Chapter 1—*Australia's Ever-changing Forests VI:* Proceedings of the Eighth National Conference on Australian Forest History. Brett J. Stubbs et al. (ed.).
 ISBN 978-0-9757906-2-5

'Large quantities of marketable pine...' a history of Upper Richmond River valley forests, New South Wales

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Landscape setting

The eastern part of the border between New South Wales (NSW) and Queensland lies along the McPherson Range where the highest points are Mt Ballow (1,280 m) and Mt Lindesay (1,177 m). Four lines of ranges run south from this main range—the Great Dividing Range in the west then Koreelah, Tooloom and Richmond Ranges. They are separated by the broad valleys of several streams—Koreelah, Tooloom and Duck Creeks draining to the Clarence River, and Findon and Grady's Creeks, along with the others such as Ironpot and Eden Creeks running off the Richmond Range, draining into the Richmond River.

The State Forests (SFs) generally occur on the tops and slopes of the following ranges and ridges at altitudes varying between 600 and 1,200 m:

McPherson Range—Mt Lindesay, Donaldson and Koreelah SFs;
Richmond Range—Unumgar, Edinburgh Castle, Richmond Range and Toonumbar SFs;
Tooloom Range—Yabbra SF; and
Koreelah Range—Bald Knob, Woodenbong and Beaury SFs.

The topography has been determined by streams downcutting

through Tertiary basalt flows into the underlying Jurassic sandstones and forming south-trending river valleys. On the highest areas the ranges are capped with Tertiary basalt, and on the lower areas where erosion has removed the basalts, Jurassic sedimentary rocks crop out. Prominent peaks of volcanic origin occur in the Woodenbong–Urbenville area as impressive landscape features: Edinburgh Castle, Mt Clunie, Mt Wilson, Bald Knob, North and South Obelisks, Glassy Mountain and Dome Mountain. Only Bald Knob remains in State Forest. Mt Lindesay, just over the Queensland border, dominates the scene from the upper Richmond Valley and the ridges to the south.

Steep topography—slopes over 25°—occurs on the upper parts of the McPherson Range in Donaldson SF, and extensive trachyte cliffs occur on the eastern fall of the Acacia Plateau and Dividing Range,

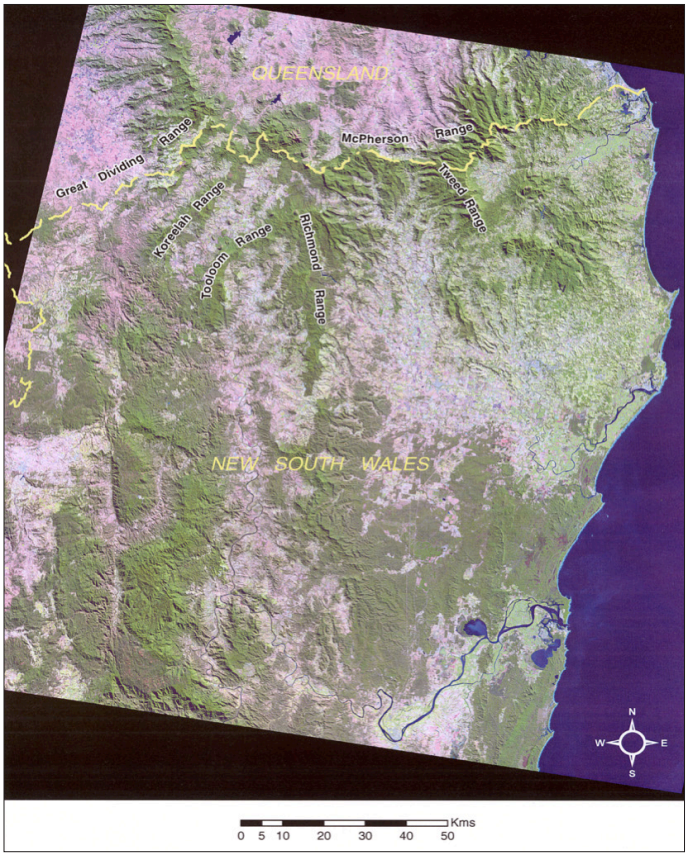

Figure 1: Satellite image of north-eastern New South Wales, showing the north-south lines of ranges and the broad valleys of streams draining southward to the Clarence River and the Richmond River. Landsat image, Nov. 2000.

while smaller broken sandstone cliffs occur on parts of the Richmond Range.

The forests of the area are a mosaic of dry and wet sclerophyll types dominated by eucalypts, and rainforest. The tiny patch of cool temperate beech forest (*Nothofagus moorei*) occurring on the top of the McPherson Range, and major areas of sub-tropical rainforest in the Tooloom, Toonumbar, Yabbra and Richmond Range SFs, were transferred to National Parks in the late 1990s to join earlier national park reservations like the Border Ranges National Park (1983) which took over most of the former Roseberry and Wiangaree SFs.

Sub-tropical rainforest still occurs in gullies in Koreelah, Beaury, Mt Lindesay and Donaldson SFs. Dry rainforest occurs at lower altitude and on soils of lower fertility in Beaury SF and in Unumgar SF. Small areas of vine thicket occur throughout.

