

Dear Chairman,

RE: Legislative Council Select Committee on the Tasmanian Forests Agreement

I am writing responding to the request from the Legislative Council Select Committee for further information on the conservation values of the proposed reserves for consideration under the Tasmanian Forests Agreement.

In addition to the joint ENGO submission, the tabled documents and our two presentations to the legislative council, I am hoping that the following information may provide additional assistance.

1. The Independent Verification Group Conservation reports

As previously referenced in our written and face-to-face presentations to the committee, the Independent Verification Group conducted a comprehensive and rigorous scientific analysis of the conservation values contained in the forests proposed for reservation by the ENGOs under the IGA. The conservation assessment was led by Professor Brendan Mackey and included work completed by a range of highly respected conservation experts, including Dr Michael Lockwood, Peter Hitchcock AM, Professor Chris Johnson, Dr Menna Jones, Dr Peter McQuillan, amongst others. These experts conducted a suite of conservation analyses of the proposed reserves against 10 key conservation criteria.

The ten criteria (see Figure 1.) used by the IVG scientists to assess the conservation values of the proposed reserves are established in Australian Government forest, biodiversity and environmental conservation commitments as articulated in international law (Convention on Biological Diversity, World Heritage Convention), Commonwealth law and national policy statements. These include the 'JANIS-CAR' criteria, established in a 1997 report outlining the 'Nationally Agreed Criteria for the Establishment of a Comprehensive Adequate and Representative Reserve System for Forests in Australia.' JANIS-CAR is a formal methodology which reflects foundational conservation values which inform Australia's National Biodiversity Strategy, the National Reserve System and Australia's commitments under the Convention on Biological Diversity.

Figure 1. IVG criteria, as established in Australian Government forest, biodiversity and environmental conservation commitments as articulated in international law (Convention on Biological Diversity, World Heritage Convention).

(i)	<i>Representation of forest biodiversity;</i>
(ii)	<i>Habitat for listed threatened species;</i>
(iii)	<i>Refugia;</i>
(iv)	<i>Old-growth;</i>
(v)	<i>Wilderness;</i>
(vi)	<i>Heritage;</i>



(vii)	<i>Connectivity;</i>
(viii)	<i>Restoration;</i>
(ix)	<i>Ecosystem services</i>
(x)	<i>Unique features.</i>

The suite of expert conservation reports conducted by the IVG group of experts are listed at Appendix A at the end of this document, and can be downloaded from:-

<http://www.environment.gov.au/land/forests/independent-verification/report.html>

Many of the conservation analyses contained within the conservation technical report(s) contain spread-sheets analysing mapping unit(s) from within the ENGO proposed reserves against the particular conservation criteria being assessed. These data spread-sheets and other technical information can be found within the body of the various conservation technical report(s).

As discussed during our presentation to the select committee, the “*Summary report of conservation values*” contains a useful 88 page summary of the findings of all of the conservation technical reports, including a spread-sheet at the end of the document of the species whose core range intersects with the ENGO proposed forest reserves.

2. The conservation values of the forests proposed for reservation

The 295 ‘lots’ under Schedule A of the proposed legislation, are administrative mapping units drafted by the Tasmanian government as part of the legislative process for the gazettal of the proposed reserves, and were identified and delineated for that specific purpose by the relevant departmental personnel. The conservation values of these forests proposed for reservation are extensive and well documented, and the Schedule A “Annexure” and “Lot” maps can easily be cross-checked against maps contained in the relevant reports and assessments on the conservation values of the proposed reserves over the past 2 years of the process, along with previous scientific reports compiled in previous processes.

However – we would caution against attempting to interpret the conservation values of individual lots or mapping units in isolation. Whilst the presence of conservation values can be identified by lot, this value is often dependent on ecological processes and habitat connectivity which extends across a region, or whose values may be dependent on the management and protection of adjacent reserves or other conservation values. A landscape-scale approach to conservation is crucial to achieving long-term ecological protection and resilience. This principle is noted strongly in the Independent Verification Group assessments – for example in the heritage report; “*Given that much of the assessment was conducted using a holistic approach it would be a mistake to disaggregate the various parcels when considering implementing as a significant number of land parcels are interdependent.*”

As tabled during the legislative council select committee hearings, the conservation case for the reservation of the forests nominated for protection by environment and community groups has been developed and refined over 30 years. In August 2011, eNGOs published the report *Tasmania’s Native Forests: Places for Protection*, which is a compilation of over 600 pages summarizing 30 years of scientific, government and community group reports that underpinned the development of the eNGO



reserve proposal on public land.¹ The conservation values prioritised by eNGOs in determining the native forests proposed for reservation, and encompassed within the 295 lots in Schedule A include:

- Large intact natural forest areas;
- Forest areas displaying ecological maturity;
- Forest areas of social, cultural and spiritual importance to local, national and/or international communities;
- Forest ecosystems and habitat with important biodiversity values;
- Forest areas that contribute to good reserve design (eg buffering and ecological connectivity); and,
- Forests with important ecosystem service functions (eg carbon rich forests, water catchments)

The documentation contained in the tabled reports provides simple maps, conservation audits and summary reports on conservation values that can easily be cross-checked against the relevant Annexures and lots contained in the bill for any member wishing to study in more detail the conservation values contained in particular lots.

In addition, as discussed during the presentation, at the insistence of the two governments and industry, an Independent Verification Group of Independent Experts was established in 2011 to conduct a rigorous scientific assessment of the conservation values contained in the reserves proposed for protection

Some of the key findings of the independent experts' assessment of the proposed reserves include that;

- The proposed reserves contribute substantial and significant gains to protecting conservation values associated with the habitat of many threatened listed and priority plant and animal species; evolutionary refugia; old growth; World Heritage and National Heritage; the ecosystem service of carbon storage; connectivity for key species and adaptation capacity to climate change; and unique features associated with Tasmanian eucalypts.
- The ENGO forests would improve the NRS status and reduce the extinction risk of all major EPBC listed groups including crustacean (vulnerable), fish (endangered) and invertebrates (critically endangered, endangered, and vulnerable). The ENGO forests would increase the NRS reservation of 16 listed species by at least 25% and 40 species by at least 5%. These species include the giant freshwater crayfish, the grey goshawk, azure kingfisher, swift parrot, fort-spotted pardalote, Tasmanian wedge-tailed eagle, masked-owl and eastern barred bandicoot.
- Over half of the proposed reserves are ranked high priority for improving the reservation status and connectivity for Tasmanian devils, spotted-tailed quolls and eastern quolls.

