



TIMBERLANDS
Pacific

Taswood Estate Special Values Management Plan



Contents

Contents	2
Purpose of Special Values Management Plan	4
Taswood Estate	5
Governance	5
Permanent Forest Estate	7
Reserves bounding the Estate	7
Evaluating Special Values in the Forest	7
Identification	7
Field Assessment	9
Evaluating High Conservation Value Forests	10
Sources of Information	11
Summary of HCV's within the Taswood Estate	12
HCV 1 – Species Diversity	12
HCV 2 – Landscape level ecosystems and mosaics	15
HCV 3 – Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refugia.	16
HCV 4 – Critical ecosystems services	20
HCV 5 – Forest Areas Fundamental to Meeting Basic Needs of Local Communities	22
HCV 6 – Cultural Values	22
Managing and Monitoring Special Values	22
Biodiversity	23
Threatened species.....	23
Remnant vegetation	23
<i>Phytophthora cinnamomii</i> management.....	24
Informal Reserves	24
Fire management	25
Game control	25
Cultural Heritage	25
Stakeholder consultation and engagement	25
Soil and Water Management	25
Soil protection	25
Stream protection	26
Catchment Management Plans	26
Seeded eucalypt plantations	27
Wetlands.....	27
7. Monitoring Plan.....	27
HCV 3 – Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refugia.	27
HCV 4 – Critical ecosystems services.....	28

Timberlands Pacific acknowledge the deep history and culture of the people who belonged to the Stoney Creek Nation, the Tyerenoterpanner, Panninher and Leterremairrener clans. These three clans lived on the lands where our business is located for many thousands of generations. The clans hunted and camped above the floodplains at the confluence of three riverways in the heart of the Stoney Creek nation – Kunermurlukeker, Pleepertoommerler and Lakakeller.

Timberlands Pacific acknowledge and pay respect to all Tasmanian First Nations people who are the past and present custodians of these lands.

This is a controlled document. Only the approved version available on the Timberlands Pacific Pty Ltd (TPPL) SharePoint is the authorised version. TPPL does not take any responsibility or ownership over any other unauthorised copy.

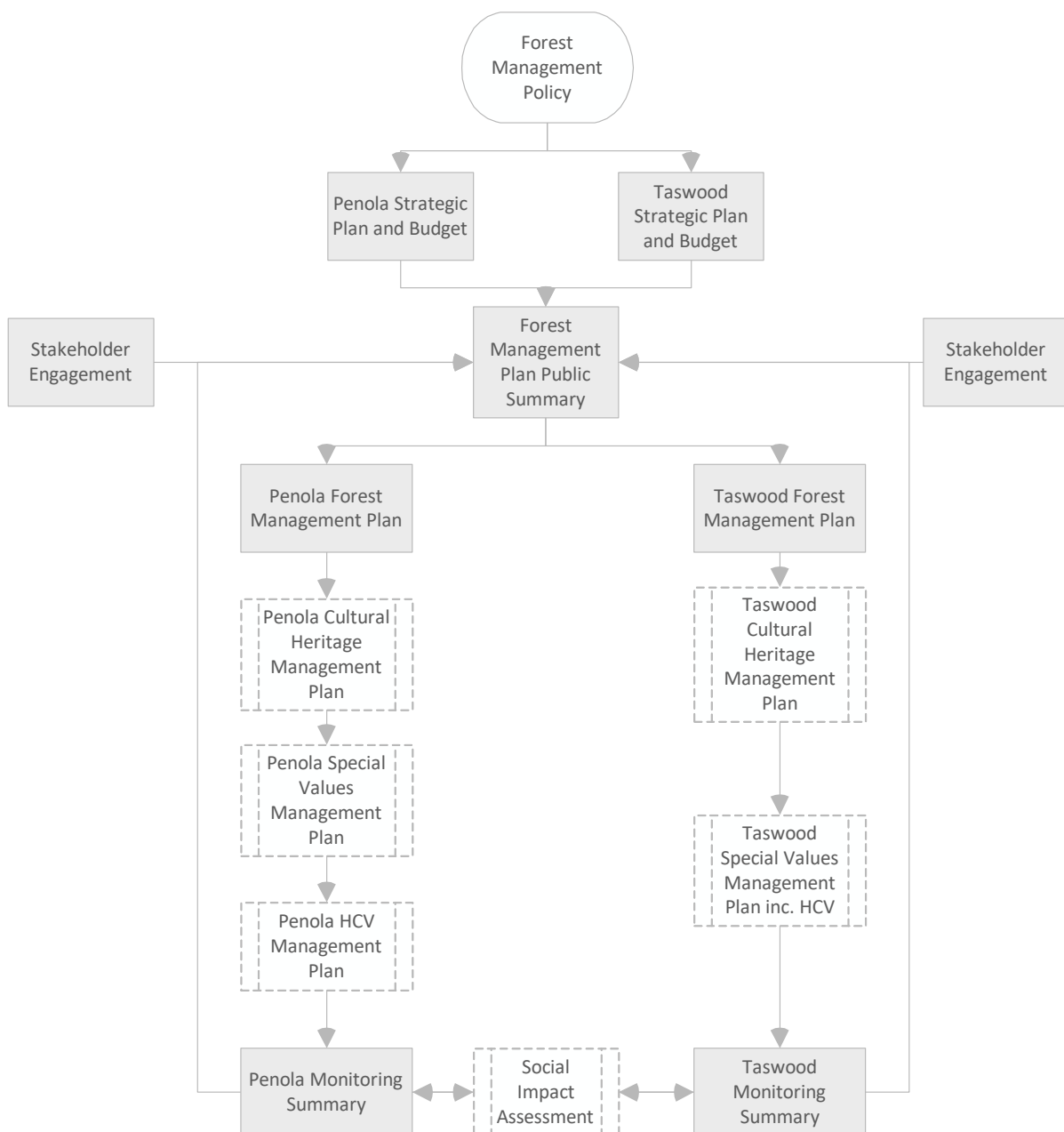
Special Values Management Plan Taswood
Version: 24.0 9/08/2023
Document Owner: Customer and Regional Manager

Purpose of Special Values Management Plan

The Taswood Special Values Management Plan outlines the processes followed by Timberlands Pacific Pty Ltd's (TPPL) Forest Practices Officers and operational staff to ensure these values are identified, management prescriptions are developed, the prescriptions are implemented in the field and the effectiveness of the prescriptions monitored over time. This document also identifies and provides guidance for the detection and effective management of Special Values to TPPL staff when preparing Forest Practices Plans and all other operational campaigns.

Special Values are intrinsic values associated with a particular site, species or ecosystem type. They can be cultural, biodiversity, geomorphic, visual, soil and water or a combination of these.

This Plan forms part of the Taswood Estate Forest Management Plan (FMP). The complete FMP is a collection of documents as identified in the below chart.



Taswood Estate

Timberlands Pacific currently manages the Taswood Estate which is approximately 54,000 hectares of predominately *Pinus radiata* forest across northern Tasmania. The trees within the Taswood Estate are owned by the Australia New Zealand Forest Fund (ANZFOF), a forestry investment fund, comprising of Australian and international institutional investors managed by New Forests Asset Management Pty Ltd (NFAM). NFAM is based in Sydney and is an investment management company specialising in forestry and environmental markets. All land currently in the Taswood Estate is Permanent Timber Production Zone (PTPZ) and is leased under a 60-year Forestry Right agreement to the ANZFOF, beginning in 1999.

TPPL acknowledges its responsibility to manage the natural and cultural values within the Estate; sustainable forest management goes beyond economic returns to the forest owners.

Although the Taswood Estate is a predominately *Pinus radiata* plantation, many species, including threatened flora and fauna, occur within or immediately adjacent to the Estate boundary. TPPL collectively refers to these values as Special Values. Special Values may be rare or endangered fauna and flora, wetlands, waterways or cultural heritage sites. These are described in detail by the Forest Practices Code 2020 (FPC 2020). TPPL's classification and identification of Special Values, strictly adheres with the FPC 2020. TPPL also abides by the guidelines of the Responsible Wood Certification Scheme (AS 4708:2013) and Forest Stewardship Council® (FSC®) certification (FSC-C115692).

The Taswood Estate is comprised of one Defined Forest Area (DFA). See Table 1 for distribution of forest types within the Taswood Estate.

Table 1: Forest type by area at 1 July 2023

Pinus Radiata	Seeded Eucalypt Plantation	Unplanted	Streamside Reserves	Native Reserves	Non-Productive	TOTAL
38,587	2,273	3,913	2,217	1269	6,589	54,848

The non-productive area is still within the defined forest area (DFA) and consists of infrastructure (extensive road network and associated quarries), unplanted areas such as wet soaks, swampy areas and rocky outcrops.

