



Precautionary measures in timber harvesting post the 2019/20 Victorian bushfires

Regulatory position statement

May 2020

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Acknowledgment

We acknowledge and respect Victorian Traditional Owners as the original custodians of Victoria's land and waters, their unique ability to care for Country and deep spiritual connection to it. We honour Elders past and present whose knowledge and wisdom has ensured the continuation of culture and traditional practices.

We are committed to genuinely partner, and meaningfully engage, with Victoria's Traditional Owners and Aboriginal communities to support the protection of Country, the maintenance of spiritual and cultural practices and their broader aspirations in the 21st century and beyond.



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1. Purpose and background

1.1 Purpose

The purpose of this regulatory position statement (position statement) is to provide practical guidance to VicForests on how Victoria's Conservation Regulator interprets Clause 2.2.2.2 of the *Code of Practice for Timber Production (2014)* (the Code) in relation to the precautionary principle and its application to the conservation of biodiversity values, following the 2019/20 Victorian bushfires.

In this document, the Conservation Regulator is putting forward a proposition for a package of integrated precautionary measures for VicForests' consideration. The Conservation Regulator expects that VicForests will consider this advice and its obligations to implement the precautionary principle, and either adopt the integrated precautionary measures proposed here or demonstrate how VicForests will adopt equivalent measures to comply with the requirements of the precautionary principle .

1.2 The Conservation Regulator

The Conservation Regulator was established by the Department of Environment, Land, Water and Planning (DELWP) in 2019 following an independent review of DELWP's approach to timber harvesting regulation in Victoria's public native forests.

The Conservation Regulator's responsibilities include ensuring compliance with the laws for timber harvesting in State forests.

1.3 What triggered the need for this regulatory position statement?

The Conservation Regulator has sought to clarify the application of the precautionary principle to the conservation of biodiversity, in the planning and conduct of timber harvesting operations, following the significant impact of the 2019/20 Victorian bushfires on biodiversity, including impacts on rare, threatened and endangered species.

These impacts have created uncertainty about whether the existing Code requirements, protections and local management prescriptions for some species are adequate to maintain biological diversity and the ecological characteristics of native flora and fauna within the state's forests.

The impact of the fires is pertinent to the operation of the precautionary principle under the Code. In particular:

- The distribution and viability of flora and fauna populations has been impacted by the 2019/20 bushfires, and many of those species are also vulnerable to impacts from timber harvesting activities.
- There is high scientific uncertainty about the impacts of the bushfires on Victoria's biodiversity, the current distribution and viability of significantly fire impacted flora and fauna populations, and their ability to withstand future adverse impacts (whether from future fires, timber harvesting or other factors).

The Conservation Regulator believes that the precautionary principle is currently triggered by risks of serious and irreversible damage to Victoria's biodiversity posed by timber harvesting operations in light of the 2019/20 Victorian bushfires, and the significant scientific uncertainty about the status of Victoria's biodiversity from these operations in this context. The Conservation Regulator believes that VicForests is therefore required by law to implement precautionary measures in response.

While the 2019/20 Victorian bushfires were still active, the Chief Conservation Regulator wrote to the Chief Executive of VicForests (21 January 2020) advising that the Conservation Regulator believes that timber harvesting needs to be modified in response to the bushfires, and asking that VicForests provide information about actions taken "to apply the precautionary principle in response to the changed conditions for vulnerable and threatened species across the State", and regarding "future changes that are proposed for planning and operations in 2020 in response to the changed conditions".

On 17 February 2020, the Chief Conservation Regulator wrote to the Chief Executive of VicForests stating that in the light of the bushfire impacts "it is justified not to undertake any commercial harvesting operations in the East Gippsland Forest Management Area (FMA) until further information reduces the scientific uncertainty of the potential for serious or irreversible environmental damage."

In the last three months, Conservation Regulator and VicForests staff have been meeting weekly to discuss the application of the precautionary principle. Staff of DELWP's Biodiversity Division have also participated in these meetings and have strongly supported the consideration of the precautionary principle by providing significant scientific assessment and modelling. These discussions have particularly focussed on the development of appropriate precautionary measures for salvage harvesting by VicForests, and have been instrumental in VicForests' decisions to focus early salvage harvesting on fire-killed Ash forests only and to apply important precautionary measures that include:

- Restricting harvesting of fire affected areas to only fire killed Ash stands (ie. high fire severity).
- Retention of all green patches.
- Retention of all green/live trees where safe to do so.
- Retention of all dead large hollow bearing trees where safe to do so.
- Developing a gaps and corridors method of salvage harvest to minimise the creation of large contiguous areas impacted and to retain forest structure and connectivity.

On 6 April 2020 during a presentation of updated assessment of the biodiversity impacts of the bushfires, the Chief Executive of VicForests requested advice and direction from the Conservation Regulator on expectations for precautionary action by VicForests. As a result, the Conservation Regulator is putting forward a proposition for a package of integrated precautionary measures for VicForests' consideration.

1.4 Who does this regulatory position statement apply to?

This position statement applies to persons conducting timber harvesting operations in State Forests subject to the Code.