Naturally regenerated and enriched stands of hoop pine occur mainly in Unumgar SF on sites occupied formerly by moist hardwoods, such as grey box/northern grey gum, and hoop pine. Hoop pine trees and groups of pine trees occur in the moist hardwood forests throughout the region.

Moist hardwoods include types such as tallowwood/blue gum, white mahogany/flooded gum, white gum, and brushbox, generally occurring at higher elevations adjacent to rainforests on richer soils. Brushbox generally occurs adjacent to drainage lines, occasionally extending to ridge tops and plateaux. The understorey is usually dense and mesophytic. Lantana has invaded many logged areas particularly in wetter parts.

Dry hardwoods occur at lower altitude on sites of lower rainfall and lower fertility. Species represented are ironbark, red gum, grey gum, white mahogany, spotted gum and grey box. Understorey is usually native grasses, particularly the tall, wavy, orange-tinged kangaroo grass, blady grass, bracken fern and sparse xeric shrubs.

Past logging, silvicultural treatments and fire have resulted in a mosaic of forest structures ranging from uneven and mixed-aged stands through to even-aged stands of regeneration or large trees with almost no understorey. This diversity of forest habitats is home to wildlife communities: a rich macropod fauna with 10 species occurring at high population levels in SFs, and rich bird life including species usually found further north and inland (Lennon 2002a).

Aboriginal history

A large number of sacred sites, particularly natural mythological sites, have been recorded in the upper Richmond and Tweed Valleys from information provided by the Githubul people at Mulli Mulli (Woodenbong). Many of these sites are associated with mountain tops, which in turn have a natural affiliation with forests. There are natural mythological sites recorded at Edinburgh Castle, Goya Bay Mountain, Mt Lindesay, Tooloom Falls and Mt Brown (Hall and Lomax 1993; State Forests 1995, p. 16/2). Hall conducted archaeological field surveys in the 1990s and recorded 66 sites of stone artefact scatters and two rock shelters in the Richmond Range. Further surveys confirm that stone artefact scatters representing campsites and activity areas are widely distributed throughout forested uplands.

Prior to European settlement the area was populated by Gidabal and Galibal people, dialectic sub-groups of the Bundjalung language group, who were hunter gatherers using fire to promote new growth on the native grasses of their hunting grounds. This had the effect of maintaining a grassy understorey in sclerophyll forests.

Despite being dispossessed during the early European settlement of the district, Aboriginal people maintain a diversity of living cultures and attachment to land within the parks and forest reserves. In 1900, Aboriginal people were living in camps at Grevillea, Moore Park, The Risk, Gradys Creek and Horseshoe Creek (NSW NPWS 1999). The Aborigines Protection Board was established in 1883 and a system of reserves was established between 1880 and 1920. There was a 115-acre reserve established at Kyogle and one at Woodenbong in 1908. Many Aboriginal men worked later in State forests and were celebrated axemen, such as Sam Anderson at Tooloom and Mt Lindesay.

Nineteenth century European settlement

Although Captain Henry Rous discovered the Richmond River and explored its estuary in August 1828, it was ignored until serious drought drove pastoralists northward to the New England tablelands and they spilled over into the upper Richmond and Clarence valleys, whose histories were inseparable in the early years of settlement (Daley 1966, p. 14). In addition, the population of NSW had doubled during

the 1830s and there was a demand for timber. Cedar getters reached the Clarence by 1838.

In 1840 Clay and Stapleton took up 30,000 acres of rich grazing land as the *Cassino* station, the first pastoral property in the Richmond valley. Surveyor James Burnett was sent from Brisbane in 1843 to make a plan of the Richmond River from its source to its mouth, and his reports induced the first small coastal schooners to trade with the up-river stations 'twenty miles beyond the junction with the North Arm' from 1846 (Daley 1966, pp. 24–26). Those up-river stations which are of relevance here are (Keats 1988): *Wiangaree* (initially occupied in 1842 by E. D. S. Ogilivie from *Yulgilbar* on the Clarence River, who transferred it in 1843 to his brother-in-law, W. C. Bundock), *Roseberry* (John Eaton, 1844) and *Unumgar* (James Glennie, 1843).

The number of sawyers on the Richmond in the early 'forties is not known, but the amount of cedar cut is proof of their industry—in 1845, 624,500 superficial feet of cedar was exported, approximately two-thirds of the colony's total exports for that year (Daley 1966, p. 34). The sawyers lived in a world of their own at the lower end of the valley while 21 stations, occupying all the good grazing land, extended up the valley to Sir John Jamison's original station at Richmond Head which was renamed Fairy Mount by new owners, Mayne and Fawcett, in 1844 (Daley 1966, p. 43).

Although cedar cutters had been at work along the Richmond River since 1842, the same year that the bridle track or 'road' opened around Mt Lindesay into the Moreton Bay district, the towering peaks of the McPherson Range still appeared to be untouched by the hand of man in 1870. Timber exploitation was delayed due to difficulties in transporting timber to ports and the first cedar cutters into the high peaks did not arrive until about 1880 when the cedar boom was almost over (Forestry Commission of NSW 1986, pp. 41–42). Nevertheless, the timber industry in the upper district prospered during the 'eighties and 'nineties.