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<http://www.et.org.au/system/files/userfiles/Tasmanias%20Native%20Forests%20Places%20for%20Protection%20August%202011.pdf>



- The creation of the proposed reserves would result in an improvement of the Comprehensiveness of the National Reserve System (NRS) of around 17 per cent, as well as improving the Representativeness of the NRS, particularly the number of vascular plant species found in each forest ecosystem type.
- The proposed reserves make from a 'medium' to 'extremely high' contribution to priority flora protection. Two nationally listed species have 100% of their known distribution protected within the proposed reserves, 10 have 40%. The serves make a globally significant contribution to preservation of paleo-endemic flora.
- The majority of proposed reserves meet one or more National or World Heritage criteria, including the presence of outstanding examples representing major stages of earth's history, outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals; and the presence of significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation
- (Taken directly from the summary report); *"Relatively substantial and significant gains were revealed regarding the contribution of the ENGO forest to protection conservation values associated with: the habitat of many threatened listed and priority plant and animal species; evolutionary refugia; old growth; World Heritage and National Heritage; the ecosystem service of carbon storage; connectivity for key species and adaptation capacity to climate change; and unique features associated with Tasmanian eucalypts."*
- *"... The ENGO forests would improve the NRS status of all major EPBC listed groups including crustacean (vulnerable), fish (endangered) and invertebrates (critically endangered, endangered, and vulnerable)... The ENGO forests make a contribution to the protection of the core and known ranges of most major groups of priority fauna, including terrestrial mammals, crustaceans, fish and invertebrates listed under the Environment Protection and Biodiversity Conservation Act as nationally endangered & vulnerable...."*
- *"Over half of the proposed reserves are ranked high priority for improving the reservation status and connectivity for Tasmanian devils, spotted-tailed quolls and eastern quolls... The ENGO forest in the northeast of Tasmania and along the Eastern Tiers would greatly improve reservation / protection status and connectivity for the sympatric carnivore guild. There is also potential to greatly improve connectivity and population protection in the southern forests / Derwent Valley.... The ENGO forest would contribute strongly to the reservation of priority crayfish... For terrestrial invertebrate species the proposed ENGO reserves would protect >40% of additional habitat for 10 species (7 rare land-snails and 3 vulnerable stage beetles)... The ENGO forest substantially improves the reservation of a range of priority flora species"*
- The report also states that: *"It is apparent that beyond the ENGO proposed reserves, state forest land in Tasmania has been extensively logged and/or converted to plantation with the result that much of the natural heritage values have been destroyed or severely degraded. The*



ENGO reserves have been found to mainly encapsulate most of the remaining intact forests. It follows that the ENGO proposed reserves represent the last chance to address and protect many natural heritage values on forested public land". Summary of conclusions. Pg 18.

The conservation values of the reserves contained in Schedule A, included the Annexures and 295 lots, can easily be cross-checked against the 10 key conservation criteria assessed as part of the Independent Verification Group. A simple way to do this, can be through the maps contained in the IVG conservation reports – which can be referenced against the maps provided to the legislative council in Schedule A and associated Annexures.

For example, maps that we tabled at our presentation, and that would be useful “ready reckoners” for conservation values contained in the individual lots, include but are not limited to;

Report 2A Priority flora and Map 2A. Figure 1. Proposed ENGO reserves that improve the reservation of priority threatened flora species, Report 2B: Priority fauna (which contains multiple maps demonstrating the distributing of priority fauna species), Report 3C Eucalypt diversity maps, Report 5A Map (i) Heritage values of ENGO proposed reserves, 5A Map (iii) Area regenerated on state forest since 1960 and plantations all tenures, Report 7A: Distribution of large marsupial carnivores.

The lots and annexures contained in Schedule A can easily be cross-referenced against any one or all of these maps for particular conservation values.

In addition, we note that there is a useful set of “Area specific findings” contained in pages 10-13 of the heritage report 5A. This in combination with the Heritage Report 5A Map (i) Heritage values of ENGO proposed reserves also provides a very useful and simple “ready reckoner” to some of the important heritage values of the proposed reserve areas, on a regional or area specific basis. We have copied these “Area specific findings” from the heritage report into Appendix B below for reference, along with bracketing the Schedule A Annexures in which the specific identified areas are found in Schedule A. The Heritage Report Map is also included in Appendix B below.

In addition, we have compiled a very short summary of some of the conservation values identified in the IVG process for the proposed reserves for the twenty-five annexures which the Tasmanian Government has used to group the 295 lots mapped in Schedule A of the Tasmanian Forests Agreement Bill 2012 as future reserve land. In a limited timeframe and to assist the legislative council members we have provided reference to some of the conservation values contained in the annexures (listed as Appendix C below) – but this represents only a small snapshot of the conservation values which were analysed and reported on in thorough detail in the full Independent Verification Group Conservation Assessment reports. **Much more rigorous and comprehensive conservation values data is contained in the full IVG conservation reports.** As mentioned above – we would reiterate our caution against attempting to assess individual lots against individual conservation values. Whilst some conservation values may be specific to a particular lot – others may be more important in context to a region or landscape, and surrounding reserves design and land management considerations - and so context for the entirety of the conservation assessment is critically important.



If any legislative council members wish to seek assistance with more conservation values information about any particular reserve(s) area or area(s), including facilitation of meeting(s) with expert(s), field visit(s) or any further presentations, we would be very happy to do what we can to provide further information or assistance.

In summary, the forests proposed for reservation through the legislation before parliament, represent some of the world's most outstanding native forests ecosystems. They include the world's tallest flowering plants, Australia's largest tract of cool temperate rainforest, glacial refugia with lineage back to the last ice age, areas of critical importance to threatened species such as the Giant Freshwater Crayfish, and the Swift Parrot, and areas of outstanding natural beauty.