Governance

In Tasmania, there are strict and comprehensive legislative and policy frameworks that dictate all aspects of forest planning, forestry operations and forest maintenance. This is administered by the [Forest Practices Authority](#). The FPA is an independent, statutory government body.

All harvesting and reforestation operations, as well as significant roading works, require the development of a Forest Practice Plan (FPP). FPP's are created in line with the [Tasmanian Forest Practices Code 2020](#). This is a legally binding Code of Practice, under the Forest Practices Act 1985, that outlines operational standards and management guidelines for the conservation or protection of the suite of cultural and natural values that may be impacted by forestry operations.

There are several other codes of practice and legislation that regulate forest activities identified in the Timberlands Pacific Legal Register. The development of all TPPL harvesting, reforestation and management plans comply with required legislation and codes of practice.

All workplace health and safety requirements are governed by the Work Health and Safety Act 2012 and the Work Health and Safety Regulations 2012. Within this legislation sits the Tasmanian 2021. The Forest Safety Code regulates all aspects of working within the forest and is legally binding and enforceable.

The legal requirements to protect Special Values, including ‘high conservation values’, within the operational forests is the basis for the Tasmanian Forest Practices System. However, operations, other than those mentioned above, can occur without an FPP in place. It is important to understand the other key legislative requirements to ensure adequate and comprehensive conservation and management of Special Values under these conditions.

Table 2: Legislation

Legislation	Function	Enforcement	Relates to
Commonwealth			
Aboriginal and Torres Strait Islander Heritage Protection Act 1984	To preserve and protect areas (including Australian waters) and object of particular significance to Indigenous people in accordance with their traditions when there is no effective protection under state or territory law.	Department of Environment and Energy	Special Values assessments
Environmental Protection and Biodiversity Conservation Act 1999	Protects matters of national environmental significance. It also regulates actions affecting Commonwealth land and Commonwealth agencies.	Department of Environment and Energy	Special Values assessments
Tasmania			
Aboriginal Relics Act 1975	To ensure the protection of Aboriginal artefacts and sites of significance.	DPIPWE Aboriginal Heritage Tasmania	Special Values Assessments
Forest Management Act 2013	To outline the roles of the state “Forest Manager” a forestry corporation, define “Permanent Timber Production Zone” and “Forest Reserves”, to provide for public access to the forest and provide for fire protections within the PTPZ’s.	Sustainable Timber Tasmania	All operations within the Forestry Right
Forest Practices Act 1985	Legislates the Forest Practices System, which requires Forest Practices Plans to be developed for all Forest Operations, the Forest Practices Code and the Forest Practices Authority to oversee the system.	Forest Practices Authority	All FPP development, roading, harvesting (clearfell, waste and production thinning), and reforestation activities
Forest Practices Regulations 2020	Dictates exceptions to the Act, fees and other charges associated with Forest Practices Plans.	Forest Practices Authority	FPP development and certification
Historic Cultural Heritage Act 1995	To identify, protect and conserve historic European cultural heritage.	DPIPWE Heritage Tasmania	Special Values Assessments
Nature Conservation Act 2002	The conservation and protection of the fauna, flora and geological diversity of the State, to provide for the declaration of national parks and other reserved land and for related purposes.	DPIPWE Threatened Species Unit	Management of threatened species and Special Values

Threatened Species Protection Act 1995	To provide for the protection and management of threatened native flora and fauna and to enable and promote the conservation of native flora and fauna.	DPIPWE Threatened Species Unit	Identification and management of threatened species and Special Values
Weed Management Act 1999	To provide for the eradication and control of declared weeds.	DPIPWE Weed Management Branch	Declaration and management of invasive weeds

Permanent Forest Estate

The Tasmanian forest reserve system is arguably one of the most comprehensive in Australia. The initial implementation of the Regional Forest Agreement in 1997 has meant that a formal scientific assessment has occurred across the state's forests and non-forest communities to analyse their current extent compared to pre-European coverage and their likely ongoing vulnerability (among other values). From this assessment a list of RFA Priority Species and Communities has been developed so these values can be maintained in perpetuity. In other words, forests at a landscape scale, have been assessed for their 'representativeness' and where current levels of retained forest communities was found to be inadequate, the remaining areas have been incorporated into the reserve system.

Overarching this approach is the [Permanent Forest Estate Policy](#). This is a state-based policy that ensures that the permanent native forest estate does not fall below 95% of that identified in the 1996 Comprehensive Regional Assessment (CRA), part of the RFA process. This Policy limits the amount of clearing of most forest areas and prohibits it in forest types that are already at the minimum threshold. This process is managed effectively by the Forest Practice Authority through the Tasmanian Forest Practices System.

Reserves bounding the Estate

TPPL has a series of formal and informal reserves and priority forests bounding the plantation area and this area (particularly informal reserves) has increased significantly since a lease agreement was formulated with Sustainable Timber Tasmania. TPPL manages the impact on these areas through its Special Values Evaluation process and the TPPL Introduced Weed Species Management Policy. Due to the established 'Forestry Right' under which the Taswood Estate operates, it is highly unlikely that any future reserves on public land will be imposed within the Taswood Estate, however, TPPL will review and any management implications as new forestry agreements are finalised.

Refer to the TPPL website, www.tppl.com.au for Estate maps that show the location of the most recent reserve expansion and its proximity to the Taswood Estate.

Evaluating Special Values in the Forest

The process of identifying potential Special Values of an area is by a combination of integrating existing information databases and field reconnaissance. Harvest planning is initially undertaken at a landscape scale, so elements such as coupe dispersal, water shed and erosion and windthrow can be considered.

The landscape plan is then broken down into harvest area plans. All identified Special Values within a harvest area require management prescriptions to conserve or protect them from harvesting and reforestation activities. These are put into the Forest Practices Plan (FPP), a legally enforceable document, which must be adhered to throughout all operations covered by the FPP. Each step of the evaluation process is critical to ensuring that known values are monitored over time and new values identified and managed to minimise any impacts from forestry operations.

Identification

Sources of information for Special Values Evaluation include, but are not limited to:

- Sustainable Timber Tasmania Conserve data base;
- Department of Primary Industries, Parks, Water and Environment (DPIPWE) Natural Values Atlas;
- Forest Practices Authority Biodiversity Values Database;
- The Threatened Fauna Advisor;
- Forest Botany Manuals;
- Flora of Tasmania reference set;
- The LIST website;
- Soils Bulletins; and
- TPPL's Geographic Information System database.

These data sources allow the harvest planning process to assess the whole catchment. Information from sources such as the Natural Values Atlas assesses all known or potential habitat at a 1:25,000 Map Sheet scale as does the Sustainable Timber Tasmania Conserve database. The Threatened Fauna Advisor, managed by the FPA, also considers the landscape level requirements of threatened species to produce prescriptions that are applicable at a harvest plan scale.

The following site-specific information is required for each potential operational area; this area includes adjacent and surrounding lands:

- **Biodiversity:** Known sites and species habitat range maps for threatened flora and fauna and the likely species and habitat to be found on the relevant map sheet. Other landscape level information is also required, such as forest type mapping and evaluation of the native forest and the location of any formal and informal reserves. Other biodiversity issues such as the identification of any known, particularly upstream, *Phytophthora cinnamomii* sites and patches of remnant vegetation are also identified.
- **Cultural heritage:** Known sites of historic European activity (hut sites, water races, mine sites etc) and known sites of Indigenous use, as well as predictive statements from the Forest Practices Code (based on historical finds) of areas with a high likelihood of containing Aboriginal artefacts. Note: known artefact sites and sites of local Indigenous significance are only available from the Forestry Tasmania Conserve database to staff suitably trained in Indigenous culture by the FPA, it is not publicly available.
- **Geomorphology:** Known sites of importance such as karst (caves and sinkholes), fluvial features, Aeolian movement, glacial, periglacial and volcanic features and landforms, hill slope features and coastal landscapes and predictive geology mapping to identify possible new landforms and features.
- **Soil and Water:** Soil type and slope mapping, compaction and erodibility ratings to identify areas prone to degradation and stream evaluation and catchment management planning to identify and minimise impacts on watersheds and the aquatic environment. This section also considers the presence of pathogens such as *Phytophthora* and applicable washdown procedures (see the Tasmanian machinery wash down guidelines for weed and disease control) to limit the spread of weeds and disease. Some stream revegetation activities are also found under this umbrella.
- **Visual management:** Visual landscape management and assessment of harvest coupes to minimise dramatic and sudden changes in the aesthetic landscape. This consists of 'seen area' evaluation, road classification for usage rates (e.g. hilly tourist roads are more susceptible to visual impacts than flat local use only roads), operational impact ratings and objectives.

