

Plan of Management & MERI PLAN

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Cover artwork: Maxine Ross 2011

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EXECUTIVE SUMMARY

As the shorter Summary explains, this Plan of Management incorporates our economic, environmental, social, cultural and spiritual aspirations for the Minyumai Indigenous Protected Area (Minyumai IPA). But this more extended plan contains far more detail on the property, its biodiversity, landforms and soils, history of land use and particularly strengths, threats and opportunities. The purpose it to provide sufficient detail and direction to guide strategic directions and specific management actions for Minyumai IPA over the next 10 years — while compatible economic ventures are being pursued to meet the social goals of the Minyumai project

Natural values of Minyumai. Biodiversity surveys of Minyumai - a 2163.6 ha largely uncleared bushland property on the far north coast of NSW owned by Minyumai Land Holding Aboriginal Corporation - have found that it has very high conservation significance, particularly for the 18 State-listed (including one Federally listed) Threatened fauna species and 19 'conservation priority' fauna species known to occur on the property. (A further 33 State-listed and seven Federally listed fauna species are considered likely to occur.) This significance is due to a wide variety of vegetation types (17) as well as Minyumai's location, which is adjacent to Bundjalung National Park and Tabbimoble Flora Reserve; providing connectivity between these reserves and extensive, forested private property areas. In terms of plants, the property contains five State-listed Endangered Ecological Communities, three State-listed Threatened species (1 fern, 1 vine and 1 grass species) and seven species of conservation significance.

To protect these values alongside the cultural and economic values of Minyumai, this plan identifies primary, secondary and tertiary conservation areas and a wide range of principles to be adopted by Minyumai management - and actions to be carried out by Minyumai Rangers to reduce threats from land clearing, logging, pest animals, weeds, fire management, drains, proliferation of tracks and other activities on Minyumai. Training for Rangers is critical to the success of all operations. Specific recommendations are also provided for improving access within the property, neighbour relations and infrastructure, plant and equipment. Priorities for action are as follows.

These are our first priorities -Ngulingah goobun.gin

Infrastructure, plant and equipment: All the activities of Minyumai depend upon the upgrading of Minyumai trail. This will be a staged project, with an initial goal of ensuring 4WD access along the entire road so that work zones can be reached. Partnership funding is to be sought and, prior to major expenditure, a concept plan for the rehabilitation of the entire road is to be prepared which includes standards for drainage and construction. Detailed proposals for drainage works for each section being upgraded are to be consistent with this concept plan and to be approved by the Minyumai directors. Equipment is required for treating weed and carrying out surveying and management of native and pest species. Quad bikes are also required to enable access to some remote zones in the medium term. The Minyumai shed and office are also to be upgraded to accommodate higher levels of activity as this gradually builds.

Protection of biodiversity assets from pest animal and plant species. Surveying of Threatened native species is to be continued by Minyumai Rangers, and disused fencing and debris is to be removed for the protection of all native species. Pest animal surveys and any prevention or control works are to focus on Cane Toad and feral Cat; with treatments for Red Fox and feral Pig to complement programs on neighbouring properties. Weed control priorities lie in four main directions: (i) removal of Lantana to allow recovery of high conservation value vegetation communities (starting with rainforest patches); (ii) systematic treatment of introduced pasture grasses (especially *Setaria* sp., *Paspalum* spp, *Sporobolus* spp. and *Andropogon* sp.) along roads to reduce their spread, progressively working towards more dense sources; (iii) systematic reduction of noxious weeds and (iv) regrowth management of cleared areas, including revegetation if required. Protection of Minyumai from newly introduced plants, animals and diseases is a fundamental principle.

Fire management. A key to protecting and restoring habitat for Minyumai's diverse flora and fauna is reducing the incidence of extensive wildfire and of burning forest habitats; an objective achieved in the long term by the establishment of a system of firebreaks coupled with varied regimes of burning in different patches, to create a finer mosaic. A Fire Management Plan is to be developed by Minyumai within one year of the adoption of this Plan, developed with the collaboration of neighbours, particularly including the National Parks and Wildlife Service (NPWS) and the Rural Fire Service (RFS).

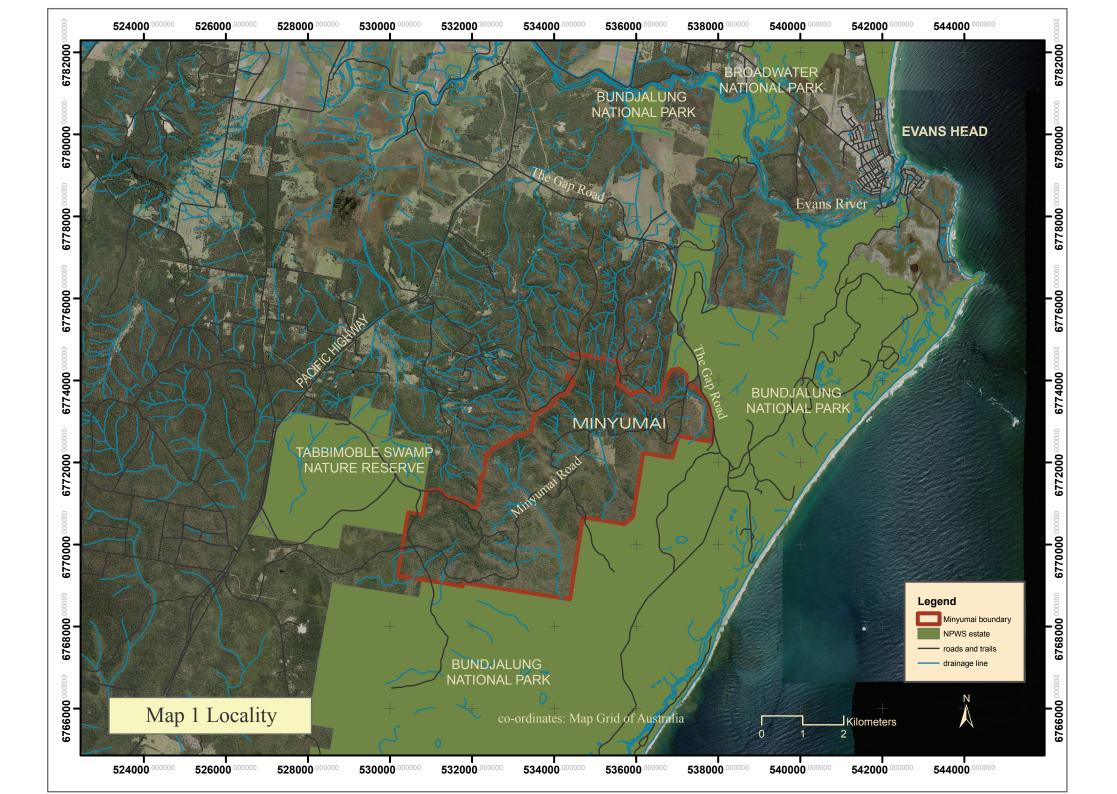
Enhance public relations by building a boardwalk at Minjehla track as an educational resource for our people and other visitors. An agreement is to be sought between the NPWS and Minyumai IPA to formalize more co-operative approaches to managing land to improve outcomes for both Minyumai IPA and Bundjalung National Park.

All of the above is to be monitored and evaluated using the MERI Plan outlined at the end of this document.

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The meaning of the hand-back of Minyumai to our people

Bandjalang ownership of Minyumai presents an opportunity for us, the Traditional Owners of this land, to reinstate styles of land management that are more in keeping with our traditional values, rather than seeing our precious land being degraded by inappropriate land management practices.

