APPENDICES

APPENDIX 2.1

PRIORITY RANKING OF FAUNA SPECIES FOR THE EDEN CRA REGION

(Reference: "JANIS and Natural National Estate Conservation Requirements for the Eden CRA")

Common name	Ranking
Petauroides volans (Greater Glider)	1
Potorous longipes (Long-footed Potoroo)	1
Mixophyes balbus (Stuttering Barred Frog)	1
Ninox connivens (Barking Owl)	2
Phascolarctos cinereus (Koala)	2
Ninox strenua (Powerful Owl)	2
Tyto tenebricosa (Sooty Owl)	2
Isoodon obesulus (Southern Brown Bandicoot)	2
Petaurus australis (Yellow-bellied Glider)	2
Heleioporus australiacus (Giant Burrowing Frog)	3
Calyptorhynchus lathami (Glossy Black Cockatoo)	3
Pteropus poliocephalus (Grey-headed Flying Fox)	3
Tyto novaehollandiae (Masked Owl)	3
Climacteris erythrops (Red-browed Treecreeper)	3
Pseudomys fumeus (Smoky Mouse)	3
Dasyurus maculatus (Tiger Quoll)	3
Miniopterus schreibersii (Common Bentwing Bat)	4
Acanthophis antarcticus (Common Death Adder)	4
Falcunculus frontatus (Crested Shrike-tit)	4
Rhinolophus megaphyllus (Eastern Horseshoe-bat)	4
Perameles nasuta (Long-nosed Bandicoot)	4
Potorous tridactylus (Long-nosed Potoroo)	4
Pachycephala olivacea (Olive Whistler)	4
Petroica rodinogaster (Pink Robin)	4
Sminthopsis leucopus (White-footed Dunnart)	4
Calyptorhynchus funereus (Yellow-tailed Black Cockatoo)	4
Daphoenositta chrysoptera (Varied Sittella)	5

APPENDIX 2.2

VULNERABILITY RANKING FOR FLORA SPECIES IN THE EDEN CRA REGION

(Reference: "JANIS and Natural National Estate Conservation Requirements for the Eden CRA")

Species	Ranking
Genoplesium rhyoliticum	1
Grevillea acanthifolia ssp. paludosa	1
Zieria formosa	1
Acacia constablei	2
Correa baeuerlenii	2
Cryptostylis hunteriana	2
Eucalyptus parvula	2
Lepidium hyssopifolium	2
Phebalium ralstonii	2
Pomaderris cotoneaster	2
Westringia davidii	2
Zieria buxijugum	2
Zieria parrisiae	2
Acacia georgensis	3
Boronia deanei	3
Burnettia cuneata	3
Deyeuxia accedens	3
Eucalyptus imlayensis	3
Eucalyptus paliformis	3
Jacksonia scoparia	3
Phebalium rhytidophyllum	3
Pimelea curviflora spp. gracilis var. sericea	3
Pomaderris costata	3
Pomaderris parrisiae	3
Psoralea adscendens	3
Pultenaea hispidula	3
Pultenaea villifera	3
Rulingia hermannifolia	3
Sicyos australis	3
Zornia dyctyocarpa var. dyctyocarpa	3
Acacia blayana	4
Acacia costiniana	4
Acacia lucasii	4
Acacia subtilinervis	4
Adriana glabrata	4
Allocasuarina diminuta ssp. annectens	4
Allocasuarina distyla	4
Asplenium australasicum	4
Asterolasia astericophora	4
Astroloma pinifolum	4
Baeckea denticulata	4
Banksia spinulosa var. cunninghamii	4
Boronia nana var. hyssopfolia	4
Botrychium australe	4

Bracteantha viscosa	4
Callitris muelleri	4
Calotis glandulosa	4
Cassinia aureonitens	4
Cassinia uncata	4
Caustis recurvata	4
Cymbidium suave	4
Davalllia pyxidata	4
Daviesia suaveolens	4
Desmodium brachypodium	4
Deyeuxia talariata	4
Dodonaea rhombifolia	4
Epilobium pallidiflorum	4
Eucalyptus badjensis	4
Eucalyptus baueriana	4
Eucalyptus ignorabilis	4
Eucalyptus latiuscula	4
Eucalyptus melliodora	4
Eucalyptus olsenii	4
Eucalyptus spectatrix	4
Eucalyptus stenostoma	4
Eucalyptus tereticornis	4
Eucalyptus wilcoxii	4
Festuca asperula	4
Festuca hookeriana	4
Gaultheria appressa	4
Grevillea miqueliana	4
Hakea macreana	4
Haloragodendron baeuerlenii	4
Haloragodendron monospermum	4
Helichrysum collinum	4
Hibbertia hermanniifolia	4
Hibbertia sp. nov. aff. hermanniifolia	4
Korthalsella rubra	4
Lasiopetalum parvifolium	4
Leptorhynchos nitidulus	4
Leptospermum scoparium	4
Leucopogon setiger	4
Logania pusilla	4
Lycopodium myrtifolium	4
Mazus pumilio	4
Monotoca albens	4
Myoporum bateae	4
Notothixos subaurens	4
Ozothamnus conditus	4
Pentapogon quadrifidus	4
Persoonia brevifolia	4
Phebalium carruthersii	4
Phebalium ellipticum	4
Pittosporum bicolor	4
Platycerium bifurcatum ssp. bifurcatum	4
Poa cheelii	4
Poa costiniana	4
Pomaderris brogoensis	4
Pomaderris pauciflora	4
Pomaderris virgata	4
Prostanthera walteri	4
Pseudanthus divaricatissimus	4
Rhagodia candolleana	4
Santalum obtusifolium	4
Sarochilus australis	4
Sarochilus olivaceus	4
Spyridium cinereum	4

Styphelia psiloclada	4
Symplocos thwaitesii	4
Thysanotus patersonii	4
Tmesipteris ovata	4
Tmesipteris truncata	4
Trachymene humilis ssp. humilis	4
Trisetum spicatum	4
Viola caleyana	4
Viola cleistogamoides	4
Acacia oxycedrus	5
Acacia pyncantha	5
Acacia subporosa	5
Acronychia oblongifolia	5
Alectryon subcinereus	5
Clematis microphylla var. leptophylla	5
Cyathea leichhardtiana	5
Daviesia acicularis	5
Dillwynia juniperina	5
Dodonaea multijuga	5
Ehretia acuminata	5
Epacris robusta	5
Eriostemon myoporoides spp. myoporoides	5
Eriostemon virgatus	5
Eucalyptus conspicua	5
Eucalyptus croajingolensis	5
Eucalyptus pseudoglobulus	5
Eucalyptus stellulata	5
Eucryphia moorei	5
Grevillea mucronulata	5
Hibbertia saligna	5
Hovea longifolia	5
Kunzea sp. C (aff.capitata)	5
Lepidium pseudotasmanicum	5
Leucopogon attenuatus	5
Leucopogon suaveolens	5
Livistona australis	5
Macrozamia communis	5
Mirbelia pungens	5
Persoonia asperula	5
Pomaderris angustifolia	5
Pomaderris betulina	5
Pomaderris elachophylla	5
Pomaderris eriocephala	5
Pschotria loniceroides	5
Pultenaea blakelyi	5
Sarcomelicope simplicifolia	5
Schizomeria ovata	5
Styphelia adscendens	5
Tetratheca subaphylla	5
Wahlenbergia gloriosa	5
Xanthorrhoea concava	5
Zieria fraseri ssp. compacta	5

APPENDIX 2.3

NATIONAL ESTATE CRITERIA

Without limiting the generality of subsection (1) of the *Australian Heritage Commission Act 1975,* a place that is a component of the natural or cultural environment of Australia is to be taken to be a place included in the national estate if it has significance or other special value for future generations as well as for the present community because of:

Criterion A

Its importance in the course, or pattern, of Australia's natural or cultural history

A.1 Importance in the evolution of Australian flora, fauna, landscapes or climate.

A.2 Importance in maintaining existing processes or natural systems at the regional or national scale.

A.3 Importance in exhibiting unusual richness or diversity of flora, fauna, landscapes or cultural features.

A.4 Importance for association with events, developments or cultural phases which have had a significant role in the human occupation and evolution of the nation, State, region or community.

Criterion B

Its possession of uncommon, rare or endangered aspects of Australia's natural or cultural history

B.1 Importance for rare, endangered or uncommon flora, fauna, communities, ecosystems, natural landscapes or phenomena, or as a wilderness.

B.2 Importance in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised, in danger of being lost, or of exceptional interest.

Criterion C

Its potential to yield information that will contribute to an understanding of Australia's natural or cultural history

C.1 Importance for information contributing to a wider understanding of Australian natural history, by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.

C.2 Importance for information contributing to a wider understanding of the history of human occupation of Australia.

Criterion D

Its importance in demonstrating the principal characteristics of:

a class of Australia's natural or cultural places; or

a class of Australia's natural or cultural environments.

D.1 Importance in demonstrating the principal characteristics of the range of landscapes, environments or ecosystems, the attributes of which identify them as being characteristic of their class.

D.2 Importance in demonstrating the principal characteristics of the range of human activities in the Australian environment (including way of life, custom, process, land-use, function, design or technique).

Criterion E

Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group

E.1 Importance for a community for aesthetic characteristics held in high esteem or otherwise valued by the community.

