

Bell Bay Pulp Mill
Environmental Impact Management Plan (EIMP)
Module B: Mill site vegetation clearing

Prepared for the
Commonwealth Minister for the Environment, Heritage and the Arts
in accordance with approval EPBC 2007/3385

1 February, 2008

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1. Environmental Consulting Options Tasmania (September 2007) Assessment of proposed pulp mill footprint for nests of the wedge-tailed eagle and white-bellied sea-eagle. Report prepared for Gunns Limited.
2. Environmental Consulting Options Tasmania (November 2007) Assessment of proposed pulp mill and associated infrastructure footprint for the presence of *Caladenia caudata*, *Prasophyllum secutum*, *Glycine latrobeana* and *Epacris exserta* (permit condition 25). Part 1: Pulp mill, solid waste disposal, reservoir and workers' accommodation facility areas. Report prepared for Gunns Limited.
3. Environmental Consulting Options Tasmania (November 2007) Assessment of proposed pulp mill and associated infrastructure footprint for the presence of *Engaeus granulatus* (central north burrowing crayfish) and *Engaeus orramakunna* (Mt Arthur burrowing crayfish) (permit condition 23). Report prepared for Gunns Limited.
4. Environmental Consulting Options Tasmania (December 2007) Assessment of proposed pulp mill and associated infrastructure footprint for the presence of *Caladenia caudata*, *Prasophyllum secutum*, *Glycine latrobeana* and *Epacris exserta* (permit condition 25). Supplement 1: Perimeter fence location. Report prepared for Gunns Limited.

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1. OVERVIEW

1a. A description of the proposal and associated infrastructure

A description of the project has been provided in Module A.

The activity to which this Module relates is the vegetation clearing of the pulp mill site, which is the principal component of the pulp mill project's footprint. The pulp mill site lies to the west of the East Tamar Highway at Bell Bay. The boundaries of this site are delineated (as "mill site boundary") in the plan in Appendix B.

Specific to this EIMP, the pulp mill site is dominated by *Eucalyptus amygdalina* forest on dolerite, with smaller and localised areas of coastal *E. amygdalina* forest, shrubby *E. ovata* - *E. viminalis* forest, *Allocasuarina verticillata* forest, *Melaleuca ericifolia* coastal swamp forest and *Notelaea* - *Pomaderris* - *Beyeria* forest. Smaller areas of other vegetation communities are also present. The pulp mill site is transected by several easements including the Esk Water pipeline, railway line, powerlines and is dissected by numerous tracks. The pulp mill site has been disturbed in the past by fire and logging, although is relatively free of weed species.

Vegetation clearance will involve the removal of all vegetation within the delineated area, as a preliminary to the bulk earthworks that will establish the ground benches for the pulp mill's construction. The total area to be cleared under this EIMP module is 92 ha, and is indicated by the hatched area on the map provided in Appendix G.

The expected duration of the vegetation clearing is approximately 6 weeks but this will be subject to weather.

The process for conducting clearing operations is as follows.

1. Upgrade existing access track to allow equipment to be moved onto site.
2. Excavators with drop saws will push over all standing vegetation and cut off stumps, and sort into three piles: one pile for logs suitable for the mobile chipper, a second pile comprising small stumps and other vegetation suitable for grinding in the hogger and a third pile that will be for material, such as large stumps, unsuitable for either chipping or grinding and which will be used as fill.
3. Skidders will take logs to the chipper as they are produced.
4. Off-road trucks will take small stumps and vegetation to the grinder.
5. Off-road trucks will take other material to designated fill or dump sites.
6. Material chipped suitable for export will be taken to the existing woodchip mill via the chip bins.
7. A dozer will be on site at all times to construct access tracks as required and to prepare firebreaks as the boundary is cleared.
8. In some sections, the chipper will also be used to produce material that will not be suitable for production of export chips and this material will be reused on-site for mulch and soil cover; if unsuitable for those purposes it will be taken to dump sites via off-road trucks.

The equipment that is likely to be used for the vegetation clearing process is described in Table 1.

Table 1: Equipment likely to be used for the vegetation clearing process

Equipment	Number
Mobile chipper	1
Mobile grinder	1
Front end loader	1
Skidders	2
Tracked excavators	10
Off road articulated trucks	3
Bulldozer	2
Road trucks (gravel)	2
Road truck (chip haulage)	2

Photographs of equipment typical of that to be used are provided in Appendix H (note that these photographs are indicative and do not necessarily depict the exact makes and models of equipment that will be used).

The heavy machinery will be floated in at the beginning of the clearing operations and then floated out at the end of the operations (approximately 6 weeks later). During the operations, all heavy equipment movements will be internal to the site, apart from the gravel trucks which could make approximately two external movements each day.

Workers will travel to and depart from the site each day using light vehicles. Car pooling will reduce these movements from approximately 20 per day to 10 per day.

Cleared vegetation will be directed to one of three end uses:

1. Chips suitable for export, which will be taken to the adjacent export chip mill stockpiles;
2. Scrub and cuttings suitable for grinding, which will subsequently be reused on site as mulch and soil cover;
3. Stumps and wood-waste that will be used on-site for fill or taken off-site for disposal.

The basic process for the vegetation clearing is depicted in Figure 1. This depiction shows three separate streams. In practice, there may be some diversion between the various streams depending on the material and its suitability for each of the streams.

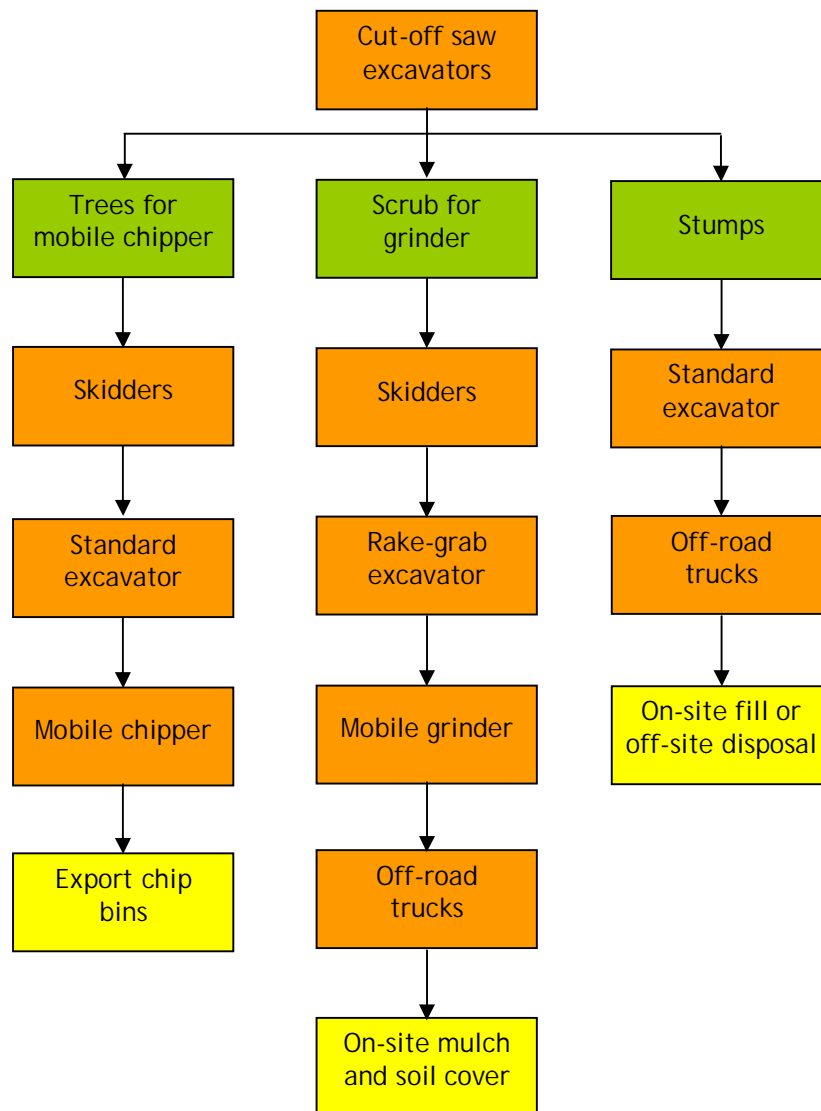


Figure 1: Basic process for vegetation clearing

1a.1 Purpose

On 4 October 2007, the Commonwealth Minister for the Environment and Water Resources approved the taking of an action under the *Environment Protection and Biodiversity Conservation Act 1999*, namely “to construct and operate a bleached Kraft pulp mill at Bell Bay, Tasmania, and associated infrastructure” (EPBC 2007/3385).