This statement applies directly to VicForests, as the entity responsible for the management of timber harvesting operations to the east of the Hume Highway and subject to the Code pursuant to the *Sustainable Forests (Timber) Act 2004*.

1.5 How will this regulatory position statement be applied by the Conservation Regulator?

This position statement will inform how the Conservation Regulator applies its regulatory oversight and powers with respect to timber harvesting operations in Victoria.

How VicForests have considered this position statement and taken necessary precautionary measures in conducting its planning and operations, will form part of compliance monitoring of timber harvesting.

Failure to apply the precautionary principle will form the basis of Conservation Regulator action in accordance with our [Compliance and Enforcement Policy](#).

1.6 Commencement and application of this regulatory position statement

The position is current from 11 May 2020. It will be reviewed in full no later than 30 November 2020. It may be withdrawn or modified at an earlier date by the Chief Conservation Regulator.

This position may be reviewed and withdrawn or revised in light of:

- new information obtained by the regulator pertinent to the precautionary principle, in particular information about the threat(s) of serious or irreversible damage to the environment or about the scientific uncertainty associated with the threat(s); and/or
- amendments to the regulatory environment for timber harvesting.

Key messages:

The precautionary principle requires VicForests to consider the broader landscape impacts of the 2019/20 Victorian bushfires on Victoria's biodiversity values in all active and planned timber harvesting operations, and where at-risk species are present to take precautionary measures to avoid or minimise serious or irreversible harm.

The Conservation Regulator has formed the view that the precautionary principle is currently triggered by risks of serious and irreversible damage to Victoria's biodiversity posed by timber harvesting operations in light of the 2019/20 Victorian bushfires, and the significant scientific uncertainty about the status of Victoria's biodiversity from these operations in this context. The Conservation Regulator therefore expects that VicForests will implement precautionary measures to meet its regulatory obligations.

In this context, VicForests has sought advice and direction from the Conservation Regulator. As a result, the Conservation Regulator is putting forward a proposition for a package of integrated precautionary measures for VicForests' consideration.

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2. Code requirements

2.1 What are the relevant provisions of the Code?

Clause 2.2.2 of the Code relates to the conservation of biodiversity. It sets out several Mandatory Actions directed towards addressing biodiversity conservation risks and sets out requirements that must be observed during planning, roading, harvesting, tending and regeneration of native forests.

2.2 How does the Conservation Regulator interpret these Code provisions?

Clause 2.2.2.2 – Precautionary Principle

The need to take precautionary measures is triggered where two conditions are met:

1. there is a real threat of serious or irreversible environmental damage; and
2. there is substantial or material scientific uncertainty as to the environmental damage.

Once those two conditions are met, precautionary measures must be taken unless the duty holder can show that the threat does not exist or is negligible.

There is no single response or mandatory set of actions that a duty holder must follow once the two preconditions are satisfied. The degree of precaution and the subsequent response will depend on the combined effect of the seriousness of the threat of environmental damage and the degree of uncertainty.

Accordingly, VicForests should take reasonable steps to assess if the precautionary principle has been triggered and where a direct or indirect threat does exist, VicForests should take precautionary measures to avoid or modify operations to minimise those risks.

The Conservation Regulator's publication *Precautionary Principle in the Code of Practice for Timber Production 2014: Statement of Regulatory Interpretation* has been provided to VicForests in tandem with this regulatory position statement. The Statement of Regulatory Interpretation will be published by the Conservation Regulator. The Statement of Regulatory Interpretation outlines the way the Conservation Regulator interprets and intends to apply the precautionary principle.

Clause 2.2.2.3 – Consideration of Conservation Biology Expert Advice

In addressing biodiversity conservation risks, consideration of scientific knowledge is another mandatory action within the Code. The Code requires that:

“The advice of relevant experts and relevant research in conservation biology and flora and fauna management must be considered when planning and conducting timber harvesting operations.”

Consideration of advice, independent of or in concert with triggering the precautionary principle, should form a key part of modifying timber harvesting to respond to new knowledge about risks of harm and/or uncertainty. Any approach would consider the results of monitoring, research and internal and external expert advice when taking management decisions.

3. Biodiversity impacts of the 2019/20 Victorian bushfires

3.1 What is the significance of the 2019/20 Victorian bushfires on application of the Code?

DELWP's Biodiversity Division has conducted analysis to understand the biodiversity impacts of the 2019/20 Victorian bushfires, and to understand the risks to and the state of scientific uncertainty for Victoria's biodiversity.

The most current analysis, provided to the Conservation Regulator to support the development of this position statement, has identified that the 2019/20 Victorian bushfires have impacted on the value of habitat for biodiversity values of the forest estate. This advice indicates:

- The 34 identified priority species that are at higher risk of harm from timber harvesting in each FMA, based on an assessment of the increase in relative importance of that FMA for the species and the proportion of state-wide distribution within that FMA available for timber harvesting.
- The relative value of areas of habitat for 34 identified priority species across eastern Victoria has changed (indicated through an integrated (zonation) analysis which considers the habitat value of an area for a 'basket' of all 34 species); as the relative value of burnt areas has declined, so the relative value of unburnt areas has increased, including within, adjacent to and distant from the burnt areas.
- These impacts (which are based on modelled habitat and therefore subject to some scientific uncertainty) create the situation where (without suitable precautionary measures) timber harvesting operations could create a threat of serious or irreversible environmental damage to identified priority forest dependant species which have experienced significant fire impacts on their range, habitat and potentially on their population viability.