We warmly welcome the Legislative Council's interest in the important and outstanding nature conservation values contained in the proposed reserves and reiterate our belief that a great benefit would be bestowed upon future generations through their protection. Please let us know if there is anything more we can do to assist in the Legislative Council's deliberations.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Phill Pullinger', with a stylized flourish at the end.

Dr Phill Pullinger
Director
Environment Tasmania

APPENDIX A – Independent Verification Group – List of Conservation Assessment Technical Reports

Forest conservation technical report

Summary report of conservation values (PDF - 81.7MB)

Report 1A: Comprehensiveness (PDF - 6249KB)

Report 1B(i): Representativeness: vascular plant composition (PDF - 8328KB)

Report 1B(ii): Representativeness: habitat productivity (PDF - 2.6MB)

Report 2A: Priority flora (PDF 3.9MB)

2A. Figure 1. Proposed ENGO reserves that improve the reservation of priority threatened flora species (ex threatened eucalypts and paleoendemics))

Report 2B: Priority fauna (PDF 870KB)

Report 3A: Locations of refugia for ancient and relictual invertebrate fauna (PDF - 357KB)

Report 3B: Paleo-endemic plants (PDF - 516KB)

3B Attachment - ENGO Proposed Reserve Report (PDF - 3451KB)

Report 3C: Eucalypt diversity (PDF - 1257KB)

3C. Attachment - refer to document at Attachment 3B

3C Map ENGO proposed reserves noted as having giant trees (PDF - 427KB)

3C Map ENGO proposed reserves noted as having important *E. globulus* gene pools (PDF - 427KB)

3C Map ENGO proposed reserves noted as having important occurrences of Eucalypt species (PDF - 428KB)

3C Map. ENGO proposed reserves with notable values from a Eucalypt phylogenetic, genetic and/or conservation perspective with conservation gain through reservation (PDF - 431KB)

3C Map ENGO proposed reserves noted as having important occurrences of *E. regnans* (PDF - 428KB)

3C Map ENGO proposed reserves that improve the reservation of eucalypt species (PDF - 376KB)

3C Map ENGO proposed reserves noted as having high estimated eucalypt species richness (adjusted for area) (PDF - 428KB)

Report 3D: Fire refugia (PDF - 785KB)

3D. Fire refugia index

3D. Attachment - refer to document at Attachment 3B

Report 3E: Tree hollows (PDF - 912KB)

Report 4: Defining and managing oldgrowth forests (PDF - 440KB)

Report 5A: Heritage (PDF - 7.7MB)

5A. Map(i) Heritage values of ENGO proposed reserves

5A Map (ii) Giant trees and indicative globally significant tall eucalypt forest ecosystem extant in Tasmania

5A Map(iii) Area regenerated on state forest since 1960 and plantations all tenures (current)

5A Index of area of indicative tall eucalypt forest ecosystem in ENGO proposed areas

Report 5B: Giant eucalyptus forests (PDF - 522KB)

Report 5C: Evolutionary significance (PDF - 1301KB)

Report 6: Future climate projections (PDF - 1416KB)

Report 7A: Distribution of large marsupial carnivores (PDF - 994KB)

Report 7B: Strategic landscape approach (PDF - 312KB)

Report 8A: Carbon value (PDF - 252KB)

Report 9A: ENGO proposals (PDF - 2159KB)

Report 10: Forestry impacts (PDF - 772KB)

Report 11: Land cover (PDF - 3407KB)

APPENDIX B – Independent Verification Group – Heritage Report 5A pg 10-13 “Area Specific Findings”. NB:- Schedule A Annexure references in square brackets.

Area specific findings

Southern Forests (Cockle Creek to Upper Derwent) [ANNEXURES 15,19, 20, 25]

A substantial proportion of the forested ENGO-proposed reserves adjoining and adjacent to the eastern boundary of the Tasmanian Wilderness World Heritage Area were found to have important conservation values. If added to the adjoining TWWHA they would make important contributions to its integrity. Many of these values derive from the area’s tall eucalypt forests but a significant number of areas other important heritage attributes including karst, caves, Aboriginal sites and glacial features. Given their adjacency, these important attributes would add to the values and integrity of the TWWHA. Particular attention is drawn to the potential in these areas to maintain ongoing natural processes, especially those directly relevant to the TWWHA.

• Picton–Huon–Weld and Styx valleys

Notwithstanding that significant areas have been logged, a holistic long-term view was taken in establishing the contribution that the areas can make to conserving tall eucalypt forest and associated ongoing natural processes. Some rehabilitation will be necessary to restore the ecology of the area in the longer-term.

• Styx River

This is an area of outstanding conservation value and of global significance. It is also a complicated area given the extent of recent logging, which has degraded the natural integrity of the forest landscape. The conservation values are high enough to warrant taking a holistic long-term approach, which must include rehabilitating degraded areas, including removing recently-introduced eucalypt species. The Styx offers one of the rare opportunities to protect tall eucalypt rainforest at a scale and nature that makes it possible to maintain ecosystem processes in the longer term. It also includes a good representation of the world’s tallest flowering plant, *Eucalyptus regnans*.

• Upper Florentine–Mount Field

Assessing some of the ENGO reserves in this area led to considering Mount Field National Park as an integral part of the cluster of conservation attributes. As a result, it is recommended that Mount Field National Park, together with associated ENGO-proposed reserves and public reserves, be added to the Tasmanian Wilderness World Heritage Area.

• Upper Derwent

The assessment confirmed the conservation importance of tall eucalypt forest on the west side of the Derwent Gorge. It also confirmed the importance of the potential restoration of previously identified wilderness values and the appropriateness of adopting the Derwent Gorge as a permanent boundary to the World Heritage Area.

West Coast (between TWWHA and the west coast, south of Pieman River) [Annexures 13 and 14]

It has long been recognised that this region has very important conservation values. There is also considerable interest in known and prospective mineralisation that has prevented the area being reserved as national park and/or being added to the TWWHA. Under the World Heritage Convention, there is an obligation on State Parties to at least identify and protect World Heritage values. This assessment contributes to identifying World Heritage values.