- **Landscape risk:** Related to visual management and focusing on how the current operation will impact on the landscapes surrounding it. Risk can be related to water and catchment management for downstream users, proximity of reserves, public access, windthrow and fire risks.

Field Assessment

The confirmation of potential Special Values and terrain conditions requires field verification of any values captured during the initial desktop evaluation, planning and Lidar mapping processes. Field assessments may also identify additional values not originally captured in the dataset information. Field checks are conducted by trained foresters that are familiar with the local forest environment and the potential species it may contain.

Fields checks are undertaken to ensure the area is covered in a thorough manner. The field check can be influenced by site conditions i.e. very thick understorey vegetation with poorly mapped contours and features in native forest may require systematic linear transects every 50m across a coupe, however, clear understorey, in an intensively mapped pine plantation, may only require a walk-through verifying stream location and looking for anything out of the ordinary.

Regardless of the existing mapping quality and available information, all coupes must be field validated. TPPL expects that at a minimum, the main features of the coupe will be checked. These include:

- All stream locations and classes especially those locations that do not fit with the updated Lidar terrain models;
- The location and status of any known Special Values within and surrounding the coupe and by checking may find other previously unidentified values;
- The condition of existing road infrastructure and any current or potential impacts this might have outside the coupe (i.e. road sediment washing into streams, blocked culverts);
- If new roading infrastructure is required, locating it in appropriate areas with notes made on any stream crossings or sensitive values;
- Whether the coupe boundary location is clear and appropriately mapped. There have been issues where encroachment from adjoining native forest stands has made the Forest Right harvest boundary ambiguous;
- Checking if adjoining tenure has changed and ensuring any impacts on this is managed appropriately (i.e. spraying next to new pasture, heightened windthrow risk of clear falling next to thinned plantation); and the proximity of dwellings on adjoining properties. Residents close to the Taswood Estate boundary may be significantly impacted by noise, dust, wind or have concerns regarding chemical usage during operations.

If additional values are identified during this verification process, its location and other information is captured and managed through existing legislative frameworks. Where the framework is unclear or inadequate, scientific specialist's advice is sort by the forest planner. The specialist advice is provided through the FPA and is independent of the forest industry. New or previously unidentified values are captured within TPPL's Forest Information System database (ARCGIS), the DIPWI Natural Values Atlas and Sustainable Timber Tasmania Conserve database.

Evaluating High Conservation Value Forests

To evaluate the potential of the Taswood Estate containing High Conservation Values (HCVs), TPPL is guided by The HCV Evaluation Framework prepared by FSC[®] Australia, the Common Guidance for the Identification of HCV, existing knowledge, Special Values Evaluation processes outlined above and further assessments of available databases.

Specifically, TPPL relies on existing internal information from:

- Operational Plans;
- Special Values assessments;
- Reference to best available information sources;
- TPPL GIS; and
- Consultation with qualified experts and other relevant stakeholders.

And external assessments from:

- TASVEG spatial layer;
- Threatened Native Vegetation spatial layer; and
- Stakeholder notifications.

By applying the Tasmanian Forest Practices Code 2020 and working regularly with FPA Specialists and land management agencies, special values have been and are comprehensively identified within the Taswood Estate. As part of TPPL's Special Values evaluation, forest and non-forest communities are assessed in context with other values of an area. These communities may be of HCV and in many circumstances, expert scientific involvement is required.

From the sources outlined above, TPPL have undertaken a diligent assessment process to identify areas within the Taswood Estate that meet the FSC HCV definitions. There are additional areas adjacent to the Taswood Estate that can be defined as HCV and may be impacted upon by forestry activities. Scientific specialist advice has been sought from the FPA and NRM North to assist in developing management plans for these areas. These plans are implemented to manage and minimise impacts from forestry activities.

The steps taken include:

1. Identification of HCV's that could be impacted by TPPL's management activities and require special protection;
2. Where HCV's have been identified, establishment of management objectives, and application of operational controls to ensure that HCV's are maintained and/or enhanced; and
3. Implementation of a verification and monitoring program.

Initially, TPPL identified seven new sites meeting the criteria of threatened or endangered forest communities (HCV3) within the Taswood Estate. Further field surveys of these sites were undertaken, and reports prepared recommending actions. Independent experts were engaged in 2018 to conduct detailed surveys of six of these sites to determine their significance. The seventh site was not assessed due to the presence of an active Wedge-tailed Eagle nest and will continue to be treated as a HCV3. These surveys included assessing and where required, remapping of the ecological vegetation community/s boundaries and their conservation status. Recommendations on future management were provided and these have been followed by TPPL. For a technical explanation of these HCV3 sites, refer to [Verification of Threatened Vegetation Communities: Timberlands Pacific Managed Forest Estate, Tasmania.](#)

TPPL is continuing to review and undertake surveys of further potential sites as identified through the TASVEG layer or from stakeholder notification to determine if they are HCV's. As sites are identified and confirmed as containing HCV's, detailed surveys will be completed and management actions formulated.

It should be noted that all native forest communities in the Taswood Estate are viewed as significant and are aimed at protecting from damage by forest management practices.

Sources of Information

1. High Conservation Values (HCV) Directory of Information Sources

The most current version is located at <https://by.fsc.org/by-en/for-forests/high-conservation-values>

2. Geographic Information Systems

The HCV assessment program has been developed using internal and external data sources, with ongoing input from government departments and various internal datasets that are maintained and updated. External databases consulted and included into the operational planning process, include:

- The List – source Tasmanian Government; and
- TASVEG – source Tasmanian Government.

3. References

Published reports, papers and information on websites include:

- Australian Government Department of the Environment and Energy – Factsheet “About Threatened Ecological Communities”;
- Tasmanian Government “Nature Conservation Act 2002 - Schedule 3A of the Tasmanian Conservation Act”;
- Tasmanian Government “Forest Practices Act 1985”;
- Forest Practices Authority “Forest Practices Code 2020”;
- Forest Practices Authority “Forest Botany Manuals 2005” (Ben Lomond, Woolnorth);
- Department of Primary Industries, Parks, Water and Environment - Tasmanian Threatened Native Vegetation Communities Fact Sheet “15. Eucalyptus amygdalina forest and woodlands on Cainozoic deposits”;
- Department of Primary Industries, Parks, Water and Environment - Tasmanian Threatened Native Vegetation Communities Fact Sheet “14. Eucalyptus amygdalina forest and woodland on sandstone”;
- Department of Primary Industries, Parks, Water and Environment - Tasmanian Threatened Native Vegetation Communities Fact Sheet “20. Eucalyptus ovata forest and woodland”;
- Department of Primary Industries, Parks, Water and Environment - Tasmanian Threatened Native Vegetation Communities Fact Sheet “25. Eucalyptus viminalis wet forest”;
- Department of Primary Industries, Parks, Water and Environment - Tasmanian Threatened Native Vegetation Communities Fact Sheet “39. Wetlands”;
- Forest Practices Authority - Threatened Native Vegetation Community Information Sheet “Wetlands”;
- Timberlands Pacific Site Assessments – “705001004_TPPL_Site_Assessment”, “718162001_TPPL_Site_Assessment”, “718166003_TPPL_Site_Assessment”, “718171002_TPPL_Site_Assessment”, “722001020_TPPL_Site_Assessment”, “734001017_TPPL_Site_Assessment”, “831206007_TPPL_Site_Assessment”;
- ECOtas “Verification of Threatened Vegetation Communities: Timberlands Pacific Managed Forest Estate, Tasmania”;
- Forest Practices Authority and Timberlands Pacific “Catchment Management Procedures for Plantations in the North East of Tasmania”; and

- Forest Practices Authority and Timberlands Pacific “Timberlands Pacific Revegetation Survey 11 July 2018”.
- Bushways Environmental Services “Benefits of Restoring Skyline Tier Scamander Plantation, Tasmania 2011”
- TPPL Assessment of Scamander Forest Block, 2020

Summary of HCV’s within the Taswood Estate

For all HCVs identified within the Taswood Estate, the management objective is to maintain and where possible, enhance the condition of the HCV.

HCV 1 – Species Diversity

Concentrations of *biological diversity including endemic species, and *rare**, *threatened** or *endangered* species, that are *significant** at global, regional or national levels.**

Protected areas

There are no Formal Reserves, Protected Areas or Conservation Covenants within the Taswood Estate. The Estate is only located within a gazetted Forestry Right within the Permanent Timber Production Zone (previously known as State Forest). This includes an area of 8,527ha that are set aside from production harvesting, that include Streamside Reserves and Native reserves

TPPL manages the impacts on these reserves by following our [Forest Management Plan](#) and [TPPL Introduced Weed Species Management Policy](#).

