



# Skewed age class distribution as a biodiversity threat and breach of precautionary principle: Rubicon State Forest as a case study

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RFPG submits that any further logging of the Rubicon State Forest (RSF), in particular ash stands and mountain mixed species stands, will be counter to a range of provisions of the *2014 Code of Practice for Timber Production* (the Code), including Clause 2.2.2.2, the precautionary principle (PP).

## The combination of high likelihood and serious harm demands caution

In relation to the breach of the precautionary principle we are mindful of the findings by Justice Osborn on the precautionary principle in his *My Environment* case decision (*MyEnvironment Inc v VicForests* [2012] VSC 91, 14 March 2012). At para 268, His Honour found that:

*... it will be easier to identify a threatened breach of the precautionary principle when a specific action threatens direct serious or irreversible damage to an aspect of the environment of extreme sensitivity and/or novel qualities. The more generalised the threat and the more indirect and less immediate the damage to a sensitive aspect of the environment, the more difficult it will be to be satisfied that the precautionary principle requires abstinence from a particular action.*

The RSF already has a highly skewed age class distribution, limited old growth forest stands but exceptionally high conservation values. Further fires over the next 20 years (which are highly likely) would kill more old growth stands and exacerbate the existing skewed age class distribution with seriously detrimental ecosystem consequences. If VicForests continues to log the remaining '39 regrowth ash stands in the RSF at anything approaching the extent proposed in the 2019 TRP, the precautionary principle will be breached.

Using His Honour's logic, the breach of the precautionary principle will arise because the prospect of an even worse age-class distribution than currently exists is not a

generalised or remote prospect of little consequence but rather threatens immediate and serious ecosystem damage. This serious and, given the impact of global warming, quite probably irreversible, threat of ecological harm is both immediate and of high magnitude.

Given the increasing spread of invasive species, in particular deer and blackberries and the impoverishment of understorey species diversity as the result of past and current clearfelling, the further removal of post 1939 forests would greatly exacerbate the already highly skewed forest age profile. Any further logging of remaining areas of high conservation value forest, as is planned in the current TRP, would be unequivocally at odds with the first principle of the 2014 *Code of Practice for Timber Production*, namely, to maintain “biological diversity and the ecological characteristics of native flora and fauna within forests”.

In demonstrating the looming age profile catastrophe we focus on several different partitions of the RSF to show the impact of (i) the 2009 fire in combination with (ii) the heavy logging that has occurred in the RSF over the past 40 years overlaid with (iii) the impact of future logging (as set out in the 2019 TRP) and (iv) the risk of future landscape-level fire or fires in the coming decades (as set out in VEAC’s 2017 report *Fibre and Wood Supply Assessment*).

The VEAC report states, inter alia, that:

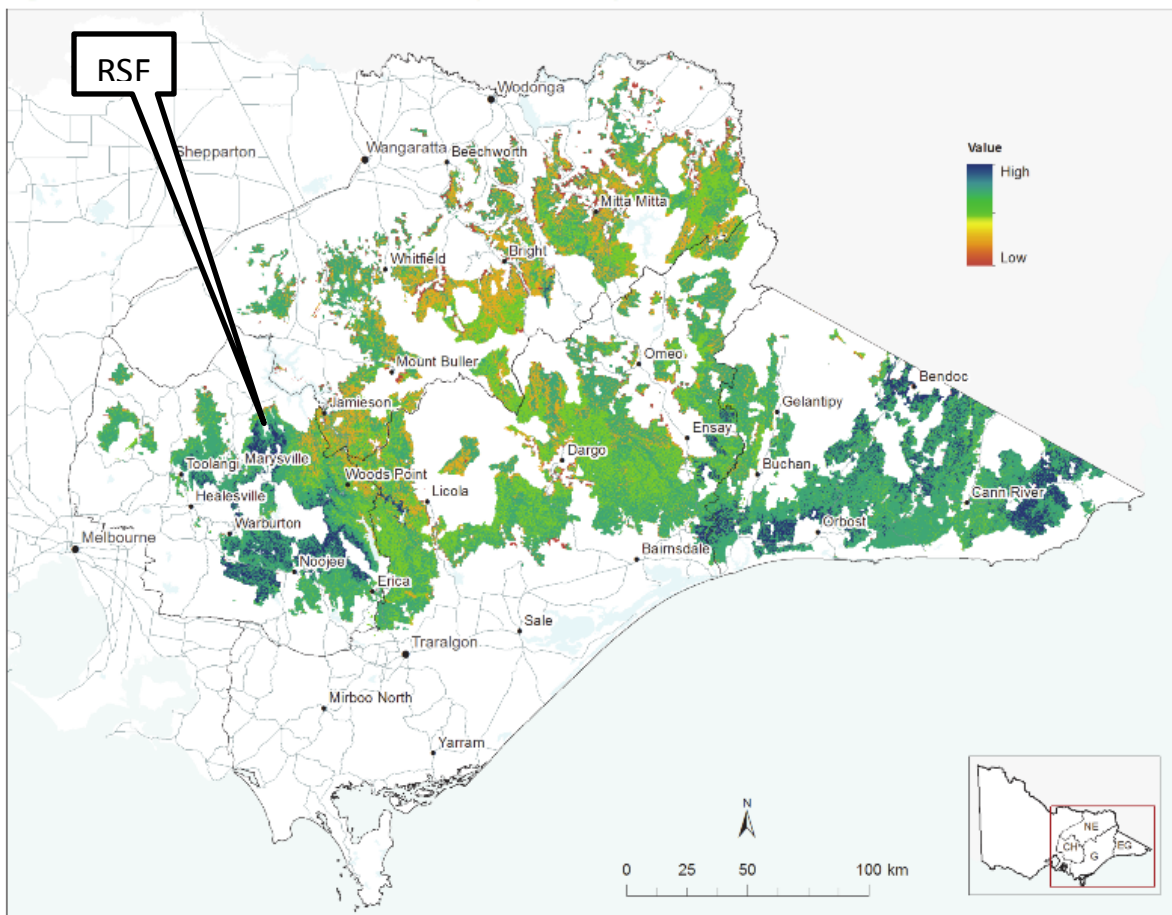
*The modelling approach attempts to quantify the risk that bushfires pose to the 1939 ash regrowth in the Central Highlands. The results indicated that it is highly unlikely that the entire 1939 resource would be lost over the next 20 years due to its spatial distribution and varying risk of bushfire across FMAs. **The risk to the 1939 resource is not spatially uniform, with the greatest risk in the Central FMA.***

*Across a range of simulations using historical fire data and a landscape fire succession model, it was **found that the mean proportion of Central Highlands broadly and the 1939 resource specifically that can be expected to burn is 20 per cent or less over the next 20 years.** While loss of 20 per cent of the 1939 ash regrowth would impact sustainable wood supply levels, it would be unlikely to eliminate the native forest industry.*

This heightened risk for the Central FMA must also be seen in the context of the 2009 fire which had a massive impact on the age structure of the RSF as is seen in VEAC’s 2017 *Conservation Values of State Forests Assessment Report*.

For additional context we also reproduce below figure 2.12 from the same report showing that the RSF sits in an area assessed to be at the highest level of generalised biodiversity. Even that ranking fails to recognise that the RSF is, in effect, a biodiversity ‘hotspot’ containing the biggest diversity of ecoclines within the Central Highlands.

Figure 2.12 Results for focused forest species analysis – state forest



We acknowledge the steps that VicForests, in its latest High Conservation Values Management Systems document, proposes to protect what it considers high conservation value areas. However as our coming comments on that report made clear, by examining individual coupes only without regard for surrounding ‘landscape-level’ considerations, the proposals utterly fail to properly protect the area’s HCVs.

VF's preoccupation with coupe by coupe assessments focusing largely on particular threatened species and habitat trees fails to properly address the wide ranging impacts of logging activities on landscape scale biodiversity and population trends of representative indicator species including pre and post logging.

To further illustrate the biodiversity threat presented by the 2009 fire and the unacceptably skewed age class distribution in the RSF we have analysed one scenario that, absent radical action, could well unfold over the coming decade. For forests

comprising eucalypt species with lifespans measured in centuries and which take over a century to form high quality arboreal animal habitat, a heavy preponderance of very young age classes, is unequivocally at odds with Code principle #1 that *biological diversity and the ecological characteristics of native flora and fauna within forests are maintained*.