Every opportunity should be taken to at least upgrade the level of protection of these areas, if not add them to the World Heritage Area.

An aggregate of ENGO-proposed reserves and associated formal reserves identified as being collectively of World Heritage value and recommended for addition to the TWWHA is illustrated on the appended map (Map 1).

Northern TWWHA (Great Western Tiers, Central Plateau, Mole Creek Karst, Mersey, Cradle Mountain) [Annexures 9, 10, 16]

Great Western Tiers

- Some obvious ‘clusters’ or ‘themes’ were adopted to assess the heritage values and significance along the northern boundary of the Tasmanian Wilderness World Heritage Area. Many of the ENGO-proposed reserves adjoining or adjacent to the northern boundary proved to contain significant conservation values, which made important contributions to the values and/or integrity of the TWWHA. That is, they are of World Heritage significance. The net result of the assessment of the lands below the cliffs of the Great Western Tiers is a shift in the northern boundary of the TWWHA from the plateau to below the escarpment—although some related precedents already exist. Most of the proposed additions below the escarpment are obvious.

Central Plateau

- Some areas were found to be of definite importance for adding to the TWWHA. It is apparent, however, that on more eastern parts of the Central Plateau the values need to be reviewed to design a robust and sustainable north-eastern boundary for the TWWHA. More detailed study is required in this area.

Mole Creek Karst

- The ENGO-proposed reserves in the Mole Creek karst region were demonstrably of potential World Heritage significance. The ENGO-proposed reserves provide the opportunity for an important consolidation of karst protection and the addition of the balance of Mole Creek Karst National Park to the TWWHA.

As with the Tarkine and the North East, the juxtaposition of the ENGO-proposed reserves with existing formal reserves is critically important to both assessed values and significance, as well to consolidating protection.

Tarkine cluster [Annexures 1, 2, 7, 8]

This cluster was assessed as having very high conservation value of at least National Heritage significance and substantial values of global (World Heritage) significance. As with a number of other cluster sites, the existing formal reserves make a major contribution to the overall heritage value and significance of the Tarkine. It was noted that the area currently the subject of National Heritage assessment by the Australian Heritage Council has had excised from further consideration some areas which the author has assessed as potentially very important to the area’s integrity, especially its ecological integrity (Sumac Road area). An area recommended for consideration as a World Heritage nomination is shown on the attached map (Map 1). Note that the Tarkine might best be considered as an extension of the Tasmanian Wilderness World Heritage Area, especially given the likely connectivity between the two.

North Coast ENGO reserves [Annexures 1, 2]

A series of ENGO-proposed reserves along the north coast and not associated with the Tarkine, TWWHA or the North East cluster were separately assessed and presented in the report findings. Although most contained significant conservation values of state significance, none were considered to achieve global (World Heritage) level significance. Several clusters were assessed to be of National Heritage significance as follows:

- Dismal Swamp



- Rare plant community plus important geoconservation feature.
- Shakespeare Hills—Dip Range (‘Keith River Cluster’ on map)
- A substantial tract of land that is linked to the Tarkine to the south and was considered as a potential part of a Tarkine protected area. Some potentially have values which contribute to a World Heritage listed Tarkine. Based on the major extent of this cluster and its direct link to the Tarkine, the area was assessed, albeit with limited available data, as likely to be of national significance and should, as a precaution, be assessed as such.

North East cluster [Annexure 5,6, 11 and 12]

The North East and East Coast were found, with minor exceptions, to be so interconnected that they were assessed as two aggregate areas or ‘clusters’. The combined effect of all the existing formal reserves and the ENGO-proposed reserves is that it is potentially a single protected area with a high degree of connectivity between component parts. This was no surprise given the way the ‘linking landscapes’ concept had guided selection of the ENGO-proposed reserves.

It also became apparent during the assessment that the north east of Tasmania, as well as comprising bioregions separate and distinct from those in western Tasmania, also demonstrated biodiversity and genetic differences when compared with western Tasmania. This was supported by a growing amount of research. It suggests a long-standing separation of the respective biotas—the ‘two Tasmanias’. This evolutionary separation contributed to assessment of the North East-East Coast cluster(s) to be of National Heritage significance. It is very important to recognise that it is the combination of the existing reserves and the ENGO-proposed reserves that elevated the assessed significance to national significance.

Notwithstanding, ‘core areas’ such as Ben Lomond and Mount Maurice might independently rate as being of national significance because of the concentration of conservation values (rainforest, tall eucalypt outlier, glacial, geoconservation, threatened plant communities). The aggregate clusters in the North East and East Coast that are assessed as being of national heritage significance are illustrated on the attached map. They are:

North East cluster

- The North East cluster is illustrated on the accompanying summary map (Map 1). This map shows the overall extent and interconnectedness of the existing and proposed reserves.

Douglas Apsley (East Coast) cluster [Annexure 12]

- The reality is that the assessment process discovered that connectivity between the North East Cluster and the Douglas Apsley cluster was reasonably effective. This illustrates that the National Heritage significance of both clusters are ecologically linked. Indeed, the two clusters should be considered conceptually as a single protected area complex.
- As with the Southern Forests, industrial logging of the forests in the North East has now reached a critical stage, or more to the point the remaining unlogged forests have reached a critical stage. Unless the opportunity is taken to protect these remaining forest remnants, the North East will be quickly reduced to an archipelago of island reserves. This verification process has demonstrated that option for an integrated connected reserve system remains an option—maybe a case of a single ‘Swiss cheese’ reserve versus an archipelago of island reserves. Even the ‘Swiss cheese’ protected area option is of much greater heritage conservation value than a landscape reduced to isolated islands.