The late elder Lawrence Wilson, who was instrumental in the hand-back, often asked himself how his elders would feel about us getting Minyumai back:

"The only answer I can come up with is that they'd be delighted. It's something that I couldn't explain about our people. When the old people was alive and all the white people took that land off them and when they walked through the bush anywhere, they felt no good. They were scared. You gotta look over your shoulder all the time. And you see somebody comin' on a yurumun, on a horse. They'd say "What you fellas doing here! You watch your dogs!" "We got cattle here. Somebody's frightening our cattle. Go on, get off the land!" That stress that was always there, you know. You walk on stations: all the bosses there; you go back to the mission: all the bosses there telling you what to do. For thousands of years our people didn't have to do that. They just survived by their laws and their rules..own rules.

But when I walk on Minyumai, I don't feel that. I feel very relaxed. I don't have to look over my shoulder. Because that's our land. I'm worried about them walking about on our land now, the yirali; because they go there with guns and dogs and everything and chase feral animals. And they shoot animals - anything that moves they shoot. Now I'm worried about them! And if I see them there I tell them "What you doin' here?" So it went around in reverse."

So the old people would probably say: 'Boogul, boogul. Ngulingah jugoon. Oh, boogul. Ngai gula wehnyoomai yirali, now. Yogombeh wiya yengwani ngalingah jugoon. Ngai boomani wa wiya! This is good. This is good. This is our land now and if you muck around here...there'll be a big fight!'" (L. Wilson 27/03/01)











LAND MANAGEMENT AIMS AND GUIDING PHILOSOPHY

IPA Project Goal: To manage the Indigenous Protected Area for conservation of biodiversity and cultural maintenance in accordance with the International Union for Conservation of Nature's management guidelines and the agreed Plan of Management.

The property – which joins onto the western boundary of central Bundjalung National Park - was handed back to the Bandjalang Clan by the Indigenous Land Corporation (ILC) on the 16th April 1999 and has been managed ever since by our people, with the management group having strong representation from the traditional custodial family in keeping with customary law. The entity that manages the property is now registered as Minyumai Land Holding Aboriginal Corporation (Minyumai LHAC).

In terms of specific principles for the management, Minyumai LHAC adopts the following principles for the management of the property.

- Community enjoyment and commercial use of the land are to be encouraged in ways that are consistent with Bandjalang customary and community values including respect of ancestors, current generations, neighbours and future generations;
- All land uses are to be balanced to ensure that the natural values of Minyumai (including its indigenous plant and animal populations and healthy and diverse habitats) and its water, soil, cultural sites and scenic values are conserved to the highest practicable extent;
- 3. Environmental protection principles are to be followed in relation to the use and management and of land so that both the land and its resources are sustained for future generations.

1.1 PLANNING TO DATE AND THE NATURE OF THIS PLAN

Three documents have been prepared about Minyumai to date. First, an assessment of the nature conservation values of the property was undertaken in 1995 by National Parks and Wildlife Service (NPWS) (McLachlan 1995) at a time when NPWS was itself considering acquiring the property to add to Bundjalung National Park (Bundjalung NP). Second, in 2003, a Property Management Plan was commissioned by ILC, through a Farming for the Future workshop program (Minyumai Land Holding Company Ltd, 2003). Third, and a brief Vegetation Management plan was developed in July 2008 by Environmental Training And Employment (EnViTE) for the purposes of a grant application.

While all these documents contain valuable information, a more updated survey of biodiversity and a more detailed management plan was needed to guide the management of Minyumai as an Indigenous Protected Area (IPA). The survey has been carried out by Landmark Ecological Services and its findings are reported in *A Flora and Fauna Report and Assessment of the Conservation Values of Minyumai*, Landmark Ecological Services 2011. This Minyumai IPA Plan of Management and MERI Plan therefore draws on the insights provided in the Landmark survey as well as extensive and thoughtful input by the Minyumai management group and other interested stakeholders and neighbours.

Note that this Plan of Management and MERI Plan is designed to be accompanied by supplementary documents including:

- Minyumai IPA Management Plan Summary
- Minyumai Management Plan wall poster.
- Minyumai IPA Vegetation Restoration and Management Plan

Future supplementary plans will include a *Minyumai Fire management Strategy* and *Minyumai Trail Upgrade and Management Plan*.

THE PROPERTY AND ITS ECOSYSTEMS

Minyumai is a 2163.6 hectare freehold property of largely uncleared native forest, woodland and wetland habitats. It is located in the traditional country of the *Bandjalang* clan, between Tabbimoble and Evans Head on the far north coast of NSW.

The property joins onto the western boundary of central Bundjalung National Park and the eastern boundary of Tabbimoble Nature Reserve. (See Map 1 – map courtesy Landmark Ecological Services P/L)

2.1 CURRENT CLIMATE

The climate of the region is subtropical, with relatively high rainfall (about 1500 mm per year). Temperatures can be hot in summer (Mean max 28° C, mean Min 20° C, Evans Head in Jan, Feb) with only a short winter. Annual mean max temperature is 24° C and annual mean min is 15° C (Evans Head).

Rainfall is more frequent on Minyumai than further inland as The Gap area is located near the coast. This rainfall generally occurs in summer/autumn although rainfall season can be unpredictable. Extended dry periods can occur during El Nino events (drying the elevated zones) and extended wet periods can occur during La Nina periods. leading to extended waterlogging of the flats.

2.2 SOILS, PARENT ROCK AND LANDFORMS

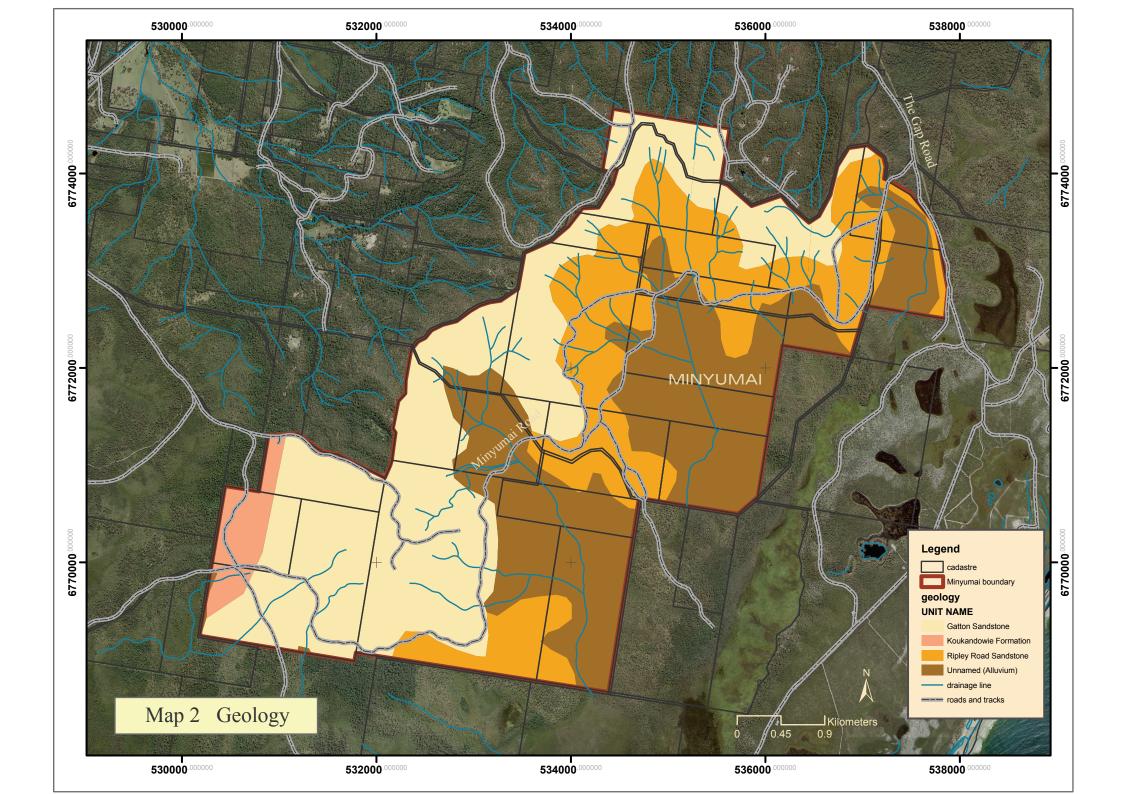
The four soil types on Minyumai (Gatton Sandstone), Koukandowie Formation, Ripley Road Sandstone and an unnamed Alluvium) are described and mapped in Landmark (2011). (See Map 2 – map courtesy Landmark Ecological Services P/L).