3.2 Identified species of concern

The biodiversity analysis has identified 34 priority species whose range, habitat and potential viability are likely to have been significantly impacted by the 2019-20 bushfires, and which are also known to be vulnerable to adverse impacts from timber harvesting operations. These identified priority species are set out in Table 1, below.

Table 1 – Identified priority species whose range, habitat and potential viability are likely to have been significantly impacted by the 2019-20 bushfires

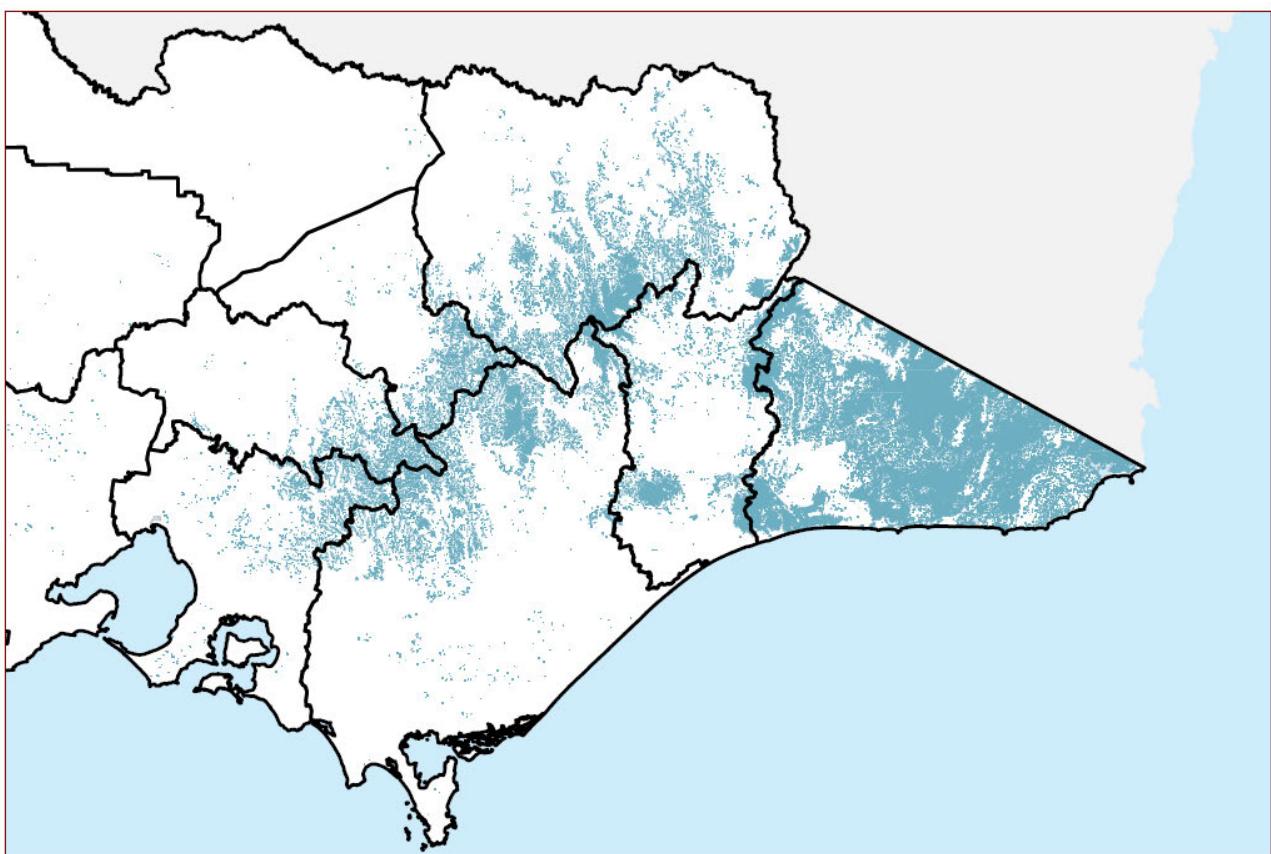
Terrestrial species (animals)	Terrestrial species (plants)	Aquatic species
- Broad-toothed Rat	- Blackfellow's Hemp	- Arte Spiny Crayfish
- Giant Burrowing Frog	- Colquhoun Grevillea	- Cann Spiny Crayfish
- Glossy Black-Cockatoo	- Elegant Daisy	- Claytons Spiny Crayfish
- Greater Glider	- Forest Geebung	- Dargo Galaxias
- Large Brown Tree Frog	- Smooth Geebung	- East Gippsland Galaxias
- Long-footed Potoroo	- Tasmanian Wax-flower	- East Gippsland Spiny Crayfish
- Masked Owl	- Upright Pomaderris	- Mallacoota Burrowing Crayfish
- Powerful Owl	- Veined Pomaderris	- McDowall's Galaxias
- Smoky Mouse		- Orbost Spiny Crayfish
- Sooty Owl		- Roundsnout Galaxias
- Spot-tailed Quoll		- Cann Galaxias
- Spotted Tree Frog		- Snowy Spiny Crayfish
- Yellow-bellied Glider		- Variable Spiny Crayfish
		- Yalmy Galaxias