Other National Heritage reserves

Several other ENGO reserves or clusters of reserves not addressed in the above categories were assessed to meet National Heritage criteria. They are:

- *Wellington Range [Annexure 20]*

This was originally considered as an integral part of an ENGO-proposed reserve that



adjoined the World Heritage Area. It was decided that, notwithstanding the increasing evidence of the conservation values of the Wellington Range, it would not be appropriate as an addition to the World Heritage Area. This significant tract of mostly eucalypt forest undoubtedly has important conservation values as well, because of its connectivity to the World Heritage Area. It could, therefore, be seen as complementing the TWWHA. Together with Mount Wellington, the Wellington Range was assessed to be of National Heritage significance.

- *Bruny Island* [**Annexure 24**]

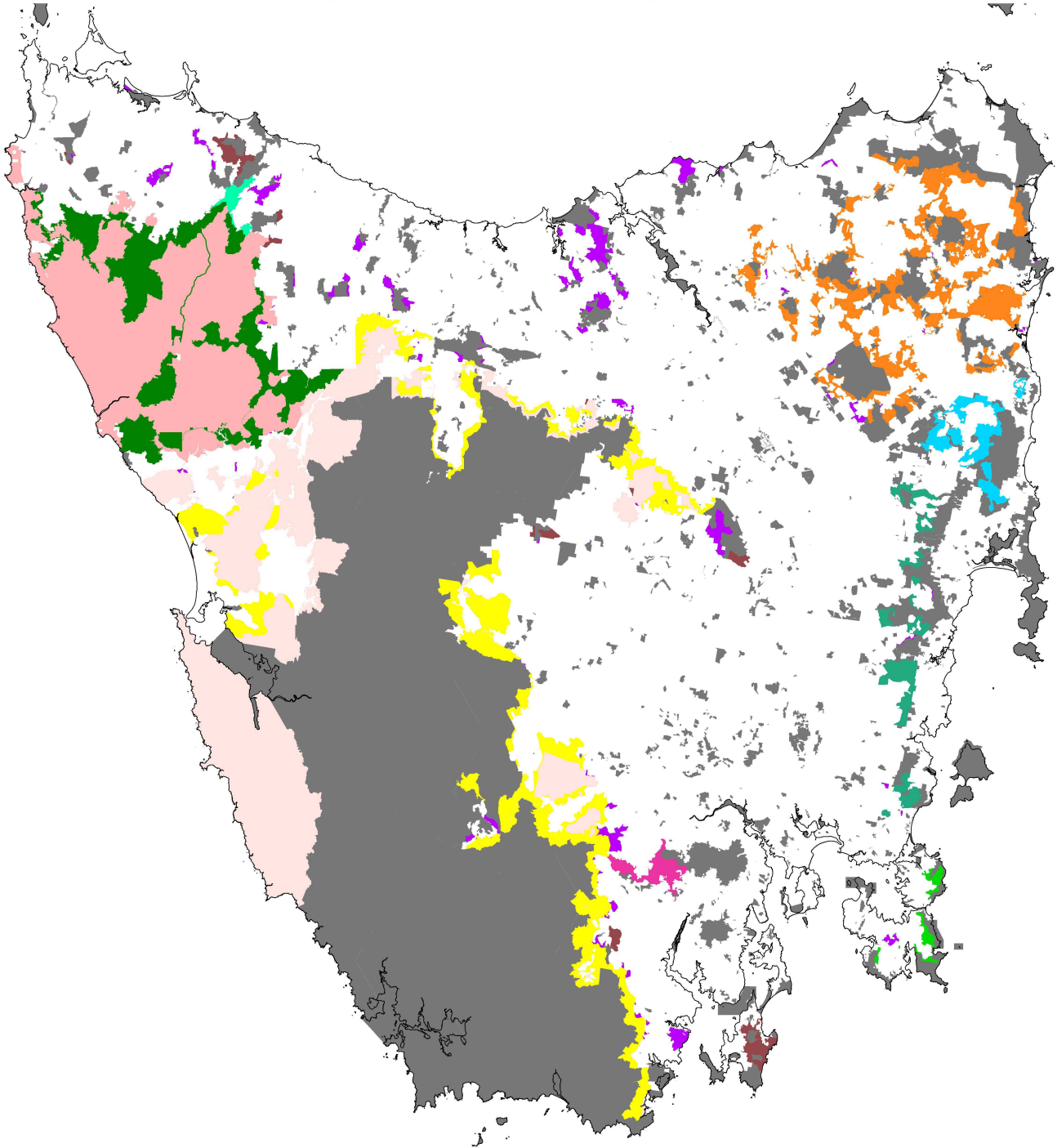
The ENGO-proposed reserves on Bruny Island were assessed as a cluster that included South Bruny National Park. A selection of the ENGO-proposed reserves, the ones that were most relevant to the National Park, was assessed as being of National heritage significance. The habitat of a nationally endangered species, the Swift parrot, was an important contribution to the assessment.

- *Tasman—Forestier Peninsula* [**Annexures 22, 25**]

The combination of conservation values in the cluster comprising both the ENGO proposed reserves and Tasman National Park were considered to be potentially of National Heritage significance. A small part potentially makes a contribution to the landscape integrity of the adjacent Port Arthur section of the Convict Sites World Heritage Area.



The Heritage Values of ENGO proposed reserves



Legend

Heritage Areas

- Other National Heritage Areas
- Shakespeare Hills Dip Range NHC
- No identified National Heritage
- Tasman Forestier HNC

- Douglas Apsley NHC
- East Coast NHC
- North East NHC
- Tarkine Proposed WHA
- TWWVHA Proposed Extensions
- Proposed Addition to IVG areas for WH

- Wellington Range NHC
- existing reserves proposed for tarkine WHA
- Existing Reserves Proposed for inclusion in an an extended TWWVHA
- National Reserve System in Tasmania



10 0 10 20 Kilometers

Data Sources ENGO proposed reserves copyright ACF, ET, TWS.
Heritage Analysis CC Consulting 2012
Map preparation and GIS analysis CAN Consulting Feb 2012.
NOTE As part of determining boundaries to capture world heritage values minor adjustments to boundaries were undertaken.

NOTE:
NHC = National Heritage Cluster
WHA = World Heritage Area

APPENDIX C – Schedule A Annexures – Conservation values short summary compiled by Environment Tasmania staff member from IVG report(s) for legislative council.