Condition 2 of the approval requires Gunns to develop and submit an Environmental Impact Management Plan (EIMP), the objective of which is to ensure that there are no adverse impacts on matters of national environmental significance as a result of the action.

The purpose of the EIMP, and the further investigations that are required in order to prepare some of its components, is to ensure that matters of national environmental significance are protected during the construction and operation of the pulp mill project.

The EIMP and those investigations are not a continuation or extension of the project’s approval assessment process. The approval process concluded with the issue of approval EPBC 2007/3385 on 4 October 2007. The EIMP is designed to ensure that the conditions of the EPBC approval are satisfied.

This module of the EIMP addresses those conditions of the approval that are relevant to the clearance of vegetation on the pulp mill site.

As described in the EIMP Module A Overview, Gunns has prepared a Construction Environmental Management Plan (CEMP) for the construction phase of the pulp mill project. The CEMP includes EIMP management measures relevant to construction and EIMP modules will incorporate those measures. Because the CEMP is a living document, it is possible that future changes to the CEMP lead to discrepancies between the CEMP and what has been incorporated into an EIMP module.

Where a module of the EIMP refers to any management action (however described) as being included in, or forming part of (however described) the CEMP, then the relevant parts of the CEMP are taken to form part of the EIMP and Gunns commits to implementing those actions according to their terms. In the event of any conflict between the text of the CEMP, as set out in the EIMP, and the text in the CEMP itself, the text of the EIMP prevails.

1a.2 Scope

The EIMP deals only with matters relevant to the EPBC approval. It does not deal with the much wider range of matters relevant to the State approval conditions other than those that are also relevant to the EPBC approval.

The staging of the project will be different for different elements of the project. For example, construction work on the mill site itself will commence more than 12 months before the construction of the ocean outfall commences.

Hence, in accordance with conditions 7 and 8, which recognise a sectional and staged approach, the EIMP development and approval necessarily has a modular structure.

A separate EIMP Module A: Overview (GNS-PLN-1000-1400-0006) provides an overarching context and structure for the EIMP.

This EIMP mill site vegetation clearing module presents those elements of the EIMP that are relevant to the clearing of vegetation on the pulp mill site, and should be read in conjunction with the EIMP Overview module. A delineation of the pulp mill site is shown in the attachment at Appendix B. The area of vegetation disturbance to which this EIMP module relates is shown in Appendix G.

Other EIMP modules will be prepared and submitted in accordance with the timing of the various stages of the project. These modules will deal with any associated vegetation clearing of the site to which they relate.

1a.3 EIMP Structure

Schedule 2 of the EPBC 2007/3385 approval provides an outline for the EIMP (although the Schedule does not address all the permit conditions relating to the EIMP). The EIMP must set out specific issues and specific measures at each of the key preliminary phases of the project, these being:

- Preconstruction
- Construction
- Precommissioning.

The EIMP must also describe environmental management measures that will be implemented once the mill is operational, including:

- Ongoing monitoring
- Remedial and response strategies if trigger levels are likely to be exceeded or maximum target levels reached.

The Department of Environment, Water, Heritage and the Arts (DEWHA) has specified that the EIMP structure must reflect the structure of Schedule 2 of the EPBC 2007/3385 approval.

These structural requirements overlay the project's staging, leading to the modular breakup shown in Table 2 that Gunns will adopt for EIMP preparation. Table 2 also shows the anticipated dates for their submission to the Minister for approval. If these dates vary, DEWHA will be advised accordingly. As a matter of course, an updated Table 2 will be presented in each module of the EIMP.

Table 2: Modular elements of the EIMP and their anticipated submission dates

	Module	Submission	Estimated construction start	Gunns document number
Overview				
A	EIMP Overview	20-Dec-07	-	GNS-PLN-1000-1400-0006
Preconstruction and construction				
B	Vegetation clearing - mill site and wharf access	21-Dec-07	5-Feb-08	GNS-PLN-1000-1400-0007
C	Bulk earthworks mill site	09-Jan-08	28-Feb-08	GNS-PLN-1000-1400-0008
C1	Mill construction	01-Jun-08	15-Aug-08	GNS-PLN-1000-1400-0022
D	Wharf construction	14-Feb-08	28-Apr-08	GNS-PLN-1000-1400-0009
E	Accommodation facility construction	01-Feb-08	15-Apr-08	GNS-PLN-1000-1400-0010
F	Water supply pipeline construction	26-Feb-08	12-May-08	GNS-PLN-1000-1400-0011
G	Dune crossing	16-Apr-08	30-Jun-08	GNS-PLN-1000-1400-0012
H	Ocean outfall construction	16-Apr-08	30-Jun-08	GNS-PLN-1000-1400-0013
I	Solid waste disposal construction	20-May-08	03-Aug-08	GNS-PLN-1000-1400-0014
J	Local reservoir construction	20-May-08	03-Aug-08	GNS-PLN-1000-1400-0015
K	Effluent pipeline construction	28-Jul-08	17-Oct-08	GNS-PLN-1000-1400-0016
Precommissioning				
L	Precommissioning management	30-Jun-08	-	GNS-PLN-1000-1400-0017
Ongoing monitoring				
M	Monitoring program**	12-Mar-08	-	GNS-PLN-1000-1400-0018
Remedial and response strategies				
N	Remedial and response strategies	30-Jun-08	-	GNS-PLN-1000-1400-0019
Habitat measures				
O	Habitat offsets & reserves	30-Jun-08	-	GNS-PLN-1000-1400-0020

*Submitted; **Construction modules B to K will include construction surveillance monitoring

Note that although the modules are numbered sequentially for convenience, as shown by the anticipated submission dates they will not be submitted in strict sequential order.

The detailed EIMP requirements are described in the separate EIMP Overview module. This EIMP mill site vegetation clearing module should be read together with the EIMP Overview module.

The EPBC 2007/3385 conditions addressed by each EIMP module are shown in Table 3.

Table 3: Modular elements of the EIMP and the EPBC 2007/3385 conditions they address

Module		Conditions addressed	
Overview			
A	EIMP Overview	1, 2, 6, 7, 8, 9, 10, 11, 12, 13, 20, 44, 45, 46, 47, 48	
Preconstruction and construction		Preconstruction	Construction
B	Vegetation clearing - mill site and wharf access	15, 17, 18, 20, 23, 25, 26	14, 15, 17, 18, 20, 23, 25, 26
C	Bulk earthworks mill site	17, 18, 20, 23	14, 17, 18, 20, 23
D	Wharf construction	20, 27, 28, 29, 30	14, 20, 27, 28, 29, 30
E	Accommodation facility construction	20, 23	14, 20, 23
F	Water supply pipeline construction	20, 21, 22, 23, 25	14, 19, 20, 21, 23, 25
G	Dune crossing	20, 23, 25	14, 20, 23, 24, 25
H	Ocean outfall construction	20, 27, 28, 30, 38 39	14, 20, 27, 28, 30
I	Solid waste disposal construction	20, 23, 25	14, 20, 23, 25
J	Local reservoir construction	20, 23, 25	14, 20, 23, 25
K	Effluent pipeline construction	20, 21, 23, 24, 25	14, 19, 20, 21, 22, 23, 24, 25
Precommissioning			
L	Precommissioning management	3, 4, 9, 31, 33, 34, 35, 36, 38	
Ongoing monitoring			
M	Monitoring program	3, 4, 15, 32, 37, 40, 41, 42, 43	
Remedial and response strategies			
N	Remedial and response strategies	3, 4, 5, 31, 39	
Habitat measures			
O	Habitat offsets & reserves	16, 17, 18	

The EIMP Overview module A provides additional detail that demonstrates relationships between approval conditions, project elements, EIMP modules and EIMP components from various perspectives.