In 1854 George Sparkes took over the squatting station around Roseberry from the Wooroowoolgen Company, after having been their manager for some years. In order to make his capital go as far as possible after the passing of the 'Robertson Land Act' in 1861, Sparkes bought every alternate block in 1875 to keep out the small settlers. Cedar getters brought their teams into Findon Creek during this time

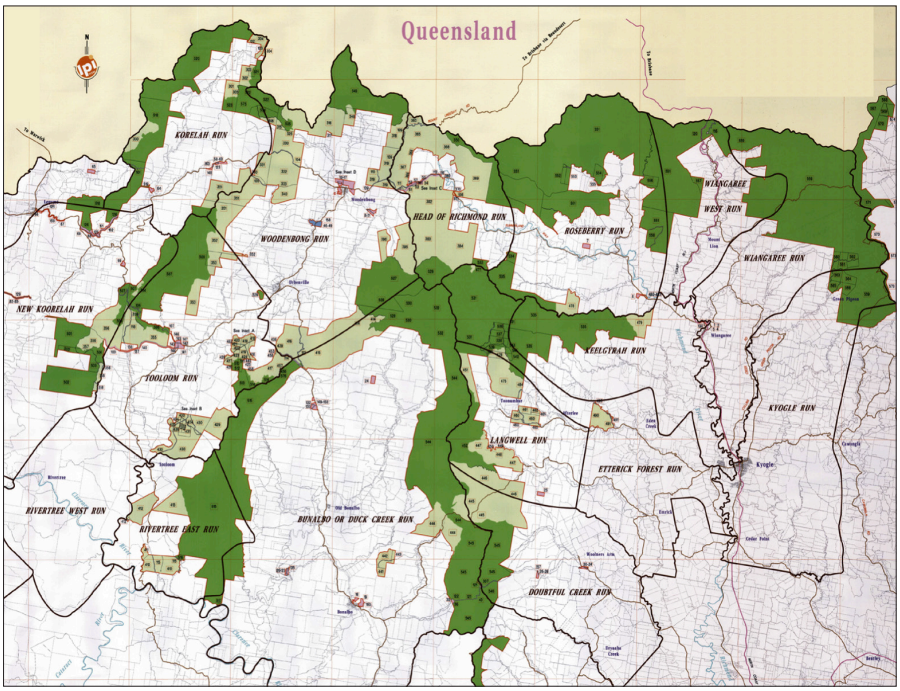

Figure 2: The location of early pastoral runs in north-eastern New South Wales is shown in relation to State Forests and National Parks in 2002, drawn by SFNSW.

but there were no permanent settlers until the twentieth century. The Roseberry Pastoral Plan (run no. 422) of 1885 shows the forest reserve and notes that it is 'covered with permanent scrub.'

Regular burning by Aboriginals ceased with closer settlement and the establishment of Aboriginal reserves. The change in the burning regime resulted in the development of dense tree and shrub regrowth, and extensive clearing was required in the 1880s to re-establish pastures. Clearing continued until the 1900s.

Closer settlement, sawmilling and forest reservation

The first permanent settlers in the upper Richmond valley were George Goodwin and Walter Simpkins, teamsters from Casino and Kyogle, who selected land at Terrace Creek in 1905 in the Parish of Findon. By 1912, Homestead Selection areas were being taken up in the Grady's Creek valley. However, the timber industry also held a firm position in the district. Sawmilling commenced with the establishment of

mills at Terrace Creek in 1910, Grevillia in 1912 and Findon Creek in 1916. Walter Lever built the mill at Grevillia. Lever was part of a consortium with Edward Munro and Campbell Brothers of Breakfast Creek, Brisbane, who had been shipping cedar from Mullimbimby via Brunswick Heads. He was introduced to the great hoop pine stands (now on Levers Plateau) via the Lismore bridle track over Richmond Gap in 1909. He purchased the Terrace Creek mill in 1914 (Lennon 2001, pp. 10–11). In 1916 John Fraser built a sawmill at the junction of Findon and Sawpit Creeks to process hoop pine harvested from the Sawpit–October Creek area.

In 1918 there were six mills operating in the Upper Richmond valley. Munro and Lever had established themselves around Grevillia, logging mainly softwoods for use in the butter-box contract which had extended to 48,000 boxes per annum by 1921, when three more mills had been established in the area and collectively they were employing 200 teamsters hauling logs and timber, 100 men in the mills, and another 300 men were bush workers (Martin 1988, p.53).

In 1922 the Findon mill was moved to Wiangaree in anticipation of that place being the railhead to Brisbane, and a veneer mill opened in Kyogle following the 1918 trip to the USA of Walter Lever jnr, who copied the latest in veneer plants. In 1927 the Terrace Creek mill burnt down and Lever built a new mill at Long Creek, the history of which has been described elsewhere (Lennon 2001, 2002b). However, Munro and Lever's Long Creek tramway of 13km was the last one given an occupation permit by the Forestry Commission, and it operated from 1930 until 1947.