NB: More data can be collated / provided for particular areas as required.

Annexure 1

Area: The Tarkine, Sumac Forest Reserve, Dempster Plains.

Lots: 1-14.

Conservation values identified by IVG scientists:

The Tarkine contains the largest area of cool temperate rainforest in the southern hemisphere. The North-West corner of the Tarkine was found to contain important elements of eucalyptus phylogenetic and genetic diversity, old growth and mature eucalypt forest habitat and significant freshwater ecosystem values. The annexure contains critical habitat for the giant freshwater crayfish, Australian grayling fish, green tree frog, golden tree frog, striped marsh frog, azure kingfisher, grey goshawk, forty-spotted pardalote, masked owl and spotted-tail quoll. Western Tasmania is a global hotspot for plant paleo-endemics. Also identified were a significant number of ancient or relictual faunal groups which are described as globally significant within the area proposed for formal World Heritage Assessment. The annexure contains significant palaeological values including the Trowutta–Sumac Karst Systems. The area makes a very high contribution to protection of a number of priority flora including *Hypolepis distans*, *Epacris curtisiae*, *Erioderma sorediatum*, *Persoonia muelleri subsp. Angustifolia*, *Roccellinastrum neglectum*, *Caladenia pusilla*, *Orthoceras strictum*.

Annexure 2:

Area: Shakespeare Hills, Dip Range.

Lots: 14-28.

Conservation values identified by IVG scientists:

The annexure contains world heritage values, such as palaeological values at Stanley River which have proven to be of global scientific interest and the Keith–Arthur Rivers Magnesite Karst. Conservation values identified throughout the annexure relate to the presence of critical habitat for endangered carnivore and globally significant relictual invertebrate species. These invertebrate species include irreplaceable ancient Pangean and Gondwanan taxa.

Annexure 3:

Area: Emu River Forest Reserve.

Lots: 27-31.

Key conservation values identified by IVG scientists:

The proposed lots cover small parcels of land which are contiguous with the existing Emu River Forest Reserve. They have been included in the TFA reserve proposal for reasons relating to connectivity. IVG heritage expert,

Professor Peter Hitchcock, found the annexure contained high heritage conservation value and would contribute significantly to the value and integrity of Emu River Forest Reserve.

Annexure 4:

Area: Reedy Marsh, Dazzler Range.

Lots:32-41.

Conservation values identified by IVG scientists:

This annexure is part of the three hot-spots identified by the Independent Verification Group of scientists as making a high contribution to provision of refugia, improved connectivity and reduced risk of extinction for endangered, globally significant populations of carnivores including the Tasmanian devil. Conserving the area would also make a high contribution to the preservation of Priority flora species, specifically the vulnerable *Epacris virgate* and *Spyridium obcordatum*. The area provides refugia for ancient and relictual fauna. It contains old growth forest and contributes to eucalypt phylogenetic and genetic diversity by increasing the representation of *E. Amygdalina* in vulnerable TASVEG communities.

Annexure 5:

Area: Mt Arthur, North Scottsdale, Mt Stronach.

Lots:42-58.

Conservation values identified by IVG scientists:

This annexe is crucial to the preservation of old growth tall, wet eucalypt forest in the NE of Tasmania, which has been so extensively eliminated by logging, it is now of premium conservation value. The annexure makes significant contributions to conserving eucalypt species values. The area forms part of the North East reserve parcel which makes an important contribution to habitat connectivity, particularly for threatened carnivores. The Mt Arthur and North Scottsdale regions provide critical habitat for the Mount Arthur and Scottsdale burrowing crayfish. The annexure also protects priority flora species *Gratiola pubescens* and *Hypolepis muelleri*.

Annexure 6:

Area: Bay of Fires, Blue Tier.

Lots:59-77.

Conservation values identified by IVG scientists:

The Bay of Fires and Blue Tier make crucial contributions to NE habitat connectivity for threatened carnivores. Old-growth tall, wet eucalypt creates premium conservation value and national heritage significance. The annexure protects several species of at-risk, priority freshwater fauna, including the giant freshwater crayfish, dwarf galaxiad, Australian grayling, and 3 hydrobiid snail species. It makes a high contribution to protection of the Grey Goshawk and hollow-using species and makes a significant contribution to the protection of the Bornemissza's stag beetle and Simson's stag beetle. The annexure also makes a high contribution to protection of priority flora including *Agrostis australiensis*, *Baumea gunnii*, *Caladenia caudate*, *Hypolepis muelleri*, *Lobelia rhombifolia*, *Orthoceras strictum*, *Pterostylis atriola*, *Stellaria multiflora*

Annexure 7:

Area: The Tarkine.

Lots:78-86.

Conservation values identified by IVG scientists:

The annexure contains verified national and world heritage values, such as rainforests framing undisturbed rivers. Paleo-endemic flora within Lot 80 indicates ongoing natural ecological and evolutionary processes. Old-growth rainforest throughout the annexure forms part of the largest tract of cool temperate rainforest in Australia and the second largest tract of cool temperate rainforest in the world. The annexure makes a high contribution to protecting habitat for a number of priority fauna including the azure kingfisher and hydrobiid snail.

Annexure 8:

Area: Meredith Range, Savage River.

Lots:87-101.

Conservation values identified by IVG scientists:

The extraordinary, complex granite landscape of the Meredith Range has verified world heritage value. The annexure contains old-growth and tall eucalypt forest, with rainforest framing the undisturbed savage river. Rare basalt soils in the area, stemming from the largest Tertiary lava plain in Tasmania, support distinctive vegetation of outstanding conservation value including rare and outstanding examples of rainforest on basalt kraznozom soils. Rare priority flora contained in the annexure includes the '*Poa labillardieri* – *Trachymene humilis* tussock grassland', which is currently poorly reserved. IVG scientists identified the annexure as very important reserve for protecting priority fauna, including the Grey goshawk, hydrobiid snail, Azure kingfisher and giant freshwater crayfish. The Savage River rainforest in the Tarkine is also the only known location of 15 invertebrate species: two species of Pauropoda (*Allopauropus convexus* mss name, *Stylopauropoides erectus* mss name); three species of Symphyla (*Hanseniella pyrethrata*, *Hanseniella*, *Hanseniella pluvialis*); two species of Diplopoda; three species of Opiliones (*Calliuncus vulsus*, *Mestonia* sp. N. and *Numioides* sp. N.); two species of Collembola (*Phradmon tasmaniae*, *Paronellides*).