Criterion F

Its importance in demonstrating a high degree of creative or technical achievement at a particular period

F.1 Importance for its technical, creative, design or artistic excellence, innovation or achievement.

Criterion G

Its strong or special associations with a particular community or cultural group for social, cultural or spiritual reasons

G.1 Importance as a place highly valued by a community for reasons of religious, spiritual, symbolic, cultural, educational, or social associations.

Criterion H

Its special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history

H.1 Importance for close associations with individuals whose activities have been significant within the history of the nation, State or region.

APPENDIX 4.1

ESFM PRINCIPLES

Principle 1: Maintain or increase the full suite of forest values for present and future generations across the NSW native forest estate

- The principle of intergenerational equity (that in meeting the needs of the present generation, the ability of the future generations to meet their own needs is not compromised) is embodied in this principle.
- Ensure that ESFM at the regional and smaller scales is implemented by ecologically appropriate planning and operational practices, and that ESFM targets are set and indicators of performance are monitored.
- Ensure the long-term maintenance of the full range of values of the NSW existing forest estate. The intention is to maintain or increase not only the full range of values, but also the magnitude or level at which those values are maintained or increased.
- Encourage the increased production of plantation-grown timber and the social and economic benefits flowing from this increased production to supplement the wood supply from native forests.

Aims for values include:

A Biodiversity

- Biological diversity of forests at the ecosystem, species and genetic levels where biological diversity includes natural patterns of ecosystems, species and gene pools in time and space.
- Address the requirements of vulnerable species, assist with the recovery of threatened species, and maintain the full range of ecological communities at viable levels.
- Protect landscape values through the careful planning of operations and the reservation of appropriate patches and corridors of vegetation.

B The productive capacity and sustainability of forest ecosystems

- Maintain ecological processes within forests (such as the formation of soil, energy flows and the carbon, nutrient and water cycles, fauna and flora communities and their interactions).
- Maintain or increase the ability of forest ecosystems to produce biomass whether utilised by society or as part of nutrient and energy cycles.
- Ensure the rate of removal of any forest products is consistent with ecologically sustainable levels.
- Ensure the effects of activities/disturbances which threaten forests, forest health or forest values are benign.

C Forest ecosystem health and vitality

- Reduce or avoid threats to forest ecosystems from introduced diseases, exotic plants and animals, unnatural regimes of fire or flooding, wind shear, land clearing and urbanisation.
- Promote good environmental practice in relation to pest management.

- Ensure the effects of activities/disturbances within forests, their scale and intensity, including their cumulative effects are controlled and benign.
- Restore and maintain the suite of attributes (ecological condition, species composition and structure of native forests) where forest health and vitality have been degraded.

D Soil and water

- Maintain the chemical and biological functions of soils by protecting soils from unnatural nutrient losses, exposure, degradation and loss.
- Maintain the physical integrity of soils by protecting soils from erosion, mass movement, instability, compaction, pulverisation and loss.
- Protect water quality (physical, chemical, biological) by measures controlling disturbance resulting from forest activities.
- Identify and maintain at appropriate levels, water yield and flow duration in catchments.

E Positive contribution of forests to global geochemical cycles

- Maintain the positive contribution of forests to the global geochemical cycle (includes climate, air and water quality and deposition).

F Long-term social and economic benefits

- Maintain and enhance, on an ecologically sustainable basis, production of wood and wood products, including value adding, investment and resource security.
- Provided it is ecologically sustainable, set, maintain or enhance the level of use of non-wood products and uses, including bee-keeping, grazing, mining, recreation and tourism, reliable water supply.
- Maintain and enhance, on an ecologically sustainable basis, the provision of employment and community needs such as economic diversification, investment skills, education, jobs stability, training and indigenous needs.
- Encourage the establishment and use of plantation forests on existing cleared land to expand social and economic values.
- Maintain and enhance the intangible social welfare benefits which forests provide.

G Natural and cultural heritage values

- Protect social, natural and cultural heritage values and sites, including aesthetic, landscape, historic, cultural, educational, scenic, spiritual and scientific values, including indigenous values and sites.

Principle 2 Ensure public participation, access to information, accountability and transparency in the delivery of ESFM.

- nsure public participation in decision-making processes at local, regional and State and Federal levels.
- Ensure comprehensive, timely and reasonable public access to information.
- Ensure transparency[1], openness[2] and accountability[3] in decision making processes and performance.

[1]Transparency in a process is the degree to which the public or stakeholder groups understand the decision-making process and can see who is taking decisions.

[2]Openness in a process is the degree to which it allows interested parties to participate in the decision-making process.

[3]Accountability in a process is the ability to identify who is responsible for implementing agreed decisions.

Principle 3 Ensure legislation, policies, institutional framework, codes, standards and practices related to forest management require and provide incentives for ecologically sustainable management of the native forest estate.

Establish a process for shared management and administration, recognising the customary and traditional rights of indigenous people, and the interests of private land-holders and other stakeholders in an area's management.

Principle 4 Apply precautionary principles for prevention of environmental degradation

The incorporation of the precautionary principle into decision making has been endorsed by State and Commonwealth Governments (Commonwealth of Australia 1992 p. 49, IGAE 1992) and is defined as *'where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:*

- *careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment; and*
- *an assessment of the risk-weighted consequences of various options.'*

Principle 5 Apply best available knowledge and adaptive management processes

ESFM would utilise the concept of adaptive management and continuous improvement based on best science and expert advice and targeted research on critical gaps in knowledge, monitoring or evaluation.

APPENDIX 4.2

ESFM PERFORMANCE INDICATORS

No.	Indicator	General Description
Biodiversity		
1	1.1 A type	Extent of forest/vegetation type by growth stage.
2	1.2 A type	Extent of connectivity in the forest landscape in relation to: i) threatened species habitat; ii) conservation reserves; iii) general retained habitat.
3	1.3a A type	Management measures in place to maintain species extent and abundance.
4	1.3b B type	List of representative species by extent and abundance. Representative sample to include threatened species, key functional groups and indicator species.
Productive Capacity		
5	2.1a A type	Annual removal of timber products and non timber products
6	2.1b B type	Annual removal of timber products and non-timber products from forest ecosystems compared with that estimated to be ecologically sustainable by tenure.
7	2.2 C type	Monitoring of site quality. Evaluation of Eden EIS 1986 for relationship between nutrient budgets (available and total major nutrients) and harvesting systems.
8	2.3 A type	Standing volume of log stocks by species association and diameter class for multi-aged forest on native forest land available for timber production by land tenure.
Health and vitality		
9	3.1 B type	Lists of biological factors (weeds, feral animals, insects and diseases) including known impact and level of control efforts.
10	3.2 B type	Fire management intent, fire impact and control effort.

Soil and water		
11	4.1 A type	Road density (length of road per unit area) by road category and stream crossing density (number of crossing per unit area) by catchment for the region.
12	4.2 B type	Ratio of crossings with effective protective measures to ineffective protective measures, and effective road maintenance to ineffective road maintenance.
13	4.3 B type	Extent and proportion of current harvested forest land with physical disturbance.
14	4.4 A type	Proportion of catchment harvested from 1997-2019 by harvest system as a proxy determination of water quality.
15	4.5 A type	Change in the level of growth stages from 1997-2019 by catchment as an immediate proxy rating of water quantity
Economic and social		
16	5.1 A type	Mean volume and royalty value of logs harvested per annum by species and grade by tenure.
17	5.2 B type	Total volume, value of products and production, and flow-on economic contribution compared to cost of production for all products.
18	5.3 B type	Availability and uses of recreational/tourism facilities.
19	5.4 A type	Employment numbers by type across all forest users in Eden region.
20	5.5 B type	Gross income index.
Cultural and heritage		
21	6.1 A type	Change in condition and number of recorded places, artefacts, sites, buildings or other structures.
22	6.2 C type	Level of participation in decision making process post RFA encompassing indigenous and non indigenous issues related to forest management.

APPENDIX 7.1

JANIS RESERVE CRITERIA: IUCN CATEGORIES

The following is extracted from the "JANIS Criteria" i.e. the Nationally Agreed Criteria for the Establishment of a Comprehensive, Adequate and Representative Reserve System of Forests in Australia (a report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee).

4. COMPONENTS OF THE CAR SYSTEM

The CAR reserve system comprises areas of both public and private land that are reserved specifically for conservation purposes, and where the tenure of the reserved areas is secured by legislation or other methods appropriate for the area concerned.

The following principles should apply when the CAR reserve system in a region is being identified.

All reasonable effort should be made to provide for biodiversity and old-growth forest conservation and wilderness in the Dedicated Reserve system on public land. However, where it is demonstrated that it is not possible or practicable to meet the criteria in the Dedicated Reserve system, other approaches will be required. For example, conservation zones in approved forest management plans and covenants on private land that bind successors in title could be used, in conjunction with Dedicated Reserves, to define the CAR reserve system for a particular region.

Throughout the document, reference to the CAR reserve system should be taken to include the elements described below.

4.1 PUBLIC LAND

4.1.1 Dedicated Reserves

A large number of types of reserve exist under Commonwealth, State and Territory jurisdictions. Those which form the Dedicated Reserve component of the CAR reserve system should be equivalent to Categories I, II, III or IV as defined by the IUCN Commission for National Parks and Protected Areas (1994) (see Appendix 1).