The soils of Minyumai are derived from the uplifted sandstone parent rock of the Richmond Range. On the ridges, the soils are very shallow and the subsoils are often clayey and poorly drained. Somewhat greater soil depth and condition exists on the footslopes of the range, while the soil of the low lying areas of Minyumai are alluvium with topsoil to a depth of only about 40cm lain over a highly erosive, dispersive, poorly-drained and unstructured subsoil (Morand 2001)

2.3 HYDROLOGY

All rain falling on the ridges and slopes in the western half of Minyumai drains quickly into the flats through many small watercourses. Prior to drainage works by the previous owner, the creeks forming on the flats tended to be fairly indistinct, with water dispersing over a wide area and extensively saturating the flats for long periods. East of Minyumai, in Bundjalung National Park, Quaternary sands form a barrier dune system behind which major swamps have formed, further contributing to the buildup of wetland conditions on Minyumai (Morand 2001). This has allowed the formation of major Lowland Redgum and Paperbark wetlands on the Minyumai flats, with small patches of wet heath.





2.4 FLORA AND FAUNA AND CONSERVATION IMPORTANCE

The property is of very high value for vertebrate fauna conservation (Box 1), largely due to its high diversity of vegetation communities (Landmark Ecological Services 2011, Box 2).

FLORA

Seventeen vegetation types and over 400 native plant species have been recorded as occurring on the property to date (A full current list of plants and animals is give in Landmark's Flora and Fauna report, (Landmark Ecological Services 2011). Further species are likely to be located over time as management is ongoing at Minyumai. Importantly, at least five Endangered Ecological Communities (EECs) occur at Minyumai and occupy a total area of approximately 658 ha (Landmark Ecological Services 2011). ('Lowland rainforest', a sixth regionally occurring EEC, may occur in very small quantities.)

These include

- 1. Freshwater wetlands on coastal floodplains
- 2. Lowland Rainforest on Floodplain
- 3. Sub-tropical Coastal Floodplain Forest
- 4. Swamp oak floodplain forest
- 5. Swamp sclerophyll forest on coastal floodplains

Many of the plant and animal species known to occur have contributed to the traditional economy of Bundjalung people over the millennia and, as such are important to the Minyumai landholding group and the Bandjalang clan. A further 33 Threatened species (*TSC Act*), including seven listed under the *EPBC Act*, are considered likely to occur in Minyumai on the basis of the presence of suitable habitat and records in adjacent areas.

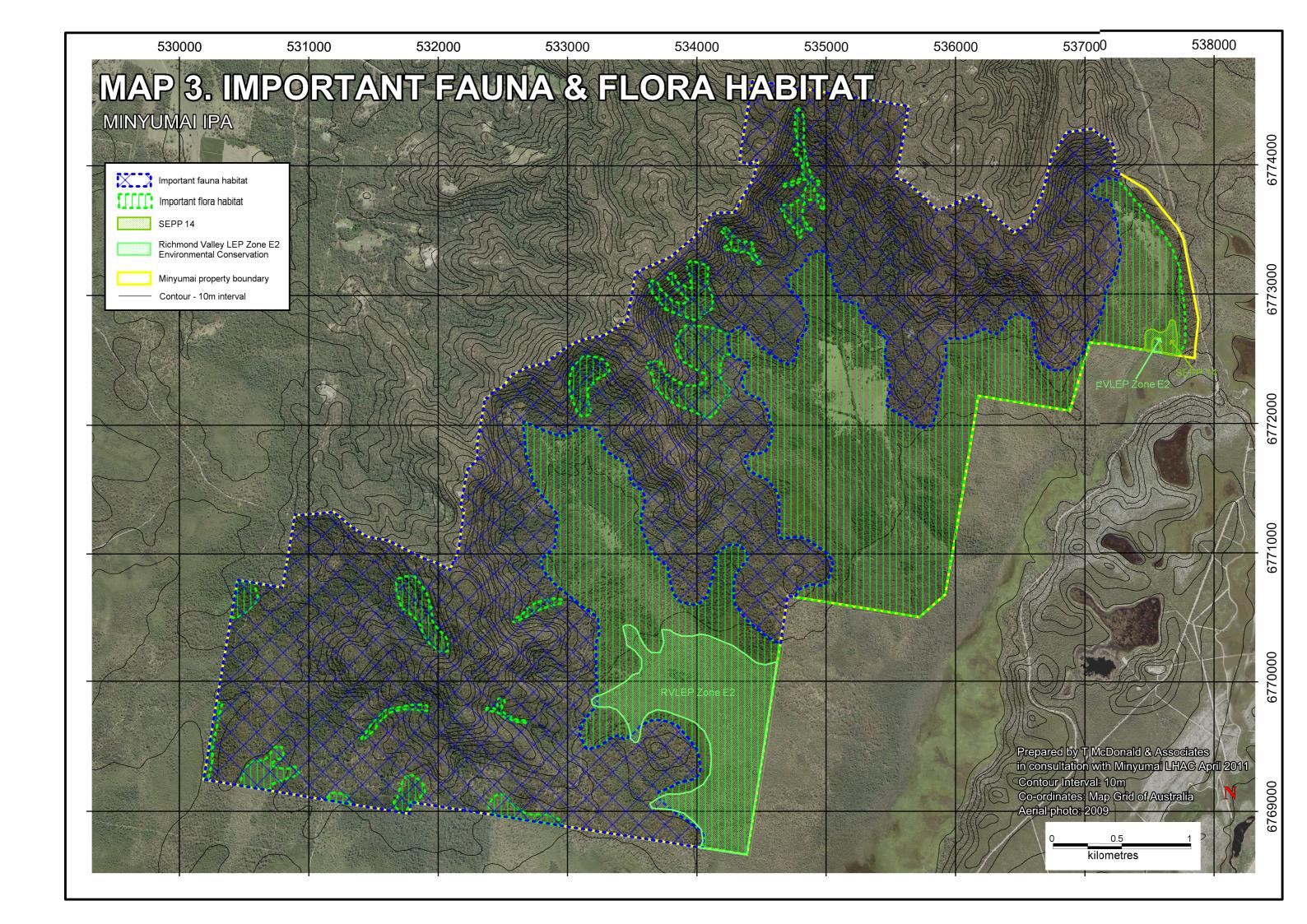
Box 1. SUMMARY OFSIGNIFICANT NATIVE PLANT AND ANIMAL SPECIES OBSERVED IN ALL SURVEYS TO DATE