Annexure 9:

Area: Leven Canyon, Black Bluff, Dove River, Vale of Belvoir.

Lots:102-118.

Conservation values identified by IVG scientists:

The annexure is adjacent to and can be seen from the Cradle Mountain World Heritage area and its protection would add significantly to the integrity of the existing TWWHA. The annexure contains a series of spur-gully sequences of tall eucalypt-rainforest with verified world heritage value. It is also contains a significant area of threatened plant community *Eucalyptus amygdalina* forest and contains important values for eucalyptus phylogenetic and genetic diversity. The areas around Black Bluff contain important habitat for the spotted-tail quoll. To the south, new proposed reserves close to Cradle Mountain would protect the core range of the eastern barred bandicoot.

Annexure 10:

Area: The Great Western Tiers.

Lots:119-131.

Conservation values identified by IVG scientists:

The spectacular escarpment created by the very extensive dolerite capping of the Great Western Tiers has verified world heritage value. The GWT are an outstanding example of major stages of earth's history processes, an area where ongoing 'geomorphological and hydrological evolution are continuing in an uninterrupted natural condition. The annexure contains the Mole Creek Karst, which are internationally renowned for their underground scenery, geomorphological and biological values. The Marakoopa Block of the Mole Creek Karst National Park is already part of the Tasmanian Wilderness World Heritage Area. The IVG heritage assessment documents ample evidence of the very high heritage significance of the Croesus Cave, King Solomons Cave and Kublai Khan Cave Blocks. The annexure contains several very significant clusters of Aboriginal archaeological sites. The GWT are a hotspot for threatened carnivores including the Tasmanian Devil. The annexure also makes a high contribution to protecting threatened priority flora including *Thismia rodwayi*, *Uncinia elegans*, *Xerochrysum bicolor* and *Stellaria multiflora* and the *Eucalyptus amygdalina*.

Annexure 11:

Area: Mt Barrow, Mt Victoria, Ben Lomond.

Lots:132-148.

Conservation values identified by IVG scientists:

The annexure contains old-growth, tall eucalypt with premium conservation value and national heritage significance and therefore contributes to maintaining eucalypt phylogenetic and genetic diversity. The annexure is also rated as making an extremely high contribution to protection of priority flora, including *Boronia hemichiton*. IVG scientists identified the area as high priority for protection, to improve reservation and connectivity of habitat of endangered carnivores. Heritage reports also found Ben Lomond has significant geoconservation values, including Glacial Ice Margins and Dolerite Horst Mountains.

Annexure 12:

Area: St Helens, Douglas Apsley, South Sister, Constable Creek.

Lots:149-181.

Conservation values identified by IVG scientists:

The annexure makes an extremely high contribution to protection of threatened, priority fauna. Species include *Asplenium trichomanes* subsp., *trichomanes*, *Boronia gunnii*, *Boronia hippopala*, *Epacris moscaliana*, *Euphrasia scabra*, *Hovea tasmanica*, *Monotoca submutica* var. *autumnalis*, *Stonesiella selaginoides*, *Acacia axillaris*, *Baumea gunnii*, *Pellaea calidirupium*, *Plantago debilis*. The annexure is identified as core habitat for a globally significant population stronghold of Tasmanian devil, spotted-tail quoll and eastern quoll. IVG scientists identified tall eucalypt forests with national heritage value and the annexure makes an important contribution to eucalypt phylogenetic and genetic diversity. The annexure also acts as a refugia for ancient and relictual

invertebrate fauna with a striking example of important biogeographical “faunal breaks” between velvet worms *Tasmanipatus barretti* and *T. anophthalmus* near St Helens.

Annexure 13:

Connects with annexure 14, no separate tenure lots.

Annexure 14:

Area: Tyndall Range, Mt Dundas, Teepookana Forest.

Lots:184-195.

Conservation values identified by IVG scientists:

The annexure was found to contain some of the best Australian examples of world heritage significant rainforest. It includes key Gondwanan genera *Nothofagus* and the coniferous genera *Athrotaxis*, *Phyllocladus*, *Lagarostrobos*, *Microstrobos* and *Microcachrys*. IVG scientists recommend creation of a reserve boundary which enables the species natural evolutionary and ecological processes to continue. The Tyndall Ranges contain a major stand of the threatened plant community, King Billy Pine *Athrotaxis selaginoides*, and are of definite natural heritage conservation value. The annexure also has significant geoconservation values, including the Central Plateau Terrain (global significance), Central Highlands Cainozoic Glacial Area (national significance), Tyndall Range Glacial Features (national significance) and the Western Tasmania Blanket Bogs (global significance).

Annexure 15:

Area: Upper Derwent, Travellers Rest, Navarre Plains, Butler’s Gorge, Wentworth Hills.

Lots:196-205.

Conservation values identified by IVG scientists:

The tall eucalypt forests of the Upper Derwent were identified as particularly significant by IVG scientists, having both national and world heritage value. They represent the northern end of a single tract of forest that extends to the lower Florentine/Tarraleah area. This is possibly the largest tract of intact tall eucalypt in Tasmania. It continues into the existing world heritage area and represents a significant component of the total ecological diversity of the tall eucalypt forests of southern Tasmania. The annexure also contains globally significant evidence of past glaciations, including the Cynthia Bay Moraines and Bedlam Wall. The area to the south of Wylds Craig, in the lower Florentine, displays rare and unusual karst features expressed in colluvium mantling limestone, which would be particularly susceptible to damage by logging operations. Clarence Lagoon and Wentworth Hills Lagoon are critical habitat for the endangered Clarence Galaxias *Galaxias johnstoni*. The annexure also contains high priority flora species *Rhytidosporum inconspicuum*, and *Xerochrysum bicolor*

Annexure 16:

Area: Central Plateau, Great Lake.