Security of tenure is an important consideration in the establishment of a Dedicated Reserve as are appropriate management regimes. The tenure of the Reserve is considered to be secure if Parliamentary action by either the Commonwealth, a State or a Territory Government is required to revoke the Reserve.

Some reserves established for nature conservation within State Forest tenures in some States will meet the standard required of a Dedicated Reserve.

4.1.2 Informal Reserves

In situations where it is not possible or practicable to include conservation values into Dedicated Reserves, it is appropriate for areas to be reserved under other secure tenure or management arrangements (e.g., within approved forest management plans). In practice such areas should be set aside specifically for conservation purposes and meet the following principles:

- they are established in approved management plans and managed accordingly;
- there is an opportunity for public comment on changes to reserve boundaries;
- they are able to be accurately identified on maps;
- they are of an area and design sufficient to maintain the values they seek to protect.

Some of these reserves could have flexible boundaries that might change over time to reflect forest dynamics and the effects of climate change, but any changes must satisfy the criteria which exist to protect conservation values.

4.1.3 Values Protected by Prescription

Where the nature of a forest value that is needed to contribute to the CAR reserve system makes inclusion in either Dedicated or Informal Reserves impractical (for example, very rare values, values with fragmented distributions, or values naturally occurring in linear form such as riparian vegetation), then protection may be prescribed in Codes of Practice or Management Plans and where appropriate, identified on maps.

These prescriptions should meet the following principles:

- there is an opportunity for public comment on proposed changes;
- they have a sound scientific basis;
- they are adequate to maintain the values they seek to protect.

4.2 PRIVATE LAND

The NFPS establishes that the CAR reserve system should in the first instance be selected from public land. However, in many regions it will need to include private land. The two key priorities for biodiversity protection in private forests are to ensure comprehensiveness so that replicated samples of all forest ecosystems are included in viable reserves across their geographic range and to meet the special needs for rare, vulnerable or endangered species or ecosystems on private land.

Many of the most threatened forest species and ecosystems throughout Australia occur on private lands, especially in coastal areas and across agricultural lands. There is an urgent need for specific measures to address their conservation in the development of the CAR reserve system as opportunities for their conservation are rapidly foreclosing. For example, in Queensland more than 100 forest and woodland ecosystems are considered to be endangered or significantly restricted in distribution, and most of these occur on private lands (Sattler and Williams, in press).

A number of strategies are appropriate for protecting biodiversity on private land, ranging from purchase of priority areas to the development of incentives for the establishment of mechanisms to ensure protection, such as covenants on leasehold and freehold lands. For example, a covenant should be binding on successors in title and that appropriate management intent should be demonstrated before the area concerned could be considered to be part of the CAR reserve system. The rights of landholders will be respected whatever mechanisms are adopted.

The level of protection possible on private land will be limited by the resources available. Conservation effort therefore needs to be highly focused on the priority forest species and ecosystems.

Note: the following version of the IUCN Protected Area Categories is that included in the JANIS criteria (see above). The IUCN Protected Area Management Categories have since been revised. See Guidelines for Protected Area Management Categories.

IUCN Protected Area Categories

The definition of "Protected Area" as defined by the International Union for the Conservation of Nature is:

> *An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.*

Category I	**Strict Nature Reserve/Wilderness Area: protected areas managed mainly for science or wilderness protection** Areas of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring. Large areas of unmodified land, or slightly modified land, or land and water, retaining their natural character and influence, without permanent or significant habitation, which are protected and managed so as to preserve their natural condition.
Category II	**National Park: protected area managed mainly for ecosystem protection and recreation** Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for this and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.
Category III	**Natural Monument: protected area managed mainly for conservation of specific natural features** Areas containing one, or more, specific natural or natural/cultural features which is of outstanding or unique value because of its inherent rarity, representative of aesthetic qualities or cultural significance.
Category IV	**Habitat/Species Management Area: protected area managed mainly for conservation through management intervention** Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species.

APPENDIX 7.2

SOCIAL IMPLICATIONS

The social impact analysis (SIA), under the Regional Forest Agreement management framework provides policy advice on social implications for communities following identification of reserve design and forest management scenarios.

The objectives of the SIA are:

- to identify those communities most sensitive to changes in forest use and management as proposed by various options
- to identify the type of social impact, the relative severity, adaptabilty/resilience and time dimensions of those impacts at the community level and
- to identify any proposals, such as industry development options or alternative economic development proposals which may mitigate impacts in those communities.

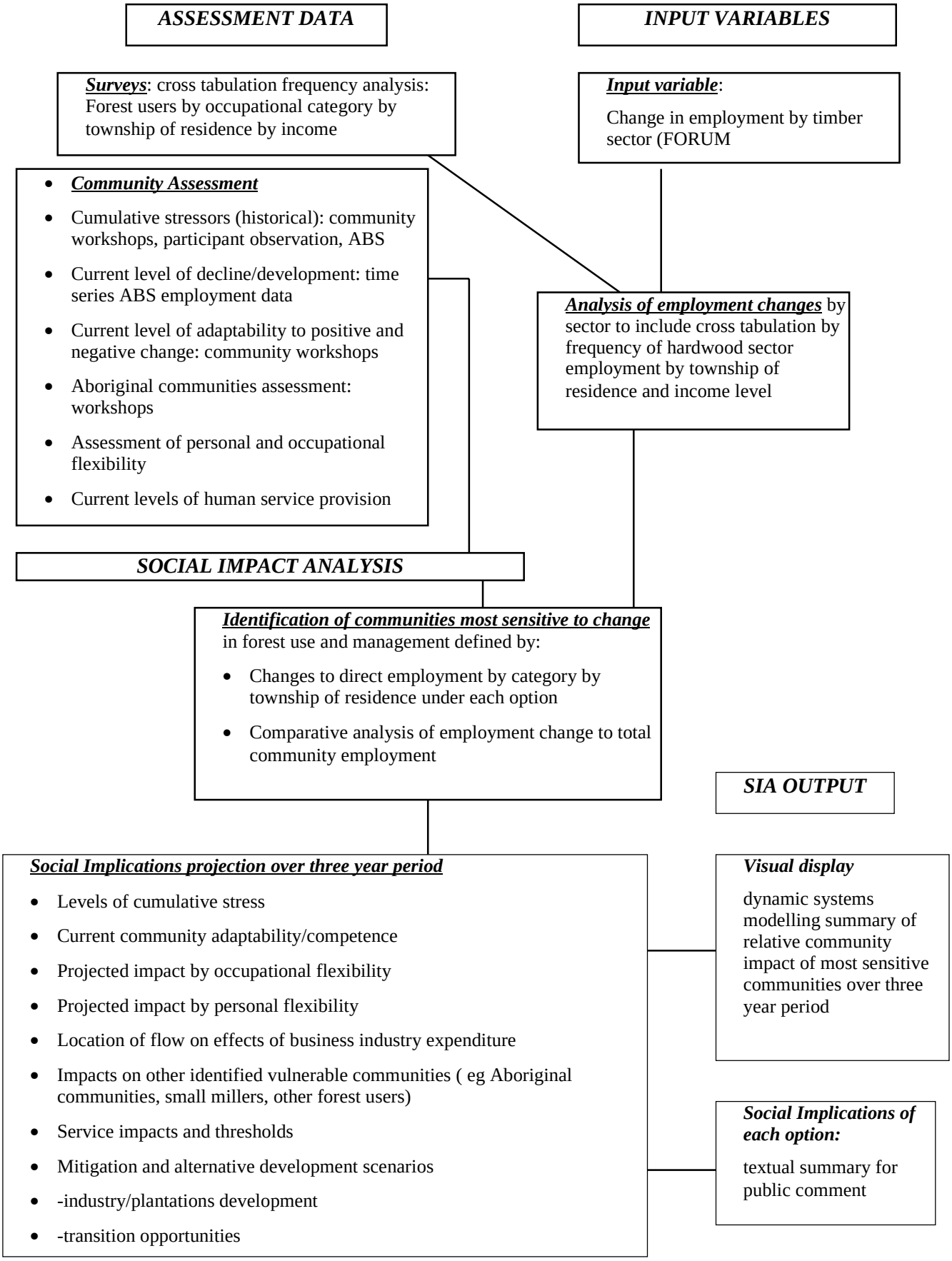
The optimal recommendation from the SIA for reserve design is that option which minimises the social impact on forest dependent communities. This optimal objective is further defined as one which:

- mimimises social dislocation
- minimise community disadvantage
- enhances community vitality and social cohesion
- maximise employment and skills development.

In addition, any mitigative factors are identified.

SOCIAL IMPACT ASSESSMENT FRAMEWORK

The following flow diagram represents how the data from the social assessment (scoping and profiling stages) and the input variables (from the economic assessments) are used and the scope of the resulting social impact analysis.