Appendix A provides an integrated summary of all those perspectives, including an interface with Table 2 in order to outline the anticipated date sequence of EIMP module development. This Appendix will be included in each module, updated to show the progress of module submissions.

Appendix C sets out in tabular form the approval conditions addressed by this Module and the actions that Gunns has taken or will take to comply with the conditions, including management measures. In the event of any inconsistency between the text in these tables and the text in the body of the EIMP, the latter prevails.

1a.4 Relevant environmental commitments

Gunns' environmental commitments for the project as they relate to matters of Commonwealth interest are described in documents submitted to the Minister under the EPBC Act approval process:

- Preliminary documentation: Gunns Limited Bell Bay Pulp Mill Project Impact Assessment under the *Environment Protection Biodiversity Conservation Act 1999*; and
- Response to public submissions: Gunns Limited Bell Bay Pulp Mill Project Response to Submissions under the *Environment Protection Biodiversity Conservation Act 1999*.

These commitments are described in EIMP Module A. Commitments relevant to this module (mill site vegetation clearing) are:

- Prevent accidental loss or damage to native vegetation, through clear indication (ie flagging) of the areas to be cleared.
- Preventing the spread and reducing the impact of *Phytophthora cinnamomi* through application of State Guidelines for *Phytophthora cinnamomi* management
- If an eagle's nest is located during clearing or construction activities operations within 500 m or 1 km line of sight will stop, with breeding season exclusion buffers applied, between August and January inclusive, and appropriate nest management prescriptions applied in consultation with relative authorities.
- Minimisation of light emissions, through directional lighting, use of light shields or baffles and utilisation of the lowest level of lighting acceptable.
- Provision of a network of reserves totalling 150 ha across the Pulp Mill Site (pulp mill, chemical plant, local water reservoir, quarry and solid waste facility)

Management measures to ensure delivery of these commitments are integrated within this EIMP Module.

1a.5 Relevant approval conditions and management measures

Descriptions of the EPBC 2007/3385 approval conditions 14, 15, 17, 18, 20, 23, 25 and 26 that are relevant to this EIMP module are provided in Appendix C together with actions that have been taken by Gunns to prepare this module. The outcomes of those actions and any resultant environmental management measures are also shown in that table. These management measures will ensure that the requirements of the approval conditions are met.

Schedule 2 of EPBC 2007/3385 requires the EIMP to reflect commitments made by Gunns in its preliminary documentation and also in its response to public submissions. Schedule 2 also requires the EIMP to address issues and concerns raised by the (then) Department of the Environment and Water Resources in its Recommendation Report and also matters raised in the Chief Scientist's report to the Minister. The EIMP satisfies those requirements also.

1b. Identification of clear environmental objectives

Overarching environmental objectives for the project are to ensure that no adverse impacts occur on matters of national environmental significance have been outlined in Module A - Section B.

Specific environmental objectives relevant to this EIMP module are to;

- Minimise impacts on the Wedge-tailed Eagle - Tasmanian (*Aquila audax fleayi*)
- Ensure effective monitoring of impacts on the Wedge-tailed Eagle - Tasmanian (*Aquila audax fleayi*)
- Minimise disturbance of vegetation at the pulp mill site by confining activities to the pulp mill disturbance footprint
- Minimise impacts on the Central North Burrowing Crayfish (*Engaeus granulatus*)
- Minimise the risk of non-detection of listed flora
- Manage the risks to listed threatened species associated with roadkill
- Protect the network of reserves across the pulp mill site
- Minimise light emissions associated with construction activity
- Prevent the spread and reducing the impact of *Phytophthora cinnamomi*.

1c. Identification of environmental indicators, and translation of objectives into agreed targets and performance measures

Performance measures relating to the above objectives are:

- No abandonment of the Wedge-tailed Eagle - Tasmanian (*Aquila audax fleayi*) nest #130
- Annual (second weeks of September and November) monitoring of the Wedge-tailed Eagle - Tasmanian (*Aquila audax fleayi*) nest #130
- No disturbance of vegetation outside this module's pulp mill disturbance footprint (shown in Appendix G)
- No impacts on the Central North Burrowing Crayfish (*Engaeus granulatus*)
- No non-detection of listed flora
- No increase in traffic volumes and therefore no increase in the risks to listed threatened species from roadkill
- No disturbance to the network of reserves across the pulp mill site
- No light emissions towards native vegetation
- No spread of *Phytophthora cinnamami* as a result of the clearing activities.

1d. Design and implementation of an appropriate monitoring program

Given the nature of the above environmental indicators, the relevant monitoring activities will be through inspections.

1e. Identification of, and commitment to, agreed trigger or response levels for key indicators

Of the approval conditions relevant to this module, only conditions 15 and 26 involve trigger or response levels:

- Condition 15(c) requires an offset strategy to be developed should eagle nest #130 be abandoned during construction or in the first breeding season after the commencement of construction.
- Condition 26(b) requires response strategies to be implemented should roadkill trigger levels be exceeded.

1f. Identification of specific remedial management responses to be undertaken when trigger point levels are exceeded

Of the approval conditions relevant to this module, only conditions 15 and 26 involve trigger or response levels:

Condition 15(c): Nest #130 is being used for breeding this (November 2007) season. If nest #130 is abandoned during construction or in the first breeding season after the commencement of construction, an offset strategy will be developed and submitted for approval to DEWHA.

Condition 26(b): Response strategies for the event that roadkill trigger levels are exceeded will be addressed in Module C (for the pulp mill construction phase) and Module N (for the pulp mill operational phase), providing that an appropriate roadkill monitoring regime is developed in consultation with the Independent Expert Group.

2. PRECONSTRUCTION

2a. Management of impacts on the wedge-tailed eagle – Tasmanian

Conditions 14 and 15 of the approval are relevant to this item, along with previous commitments made by Gunns in its Preliminary Documentation as described in section 1a.4 of this EIMP module. Previous commitments made are captured within conditions 14 and 15.

2a.1 Condition 14 of EPBC 2007/3385

To minimise impacts on the wedge-tailed eagle - Tasmanian (*Aquila audax fleayi*) Gunns Limited must put in place and implement, as part of the EIMP, measures including:

- a) Not carrying out construction during the breeding season within the exclusion buffers of 500 m or a 1 km line of sight from any active nest.
- b) If a new active nest is found within 500 m or a 1 km line of sight of clearing or construction activities, construction during the breeding season within the exclusion buffers must cease immediately. Gunns Limited must immediately notify DEWHA if a new active nest is found.
- c) The breeding season buffer must be applied from 1 August to 31 January inclusive.

Actions taken to prepare management measures

In addition to the surveys undertaken by Gunns for the Draft Integrated Impact Statement (Weeding, S. (2005) *Eagle nest search proposed pulp mill and associated infrastructure survey report*), Mark Wapstra has also undertaken a detailed survey of the pulp mill footprint, looking for other wedge-tailed eagle or white-bellied sea eagle. The results are reported in: Environmental Consulting Options Tasmania (September 2007) *Assessment of proposed pulp mill footprint for nests of the wedge-tailed eagle and white-bellied sea-eagle*. Report prepared for Gunns Limited. A copy of that report is submitted with this module (Appendix I, report 1).

No new nests of wedge-tailed eagles (or white-bellied sea-eagles) were located. Physically, the study area itself presents little potential nesting habitat because of gentle slopes and broad flats with only a few short sections of sheltered slopes and gullies. Any sheltered areas tend to support regrowth forest (lacking a significant number of mature trees with suitable structure for nesting i.e. a large fork) or non-eucalypt forest (e.g. along Williams Creek). More mature forest is present but it mainly occurs on broad flats associated with stream systems. All large trees were thoroughly examined and no eagle nests were detected.

Findings

The only nest in the vicinity of the project footprint is the already known nest #130. This is 900 m from the closest disturbance area of the project as a whole but not in line of sight. For the project as a whole, it is therefore outside the relevant 500 m buffer distance specified by the approval condition. For the disturbance area relevant to this Module B, the closest distance to the nest is 1800 m. This is outside both buffer distances specified by the approval condition.