### Data shortcomings

While our analysis uses VicForests and DELWP data as provided to us, various data shortcomings mean that the situation may well be much worse than our analysis reveals. For example, data provided to us by VicForests which we have used in this analysis may substantially understate the extent of ash forest killed in the Central FMA in the 2009 fires. VicForests' 2010 Annual Report states (p8) that:

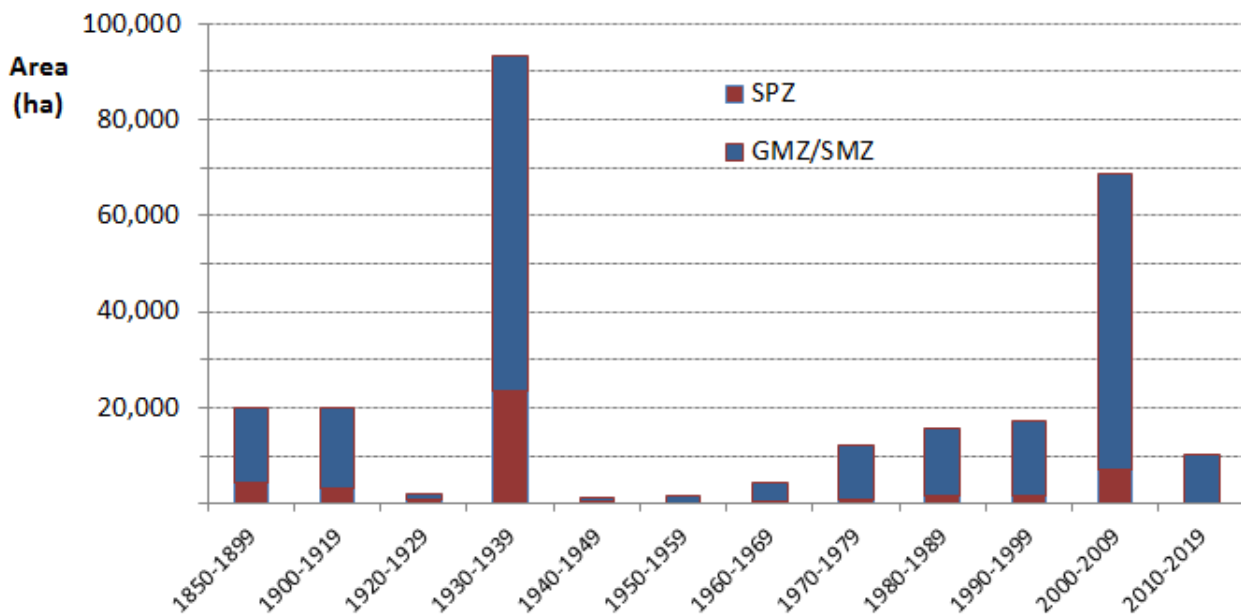
*In 2009–10, VicForests spent considerable effort in determining an operational and economic level of harvest across the entire forest estate following the 2009 bushfires. The fires killed about 13,000 hectares of high-quality ash forest. Of this, about 7000 hectares were stands of a harvestable age. Of those stands, VicForests has salvaged about 1600 hectares. Our analysis indicates that existing harvest levels can be maintained for the medium term.*

Yet the age class (decade of origin) data supplied to us by VicForests in 2017 indicates that in the Central FMA - the only FMA in the Central Highlands seriously impacted by the 2009 fires - there is only 10,173 ha in the 2000-2009 decade of origin class. Yet data held in the DELWP 'forest explorer' database indicate that in the same decade, 4,803 ha of ash forest in the Central FMA was logged other than salvage logging. Subtracting 4,803 from 10,173 implies that only 5,370 ha was killed – a far cry from the assessed 13,000 ha of ash in State Forest that was killed as reported in the 2010 Annual Report.

### Age class profile State-wide

To give some context we turn first to the state-wide picture. The chart below reproduces the decade of origin data for ash stands as provided to us by VicForests in June 2017, which we understand to include logging seasons up to and including 2015-16.

#### **Chart 1: Ash stands in State Forest in Eastern Victoria by decade of origin (VF data)**



The two notable features of Chart 1 are the substantial area of 1939 regrowth and the substantial area originating in the decade 2000-2009 as a result of the three large landscape-level fires on the 2000s.