ASSESSMENT DATA
INPUT VARIABLES
Surveys: cross tabulation frequency analysis: Forest users by occupational category by township of residence by income
Input variable:
Change in employment by timber sector (FORUM
Community Assessment
Cumulative stressors (historical): community workshops, participant observation, ABS
Current level of decline/development: time series ABS employment data
Current level of adaptability to positive and negative change: community workshops
Aboriginal communities assessment: workshops
Assessment of personal and occupational flexibility
Current levels of human service provision
Analysis of employment changes by sector to include cross tabulation by frequency of hardwood sector employment by township of residence and income level
SOCIAL IMPACT ANALYSIS
Identification of communities most sensitive to change in forest use and management defined by:
Changes to direct employment by category by township of residence under each option
Comparative analysis of employment change to total community employment
SIA OUTPUT
Social Implications projection over three year period
Levels of cumulative stress
Current community adaptability/competence
Projected impact by occupational flexibility
Projected impact by personal flexibility
Location of flow on effects of business industry expenditure
Impacts on other identified vulnerable communities (eg Aboriginal communities, small millers, other forest users)
Service impacts and thresholds
Mitigation and alternative development scenarios
-industry/plantations development
-transition opportunities
Visual display
dynamic systems modelling summary of relative community impact of most sensitive communities over three year period
Social Implications of each option:
textual summary for public comment

DEVELOPMENT OF THE SOCIAL IMPACT MODEL

There is extensive psychological and sociological literature detailing research into the relationships between major changes in the conditions surrounding peoples' lives and their subsequent emotional and physical wellbeing. The relationships are complex and depend upon both the quality of the changes that occur and the particular state of the people before and while change takes place. However, a number of broad conclusion appear across a range of studies consistently (see, for example the review by Kessler, 1997) and these provide the rationale for the development of the social indicators used in the present model. In brief, the key conclusion is that the greater the number and severity of negative life events, the more likely it is that a person or a community will have difficulty coping.

Two kinds of indicators were developed—those that reflected the aggregate historical stress each community has been under prior to the assessment and those that reflect the potential stress that each person employed in the hardwood industry would be under if faced with the need to leave the hardwood industry.

Both categories of indicator were developed by combining data about individual variables used in the various surveys and community assessment procedures. The combination was necessary because individual variables, for example, a person's age, tell only part of the story about that person's ability to deal with social stressors such as unemployment. Information about their level of education and the extent to which they have had experience in other industries are needed to adequately reflect a broad concept such as "ability to change employment". Similarly, age needs to be combined with information about possible dependent family members to adequately capture the concept of "flexibility to move to a new location".

Because timing is an important element in the specific relationship between the impact of life events and subsequent emotional and physical welfare, it was important that the SIA model reflects the time dependencies. For this reason, the software chosen as the tool to model the interplay of event and indicators ("ithink") was selected because of the ease with which time could be incorporated into the model and displayed through the graphic output. GIS software, which is ideal for representing processes that take place against a spatial backdrop, is less satisfactory as a means of reflecting progressive and subtle changes over time in highly localised elements such as groups of people.

OUTLINE OF THE DYNAMIC SYSTEMS MODEL

Social Impact is not a simple outcome that can be represented by a single number or indicator. Rather a number of indicators provide a profile or 'signature' for the community and this profile suggests how sensitive a community might be to the effects of change in a particular context, in this case the forest context.

The necessary condition of the model was that the internal logic of the model to be apparent to all stakeholders. the initial goal when using 'ithink' was to identify key flows in a system and them model those flows over time by identifying the factors that control them. The modelling process isolates essential elements of a situation and mirrors this in the software so that the impact of changes in key factors can be explored by simulation. This approach can work with both 'hard and 'soft'variables.

The model represents each township as a system. To keep the complexity of the model to a minimum a single community logic was developed and cloned for each community to be analysed. So, while the actual values of variables and parameters for each community will be specific to that community, the underlying logic of assessing social impact will be the same for all communities.

An example of these indicators is the 'background trends' in a community, recognising that some rural communities may be experiencing a decline associated, for example, with a downturn in commodity prices. This indicator is represented by the change in total jobs counted in that community between census periods 1991-6. Other information captured in the community profile are parameters, largely based on survey or ABS data, that provide a current picture of the socio-demographic features of each community. Within the timeframe simulated in the model, most of these factors will not vary in a substantial way and thus they are treated as parameters rather than variables.

Also included in the profile are 'co-flows' which vary over time as part of the simulation. The two co-flows used in this model are the total job number of people employed in a community and three income levels which are used as social indicators of community contribution, rather than as a dollar value economic variables. The first provides a context against which the scope of changes in hardwood employment can be assessed and is also the means whereby the impact of mitigation and industry development scenarios can be included as growth in jobs.

The base flow for the social impact model has been identified as the number of jobs in the hardwood industry resident in that community. This is a 'flow' in the sense that over time jobs may be created or lost over time, or as a result of particular forest use or management options. Thus the link between jobs and community is the place of residence of the person holding a specific job. For example, community A may have x contractors, y haulers, z bush crew and a mill worker resident in that community.

The projected social implications flowing from each forest use and management scenario is provided as text under the follwing headings:

- Employment changes (a textual nterpretation of the FORUM output)
- Location (community) of impact
- occupational and personal flexibility
- social well-being and community resilience
- Community Impact summary

Eight case study communities were selected for detailed assessment and impact analysis.

The following table indicates a brief overview of some of the relevant socio-demographic that have been used as parameters for the social impact modelling of these case study towns.

TABLE: ANALYSIS OF TOWNSHIP OF RESIDENCE BY HARDWOOD TIMBER WORKER

	EDEN	**BOMBALA (Town)**	**PAMBULA**	**MERIMBULA**	**BEGA**	**COBARGO**	**WYNDHAM**	**WONBOYN LAKE**
Population:	3,106	1,380	1,045	3,864	3,145	397	113	85
Median Age:	35 years	35 years	37 years	50 years	36 years	35 years	28 years	44 years
Median Gross individual income:	$200-299/wk	$200-299/wk	$200-299/wk	$200-299/wk	$200-299/wk	$160-199/wk	$160-199/wk	$200-299/wk
Median Gross household income:	$500-699/wk	$500-699/wk	$300-499/wk	$300-499/wk	$300-499/wk	$300-499/wk	$120-299/wk	$300-499/wk
Community Job Stock[1]:	1,204	578	393	1,263	1,154	125	26	25
Hardwood Job Stock[2]:	111	57	<20*	<10*	<10*	<10*	<10*	
Unemployment Rate in Town:	11.1 %	6.5 %	12.5%	10.7%	10.7%	15.5%	25.7%	24.2%
Unemploy ment Rate in Shire:	12.5 %	7.3%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%

1 Number of community residents employed
2 Number of community residents directly employed in hardwood

APPENDIX 7.3

PROTECTION OF SIGNIFICANT NATURAL HERITAGE VALUES IN PRODUCTION AREAS OF THE EDEN CRA REGION: CONSERVATION

PROTOCOLS

A series of protocols have been proposed by New South Wales to apply to production forest areas to complement the formal and informal reserve network. The intent of the protocols is to protect conservation values, including protection of rare non-commercial forest types, old growth, rainforest, and threatened species in all areas that have been identified to be managed for sustainable production.

The Protocols for the Eden CRA Region were developed according to a set of principles including:

- prescriptions will only be applied for those species, which are at risk from harvesting operations;
- prescriptions will take account of the extent of reserved habitat, whether the prescriptions are operationally feasible; and the relative conservation status of each species;
- prescriptions will be derived, wherever possible, to provide benefits to more than one species; and
- prescriptions will provide for regional variability within a species if it is relevant.

The resulting protocols include:

- Protection of Rare Non-commercial Forest Types

All rare non-commercial forest types will be protected.

Old Growth Forest Protocol

Most forest ecosystems will have at least 80% of old growth protected in conservation reserves on public land. For those Old Growth ecosystems where this was not possible a protocol has been developed to protect additional stands of each within the production forest areas.

Rainforest Protocol

All stands of rainforest will be protected.

Threatened Species Protocol

The *Threatened Species Conservation Act 1995* applies to harvesting in state forests. The Regional Forest Agreement will therefore include protocols for the protection of threatened species in production areas.

The proposed protocols reflect the specific issues and requirements of the Eden region including:

- adequacy of reservation of each species under the identified options;
- adequacy of information on which to base management decisions; and
- the harvesting techniques that will be applied.

Fauna

The protocols were then considered in terms of general prescriptions to cover a range of species. These general prescriptions cover habitat tree retention and recruitment, significant food resources, the importance of riparian buffers, connection corridors and key habitat areas such as heath, wetlands, caves and tunnels.

Specific requirements of individual species were identified in addition to the general prescriptions. For example the identification of the need to take account of several species of threatened fauna whose distribution and general ecology is poorly known. These species will be initially managed through the designation of Special Management Areas incorporating habitat around known site localities. Specified forestry activities will be temporarily excluded from these areas. Once a certain number of confirmed records of each species have been obtained this prescription will be reviewed. Species to be managed in this way are the smoky mouse, southern brown bandicoot, stuttering barred frog and giant burrowing frog.

A further example is for large forest owls and koalas: Large forest owls will be managed through the combination of general prescriptions enforced in production areas, the linkage of National Parks and other preserved areas at a landscape scale and the protection of roost and nest sites. Koalas will be protected by identifying core foraging habitat in targeted surveys. This habitat will be excluded from production, and linked to other forms of retained habitat.

Flora

The regionally rare flora was considered in a similar fashion by considering each individual species' response to disturbance. Prescriptions were developed to take account of this response and included avoidance of damage for some species and buffering and protection of others.