Rail traffic to Brisbane through the Border Loop tunnels on the main line from Sydney commenced in 1930. This new rail access to south-eastern Queensland markets was timely. Much of the timber had been removed from the Canungra area just over the border by 1920, and this is obvious in today's landscape. The Lahey family operated a mill at Canungra from 1884, and the War Services Homes Commission, established at the end of the First World War, purchased the milling operation from the Laheys in 1921 (Kerr 1998, p. 226). Timber processed at the mill was to be used in the construction of housing for returned servicemen. The mill closed three months later, however, due to a change in policy by the Commission for their acquisition of timber (Kerr 1998, p. 226). In 1923, Brisbane Timbers

Ltd (part of which was owned by the Lahey family) purchased the mill by tender including all plant and equipment, 10,412 acres of freehold land of which 4,393 acres carried pine, the timber tramway and branch lines totalling 16 miles of track, the locomotives and all rolling stock. In 1933, the Standply Timber Company purchased the mill and added an advanced veneer and plywood plant. By about 1935, however, the timber industry in the Canungra area had largely collapsed. That same year the last of the tramway rails and equipment was sold to a milling venture in Cardwell, north Queensland, and the mill was dismantled (QHR 602529 entry).

Like the Levers in the Richmond River valley, the Laheys were innovative when rebuilding burnt out mills (at Canungra in 1897 and 1907). They also had mills at Tygum, Hillview and Beaudesert. In 1913, Tom Lahey inspected milling operations in the USA and purchased new equipment which doubled the capacity of the mill and greatly reduced the cost of labour. The introduction of an eight foot band mill and steam log turner made the Lahey's Canungra Sawmill the biggest softwood mill in Queensland. In its heyday, the mill was producing Australia's largest output of softwood timber. In the process, the township of Canungra was established because of the presence and success of the mill.

Laheys continued to have a mill in Brisbane—at Corinda, with its own rail siding—from 1910 until 1956. It was sold to Carricks Ltd for furniture making in 1956 (Kerr 1998, p. 47). Country mills often had yards and sometimes mills in south Brisbane, initially with river access and connector tramways and later with rail network access. The Richmond River Timber Company had Brisbane premises at Stanley Street in 1921, and the siding that it used was only removed in 1952 (Kerr 1998, p. 40).

Interest in conserving the timber resources of the upper Richmond River district led to Forest Reserve 10723 becoming Roseberry State Forest No. 608 in 1917:

> Large quantities of marketable pine, teak, rosewood, beech, cudgerie, longjack, cedar and other softwoods are growing in this area, the hardwoods consist mainly of brush box, tallowwood, grey gum, blue gum and ironbark. This reserve forms one of the chief sources for the supply of hoop pine in this part of the state (Report on Forest Reserve 10723—Surveyor Corlis and DF Boyd, Casino, 12th June 1916).

Forest rangers were appointed to oversee the cutting of timber, to collect royalties from sawmillers and to conserve the forests for present and future use. As well as this pragmatic desire to ensure continuity of timber supplies, sentiments were being expressed in favour of protecting the natural beauty of the area. On the Queensland side of the border, Lamington National Park had been reserved in 1915 (Martin 1988, pp. 53–54).

Forest management history

The first reserves for preservation of timber in NSW were made in 1871, under Section 4 of the *Crown Lands Alienation Act* of 1861. Timber reserve no.14 of 1871 covered 88 square miles of the McPherson Range. Large sections of forest in the upper Richmond River catchment were declared under Forest Reserve classifications from 1887.

In the upper Clarence River catchment, State Forests were declared after the enactment of the first *Forestry Act* of 1909, Koreelah SF No.1 and Beaury SF No.2 being the first two dedications on 26 March 1913. Dedication of most other SFs in the area, including the reserves in the upper Richmond River valley, was completed by 1918 following the enactment of the *Forestry Act* of 1916. This Act established the Forestry Commission. Prior to this, commercial activities like logging, grazing and quarrying in forest areas had been controlled by Lands Department permits.

The *Forestry Act* of 1916 required the dedication of 2 million hectares of land as State forest within 3 years. By 1920, much of the valuable timber-producing areas in forest reserves and other large tracts of forest were dedicated as Edinburgh Castle, Mt Lindesay, Roseberry, Richmond Range, South Toonumbar, Toonumbar, Wiangaree, Woodenbong and Yabbra State forests. The Forestry Commission was faced with identifying how future generations might be supplied with their timber needs, so a plan was needed with strategies to provide for wood production into the future.

A start was made on mapping the forests, assessing the remaining timber resource, and regenerating cut-over areas. The hoop pine in the upper Clarence and upper Richmond forests gained importance as a valuable timber resource. Even in those days, it was clear that the native forests would not meet future demands for timber. Australia needed to