Nevertheless, this module notes that measures to implement this approval condition's restrictions have been incorporated into the pulp mill's Construction Environmental Management Plan (CEMP).

Management measures adopted to ensure approval condition is met

The requirements of condition 14 have been incorporated into the pulp mill's Construction Environmental Management Plan (CEMP), specifically items 26 and 27 of Operational Control OCO0011 *Fauna and flora management*, which also addresses related State permit requirements.

The relevant extracts from the CEMP and the commitments adopted for this EIMP module are provided below:

- *Eagles nests (condition 14(a))*: During the period between 1 August and 1 February construction activities must not occur within:
 - (a) 1000 metres of an active Wedge-tailed Eagle or a White-bellied Sea-eagle nest if the construction activities or maintenance activities are in line-of-sight of the nest site; or
 - (b) 500 metres of an active Wedge-tailed Eagle or a White-bellied Sea-eagle nest site.

The reference to "maintenance activities" in the above management measure reflects a State permit requirement (the EPBC condition does not address maintenance activities).

- *Identify previously unknown eagle nest sites (condition 14(b))*: Previously unrecorded eagle nest sites, noted during clearing and/or construction activities will be reported to the Environmental Manager who will inform DEWHA and NPWS. If a new active nest is located within 500 m or 1 km line of site of clearing or construction activities during the breeding season (1 August to 31 January) work within that buffer must cease immediately and DEWHA notified.

The CEMP is described in Module A (EIMP Overview). Copies of the CEMP's Operational Controls accompanied the submission of Module A.

2a.2 Condition 15 of EPBC 2007/3385

To ensure effective monitoring of impacts on the Wedge-tailed Eagle - Tasmanian and as part of the EIMP, Gunns Limited must:

- a) With an appropriately qualified person, approved by DEWHA conduct monitoring checks on the Wedge-tailed Eagle nest known as #130 'Tippogoree Hills' in the second week of September and in the second week of November each year for five years, in accordance with the 'Forest Practices Authority, Fauna Technical Note Series - Eagle Nest Management'.
- b) Provide results from the monitoring to DEWHA and to the Tasmanian Department of Primary Industries and Water within one month of each monitoring event and provide the information in the annual performance report against the EIMP.
- c) Should nest #130 'Tippogoree Hills' be abandoned during construction or in the first breeding season after the commencement of construction, Gunns Limited must, within six months of becoming aware of the abandonment, submit an offset response strategy to DEWHA for approval. The response strategy must provide for the protection of a minimum of 20 ha surrounding an eagle nest that is not protected in a 'formal reserve'. This response strategy and its timing must be included in the EIMP and detail a site description, connectivity with other habitats and mechanisms for long term protection, conservation and management. DEWHA may request that the response strategy be revised or amended before approval; any such request must be responded to within the time frame specified in the request.

Actions taken to prepare management measures

The (then) Department of Environment and Water Resources approved Mark Wapstra (ECOTas) on 23 October 2007 and Jason Wiersma on 7 November 2007 to be suitably qualified persons to inspect eagle nests.

Mr Wiersma has advised that the following classifications of breeding status are appropriate to use:

- *Occupied*: refers to a territory or home range where at least one eagle is resident. It does not relate solely to birds being at a nest but simply frequenting an area, although activity may be heightened surrounding nest sites as they are focal points.
- *Active*: relates to the initiation of incubating. While birds may line nests with leaves, this does not signify that the nest will be actively used for breeding since the resident eagle(s) may line more than one nest in their territory where multiple nests exist.
- *Successful*: pairs have produced a large chick (8 weeks+) with visible pin feathers over the body. From observations and literature, chicks six weeks or older have low natural mortality while they are still in the nest, ie. they have sufficient bulk and strength to fend off most predators and are regarded as physically robust in terms of weather and are mobile in that they can move to shelter.
- *Territory*: that part of a home range that is defended.
- *Chick*: a young eagle in the nest.
- *Fledgling*: a near completely feathered chick.

Mr Wiersma inspected nest #130 on 8 November 2007.

Findings

The 8 November 2007 inspection found that the nest was occupied, with one eagle chick observed.

The breeding status of nest #130 is therefore classified as successful.

Management measures adopted to ensure approval condition is met

Annual (second week of September and November) nest inspections of nest #130 (condition 15(a)) have been scheduled in the project's obligations register, and commenced in November 2007 (8 November).

The requirements of condition 15 have been incorporated into the pulp mill's obligations register and the Construction Environmental Management Plan (CEMP), specifically Table 4 and item 28 of Operational Control OCO0011 *Fauna and flora management*, which also addresses related State permit requirements. The relevant extracts from the CEMP and the commitments adopted for this EIMP module are provided below:

- *Eagle nest #130 (condition 15(a))*: Annual nest inspections of nest #130 have been scheduled in the project's obligations register, and commenced in November 2007 (8 November). The nest was occupied, with one eagle chick observed.
- *Eagle nest #130 (condition 15(b))*: The results from the monitoring will be provided to DEWHA and to the Tasmanian Department of Primary Industries and Water within one month of each monitoring event and the information will also be provided in the annual performance report against the EIMP (EPBC approval).
- *Eagle nest #130 (condition 15(c))*: Should nest #130 be abandoned during construction or in the first breeding season after the commencement of construction Gunns will within 6 months prepare an offset strategy for approval.

The CEMP is described in Module A (EIMP Overview). Copies of the CEMP's Operational Controls accompanied the submission of Module A.

2b. Management of risks to listed flora from plant pathogens

Phytophthora cinnamomi is an aggressive, microscopic, lethal pathogen that causes the roots of susceptible species to rot. *Xanthorrhoea aff. bracteata* is highly susceptible to infection by *Phytophthora cinnamomi*. Introduction and spread can be accelerated in a number of ways, including the introduction of infected soil.

Best practice guidelines will be adopted, with application of the *Phytophthora cinnamomi* Management Guidelines produced by Tasmanian Department of Primary Industries and Water. These Management Guidelines include a series of measures prevent the introduction and minimise the spread of this pathogen, including vehicle washdown hygiene procedures to ensure no relocation of potentially infected soil.

Due to the implementation of hygiene procedures, consistent with best practice guidelines, no impacts are expected from *Phytophthora cinnamomi*.

Plant pathogen hygiene measures are included in the pulp mill's Construction Environmental Management Plan (CEMP), specifically the Operational Control OCO0012 *Weed and pathogen management*. A copy of that OCO is attached to this module as Appendix F and adoption of those measures as they stand in Appendix F is a commitment under this EIMP module.

A key component of the hygiene measures will be an equipment hygiene certification system, which is also described in Appendix F and extracted to Table 4 below.

Table 4: Equipment cleaning provisions for hygiene certification

Subject	Guidance
Basis	Interim <i>Phytophthora cinnamomi</i> management guidelines and <i>Tasmanian washdown guidelines for weed and disease control (machinery, vehicles and equipment)</i>
Intent	Cleaning procedures should remove all soil or organic matter from the surface of vehicles, equipment and portable infrastructure.
Wash down facility	<p>A long-term vehicle wash down facility should consist of a holding pit dug into the ground over which a steel grate has been built. An overflow drainage system should be designed into the facility as follows:</p> <ol style="list-style-type: none"> 1. A 40 mm pipe placed underneath the support beams 2. The end of the drainage pipe should be covered with a sock/filter system to collect coarse seed and soil particles 3. The grate should be supported by steel support beams and constructed of steel battens 4. It needs to be structurally sound and of adequate size to contain/support large and heavy construction machinery
Wash down media	Temporary washdown is to be facilitated via the use of high pressure water/steam or air. High pressure air cleaners are recommended when site conditions are dry. Water/steam should only be used when site conditions are already wet or air cleaning is not satisfactorily removing soil and plant material.
Clean inside and out	All construction personnel should thoroughly clean their vehicles regularly both inside and out. Cleaning should ensure that all mud and vegetative material is cleaned from the undercarriage, running gear and around wheel arches of the vehicle. Mud and grass seeds should be removed from interior mats and footrests.
Disinfection	A chemical such as Phytoclean should be used to disinfect potentially contaminated vehicles and machinery. Vehicle baths or spray packs for the application of disease control agents may be required.
Inspections	Inspections should be undertaken at the same time as the initial safety inspection and clean vehicles should be issued with confirming certification.
Certified	All vehicles must be certified and registered as clean before being permitted access to the easement construction zone. Certified vehicles utilising constructed roads that have not passed through bare soil areas will not require wash down.
Wash and control points	Washdown and hygiene control points should be identified based on the weeds present, the vegetation type (native, exotic pasture) and the sensitivity to certain pathogens (<i>Phytophthora cinnamomi</i>).
Certification system	A certification system for managing and monitoring the implementation of hygiene and washdown requirements will be developed. This will follow the identification of washdown areas based on weed and disease surveys to be conducted prior to construction. The system will entail the use of guidelines outlining specific hygiene requirements for specific infested areas, a washdown register to record machinery and vehicle movements, and colour coded stickers to assist in the identification of vehicles and machinery involved.
Pre and post construction	Preconstruction hygiene and during/post construction hygiene measures will be managed separately. Specific forms for both stages will be developed to manage and record hygiene and washdown requirements. Hygiene Form A will cover preconstruction hygiene and Hygiene Form B will cover hygiene during construction.
Emergencies (eg. fire fighting)	To the extent practicable, these measures should also be applied during emergencies such as fire fighting but only to the extent that urgency and safety considerations allow

