridiche aggregata (vo-o).

Polyscias sambucifolia (o).

c. Rhodanthe rubra (vo-o)

Gonocarpus ^{small (leaves)} fuscoides (vo-o).

Leucopogon lanceolatus (o-c).

Passerina media (o-)

Isola hederacea (o).

Aconitum ~~acuta~~ (2-vo).

Bursaria spines (vo-o).

Lupinus variabilis (vo).

3 ~~acuta~~ ~~acuta~~ (vo).

Pinus ~~parvifolia~~ (sp. vo).

Juniperus sp. potentilloides (o) specim. ~~collected~~

Rhodanthe fuscata (vo).

R. hederacea - sp. (vo.) ~~collected~~.

Cissus hypoglauca (o-

C. antarctica (o-

Tetrastigma nitens (vo-

Rubus hillii (o-

R. ~~maerei~~ (o- R. sp. 'A'...

R. ~~parvifolius~~ (vo-c)

Hibbertia coccinea (o-c)

H. ~~dentata~~ (o).

Stephanandra japonica var. ~~dentata~~ (o).

Hibbertia ~~aspera~~ (vo-o).

Eustrephus latifolius (vo-o).

Smilax australis (o-c)

Celastrus subspicatus (2-o).

Rubus ~~parvifolius~~ (o).

Lepidosperma latifolia (vo-

Lomandra longifolia (o-c).

Lomandra spicata (o)

Poa ~~latifolia~~ var. ~~latifolia~~ (vo-

Imperata cylindrica ~~var. ~~latifolia~~~~ (o-

Dianella caerulea (vo-

Gahnia ~~aspera~~ (2-o)

Gahnia ~~strobilifera~~ (vo-o).

Entolasia stricta (o-c).

Xanthorrhoea glauca (2-o).

Doodia ~~aspera~~ (o-c)

Calochortus ~~dentata~~ (o-c).

Pteris ~~exultans~~ (vo-o).

Blechnum ~~cartilagineum~~ (vo-c).

Glycine ~~clandestina~~ (o-vo).

Dioscorea ~~transversa~~ (vo).

Geitonophyllum ~~cymosum~~ (o-vo).

Clematis aristata (o).

Gonocarpus ~~oreophyllum~~ (o).

Seringia ~~arbutifolia~~ (vo-2).

Hibbertia ~~aspera~~ (o-c).

Hibbertia ~~dentata~~ (o)

~~Leptosiphon~~ ~~parvifolius~~ ... ?

Hibbertia ~~oblongifolia~~ (vo-o).

Crassula ~~sp. ~~strobilifera~~~~ (2) ~~check~~

Olearia ~~elatina~~ (o-vo).

Viola ~~betanica~~ (o-c).

Pomadouria ~~ligustica~~ (vo).

Daviesia ~~granitica~~ (2).

Acacia ~~falciformis~~ (vo-o).

Galium ~~propinquum~~ (vo).

EWINGAR S-F. Cmts: 625-628.

Robert Kayman

VEG. SAMPLE.

Ft. 23/26

NVF ... RAINFOREST

10/97.

± F4.67, F4.53.

- C. *Ficus waltkinsiana* (o-vol)
 C/he. *Cryptocarya doavata* (ol)
 C/he. *Litsea reticulata* (ol)
 c/he. *Syzygium crebrierve* (vo-o)
 c/he. *Caldecluvia paniculata* (o-c)
 c/he. *Orites ocellata* (o-c)
 c/c *Rhodamnia argentea* (vo-o).
 c/he. *Schizomeria ovata* (ol).
 sc/c *Baloghia inophylla* (o-vol)
 c/x. *Dendrocinide excedea* (o)
 sc. *Dendrocinide photinophylla* (vo-o).
 sc. *Ficus coronata* (vo-o).
 i/he. *Diospyros pentanera* (ol).
 c/x *Doryphara saussurana* (vo-o)
 c/he *Cryptocarya erythroxylon* (vo-a)
 C/he *Endiandra muelleri* (o) check! ✓
 i/he *Syzygium corynanthum* (vo-o).
 i/he. *Dysoxylum fraserianum* (vo-o).
 sc. *Polygama cunninghamii* (o-vol).
 c/he. *Cryptocarya glaucocarpa* (o-c).
 i/he. *Dysoxylum rufum* (vol).
 i/c *Livistana australis* (vo)
 i/c *Archantophoenix cunninghamiana* (o-
 i/c *Syzygium glandulosum* (vo-o).
Catriobatea paniculata (o-c)
Linosydes manostadys (o-c).
 . *Polyscias murrayi* ^{disturbans} (o-o).
 i/sc. *Cinnamomum oliverii* (o-c).
 sc *Daphnandra* si. A (ol).
 c. *Acrangium pubescens* (vo-c)
 i. *Acrangium oblongifolia* (vo-o).
 . *Acrangium cunninghamii* (2).
 u. *Diplazium australe* (vo-o).
Psychotria loniceroides (o-vol).
 i/c *Allargium villosum* (vo).
 . *Acacia ensaifensis* (vo-c).
 . *Acacia smithii* (vo-)

