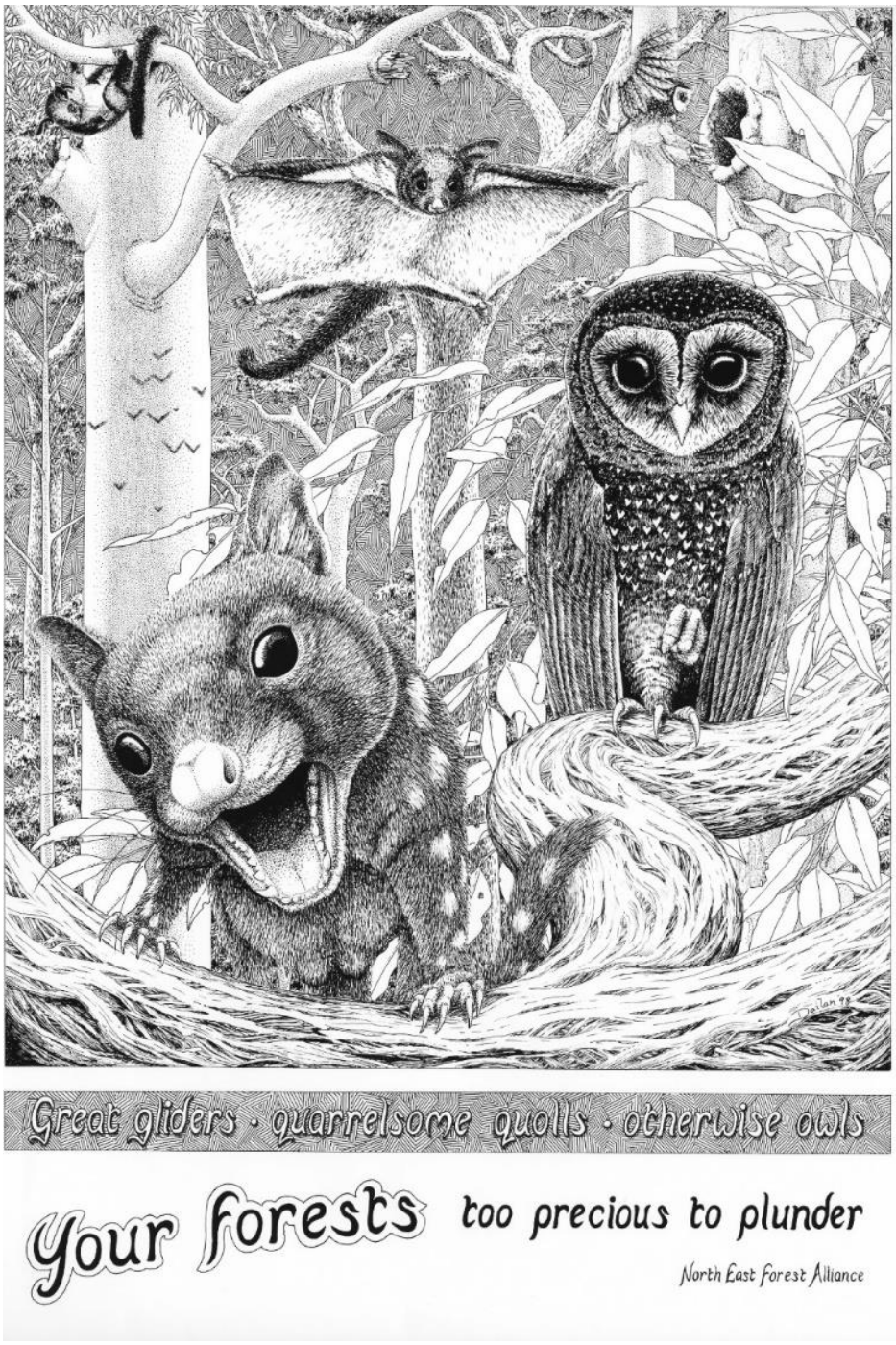
Act now for oldgrowth trees.

Dailan Pugh, North East Forest Alliance Inc, May 2022



Oldgrowth trees, and the multitude of species that depend upon them for food and hollows to den and nest in, have been decimated by decades of logging, with their losses in the 2019/20 wildfires creating a housing crisis. In response to the crisis in June 2021 the Natural Resources Commission recommended to the NSW Government that they urgently restore hollow-bearing trees across State forests by changing the logging rules to require the retention of 8 of the biggest and oldest trees per hectare where there are not enough hollow-bearing trees left, and for each of these retaining 2 recruitment trees as future hollow-bearing trees. The 174 NSW species reliant upon hollows need your urgent help to convince the NSW Government to adopt this recommendation.