2c. Management of risks and uncertainties associated with the non-detection of listed flora

Conditions 20 and 25 of the approval are relevant to this item, along with previous commitments made by Gunns in its Preliminary Documentation as described in section 1a.4 of this EIMP module.

2c.1 Condition 20 of EPBC 2007/3385

Disturbance of vegetation at the site must be confined to the construction corridors of the pipelines and the pulp mill site and associated infrastructure and in accordance with the EIMP, including:

- a) No disturbance must occur until such time as the relevant pre-construction and construction requirements of the EIMP have been approved by the Minister;
- b) All areas to be cleared must be clearly marked to prevent damage to listed species outside the project area;
- c) Access to project areas must be via established roads or access tracks located on areas that have been subject to flora and fauna surveys as required in the EIMP and described in the preliminary documentation.

Actions taken to prepare management measures

All areas of the project will be covered by Site Environmental Plans (SEPs), which form part of the project's Construction Environmental Management Plan (CEMP). The CEMP is described in Module A (EIMP Overview). The SEPs will show vegetation disturbance limits.

Findings

The vegetation disturbance limit for the mill site is shown on the mill site SEP, document number BBA-SEP-1670-1400-0003 of the project's CEMP. A copy of this SEP is attached to this module as Appendix B.

Management measures adopted to ensure approval condition is met

- *Minimising vegetation disturbance (condition 20)*: The vegetation disturbance limit for the mill site is shown on the mill site SEP, which is the SEP relevant to this module. This SEP is provided in Appendix B. The SEP is a key contractor management tool, and will ensure that vegetation disturbance is confined to the approved footprint. Access, which will be via existing roads and tracks, is also shown on the SEP.

Other EIMP modules relating to construction activities will also be accompanied by SEPs with similar provisions.

The CEMP Operational Controls, specifically items 7, 8, 9, 10 and 11 of OCO0005 *Site preparation and rehabilitation*, specify requirements to clearly delineate (eg. with construction tape) construction area and sensitive areas and to remain within the construction area boundaries. These controls also address related State permit requirements. The relevant extracts from the CEMP and the commitments adopted for this EIMP module are provided below.

- *Delineate all construction areas (condition 20(b))*: Inspect the project footprint and identify all construction areas, access tracks, car parks and other infrastructure and delineate them with flagging tape (other flagging options will include delineator rope or electric fencing tape)

- *Identify sensitive areas*: Identify from available documentation and plans, all construction areas and their respective land use and significance (i.e. pasture or native vegetation, archaeological and cultural significance)
- *Delineate sensitive areas (condition 20(b))*: Delineate all sensitive areas with proximity to construction areas with flagging tape (other flagging options will include delineator rope or electric fencing tape)
- *Remain within construction boundaries (condition 20)*: All construction activities and materials must remain within the construction boundaries
- *Existing tracks (condition 20(c))*: All vehicle access will be confined to existing roads and tracks that have been subject to flora and fauna surveys. Permanent access tracks located in native vegetation areas must be as narrow as practicable in order to minimise the clearance of native vegetation.
- *Check hollows in trees before clearing*: Prior to felling large trees, check any tree hollows for fauna and allow them to move away from the clearing area, and if practicable towards the reserve areas, before proceeding
- Regular monitoring inspections and audits will be undertaken in accordance with the procedures of the CEMP to ensure that disturbance is confined to the delineated work areas.

The CEMP is described in Module A (EIMP Overview). Copies of the CEMP's Operational Controls, including OCO005, accompanied the submission of Module A.

2c.2 Condition 25 of EPBC 2007/3385

To minimise the risk of non-detection of listed flora, Gunns Limited must:

- a) Conduct pre-construction surveys for *Prasophyllum secutum*, *Caladenia caudata*, *Epacris exserta* and *Glycine latrobeana* within the area of potential habitat for these species at appropriate times.
- b) Conduct these surveys at all construction sites associated with the pulp mill and at 'comparative sites', where populations are known to occur.
- c) Record both positive and negative search outcomes. An estimate should then be provided of the confidence in detection of these species. Methods for this estimation should follow those described by Keith (2000)*.
- d) If populations are detected at construction sites associated with the action, then their population size and area of occupancy should be measured as described by Keith (2000)* and the management procedures included in the EIMP.
- e) Disturbance of vegetation at the site must be confined to the construction corridors of the pipelines and the pulp mill site and associated infrastructure. All areas to be cleared must be clearly marked to prevent damage to listed species outside the project area. Access to project areas must be via established roads or access tracks located on areas that have been subject to surveys.

*Keith DA (2000). Sampling Designs, field techniques and analytical methods for systematic plant population surveys. *Ecological Management and Restoration*, 1, 125-139.

Actions taken to prepare management measures

The (then) Department of Environment and Water Resources approved Mark Wapstra (ECOTas) to be a suitably qualified person on 23 October 2007. A survey for these species has been undertaken by him.

The field work, analysis and conclusions are complete and a report has been prepared: Environmental Consulting Options Tasmania (November 2007) *Assessment of proposed pulp mill and associated infrastructure footprint for the presence of Caladenia caudata, Prasophyllum secutum, Glycine latrobeana and Epacris exserta (permit condition 25). Part 1: Pulp mill, solid waste disposal, reservoir and workers' accommodation facility areas.* Report prepared for Gunns Limited.

The survey report is attached in Appendix I (report 2).

The findings of the survey work are summarised here.

Findings

- *Preconstruction surveys for difficult to detect listed flora (condition 25):* Surveys for *Prasophyllum secutum, Caladenia caudata, Epacris exserta* and *Glycine latrobeana* have been undertaken within the area of potential habitat for these species at appropriate times:
 - *Prasophyllum secutum:* The species was not found within the mill site vegetation clearing area. Potential habitat is limited to the last 2 km of the effluent pipeline route. No evidence of this species was found in that area. However, a follow-up survey will be undertaken in mid-November to coincide with the peak flowering time. If the species is found in the vicinity of the effluent pipeline during the mid-November survey, any resultant management measures will be included in EIMP Module G (dune crossing construction) and/or K (effluent pipeline construction).
 - *Caladenia caudata:* The species was not found within the mill site vegetation clearing area. Only two individuals were recorded from within the project footprint, being to the south-east of the solid waste landfill and close to the reservoir and associated road locations. Management measures will be included in EIMP Modules I (solid waste disposal construction) and J (local reservoir construction).
 - *Epacris exserta:* The species was not found within the mill site vegetation clearing area. The only area within the project footprint with potential habitat is the base of the cliffs adjacent to Lake Trevallyn Dam. This area will be inspected in early to mid-November. If the species is found in the vicinity of the Trevallyn Dam during the mid-November survey, any resultant management measures will be included in EIMP module F (water supply pipeline construction).
 - *Glycine latrobeana:* The species was not found within the mill site vegetation clearing area. Potential habitat for this species within the project footprint is limited. It is mainly along the water supply pipeline route close to Lake Trevallyn but there are small areas adjacent to the mill site and near the effluent pipeline route. Areas of prime potential habitat near Lake Trevallyn and adjacent to the mill site have been inspected. The species was not found. A follow-up survey of other areas, including the slope above Lake Trevallyn and open grassy areas in the last 1 km of the effluent pipeline will be undertaken between mid-November and mid-January. If the species is found in the vicinity of the Trevallyn Dam or effluent pipeline during the mid-November to mid-January survey, any resultant management measures will be included in EIMP module F (water supply pipeline construction) and/or G (dune crossing construction) and/or K (effluent pipeline construction).

