HARPER SOMERS O'SULLIVAN

PLANNING · SURVEYING · ECOLOGY

HUNTER ECONOMIC ZONE ROAD (EPBC2002/782)

MANAGEMENT OF IMPACTS ON THE SWIFT PARROT AND REGENT HONEYEATER ROAD CONSTRUCTION (CH2100 - 4285 METRES)

A REPORT TO DEPARTMENT OF THE ENVIRONMENT AND HERITAGE

NOVEMBER 2004

Job Reference No. 22129

I R Harper B SURV MIS · M J O'Sullivan B SURV MIS · C J Anderson B APP SC (EAM)

WINNER OF THE NSW EXCELLENCE IN SURVEYING AND MAPPING AWARD 2003

241 Denison Street Broadmeadow NSW · PO Box 428 Hamilton NSW 2303 · DX 7949 Newcastle
T 02 4961 6500 · F 02 4961 6794 · E survey@hso.com.au · W www.hso.com.au · ABN 11 093 343 858

CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 INTRODUCTION

On the 24th February 2003, approval for the construction of a Spine Road into the Hunter Economic Zone (HEZ) was granted under Part 9 of the Environment Protection and Biodiversity Conservation Act 1999 (EPBC 2002/782).

As part of the Conditions of approval (Annexure 1), HEZ Pty Ltd must prepare and submit to the Minister for approval prior to construction, a plan, or plans, to manage impacts on the Swift Parrot and Regent Honeyeater habitat. The plan, or plans, must include:

(a) survey of potential habitat along the route;

(b) criteria used to identify potential habitat;

(c) any habitat that may be cleared;

(d) provision for the protection of areas of known Swift Parrot Habitat at Sites 5, 9, 10, and 16, as shown in Annexure 2 of the approval; and

(e) conservation measures to minimise loss of habitat and protect these species, including compensatory habitat.

Each of the above mentioned points are detailed in the following chapters.

The current alignment for Stage 1c of the HEZ Spine Road (CH2100 – 4285m) has been modified to that originally proposed and approved under EPBC 2002/782, however the Department of the Environment and Heritage indicated (in a letter dated 30th July 2004) that the realignment can be assessed under the existing EPBC 2002/782 approval.

2 SURVEY OF POTENTIAL HABITAT ALONG THE ROAD ROUTE

A survey of potential habitat along the road route (CH2100-4285m) has been conducted. The survey utilised criteria detailed in Chapter 3 and included the GPS survey of mature key foraging trees (Diameter at Breast Height > 50cm) within the development zone of the HEZ (Zone 4(h)). The results of the survey of potential habitat is dealt with in Chapter 4 and graphically presented in Figure 4-1.

These surveys whilst detailing the locations of mature tree species, failed to obtain any further records of the Swift Parrot or Regent Honeyeater, as these two migratory / nomadic species appear to have been absent from the locality during winter months of 2003 / 2004 (when these species are most likely to be present).

3 CRITERIA USED TO IDENTIFY POTENTIAL HABITAT

The criteria used to identify potential habitat within the HEZ was based on available literature on the known habitat requirements for the Swift Parrot and Regent Honeyeater. In Particular, the following sources of information were utilised.

Ecotone Ecological Consultants (2002) *'Second Draft' Habitat Management Strategy for the Development of the Hunter Employment Zone*. Prepared for Cessnock City Council. September 2002.

Menkhorst, P. Schedvin N and Geering, D (1999) *Regent Honeyeater Recovery Plan 1999-2003*. Department of Natural Resources and Environment. Parks, Flora and Fauna Division, East Melbourne.

SPRT – Swift Parrot Recovery Team (2001) *Swift Parrot Recovery Plan*. Department of Primary Industries, Water and Environment. Hobart.

SPRT – Swift Parrot Recovery Team (2002) *Assessment of Swift Parrot Sites near Cessnock, Lower Hunter Valley Region, NSW – including the Hunter Employment Zone* October 2002. Prepared by Debbie Saunders National Swift Parrot Recovery Team for NSW National Parks and Wildlife Service.