APPENDIX 7.4

ESFM HARVESTING PRACTICES

The following practices were examined and considered to have the associated impacts:

- **integrated harvesting in the general management zone at 70% canopy removal (B3)**

implications - this regime most readily meets the sawlog and pulpwood volume requirements of industry within the current conservation protocols. The expected environmental impacts of this practice are outlined in the current Eden Environmental Impact Statement.

- **single tree selection at 10% canopy removal (A1)**

implications - this regime provides minimal impacts on environmental and conservation values and is particularly suitable for harvesting specialty timber species and for sawlog operations in areas of environmental sensitivity. Ten percent canopy removal however has the potential to restrict regeneration and compromise silvicultural requirements for a sustainable timber production. The regime needs to be applied in conjunction with other harvesting practices to meet wood supply requirements. Such a regime requires detailed management planning and has high operational costs in comparison to the revenue obtained. In certain situations, need for more frequent road access will have implications for maintenance of water quality. In certain forest types occupational health and safety needs would become an important operational consideration.

- **medium selection logging at 30% canopy removal (A2)**

implications - this regime reduces environmental and conservation impacts whilst providing improved silvicultural and regeneration conditions. It is an extension of the A1 regime and is suitable for most forest types. There is relatively low site impact resulting from this regime. The economic viability of selective sawlog harvesting at 10% (A1) and 30% crown removal (A2) would need investigation.

- **selection logging using 50% canopy removal (B0)**

implications - this regime enables available sawlog volumes to be nearly fully utilised with a reduced impact on environmental and conservation values and an associated reduction (approximately 60%) in pulpwood supply. At this level of canopy removal, the silvicultural and regeneration requirements for sustaining viable forest regeneration and growth would be at their limit in certain forest types. The pattern of logging under this regime can consider silvicultural and operational constraints as well as a suite of conservation values. Management planning and operational costs are relatively high.

- **intensified harvesting at 90% crown removal on sites of low impact (C1)**

implications -Intensive harvesting on sites of low impact where conservation values are negligible (such as upper slopes of ridges) allows pulpwood to be maximised (approximately 15% more than for B3) but provides relatively little increase in sawlog volumes. Increased canopy removal enhances conditions for forest regeneration and growth through removal of overwood competition.

- **selection logging (up to 30% canopy removal) of filter strips (1st order streams)**

implications - selective harvesting (single tree or 30% canopy reduction) was estimated to provide 1 000 m^3 of sawlogs per annum and 2,000m3 of pulpwood from filter strips around upper first-order streams in areas of less than 18 degrees slope. In Eden, approximately 2 000 ha was estimated to be in this category. An average of 10 m^3 of sawlogs and per ha was expected. Selective harvesting in certain first-order streams would have, at this stage, an unknown impact on water values. Harvest planning would need to consider felling patterns and environmentally sensitive extraction techniques to minimise impacts. Of greatest importance would be the need to avoid soil disturbance in these filter strip areas. The economic viability of selective sawlog harvesting at up to 10% or 30% crown removal and the quality of sawlog able to be obtained from buffer strips would need investigation.

- **thinning from below up to 50% canopy removal (C2)**

implications - thinning of regrowth forest, where suppressed trees and trees with poor form are removed and trees of good form and strong dominance are retained, provides the potential for increased growth rates and production of high value product. Identification of stands of high production potential will be required as operational costs are high. Protection from fire will be a major consideration in the ongoing management of this resource.

APPENDIX 10.1

DRAFT EDEN CRA INDIGENOUS LAND USE AGREEMENT - NOVEMBER 1997

HEADS OF AGREEMENT

THIS AGREEMENT

is made on the day of 1997.

BETWEEN the BEGA EDEN MERRIMANS ABORIGINAL FOREST MANAGEMENT COMMITTEE ("BEMAFMC") representing the rights and interests of the Aboriginal Peoples in the Eden Comprehensive Regional Assessment Region (the "Eden CRA Region"),

AND the CONSTRUCTION FORESTRY AND MINING EMPLOYEES UNION ("CFMEU"), representing CFMEU members,

AND the FOREST PRODUCTS ASSOCIATION ("FPA") and the NATIONAL ASSOCIATION OF FOREST INDUSTRIES ("NAFI") representing the forestry industry in the Eden CRA Region,

AND the NATURE CONSERVATION COUNCIL ("NCC") and the SOUTH EAST FOREST CONSERVATION COUNCIL ("SEFCC"), representing environmental interests in land use in the Eden CRA Region,

1. The CFMEU, FPA, NAFI, NCC and SEFCC acknowledge and affirm that the Aboriginal Peoples, represented by the BEMAFMC, are the original inhabitants of the lands described within the Eden CRA Region and are entitled by their traditional law to their traditional customs and culture, including access to areas of traditional significance.
2. The Aboriginal Peoples of the Eden CRA Region, the NCC and the SEFCC acknowledge and affirm that individuals and companies participating in the forestry industry are significant stakeholders who have existing legal rights and concerns related to their industry and lifestyle.
3. The parties acknowledge that there exists in the Eden CRA Region areas of significant conservation and heritage value encompassing environmental, historical and cultural features, the protection of which is the responsibility of State and Federal Governments in conjunction with the parties.

4. All parties are committed to work together to develop a management regime for ecologically, economically, socially and culturally sustainable land use in the Eden CRA Region, and to develop harmonious relationships amongst all interests in the area.

5. Subject to clause 4, all parties are committed to the development of an ecologically sustainable forestry industry in the Eden CRA Region.

6. The parties acknowledge and affirm that the participation of the Aboriginal Peoples of the Eden CRA Region is necessary for the development of an ecologically, economically, socially and culturally sustainable land use management regime and are committed to jointly approach the State Government to secure the: -

a. freehold title to the lands specified in Schedule A;

b. freehold title subject to condition (ie leaseback to NSW National Parks and Wildlife Service, sawlog quota, other conservation or resource use agreement) in respect of the lands specified in Schedule B; and

c. a joint management regime (incorporating NPWS District, State Forest Regional, Local Aboriginal Land Council area, and national Parks or State Forest specific arrangements) in respect of the lands specified in Schedule C.

7. The CFMEU, FPA, NAFI and BEMAFMC agree to make joint approaches to secure investment for development of the forestry industry through the Indigenous Land Corporation, Forest Industry Structural Adjustment Package, and other sources.

8. The CFMEU, FPA, NAFI and BEMAFMC agree to jointly develop a Forest Based Industries Aboriginal Employment Strategy that will maximise employment, training and career development opportunities for Aboriginal Peoples in the forest based industries in the Eden CRA Region.

9. The CFMEU, FPA, NAFI, SEFCC, and NCC recognise and agree to support continuing rights of use and access for Aboriginal Peoples to National Parks and State Forests for cultural purposes. These rights include (but are not limited to): -

    a. hunting, gathering, fishing and camping;
    b. access to sites of significance;
    c. access for ceremonies under traditional law;
    d. protection and conservation of cultural heritage; and
    e. practice of cultural activities.

10. These rights shall be, to the extent of their consistency with existing legislation, incorporated in all relevant plans of management and a detailed code of conduct to be developed between the Government (via the relevant land management agency) and Aboriginal Peoples of the Eden CRA Region.

11. The parties shall approach the Commonwealth and the State to become parties to this agreement process.

12. The parties are committed to pursuing agreements with the mining and tourism industries and with other industries with interests in the Eden CRA Region.

APPENDIX 10.2

PLACES OF ABORIGINAL SIGNIFICANCE IN THE EDEN CRA/RFA REGION

Schedule A

PLACES OF SIGNIFICANCE FOR ABORIGINAL OWNERSHIP (FREEHOLD TITLE)

Merrimans Local Aboriginal Land Council

- Wallaga Lake Shoreline (crown Land)
- Coastal Strip - Camel Rock
- Littoral Claim - Bermagui to Camel Rock
- Bermagui Waterhole
- Bermagui State forest (western section)
- Merrimans Island
- Old Cobargo Brick Factory
- Mumbulla Creek Valley (20 ha culture camp site in Biamanga NP)
- Myarar (Murrah) Lagoon in Murrah SF

Bega Local Aboriginal Land Council

- Blackfellows Lake
- Black Mary's Lagoon
- Bithrey Inlet (300 m radius of old Ranger Station)
- Stoney Creek
- Mogareeka Inlet
- Wallagoot Keeping Place (Djirranganj Sites 1 & 2)
- Murrays Flat Road
- Browns Mountain (mountain foot)
- Little Brown Mountain

Eden Local Aboriginal Land Council

- Merrica Ranger Station (200m radius keyhole in Nadgee Wilderness)
- Service area located at junction of Old Bridge Road and Wonboyn Road (1 ha)
- Green Cape Plantation (25 ha within Ben Boyd NP)
- Fisheries Flat Creek (Twofold Bay)
- North Wonboyn Waterways (550 ha northern shore of Wonboyn Lake)
- Public Road Access (Portions 1 & 2 in Parish of Nullica leading to Kiah Inlet)

Schedule B

SIGNIFICANT PLACES FOR ABORIGINAL OWNERSHIP SUBJECT TO CONDITION (FREEHOLD TITLE SUBJECT TO CONDITION)