The field work, analysis and conclusions are complete and a report has been prepared: Environmental Consulting Options Tasmania (November 2007) *Assessment of proposed pulp mill and associated infrastructure footprint for the presence of Caladenia caudata, Prasophyllum secutum, Glycine latrobeana and Epacris exserta (permit condition 25). Part 1: Pulp mill, solid waste disposal, reservoir and workers' accommodation facility areas.* Report prepared for Gunns Limited. The survey report is attached in Appendix I (report 2).

Management measures adopted to ensure approval conditions are met

The listed flora species were not found within the mill site vegetation clearing area.

However, if any of the species is subsequently discovered on the mill site then Gunns will:

- Stop work in the immediate vicinity (100 m) of the listed species;
- Notify DEW and await an agreed course of action before recommencing the construction activity.

2d. Management of risks associated with the decline of difficult-to-detect listed flora

2d.1 Conditions 20 and 25 of EPBC 2007/3385

Conditions 20 and 25 of the approval are relevant to this item.

- *Minimising vegetation disturbance (condition 20)*: See discussion under item (2c.2).
- *Preconstruction surveys for difficult to detect listed flora (condition 25)*: Surveys for *Prasophyllum secutum*, *Caladenia caudata*, *Epacris exserta* and *Glycine latrobeana* have been undertaken within the area of potential habitat for these species at appropriate times (see item (2c.2)):
 - *Prasophyllum secutum*: The species was not found within the mill site vegetation clearing area. No management measures are necessary for this module.
 - *Caladenia caudata*: The species was not found within the mill site vegetation clearing area. No management measures are necessary for this module.
 - *Epacris exserta*: The species was not found within the mill site vegetation clearing area. No management measures are necessary for this module.
 - *Glycine latrobeana*: The species was not found within the mill site vegetation clearing area. No management measures are necessary for this module.

2d.1 Incidental and ancillary vegetation disturbance (perimeter fence)

A property perimeter fence (total length approximately 12.5 km) will be installed around the pulp mill site. The perimeter fence does not form part of the referral action. However, information on it is provided in this module for completeness.

The alignment of the fence is shown in Appendix G to this module.

The property perimeter fence needs to be installed for legal reasons to clearly delineate the property boundary.

The fence will be a simple farm-fence type (post and wire), as follows:

- The fence to comprise steel star-posts at 8 m centres, 2 galvanised steel droppers (wire spacers/visibility barriers) per panel, 4 horizontal runs of plain wire. The bottom wire to be spaced a minimum distance of 350 mm above ground level to facilitate wildlife cross movement.
- Star-posts to be typically 1650 mm long, driven to set the top wire at approx 1150 mm above ground level.
- Strainer posts to be 200-250 mm diameter treated pine, including 50 mm diameter galvanised steel pipe bracing, or similar proprietary system. Where a change of fence direction is required to avoid trees or areas of special values, additional galvanised steel angle or treated-pine posts may be required, including appropriate bracing.
- A typical fencing crew is 3 men using 1 or 2 4WD flat-tray vehicles for equipment and materials transport and a rubber-tyred tractor as required. However, this is subject to the requirements of terrain and soil-type. Multiple crews may be required at different locations to facilitate fence construction as required in the given time.
- Star-posts will be driven either by hand-held driver or pneumatic device powered by 4WD-mounted compressor.
- Strainer-posts will normally be driven by tractor-mounted driver or auger.
- Where extensive rock outcrops are in evidence, holes for star-posts may need to be drilled either electrically or pneumatically, powered from 4WD-mounted plant.
- The fence will not present a significant barrier to wildlife movement.

For the fence sections that run along side the East Tamar Highway (approximately 5 km), vegetation removal will not be required due to there already being an existing post and wire fence that is readily accessible. This existing fence will be upgraded to the new fence standard.

For the new fence sections, the installation will require vegetation disturbance, as follows:

- Generally, the maximum vegetation clearing required for the fence corridor will be 1.5 m either side of the fence to provide longitudinal visibility and movement space for personnel and wildlife. Where vehicular access is not possible due to vegetation obstructions, those obstructions will be removed if and where such access is necessary. The maximum vehicular access width required is 6 m.
- Large-size trees will be retained, with only those less than 150 mm trunk diameter being removed, and then only if access is not otherwise possible. Where it is evident that existing dead trees (stags) are likely to fall or endanger either the workplace or the fence, they will be felled in accordance with recognised forest practices.
- Main clearing operations, including log movement, will be performed utilising an appropriately sized rubber-tracked excavator. The general principle will be to minimise disturbance to the extent practicable. Cleared debris will be spread out locally in preference to formation of wind-rows.
- Existing fallen branches, logs and tree litter to be similarly moved aside if and as necessary to enable adequate construction access.
- Low understorey and grasses will be generally left as-is in the cleared corridor, the fencing installation operation rolling over it as opposed to physical removal and soil disturbance. The guiding principle will be "tread lightly", while allowing for the practical and efficient construction of the fence.
- The fence will span minor creek crossings so as not to catch and dam water-borne debris. Fence construction crossings will be sympathetically managed in accordance with recognised forest practice.
- Surface outcrops/obstructive rocks will only to be moved where necessary to provide suitable construction access, with as little ground disturbance as possible.

The total length of the new sections of fence is approximately 7.5 km. Assuming an average fence corridor width of 4 m, the total vegetation disturbance area will therefore be approximately 3 ha. This area is not part of the 92 ha vegetation clearance area shown in Appendix G. The perimeter fence corridor will not intrude into the mill site reserve areas.

The perimeter fence corridor lies outside the area that had previously been surveyed for threatened flora. Potential habitat for Commonwealth threatened plants (*Prasophyllum secutum*, *Caladenia caudata*, *Epacris exserta* and *Glycine latrobeana*) along the alignment of the perimeter fence was therefore surveyed for those species in October/November 2007. None of these species were found. A copy of the survey report is provided in Appendix I to the module (report 4).

2e. Management of risks associated with the decline of *Xanthorrhoea aff. bracteata*

Condition 24 of the approval is relevant to this item but *Xanthorrhoea aff. bracteata* is not present on the mill site. This item is therefore not relevant to this EIMP module. It will be addressed in Module G. Module G relates to the effluent pipeline dune crossing area, where the species is present.

2f. Management of risks associated with the amphibian chytrid fungus *Batrachochytrium dendrobatidis*

Condition 21 of the approval is relevant to this item but relates to the pipeline corridors. This item is therefore not relevant to this EIMP module. It will be addressed in Modules F and K. Those modules relate to the water supply and effluent pipelines respectively.

2g. Management of risks associated with trenching

Condition 19 of the approval is relevant to this item but relates to the pipeline corridors. This item is therefore not relevant to this EIMP module. It will be addressed in Modules F and K. Those modules relate to the water supply and effluent pipelines respectively.

2h. Mitigation of impacts on the pipeline corridors

Conditions 20 and 25 are relevant to this item but this item relates to the pipeline corridors and is therefore not relevant to this EIMP module. The pipeline modules are Modules F and K. Those modules relate to the water supply and effluent pipelines respectively.

2i. Establishment of baseline surveys for roadkill

Condition 26 is relevant to this EIMP module.

2i.1 Condition 26 of EPBC 2007/3385

Condition 26 of EPBC 2007/3385

To manage the risks to listed threatened species associated with roadkill, Gunns Limited must, in accordance with the EIMP:

- a) Immediately following the date of this approval, establish baseline monitoring of roadkill along the East Tamar highway and other major access routes for construction.
- b) Monitor roadkill and implement response strategies, as necessary, in accordance with the EIMP if the number of road killed mammals exceeds the trigger levels in the EIMP.