3.3 Analysis of high value habitat for identified priority species

Integrated analysis of the highest value habitat for the ‘basket’ of 34 identified priority species

DELWP’s Biodiversity Division has conducted analysis to identify the distribution of the highest value habitat (i.e. the most valuable 20% of habitat across the 34 identified priority species as set out in Table 1). This highest value habitat has the potential to provide refuge and allow for recovery of a range of identified priority species. This could be described as the ‘best of the best’ habitat for vulnerable and potentially vulnerable species within eastern Victoria.

Figure 1 – distribution of the top 20% highest value habitat for the ‘basket’ of identified priority species (shown in blue) across all land tenures



A significant portion of this top 20% highest value habitat for the ‘basket’ of 34 identified priority species is in state forests which are available to VicForests under the current Timber Release Plan.

Highest value habitat for the identified priority species by Forest Management Area

DELWP's Biodiversity Division has provided advice to the Conservation Regulator regarding which of the identified priority species (see Table 1, above) are of particular concern within each of the Forest Management Areas. This advice is summarised in Table 2, below.

Table 2 Identified priority species of particular concern within each Forest Management Area

	Benalla Mansfield	Central	Central Gippsland	Dandenong	East Gippsland	North East	Tambo
Terrestrial species (animals)							
Broad-toothed Rat							✓
Giant Burrowing Frog					✓		✓
Glossy Black-Cockatoo					✓		✓*
Greater Glider	✓	✓	✓	✓	✓		
Large Brown Tree Frog					✓		
Long-footed Potoroo					✓	✓*	
Masked Owl			✓		✓		
Powerful Owl		✓	✓		✓		
Smoky Mouse	✓	✓	✓	✓			
Sooty Owl		✓	✓	✓	✓		
Spot-tailed Quoll			✓		✓		✓
Spotted Tree Frog						✓*	
Yellow-bellied Glider	✓	✓	✓	✓	✓		
	Benalla Mansfield	Central	Central Gippsland	Dandenong	East Gippsland	North East	Tambo
Terrestrial species (plants)							
Blackfellow's Hemp					✓		
Colquhoun Grevillea					✓		
Elegant Daisy					✓		
Forest Geebung					✓		✓
Smooth Geebung					✓		
Tasmanian Wax-flower					✓		
Upright Pomaderris					✓		
Veined Pomaderris					✓		
	Benalla Mansfield	Central	Central Gippsland	Dandenong	East Gippsland	North East	Tambo
Aquatic species							
Arte Spiny Crayfish					✓		
Cann Spiny Crayfish					✓		
Claytons Spiny Crayfish					✓		
Dargo Galaxias							
East Gippsland Galaxias					✓		
East Gippsland Spiny Crayfish					✓		
Mallacoota Burrowing Crayfish					✓		
McDowall's Galaxias					✓		
Orbost Spiny Crayfish					✓		
Roundsnout Galaxias (includes Cann Galaxias)					✓		
Snowy Spiny Crayfish					✓		✓
Variable Spiny Crayfish					✓		
Yalmy Galaxias					✓		

Table 2 (above) includes three modifications to the advice provided by DELWP's Biodiversity Division, to add the following identified priority species by FMA. These modifications are indicated with an asterisk [*] next to the relevant tick marks. They are:

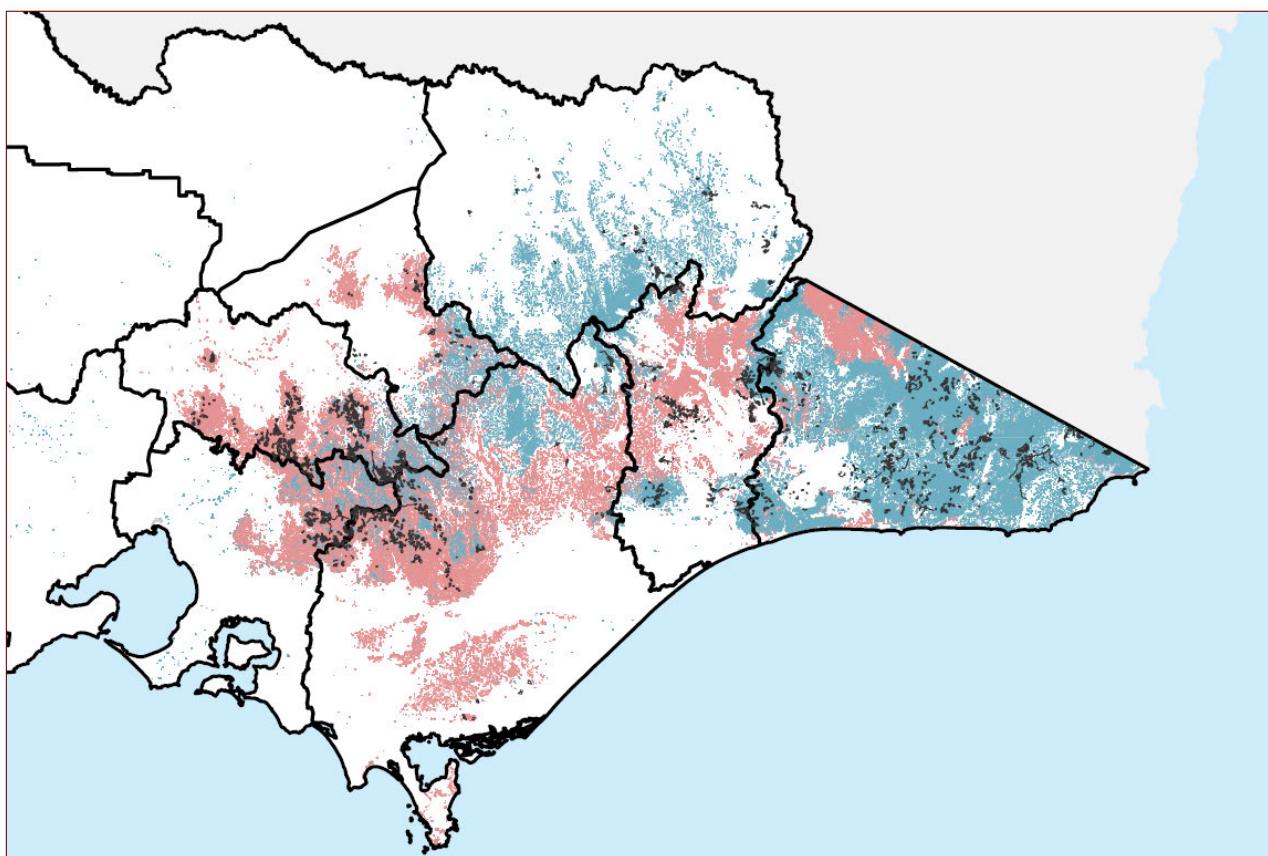
- Glossy Black-Cockatoo added as a priority species for Tambo FMA.
- Long-footed Potoroo added as a priority species for North East FMA.
- Spotted Tree Frog added as a priority species for North East FMA.

These three additions have been made by the Conservation Regulator after seeking peer review advice from the Arthur Rylah Institute. These additions were made to reflect the following advice from the Arthur Rylah Institute:

- Glossy Black Cockatoo: has been included for Tambo FMA to ensure adequate protection of the species' critical food supply can occur across its range.
- Long-footed Potoroo: has been included for North East FMA due to the importance of this sub-population and the likely under representation of modelled habitat in the North East FMA, which increases the potential overlap with timber harvesting.
- Spotted Tree Frog: has been included for North East FMA due there being so few populations remaining, that identifying all locations where there is overlap with timber harvesting is critical for the conservation of this species.

DELWP's Biodiversity Division has conducted analysis to identify the best post-fires habitat (the top 20%) for each of the identified priority species in each FMA. Modelling suggests that some species have high value habitat in areas that are not favoured by other identified priority species. These results are shown in Figure 2, below. Note that Figure 2 does not include the highest value habitat for the three additions made in response to Arthur Rylah Institute advice (as noted above).

Figure 2 – distribution of the top 20% highest value habitat for the 'basket' of bushfire impacted priority species (shown in blue), and of the top 20% highest value habitat for individual identified priority species (shown in pink) across all land tenures



4. Conservation Regulator advice regarding precautionary measures

VicForests is the duty holder and the Code requires them to comply with the mandatory actions including the precautionary principle. It is VicForests' responsibility to work out how best to comply with the law, and the Conservation Regulator expects and understands that VicForests will do that in a way that best balances environmental, social and economic outcomes.

The following advice is presented to VicForests for consideration as one method by which the Conservation Regulator's interpretation of the requirements of the Code and the precautionary principle could be met.

The Conservation Regulator understands that VicForests has access to a range of information about its business that the Conservation Regulator does not. VicForests is encouraged to examine how it can maximise the efficiency and effectiveness of its approach to implementing an integrated package of precautionary measures.

Key messages:

The Conservation Regulator is putting forward a proposition for a package of integrated precautionary measures for VicForests' consideration at VicForests' request.

The Conservation Regulator expects that VicForests will consider this advice and its obligations to implement the precautionary principle, and either adopt the integrated precautionary measures proposed here, or demonstrate how VicForests will adopt equivalent measures to comply with the requirements of the precautionary principle.

VicForests is the duty holder and the Code requires them to comply with the mandatory actions including the precautionary principle. It is VicForests' responsibility to work out how best to comply with the law.

The Conservation Regulator can provide advice on the adequacy of alternative precautionary measures if developed by VicForests. It is the Conservation Regulator's expectation that any alternatives proposed will demonstrate adopt equivalent measures to comply with the requirements of the precautionary principle.