- I Feb. 67, Ft. S.B.
- Ripogonum dasycarpum (o-c)
Cephaelocarya cephalobotrys (o-c).
Rubus hillii (o).
Rubus moorei (o) R.sp. 'X'.
Cissus hypoglauca (c)
Cissus antarctica (o-c)
Tetraschima nitens (o).
Piper nake-hollandiae (o).
Pandanus pandarum (o-c).
Clematis cristata (o-v).
Legnaphora moorei (vo-o).
Persaria fulva (o-c).
Palmeria scandens (o-c).
Melodinus australis (o).
Embellia australasica (o).
Celastrum subspectus (o-)
Malaisia scandens (o)
Maclura cochinchinensis (vo-o).
Geitneroplerium cymosum
Marsdenia flavescens (vo-
Marsdenia sp. (vo-
Sarcopetalum harveyanum (vo).
Maleicia scandens (vo-o).
Rauwenhoffia leichhardtiana (vo-o).
Sarcochilus olivaceus (vo-). & Sarcochilus sp.?
Davallia pyxidata (vo-o).
Vittaria elongata - small!
Dichymia brownii (o)
Bulbophyllum argemum (o).
Asplenium australasicum (o-c)
A. polyodon (o-vo).
Pyrrhia superba (o)
P. confluenta (vo).
Peperomia tetraphylla (vo-o).
Denardobium speciosum (o)
Denardobium gracilicaulis (o)
D. canaliculatum (vo)
D. puzosianum (vo-o)
Polka crispata (vo-c).
Alouatta b.-ibanezi (o-vo).
Piptocarpha moorei (vo).

Fr. 23/26. NVF

EWINGAR S.F.

Cmpts. 625-628.

Rosaar Kooyman
10/97

- sc/c *Melicope micrococca* (vo-o).
 sc/c *Guioa ximilanca* (vo-o)
Tasmanian usipida (o-c)
 sc/c *Stenocarpus salignus* (o-vo)
Trema aspera (vo-o)
Ononanthus populifolius (x).
Cryptocarya meisneriana (o-vo)
 c/c. *Stanea woolfsii* (vo).
 sc. *Neolitsea dealbata* (o-vo).
 c/c *Gmelina leichhardtiana* (vo).
Willkea huegeliana (vo-o).
 sc. *Anoptium macleayanus* (o).
Abrophyllum arane (vo-o).
Gnifaylia monanthylis (vo).
 sc/c *Pennantia cunninghamii* (vo-o).
 c/c *Cinnamomum virens* (vo-o).
Cladodendron tomentosum (o-vo).
 c/c *Ehretia acuminata* (vo-o).
 a. *Hedyocarya angustifolia* (vo).
 1/2. *Acmena rigens* (x) C 628 - Ewing Gb. NVF
 * S.W. Range Extension for this species.
 c/x *Brachychiton acerifolius* (vo).

- Microsorum scandens* (o-c)
Lantreopsis decomposita (o-c)
Anthreopteris ^{small} (o-c).
Cyathaea leichhardtiana (vo-o).
Christella dentata (vo-)
Doodia media (o) ^{crab.}
Adiantum formosum (o-c)
 A. ^{hispidulum} (vo-o).
Pellaea ^{p. falcata} (vo-).
Histioporus incisus (vo-o) ^{crab/leaf.}
Lantreopsis ^{p. micrantha} (o) ^{ran.}
Diplazium australe (x-o).

- Hydrocotyle pedicellata* (vo-o).
Calanthe triplicata (vo-o).

- Cyperus tetraphyllus* (vo).
Gymnostachyum anceps (o-vo).
Elatostema ^{long...} *obpitatum* (vo-c).
Elatostema reticulatum (vo-o).
Urtica incisus (x-vo).

EWINGAR S.F. Cnpts. 625-628. Robert Kooyan 10/17
 VEG. SAMPLE - Fr. 47 - Tallwood / Sydney Blue-gum ... overgrown with R.F. Fr. 25/26. (see list...)