Actions taken to prepare management measures

A consulting firm, Genames, has been commissioned and initial data gathering has commenced. A description of this initial sampling regime is provided in Appendix D.

Sampling occurs every fourth day.

Sample runs to date have been undertaken on the 4th, 16th, 20th, 24th and 28th of November 2007, the 2nd, 6th, 10th, 14th, 18th, 22nd, 26th and 30th December 2007, and the 3rd and 7th of January 2008.

The gap between the first and second sampling periods were due to the safety and traffic management and logistical concerns that arose during the first run, which required a review of procedures. The first run's sampling was by foot. The concerns led to subsequent sampling being undertaken by slow-drive vehicle, with a passenger observing and recording carcasses. The change in methodology required an alteration to the original traffic permit required under State legislation, hence the gap between first and second sample runs.

The 9 sampling transects shown in Appendix D are road sections where sight distances are adequate for the inspections to be undertaken safely, without unacceptable safety issues arising for the samplers and other road users. Genames has also noted carcasses observed in the road sections between the sampling transects.

Sampling results to date (up to and including the 7th January 2008 run) are shown in Appendix D.

Two Commonwealth listed threatened individuals (both Eastern Barred Bandicoots) have been have been logged in the program to date.

A full three-month set of results from baseline monitoring will be provided in early February 2008, which will constitute the baseline. Site clearing (other than the property perimeter fence) will not commence until baseline monitoring is complete.

For the vegetation clearing that is the subject of this EIMP module, there will be no significant increase in traffic volumes of the East Tamar Highway. Vegetation clearing will lead to approximately 15 to 20 additional traffic movements per day, which is less than 0.5% of the average daily traffic movements (approximately 5000) on the East Tamar Highway.

Nevertheless, Gunns will reduce this increase to zero through the following:

- Car pooling vegetation clearing traffic to at least halve the additional traffic (a residual increase of approximately 10 movements); and
- Offsetting the residual 10 movements by reducing traffic to the existing Gunns woodchip facilities, which are adjacent to the pulp mill site. This would be achieved by transferring a number of staff into Launceston. Those staff have duties in the north-east

of Tasmania generally, and relocation would deliver a positive offset because they would not need to travel the East Tamar Highway on a regular basis.

The achievement of a zero net increase means that there will be no increase in the risk of roadkill as a result of the vegetation clearing and response measures are therefore not relevant to this module.

In relation to subsequent modules, Gunns recognises that there will be a net increase in traffic as a result of the construction of the mill. Gunns notes its obligation to implement response strategies if the number of roadkilled mammals exceeds trigger levels to be established in the EIMP. However, Gunns and the Government have agreed that Gunns will develop and implement response strategies in subsequent modules in any event (ie. as if there were a zero trigger level for roadkilled mammals). Gunns will therefore develop, for inclusion in subsequent modules that relate to the preconstruction and construction phases, the following:

- Speed reductions on the site access road from the East Tamar Highway and internal site road networks - reduction from 60km/hr to 40km/hr on access road and a 20km/hr limit on mill construction site internal networks.
- Removal of any roadkill carcasses on the mill access roads to minimise risks of roadkill from carcass feeding.
- Worker traffic - Implementation of a range of measures, including car pooling and bus transport, to minimise construction worker vehicle movements associated with construction of the mill.
- Worker traffic - With specific reference to bus transport for construction worker traffic, Gunns will ensure that a daily bus service from Georgetown or Launceston (or both) is employed when construction workers travelling from either of those locations exceeds 50.
- Other traffic - Scheduling of construction heavy vehicle (ie. Non-employee movement) related traffic for the minimisation of traffic during crepuscular periods (dawn and dusk) to minimise fauna roadkill.
- A feasibility study into the possibility of a cross-river ferry service for the transportation of construction workers from the West Tamar to the site.
- Site induction for all employees to include alerting them to the impact of roadkill and the need for care.

To assist in monitoring compliance with these measures, Gunns will:

- a) install and maintain for the duration of the pre-construction and construction phases, a traffic counting device on the main site access road;
- b) submit quarterly results covering traffic movements, vehicle type and speed; and
- c) submit quarterly results detailing the total number of workers involved in construction and their area of residence, as well as the number transported by bus.

2j. Undertaking appropriate surveys and establishing mitigation measures for impacts on listed migratory birds

Condition 27 is relevant to this item but this item relates to shoreline impacts and is therefore not relevant to this EIMP module. It will be addressed in Modules D (wharf construction) and H (ocean outfall construction).

2k. Undertaking appropriate examination of likely impacts of pile-driving noise associated with the wharf construction

Condition 29 is relevant to this item but this item relates to wharf construction and is therefore not relevant to this EIMP module. It will be addressed in Module D, which relates to wharf construction.

2l. Establishing baseline levels of vessel strike in the region

Condition 30 is relevant to this item but this item relates to vessel movements and is therefore not relevant to this EIMP module. It will be addressed in Modules D (wharf construction) and H (ocean outfall construction).

2m. Monitoring the baseline levels of contaminants in listed species

Condition 41 is relevant to this item but this item relates to marine species and is therefore not relevant to this EIMP module. It will be addressed in Module M, which relates to the monitoring program.

2n. Developing rehabilitation and offset plans for listed threatened species

Conditions 16 and 22 are relevant to this item.

Condition 16 requires management strategies to rehabilitate an area of at least 200 ha of potential habitat to be developed in the EIMP within 12 months of the date of the approval. This will be done and included in EIMP Module O, which relates to habitat offsets and reserves.

Condition 22 relates to pipeline corridors and is therefore not relevant to this module. It will be addressed in Modules F (water supply pipeline) and K (effluent pipeline).

2o. Establishing measures for habitat protection

Conditions 17 and 18 are relevant to this item, along with previous commitments made by Gunns in its Preliminary Documentation as described in Section 1a.4 of this EIMP module.

- Condition 17 requires the establishment of a network of reserves totalling at least 150 ha within the pulp mill site within 12 months of the date of this approval. This will be done and included in EIMP Module O, which relates to habitat offsets and reserves.

However, the establishment and ongoing protection of reserves have already been identified and committed to. No degradation of the reserves network will occur as a result of the mill site vegetation clearing. Those reserves that are in the area to which this module relates are shown on the *Pulp mill site - Construction - Site Environmental Plan*, attached as Appendix B. The full set of reserves is delineated on the map in Appendix E.

During construction, these reserve areas will be delineated for protection by CEMP Operational Controls, specifically OCO0005 *Site preparation and rehabilitation* and OCO0011 *Flora and fauna management*, which specify requirements to clearly delineate (eg. with construction tape) construction area and sensitive areas and to remain within the construction area boundaries. These controls also address related State permit requirements.

The relevant extracts from the CEMP are provided below.

- Delineate all construction areas (condition 20(b)): Inspect the project footprint and identify all construction areas, access tracks, car parks and other infrastructure and delineate them with flagging tape (other flagging options will include delineator rope or electric fencing tape)
- Identify sensitive areas: Identify from available documentation and plans, all construction areas and their respective land use and significance (i.e. pasture or native vegetation, archaeological and cultural significance)
- Delineate sensitive areas (condition 20(b)): Delineate all sensitive areas with proximity to construction areas with flagging tape (other flagging options will include delineator rope or electric fencing tape)
- Remain within construction boundaries (condition 20): All construction activities and materials must remain within the construction boundaries
- Existing tracks (condition 20(c)): All vehicle access will be confined to existing roads and tracks that have been subject to flora and fauna surveys. Permanent access tracks located in native vegetation areas must be as narrow as practicable in order to minimise the clearance of native vegetation.
- The CEMP Operational Controls OCO0001 *Erosion and sediment control*, OCO0002 *Soil and water management* and OCO0016 *Spill management* contain detailed measures to minimise erosion and control stormwater and to ensure that accidental fuel spills are retained within bunds. These measures will ensure that sediment and spills do not impact on the reserve network. The Site Environmental Plan provided in Appendix B shows how stormwater will be directed to sedimentation basins, away from the reserves.