But the apparently reassuring extent of '39 ash regrowth remaining is wide of the mark. In particular, it takes no account of the fact that as shown below, much of this area has been fragmented by past logging and so is of much less value as habitat, including failing to serve as refugia or provide effective wildlife corridors.

### Projected age class profile 2030

In order to estimate the age class profile that is likely to prevail in 2030, it is necessary to adjust the data on which Chart 1 above is based. Several adjustments have been made.

First, the total areas of ash forest of '39 regrowth in GMZ/SMZ zones have been further partitioned into unlogged forest within logged coupes (hence labelled 'fragmented') and unlogged areas ('intact'). The estimated area of 'intact' '39 regrowth should be able to serve as biodiverse old-growth in the future; 'fragmented' regrowth will have significantly lower biodiversity attributes. This partition is based on an analysis of net:gross coupe area in recent times and an understanding of past (and projected) harvesting practices. The following factors have been applied to the remaining '39 regrowth in GMZ/SMZs:

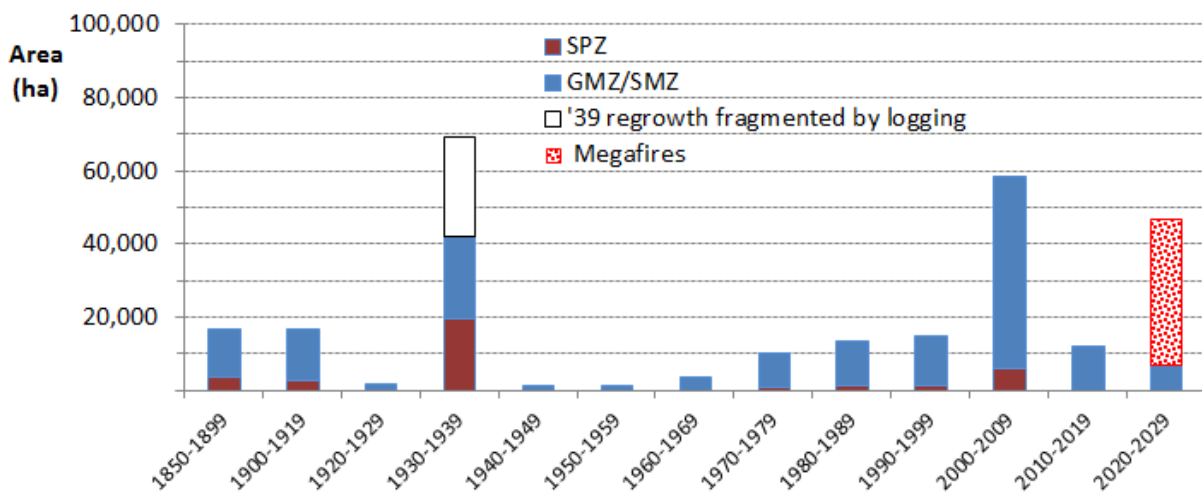
- Coupes logged 1980-1999 – 25% of logged coupes retained
- Coupes logged 2000-2019 – 30% of logged coupes retained
- Coupes logged 2020-2030 – 33% of logged coupes retained

Two further adjustments of the projected area of '39 regrowth have been undertaken to allow for known logging in 2016-17 and 2017-18 and to allow for projected logging from 2018-19 to 2029-30. This latter adjustment is based on VicForests' 2017 Resource Outlook, using an average yield of 167 m<sup>3</sup> of D+ sawlogs per ha to convert yield to area).

The final adjustment assumes the killing of a further 15% of total ash forest in megafires in the decade 2020-29. The reduction in estimated areas is applied in proportion to the existing size of age class cohorts. The loss of area in each age class column in the chart is matched by the appearance of forest area in the '20-29 column (labelled 'megafires'). It should be noted that the assumption of only 15% of the forest estate burning in the decade 2020-29 – given the heightened fire risk for the Central FMA highlighted by VEAC – is probably conservative.