- C. Eucalyptus microcarpa (o-c)
 C. E. saligna (o-c)
 C. E. acmenoides (o)
 C. E. laevoparia (vo-o-c)
 C. E. (albensii) campanulata (r-vo)
 C. Lophostemon confertus (vo-o)
 C. E.
 X. Livistana australis (vo-o)
 ss. Caldecluvia paniculata (o-c)
 sc/c Albocanevia torulosa (o-c)
 Persoonia media (o)
 ic. Acacia irrorata var. irrorata (c-o)
 ic. Acacia melanoxylon (o-vo)
 Elaeocephalus reticulatus (o-c)
 Cryptocarya rigida (o-c)
 c. Trochocarpa kuria (o-c)
 c. Synoum glandulosum (o-c)
 Archirhodomyrtus beckeri (o)
 Psychotria loniceroides (o-c)
 Solanum: sp. densivelutium (o-c)
 Ozolacium diosmifolium (o-c)
 Duboisia myaparioides (r-o-c) ditulosa.
 Tristaniopsis collina (r-vo)
 Solanum cerneum sp. aff. var. tall. (o-vo)
 Olea elatius (o-c)
 Zieria smithii (o)
 Pdyxias scabucifolia (o)
 Schizomaria ovata (vo-o)
 Alphiternia excelsa (o-vo)
 Rhodamnia rubescens (o-)
 Knapturn malcomianus (vo-o)
 Cryptocarya glaucocarpa (o)
 Cordyline stricta (o)
 Cordyline peribaris (vo-o)
 Denhamia celastroides (vo-o)
 Sonocarpus sp. oracanthum (o)
 Anaspadix monacanthus (vo-o)
 Palmeria scandens (c)
 Hibbertia scandens (o)
 Cissus hypoglauca (c)
 C. antarctica (o-c)
 Rubus hillii (o-)
 R. moorei (o-)
 R. resifolius (c-)
 Marinda jasminoides (o-)
 Tetragyna nitens (o-)
 Hibbertia dentata (o)
 Parsonsia fulva (o-c)
 Cephalarchia cephalobotrys (o)
 Marsdenia flavescens (vo-)
 X M. sp. aff. longiloba (collected vegetative specimen)
 Eustrephus latifolius (vo-)
 Geitonoplexium cymosum (o) ^{very sparsely hairy}
 Calochortia dubia (c-vo)
 Bledium caribgeum (c)
 Cyathea australis (o)
 Paris tremula (vo)
 Peltocera paradoxica (o) route...
 Cyperus tetraphyllus (o)
 Lapidospoma laterale (o-)
 Juncus sp. (vo-o)
 Gahnia sieberiana (o-)
 Gahnia aspera (o-)
 Lomandra longifolia (vo)
 Lomandra spicata (o-c)
 Dianella caerulea (o-c)
 Entolasia stricta (o)
 E. marginata (o)
 Oplismenus imbecillis (vo-o)
 Oplismenus aemulatus (o)
 Derelobium speciosum (vo)
 Dendrobium gracilentum (vo-o)
 Platycerium bifurcatum (o)
 P. superbum (vo-o)
 Davallia pyzaster (vo-o)
 Asplenium polypodioides (vo)
 Allocasuarina brisbanensis (r-vo)
 Calamita duplicata (vo-o)

Robert Koenig 10/27

sc. *Diospyros pentanera* (vo)

Citriobatus pauciflorus (o).

Cinnamomum oliverii (vo-o).

Dodonea triquetra (o-c).

* *D. megarhypha* (2) - outside area?

sc. *Callicoma sericeifolia* (o-vo) ^{young/moist...}

Pithecia latifolia var *altai* (o-vo).

Rhodomyrtus psidioides (o-vo).

Viola hederacea (o-vo).

Hydrocotyle (pedicellata) (2-o).

* *Rhodanthe argentea* (vo-o).

* *Balgaria inophylla* (2-o).

* *Oritia eximia* (vo-o).

Parietaria debilis (vo-c).

Pomadouris angustifolia (vo) ^{silulag...}

* *Polyscias elegans* (vo-)

* *Stenocarpus schizone* (vo-)

Bursaria spinosa (o-2).

Seringia arborea (o).

Senecio amygdalifolia (vo).

Myrtus silvestris (o).

Labellia 4. trigonocaulis (o)

Aconis acoma (2).

Senecio minimus (vo-o).

Endandra sieberi (vo).

Stylidium 2. latifolium (2-o) ^{tall... today seen...}

Solanum aviculare (vo-o).

Prostanthera 2. incisa (vo-c) ^{ched...}

Olearia nerioides (vo).

Rubrica 2. styphylia (2-vo)

Gnaphalium forsteri (vo-).

Sesuvium portulacastrum (o).

Urtica incisa (vo).

Pomadouris angustifolia (vo-o).

Passerina straminea (o).

Maclura cochinchinensis (vo).

Riparianum elaeagnum (o-vo)

Riparianum ()

Melodinus australis (vo-o).

Passerina 4. induplicata (vo).

Dioscorea transversa (vo-o).

Smilax australis (o-vo)

Cayratia clematidea (vo-o)

Cayratia aurea (vo-).

Glycine clandestina (vo).

Streptanthus noarzi (vo-)

Sarcopetalum harveyanum (vo).

Fr. 37 - Dry Blackbutt.

Veg. Sample overlaps with Fr. 62).