<u>A total of **407** native plant species</u> have now been recorded on the property. This large number is due to the **17 vegetation types** present, including **5 State-listed Endangered Ecological Communities**. Threatened plant species include:

- 3 State-listed Threatened species (1 fern, 1 vine and 1 grass) and
- 7 species of conservation significance (4 trees, 2 orchids and 1 herb)

<u>A total of **180** vertebrate animal species</u> have now been recorded on the property (19 amphibians, 18 reptiles, 105 birds and 38 mammal species). Threatened animal species include:

- 18 State-listed Threatened species including 1 Federally listed Threatened species: and
- 19 conservation priority species
- A further 33 Threatened species (*TSC Act*), including seven listed under the *EPBC Act*, are considered <u>likely to occur.</u>
- Individuals of an <u>Endangered Population</u> (the regional population of Emu) also have been seen on the property.
- Oxleyan Pygmy Perch (Nannoperca oxleyana) an endangered small freshwater fish endemic to the coastal region of northern NSW and SE Queensland is thought to occur on the property.





Some of the animal species at Minyumai: (Clockwise from bottom left). Red-backed Toadlet, White-headed Pigeon, Noisy Pitta, Variegated Fairy-wren, Brown-striped Marsh Frog, Eastern Small-eyed Snake, Peron's Tree Frog, Red-necked Wallaby (V. Wilson), Carpet Python. . (All photos by D. Milledge unless otherwise stated.)



Box 2. Minyumai's high diversity of habitats

Important reasons for the high diversity of plants and animals on Minyumai include the property's varied topography and soils. For example, Minyumai contains elevated ridgelines that drain quickly, shaded gullies and extensive low lying areas. This varied topography, and the different soils that go with it, combine to produce a patchwork of different sorts of vegetation (Map 3)— with different habitats forming, depending on the location of the site along the gradient of soil fertility and degree of drainage present. At the drier end of the gradient, for example, the elevated ridges support eucalypt-dominated dry forest, while at the more moist end of the gradient, low-lying forested wetlands are dominated by different eucalypts and paperbarks. Depending on fire history and soils, the sites can have a grassy understorey, a heathy shrub understorey, or a mix of both. Between the dry and wet extremes lie the more fertile footslopes (containing mixed hardwoods) and the creek gullies (which support a range of both subtropical and dry rainforest species). (Refer to Landmark survey 2011.)

Importantly, the vegetation is also affected by the fire prone nature of the property, dictating that fire-adapted species tend to be the most predominant, with fire sensitive rainforest species occurring more in the deeper gullies.









FAUNA

When adding all species recorded by the Landmark and other surveys to date, 18 Threatened fauna species are known to occur on the property (all listed under the NSW TSC Act and one of these also listed under the federal EPBC Act) (Landmark Ecological Services 2011). Individuals of an Endangered Population (Emu Dromaius novaehollandiae population in the NSW North Coast Bioregion; NSW TSC Act) have also been seen on the property along with 19 other significant or conservation-priority species listed in the Landmark report. A further 33 Threatened species (TSC Act), including seven listed under the EPBC Act, are considered likely to occur in Minyumai on the basis of the presence of suitable habitat and records in adjacent areas (See Landmark2011).

Oxleyan Pygmy Perch (*Nannoperca oxleyana*) – a fish listed as Endangered at State- and Commonwealth-levels has been observed on the property by the landholders.

As the Landmark survey outlines, the property's forest types, dominated by tree species, provides nectar flows in sequence throughout the year. This is particularly important for both resident and nomadic migratory birds and mammals. A number of the most widespread forest types also provide a range of hollows used as roost, nest and den sites by many hollow-dependent vertebrates. The rainforest patches provide refugia for several specialised, moist forest-dependent species and function as "stepping-stone" habitats for nomadic and migratory frugivorous and insectivorous rainforest birds moving between larger rainforest patches in the hinterland and the Iluka Peninsula.

Connectivity. One of the most important things about Minyumai is the fact that it adds to the core reserve area of Bundjalung National Park and Tabbimoble Nature Reserve, one or other of which abuts Minyumai on its northern, eastern and southern boundaries. As such, conservation of the habitats on Minyumai IPA strengthen the core reserve corridor between the Richmond and Clarence valleys, allowing native animals to move between these areas over long time frames, allowing genetic mixing and potential adaptation to climate change.

This corridor function is enhance by the fact that Minyumai also connects on its western boundary to an additional area of extensive, regionally significant privately owned native vegetation in rugged high country of The Gap precinct. This bushland is unlikely to be extensively developed or cleared due to its fire prone nature, low productivity soils and land clearing legislation at State level. However, Minyumai is a critical link between this expanse of vegetation and the National Park, consolidating very important buffer to the Park, particularly catering for Threatened species with large home range requirements. Mass flowerings of the Spotted Gum forest types around the western edge of Minyumai and the surrounding range are also important for maintaining the viability of the regional population of the State and Federally listed Grey-headed Flying-fox as well for nomadic bird species. All the Minyumai vegetation is likely to be important for genetic mixing between Koala populations in the Richmond and lower Clarence.)

LAND USE

3.1 LAND USE HISTORY

Bandjalang land use.

The property is part of the traditional territory of our Bandjalang people, as attested by local oral history and anthropological evidence.

Oral history. The late Lawrence Wilson, who negotiated the transfer of the property from ILC, spoke of Minyumai being on the traditional track to Iluka. He remembered how he himself went through there in his youth, not knowing the future the property would hold for his people. He recalled his elders (Uncle Harry Yuke and Grandfather Andrew Henry) saying that the whole flat was a "big swamp, right up to Minyumai" - and all the ridges "sort of stuck out of the swamp". He said that the people, as they travelling down, would 'get up on that hill ..and look out to sea and look around"

The Gap also provides access through the range to the south/eastern bank of the Evans River where major campsites were during Aboriginal times (*Gooriuhboo*). As a result, the area is thought to have been the main route between coast and inland camp sites. While it is not possible to know exactly how our ancestors managed the land prior to the coming of *Yirali*, it is likely that some areas of the coastal zone including The Gap area were deliberately burnt, creating something of a patchily burnt landscape which may have provided some control of the spread and/or intensity of fire. After the late 19th Century massacres and the flight of our people away from the coast, this burning was discontinued, replaced by coarser mosaic pastoral burning or, more recently, no management burning at all.

<u>Archaeological evidence</u>. A brief archaeological survey undertaken of the property (Rebecca Edwards-Booth, 1994) located a scarred tree and an axe head on a sand dune ridge. This suggests that more archaeological relics are likely to be found as the area is gradually assessed by us. Other archaeological studies carried on the nearby coast during the 1970s (McBryde 1982) and the early 1980s (Johnston & Walters 1986) found extensive areas of stone artefact scatters

and knapping floors where stone tools were produced. Shell middens found extensively along the immediate coast and estuaries - as well as other Aboriginal sites and relics in the broader Evans Head area (including scarred trees and the major shell midden at the Winter Camp site in Bundjalung National Park referred to by us as *Gumigurrah* – see Map 1) make it clear that the coastal zone has been extensively used for Aboriginal habitation extending from many thousands of years (Peter Veth, Archaeological consultant, 2004, pers. comm.).