Threatened and endangered species

Many species of vertebrates and invertebrates utilise the Taswood Estate for foraging or accessing foraging territory. While the pine plantation is not considered ‘habitat’ for any threatened species, some native forest and forest elements that occur within and surrounding it is. The native forests within the boundaries of the Estate are classified as TPPL Managed Reserve areas. These areas provide localised corridors, linking larger tracts of native forest above and below the pine plantation; the vast majority of threatened species occur within these areas.

While there are no areas that meet HCV1 within the Taswood Estate, below are lists of threatened species for which foraging, or habitat management considerations exist within the Taswood Managed Reserve areas and have been identified as part of the Special Values evaluations process. The status referred to in the table is derived from the *Threatened Species Protection Act 1995* list on the DPIPW website. The data was sourced from the Protected Matters Search Tool and cross referenced with species listed on the DPIPW List of Threatened Species website. These are managed in line with FPA requirements.

Table 4: Vertebrate species known within or immediately adjacent to the Taswood Estate, requiring management during forestry operations (as of 04/08/2022)

Common Name	Scientific Name	Status	
		Tasmania	C'wealth
Grey Goshawk	<i>Accipiter novaehollandiae</i>	Endangered	
Masked owl	<i>Tyto novaehollandiae</i>	Endangered (unofficial)	Vulnerable (unofficial)
Spotted tailed quoll	<i>Dasyurus maculatus</i>	Rare	Vulnerable
Swift parrot	<i>Lathamus discolor</i>	Endangered	Critically Endangered
Tasmanian Devil	<i>Sarcophilus harrisii</i>	Endangered	Endangered
Tasmanian Azure Kingfisher	<i>Ceyxazureus subsp. diemenensis</i>	Endangered	Endangered
Tasmanian Wedge-tailed Eagle	<i>Aquila audax subsp. fleayi</i>	Endangered	Endangered
White-bellied Sea Eagle	<i>Haliaeetus leucogaster</i>	Vulnerable	
Eastern Quoll	<i>Dasyurus viverrinus</i>		Endangered
Eastern Barred Bandicoot	<i>Perameles gunnii gunnii</i>		Vulnerable
Green & Gold Frog	<i>Litoria raniformis</i>	Vulnerable	Vulnerable
Stripped Marsh Frog	<i>Limnodynastes peroni</i>	Endangered	
Glossy Grass Skink	<i>Pseudemoia rawlinsoni</i>	Rare	

Table 5: Invertebrate species known within or immediately adjacent to the Taswood Estate, requiring management during forestry operations (as of 04/08/2022)

Common Name	Scientific Name	Status	
		Tasmania	C'wealth
Bornemissza's Stag Beetle	<i>Hoplogonus bornemisszai</i>	Endangered	Critically endangered
Burnie Burrowing Crayfish	<i>Engaeus yabbimunna</i>	Vulnerable	Vulnerable
Central North Burrowing Crayfish	<i>Engaeus granulatus</i>	Endangered	Endangered
Giant Freshwater Crayfish	<i>Astacopsis gouldi</i>	Vulnerable	Vulnerable
Giant Velvet Worm	<i>Tasmanipatus barrette</i>	Rare	
Hydrobiid Snails	<i>Beddomeia spp</i>	Rare	
Mt Arthur Burrowing Crayfish	<i>Engaeus orramakunna</i>	Vulnerable	Vulnerable
Scottsdale Burrowing Crayfish	<i>Engaeus spinicaudatus</i>	Endangered	Endangered
Simson's Stag Beetle	<i>Hoplogonus simsoni</i>	Vulnerable	Vulnerable
Skemps snail	<i>Charopidae "Skemps"</i>	Rare	
Blind Velvet Worm	<i>Leucopatus anophthalmus</i>	Endangered	Endangered

Table 6: Flora species found within or immediately adjacent to the Taswood Estate, that may require management consideration during forestry operations (as of 04/08/2022)

Common Name	Scientific Name	Status	
		Tasmania	C'wealth
Cane Holygrass	<i>Hierochloe rariflora</i>	Rare	
Clustered Rush	<i>Juncus vaginatus</i>	Rare	
Coast Dustymiller	<i>Spyridium parvifolium</i> var. <i>parvifolium</i>	Rare	
Dolerite Spleenwort	<i>Asplenium trichomanes</i> subsp. <i>trichomanes</i>	Vulnerable	
Ferny Buttercup	<i>Ranunculus pumilio</i> var. <i>pumilio</i>	Rare	
Forest Germander	<i>Teucrium corymbosum</i>	Rare	
Fragrant Hempbush	<i>Gynatrix pulchella</i>	Rare	
Glossy Purplepea	<i>Hovea corricketiae</i>	Rare	
Gristle Fern	<i>Blechnum cartilagineum</i>	Vulnerable	
Harsh Groundfern	<i>Hypolepis muelleri</i>	Rare	
Juniper Wattle	<i>Acacia ulicifolia</i>	Rare	
Leafy Fireweed	<i>Senecio squarrosus</i>	Rare	
Lemon Dogwood	<i>Pomaderris intermedia</i>	Rare	
Lesser Guineaflower	<i>Hibbertia calycina</i>	Vulnerable	
Moleskin Dogwood	<i>Pomaderris pilifera</i> subsp. <i>talpicutica</i>	Endangered	Vulnerable
Narrowleaf Dogwood	<i>Pomaderris phylicifolia</i> subsp. <i>phylicifolia</i>	Rare	
Pygmy Clubmoss	<i>Phylloglossum drummondii</i>	Rare	
Revolute Narrowleaf Dogwood	<i>Pomaderris phylicifolia</i> subsp. <i>ericoides</i>	Rare	
Shade Plantain	<i>Plantago debilis</i>	Rare	
Showy Willowherb	<i>Epilobium pallidiflorum</i>	Rare	
Silky Bushpea	<i>Pultenaea prostrata</i>	Vulnerable	
Slender Ticktrefoil	<i>Desmodium varians</i>	Endangered	
Southern Ticktrefoil	<i>Desmodium gunnii</i>	Vulnerable	
Spike Centaury	<i>Schenkia australis</i>	Rare	
Spiny Bossia	<i>Bossiaea tasmanica</i>	Rare	
Wallys Wattle	<i>Acacia pataczekii</i>	Rare	
Yellow Riceflower	<i>Pimelea flava</i> subsp. <i>flava</i>	Rare	

Species in **Table 4 and 5** are considered for management during forestry activities with the assistance of the Threatened Species Advisor(TSA). The TSA is a decision-support tool intended for use by those conducting biodiversity evaluations as part of the development of FPPs for activities covered by the Tasmanian forest practices system. The TSA will be used in accordance with the procedures for the management of threatened species agreed between the Department of Primary Industries, Parks, Water & Environment (DPIPWE) and the Forest Practices Authority (FPA), under section D3.3 of the Forest Practices Code.

The primary objective for the management of threatened species in areas covered by the forest practices system is to contribute to the maintenance of habitat and populations of threatened species throughout their ranges and over time. The TSA provides the planner with recommended management actions (recommendations) to use in development of management prescriptions for Forest Practices Plans. The TSA can be used in conjunction with the Biodiversity Values Database.

Flora species and threatened vegetation communities are generally regarded by the Forest Practice System to either not occur within plantation estates or be disturbance dependant. It is extremely rare for any threatened flora species to be identified during a threatened species planning process (only example in the last five years is *Ranunculus pumilio* var *pumilio* at Virginstow Forest in the Central North). However, there is significant potential habitat in the native forest areas surrounding the Taswood Estate. If a forest planner suspects they have found a threatened flora species, vegetation community or an RFA Priority Community during field reconnaissance, these are recorded where required as part of the planning process.

Endemic Species

Tasmania has a high level of endemism compared to mainland Australia. TPPL manages for endemic species through the Special Values Evaluation and Forest Practices Management process.

Poorly Reserved Areas at the IBRA level

The Taswood Estate is located within Bioregions Tasmanian Northern Slopes, Furneaux and Ben Lomond and all these are well represented at a National level.

Critical temporal use sites

Being an island, migratory species are dominated by birds. There are approximately 43 different species of breeding and migratory shorebirds, with 31 of them migrating to Tasmania annually¹. None of these species are known to habitat within the Taswood Estate. There are two other species of migratory parrots; the Swift Parrot (*Lathamus discolor*) and the Orange Bellied Parrot (*Neophema chrysogaster*). The Orange Bellied parrot's breeding grounds are located on the South West coast of Tasmania; well outside any impacts from activities in the Taswood Estate.

The Swift Parrot breeds in the hollows of mature eucalypt trees and forages in eucalypt communities including *Eucalyptus globulus* and *Eucalyptus ovata* forests, identified as threatened under the *Nature Conservation Act 2002* and the Tasmanian Regional Forest Agreement. These areas may occur within and in adjacent native forests predominately on the east coast of Tasmania. They are assessed and if required, prescriptions are applied through the Forest Practices planning process.