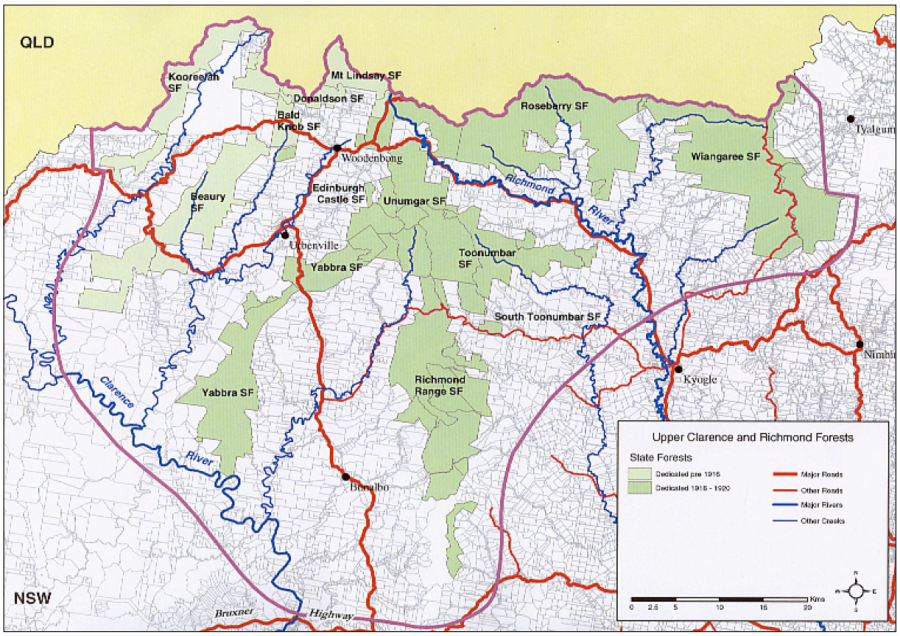

Figure 3: Location of State Forests in the Upper Clarence River district, dedicated under the *Forestry Act* 1909. SFNSW 2004.

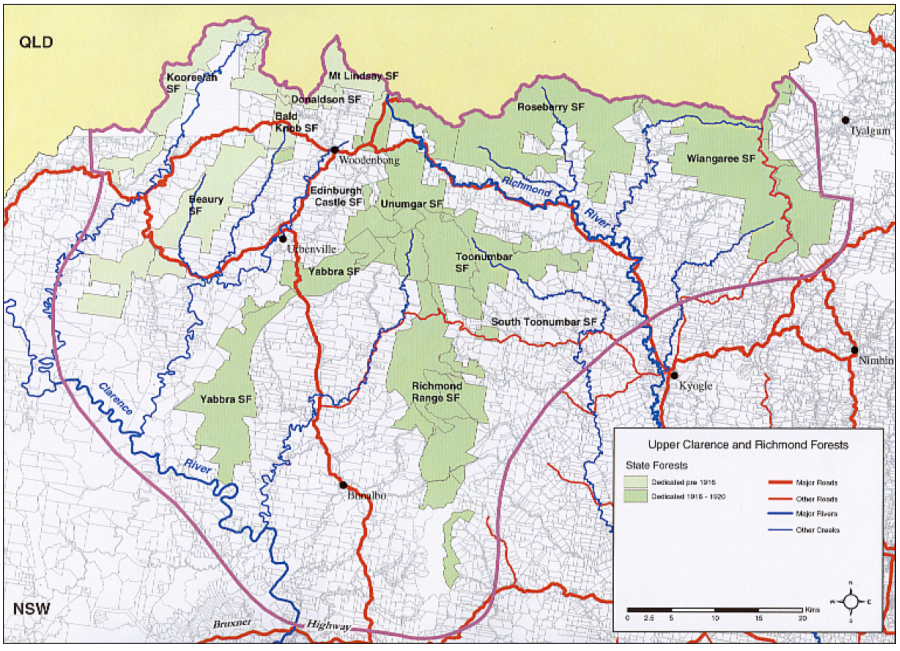

Figure 4: Location of State Forests in the Upper Clarence and Richmond River districts in 1920, including those dedicated under the *Forestry Act* 1909, and the *Forestry Act* 1916 (darker). SFNSW 2004.

conserve its timber supplies, and consideration of the situation was already leading to a realisation that the only way to curtail the State's growing dependence on imported softwoods would be to establish a large-scale softwood plantation program (Abbott and Lennon 2005, p.6).

The earliest known silvicultural treatment was trial enrichment planting of 350 red cedars within compartment 1 of Koreelah SF in 1916 (Grant 1988, p. 149). No survivors of this can now be recognised.

Initial Forestry Commission management involved fencing the perimeter of designated forests and clearing a fire-break. Management control was imposed by the allocation of licence areas to sawmills. Hoop pine was extensively harvested from the early 1900s. Selection of areas of operation within allocated areas, access to logging coupes, trees to be logged, retention of young growing trees, noxious weed control and fire control were matters imposed by the Forestry Commission. Occupation permits for forest grazing brought in steady revenue and also ensured some element of fuel reduction of undergrowth. Stockyards and dips are a feature in most SFs and internal barbed wire fencing usually signifies an OP (occupation permit) area for cattle grazing. In Donaldson SF, the first permanent improvements were made in 1934—permanent fencing along both sides of Mt Lindesay road to Brisbane, post and barbed wire, and 158 chains of firebreaks, construction of which continued so that by 1943 seven miles were maintained.

In Yabbra SF in 1933, 2.7 million superficial feet (sft) of hoop pine was available in sections E and F. Compartments in section E were allocated to W.A. Bradford (teamster), O.C. Affleck, T.W. Hewetson and Sons Ltd, and Kyogle Veneer Company. They:

> must cut 30% brushwoods except Kyogle Veneer Co who will cut all the marketable brushwoods no matter what percentage relation they may bear to pine—they will be required to cut both classes in a face as they occur.

Royalty on the timber was: Hoop pine—firsts 5/6 per 100 sft, half of this for seconds, and 6d. for tops above first whorl of green branches (removal optional); brushwoods—cudgerie yellowwood, rosewood, pigeonberry ash 2/- per sft; sassafras, bollygum, bog onion, brown pine, red bean, beef wood, beech, white cedar, silky oak, teak 1/- per sft. Classification of pine into firsts, seconds and tops by the forest officer

is to be final. Minimum monthly removals were set as: 15,000 sft hoop pine, and 5,000 sft brushwood (Yabbra SF 394**,** HO file 86182).