Merrimans Local Aboriginal Land Council

- Murrah State Forest (no 140)
- Bermagui River (State forest No 142)
- Bermagui State forest (northern section)
- Murrabrine State forest
- Peak Alone (Wandella State forest)
- Goura Nature Reserve
- Wallaga Lake Shoreline (National Park)
- Biamanga National Park (within Merrimans LALC boundary)
- Cobargo Showground Site
- Littoral Coastal Strip

Bega Local Aboriginal Land Council

- Biamanga National Park (within Bega LALC boundary)
- Mumbulla State forest (within Bega LALC boundary)
- Tanja State forest
- Evans Hill
- Yurammie State forest (within Bega LALC boundary)
- Tantawangalo State forest (within Bega LALC boundary)
- Dr George Mountain (peak)

Eden Local Aboriginal Land Council

- current Interim Deferred Forest Area (within Eden LALC boundary)

Schedule C

PLACES OF ABORIGINAL SIGNIFICANCE FOR ABORIGINAL JOINT MANAGEMENT

Merrimans Local Aboriginal Land Council

- Wadbilliga National Park (within Merrimans LALC boundary)
- Gulaga (Mt Dromedary)
- Cuttagee Point Coastal Strip
- Mimosa Rocks NP (within Merrimans LALC boundary)

Bega Local Aboriginal Land Council

- Wadbilliga NP (within Bega LALC boundary)
- Glenbog State forest
- Glen Allen State forest
- Rutherfords Creek
- Bournda Nature Reserve
- Bournda National Park
- Tathra Catchment
- Mimosa Rocks National Park
- Bithrey Inlet to Stinking Bay
- Aragunnu to Benegunnu Point
- Bega River (Rutherfords Weir to Mogareeka Inlet)
- Brogo Dam to junction of Bega and Brogo Rivers at Bega
- Tarraganda Rifle Range
- Tarraganda Golf Links
- Bega Showground site

Eden Local Aboriginal Land Council

- Access route from Wonboyn Road (access from Old Bridge Road to the Ranger Station)
- Foreshore of Twofold Bay from Fisheries Beach to Brierly Point (including littoral strip)
- Access to Wonboyn Lake via a wharf and boat ramp (ie easement required for access to the lake - lands to be used in conjunction with land for ownership at North Wonboyn Waterways)
- All forested public lands within the Eden LALC boundary.

APPENDIX 10.3

ANALYSIS OF BEMAFMC POSITION

Introduction

In order to inform discussion on the BEMAFMC's position it has attempted to analyse how its position affects the scenarios put forward by State agencies, industry groups and conservation groups (the three scenarios presented in Chapter 7). This analysis is indicative only, and attempts to demonstrate the lowimpact of the BEMAFMC's position on the positions of the other stakeholders.

The analysis will focus on whether the BEMAFMC's position is inconsistent with the proposed tenure of land and its resultant use in each of the three proposals. For the purpose of the analysis it has been assumed that land which is neither part of an existing reserve or identified as a new reserve will be available for timber harvesting (unless the contrary is known).

The BEMAFMC is currently in discussions with the NSW Government about a number of aspects of its position. The analysis of its position will indicate the parts which are possible under current NSW Government policy and what matters need to be agreed upon before they can be implemented.

The matters to be agreed upon fall into two categories:

- those matters which can be negoriated at agency level, and
- those matters which require endorsement from the executive level of the NSW Government.

Land Identified for Ownership without Conditions

Comparison with NSW State Agency Proposal

At present the NSW Government position does not identify any land for Aboriginal ownership. Most of the areas identified for Aboriginal ownership are small in size so this GIS layer has very little impact on the conservation and timber outcomes.

In the Eden LALC boundary three areas in State Forest land have been identified:

- west of Wonboyn Lagoon;
- Fisheries Beach
- the pine plantation inside Ben Boyd National Park.

It appears there is no prospect that the lands at Fisheries Beach and Wonboyn Lake would ever be harvested for timber and the State Forests/NPWS position does not identify them to be reserved. Eden LALC proposes to haravest the pine plantation lands to alllow native regrowth. The Merrica River Ranger Station has also been identifieed and it would not contribute to conservation targets or timber volumes. Therefore their transfer to Aboriginal ownership will not affect the NPWS/State Forest position.

In the Bega LALC boundary ares which have been identified for ownership have all been for their cultural significance. Ownership is seen as the best protection. Many of these areas are already under the control of NPWS. Further, there are no known proposals to harvest timber on Little Brown Mountain, at Mogreeka Inlet or on the Djirranganj sites. Therefore, Bega LALC's ownership proposals will have no effect on the NPWS/SF position.

In Merrimans LALC Bermagui North State Forest has been identified for Aboriginal ownership along with some very small areas. This area hs been identified for socio-economic purposes (especially employment) wahich is not inconsistent with its continued status as a production area.

Comparison with CFMEU/FPA/NAFI Position

The analysis in terms of the areas identified for Aboriginal ownership are similar to the NPWS?SF position except that in the Bega LALAC boundary the Djirranganj sites appeared to have been identified for reserves.

This position is not affected by the proposals for Aboriginal ownership.

Comparison with Conservation Movement's Position

This does not appear to differ from the NPWS/SF position in regard to the impact of the Aboriginal ownership proposals.

Aborignal Ownership with Conditions

This has been referred to up until now as aboriginal ownership with leaseback to the Government. The term "leaseback" was not intended to necessarily referred to the provisions of the *National Parks and Wildlife (Aborginal Ownership) Act 1996* so the term "Aboriginal ownership with conditions" has been used to replace it.

Comparison with NPWS/SF Position

Eden LALC ha identified all Interim Deferred Forest Areas in this category. These areas were chosen on the basis that they were the best available data on what lands may be transferred from State Forests to the NPWS. Eden LALC wishes to have ownership with leaseback to the Government on whichever lands in its boundary which are to be transferred to NPWS. These lands are to be managed in ajoint arrangement between the LALC and the Government.

This will not affect the outcomes of the NPWS/SF position becausse it is only aimed at lands wahich are to be transferred to NPWS.

Bega LALC has identified areas currently in National Park and in State Forests for ownership with conditions. The areas already in national park (Tantawangalo National park, Biamanga National Park, Bournda nature Reserve and part of Wadbilliga National Park (Brogo Dam) or to be new national parks (part of Tantawangalo State Forest) can become Aboriginal-owned national parks and therefore have no impact on either the National Parks and Wildlife Service or State Forests of NSW.

Mumbulla State Forest has been identified for ownership with leaseback for conservation. This may not be compatible with proposla for use for continued timber harvesting in the NPWS/SF position.

The west part of Tantawangalo State Forest, Tanja State Forest and Evans Hill have been identified for ownership with leaseback arrangements to secur the Aboriginal cultural, traditiona, historical and socio-economic (tourism) values of those ares. This is compatible with the NPWS/SF position so long as the approporiate management regimes are put in place through negotiation with Aboriginal people.

Biamanga National Park and Aboriginal Place has been identified for ownership with leaseback to the NPWS and is a joint proposal between Bega and Merrimans LALCs. This can be accommodated in the NPWS/SF position and there is no dispute about its Aboriginal cultural significance.

Merrimans LALC has identified areas of State forest (Murrabrine, Murrah and Bermagui State Forests) for wonership with conditions. urrabrine State Forest and part of Murrah State Foest has been identified for conservation Merrimans LALC believe these should then become Aboriginal-owned national parks. Murrah could be easily added to the Biamanga proposal.

Part of the Murrah and the Bernajui State Forests have been identified in the NPWS/SF position to remain as State Forest. This is consistent with Merrimans LALC's position if the land is to be trasferred to Merrrimans LALC with conditions or arrangnents which allow for ongoing use in a sustainable manner.

Comparison with CFMEU/FPA/NAFI position

In Eden LALC's boundary there is no difference to the effect on the NPWS/SF position.

In Bega LALC's boundary Evans Hill has been identified for conservation and less of the Tantawangalo State Forest has been identified for conservation and less of the Tantawangalo State Forest has been idnetified for conservation compared with the NPWS/SF position. These minor changes can be accommodated within Bega LALC's position.

In Merrimans LALC's boundary more of Murrabrine State Forest and different parts of Murrah State Forest have been identified for conservation reserve. These minor changes can be accommodated in Merrimans LALC's position as it supports a flexible outcome, particularly in Murrah State Forest.

Comparison with Conservation Movement's Position

In the Eden LALC boundary there is no difference in impact from Eden LALC's position compared with the NPWS/SF position. Eden LALC notes the recommendation of small sawmill management zones (SSMZ) and states that this is not the recommendation of the Eden LALC.

In Bega LALC's boundary the only changesa from the NPWS/SF position are the identification of Evans Hill fore reserve (which can be accommodated and Tanja and Mumnulla State Forests as SSMZs. It is unclear what the SSMZs will mean for Aboriginal ownership aspirations but Bega LALC supports this concept for Mumbulla State Forest subject to Aboriginal ownership with appropriate conditions.

In Merrimans LALC's boundary more of Murrabrine State Forest and Murrah State Forest have been identified as reserve and the rest of Murrah has been idnetified as a SSMZ. These changes can be accommodated within Merrimans LALC's position subject to further clarification about Aboriginal ownership and and the SSMZs.

Joint Management

Joint management is a broad term which encompasses Aboriginal input into management government controlled land on a regional level, on a park by park basis and/or for specific functions such as assessment of Aboriginal cultural heritage.