Yiruli land use.

Dairving and cattle: During the early 20th century, there were a number of small dairy farms in the vicinity, although it is though that most dairy farms were closer to the river flats and the poorer country was used as their 'dry run' for dry cattle and rearing bullocks (Marie Bellette, 5th July, 2003, pers comm.) A dairy was said to be located in the central area of Minyumai, with one on the neighbouring property (recently Suffolk's) now in Bundialung NP (Stuart Everett, 4/3/2011, pers comm.) These businesses ceased prior to the Second World War after which time the many blocks that now make up Minyumai went through a series of ownership changes. In about 1967, the Everett brothers purchased the now 17 titles to raise beef cattle on fertilised clover paddocks. At this time, the central clearing was already open, and the Everetts fenced the property and further cleared this area and the other two main clearings. They also undertook extensive earthworks to centralise the drainage of the flats. The three flats were annually, aerially fertilised with superphosphate at a rate of 1 hundredweight/cleared acre and sowed clover and Setaria. At its peak in the 1970s. Everetts ran about 250 steers for fattening and 150 cows that raised calves that were sold off as yealers. After the cattle crash of 1974 and removal of superphosphate bounty, profitability had reduced to a point that the Everetts just grew steers to bullocks and sold them for fattening elsewhere, and subsequently lease the property to other graziers. When Minyumai was first handed back to the Bandialang group, agistment of 50 cattle was reinstated, although this reduced gradually due to unprofitability until cattle were removed by the agister in 2008-9.

Logging: There is evidence of logging having occurred in the Gap area many decades ago as well as in recent decades. Evidence for the older logging can be seen in the form of axe notches on stumps on the neighbouring Korinderie Ridge, showing it was confined to very large trees found in rainforest gullies. In about 1998, however, (prior to Everett's sale of the property) the property was systematically logged for larger Spotted Gum and any other sizeable species by the local contractor, Noel Spencer, who may also have logged the north-west corner of the property approximately 20 years earlier.

In the late 20th century, the previous landholder proposed a residential development on the property, calling the proposal 'Seabush Estate'. The subdivision was approved but the project lapsed due to the cost of road construction compared to the potential price of the blocks (Stuart Everett,

4/3/2011, pers comm.). Such subdivision is now unlikely to be approved because of the bushfire prone nature of the area.





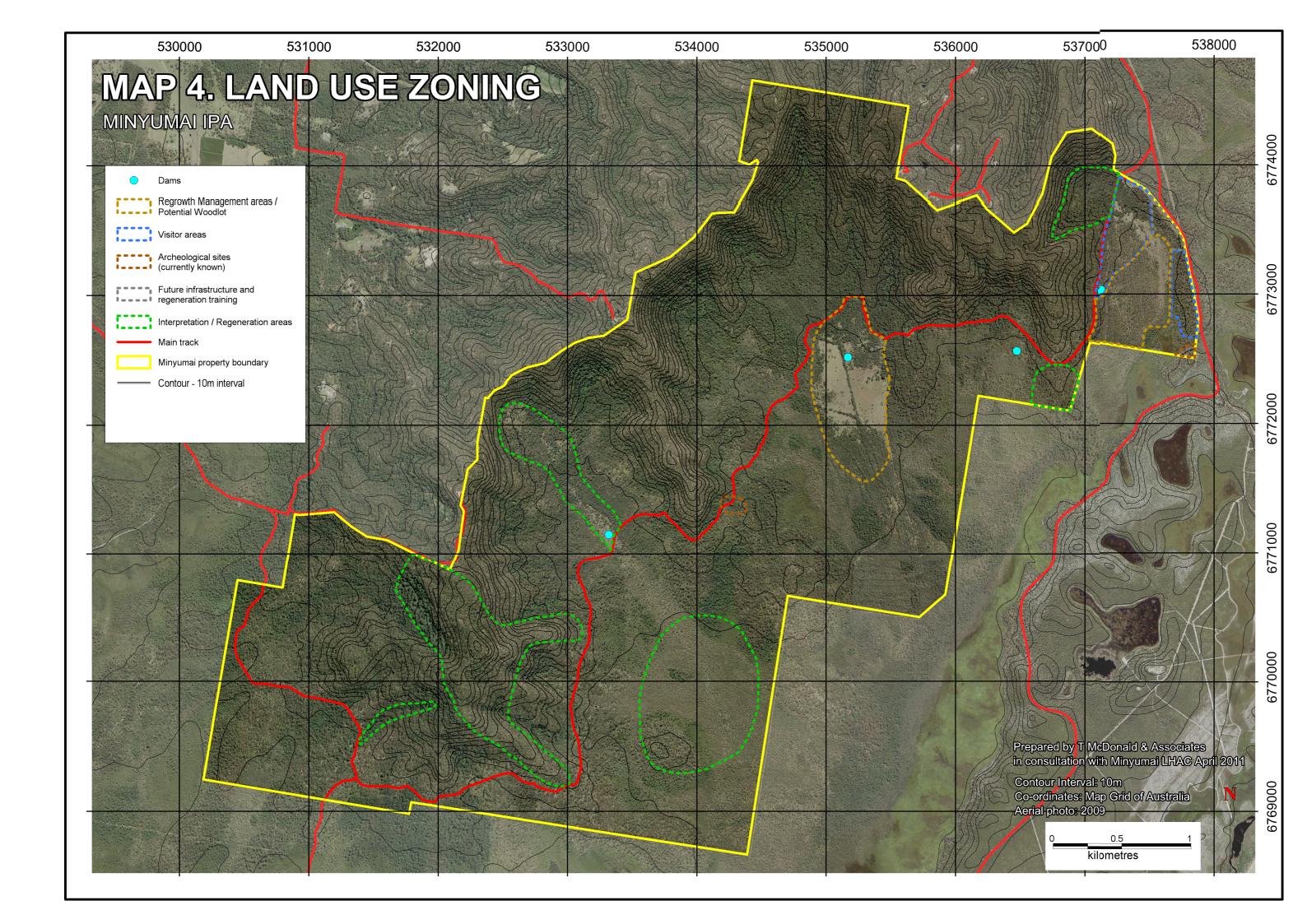
3.2 CURRENT AND POTENTIAL LAND USES WITHIN MINYUMAI IPA

Current Bandjalang use of Minyumai is as a rural bushland property, managed for conservation and employment opportunities for the betterment of our people. Its primary land use is management as an Indigenous Protected Area. A range of compatible potential land use activities exist, however, in the IUCN category VI areas of Minyumai IPA (Tertiary conservation areas). These may be both commercial and non-commercial. (Refer to Maps 4 and 5 for land use and conservation zonings recommended by this Plan.)

An indication of these potential land use activities include the following - bearing in mind that any buildings (particularly for tourist ventures) would require development consent. (See Appendix 1)..