- C. Eucalyptus ptilularis (vc)
 C. E. (Corymbia) gunnifera (vo-o, c)
 C. E. ^{upulata? chab.} ~~tindalica~~ (o).
 C. E. ^{acmurioides} (vo-a). ^{chab. carnea...}
 C. E. laevapinea (vo).
 Add: E. umbra (o) Fr. 62.
 sc. Acacia falcata (o-c)
 sc. Acacia irrorata or irrorata (vo).
 sc. Allocasuarina taralata (o-c).
 sc. Banksia integrifolia ^{ex. montana} (2-o).
 Leptospermum ^{*} polygalifolium (vo-c).
 Oxylobium illicifolium (c).
 Gampholobium latifolium (vo-a)
 Correa reflexa (vo-c) rocky areas...
 Hibbertia aspera (o-c)
 Hibbertia acuminata (2-o) rocky areas... scrub...
 Leucopogon lanceolatus (vo-o).
 Hakea ^(?) Merinthia (o).
 Lamaria siliifolia (o-c).
 Notalea longifolia (vo-o).
 Comesperma ericunum (o).
 Daviesia uncinata (o) prickly...
 Epacris sp.
 Platylobium ^{sp. chab...}
 Persoonia obata? (o).
 Persoonia stradborensis (o).
 Xanthorrhoea glauca (o).
 Paraphite ^{*} canescens (o-c).
 Goodenia hederacea (vo-o).
 Archirhodomyrtus beckeri (vo-o).
 Acrotriche [?] latifolia (vo-o).
 Viola heterocarpa (o).
 Eucasia coelia var. spinulosa (vo-o).
 Hakea (sp. 2) dactyloides (o).
 Axiotricha latifolia (vo-c).
 Hovea ^{sp.} purpurea (vo). ^{specimen}
 Dotsonia triquetra (o) ^{chab.}
 Lomatia [?] (o).

- Poa labillardierei n. l. (o).
 Entolasia stricta (c).
 Lepidoloma sp. (o-).
 Imperata cylindrica (o-c).
 Dianella caerulea (vo-o).
 Lomandra multiflora (vo-o).
 Themeda (o).
 Calochlaena dubia (vc).
 Paspalum stramineum (o-vo).
 Pholidium aculeatum (o-vo).
 Cyathea australis (vo-a).
 Billardiera scandens (vo).
 Kennedia rubicunda (vo-o).
 Hardenbergia violacea (vi-c)
 Smilax australis (vo)
 Smilax glycyphyllo (o-vo).
 Canytha (filiformis) (vo-o).
 Macrozamia lanceolata (vo-a).
 Zieria cythioides (vo-a).
 Pultanea retusa (vo-o).
 Patersonia sericea (vo).
 Galium prorepens (2-vo).
 Connellia cyanea (vo-a).
 Leptospermum sp. trinervium (vo-o)
 Pratia purpurea (vo).
 Acacia ^{(small leaved) myrtifolia} (vo). ^{specimen (1).}
 Tetrallea st. hypophylla (2-b)
 Pinetia longifolia (vo-o).
 Pomadouria ligustrina (2-vo).
 Daviesia genistifolia (vo-o).
 Acacia ^(prickly) ulicifolia (o-c). ^{specimen (2).}
 Tetrallea thymifolia (vo).
 Hybanthus monogynus (o-vo). ^{rocky areas...}
 Acacia sp. ^(specimen caustic?)
 Eucalyptus suppreffens (vo-o).
 Wahlenbergia sp. (vo).
 Stylidium laevifolium (2-o) rocky sites...
 Lychnis ericoides var. tenuis (chab...)
 Muelleria myrtifolia (vo-o)
 Amygdalum sp. (o-c)

Wednesday 15/10
+ 2:30pm

EWINGAR S.F.
Cmpts. 625-628.

FLORA & FAUNA SURVEYS

15/10/97

Robert. Kooyman

Check various tracks, sites for playback, habitat assessments etc.
Kevin, Noel, Rodney & Nicole arrived yesterday..... Koda transects etc...

- Set up early evening for 'ANABAT', creek sample and frog transects.
- Playback calls for owls - various locations.....

Weather: fine, clear, $>25^{\circ}\text{C}$ daytime, N winds, 10 km..., $+18^{\circ}\text{C}$ 7:30pm.
☾ - moon, almost full - very bright...

6:00pm - lg. walk, listen, start species lists etc.... Prep. for night work.

Playback calls: P.O. - no response YBG - no response.
M.O. - no response

Site - (end) Bluff Rd - Boundary (626/627) -

Spotlight Transect - : Bluff Rd \rightarrow nil.

NABAT SAMPLE - : causeway crossing - Harp Trap area...

. then EWINGAR CR. *Litoria phyllachna* - *Litoria lesaei*
(peersoni).

PLAYBACK calls - Sooty owl - no response....

Shift to C628 - camp on lg dump - 10:30pm. (at no camp).

* Disturbed Spotted-tail Quoll --- approx. 2am. at my camp. Ran off when I moved to get a better look and gave 2 (two) loud calls ---- a couple of 'sipping' blasts! [bright moonlight - good visibility...].