Lots:206-212.

Conservation values identified by IVG scientists:

IVG scientist found the annexure contains priority flora species, the endangered *Eucalyptus gunni* ssp. *Divaricate* and therefore contributes to preservation of eucalypt phylogenetic and genetic diversity. The annexure contains rare and ancient invertebrate faunal taxa and was also identified as containing significant freshwater ecosystem values.

Annexure 17:

Area: Great Western Tiers, Millers Bluff.

Lots:213-216.

Conservation values identified by IVG scientists:

The annexure covers the southern end of the Great Western Tiers, predominately represented in annexure 10. Lots 213 – 216 contain high priority flora species *Acacia axillaris*. Lot 213 contains rare and ancient invertebrate faunal taxa. IVG scientists identified the area as high priority for protection, to improve reservation and connectivity of habitat for the Tasmanian devil and eastern quoll.

Annexure 18:

Area: Douglas Apsley, Eastern Tiers.

Lots:217-239.

Conservation values identified by IVG scientists:

IVG scientists found the annexure made a critical contribution to the east coast habitat corridor, meaning that omission of key land parcels would have the effects of breaking regional habitat connectivity, potentially permanently. This is of particular significance to threatened Tasmanian devil populations. The annexure also contains priority flora species *Eucalyptus amygdalina*, important for maintenance of eucalypt species richness and genetic diversity and threatened plant, *Callitris rhomboidea*.

Annexure 19:

Area: The Wedge, The Florentine.

Lots:240-253.

Conservation values identified by IVG scientists:

Tall Eucalypt forests of Mt Wedge and Clear Hill are identified as having world heritage value, as does the dolerite capping and glacial features of Mt Wedge itself. The annexure contains the Upper Florentine, with its ecologically diverse mosaic of stands of tall eucalypt forest. The area also contains significant geoconservation values, including the Junee–Florentine karst. Nanwoon Cave (now known as Nanwood), Nunamira (previously known as Bluff Cave), and Tiata Mara Kominya (Beginners Luck Cave) are important cultural heritage and archaeological sites. The annexure also contains ancient invertebrate faunal taxa and makes an extremely high contribution to preserving the habitat of priority flora, *Thynniorchis nothofagicola*.

Annexure 20:

Area: Mt Field, Weld Range, the Styx and West Wellington.

Lots:254-269.

Conservation values identified by IVG scientists:

The annexure tall eucalypt forests and geoconservation features have world heritage values. The annexure contain highly significant karst and glacial features. The Junee River Caves system is of special heritage conservation significance, containing many of the deepest and longest caves in Tasmania.. The Weld valley is at the centre of development for tall eucalypt. This area is home to possibly the highest recorded fungi diversity in the world and would make a significant contribution to protecting globally significant populations of ancient, relictual fauna. It also contains important karst developments and evidence of Ice Age Aboriginal use of caves. Renowned for its stands of very tall *Eucalyptus regnans* the Styx Valley is home to one of the three main clusters of registered 'giant trees' in Tasmania, the tallest trees in Australia. Lots 262 and 259 provide crucial, mature habitat for a range of priority cave fauna, freshwater fauna, swift parrots, grey goshawk, masked-owl, forty-spotted pardalote. The area also makes a high contribution to protection of priority flora, including *Asplenium hookerianum*, *Cyathodes platystoma*, *Monotoca submutica* var. *autumnalis*, *Persoonia muelleri* subsp. *angustifolia*, *Thismia rodwayi*, *Pentachondra ericifolia* and *Stellaria multiflora*. The annexure is key to connectivity of habitat for all three endangered carnivore species.

Annexure 21:

No separate tenure lots.

Annexure 22:

Area: Wielangta.

Lots:270-274.

Conservation values identified by IVG scientists:

The Wielangta area has some of the highest levels of eucalypt species richness in Tasmania, and includes a range of other values such as disjunct eucalypt populations, variants, and natural hybrids (including possible genetic remnants from the Last Glacial). The area contains threatened plant communities *Eucalyptus globulus* and *Eucalyptus amygdalina*. It is also of high importance to priority flora species *Corunastylis nuda*, *Odixia achlaena*, *Pterostylis atriola*, *Spyridium parvifolium* and var. *parvifolium*.

Annexure 23:

Area: Picton, Huon Valley, Esperence Forest, Hastings Caves, Recherche Bay.

Lots:275-284.

Conservation values identified by IVG scientists:

The Picton and Huon Valleys connect to the Weld to form the centre of development of tall eucalypt forest and the annexure demonstrates great ecological diversity, with verified world heritage values. This includes registered 'giant trees' of the Huon. Karst on both on the north and the south side of the Huon River includes cultural heritage sites of World Heritage significance. Hastings Caves are identified as crucial to allowing continuation of ecological processes in the existing TWWHA. The area contains ancient invertebrate faunal

taxa, provides critical habitat for the swift parrot, azure kingfisher and hydrobiid snail and critical habitat for all 3 threatened carnivores.

Annexure 24:

Area: Bruny Island.

Lots:285-290.

Conservation values identified by IVG scientists:

With verified national heritage significance, lots on the island are of high importance to hollow-using birds, with tall eucalypt providing critical habitat for the swift parrot and important habitat for the nationally endangered forty spotted pardalote.

Annexure 25:

Area: Tasman Peninsula.

Lots:291-295.

Conservation values identified by IVG scientists include:

The annexure was found to have high heritage conservation values. The forests of the Forestier Peninsula are a microcosm of the southern forests of Tasmania with the three 'tall eucalypt' species—*E.regnans*, *E. delegatensis* and *E.obliqua* together with minor occurrences of *Nothofagus* rainforest. The annexure also contains threatened plant community, *Eucalyptus amygdalina*. It provides important habitat for a number of priority flora species including *Cyathodes platystoma*, *Euphrasia collina* subsp. *Deflexifolia*, *Euphrasia semipicta*, *Thelymitra jonesii*, and *Prasophyllum Apoxychilum*.