In Mt Lindesay SF in 1926, 2,000 acres were burnt by wild fire in March, and another 1,500 acres damaged by fire in October, but in 1933 a special licence was granted to Munro & Lever for hardwoods; in 1934 this was increased to cover the whole SF for 10 years, and royalty was reduced to 2/- for tallowwood, 2/3 for red mahogany, and 1/- for blue gum, stringybark, white mahogany, and brush box. The maximum annual cut was 500,000 sft, the minimum was 120,000 sft, and the working order of compartments was 2,3,1,4 (Mount Lindesay SF 542, HO file 86306).

Hoop pine was still the major tree species harvested in the area in the 1930s, and freeing of suppressed hoop pine regeneration was commenced on Unumgar SF in that decade. About 1936, a six-foot cutting girth limit (equivalent to 58 cm dbhob) was introduced for hoop pine to actively conserve growing trees. A new basis of stumpage (system of log charging) was introduced to encourage utilisation of defective trees. Log measurement prior to removal of logs from dumps was introduced about this time.

During the 1930s and 1940s a lot of 'hewn timber' was cut for the Queensland Railways, sleepers from Bald Knob and Woodenbong SFs rising to a peak of 201,877 super feet (sft) of sleepers in 1946–47. Men were also employed in the 1930s from the Unemployment Relief Fund on fencing and fire break construction in SFs (Bald Knob SF 120, HO file 86314).

In the 1930s, little was known about how to perpetuate the rain forest after logging. Plans for hoop pine and bunya plantations were formulated to replace the dwindling supplies of indigenous hoop pine in the region. The socially important sawmilling industry had been reliant on indigenous hoop pine, supplying predominantly local markets with timber products including butter boxes and other packaging for the then thriving dairy products industry. Buoyed by the success of hoop and bunya pine plantations in South East Queensland, staff prepared an ambitious 'Forest Development plan for the Urbenville District.' This was launched by the Deputy Premier at Urbenville on 6 March 1939 (Abbott and Lennon 2005, p. 11).

In part to pre-empt moves to alienate State Forest for dairying, establishment of hoop and bunya plantations commenced on Acacia

Plateau (Koreelah SF) and in Beaury SF in 1939, in Toonumbar SF in 1942, and in Tooloom SF in 1948. High shade nurseries were built at Urbenville in 1938 and at Roseberry in 1940 to supply tubed root-stock for planting out in the forest. By 1956, all hoop and bunya plantings had ceased, primarily because of high nursery, establishment and tending costs (Forestry Commission of NSW 1981, p. 10). However, limited plantings of hoop and bunya pine were carried out in Beaury SF in 1969, 1975, 1977 and 1978 so that in total 941 hectares of plantation were established. The Roseberry nursery continued until the 1980s as a specialist regional hoop pine nursery.

Following timber surveys in the 1940s and 1950s, major access roads were developed. Construction of permanent access roads by the Commission began in 1943 with the building of McIntosh Road in Unumgar SF, and was followed by giving sawmillers a rebate on royalties for road construction work undertaken to their allocations especially in the 1960s in Koreelah and Richmond Range SFs. Over 145 km of all-weather roads existed in SFs in the Urbenville Management Area at 1986.

Wartime logging yields were higher in most of the SFs in the area, and poles, piles, sleepers and assorted produce show up in returns. Increased demand for timber after the Second World War for housing in particular resulted in improved utilisation of the full range of species, particularly hardwoods. Logs, especially veneer quality hoop pine, were sold to Queensland-based industries until the late 1950s when sales were reduced to material salvaged from proposed native conifer plantation areas.

In June 1959 Charles Lane Poole, the retired Commonwealth Conservator of Forests, visited Munro and Lever's plywood mill at Kyogle. He returned in August, as he and Jack Lever had a mutual interest in widening the number of species used in veneer production. They looked at coachwood stands in Wiangaree SF. However, Lane Poole fell and gashed his head while scrub bashing off the plateau above Running Creek in the Border Ranges. This and subsequent accidents slowed him and his investigation of the development opportunities for the forests between Coffs Harbour and the Queensland border which in 1961 was his last major assignment (Dargavel 2008, pp. 187–192).

In 1952 Crown sawlog quotas based on average annual cuts by licensees over the preceding three years were introduced. Logging

operations continued to selectively remove preferred species and better quality stems from areas of easier access and flatter topography until about 1960. This led to areas of hardwood and brushwood being left in partially logged condition and containing isolated unlogged sections. However, in 1960 the introduction of tree marking led to improved logging management and utilisation, and silvicultural improvements of stands through the removal of poorer quality mature and over-mature stems and top disposals.

Tree-marking for removals in rainforest logging was introduced in 1962 with the aim of maintaining forest structure and minimising damage to retained stems. The 50% canopy retention selective logging prescription, which generally applied after the mid-1960s, evolved from this prescription. Previously the aim had been to cut out all brushwood, and hoop pine was the favoured species in this category. For example, in 1947–48, 1,752,156 sft of hardwood, 3,634,391 sft of brushwood, and 371, 574 sft of hoop pine were logged in Yabbra SF. Small quantities of red cedar are noted in logging returns from the late 1950s with the largest being in 1971–72 when 14,126 sft of red cedar were cut.