Generally, management matters will be able to be worked out through arrangements/agreements/memoranda of understanding with the relevant government agency and stakeholder groups. Therefore, they can easily be accommodated with each of the positions.

Eden LALC has identified all public lands within its boundary for joint management. This management includes assessment of Aboriginal culturla heritage before any developments occur, representation on the

relevant advisory bodies which oversee the management of State frests and national parks and the ability to access public lands for socio-economic purposes such as ecotourism.

Bega LALC's joint management aspirations include ongoing negotiations with NPWS, State Forest and other stakeholders over part of Wadbilliga National Park, Glenbog State Forest, Glen Allen State Forest, Mimosa Rocks National Parks, the stretch of land from aragunna to Benegunna Point and Bournda National Parks for protection of Aboriginal cultural heritage, employment creation, and socio-economic advancement of Aboriginal people.

In the Merrimans LALC boundary Wadbilliga National Park has been identified to allow access for tourism and for traditional purposes. This may be inconsistent with the proposed Wilderness extension.

Matters for the NSW Government

Correspondencce has been received from NPWS and State Forest in regard to management issues within lands those agencies manage. Both agencies have agreed to enter into agreements with the relevant Aboriginal group to allow more flexibility of use and management in regard to Aboriginal interests and also to put in place interim arrangements while more permanent ones can be negotiated.

NPWS has indicated that it is willing to consider the following issues regarding NPWS-managed land:

- Memoranda of Understanding for the management of areas identified as future Aboriginal-owned national parks;
- access for Aboriginal people to nanational park for traditional, ceremonial and recreational purposes;
- employment of Aboriginal people for the repair of Aboriginal sites in the Mumbulla Falls area; and
- cooperation in the development of Aboriginal tourism ventures.

The details of these proposals, particularly what is meant by "traditional purposes", are still being finalised. Thie issue of Aboriginal people controlling the heritage assessment process prior to developments is still to be resolved.

State Forests have stated that a package of arrangements are possible:

- guarantee the right of access to traditional values and usses and recognise them in the State Forest planning process;
- shared decision-making and cooperative management on identified areas;
- security of those rights and arrangements in hunting and gathering agreements, licenses and Memoranda of Understanding; and
- interim arrangements such as occupaation permits for areas identified for ownership or leasdeback for cultural/economic significance.

There are some issues which will need to be resolved at the executive level of government. Local Aboriginal communities believe the NSW Government must address these issues as their resolution will define the seriousness with which Aboriginal concerns are to be treated in the CRA/RFA process. These are:

- the endorsement of the transfer of areas of land to Aboriginal groups wich have been specifically identified for Aboriginal ownership as a desirable outcome in the CRA/RFA process;
- the endorsement of the transfer of other areas of land conditional on certain cooperative arrangements such as leaseback to the NPWS and agreements with government and industray to allow them access for commercial purposes as a possible outcome in the CRA/RFA process; and
- a commitment to implementing the abaove within agreed timeframes which must include reconsideration of the current NSW Government position that no further lands will be put on the Schedule for Aboriginal owned national parks until the initial five areas in other parts of the State have been resolved, the use of

existing legislation such as the land claim process under the *Aboriginal Land Rights Act 1983*, and any necessary changes to legislation.

APPENDIX 12.1

ASSESSMENT OF MANAGEMENT SYSTEMS AND PROCESSES FOR ACHIEVING ECOLOGICALLY SUSTAINABLE FOREST MANAGEMENT IN NEW SOUTH WALES (INDEPENDENT EXPERT WORKING GROUP CONSULTANCY)

KEY RECOMMENDATIONS

Legislation

Key Recommendation 1:
A whole of government process to develop natural resources legislation should be put in place. Parts 3 and 4 of the *Environmental Planning and Assessment Act 1995* should be considered as a potential vehicle for integrating natural resource management in view of the following characteristics of that legislation:

- broad plan-making powers;
- a well-developed assessment procedures and approvals process;
- a well-understood system of community participation including review by the courts;
- potential to move beyond constraints on land use to active management;
- potential applicability to both public and private land.

In the short term, to reduce complexity at the level of operational regulation and as a move towards a 'one-stop shop':

- there should be a review of separate requirements for approvals under existing legislation with a view to replacing them with concurrence procedures.

Information management

Key Recommendation 2:
Information collation, analysis, communication and dissemination for delivery of ecologically sustainable forest management in New South Wales should be improved by:

- storing, analysing and disseminating State-wide information required for delivering ecologically sustainable forest management, including all existing digital, biophysical, socio-economic and cultural heritage data;
- developing protocols for data collection;
- maintaining standards of data quality, storage and transfer;
- identifying gaps in current knowledge;
- guidance on data 'capture' (collection) and inventory activities;

- better training and advice to staff by agencies;
- facilitating the free exchange of data between government agencies and making data available to stakeholders, local councils, and the public; and
- provision of existing information to interested parties for the cost of data retrieval and handling.

A single forest resource information unit should be created within the New South Wales Government to take responsibility for information management.

Public participation in forest use decisions

Key Recommendation 3:
The expert working group acknowledges the benefits of direct stakeholder participation in negotiated outcomes. The opportunity for public comment in decision-making processes should be focused at the strategic planning level, for example:

- environmental planning instruments (including regional vegetation management plans);
- strategic management area plans (including both forest and park management plans); and
- cross-tenure threat abatement and species recovery plans.

Greater attention should be given to ensuring that those nominated to membership of consultation committees adequately represent stakeholder interest.

Regional managers should negotiate with Aboriginal groups on the most appropriate ways for them to contribute to the formulation of strategic plans.

Opportunities for public participation at other levels should be confined to situations where there is likely to be a significant effect on the environment and where decision-making processes have not been properly implemented.

In order to facilitate the regional forest agreement process and forest management after agreements are negotiated, ongoing formal processes (such as regional forest forums) need to be strengthened to raise awareness and understanding of ecologically sustainable forest management and how it can be achieved in New South Wales forests.

Costing of ESFM

Key Recommendation 4:
Improved mechanisms are needed for collecting and using information to enable cost-effective decision making. Accounting practices that allow full costing of all inputs to forest management should be developed. Without efficient costing of management efforts, the delivery of ecologically sustainable forest management components (environmental, social and economic) is at risk, and opportunities to develop more cost-effective procedures could be lost. Systematic trials to assess the cost-effectiveness of alternative operational prescriptions should be undertaken. In particular, ‘impact costing’ should be used to ensure stakeholders fully appreciate the cost implications of their expectations.

Strategic planning for public forests

Key Recommendation 5A:
Strategic planning in public forests must be strengthened. While the format of plans prepared by the National Parks and Wildlife Service generally meets requirements for ecologically sustainable forest management, there is a need to complete plan preparation for all parks. For State Forests, a new strategic management area planning model able to deliver ecologically sustainable forest management needs to be developed. Such management area plans:

- must be developed by the responsible management agency;
- should initially draw on and be consistent with regional forest agreements;

- must be approved by the forest regulator (see later);
- should require an annual report to the regulator on achievements in relation to the plan;
- must be subject to periodic review (for example, at 5–7 year intervals) or as required by exceptional circumstances, and
- after review, should be resubmitted to the forest regulator for approval.

The strategic management area planning process must:

- assess environmental impacts in sufficient detail to allow management plans to replace the environmental impact statement process;
- set targets (for example, sustainable yields, size of animal populations, degree of site disturbance);
- provide opportunities for public exhibition and comment;
- allow determination by the forest regulator; and
- provide opportunity for review by the courts.

This process would be ongoing, providing a basis for adaptive management and continuous improvement, and represent the primary public forum for discussion and involvement in forest management.

Key Recommendation 5B:
Given the distribution of forest across several land tenures, National Parks and Wildlife and State Forests should coordinate their approach to the management of the comprehensive, adequate and representative reserve system, often referred to as the CAR reserve system (which is based on criteria defined by JANIS, the committee established to ensure the implementation of the National Forest Policy Statement), (see also Key Recommendation 13B).

Private land planning and management

Key Recommendation 6A:
The current system of project-based assessment and approval for private forests should be replaced by one based on:

- regional (cross-tenure) land use planning (for example, regional vegetation management plans);
- preparation of a private forest management plan;
- use of codes of practice for all significant activities within each planning zone;
- preparing private forestry management plans, where forestry is proposed on specific sites;
- enhanced monitoring by the forest manager; and
- periodic review of the private forest management plan and its outcomes in terms of ecological sustainability, undertaken by the forest regulator.

Key Recommendation 6B:
The development of a regional approach to private forest management based on regional vegetation management plans and private forest management plans should be expedited. Improved vegetation management plans should use information derived from comprehensive regional environmental surveys that take into account the conservation status of forest ecosystems across all tenures and consider such elements as biodiversity, soil, water and cultural heritage. The vegetation plans must also acknowledge the fundamental distinction between clearing for agricultural and residential purposes and sustainable native forest management.

Committees preparing regional vegetation management plans must possess adequate technical expertise in relation to the science/practices involved in ecologically sustainable forest management. Processes to effectively capture relevant information need to be developed.