TPPL has identified *Eucalyptus ovata* communities as part of its HCV3 assessments of reserved native forest and these areas are being treated accordingly (see HCV3).

Areas of high species/community diversity & Refugia

There are no known areas of high species or community diversity within the Taswood Estate, however all areas of native forest within the Estate are managed for long-term biodiversity.

HCV 2 – Landscape level ecosystems and mosaics

Intact Forest Landscapes and large landscape level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

The Tasmanian landscape is notable for its high level of forested and naturally vegetated areas. Areas that have been determined as significant, either for threatened species or threatened vegetation communities are protected through a number of large National Parks, Formal Reserves and Informal Reserves. Some areas

¹ Bryant, Dr S. (2002) Conservation assessment of beach nesting and migratory shorebirds in Tasmania, Nature Conservation Branch Dept Primary Industries Water and Environment. Natural Heritage Trust Project No. NWP11990. <http://dpiwwe.tas.gov.au/Documents/finalreportwithcovers.pdf>

within the Taswood Estate have environmental, cultural or social values, but do not meet the HCV 2 criteria due to their size and lack of connectivity into the larger landscape.

HCV 3 – Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refugia. Ecosystems that are rare and/or threatened at a global, national or regional level. Distinctiveness in terms of size, quality (particularly lack of human disturbance), or location within the ecosystems’ geographic range may be considered in assessing ecosystem rarity.

The RFA process identified 50 different forest communities within Tasmania². Currently 22 of these forest communities and a further 17 non-forest communities have been identified as threatened³. Much of the Taswood Estate is situated on land that was converted from native forest between the 1960’s and the early 2000’s. As described above, TPPL is undertaking a review of existing native forest areas within the Estate by reviewing TASVEG and ground truthing Threatened Communities listed in these areas.

The communities identified are listed under legislation or are a priority for conservation or considered to be high significance under State policy.

Threatened vegetation types are listed on Schedule 3A of the Nature Conservation Act 2002.

While there have been no confirmed areas of native forest “Old Growth” identified within the Taswood Estate, there are old growth elements present. All native forest areas within the Estate are set aside from harvesting and considered reserves. Enhancement through wildling management in these areas may be conducted following the [TPPL Introduced Weed Species Management](#) policy.

Description

- Ecological communities under the Nature Conservation Act 2002; and
- Table 3 lists the HCV3 identified for the Taswood Estate.

Threats to HCV3’s

Identified threats to HCV3s include:

- Loss of HCV due to operational activities;
- Introduction of weeds, diseases and pests;
- Inappropriate fire regimes; and
- Unauthorised entry into the HCV.

Management Strategies

Strategies used to manage the HCV3s identified in the Taswood Estate include:

- Exclusion from operational plantation related activities;
- Compliance with forestry guidelines and C.O.Ps;
- Following TPPL management systems;
- Control of pine wildlings;
- Control of noxious weeds;

² Sourced from Attachment 1-7 of the Tasmanian Regional Forest Agreement
http://www.daff.gov.au/data/assets/pdf_file/0011/49277/tas_attach1.pdf

³ Sourced from [http://dpijwe.tas.gov.au/conservation/development-planning-conservation-assessment/tools/monitoring-and-mapping-tasmanias-vegetation-\(tasveg\)/tasveg-the-digital-vegetation-map-of-tasmania/threatened-vegetation-communities-list](http://dpijwe.tas.gov.au/conservation/development-planning-conservation-assessment/tools/monitoring-and-mapping-tasmanias-vegetation-(tasveg)/tasveg-the-digital-vegetation-map-of-tasmania/threatened-vegetation-communities-list)

- Undertaking training and awareness;
- Consultation with relevant authorities and stakeholders;
- Undertaking routine monitoring of the HCV's, by establishing fixed photo points and conducting regular health surveillance surveys; and
- Undertaking active management works as identified through monitoring activities.
- Replanting of native buffers to mitigate risks associated with future harvesting where a risk is identified

Specific management activities are outlined in the table below. Table 3: HCV3 identified for Taswood Estate

Location	Threats	Management Activities	Area (Ha)
Stoodley – 831_206_219 (26) *831206007	<ul style="list-style-type: none"> • Weeds – Thistles, Blackberry • Pine wildlings • Recent dam construction upstream altering hydrological effects 	<ul style="list-style-type: none"> • Monitor site changes either positive or negative – highly altered environment with long term issues short term management unlikely to be beneficial • Establish photo points for long term monitoring of changes 	0.25
Nicholas – 718_162_219 (12) *718162001	<ul style="list-style-type: none"> • Pine wildlings • Firewood removal 	<ul style="list-style-type: none"> • Remove and maintain site free of Radiata Pine wildlings. • Monitor for recent firewood cutting • Establish photo points for long term monitoring of changes 	2.55
Nicholas – 718_171_219 (4) *718171002	<ul style="list-style-type: none"> • Pine wildlings • Firewood removal 	<ul style="list-style-type: none"> • Remove and maintain site free of Radiata Pine wildlings. • Monitor for recent firewood cutting • Establish photo points for long term monitoring of changes 	18.44
Nicholas – 718_166_219 (16, 17, 18, 19) *718166003	<ul style="list-style-type: none"> • Pine wildlings • Firewood removal 	<ul style="list-style-type: none"> • Remove and maintain site free of Radiata Pine wildlings. • Establish photo points for long term monitoring of changes • Monitor for recent firewood cutting 	4.18
Paradise – 722_010_219 (23, 24) *722001020_22	<ul style="list-style-type: none"> • Pine wildlings • Firewood removal • Rubbish dumping 	<ul style="list-style-type: none"> • Remove and maintain site free of Radiata Pine wildlings. • Monitor for recent firewood cutting and rubbish dumping • Establish photo points for long term monitoring of changes 	1.06
Beulah – 705_001_219 (20) *705001004	<ul style="list-style-type: none"> • Pine wildlings • Firewood removal 	<ul style="list-style-type: none"> • Monitor for pine wildling incursion • Monitor for recent firewood cutting • Establish photo points for long term monitoring of changes 	0.59
Virginstow –	<ul style="list-style-type: none"> • Pine wildlings 	<ul style="list-style-type: none"> • Monitor for pine wildling incursion • Monitor for recent firewood cutting 	6.29

734_001_219 (47, 48, 49, 50, 51, 52) & 834_041_219 (31) *734001017	<ul style="list-style-type: none"> Firewood removal 	<ul style="list-style-type: none"> Establish photo points for long term monitoring of changes 	
Scamander – 827_183_219 (102) *827183000002	<ul style="list-style-type: none"> Pine wildlings Damage from commercial harvesting 	<ul style="list-style-type: none"> Manage sites within plantation, utilising a commercial operation to remove pine wildlings Post-operation confirm boundaries and set up ongoing monitoring for pine wildlings and woodcutting Establish photo points for long term monitoring of changes 	3.25
Scamander – 827_176_219 (87) *827176000062	<ul style="list-style-type: none"> Pine wildlings Firewood removal 	<ul style="list-style-type: none"> Monitor for pine wildling incursion Monitor for recent firewood cutting Establish photo points for long term monitoring of changes 	3.2
Scamander – 827_176_219 (81, 82) *827176000063 *827176000074	<ul style="list-style-type: none"> Pine wildlings Damage from commercial harvesting 	<ul style="list-style-type: none"> Manage sites within plantation, utilising a commercial operation to remove pine wildlings Post-operation confirm boundaries and set up ongoing monitoring for pine wildlings and woodcutting Establish photo points for long term monitoring of changes 	2.2
Scamander – 827_176_219 (83) *827176000075	<ul style="list-style-type: none"> Pine wildlings Damage from commercial harvesting 	<ul style="list-style-type: none"> Manage sites within plantation, utilising a commercial operation to remove pine wildlings Post-operation confirm boundaries and set up ongoing monitoring for pine wildlings and woodcutting Establish photo points for long term monitoring of changes 	1.5
Scamander – 827_176_219 (80, 84, 85) *827176000060 *827176000076 *827176000079	<ul style="list-style-type: none"> Pine wildlings Damage from commercial harvesting 	<ul style="list-style-type: none"> Manage sites within plantation, utilising a commercial operation to remove pine wildlings Post-operation confirm boundaries and set up ongoing monitoring for pine wildlings and woodcutting Establish photo points for long term monitoring of changes 	3.9
Scamander – 827_176_219 (86, 88, 89) *827173000043 *827174000020 *827174000016	<ul style="list-style-type: none"> Pine wildlings Damage from commercial harvesting 	<ul style="list-style-type: none"> Manage sites within plantation, utilising a commercial operation to remove pine wildlings Post-operation confirm boundaries and set up ongoing monitoring for pine wildlings and woodcutting Establish photo points for long term monitoring of changes 	2.3
Scamander – 827_173_219 (54)	<ul style="list-style-type: none"> Pine wildlings Firewood removal 	<ul style="list-style-type: none"> Monitor for pine wildling incursion Monitor for recent firewood cutting Establish photo points for long term monitoring of changes 	1.1