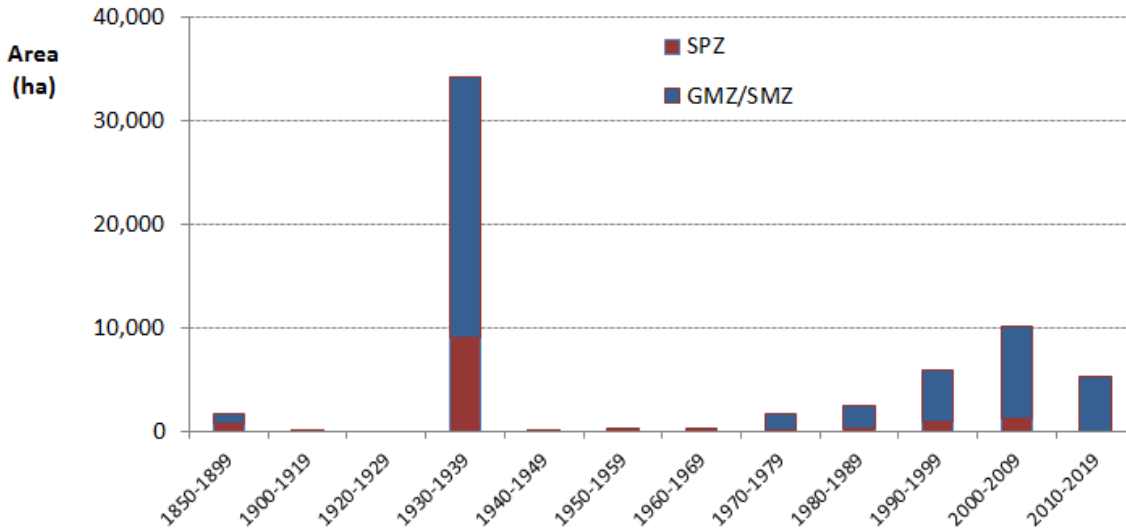
The resulting projected age class distribution is shown in Chart 2 below.

**Chart 2: Ash stands in State Forest in Eastern Victoria by decade of origin, based on VF data, projected to 2030 and including provision for 15% loss due to megafires**



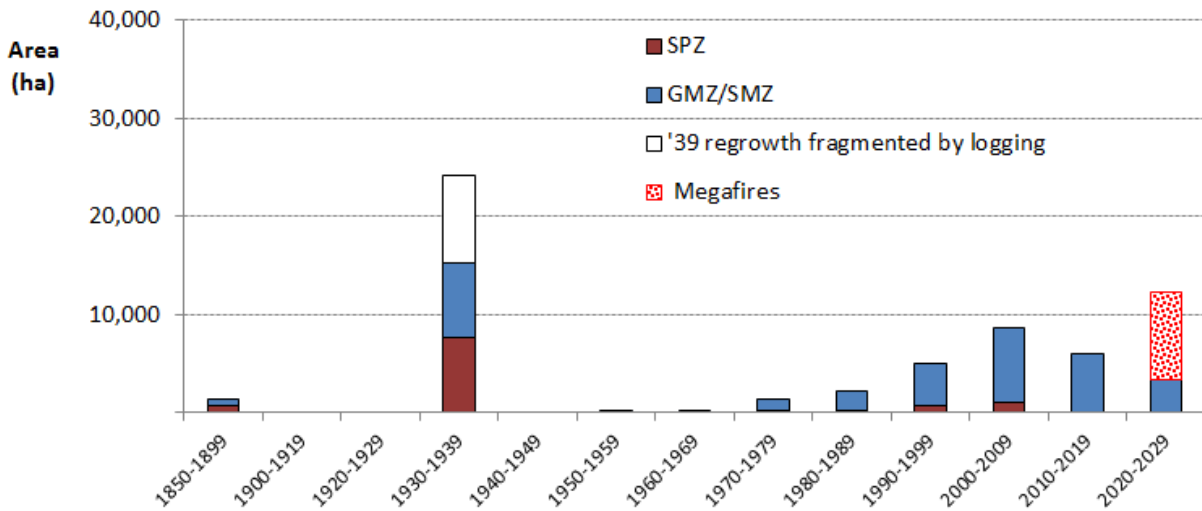
In order to better visualise the future facing the Rubicon State Forest, the equivalent transformations, based on the same data sources, have been applied to the Central Forest Management Area (FMA).

**Chart 3: Ash stands in State Forest in the Central FMA by decade of origin (VF data)**



Due to the data issues in relation to the 2009 fire discussed above, Chart 3 is assumed to substantially overstate the area of '39 ash regrowth in existence at 30 June 2016.