* HARP TRAP - *Kerivoula papuensis* (2) - this morning (16/10).....!
.... release tonight and record release calls!!

FIELD NOTES: During.

EWINGAR S.F.

FLORA & FAUNA SURVEYS.

16/10/97.

Th. 16/10.

8:00 am.

Sample areas of Ft. 47, Ft. 37, Ft. 23/26, Ft. 11. Cnpts. 628, 625.
Start species lists etc....

5:30 pm. end...

6:00 pm START. NIGHT FAUNA SURVEYS - : 7 Glossy Black Cockatoos at Ck. Cronig^{Kennedy site..}

1. Release *Kerivoula papuensis* (2) captured last night --- record release calls onto Anabat - Computer link-up.

6:20 pm --- successful release --- poor quality recording....

● - Full moon - +18°C, light breeze, clear, n
bright ---

- Bulldog Rd... Eldham Rd.

6:30 pm - 8:30 pm - 4 km Driving transect - Stop & listen every 1 km for >15 mins....

Finish - 8:30 pm - Drive to C 628, 625 - trail to Rory's Rd - to Creek...

(Rufous Belling (2) - on road - Ft. 37 - near cnr. Bulldog Rd / Eldham Rd.
Cnpt. 625, 626 -

END. 9:30 pm.

Set up camp! ... White-throated nightjar - calls.

Mtn. Bobwhet parson - calls

Boobook owl - calls

Ringtail parson - calls

... several other calls unable to positively identify ---- one possible Quail?

Fri. 17/10 - Check mine sites / Bulldog Diggings - : several shafts - vertical, >3m (no bats).
Veg. Sample - Ft. 37 etc...

CHECK THE FOLLOWING - :

Casino Office - Peter St. Clair -

1. Scat analysis results.

✓ 2. Package to Barbara Triggs - Box please...!

? 3. AMG's - locations for NWS data base records -
C 625 - 628. What happened?

* Sat./Sun.

✓ 4. Wompoo fruit dove records - Mt. Belmore / Mt. P. ...

✓ 5. Ewingar S.F. C 661... S.O. records to office...
YAB.

6. Macabai S.F. - operation? - Rare Plants Hot spot... - careful w/ that area... Ewingar
(is there one)?

11: NEBBT coming into flower....

FIELD NOTES

EWING 622 S.F.

Cmpt. 625-628.

Robert Kooyman 21/10/97

Tuesday - 21/10/97 - arrive 1:30pm - locate trap-trap sites / discuss program with Fauna team (Kevin, Noel, Rayn, Nicole).

* weather: cool, cloudy, some rain, clearing toward evening ---- still cool!
light winds (southerly...)

Fr. 163 NEBT - Veg. sample (in part...) Cmt. 627-628.

END: 5:30pm

NIGHT SURVEYS - 6:00pm (prep., 10-specimen etc.) site 1, - Fenceline - Bulldog Rd. Cmt. 628/7.

weather: fine, clear, cool-cold - +11°C at 6:30pm - no wind →
Moon - (waxing) - +9°C at 7:30pm.

6:30pm - LISTEN - Boobook owl Superb Lyre-bird.
Ring-tailed Possum Sugar Glider.

PLAYBACK CALLS - 6:45 P.O. - no response YBG - no response
6:55 S.O. - no response Kook - no response.
M.O. - no response.

7:30: end - LISTEN: 10 mins. - Sugar Glider
Boobook owl small macropod...
Mtn. Bobwhite possum.

DRIVING SPOTLIGHT - Bulldog Rd - C 627-8 - to Elkhorn Rd. (3 listening points).

1.5km - long nosed bandicoot

1.9km - long nosed bandicoot

2.3km - Greater Glider. (S.B.G. ... feeding -

3.2km - Parma Wallaby ... grazing at edge of road... female with pouch young...
3.4km - END - Elkhorn / Bulldog Rd.

5:50pm LISTEN: Boobook owl, Sugar Glider,

PLAYBACK - CALLS - site 2. P.O. - calls → 100°.. Cnr. Bulldog / Elkhorn.

8:38pm P.O. - calling 120°, approx. 200 metres....
(pos. M.O. heard)

- Powerful ant calls for approx. 10 mins....

Drive down to cnr. Bluff / Bulldog Rd. - M.O. - playback calls - no response... 10:00pm.

ET UP CAMP - 11:00pm. Listen to Kevin (Playback calls ... 1km ... no response -

- Rufous Whistling (2) on road By 8:00. above ... creek crossing. (see map)

EWINGAE S.F. Cnpts. 625-628.

Floer & FANJA surveys.

Robert Koenigman
22/10/97

Wednesday 22/10.

weather: fine, partly cloudy --- clearing +22°C ... light S.E.

Vg. samples: Fr. 37, Fr. 163, Rake areas.... Bush-tailed Rodent Wallowing (possible).