In developing this advice, the Conservation Regulator has also considered the principles of ecologically sustainable development (s.5 of the *Sustainable Forests (Timber) Act 2004*), seeking to "effectively integrate both long-term and short-term economic, environmental, social and equity considerations" (s.5(4)(a) of the Act). This advice aims to support VicForests in making operational choices that implement a package of integrated precautionary measures in a way that maximises social and economic outcomes.

4.1 Proposition for a package of integrated precautionary measures

The Conservation Regulator's proposition for a package of integrated precautionary measures consists of three major components as follows:

1. Continued postponement of harvesting in East Gippsland FMA
2. Postpone harvesting in areas of highest value habitat for the 'basket' of 34 identified priority species
3. Survey and mitigate if harvesting in the best habitat for identified priority species

These components measures are explained in turn below.

Component 1 – Continued postponement of any harvesting in East Gippsland FMA

East Gippsland FMA is severely fire impacted, and there is extreme scientific uncertainty about biodiversity impacts. The East Gippsland FMA has multiple endemic species with small natural ranges. For many of these there is very high scientific uncertainty, and many were very vulnerable before the 2019/20 bushfires. There is extensive analysis of these impacts available in the advice developed by the Biodiversity Division of DELWP that has been provided along with this regulatory position.

On 7 February 2020, the VicForests Board published a statement that "Unburnt areas in the East Gippsland fire zone will not be harvested by VicForests until Government has determined the priority areas to be preserved to provide the best opportunity to support the recovery and long-term viability of threatened species."

As component 1 of the package of integrated precautionary measures to meet VicForests' obligations under the precautionary principle, the Conservation Regulator advises a continued postponement of timber harvesting (salvage or unburnt) in East Gippsland FMA.

This postponement of any harvesting in East Gippsland FMA is to be reviewed by the Conservation Regulator by 30 November 2020 as part of the review of this position statement.

Component 2 – Postpone harvesting in areas of highest value habitat for the 'basket' of 34 identified priority species

Section 4.3 (above) summarises the DELWP Biodiversity Division's analysis of the highest value habitat for the 'basket' of 34 identified priority species (set out in Table 1, above).

As component 2 of the package of integrated precautionary measures to meet VicForests' obligations under the precautionary principle, the Conservation Regulator advises a postponement of timber harvesting in these areas of highest habitat value.

Excluding the East Gippsland FMA, implementation of component 2 by postponing harvesting in areas of highest value habitat for the 'basket' of 34 identified priority species would represent postponed harvesting in 25% of the current Timber Release Plan area.

Surveying by VicForests may demonstrate the values that indicate high quality habitat are not present and therefore allow harvesting to proceed where VicForests forms a view that the modelled 'highest value habitat' is not present in reality.

Component 3 – Survey and mitigate if harvesting in the best habitat for identified priority species

Section 4.3 (above) also summarises the DELWP Biodiversity Division's analysis and ARI advice of the highest value habitat for the individual identified priority species for each FMA (set out in Table 2, above).

As component 3 of the package of integrated precautionary measures to meet VicForests' obligations under the precautionary principle, the Conservation Regulator advises to avoid timber harvesting in these locations where possible.

Where timber harvesting is proposed in these locations, VicForests should:

1. ensure that each proposed timber harvesting coupe is surveyed to assess the presence of the identified priority species for that FMA (see Table 2 above), and

2. modify any timber harvesting activity at that site to avoid or mitigate adverse impacts on the identified priority species and (where appropriate) their habitat requirements.

The Conservation Regulator has developed a suite of proposed modifications for timber harvesting at coupes which are outside the highest value habitat for the 'basket' of 34 identified priority species (to be protected if component 2 is implemented). These are discussed in the following section.

The implementation of this suggestion requires that a high standard of pre-harvest surveying is undertaken to identify identified priority species and other protected values.

The Conservation Regulator can support VicForests in ensuring that appropriate surveying is conducted. As part of this, the Conservation Regulator's Forest Protection Survey Program can conduct much of the required surveying (it targets surveying 80% of coupes which VicForests harvests), but VicForests will need to assist with the identification of priority coupes and give sufficient notice for this to occur. In the absence of the Forest Protection Survey Program conducting a survey, it is VicForests' responsibility to ensure that a survey of at least equivalent scope and standard is conducted.

Excluding the East Gippsland FMA, implementation of component 3 by postponing or modifying harvesting in the top 20% of the highest value habitat for individual identified priority species would apply to the conduct of timber harvesting in 48% of the current Timber Release Plan area.

Modified harvesting proposals to protect identified priority species

The suite of proposed timber harvesting modifications that the Conservation Regulator presents for VicForests' consideration as part of this integrated package of precautionary harvesting modification measures is set out below in Table 3. These modifications are to be applied at any timber harvesting coupe at which these species (or their habitat) are identified.

Table 3 also summarises the existing protections prescribed for these identified priority species, the FMAs for which each species is an identified priority species, and the (pre-fires) listed conservation status of each species.

The remainder of the Timber Release Plan area

There are significant areas of the Timber Release Plan area which are not subject to the precautionary measure suggestions in components 1 to 3 above.