Based on the information contained in these reports the following criteria were used to identify potential habitat:

Table 3-1 Criteria Used to Identify Potential Habitat

Species	Vegetation Community	Key Foraging Tree Species (winter flowering)	Other resources	Previous Records
Swift Parrot	Lower Hunter Spotted Gum/ Ironbark Forest Hunter Lowlands Redgum Forest	Spotted Gum (Corymbia maculata) Red Bloodwood (Corymbia gummifera) Narrow-leaved Ironbark (Eucalyptus crebra) Board-leaved Ironbark (Eucalyptus fibrosa) Forest Red Gum (Eucalyptus tereticornis) Grey Box (Eucalyptus moluccana)	Lerps	Yes^/No
Regent Honeyeater	Lower Hunter Spotted Gum/ Ironbark Forest Hunter Lowlands Redgum Forest	Spotted Gum (Corymbia maculata) Red Bloodwood (Corymbia gummifera) Narrow-leaved Ironbark (Eucalyptus crebra) Forest Red Gum (Eucalyptus tereticornis) Grey Box (Eucalyptus moluccana)	River She-oak (Casuarina cunninghamiana)* Mistletoe sp.*	Yes^/No

Notes: * - Where these resources occur as more than isolated individuals within the landscape.
^ -Previous records within 100meters of the boundaries of the development /clearing.

If one or more of the criteria is evident, and/or there are previous records within the immediate locality (i.e. within 100 meters), then the area / development site should be classified as 'Potential Habitat'.

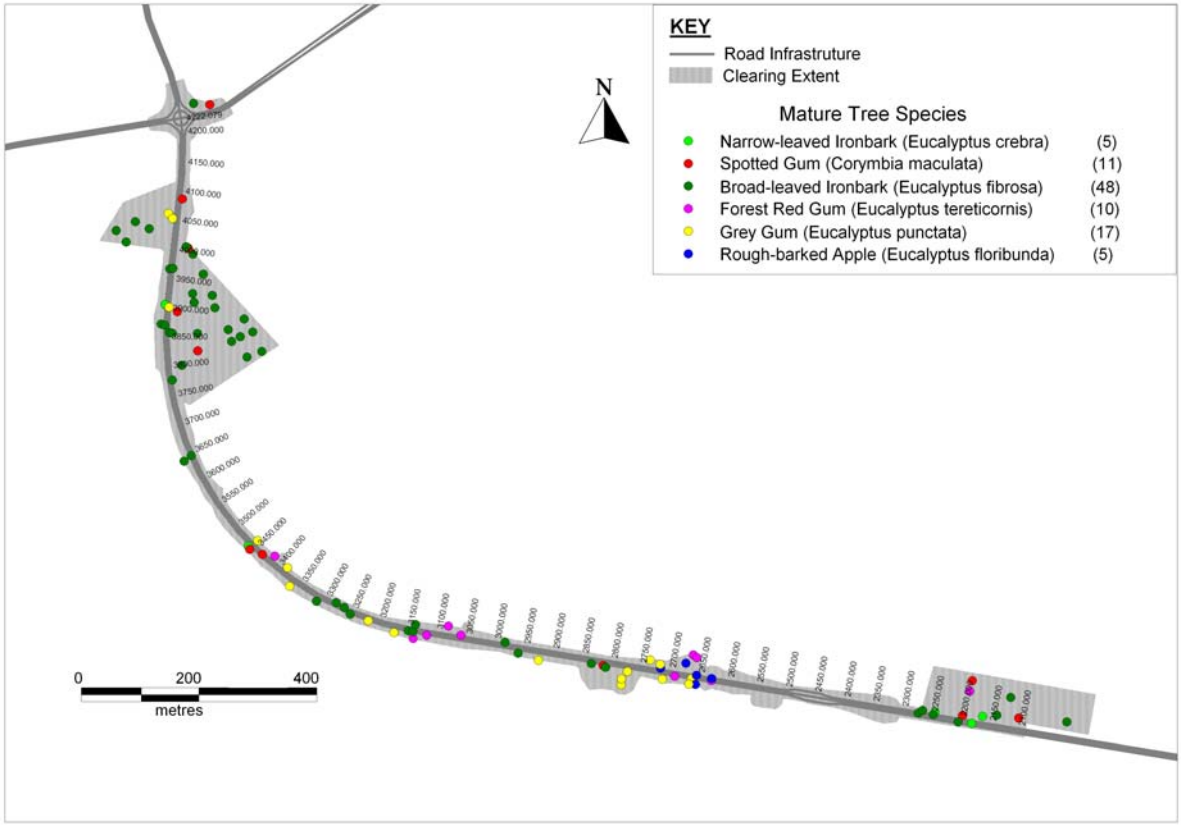
4 ANY HABITAT THAT MAY BE CLEARED

It was concluded that the entire extent of clearing for road (CH2100 – 4285 meters) is potential habitat for the Swift Parrot and Regent Honeyeater, due to the presence of feed trees, as shown in Figure 4-1.