Habitat Assessment excellent habitat.....

Fr. 47, Fr. 22/26. Cnpt. 626, 625 - creek areas for Harp Traps - open tracher...

5:30pm. Cnpt. 628 - Red-lipped palmerston - on road edge - grazing (near gully head).
Listen for Rufous Scurs - also - Playback calls - no response...

weather: fine, partly cloudy, wind stronger - Sk - 20% on ridges.....

☉ - $< \frac{1}{2}$ moon, rising after 11 pm.... increasing cloud (7:30pm) - light rain.
Building Rd. Site - : western edge Cnpt. 628. TEMP +13°C 7:00 pm.

6:35pm - LISTEN - : Boobook owl (windy, difficult to hear well!)
10 mins.

PLAYBACK CALLS - : M.O. - no response
(last played) - S.O. - no response
(then several disturbance calls) - calls from several sites & flying....
7:08pm ... 85°, 100m... (gully head). Cnpt. 628.

7:20pm - :

LISTEN: 10 mins... nothing heard...

8:00pm.

Move to Cnpt. 626 - Bloodwood Rd - Ewingae Creek crossing - :

LISTEN: 10 mins. Boobook owl, Bobule pernum...

PLAYBACK CALLS - : P.O. - no response M.O. - no response
S.O. - no response YBG - no response KOLA - no response

distant - : Boobook owl (distant).

9:00pm. Driving down Building Rd - toward Perry's Rd - spotlight.
- Long nosed Potoroo - on road - spotlight - binoculars....
- Red necked Palmerston - on road

10:00pm - Meet up with Kevin, Abel - discuss tomorrow's work, results tonight..
Mine shaft inspection, Scat (predator) collection - tomorrow!

Check Oct releases - Harp Traps.

10:30pm - set up camp - etc. 11:00 pm. END.

Thurs. 23/10/97.

EWING S.F. Cnpts. 625-628.

Robert Karyman

Veg. sampler - NEOST Ft. 163, Ft. 23/26,

Rufous Scrub-Bird habitat assessment, early morning listening (for calls....
... none heard). area has some moist forest types at 800-900m altitude..

Ft. 58, 11, 62 - veg. sampler... Wampoo fruit-doves - calls & seen C628. SW corner
Cruky Head..

NB: Next week - complete spotlight transects etc., Bat work - H.T. & Samr., Frog Surveys,
(3 days/night). Veg. sampler/surveys, Call Playbacks,

Move down to Ewiger Gk - end Rary's Rd.

Wampoo fruit-doves - calling & seen feeding in Ficus wattleicaria...

5:30 → 6:30pm. EWING S.F. - Rary's rd crossing..

6:30pm - Litter: 30mins. Bodhok and

PLAYBACK CALLS - S.O. - no response YBG - no response.
P.O. - no response

7:45pm - walking spotlight transect..

weather - cloudy, Temp. +14°C at 7:30pm, light - no wind, light drizzle,
Moon: ☉ - $< \frac{1}{2}$, rise after midnight...

long nosed Bandicoots ---- (4). Sugar-glider - calls.

white throated nightjar - calls, Bodhok - calls..

END: 9:00pm.

... Set up camp - light drizzle - 9:30pm -

∴ Rain increasing overnight (still light...), cloudy in morning, some drizzle.

Fri 24/10/97.

Flea & FAWA surveys...

EWING S.F. Cnpts. 625-628.

Robert Kooyman

Mon. 27/10/97.

Travel via Carino -:

Ewing S.F. 3:00pm. Organise survey sites etc. with Noel et al.

Vegetation samples...

weather: fine, clear, +27°C, storms threatening, then dissipated.... termite hatching!!

Night survey: start. BLUFF RD. Boundary Cnpts. 626, 627.

LISTEN: 30min: BOOBIE OUL (c) - 2-3
White throated Nightjar. (2)

weather: mostly fine, some light cloud, no wind → light breeze. Temp. +18°C at 7:30pm.
dark phase of moon.

PLAYBACK CALLS:- S.O. - no response YB6 - no response
P.O. - no response Kake - no response
M.O. - no response

Cnpt. 627 - Walking Spotlight Transect - ... Bluff Rd & sidetrack into C 627.

Sugar glider-calls,

small neotoma (alarm stamping...)

white-throated Nightjar - calls.

9:45pm -

Meet up with Noel - ANGST SAMPLE... Temp. +15°C.

Driving SPOTLIGHT TRANSECTS:- Cnpts. 625, 628, 627, 626

Walking transects:- C. 627, 626,

11:30pm - finish - Set up Camp 12:00, END.

Tues. 28/10/97.

Ft. 11 - *Ceratopetalum apetalum* - veg. sample Riparian.

Wampoo Fruit-Doves - C625, 628 Ft. 47 with Railfowl
(Paradise Lige-birds calling also)

Ft. 37 - Dry BOT - (\pm Ft 62) (1) Predator Scat collected...