Old trees are the primary storehouses of carbon, provide essential hollows for animals to nest and den in, provide the most abundant nectar and seed, and are of the highest aesthetic appeal. These values appreciate with age. Since European settlement most of our oldest trees have been lost, with only scattered old trees left across agricultural lands and within logged forests. Those surviving are of immeasurable value.

The hollows provided by oldgrowth trees provide essential homes for a plethora of native species. It is only once they are over 120-180 years old that they begin to develop hollows, and not until they are over 220 years old that they develop the large hollows required by many species. NEFA have battled for over 30 years to get hollow-bearing trees protected, and equally importantly the next largest trees to replace them when they die.

As retention rates have waxed and waned, the Forestry Corporation has waged a war of attrition against hollow-bearing trees, leaving many forests with far too few, or none. The current requirement is to retain how ever many hollow-bearing trees remain within the logging area, up to eight per hectare. The requirement to retain one of the next largest trees as a “recruitment” tree to be available to replace the hollow-bearing tree when it dies, was removed in 2018.

In response to the extensive loss of hollow-bearing trees in the 2019-20 wildfires, the Natural Resources Commission (**NRC**) has recommended that where there are not eight hollow-bearing trees per hectare, retaining the next largest trees to make up the balance of the eight trees, and for each of these trees retaining two ‘recruitment’ trees that have the potential to become the hollow-bearing trees of the future.

NEFA’s position is that all public native forests should be protected. The amplification of the housing crisis for our hollow-dependent fauna following the 2019/20 fires means that they cannot wait for us to achieve this goal. NEFA considers that all large old trees over 100 years old should be retained.

The NRC recommendation is a major step forward, intended to restore a minimum of 8 hollow bearing trees per hectare, and retaining the 16 next oldest and largest trees as future hollow-bearing trees, effectively requiring the retention of the 24 oldest and largest trees per hectare throughout State forests.

The challenges now are to convince the NSW Government to adopt this recommendation, and ensure it is appropriately worded and enforceable. The multitude of hollow-dependent animals desperately need your help to save and restore their homes.

Natural Resources Commission’s hollow-bearing tree recommendation.

The Natural Resources Commission’s (NRC) report ‘Final report Coastal IFOA operations post 2019/20 wildfires, June 2021’ was provided to the NSW Government in June 2021 with a recommendation for urgent action. Unfortunately, the Government has refused to act on its recommendations. The NRC recommendations were prepared in consultation with the Forestry Corporation (FCNSW) to minimise impact on the industry, and included requirements for variable protection of percentages of the least affected forests in Forestry Management Areas, according to risk, for up to 3 years after the wildfires, as well as increased retention of hollow-bearing trees and recruitment trees.

The NRC recognised:

> *The Coastal IFOA standard prescriptions do not provide effective retention of feed and habitat trees, including recruitment trees in timber harvest areas of state forests, to support*

the persistence of species dependent on these resources in a severely fire-affected landscape

Explaining:

> *… there is evidence that trees retained on logged sites have higher rates of mortality and collapse than trees in comparable unlogged sites and the mortality and collapse of trees retained in logged sites increases with logging intensity and the severity of post-logging fire.*
>
> *To be effective, the retention of hollow-bearing trees and recruitment trees must be permanent.*
>
> *… Advice received from the EPA and FCNSW during this review indicates that in some forests hollow bearing trees do not exist at* [eight hollow-bearing trees per hectare] *and the resource may be limited or non-existent. Our review also suggests that after the extensive and severe fires the hollow-bearing tree resource is at risk of loss.*

The only long-term change to the CIFOA logging rules recommended by the NRC was:

> *The Commission has proposed temporary additional measures relating to hollow-bearing trees and recruitment trees for medium and high-risk zones. However, the Commission considers the following measures could also enhance the standard Coastal IFOA prescriptions:*
>
> - *retain a minimum of eight hollow-bearing trees per hectare where they exist (as per the requirement in the standard Coastal IFOA prescriptions)*
> - *if hollow-bearing trees are not available, then retain suitable substitutes, in priority order being, potential future hollow-bearing trees, the largest mature tree in the stand or a regrowth tree that is not suppressed*
> - *retain two recruitment trees per retained hollow-bearing tree*

It is clear that the NRC consider that this change should be permanent and applied across all native State forests. We need action on this now.