Key impacts include:

- Total area to be cleared will be approximately 13 hectares.
- Seventy four (74) mature Swift Parrot and Regent Honeyeater feed trees will be removed by the road construction; and
- No known Swift Parrot Habitat Sites will be disturbed.

Figure 4-1 Swift Parrot and Regent Honeyeater Habitat (CH2100 – 4285m)



5 PROVISION FOR THE PROTECTION OF AREAS OF KNOWN SWIFT PARROT HABITAT

None of the known Swift Parrot Habitat at Sites 5, 9, 10, and 16, as shown in Annexure 2 of the approval, are in close proximity to the road (CH2100 – 4285m) and will not be directly impacted upon by the construction and ongoing use of the road. Site 5 is the closest of these sites, located approximately 290m north of chainage 2100m.

6 CONSERVATION MEASURES

A number of conservation measures to minimise loss of habitat and protect these species, including compensatory habitat, will be implemented. These include:

- Erection of Swift Parrot road signs which will alert motorists to the presence of the Swift Parrot;
- Set speed limits to minimise potential for bird collisions with vehicles;
- Landscaping along road verges, including the planting of key foraging species such as 270 Spotted Gums (refer to Table 6-1);
- Any other measures to minimise ecological impacts contained within Cessnock City Council's Terms of Consent – refer to http://www.cessnock.nsw.gov.au/scripts/CESSremdm.pl?Do=page&Page=PNum1699, such as preparation of a detailed landscape plan and a vegetation clearing plan; and
- Ensuring that an area equal to or greater than that cleared by development is maintained within the conservation zones of the greater HEZ study area. A visual representation of the compensatory habitat is shown in Figure 6-1. Habitat data showing that the compensatory habitat is of greater quality to that being removed by the road construction is shown in Table 6-2.

  The area to be utilised in this instance is the third parcel of compensatory habitat to be provided to meet EPBC Act requirements.

The expected timeframes for the implementation of each of the above mentioned conservation measures proposed is shown in Table 6-3.

It is expected that a further refinement of conservation measures / development control provisions will be specified by the DEH under the assessment process currently underway for the entire HEZ estate (EPBC 2004/1417).

Table 6-1 Planting Schedule

PLANT SCHEDULE

PLANT CODE	BOTANICAL NAME	COMMON NAME	SIZE	MINIMUM HT	NOTES	PLNT NO. PER M²	TOTAL NO.
	PLANTING - TREES						
CAS cun 45L	Casuarina cunninghamiana	River She-Oak	45L	1600mm			31
CAS cun	Casuarina cunninghamiana	River She-Oak	Viro Tube	75mm			63
COR gum 45L	Corymbia gummifera	Red Bloodwood	45L	1500mm			16
COR mac 45L	Corymbia maculata	Spotted Gum	45L	1500mm			24
COR mac	Corymbia maculata	Spotted Gum	Viro Tube	130mm			246
MEL lin	Melaleuca linariifolia	Narrow-leaf Paperbark	200mm	500mm			34
MEL qui	Melaleuca quinquenervia	Broad-leaved Paperbark	200mm	500mm			50
MEL aze	Melia azerdarach	White Cedar	200L	2600mm			36
	PLANTING - GRASSES / GROUND COVERS						
CRI ped	Crinum pedunculatum	Swamp Lily	200mm	800mm			101
DOR exc	Doryanthes excelsa	Gymea Lily	25L	600mm		1	350
DIA cae	Dianella caerulea	Blue Flax Lily	150mm	300mm		3	564
DIA tas	Dianella tasmanica	Flax Lily	150mm	200mm		3	1433
FES gla	Festuca glauca	Fescue	150mm	140mm		6	5834
GRE gau	Grevillea gaudichaudii	Grevillea	150mm	140mm		3	2496
GRE sup	Grevillea superb	Grevillea	150mm	140mm		3	2292
LOM lon	Lomandra longifolia	Long-leaf Mat Rush	Viro Tube	75mm		6	45270
LOM tan	Lomandra tanika	Mat Rush 'Tanika'	Viro Tube	75mm		6	5904
ZOY jap	Zoysia japonica (ss 500)	Empire	Roll	-		1	2860m²
	PLANTING - AQUATIC PLANTS				PLANTING DEPTH		
CAR app	Carex appressa	Tall Sedge	Viro Tube	75mm	bank	5	2088
JUN usi	Juncus usitatus	Rush	Viro Tube	75mm	bank	5	2179
BAU art	Baumea articulata		Flora - Edge	800mm	500mm deep	1	500
PHR aus	Phragmites australis	Common Reed	Flora - Edge	800mm	500mm deep	5	507
SCH val	Schoenoplectus validus		Flora - Edge	800mm	500mm deep	5	450
ISO nod	Isolepis nodosa	Tuffed Rush	Viro Tube	75mm	bank	5	1893
	PLANTING - NATIVE GRASS HYDROSEED MIX						
GRA mix	Lomandra longifolia	Mat Rush	Hydroseed	10kg/ha			
	Poa labillardierei 'eskdale'	Tussock Grass					
	Bothriocephala macra	Red Leg Grass					
	Danthonia laevis	Wallaby Grass					
	Japaneses millet		Hydroseed	100kg/ha			19873m²
	PLANTING - NATIVE TREE HYDROSEED MIX						
TRE mix	Corymbia maculata	Spotted Gum	Hydroseed	10kg/ha			
	Eucalyptus crebra	Narrow-leaved Ironbark					
	Eucalyptus robusta	Swamp Mahogany					
	Eucalyptus sideroxylon	Mugga Ironbark					
	Eucalyptus tereticornis	Forest Red Gum					
	Japanese millet		Hydroseed	100kg/ha			2200m²