Weather: fine, warm +26°C, light winds, storms building in afternoon.

Rain after 5:00 pm - light --- increasing storm activity --- later.

--- some heavier showers ... storm front - very strong winds, heavy rain ...

Start. 6:00 pm - Riparian veg. samples --- light rain ...

Storms / heavy rain upto 8:45 pm ...

Release bats from previous night - *Kerivoula papuensis*
Chalinobates morio
Nictophyllus gouldi

Walking spotlight transect - in rain on creek. RAIN END!

Walking Spotlight Transect -: Dry BOT. type - C626.
- nothing seen. BOOBOOK OWL - calls

- Back at vehicle -: 10:30 pm.

Driving Spotlight along Bully Rd ... Playback calls -: M.O. - no response

11:00 pm ... end Playback ... continue down transect ... YSB - no response ...

- *Mixophyes fasciatus* - on road ... *Litoria chloris* - at creek crossing ... (natural)

Walking Spotlight - Creek Transect - to 11:45 pm.

* Tomorrow - do Habitat assessments / Veg. lists & site descriptions for *.
Kerivoula papuensis capture sites ... (for report -: lack of captures on large creek may be due
difficultly locating / sitting H.T.).

Driving Spotlight transect - back down to Rary's Rd. ...

Camp near Ewing's Gk. - *Mixophyes iterans* - calls ... check ... yes!

12:00 pm - set up camp - 12:30 pm END. M. ... ? ...

Approx. 3 am - * Powerful Owl calling - 215' from my camp.

(started up Chinthee - Billed Cuckoo calling ...) very large tree fall nearby ...

Microchiropteran Bat Roost Assessments / Inspections.

Harvey, K. / Herklots, R., & Kooyman.

MINE SHAFTS (BULLDOG AREA)

- Inspection Report compiled by Kevin Harvey. 10/2.

- BD 1 - Nil habitat for bats.
- BD 2 - Nil
- BD 3 - ~8m but no side shafts : nil habitat.
- BD 4 - ~6m - no side shafts: nil habitat
- BD 5 - ~6m - nil habitat
- BD 6 - ~5m - no habitat
- BD 7 - 8 m - water in bottom - nil habitat
- BD 8 - 8m - nil habitat.
- BD 9 - 10m - nil habitat (v. close to Bulldog Rd)
- BD 10 - 8m - nil habitat
- BD 11 - 9m unsuitable for bats
- BD12 - 9m - covered over with tin - unsuitable bat habitat
- BD13 - 3.5m - nil habitat
- BD14 - 5m - nil habitat
- BD15 - 4m - nil habitat.
- BD16 - 5.5m - nil habitat
- BD17 - 7m - nil habitat
- BD18 - 3m - nil habitat
- *BD 19 - 8m - nil habitat
- BD20 - 7m - nil habitat
- BD21 - 5m - nil habitat
- BD22 - 7m - small cavities at bottom but nil habitat
- BD23 - 8m - nil habitat
- BD24 - 8m - nil habitat
- BD25 - 3m - nil habitat
- BD26 - 10m - water at bottom + unsuitable habitat
- BD27 - 4m - nil habitat
- BD28 - 9m - nil habitat
- BD29 - 8m - nil habitat
- BD30 - 8m - nil habitat
- BD31 - 9m - nil habitat
- BD32 - 8m - water in bottom-nil habitat
- BD33 - 8m - water in bottom- no bat habitat
- BD34 - 4m - small horizontal shaft at bottom . Very overgrown at entrance.
- BD35 - 4m - no bat habitat
- BD36 - 3.5m - nil habitat
- BD37 - 4m - nil habitat
- BD38 - 9m - nil habitat - water in bottom
- BD39 - 4m - small horizontal shaft at bottom
- On the other side of the road;
- BD40 - 5m - nil habitat
- BD41 - horizontal shaft
- BD42 - 7m - nil bat habitat
- BD43 - 6m -small horizontal cavity at bottom
- BD44 - 8m - no bat habitat
- BD45 - 10m - no bat habitat
- BD46 - 6m - no bat habitat
- BD47 - 5m - nil bat habitat

Microchiroptera. Bat & Flare data.

EWINGAE S.P.

Cmpt. 625

Elkham 22 - 'Ford' site.

Road Kangaroo

21/10/97

* Kerivoula Papuensis - Habitat at capture site.

ENVF - Ceratopetalum / Caldehuvia / Tritanopus - Riparian advance.... Ft. 11/13.

- merge with Ft. 53 and upshore / moist Ft. 47. (see species lists).

Ck. Ceratopetalum apetalum (c-vc)

Ck. Caldehuvia periculosa (o -

Ck. Schizomeria ovata (o -

Ck. Acacia smithii (vo-o).

sc. Anagrostis macdonaldiana (o-c).