*827173000051 *827173000052			
Scamander – 827_173_219 (53) *827173000050	<ul style="list-style-type: none"> • Pine wildlings • Firewood removal 	<ul style="list-style-type: none"> • Monitor for pine wildling incursion • Monitor for recent firewood cutting • Establish photo points for long term monitoring of changes 	2.7
Scamander – 827_187_219 (27, 28) *827186000102 *827187000026	<ul style="list-style-type: none"> • Pine wildlings • Damage from commercial harvesting 	<ul style="list-style-type: none"> • Manage sites within planned FPP's, utilising commercial operation to remove pine wildlings • Post-operation confirm boundaries and set up ongoing monitoring for pine wildlings and woodcutting • Establish photo points for long term monitoring of changes 	1.7
Scamander – 827_185_219 (112, 113) *827185000106 *827185000111	<ul style="list-style-type: none"> • Pine wildlings • Damage from commercial harvesting 	<ul style="list-style-type: none"> • Manage sites within planned FPP's, utilising commercial operation to remove pine wildlings • Post-operation confirm boundaries and set up ongoing monitoring for pine wildlings and woodcutting • Establish photo points for long term monitoring of changes 	3.3
Payanna – 721_106_001	<ul style="list-style-type: none"> • Pine wildlings 	<ul style="list-style-type: none"> • Monitor for pine wildling incursion • Establish photo points for long term monitoring of changes 	43.77

Location Naming Convention = Forest_Compartment_Stand (Patch)

Locations mark with * and Italics (eg. *827185000111) are historic names

HCV 4 – Critical ecosystems services

Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.

These are catchments that are considered of special need due to the early pre-Forest Practices Code harvesting practices and the potential effects of downstream users.

Description

- Catchment areas that were identified as being of high importance due to regular natural high rainfall events
- High soil erodibilities
- Originally harvested pre-Forest Practices Code with no formal stream protection measures implemented

Table 4 lists the HCV4's identified for the Taswood Estate.

Threats to HCV4's

Identified threats to HCV4s include:

- Erosion events which cause;
 - Short and long-term impacts for downstream users; and
 - Significant ecological effects.

Management Strategies

Strategies used to manage the HCV4s identified for the Taswood Estate include:

- Compliance with forestry guidelines and C.O.Ps;
- Following TPPL management systems;
- Undertaking training and awareness;
- Consultation with relevant authorities and stakeholders;
- Undertaking routine monitoring of the HCVs;
- Monitoring and investigating the impacts of major rainfall events and acting appropriately to minimise damage;
- Carrying out research into best practice techniques for minimising damage from natural events and maintaining or enhancing special values;
- Undertaking active management works as identified through the Catchment Management Planning Procedures for Plantations in Northeast Tasmania, and implementing the mitigation steps outlined within and described below under Soil and Water Management – Catchment Management Plans
- Identifying, harvesting and revegetating poor performing plantations (Early Age Clearfall) to create a mixed age forest. Breaking up the age class improves dispersal for future rotations.

Specific management activities as adopted by TPPL are outlined in the table below.

Table 4: HCV4 identified for Taswood Estate

Location	Threats	Management Activities	Area (Ha)
Fingal Forests – South Esk River Catchment	Erosion in the upper and middle catchment causing downstream impacts for users	<ul style="list-style-type: none"> Conduct operations within the catchment under provisions of the Forest Practices Code Apply guidelines from the Catchment Management Planning Procedures for Plantations in Northeast Tasmania 	9,421
Scamander Forest – Wrinklers Lagoon	Erosion in the upper catchment causing downstream impacts	<ul style="list-style-type: none"> Conduct operations within the catchment under provisions of the Forest Practices Code Apply guidelines from the Catchment Management Planning Procedures for Plantations in Northeast Tasmania 	251

Forests critical to water catchments

There are 48 identified water catchments across Tasmania and three main management regions. The Taswood Estate is located within 17 of these catchment areas⁴.

There are a further nine town water intakes either adjacent to the Estate or within a few kilometres downstream, and numerous domestic intakes; many within the Estate boundaries. There is also one fish hatchery whose secondary water source flows alongside the Estate.

TPPL has a very positive relationship with its stakeholders regarding water management. This is achieved through effective stakeholder notification and consultation of proposed forestry operations and excellent on ground consultation to address neighbour and community concerns. TPPL has been involved with multiple organisation in environmental projects to help improve the catchment, including, Natural Resource Management North, Upper Esk Management, North East Biodiversity Network, Caring for Our Community and Environment Tasmania.

Based on historic information, the majority of concerns raised revolve around herbicide usage, specifically runoff and drift. TPPL strictly complies with all the legislative requirements with regards to chemical usage, specifically the Agricultural and Veterinary Chemicals (Control of Use) Act 1995 and related Regulations, the Forest Practices Code (2020), the Code of Practice for Aerial Spraying (2000) and the Code of Practice for Ground Spraying (2001).

As the Taswood Estate is solely located on PTPZ land, state restrictions on chemical usage applies. In 2005, the Triazine family of chemicals (e.g. Atrazine, Simazine) and 1080 were banned from use. TPPL complied with these restrictions.

TPPL also implements strict water sampling regimes on all water flowing out of a coupe where herbicides have been applied. Water samples of surface water are taken by an independent contractor on the day of application and post significant rainfall. This is carried out regardless of application method or presence or absence of water intakes. The results of the samples are made available to affected stakeholders upon request.

Forests providing barriers to destructive fire

The Taswood Estate does not have any areas that could be considered as providing a critical barrier to fire. Radiata pine of all age classes burns readily during destructive fire events.

⁴ Sourced from <http://dpijwe.tas.gov.au/Documents/Tasmania-Catchment-Map.pdf>

HCV 5 – Forest Areas Fundamental to Meeting Basic Needs of Local Communities

There are no communities within the Taswood Estate and the communities surrounding it have many options for meeting their basic needs. The Estate is a provider of local employment and wood products for use in the community but is not fundamental to meeting basic local needs.

HCV 6 – Cultural Values

Aesthetic Values

The Taswood Estate is predominantly made up of a modified plantation-based landscape, which provides little or no aesthetic values. The surrounding native forest managed by TPPL is protected from harvest.

Historic values

All operational areas are assessed for historic values of Indigenous or European heritage using existing known sites database and on ground surveys during the Special Values process of preparing a FPP. . If any sites are located, they are recorded and treated as per the required guidelines.

Long Term Research Sites

There are no known long term research sites within the Taswood Estate. Environmental research activities being undertaken in conjunction with TPPL can be found within the [Forest Monitoring Summary](#)

Social, Spiritual and Cultural Values

TPPL recognises that the Tasmanian Aboriginal people are the original custodians of the land and acknowledges that the land and any traditional sites are significant to the local Aboriginal people. TPPL allows full access (other than for health and safety reasons) to all areas of the Estate if Indigenous communities request access for traditional use, such as ceremonies, gathering, hunting, access to important sites or as part of teaching law and customs to future generations.

TPPL has been working on actively engaging with recognised local indigenous groups by establishing a Reconciliation Action Plan. This plan will form the basis for ongoing engagement with the indigenous communities and will help to identify lands within the Taswood Estate that may be of significance to these people. Where identified, TPPL will work with these communities to better understand the significance of these areas and if required will include management prescriptions to protect and preserve these areas.

To date, TPPL have facilitated access to, and granted permission to collect and utilise materials from, some areas of the Taswood estate in North East Tasmania for melythina tiakana warrana Aboriginal Corporation.

Managing and Monitoring Special Values

As previously stated, operational planning involves both desktop assessment of known values and field validation for new values. The internal TPPL GIS templates contains all relevant TPPL managed spatial layers such as native forest type, stream location and classification, site specific hazards etc.

All Special Values found in an operational area must be considered in the harvest and reforestation planning process. Section D. MANAGING NATURAL AND CULTURAL VALUES of every Forest Practices Plan (FPP) outlines what the values are, what to do to conserve or protect them and what to do if others are found during the operation. The operational prescriptions resulting from the Special Values management are located in Section A. INTRODUCTION at the start of the document along with a clear description of the boundary, as well as in the relevant operational section e.g. Section B. BUILDING ACCESS TO THE FOREST, Section C. HARVESTING OF TIMBER, Section E ESTABLISHING AND MAINTAINING FORESTS, or Section F. MANAGEMENT OF FUEL, OIL RUBBISH AND EMISSIONS.