- <u>Cultural activities</u> passing on traditions while camping; managing aboriginal sites, language and culture, and doing arts and crafts
- <u>Tourist ventures</u> such as day tours, (including in the national park) and overnight camps with options for future camp grounds and guest accommodation
- <u>Social and educational activities</u> community and social development camps; school and education camps, and even fundraising concerts
- <u>Natural resource management employment</u> attracting funding to control weed and feral animals on Minyumai and contracting the team out to others
- <u>Wood-based cottage industries</u> firewood supply from Minyumai's woodlot, artifact making, furniture making,



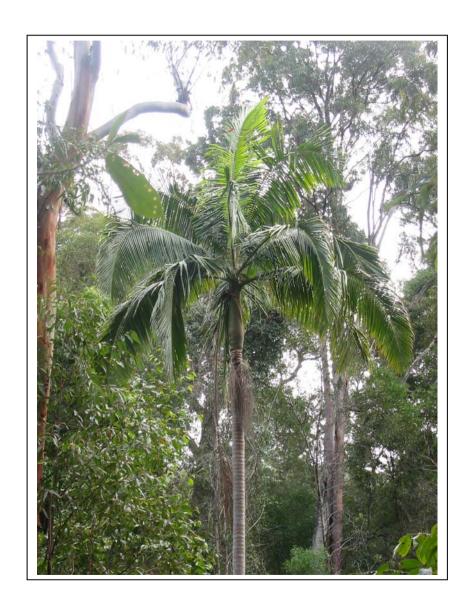


4 ENVIRONMENTAL MANAGEMENT CONSIDERATIONS AND SOLUTIONS

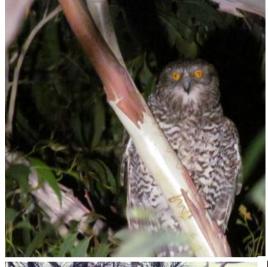
4.1 MANAGEMENT ASPIRATIONS

The appropriate management of indigenous plant and animal communities has two aspects – protection from future degradation and restoration where degradation has already occurred.

- (a) **Protection** involves preventing degradation of Minyumai's plants and animals as well as its soil and water. Degradation of these can be caused by the following impacts.
- Excessive harvesting or burning of wild plants or animals (i.e. disrupting sustainable habitats)
- Uncontrolled invasions by pest plants and animals
- Excessive soil disturbance (by stock, vehicles or cultivation machinery) which might cause erosion, siltation, compaction or loss of soil structure.
- Excessive irrigation or alteration of natural water flows that could damage natural wetlands.
- Agricultural fertilising or chemical use that may cause pollution.
- (b) **Rehabilitation / restoration** is the process and practice of renewing the integrity of ecosystems that have been degraded, damaged, destroyed, removed or otherwise converted, either intentionally or unintentionally. It is based on an ethic of reconciliation between humans and the rest of nature and generally takes the form of active repairs such as feral plant and animal control, erosion control and revegetation works.















Some of the threatened or significant fauna at Minyumai:

(Clockwise from bottom left)

Whiptail Wallaby (D. Milledge), Barking Owl (D. Hollands); Powerful Owl (C. Graves); Eastern Blossom Bat (D. Milledge); Hoary Wattle-bat (D. Milledge); Glossy Black-cockatoo (D. Milledge).

4.2 CONSERVATION ZONINGS

Minyumai lends itself primarily to nature conservation, with a small proportion of the property being utilized for income generation while conserving natural values to the extent possible. We have identified, therefore, the location of primary, secondary and tertiary conservation areas. (See Map 6)

The location of the primary conservation areas has taken into account the need to ensure the largest area with the smallest edge – as well as to allow for the widest corridor (ideally at least 500m) connections with intact patches of native vegetation on neighbouring private land.

'Rezoning' to a lower protection category of any portions of these areas, however small, would require the preparation of an internally produced environmental assessment and support of the full Minyumai advisory committee after consideration of that assessment.

Primary conservation areas [equating with IUCN Category IV areas]

Primary conservation areas are shown on Map 4 and include all areas adjoining Bundjalung National Park and Tabbimoble Swamp Nature Reserve.

<u>Permitted activities</u> include: weed control, fauna and flora surveying, pest animal control activities, ecological burning consistent with the Minyumai Fire Plan, bushland friendly bushwalking and educational tours, existing dams, low impact firebreaks.

Secondary conservation areas [equating with IUCN Category VI areas]

Secondary conservation areas include all other parts of the property containing bushland and where low levels of usage are permitted.

Permitted activities include: all the activities permissible in primary conservation

areas as well as low-use tracks, low impact electricity easements, woodlots and primitive camping areas.

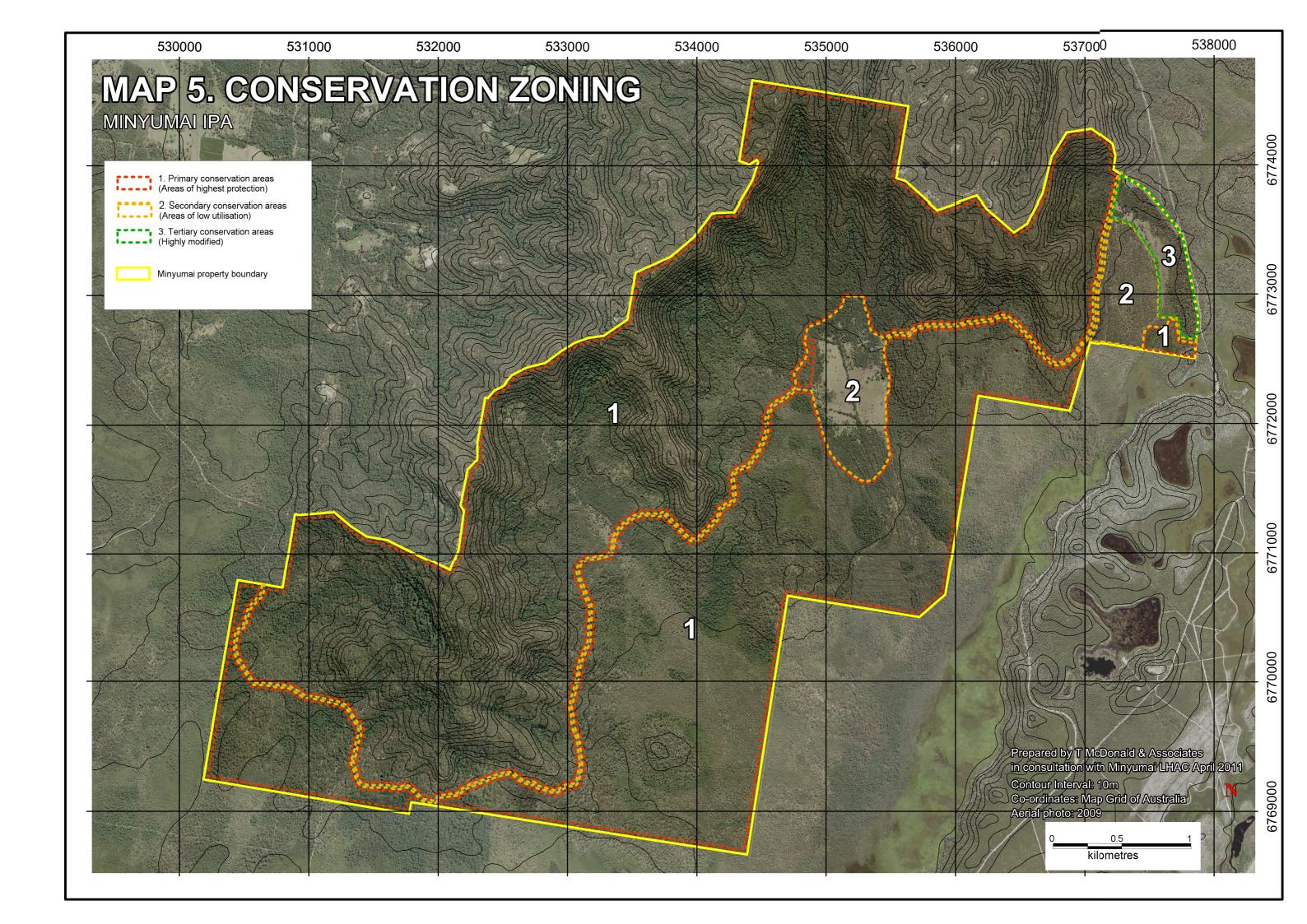
Tertiary conservation areas: [Intensively utilized areas]

This zoning includes areas that are intensively managed.