Ck. Syntherisma glandularum (o)

Ck. Stenocarpus sativus (vo-o).

sc. Acronychia pubescens (o-vo).

sc. Calliandra serratifolia (o-vo).

sc. Syzygium oleosum (o).

sc. Allocasuarina torulosa (o).

Ck. Eriodictyon mulleri (o-vo).

Ck. Cryptocarya glaucescens (o-vo).

Ck. Orites excelsa (vo).

Taenidia insipida (o-c)

Linosyris maritima (o-c).

Citrobatus paniculatus (o).

sc. Trachocarpus laevis (o).

sc. Badkhouia myrtifolia (vo-o).

sc. Cryptocarya rigida (vo-o).

1/2 Cinnamomum oliverii (vo).

Cryptocarya meiseniana (ot.vo).

1/2 Livistona australis (vo).

Cardinalis stricta (o).

1/2 Diospyros pentanervia (vo).

1/2 Daphniphyllum scandens (r-vo).

C. Lophocarpus confertus (r-o)

C. Eucalyptus sativus (r-o).

Canopy Height - R.F. (Ft. 11/13 etc.) - 25-35m.

Ft. 163 /

Ft. 47 adj. - > 45m.

This site has 'higher' quality R.F. - structurally more open, taller, with intact canopy.

1/2 'Playway' along creek.... see photographs - 9-10-11.... habitat data -

improve site photographs....

Scrub-wren nests along creek.

1/2-2 PWF - 20m radius.

Ft. 163.

Cissus hypoglauca (o)

C. antarctica (o)

Hibbertia scandens (vo)

Maridia jasmoides (o-vo).

Palmeria scandens (o)

Stichurus flabellatus (o-c).

Adiantum farosum (o-c).

Blechnum patersonii (o)

B. caribaeum (vo-o).

Doodia capensis (o-c).

Doodia media (o-c).

Platynerium bifurcatum (o).

Blechnum walshii (o).

Cyrtocarpus australis (o)

Cyperus tetraphyllus (ot.c).

Lomandra (histeria) (vc-c).

Asplenium australasicum (vo-o)

Devalia pyridata (o-vo)

Dendrobium cernuum (o)

D. gracile (vo).

* *Protogon...* - microch. bat & flora data...

Eniwetok S.F. Capt. 626

Robert Kanyan
29/10/97.

* *Karivoula papuensis* - Habitat at capture Site.

Capture Site - Veg. Sample

(Bottom and surrounding Gully on Hanu-Kang Creek....)

- Variable width band of Riparian Rainforest ± Ft. 53, Ft. 47 (S.F.) etc...

* NB: (NOT MARKED ON FOREST TYPE MAPS....) ...mostly small stature (occ) RF trees only...

c/c *Tristania laurina* (o-c).

c/c *Callicoma serratifolia* (vc-c)

c/c *Schizomeria ovata* (o-c)

s/c *Certhetodum apetalum* (o-c)

s. *Anaptychus nuclearyanus* (o)

s/c *Calochortus periclymenus* (o).

s. *Syzygium obcordatum* (vo-o).

s. *Trochocarpus laurina* (o-c)

s/c *Synowia glandulosa* (vo)

s. *Alloxanthus taurina* (o)

Personea media (vo-o).

s. *Pittosporum undulatum* (vo).

s/c *Acacia viciifolia* var. *maritima* (o-vo).

Procris incisa (o-vo).

s. *Elaeocarpus reticulatus* (vo-o).

Pittosporum revolutum (vo).

Psychotria loniceroides (vo).

Dubautia myrsinoides (vo).

s. *Acacia smithii* (vo).

s. *Backhousia myrsinifolia* (vo-e).

Rapanea variabilis (vo-o).

s. *Livistana cincta* (vo-o).

s. *Acrotychium puterianum* (vo).

s. *Bursera sp.* (vo).

Forest Types directly adjacent are: (Day) Ft. 37, Ft. 163. see species lists....

± *C. Lephostemon confertus* (vo-c)

± *C. Eucalyptus saligna* (vo-c).

|| *Ureca* ... Ht. - > 3m.
Curat sp. - 15m - 25m (border / pasture)

- Scrub-wood near mangrove.

Photographs: 1-o - (Habitat / Trap Site) - 1 shot / edge - looking up slope. (horizontal).
1 - shot Ft. 37 (vertical).

10m Plot - 20m radius....

Sent to: Dr Barbara Triggs
'DEAD FINISH'
GENOA, VIC 3891

From: State Forests
Casino Office
PO BOX 688
Casino 2470

Date Sent: 30/10/98
Invoice Number: 461 157 363
State Forest: Ewingar State Forest

REF No.	CPT	TRANSECT No.	METRES	DEFINITE	PROBABLE	COMMENTS
				POSSIBLE		
1	625	T10	294m	<i>W. bichen</i>		<i>macrofod scat - several grooming hairs</i>
2	626	-	-	<i>A. rufescens</i>		Predator scat. - <i>prob. Fox</i>