The CEMP is described in Module A (EIMP Overview). Copies of the CEMP's Operational Controls, including OCO005, accompanied the submission of Module A.

- Condition 18 requires the establishment of a reserve of at least 34 ha of swift parrot foraging habitat within 12 months of the date of this approval. This will be done and included in EIMP Module O, which relates to habitat offsets and reserves.

3. CONSTRUCTION

3a. Management of risks associated with the amphibian chytrid fungus

Condition 21 of the approval is relevant to this item but relates to the pipeline corridors. This item is therefore not relevant to this EIMP module. It will be addressed in Module F (water supply pipeline construction) and Module K (effluent pipeline construction).

3b. Management of risks associated with roadkill

Condition 26 of the approval is relevant to this item.

Condition 26(a) relates to a baseline survey, which has been discussed in item 2i.

Condition 26(b) relates to response strategies if roadkill trigger levels are exceeded, and will be addressed in Module C (mill site bulk earthworks) for the pulp mill construction phase and Module N (remedial and response strategies) for the pulp mill operational phase, providing that an appropriate roadkill monitoring regime is developed in consultation with the Independent Expert Group.

3c. Management of pile-driving noise

Conditions 29 and 30 of the approval are relevant to this item but these conditions relate to the construction of the wharf and ocean outfall respectively. This item is therefore not relevant to this EIMP module. It will be addressed in Module D (wharf construction) and Module H (ocean outfall construction).

3d. Development of strategies to minimise vessel strike

Condition 30 is relevant to this item but this item relates to vessel movements and is therefore not relevant to this EIMP module. It will be addressed in Module D (wharf construction) and Module H (ocean outfall construction).

3e. Appropriate strategies to minimise impacts on listed migratory birds

Condition 27 is relevant to this item but this item relates to shoreline impacts and is therefore not relevant to this EIMP module. It will be addressed in Module D (wharf construction) and Module H (ocean outfall construction).

As described in Section 1a.4 of this EIMP Module, an additional Gunns commitment relevant to this item is the sensitive directional use of lighting during construction work. The CEMP Operational Control BBA-OCO-1000-1400-0015 *Light Escape Control* includes a number of measures to management light emissions during construction.

The CEMP is described in EIMP Module A (Overview). Copies of the CEMP's Operational Controls accompanied the submission of Module A.

Relevant extracts from the Operational Control are:

<i>Subject</i>	<i>Control activity</i>
Light sensitive areas detailed in SEPs	Identify any light-sensitive areas or migratory pathways on the Site Environmental Plan.
Restrict working hours where listed migratory species route identified	Where a listed migratory species route is identified, working hours will be restricted to daylight hours, as far as practicable. This will be identified on the SEP.
Direct temporary lighting away from sensitive areas	Direct temporary lighting away from light-sensitive areas, as identified on the SEP. Light shades and low lighting must be applied to construction and operational areas located adjacent to remnant native vegetation.

3f. Strategies to ensure no increase in the levels of contaminants in listed species

Conditions 39 and 41 of the approval are relevant to this item but these conditions relate to marine species. This item is therefore not relevant to this EIMP module. Modules H (ocean outfall), N (remedial and response strategies) and M (monitoring program) are relevant.

3g. Management of risks associated with listed crayfish

Condition 23 is relevant to this item.

3g.1 Condition 23 of EPBC 2007/3385

To minimise impacts on, the central north burrowing crayfish (*Engaeus granulatus*) and the Mt Arthur burrowing crayfish (*Engaeus orramakunna*) and as part of the EIMP, Gunns Limited must:

- a) Conduct surveys, using a suitably qualified person, agreed to by DEWHA, prior to commencement of construction of each relevant stage of works;
- b) If any of these species are identified during surveys, detailed management procedures must be included in the EIMP and approved prior to continuing relevant construction. Management procedures may include but not be limited to:
 - i) Micro-siting of the pipeline alignment to avoid populations;
 - ii) Exclusion zones around the pulp mill site as necessary; and
 - iii) Translocation of individuals.

Action taken to prepare management measures

- *Conduct surveys (condition 23(a))*: DEW approved Mark Wapstra (ECOTas) to be a suitably qualified person on 23 October 2007. The area was assessed by Mark Wapstra on 30th and 31st October 2007. The survey report is attached in Appendix I (report 3).

Findings

Five live specimens of *Engaeus* were collected from various sites:

- Williams Creek (1 specimen from within the area designated as the solid waste disposal site)
- Williams Creek (1 specimen from within the area designated as the reservoir site)
- Unnamed creek flowing into Big Bay under powerline easement (pulp mill site)
- Poorly drained ground near Bell Bay Line (effluent pipeline route)
- Macquarie Rivulet tributary/drain near Bullocks Head Road (water pipeline route).

All specimens were identified as the non-threatened *Engaeus mairener*. No evidence of *E. granulatus* or *E. orramakunna* was found.

Management measures adopted to ensure approval condition is met

- *Management procedures (condition 23(b))*: Neither *Engaeus granulatus* nor *Engaeus orramakunna* occur within project footprint, including within the mill site vegetation clearing area. No management measures are necessary.

If a contrary finding arises during vegetation clearance, however, and these species are discovered, work in the immediate (100 m) vicinity will cease and advice from an expert approved by DEWHA will be taken on appropriate management measures. These measures will be submitted to DEWHA for approval prior to them being implemented.

4. PRECOMMISSIONING

4a. Toxicity testing of Elemental Chlorine Free mill effluents

Condition 34 is relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Module L, which relates to precommissioning management.

4b. Studies to establish the properties affecting fate of fine particulate organic matter in effluent

Condition 35 is relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Module L, which relates to precommissioning management.

4c. Establish maximum limits and trigger levels of pollutants in effluent, receiving environment and sentinel biota

Condition 33 is relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Modules L, (precommissioning management) and M (monitoring program).

4d. Measurement of background contaminants in sediments and biota

Condition 36 is relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Modules L (precommissioning management) and M (monitoring program).

4e. Background ecological surveys

Condition 40 is relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Modules L (precommissioning management), M (monitoring program) and N (remedial and response strategies).

4f. Improved modelling (hydrodynamic and sediment) of fate and impact of effluent

Condition 38 is relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Modules L (precommissioning management), M (monitoring program) and N (remedial and response strategies).

4g. Design of the monitoring program for marine effluent

Condition 37 is relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Modules L (precommissioning management), M (monitoring program) and N (remedial and response strategies).

5. ONGOING MONITORING

5a. Effluent monitoring

Conditions 31, 32 and 41 are relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Modules M (monitoring program) and N (remedial and response strategies).

5b. Continuous monitoring of the effluent plume and its dispersion

Conditions 32 and 41 are relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Modules M (monitoring program) and N (remedial and response strategies).

5c. Sediment quality monitoring

Conditions 41 and 42 are relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Modules M (monitoring program) and N (remedial and response strategies).

5d. Sentinel biota monitoring

Condition 41 is relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Modules M (monitoring program) and N (remedial and response strategies).

5e. Ecological surveys

Condition 41 is relevant to this item. This item is not relevant to this EIMP module. It will be addressed in Modules M (monitoring program) and N (remedial and response strategies).

6. REMEDIAL AND RESPONSE STRATEGIES

Remedial and response strategies will be developed for each of the matters for which the approval conditions require trigger levels to be developed and these will be described in their relevant EIMP modules, which have been identified in Table 9 of the EIMP Module A Overview module, as shown in Table 5 below.

None of the trigger levels or their associated remedial and response strategies are relevant to this module.

Table 5: Trigger levels and the EIMP modules that will deal with them and their associated remedial and response strategies

Trigger	Module
Concentration of dioxins and furans, chlorate and total chloroacetic acids in effluent	L
Additional effluent contaminants, including nitrate, resin acid and colour	L
Numbers of Tasmanian devils, quolls and Eastern barred bandicoots that may become trapped in excavation trenches	F, K
Numbers of listed threatened species that may be victims of roadkill	C
Underwater noise impacts on Australian grayling during pile driving for the construction of the wharf	D
Underwater noise impacts on listed threatened and migratory marine species during construction of the wharf and ocean outfall	D, H