<u>Permitted activities</u> include: all the activities permissible in primary and secondary conservation areas as well as the main trail, high-impact electricity easement, IPA infrastructure, tourist facilities, active recreation areas, quarries and borrow pits for road construction on Minyumai, stockpiles and dog walking

Although this is a higher utilized zone, it is still to be managed in a way that is sympathetic to the conservation and aesthetic aspirations of Minyumai. That is, within this zone, native plants and animals are to be conserved to the highest practicable extent and care is to be taken to ensure that activities or their effects in these areas do not impact upon other zones. Weed is to be reduced to a minimum and controlled where it cannot be reduced so that it does not impact upon other zones. (See *Minyumai Vegetation Restoration and Management Plan* for ways this can be achieved.) Visitor activities should be managed so that visitors grow in their understanding of Minyumai's natural values and ways to conserve nature.





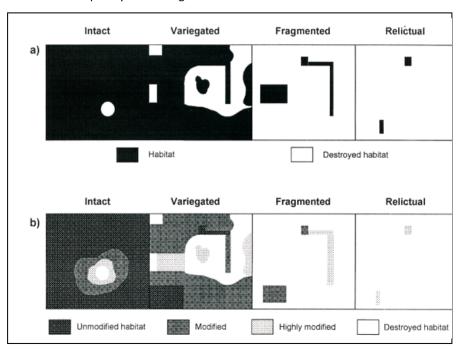
4.3 MAINTAINING AND RESTORING MINYUMAI'S BIODIVERSITY VALUES

4.3.1 CURRENT CONDITION

VEGETATION AND HABITATS

Most of the property is in an uncleared, unmodified condition - although some logging has occurred on the property in the past; some pest animals are present; and, varying levels of weed (including some serious infestations) occur in some areas.

Habitat for native animals has been somewhat degraded by past grazing and burning practices, particularly for reptiles and small mammals. This requires improved vegetation management and more appropriate fire regimes to reduce the overall frequency of burning.



Condition classification

Using the framework for conceptualizing degradation in landscapes (McIntyre & Hobbs 1999) over 90 percent of the property is intact, with less than 10 per cent in variegated condition. None is in a fragmented condition. (See Fig 1 and Map 6).

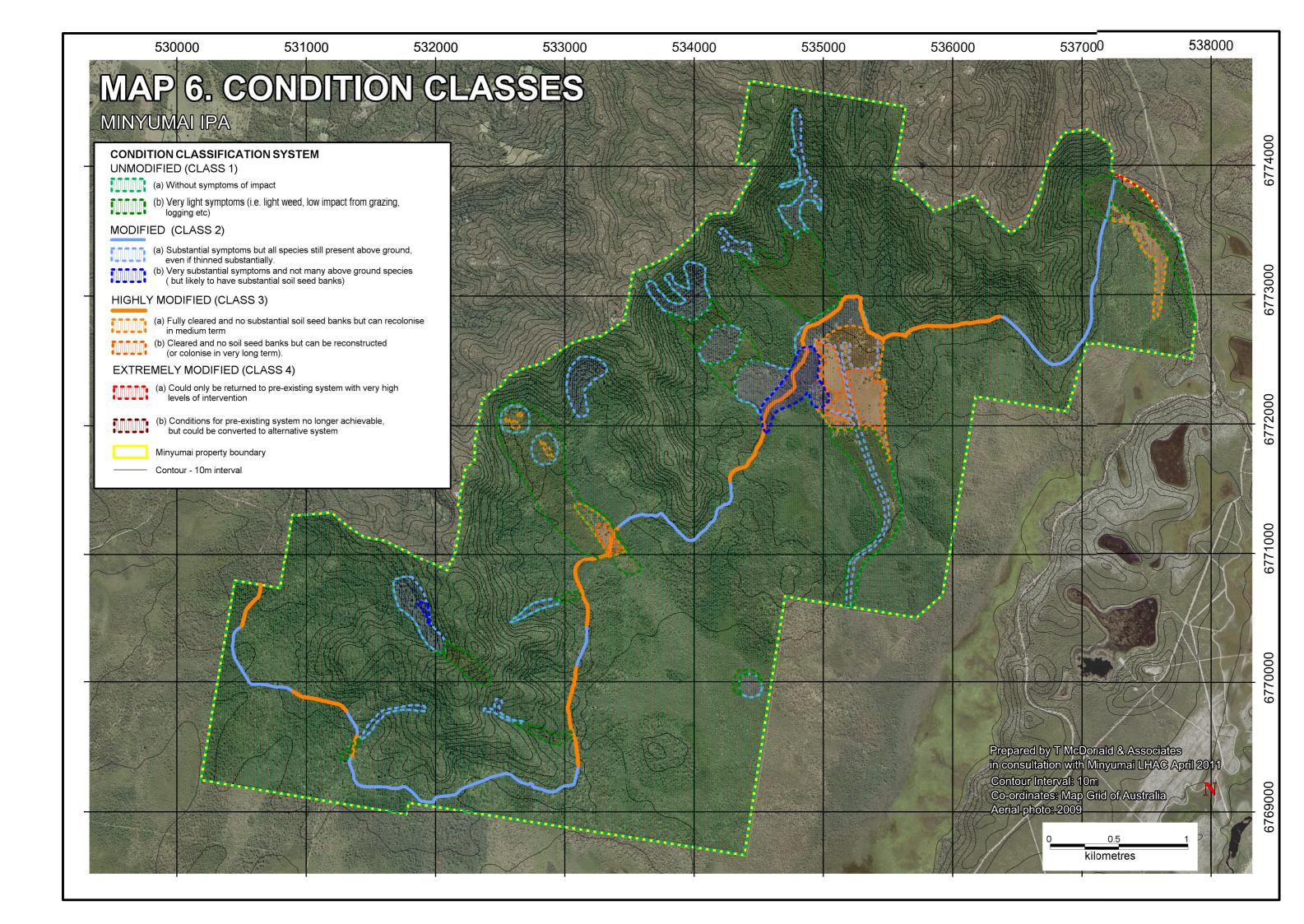
In terms of intensity of degradation, about 90.7 per cent (1963 ha) of the site is broadly in Class 1 condition (although in lightly grazed or logged lower elevations areas, it is Class 1b rather than Class 1a – See Map 6 and Minyumai Vegetation Restoration and Management Plan). Some 5.7 per cent (125.6 ha) is in Class 2 condition, 3.5 per cent (72.8 ha) in Class 3 condition and 0.1 per cent (1.5 ha) in Class 4 condition (Table 1).

Note: The zone boundaries on Map 6 are not sufficiently accurate for fine scale monitoring. Finer scale boundaries for monitoring should be drawn once a restoration site has been identified and closely assessed prior to works.

Figure 1. A useful framework prepared by McIntyre and Hobbs (1997) for classifying degradation in landscapes

Have a look at this diagram on the left. The top part represents the typical patterns of native vegetation clearing as if seen from the air. (So the first picture has very little cleared and the last one is almost entirely cleared.