Excluding the East Gippsland FMA (for which the Conservation Regulator has recommended no harvesting as a precautionary measure), 27% of the Timber Release Plan area can be harvested by VicForests with minimal change from the harvesting approaches it had used before the 2019/20 bushfires.

The Conservation Regulator suggests VicForests consider as part of its package of integrated precautionary measures that when an identified priority species is found to be present at any coupe that the precautionary harvesting modification measures set out in Table 3 (below) should be implemented.

Table 3 - Identified priority species, their (pre-fire) status, identified FMAs, existing management actions, and modified harvesting precautionary measure examples

Common Name and Species Name	Existing Management Actions <i>Appendix 5: Management Standards and Procedures for timber harvesting operations and Action Statements</i>	Examples of Precautionary Measure <i>Objective: Risk Avoidance, Minimisation or Management</i>
Dargo Galaxias / <i>Galaxias mungadhan</i>	No formal prescriptions however VicForests have voluntarily implemented prescriptions in consultation with DELWP	<p>Avoid timber harvesting in Dargo Galaxias sub-catchments and within the catchment polygon spatial layer including the headwaters and areas potentially impacted by upstream sedimentation.</p> <p>Avoid new roads (including coupe roading) into sub-catchments and within catchment polygon spatial layers of Dargo Galaxias.</p> <p>Consult with DELWP in the application of any voluntarily implemented prescriptions to protect Dargo Galaxias sites</p>
Colquhoun Grevillea / <i>Grevillea celata</i>	Establish a SPZ of 200 m radius over each verified population.	<p>Undertake searches consistent with DELWP survey standards through proposed coupes which overlap with high quality modelled habitat areas or have records in or near the proposed coupe. If flora species are present, establish a SMZ of 200 m radius over verified populations. Conduct a site inspection and detailed planning in consultation with DELWP to ensure the species is adequately protected during timber harvesting operations.</p>
Forest Geebung / <i>Persoonia silvatica</i>	No formal prescriptions	<p>These species have an uncertain fire response, so if the species is not recorded during the survey then consult with DELWP seeking advice prior to commencing any works</p>
Powerful Owl / <i>Ninox strenua</i>	<p><u>All FMAs also including Sooty Owl and Masked Owl:</u> Establish a SPZ of 3 ha and a SMZ of 250-300 m radius (or equivalent linear area) around each verified nesting and roosting site, unless already protected.</p> <p><u>Tambo and Central Gippsland:</u> Identify and maintain a target of 115 Powerful Owl Management Areas (POMA) of at least 500 ha of suitable habitat across public land in the Gippsland FMAs.</p> <p><u>Central:</u> Identify and maintain a target of 50 Powerful Owl Management Areas (POMA) of at least 500 ha of suitable habitat across public land</p>	<p>Undertake large forest owl surveys consistent with DELWP survey standards in coupes overlapping with high quality modelled habitat.</p> <p>If any large forest owls or roosting and nesting sites are recorded, then avoid harvesting until a review is completed of the record. Apply the relevant FMA's prescriptions after the review is completed.</p> <p>Following site confirmation of high quality habitat, modify harvesting to retain hollow-bearing trees throughout the coupe and apply increased vegetation buffers along creeks and gully-lines wherever possible.</p>
Sooty Owl / <i>Tyto tenebricosa</i>	<p><u>Tambo and Central Gippsland:</u> Identify and maintain a target of 169 Sooty Owl Management Areas (SOMA) across public land in the Gippsland FMAs.</p> <p><u>Central FMA:</u> Identify and maintain a target of 100 SOMAs across public land. Locate SOMAs based on probable breeding areas based on the occurrence of owlets or adult roosting pairs and on habitat identified by habitat modelling. SOMAs may overlap with management areas established for other species.</p>	<p>Undertake large forest owl surveys consistent with DELWP survey standards in coupes overlapping with high quality modelled habitat.</p> <p>If any large forest owls or roosting and nesting sites are recorded, then avoid harvesting until a review is completed of the record. Apply the relevant FMA's prescriptions after the review is completed.</p> <p>Following site confirmation of high quality habitat, modify harvesting to retain hollow-bearing trees throughout the coupe and apply increased vegetation buffers along creeks and gully-lines wherever possible.</p>