FPP's are legal documents. A breach of any section of the FPP will result in an investigation by an FPO and possible investigation and or prosecution by the FPA. TPPL has internal standard operating procedures for identifying and dealing with this issue.

Biodiversity

There are many biodiversity values within the Taswood Estate. This section details the main management methods that are used to protect these values. All TPPL field supervisors are trained at recognising biodiversity values and in implementing their management requirements outlined in the FPP's. Likewise, contractors are given copies of all FPP's or operational plans and the specific requirements are discussed and identified in the field as required. It is a contractual obligation for all people working within TPPL managed estates to conform to all relevant legal and TPPL environmental standards. This is enforced through systematic monitoring of all operations and annual audit programs. The outcomes of these audits are summarised in the TPPL Monitoring Summary. This is publicly available via request.

Threatened species

In Tasmania, the management of biodiversity values within a production forest is dictated by the FPA, through the TSA and interaction with specialists. The TPPL Forest Practices Officer conducting the Special Values Evaluation formulates management prescriptions based on management plans detailed in the TFA. FPO's also consult the relevant FPA specialist if there is any difficulty applying the management plans or if there is anything unusual about the site or the species present. Management of all threatened species includes:

- The location of identified threatened species or potential habitat;
- Implementation of machinery exclusion zones around the area during harvesting to exclude disturbance. These areas are taped in the bush so there is no confusion from the crews; and
- The establishment of Streamside Reserves (SSR) as part of the reforestation process. SSR's are replanted with native, in zone species (if none are present at time of harvest) and are monitored for wilding incursion during successive operations. SSR widths vary depending on stream size:
 - 10m either side of stream bank for Class 4 streams (<50 ha catchment)
 - 20m either side of stream bank for Class 3 streams (50- 100 ha catchment)
 - 30m either side of stream bank for Class 2 streams (>100 ha catchment).

Where fauna have a high level of visual disturbance sensitivity, such as Wedge-tailed Eagles, much broader landscape prescriptions apply. For example, no forestry activity (including inventory) can occur within 500 metres, or one-kilometre line of site from an active nest. Nest searches are conducted annually on upcoming operational areas to check the activity of known nests and identify new ones.

TPPL has internal GIS layers that are regularly updated, by the Forest Information Specialists, with new finds in the field. These layers contain known locations of threatened species, forest type information, stream locations etc.

Remnant vegetation

The layout of the remnant vegetation within the Estate means it is particularly susceptible to wilding incursions. These areas are often surrounded by pine on all sides; refer to Figure 1 where remnant vegetation is shown in green. This is recognised by TPPL as a risk to the ecological values of these areas and so monitoring and maintenance is conducted regularly. This process is detailed in internal standard operating procedures. Where the Taswood Estate bounds native forest on one side, and there is a land tenure change, for example where the Estate adjoins a reserve area or STT production native forest, see Figure 1, wilding management will occur under the TPPL Introduced Weed Species Management policy.

Figure 1 demonstrates the intricate nature of remnant vegetation within the Taswood Estate. Tall eucalypt forest (shown in green) was left along the major streams when the area was converted to pine plantation in the 1980's. These areas can be severely impacted on by wilding incursions and windthrow as the surrounding pines are harvested. To ensure that these impacts are managed these areas are monitored regularly and management plans put in place as required.

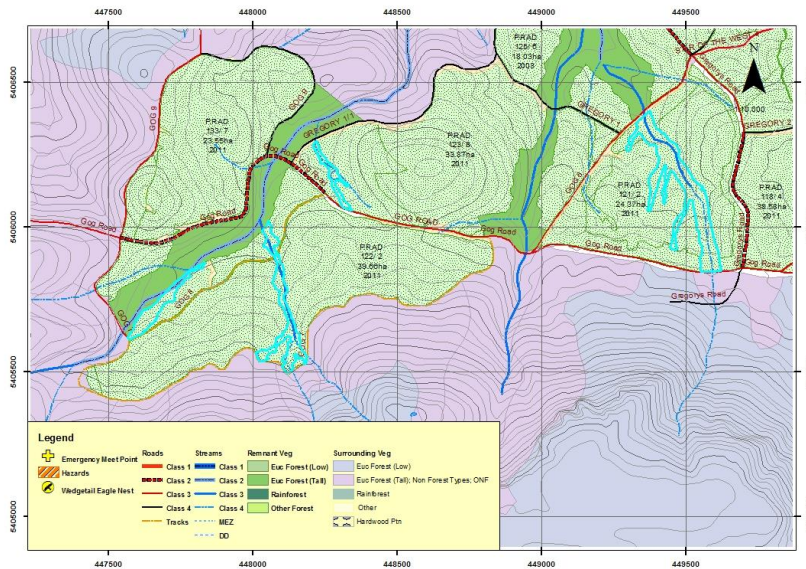


Figure 1: Forest map of Beulah, showing the complex nature of remnant vegetation, streamside reserves and native production forest within and surrounding the Taswood Estate.

Under the Forest Practices Code (2020), minimum 20 metre buffers need to be established along these streams to protect them in perpetuity. Where the original remnant buffer is not adequate, TPPL has hand planted the additional area with eucalypt seedlings, as shown by the light blue outline next to the remnant vegetation in the south west of the map. To ensure that water quality is maintained and habitat connectivity exists from native edge to native edge, additional streamside reserves have been planted, with eucalypts, along all ephemeral streams as the plantation was established for its second rotation, these are the other light blue outlines leading into the remnant vegetation.

The native forests surrounding the Beulah plantation, (shown in shades of purple) are production forests managed by Sustainable Timber Tasmania. As this is not remnant forest, TPPL manages its impacts on its neighbours through the [TPPL Introduced Weed Species Management](#) policy.

***Phytophthora cinnamomii* management**

TPPL consults the information sources outlined previously for the locality of known *Phytophthora cinnamomii* (PC). Full machine wash down is required on all TPPL managed forestry operations, as per [Tasmanian machinery wash down guidelines for weed and disease control](#) in order to stop the inadvertent introduction of the pathogen to unaffected sites. Compliance with this is checked at the completion of operations at each coupe and at start up.

Lists of plant species susceptible to PC infection are located in the Forest Botany Manuals on the [FPA website](#). If unusual death of susceptible species is noted in an area at any stage, the situation is referred to Sustainable Timber Tasmania's Forest Pathologist as part of TPPL's Forest Health protocols. Symptoms of PC infection are also monitored closely as part of the Forest Health Surveillance program. Refer to the TPPL Taswood Forest Management Plan for Forest Health Surveillance details.

Informal Reserves

There is approximately 6,475 hectares of Informal Reserves within the Taswood Estate. These areas are identified on our internal GIS system. These areas will be managed for Conservation purposes; as there are no commercial forestry operations occurring within these areas, the main impacts identified are wildling pine incursion. Weed related issues are managed through the [TPPL Introduced Weed Species Management](#) policy.

Fire management

Fire is an effective tool used to manage risk as well as biodiversity values in and surrounding the Estate. Fuel reduction burns and selected controlled windrow burning create a mosaic across the plantation that protects lives, property and the valuable plantation resource in the event of wildfire. Higher intensity burns are used within the Estate to control pine wildling infestation and create a seedbed for eucalypt regeneration where eucalypts are the chosen reforestation species.

TPPL engages Sustainable Timber Tasmania to undertake all fire management activities within the Taswood Estate.

Game control

Young plantations, up to age 5, and new revegetation plantings, up to 1m in height, are highly susceptible to damage and mortality from browsing mammals. In Tasmania the main browsing species are native Bennett's and Rufous wallabies, Brushtail possums and occasionally fallow deer. Crop protection and lethal management measures are part of TPPL's broader **Integrated Pest Management Plan** and are specifically detailed in the internal **Game Management Guide**. Crop protection permits must be obtained prior to any program commencing and only the above-mentioned species may be targeted under TPPL's permits.

Cultural Heritage

Culture is a defining feature of humanity, and our heritage is how we express ourselves in continuity, in the world. Cultural heritage does not just mean physical artefacts; it is the places that are locally and spiritually significant; cultural heritage can provide a view to our past; and it can give context and meaning to the present. It is fundamental to the identity of our present and future communities.

TPPL manages areas with known or likely heritage values as per the [Taswood Cultural Heritage Management Plan](#). Datasets containing known and likely areas for management are available for interrogation by trained TPPL staff (Cultural Heritage Officer). TPPL follow existing guidelines for management of these areas through the Forest Practices Authority using [Procedures for managing Aboriginal cultural heritage when preparing FPPs](#) and [Procedures for managing historic cultural heritage when preparing FPP's](#).