**Chart 4: Ash stands in State Forest in the Central FMA by decade of origin, projected to 2030 and adjusted for fire**



Bearing in mind the data limitations, Chart 4 extends timber harvesting out for another 14 years to 2029-30, based on what has already occurred and what is envisaged in the 2019 TRP and 2017 Resource Outlook.

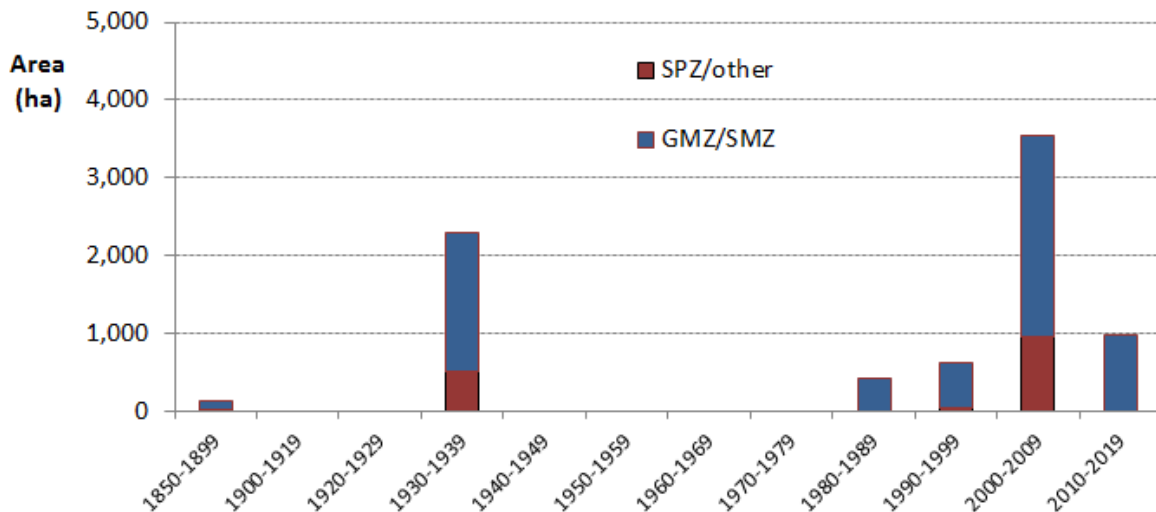
In order to appreciate the RSF circumstances in more detail, the next analysis uses a more recent age class profile provided to RFBG by VicForests last month.

Unfortunately this analysis only includes two forest blocks, Cathedral and Rubicon, these being the two areas of the RSF most heavily impacted by the 2009 fire. The extremely skewed age class distribution seen in Chart 5 is immediately apparent, but

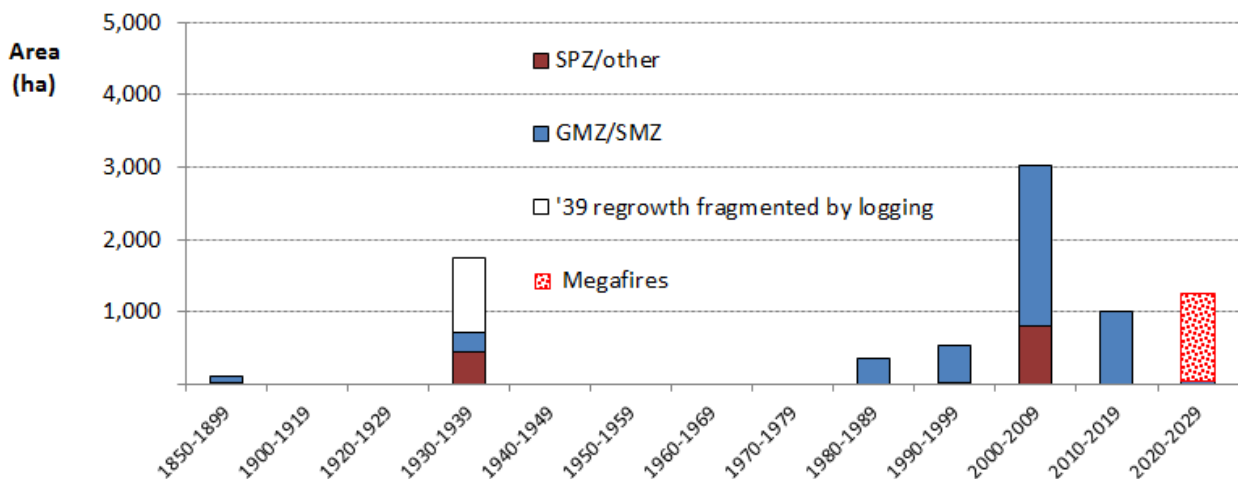
should logging continue and another fire occur, the situation will be catastrophic as is seen in Chart 6.