Common Name and Species Name	Existing Management Actions <i>Appendix 5: Management Standards and Procedures for timber harvesting operations and Action Statements</i>	Examples of Precautionary Measure <i>Objective: Risk Avoidance, Minimisation or Management</i>
<i>Masked Owl / Tyto novaehollandiae</i>	Identify and maintain a target of 150 resident pairs as Masked Owl Management Areas (MOMA) across their main range in Victoria on either public or private land. Within the Gippsland FMA MOMAs are to be at least 500 ha	Undertake large forest owl surveys consistent with DELWP survey standards in coupes overlapping with high quality modelled habitat. If any large forest owls or roosting and nesting sites are recorded, then avoid harvesting until a review is completed of the record. Apply the relevant FMA's prescriptions after the review is completed. Following site confirmation of high quality habitat, modify harvesting to retain hollow-bearing trees throughout the coupe and apply increased vegetation buffers along creeks and gully-lines wherever possible.
<i>Greater Glider / Petauroides volans</i>	Retain at least 40% of the basal area of eucalypts across each timber harvesting coupe, prioritising live, hollow bearing trees, wherever a density of Greater Gliders equal to or greater than five individuals per spotlight kilometer (or equivalent measure) is identified.	Complete coupe surveys consistent with DELWP survey standards for Greater Glider and Yellow-bellied Glider in high quality modelled habitat and high quality site-based habitat. Retain at least 40% of the basal area of eucalypts across each timber harvesting coupe, prioritising live, hollow-bearing trees, wherever a density of 3 or more Greater Gliders or 3 or more Yellow-bellied Gliders per spotlight kilometre (or equivalent measure) is found.
<i>Yellow-bellied Glider / Petaurus australis</i>	No prescriptions outside of East Gippsland FMA	Undertake Smoky Mouse and Broad-toothed Rat surveys consistent with DELWP survey standards in coupes overlapping with high quality modelled habitat. If Smoky Mouse or Broad-toothed is recorded, then apply the Smoky Mouse Central FMA prescription. Following site confirmation of high quality habitat, modify harvesting to retain on-ground habitat (unharvested patches) throughout the coupe. Consult with DELWP if further direction is required.
<i>Broad-toothed Rat / Mastacomys fuscus mordicus</i>	No prescriptions	
<i>Smoky Mouse / Pseudomys fumeus</i>	Establish a SMZ of approximately 100 ha over each verified record incorporating the detection site wherever possible.	Undertake surveys consistent with DELWP survey standards in high quality modelled habitat and if detections are made apply the North East FMA's prescriptions. Following site confirmation of high quality habitat, extend additional buffers on creeks and gully-lines.
<i>Long-footed Potoroo / Potorous longipes</i>	Maintain areas of State forest within the North East Long-footed Potoroo Core Protected Area within SPZ Establish a SMZ of approximately 150 ha for each Long-footed Potoroo detection site that is outside the Core Protected Area (i.e. within existing SPZ and conservation reserves). Within each SMZ, at least one third (50 ha) will be protected from timber harvesting and new roading.	

Common Name and Species Name	Existing Management Actions <i>Appendix 5: Management Standards and Procedures for timber harvesting operations and Action Statements</i>	Examples of Precautionary Measure <i>Objective: Risk Avoidance, Minimisation or Management</i>
Giant Burrowing Frog / <i>Heleioporus australiacus</i>	<p>Where verified records of Giant Burrowing Frog are located on first-order streams or sites away from streams, protect approximately 50 ha (preferably the entire sub catchment unit) in SPZ.</p> <p>Where verified records of Giant Burrowing Frog are located on second or higher order streams, establish a SPZ of 100 m width each side of the stream for 1km upstream and downstream of the detection site. For off stream records establish a SPZ of 50ha over the record or equivalent area of suitable habitat nearby.</p>	<p>Avoid harvesting of coupes overlapping with high quality modelled habitat or in sub-catchments containing records.</p> <p>Establish additional buffers on creeks and gully-lines within sub-catchments of modelled habitat areas.</p>
Spotted Tree Frog / <i>Litoria spenceri</i>	<p>Until the species critical habitat is known, establish a SPZ of 300 m radius over all verified frog sites and mapped habitat areas. Establish a SMZ of a further 700 m either side of the SPZ and 1 km upstream or to the ridge top (if the stream is less than 1 km long) along all streams that flow into frog habitat</p>	<p>Timber harvesting to proceed only after a desktop study has confirmed that no records of the species are within riparian areas of proposed coupes. Apply DELWP and VicForests agreed salvage harvesting prescriptions if applicable.</p>
Glossy Black-Cockatoo / <i>Calyptorhynchus lathami</i>	<p>Establish a SMZ of 250m radius over each verified nesting site.</p> <p>Where Black She-oak stands are identified timber harvesting (including post harvesting burning) and new roading activities will be conducted in a manner that avoids damage to the stand</p>	<p>Establish a 20m buffer around any Casuarina stands (basal area equal or greater than 10 square metres in 0.25 hectares) or large single trees or recent evidence of Casuarina foraging within proposed coupes or along any proposed road alignments</p>
Spot-tailed Quoll / <i>Dasyurus maculatus</i>	<p>Establish a SPZ of approximately 500 ha for each verified record including the detection site where appropriate. Include areas of undisturbed mature forest, riparian areas and rocky outcrops in the SPZ where possible. In addition to the SPZ, establish a SMZ of approximately 1 000 ha contiguous to the SPZ.</p> <p>Protect verified den and latrine sites by at least a 200 m radius SPZ where they are not otherwise protected.</p>	<p>Undertake Spot-tailed Quoll surveys in broad areas where coupes overlap high quality modelled habitat. If Spot-tailed Quoll is recorded, then review the record and apply the relevant FMA's prescription.</p> <p>Following site confirmation of high quality habitat, modify harvesting to retain on-ground habitat (unharvested patches) throughout the coupe</p> <p>Consider salvage harvesting only in Alpine Ash coupes. If coupes overlap with high quality modelled habitat then include appropriate measures for the protection of Spot-tailed Quoll.</p>



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