Stakeholder consultation and engagement

TPPL consults with stakeholders on a variety of topics. Most contact is with affected stakeholders, particularly neighbours that may be impacted by forestry operations. TPPL consults with other interested stakeholders primarily through its website, where general information pertaining to the Estate is publicly available. TPPL engage with stakeholders at a community level where forestry operations impact on the townships surrounding the Estate. These situations are identified and assessed through the TPPL Social Impact Assessment process which is conducted when significant or new⁵ operations commence in an area.

TPPL has internal guidelines which outline how staff interact with stakeholders and benchmarks what type of information is to be made available. TPPL also follows internal procedures for **Compliments, complaints and dispute resolution**, which can be made available on request, to affected stakeholders.

Soil and Water Management

Soil protection

There are approximately 127 different soil types identified in the Taswood Estate and these have been mapped to a 1:10,000 scale. The spatial GIS layers are complimented by the Taswood Soils Bulletins, Forest Soils of Tasmania and Tasmanian rainfall maps from the Bureau of Meteorology. This library of soils information is consulted as part of all pre-harvest and reforestation planning.

⁵ New to an area, i.e. harvest planning commences in a district that has not been harvested for 30 yrs

The mix of machinery i.e. harvesting using skidders, site clearing using small excavators etc, used within the Taswood Estate has been chosen to minimise the impacts of soil erosion and compaction. Many of the soils within the Estate are easily degraded if managed inappropriately, and it is imperative that site productivity be maintained across rotations. Soil type and erodibility are described within the Soil Bulletins. This information has been further developed into the Site Disturbance Decision Tree, which uses information available in the Soils Bulletins to determine the potential impacts of harvesting on different soils prior to harvest. This decision tree and the recommended mitigation outcomes have been incorporated into the FPP development process, so management practices can be accurately tailored to site and condition.

Stream protection

All class 1- 4 streams identified as part of a Special Values Assessment have, as a minimum, a 10 metre machinery exclusion zone placed on it. If sensitive values are identified within or downstream of the coupe, additional buffers and reforestation prescriptions, as mentioned in previous sections, are prescribed.

Roading and landing locations are strictly managed following the Forest Practices Code, to ensure that water quality is not impacted by run off from these areas. Sedimentation is minimised during harvesting through controlled water runoff from landings and roads. If roads or landings are permitted within 40m of a Class 4 or higher stream (prior authorisation must be sort from a Forest Practices Officer), additional drainage measures, such as sediment traps are used.

TPPL understands water quality encompasses more than just sedimentation and turbidity. To ensure that chemical (e.g. herbicides, fertilisers etc) use is in line with legal and community standards, TPPL carries out extensive and independent water monitoring whenever chemicals are applied. Dependant on the type of weed species present, a number of herbicides and surfactants may be used to achieve weed control. Water samples are tested for the active ingredient of the most mobile component of a 'brew'. The samples are tested by DPIPWE laboratory, Analytical Services Tasmania located in Hobart. Results are made available to any affected neighbours on request.

Catchment Management Plans

The Fingal and Scamander forests in the North East of the Taswood Estate have particular soil and water management issues that have necessitated a broad scale planning approach. These forests are identified as HCV 4 and described in detail above. The issues that have occurred within these forests during the most recent harvesting operations originated from the conversion of native forest to plantation in the 1960's. To avoid a re-occurrence at the next harvest phase, TPPL, in conjunction with the FPA, developed the [Catchment Management Planning Procedures for Timberlands Pacific Plantations in Northeast Tasmania](#). This management plan outlines the main causes of the severe soil and stream erosion as well as the steps taken to change the plantation layout, in order to minimise the impact in the next rotation. Mitigation steps include:

- Minimum Streamside Reserve replanting distance for a stream Classes;
- Minimum Stocking Standard for native plantings within these Streamside reserves for all stream classes;
- Recommendations for follow-up wildling control to remove pines from within these established Streamside Reserves;
- All SSR's are planted with in zone eucalypt seedlings with the aim of establishing native buffers that shade as well as bind the stream banks;
- Slash minimisation (using modified cable harvesting techniques) and removal (using small excavators in the streamside reserves) from streams and incised catchments to reduce the incidences of debris dams forming;
- Staggered reforestation program to try and spread out third rotation harvest patterns to reduce the size of area fallow at any one time; and

- Reforestation with appropriate species for the site, on very low productivity sites eucalypt seeding (seeded eucalypt plantations) or pine wildling thinning gives better economic and environmental outcomes than traditional establishment regimes.

Seeded eucalypt plantations

The Taswood Estate, as mentioned previously, has approximately 127 different soil types. These range from highly productive soils derived from basalts and granites to very low productivity derived from sandstones and mudstones. Very low productivity sites are predominately in the Fingal Valley and Scamander regions as well as around Branches Creek, near Bakers Beach in the central north.

Standard reforestation regimes of site preparation, planting and fertilising are not economically viable on these sites. In 2007, TPPL began trialling alternative cost-effective reforestation methods. Seeded eucalypt plantations, based on traditional clearfall burn and sow regimes used by Sustainable Timber Tasmania, utilise controlled high intensity burns to minimise pine wildling germination (pine seed is highly sensitive to smoke and heat), and prepare a suitable seedbed for eucalypt germination. The site is then seeded with 'in zone' seed collected from the site prior to harvest.

Seeded sites are surveyed for seedling survival at 18 months of age, to ensure that the site has an adequate stocking.

Wetlands

Wetlands are managed by TPPL as per guidelines outlined in the Forest Practices Code 2015. In addition, TPPL manage large scale areas of the Estate as per the [Catchment Management Planning Procedures for Timberlands Pacific Plantations in Northeast Tasmania](#). This document outlines areas in the North East of Tasmania that are highly susceptible to soil degradation due to erosion. It also describes the, background information on plantation development in these areas, the intended management outcomes for current and future harvesting and reforestation, and an action plan for operational implementation.

7. Monitoring Plan

HCV 3 – Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats or refugia.

Monitoring is to be conducted either annually or bi-annually and is recorded in the [Forest Monitoring Summary Taswood](#). This decision is based on work being carried out in the HCV within the preceding 12 months, where work has been conducted it will trigger an annual monitoring assessment, if no work has been carried out areas will be monitored bi-annually. The assessment methodology is described below.

*An exception to this is areas identified within the production zoned plantations of Scamander, these will be re-assessed post-commercial harvesting of the adjacent plantation. The areas will be mapped and added to the monitoring program.

Damage categories and severity ratings for LTR reserve condition assessments.

Damage category	Severity rating	Severity category	Description of damage
Burning	0	None	Little burn damage evident
	1	Low	Fire scorch evident on canopy trees, death of understory shrubs
	2	Moderate	Fire death of any overstorey, or small patches of dead trees
	3	Severe	Large patches of understory and overstorey trees dead or slop-over of burn down whole edge of coupe.
Wind damage ¹	0	Negligible	None or isolated background windthrow (normal attrition)
	1	Low	Limited to edges of reserve, scattered, low incidence

	2	Moderate	Obvious patches or common downed trees
	3	Severe	Significant proportion of trees windthrown, or large clumps or widespread through reserve
Exotic weeds	0	None	No weeds evident
	1	Low	Isolated to scattered weeds along the edge of the reserve
	2	Moderate	Patches of weeds, or spreading into the reserve, or several species
	3	Severe	Weed species comprise a significant proportion of the vegetation
Illegal wood cutting	0	None	None
	1	Low	Isolated cutting of downed trees
	2	Moderate	Cutting of several downed trees or any green tree
	3	Severe	Several green trees cut, access tracks and damage to understorey
Other			Can include dumped rubbish, myrtle wilt, erosion into creeks, slasher damage etc.

¹Assessed separately for overstorey (O/S), midstorey (M/S) and understorey (U/S).

Canopy condition ratings and severity categories for LTR reserve canopy health² assessments.

Rating	Severity category	Canopy description
0	Healthy	No sign of crown dieback ³ or compromised crowns
1	Low	Thinning crown density and/or dieback of some branches
2	Moderate	Epicormic shoots along trunk and/or reduced crown density and/or major branch dieback
3	Severe	As above and/or significant mortality

²Separately assessed for for overstorey (O/S), midstorey (M/S) and understorey (U/S).

³Branch dieback of old, "overmature" trees is normal so these are scored 0 and noted as O/M in the comments.

HCV 4 – Critical ecosystems services

Monitoring of the South Esk & Wrinklers Lagoons catchments has been ongoing as part of TPPL management, this has primarily been triggered through natural high rainfall events but more recently due to large scale bushfires within the South Esk Catchment. Details of this monitoring can be found within [Forest Monitoring Summary Taswood](#).