Figure 6-1 Swift Parrot and Regent Honeyeater Compensatory Habitat within the HEZ

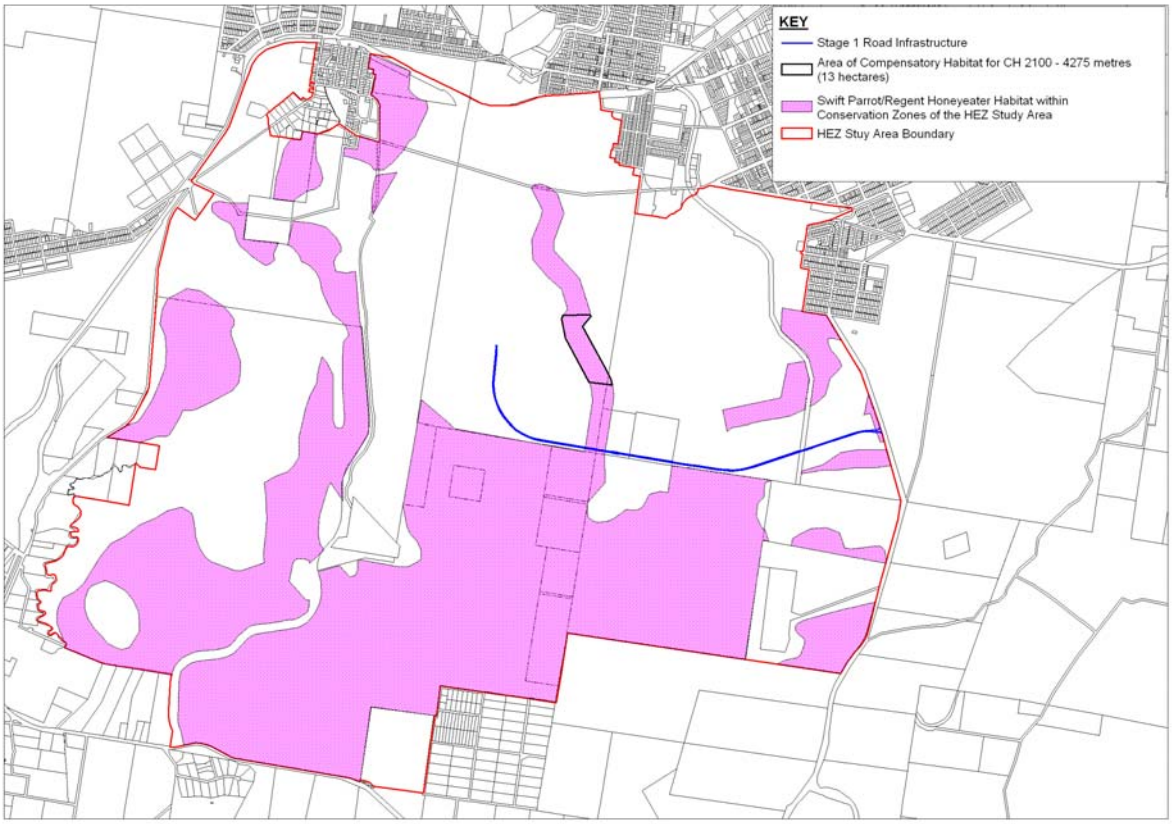


Table 6-2 Swift Parrot and Regent Honeyeater Compensatory Habitat Data

	C. maculata	E. crebra	E. fibrosa	E. tereticornis	E. punctata	A. floribunda	E. moluccana	Total Mature Feed Trees	Total Mature Trees
Compensatory Habitat (13 hectares)	0	3	31	53	31	2	1	87	121
Clearing Extent (CH 210 –4285m) (13 hectares)	11	5	48	10	17	5	0	74	96