Weed eradication was seasonal work. In Donaldson SF in 1947–8 there is the first mention of lantana control, with 16 acres treated, and in 1951 crofton weed was eradicated in a small area, while noongurra burr was tackled at Bald Knob.

Timber stand improvement (TSI) went in cycles depending on labour. In the 1950s most forests undertook some programs with associated weed control and fire-line construction, as well as hoop pine enrichment in selected areas such as noted at Unumgar SF, and men's barracks were constructed in some forests. For example, in Unumgar SF in 1942–43 works reported included construction of a foreman's cottage, four miles of access roads, fencing the horse paddock, construction of ¾ mile of telephone line, control burning, control of noxious weeds on 723 acres, while in 1945 three miles of Back Creek road was constructed and in 1946 the creek crossing was constructed, while there was extensive TSI of over 300 acres and establishment of regeneration plots for hardwood (Unumgar SF 540**,** HO file 86198). TSI involved the post-logging felling of all non-merchantable trees, thinning and coppicing, and the retention of seed trees, preferably ironbarks, at a 30m interval. Operations covered 850 hectares by 1955

when the available area was completed (Forestry Commission of NSW 1986, p. 18).

Enrichment planting of various sites with hoop pine at 6m intervals along 1.2 m wide brushed lines continued from its introduction in Unumgar SF in 1956 to include 800 hectares including sites within Toonumbar SF by 1968. Freeing of hoop pine regeneration undertaken during this time has resulted in treatment of an additional 680 hectares. This work continued until the 1980s.

From about 1970 management recognised the demand for increasing forest recreation, which followed the construction of major access roads, and provided picnic areas as at Bellbird picnic area in Mt Lindesay SF adjacent to the highway in 1979 and the Roseberry Forest Park picnic area in Toonumbar SF on the old nursery site in 1971. These are now abandoned. Other picnic areas as at Tooloom or Murray Scrub lookout in Toonumbar SF have been transferred to the National Parks and Wildlife Service (NPWS).

Exotic southern pine plantations (*Pinus taeda, P. elliottii*—loblolly and slash pine) were established in 1980 on farmland repurchased for Eden Creek SF and on 950 ha of farmland purchased adjacent to Yabbra SF on the northern slopes of the Tooloom Range south of Urbenville in 1982. The hardwood plantations of Dunn's White Gum on the shores of the Toonumbar Reservoir were planted on farmland that had been purchased and became Toonumbar SF in 1978.

The first management plan was for the Urbenville Management area in 1977 followed by Kyogle in 1979. When the Kyogle office closed in 1982 the SFs were administered from Urbenville under the control of the Casino regional office (areas west of the Richmond Range had been administered by Glen Innes forestry region, controlled by a district office in Legume, until 1937 when the Urbenville office was established).

Logging of substantial remaining accessible and unreserved old growth hardwood stands, except for a part of Richmond Range SF and small areas in Koreelah and Donaldson SFs, was virtually complete by 1985. Regrowth and regeneration as a result of this logging is relatively widespread although a significant component of old growth material remains over much of the area.

Protection of special areas of botanical interest within forests commenced in 1937 when the first Flora Reserve (FR) was set

aside—705 ha within Beaury SF No. 2 known as the Tooloom Scrub FR. Another FR of 380 ha of dry rainforest at Captains Creek is now a NPWS Nature Reserve, and the Murray Scrub FR of 740 ha is now in Toonumbar National Park. The Mount Nothofagus FR, 650 ha of predominantly rainforest with beech, yellow carabeen and booyong and moist hardwoods at the lower edge, is also now National Park.

There were also Flora Reserves set aside in 1986 at Wilsons Peak (185 ha in Koreelah SF), Acacia Plateau (585 ha in Koreelah SF), Dome Mountain (305 ha in Richmond Range SF), and Mount Clunie (485 ha in Koreelah SF). They are now in National Parks.

Another reservation is the Scenic Rim, 305 ha of forest in a strip at least 100 m wide adjoining the State border in which logging is not permitted and other development is limited to maintain the bushwalking values. It stretches from the base of Mt Lindesay to the base of Wilsons Peak FR. There are also scenic reserves 100 m wide each side of the Mt Lindesay Highway and the Summerland Way where they adjoin State Forest and from which logging is excluded. These highway strips through Donaldson, Mt Lindesay, Unumgar, Bald Knob and Yabbra SFs total about 500 ha. Outstanding trees, the largest recorded for their species in NSW, have also been listed; there were 26 of these in 1986 but many are now in National Parks.

Current forest management is conducted in accordance with the Regional Forest Agreement and NSW Forest Agreement for Upper North East NSW, with Integrated Forestry Operations Approvals under RFA and Ecologically Sustainable Forest Management plans. These plans and the zoning of forest landscapes provide for the sustainable production of timber whilst protecting soils and water quality, flora and fauna and cultural heritage values. Most of the forests, however, have been transferred to national park status and are managed in accordance with park management plans for Border Ranges NP (1979), Toonumbar NP (1995), and Richmond Range NP (1997). The primary emphasis of these plans is the conservation of the natural, cultural and World Heritage values of the planning area.