Please write to the NSW Ministers for Environment, James Griffin, and Forestry, Dugald Saunders, now asking them in your own words to:

Please take urgent action to protect and restore hollow-bearing trees across State forests by implementing the June 2021 advice of the Natural Resources Commission by changing the logging rules to require:

> (1) where eight hollow-bearing trees per hectare are not available, retaining the next largest trees as substitutes,
>
> (2) retaining two recruitment trees per retained hollow-bearing tree.

It is essential that the largest healthy trees are protected as recruitment hollow-bearing trees.

Apply these protections Private Native Forestry through the PNF Code of Practice

Protect all trees over 100 years old.

Retaining old trees.

It is the **bigger and older trees** that provide resources in the abundance required by numerous animals. It may take a tree one or two decades before they begin to flower and set seed, which they produce in increasing abundance as they mature. Numerous species of invertebrates, many

birds, and a variety of mammals feed on these flowers and seeds. As they mature their trunks and leaves also exude a variety of sweet substances used by many species. Invertebrates harbour within their rough and shedding bark where they are eagerly sought out for food. Yellow-bellied and Squirrel Gliders chew channels through their bark to tap trees for sap. As the trunks and branches thicken the trees provide more stable nesting and roosting sites, while enabling Koalas to hug them on hot days to keep cool.

Once a eucalypt tree is over 120-180 years old they may start to develop hollows in their branches and trunks. As the trees get bigger so do their hollows, and it may not be until they are over 220 years old that they develop hollows big enough for the largest species. Most eucalypts may only live for 300-500 years, though some are reputed to live for over 1,000 years. The NSW Scientific Committee (2007) notes "*Although large hollow-bearing trees are numerically rare, vertebrate species strongly select for them as nest and roost sites*".

In NSW at least 46 species of mammals, 81 birds, 31 reptiles and 16 frogs, are reliant on tree hollows for shelter and nests, of these, 40 species are listed as threatened in the Biodiversity Conservation Act (NSW Scientific Committee 2007). Animal species that use tree hollows include most possums and gliders, numerous bats, various ducks, most owls, Australian Owlet-nightjar, tree creepers, tree martins, all cockatoos, most parrots, some kestrels and falcons, some kingfishers, Dollarbirds, and various lizards, snakes and frogs.

Not all hollows are equal. Animals do not select hollows at random, factors such as entrance size and shape, depth, degree of insulation and location greatly affect the frequency and seasonality of hollow use. Many species use multiple hollows which they move between, for example a Brush-tailed Phascogale has been found to use 27-38 different hollows (Gibbons & Lindenmayer 2002). A single hollow may be used by more than one species in a year, sometimes concurrently. Many species will exclude other individuals of the same species from the vicinity of their nesting hollows, some may only defend a few metres around their nest while others may defend a clump of trees (Gibbons & Lindenmayer 2002), and many are territorial with defended territories of a few hectares or hundreds of hectares. A few species prefer to nest colonially in clumps of trees (Gibbons & Lindenmayer 2002).

Natural forests may support 13–27 hollow-bearing trees per hectare, with numbers varying between tree species, and increasing on more productive, moister and flatter sites. On agricultural lands the numbers of hollow-bearing trees have been drastically reduced. Similarly, they have been significantly reduced throughout the remnant forests by logging, prescribed burning and culling in Timber Stand Improvement operations.

The NSW Scientific Committee (2007) has identified *Loss of Hollow-bearing Trees* as a Key Threatening Process. The maintenance of large old hollow-bearing trees **in perpetuity** is the single most important requirement for the survival of the numerous animal species that rely on their hollows for denning, nesting or roosting**.**

On State forests in north-east NSW logging prescriptions now require the retention of up to eight hollow-bearing trees per hectare where they survive within logging areas, though numbers have already been reduced to well below this level in many forests. Retained hollow-bearing trees continue to decline with each logging due to token implementation of prescriptions, poor tree selection, inadequate protection, damage during logging, burning in post-logging burns, and lax enforcement. There used to be a requirement to restore hollow-bearing trees (to 10 per 2 hectares) in north-east NSW's coastal forests, though this was removed in the 1999 Threatened Species Licence, instead only requiring retention of the remaining numbers of hollow-bearing trees.