Figure 6-2 Compensatory Habitat Details

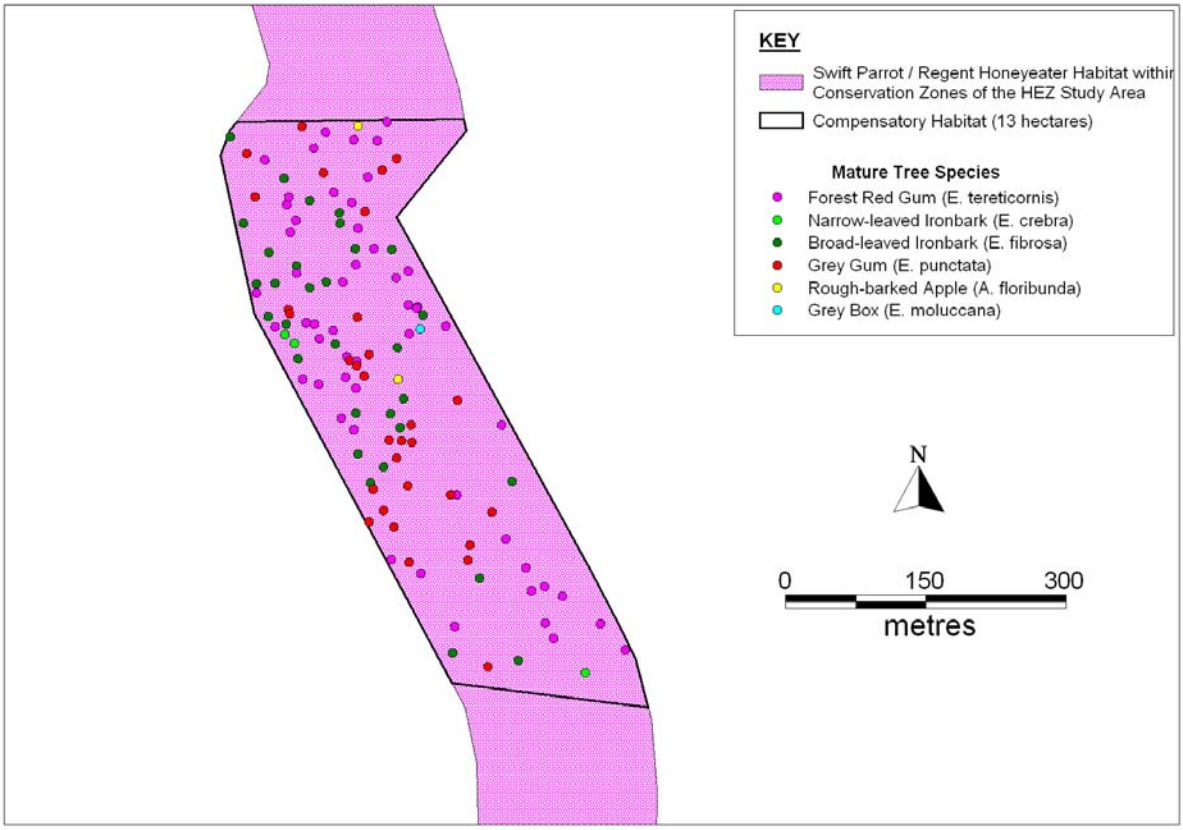


Table 6-3 Timeframes for Implementation of Conservation Measures

Conservation Measure	Expected Timeframe for Implementation
1.	During road construction (dates yet to be finalised).
2.	During road construction (dates yet to be finalised).
3.	During and immediately post road construction (dates yet to be finalised).
4.	Undertaken as part of Cessnock City Council's Terms of Consent (including pre, during, and post construction requirements). Consent authority in this regard is Cessnock City Council or as specified.
5.	Compensatory habitat is conserved as a 7(b) Environmental Protection (Conservation) Zone under the Cessnock Local Environmental Plan 1989. This area is owned by HEZ Pty Ltd. Some provision for the management of this area is provided within the HEZ Habitat Management Strategy (Ecotone Ecological Consultants 2002).