In terms of the forest resource, regional vegetation management plans must:

- assess effects of management practices on individual forest values at an appropriate scale, which may be larger or smaller than the area covered by the plan, when setting zone boundaries;
- include minimum targets consistent with regional determination of the comprehensive, adequate and representative (CAR) reserve system for retention of forest cover;
- indicate specific zones and procedures essential to meet CAR reservation targets for forest communities that are inadequately protected on public land;
- maintain or increase the values realted to ecologically sustainable forest management above regional targets;
- identify areas of forest suitable for restoration;
- contain a requirement for monitoring compliance with plans;
- include coordinated cross-tenure plans for habitat corridors and links in and between forests across all tenures; and
- involve landholders at an early stage in the planning process.

Private forest management plans should be prepared according to strict guidelines that:

- include systematic vegetation, habitat and fauna surveys as a foundation for planning;
- implement standardised 'clearing codes' to maintain forest connectivity across tenures;
- maximise opportunities for development trade-offs in urban areas as an incentive for conservation.

Key Recommendation 6C:
Private forest management plans and threat abatement plans should be prepared to an approved standard and approved by the forest regulator.

Key Recommendation 6D:
Compulsory codes of practice designed to achieve sustainable management of private native forests must be put in place. An appropriate vehicle would be a State environmental planning policy.

Key Recommendation 6E:
Development proposals for forests should be exempt from requirements to undertake 8-point tests and environmental impact statements where:

- they are within specified zones identified on proposed regional vegetation management plans and are incorporated into local environmental plans and regional environmental plans;
- comprehensive regional environmental surveys have been undertaken;
- impacts of activities are known with a high level of scientific certainty;
- approved codes of practice have been adopted for the proposed activities; and
- effective monitoring and enforcement procedures are in place.

Management of forests to protect conservation values

Key Recommendation 7:
Consistent with the intent of the National Forest Policy Statement and the nationally agreed JANIS conservation criteria for forests, conservation targets should be met through a combination of dedicated forest reserves, areas protected within State forests, and areas zoned for management by special prescription. Increased consideration should be given to the capacity of forest areas outside national parks and reserves, often referred to as 'non-dedicated' or 'off-reserve' forest, to contribute to meeting conservation targets, because in some circumstances this 'off-reserve' component can result in enhanced and more balanced ecologically sustainable forest management outcomes. Resources should be committed to quantifying the potential of carefully managed private native forests to contribute to conservation objectives.

While establishment of a comprehensive, adequate and representative system of forest reserves represents a significant step in achieving protection of conservation values, active on-going management of the reserve system is also crucial. Increased emphasis must be given to managing the biological resource for specified objectives, taking into account the contribution of all tenures.

Management of threatening processes

Key Recommendation 8A:
Threat abatement plans must be prepared for all recognised major threatening processes (including fox and cat predation, clearing on private land, loss of tree hollows, grazing, frequent burning, weed invasion and disturbance by exotic animals) as a matter of urgency (within three years). These plans should be prepared prior to or concurrently with recovery plans prepared for individual threatened species significantly affected by these processes. Recovery plans should be prepared for groups of threatened species affected by common threatening processes and prioritised according to extinction risk. Consideration should be given to extending completion dates for individual recovery plans for threatened species at low risk.

Key Recommendation 8B:
A threat abatement unit should be created to develop regional cross-tenure threat abatement plans (to counter significant threatening processes) and to implement recovery plans for threatened species.

Codes of practice

Key Recommendation 9:
Application of effective codes of practice to guide planning and operations is critical to achieving ecologically sustainable forest management, but currently codes are only applied in a significant way in public wood production forests.

The role of codes of practice in supporting the implementation of ecologically sustainable forest management in New South Wales should be expanded by:

- developing and approving legally binding codes to address all important activities across all land tenures in New South Wales forests, including wood production, conservation reserve management, grazing, pest management and clearing.
- ensuring that such codes contain sufficient detail to guide protection of environmental values at appropriate scales;
- providing adequate resources to expedite the development of such codes and their effective implementation in forested areas;
- implementing codes within the framework of an environmental management system in public forests to facilitate:
  - agencies and organisations implementing codes to demonstrate compliance with codes through independent means;
  - regular public review processes to ensure that codes reflect continual improvement and best-practice concepts.

Monitoring ecologically sustainable forest management

Key Recommendation 10:
All New South Wales government departments with a direct forest management responsibility should implement long-term monitoring programs so as to be able to track changes in important forest values. Monitoring methods must be able to detect changes at spatial and temporal scales that are significant for ecologically sustainable forest management. A set of key indicators for ecologically sustainable forest management should be selected, used and subject to ongoing improvement. These indicators should be compatible with the regional framework and the core set of indicators developed by the Montreal Process

Implementation Group, a national committee working to identify criteria and indicators for reporting ecologically sustainable forest management. Supplementary indicators that cover additional locally important values should also be used.

The setting of targets (for example, sustainable yields, size of animal populations, degree of site disturbance) essential to interpreting effects of forest management on forest values should occur as part of the strategic planning process.

Environmental management system

Key Recommendation 11:
All New South Wales departments with direct forest management responsibility should develop and implement a recognised (and certifiable) environmental management system. Further details of the requirements for implementation of such a system can be found in Chapter 7 and Appendix A. The environmental management system is essential to ensure continual improvement of forest management ('adaptive' forest management) and to permit effective audits that demonstrate compliance with principles and regulations for ecologically sustainable forest management.

Essential components of adaptive forest management that are currently poorly developed and need to be strengthened to include performance measures that can gauge whether management is ecologically sustainable and review processes that will lead to continual improvement in the management system.

The results of applying the environmental management system and the outcomes of management plans should be publicly reported to raise community confidence that ecologically sustainable forest management is being achieved. Regulatory compliance should also be reported and subject to independent validation.

Co-ordination of research and development

Key Recommendation 12:
Steps should be taken to achieve better coordination and effective use of resources allocated to research for ecologically sustainable forest management in New South Wales government agencies. Such action should lead to the formation of a single research unit that services the needs of both forest management and regulation. A single unit would improve research co-ordination and strengthen the focus on meeting the needs of ecologically sustainable forest management , which are often generic across tenures. The unit should undertake formal collaborative work with external research providers to enhance multidisciplinary research. There is merit in linking the proposed forest resource information unit to the activities of the research unit and in co-locating these two units.

Institutional structures

Steps should be taken to separate existing forest regulatory and management functions and to improve the cost-effectiveness of regulatory procedures.

The expert working group recognises recent structural changes within the New South Wales forest management system and the need for some consolidation.

Key Recommendation 13A:
In the short term, an inter-agency coordinating group involving existing regulatory agencies should be established to:

- better coordinate planning in relation to cross-tenure issues;
- ensure consistency of plans with the regional forest agreement and other hierarchical components of the planning structure;
- coordinate the process of granting licences and approvals;
- coordinate independent audits of processes and outcomes;
- ensure better implementation and enforcement of regulations;

- improve response to public concerns about inadequate compliance with policies and codes; and
- effectively report to the public and government of the findings from audits.

However, even in the short term, it is essential that the following functions are managed and approved by a single agency:

- responsibility for ensuring that forests-related plans address management requirements for ecological sustainability and specify ecologically sustainable management targets (such plans include, for example, management area plans for public forests; regional vegetation and private forest management plans; and local and regional environmental plans);
- responsibility for establishing an effective code of forest practice system, including the approval of codes and methods for their implementation (see key recommendation 9);
- responsibility for ensuring that monitoring (by the forest manager) of agreed ecologically sustainable forest management outcomes is conducted (see key recommendation 10).

Within three years, the position of forest regulator should be established as a means of more effectively performing the above functions which are necessary for achieving ecologically sustainable forest management and to approve operations not adequately addressed by codes of practice or approved plans of management.

Key Recommendation 13B:
There is a need to strengthen cooperation and coordination between Government agencies so as to achieve integrated management for conservation, wood production and other values in both public and private forests. Specifically:

- active management across tenures of the comprehensive, adequate and representative (CAR) reserve system (formal and informal reserves and areas managed by prescription);
- complementary management of general wood production zones within State Forest;
- effective threat abatement practices;
- an appropriate balance between recreation and conservation;
- more effective management and use of resource information supporting ecologically sustainable forest management ;
- more effective use of expertise;
- support for private native forest management;
- better strategic management area plans;
- better coordination of research and development;
- more effective communication of ecologically sustainable forest management outcomes.

In order to promote cultural change within existing forest agencies, the formation of an interdepartmental coordinating committee may provide some interim benefit. However, in the medium-term, a more effective option would be the formation of a Natural Resources Management Agency with management responsibility for all public forested land and a support function for managers of private forested land.

This recommendation is contingent upon the creation and filling of the position of forest regulator in order to assist in maintaining a balance between forest uses. The proposed natural resources agency will be guided in balancing conservation and wood production objectives by objectives specified in RFAs, requirements of the external regulator, and by other government policy.

A logical corollary of the proposals in Recommendations 13A and 13B will be to extend them so as to cover not only forests but all natural resources. However, this is outside the expert working group’s terms of reference.

Key Recommendation 13C:
Private forest managers should be given assistance with the implementation of ecologically sustainable forest management, including:

- technical assistance in the preparation of conservation management plans, private forest management plans and individual timber harvesting plans;
- negotiation of conservation agreements; and
- the provision of advice and training in relation to codes of practice.

A Private Forest support Unit should be established to assist forest managers.