The 2004 plan of management for the Border Ranges NP encompasses the national parks and nature reserves commonly known as the Tweed Caldera, all of which form part of the ancient Mt Warning (or Wollumbin) shield volcano in far northern NSW. The six NPs and three NRs are all considered in the one plan because, with the exception

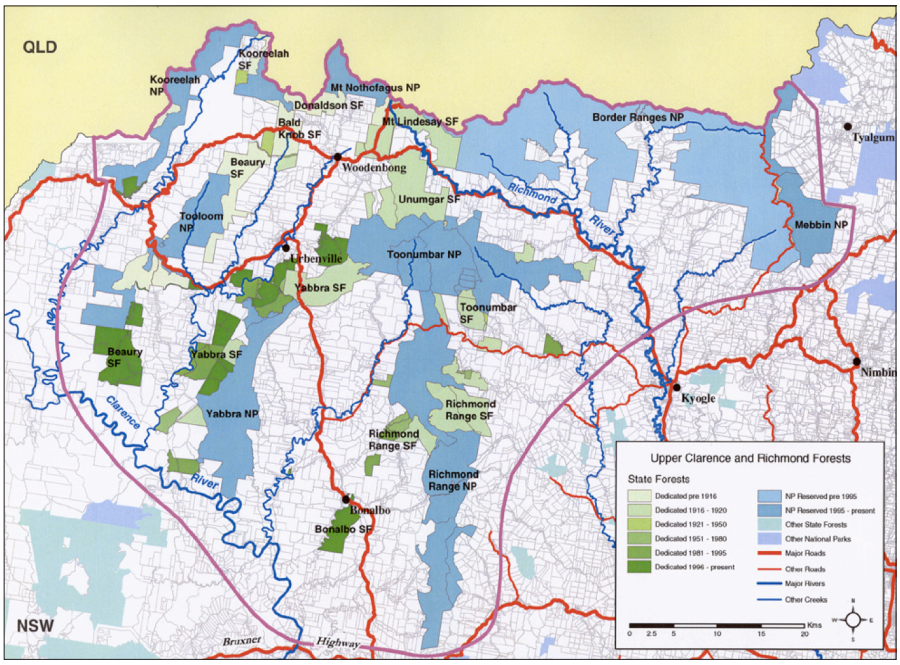

Figure 5: Forest tenure in the Upper Clarence and Upper Richmond River districts following the 1998 Upper North East Regional Forest Agreement. Notable are several new national parks, and additional areas of State Forest for plantations. SFNSW 2002.

of the western Border Ranges, they form part of a common landscape—the Mt Warning shield volcano (Lamington and Springbrook National Parks in Queensland also form part of this spectacular landform). Most of the planning area is of international renown for its World Heritage listed subtropical rainforests, outstanding landscapes, and the recreation opportunities it affords.

The majority of Border Ranges NP and all of Limpinwood NR is declared wilderness, thereby affording a sense of remoteness and solitude. The plan also provides for the protection of significant Aboriginal and historic cultural heritage values.

Conclusion

The history of forestry in the upper Richmond valley provides six distinct periods:

In the nineteenth century, forest use was dominated by timber getting, especially the removal the red cedar, a rainforest timber.

A greater emphasis on conservation and regeneration emerged after the 1870s but, at this stage, without government support. Also, as red cedar was becoming increasingly scarce, timber-getters switched to hoop pine where they could. Exploitation of this species continued from about 1880 until the 1930s.

The early decades of the twentieth century were typified by State intervention in administration and control of forests, a significant aspect of which was the dedication of State Forests (*Forestry Acts* of 1909, 1916 and 1924).

From the Second World War to the mid-1960s, exploitation of timber resources escalated in response to market demand for more timber, especially for house construction.

The period from the 1960s until 1997 featured: the tightening of controls over harvesting practices and quotas; the loss in 1983 of part of Mt Lindesay, Roseberry and Wiangaree SFs to the Border Ranges National Park; the loss in 1997 of most of the moist forest/rainforest to Koreelah, Tooloom, Yabbra, Richmond Range and Toonunbar National Parks; the reduction of quotas to ensure sustainability; and increasing environmental awareness.

The final period covers the years from 1997 until 2010 when the park reserves became 'locked' with former logging tracks closed and limited access on few through-roads; supply of logs for local mills, now consolidated into the big firms at Kyogle and Casino, came mostly from private properties.

The main themes of historic activity with surviving field evidence are: transport and communication—with roads, towers, telephone poles and wires; grazing—with fence lines, gates, tick control fences, dips, stockyards, huts, fruit trees and dams; mining—with disturbed, eroded ground with shafts, water races, abandoned machinery (in adjacent freehold paddocks), disused roads and domestic sites; forestry—with sawmills and associated settlement, forestry camp sites and bush camp sites, sleeper cutting sites, notched stumps, lettered trees, disused roads and snig tracks, and nursery sites; apiary—in cleared areas; recreation—picnic areas, walking tracks and lookouts, interpretive signs; and, finally, a miscellaneous group of lone graves, military manoeuvre sites, and clearings for attempted agriculture.

There are surprisingly few actual relics surviving *in situ* in these moist forests—fence lines, yards and dips, log dumps and notched

stumps are the recurring ones. The structure and composition of the forests remain as evidence of the hand of man—selectively logging species, improving stand quality, replanting where overcutting had occurred, battling weed infestation and conserving special specimens and groves.

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