Such a threat unquestionably brings the precautionary principle into play.

**Chart 5: Ash stands in Blocks 285 and 286 in Rubicon State Forest by decade of origin (VF data)**



**Chart 6: Ash stands in Blocks 285 and 286 in Rubicon State Forest by decade of origin, projected to 2030 and adjusted for fire**



The bleak picture in Chart 6, which takes account of the likelihood of future major fires, is not confined to blocks 285 and 286 but a similar picture will prevail west of Snobs Creek generally (ie. in the Royston River Valley and on the Royston Range) covering block 287 and half of block 288.

A further analysis has therefore been conducted to understand the impact of logging across all the RSF west of Snobs Creek. This is set out in Chart 7 overleaf.



**Chart 7. Crude age profile of ash forest area, including Rubicon Valley Historic Area, within Rubicon State Forest west of Snobs Creek, projected to 2022 with no allowance for future fire (total area = 12,900 ha)**

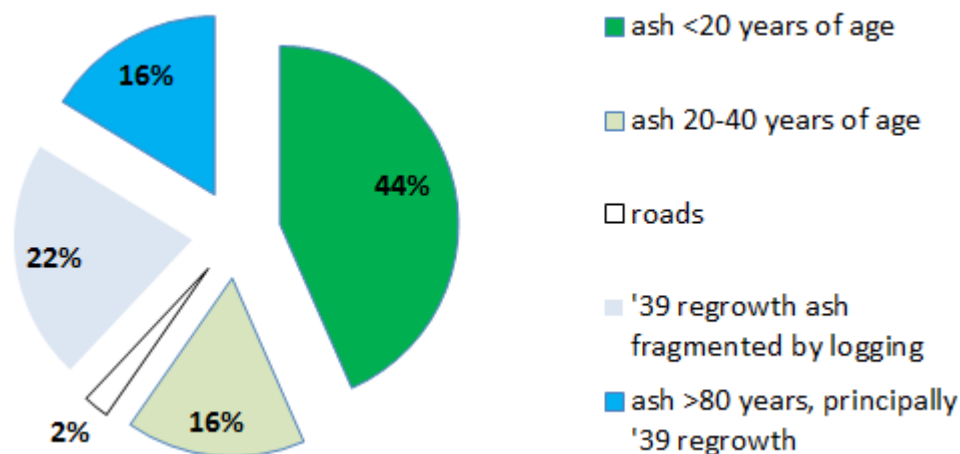


Chart 7 shows that once the coupes on the 2019 TRP are all logged, only 16% of the remaining ash forest will be ‘intact forest’ older than 80 years – a far cry from an ecologically appropriate distribution for trees whose life span is measured in centuries. Even more alarmingly, the data show that as a result of both the 2009 fires and the extensive logging that has occurred since, almost half (44%) the area of ash forest is now under 20 years of age. As we have been arguing for the past 3 years this is completely ecologically unsustainable, especially since forest of this age is still reproductively immature.

While the situation east of Snobs Creek (ie on the Torbreck Range) and east of Lake Mountain may not yet be as dire as the situation to the west, the logging proposed here under the TRP will ensure the near elimination of last vestiges of broadly intact areas of older forest within the RSF as well as destroying the ecological integrity (and tourist value) of the Snobs Creek Valley and the area north of Cambarville.

Under these circumstances, the only responsible action that the Government can take if the precautionary principle is to be adhered to is to require VicForests to cease all further logging of the RSF.

Should it not be agreed that this is the only way to comply with the precautionary principle, the Government must at least commit to a moratorium on all further logging in the RSF until a full independent analysis of the ecological integrity of the entire area, including a comprehensive biodiversity assessment, has been completed as part of the RFA modernisation project and a new FMP for the Central Highlands has been put into place.