The 2019/20 fires greatly worsened the acute shortage of homes for hollow-dependent species, with many hollow-bearing trees burnt out in the fires. Consequently, the NRC (2021) recommended "*if 8 hollow-bearing trees per hectare are not available retain suitable substitutes (in priority order: potential future hollow-bearing tree, largest mature tree in the stand, regrowth tree that is not suppressed)*". This proposed restoration of hollow-bearing trees is sorely needed.

It takes a forest tree centuries to progress through its growth stages before it succumbs to old age, and many die along the way. Natural forests are generally multi-aged, with a range of young, mature and old trees. As the existing old hollow-bearing trees die its important there are enough mature trees around to relatively quickly replace them. As noted by Gibbons and Lindenmayer (2002):

> *The age at which they 'reproduce' hollows (typically 150-250 years) represents one of the slowest 'reproductive cycles' for any organism. Failure to replace hollow-bearing trees as they are lost will result in prolonged temporal gaps in the resource that will not only reduce the area of suitable habitat for hollow-using fauna, but could also fragment populations of species unable to occupy areas lacking hollows. The dispersal of hollow using species also will be impaired".*

To account for this, for each hollow-bearing tree required to be retained, logging prescriptions used to require the retention of the largest, sound and healthy mature tree in the vicinity, called a 'recruitment' tree, to develop into the next hollow-bearing tree. The NSW Scientific Committee (2007) notes:

> *Trees retained during harvest are susceptible to damage from logging operations and post-harvest burning, or can suffer poor health owing to changes in abiotic conditions (Gibbons and Lindenmayer 2002). Consequently, retained trees are prone to early mortality, especially with repeated exposure to harvesting events over their lifespan. Prescriptions for forestry operations also stipulate that young trees are retained for long-term replacement of hollow-bearing trees, typically with one recruit for every hollow-bearing tree. The age structure in natural forests, where recruitment and loss of mature trees is at equilibrium, indicates that only a small proportion of younger trees survive to reach maturity. A ratio of one-to-one will be inadequate in itself to sustain the stipulated minimum densities of hollow-bearing trees in harvested areas.*

Due to the high mortality of trees, it was often recommended that at least 2-3 recruitment trees be retained for each hollow-bearing tree, though only one ever was. Astoundingly, in 2018 the NSW logging rules were changed to remove requirements to retain any recruitment trees.

In practice, trees meeting the definition of a recruitment tree are also high-quality sawlogs, so the Forestry Corporation used to go to extremes to avoid their obligations to protect them. Often the most appropriate trees were logged, with small, poor, damaged and suppressed trees retained instead. Damage to retained hollow-bearing and recruitment trees, along with the failure to retain appropriate recruitment trees, were the most **frequent and systematic breaches** recorded by NEFA and the EPA, emphasizing the need for clear legally enforceable rules and rigorous enforcement.

The NRC (2021) recommended that there also be the retention of "*two recruitment trees per hollow-bearing tree*". This is a needed and welcome change. They do not define parameters for a recruitment tree, the pre 2018 definition in the Threatened Species Licence was that they are "*not suppressed prior to harvesting and has good potential for hollow development and long term survival*" and that they have as many of the following characteristics as possible (Sec. 5.6.1. e):

i. belong to a cohort of trees with the largest dbhob,

ii. *located such that they result in retained trees being evenly scattered throughout the net logging area,*
iii. *good crown development,*
iv. *minimal butt damage,*
v. *represent the range of hollow-bearing species that occur in the area.*

If we are to minimise the hiatus in the availability of hollows for a plethora of native species we must act now to protect, as far as possible, all large old trees, and restore them throughout forests, along with sufficient recruitment habit trees to replace hollow-bearing trees as they die so as to maintain hollow-bearing trees through time.

We have an opportunity, right now, to help alleviate the housing crisis facing many of our unique forest species. The changes recommended by NRC effectively require retention of the 24 oldest and largest trees in a stand, which also applies to degraded regrowth stands. Taking this first step of restoring minimum numbers of will greatly enhance the future availability of hollows for homes, while increasing the multitude of other resources provided by older trees in the process.

The need for action is urgent. You need to do something about it.

Gibbons, P & Lindenmayer, D 2002, *Tree hollows and wildlife conservation in Australia*, CSIRO Publishing, Collingwood, Vic.

NSW Scientific Committee (2007) Loss of Hollow-bearing Trees - key threatening process determination. NSW Scientific Committee - final determination

For more information on this campaign, visit: https://www.nefa.org.au/

For more information about the importance of old trees visit: https://www.nefa.org.au/old_trees