The bottom part of the diagram shows how the same area could also have degrees of impact apart from land clearing – impacts such as weed.



A WAY OF CLASSIFYING THE RESILIENCE OF DIFFERENT PARTS OF MINYUMAI

Table 1. A way of categorizing the four level of modification - i.e. emphasizing that higher levels of modification translate into lower levels of 'resilience' in a vegetation community. That is, lower ability of a native vegetation to bounce back after the removal of the stresses such as grazing, land clearing, excessive fire or weed invasions. (adapted by T. McDonald from McIntyre & Hobbs 1999) This can be further subdivided into more sensitive sub-classes as shown in Map 6. (Further information is available in McDonald 2010, 2011).

1	2	3	4
Green	Blue	Orange	Red
Unmodified	Modified	Highly modified	Extremely modified
Resilience very high. Requires maintenance inputs only	Resilience modified but generally responsive to assisted natural regeneration (ANR) inputs	Resilience reduced but still at least somewhat responsive to ANR inputs (of higher intensity and /or longer duration. Reconstruction necessary in extreme cases.).	Reduced to migratory resilience only, or nil resilience. Requires full recolonisation, reconstruction or type conversion.
WI	OUTSIDE AREAS OF NATIVE		
	VEGETATION COVER*		





4.3.2 THREATS TO BIODIVERSITY

[Note that this section includes recommendations, which are summarized in Appendix 2]

4.3.2.1 CLEARING AND GRAZING

Some 12 percent of the property (259 ha) has been cleared in the past, in three main clearings. The first area to be cleared was the central clearing, which would have been cleared by axe some time prior to WWII. This area was expanded by bulldozing in the late 1960s at the same time as the clearing of the other two areas. These main 1960s clearings have now all developed very high levels of regrowth.

Although some internal fencing was erected, cattle are likely to have roamed throughout the flatter parts of the property. Grazing has been most intense, however, in the core of the central clearing. All the 1960s clearings were aerially fertilized and sown to clover and some Setaria as described in the earlier section 'Land Use History'.

Recommendations:

- 1. Prevent any clearing in Endangered Ecological Communities and upland forested ecosystems
- 2. Allow clearing only for designated firebreaks or ecotourism accommodation only in tertiary conservation zones (after the appropriate environmental assessments and in a manner consistent with State land-clearing legislation).



4.3.2.2 LOGGING

It is difficult to determine how much of the property has been selectively logged, as it is likely that this occurred in at least two main eras as described in the Land Use History section of this Plan.

Some 68 per cent of the property (148 ha) has potential to have been subject to relatively light logging. While potential for replacement of these logs has been high, the removal of the largest and oldest trees has removed a substantial proportion of Minyumai's future habitat for many arboreal mammals and birds.

Recommendations:

- 1. Ensure no logging of mature or old-growth trees with trunks greater than 50cm at breast height or with visible hollows
- 2. Ensure no felling of large stags (standing dead trees) with trunks greater than 50cm at breast height).
- 3. Limit firewood and timber gathering to designated woodlot areas
- Revegetate already cleared areas using likely pre-existing native trees to provide additional fauna habitat as well as provide areas that can be used as 'woodlots' for timber and firewood supply.



4.3.2.3 PEST ANIMALS

Control of pest animals will be in accordance with Minyumai's obligations under the NSW *Rural Lands Protection Act 1998* to control pigs and dogs while protecting non-target native animals and in accordance with best industry practice.

Four pest animal species (foxes, pigs, cats and wild dogs) have been seen on the property and are capable of having a significant impact upon native fauna. Cane toads are currently not found on Minyumai but there is strong potential for their invasion of the property as this species has been seen and heard on The Gap Road in recent years and is present in Evans Head, Woodburn and Coraki. Preventing invasion by Cane toads is therefore a very high priority.

The level of threats to threatened species from these pest animals is high, so programs need to be conducted wherever pest animals are detected. However it should be noted that the conservation of Dingoes is likely to play an important role in reducing the Red Fox.

Timing of monitoring and baiting of pest animals is critical to the success of a program. Monitoring of wild dogs, for example, is best carried out around March/April and, if present, baits laid prior the dogs' winter breeding season. [Similarly, foxes breed once a year in Spring.] Alternatively, baiting could be carried out to protect sensitive native species during their breeding season. While Long-nosed Potoroo can breed throughout the warmer seasons, for example, there is a tendency for most births to occur from the end of winter to early spring. This means that monitoring in March/April and baiting in winter/spring/early summer could be considered to protect this species (Andrew Fay, NPWS, February 2011 pers. comm.). Other species that could be considered for protection include the many Threatened species known to occur or which may potentially occur on Minyumai

The Survey by Landmark ecological Services (2011) contains detailed information on where on the property Minyumai Rangers and volunteers could target monitoring for Wallum Sedge Frog , Spotted-tailed Quoll and Long-nosed Potoroo).

Recommendations:

- Prepare a program of pest animal management activities before mid March each year in time to apply for funding for the following financial year. Some contingency funding needs to be built into this program to enable Minyumai to complement monitoring and control programs carried out by NPWS in Bundjalung National Park.
- Give very high priority to the prevention, monitoring and control of the Cane
 Toad to protect both Minyumai's native fauna and the fauna of neighbouring
 properties including Bundjalung National Park (which has been identified as a
 priority zone for Cane Toad exclusion and treatment).

This is to be based on three activities:

- o thickly revegetating the perimeters of all dams with tall reeds to a width of at least 3m.
- o inspecting all ponds and dams for the easily recognizable eggs of the Cane Toad
- o carrying out night surveys (September to April) that involve listening for the Cane Toad's distinctive call. If toads are detected, 'collect and destroy' treatments are carried out over three consecutive nights using the most effective yet humane methods, taking care not to destroy native frogs. (To avoid this, all Minyumai personnel are encouraged to also learn the native frog calls.)
- Formulate a domestic dogs and cats policy to control introduction of these animals to Minyumai
- Report any wild dog sightings to the Livestock Health and Pest Authority (LHPA) and neighbours.
- Complement, to the extent practicable, any control programs carried out by NPWS in Bundjalung National Park. Prior to any control, however, monitor pest animals to identify the need for any trapping or baiting. If not present, no baiting is to be carried out.
- Actively control feral Pig population in conjunction with NPWS (preferably by supervised trapping), particularly along shared boundaries with NPWS.
- Remove and prevent debris such as stored/discarded building materials, car bodies, old machinery from primary conservation area and other areas where possible, to remove shelter sites for introduced species such as Cane Toad, House Mouse and feral Cat

 Monitor for signs of introduced fauna species (eg. Cane Toads at water bodies, Red Fox scats along tracks) to determine the effectiveness of habitat restoration and improvement actions

Standards: To avoid impacts to native animals, any pest animal control programs need to be carried out by Minyumai's Rangers to a high standard, ideally to at least the standards adopted by NPWS. Principles of any treatments include:

- 1. Ensure personnel involved are competent in humane trapping and baiting
- 2. Avoid any impact to native animals
- 3. Time any treatments to prior to the breeding season of either the pest animals or the target native animal being protected.
- 4. Monitor prior to treatments to ensure the pest animal is present. If not present, do not lay out baits
- 5. Install appropriate signage

4.3.2.4 DISEASES

Rangers and visitors are to be educated in how to recognise diseases including phytopthera and Myrtle Rust, a relatively recently introduced fungus which is not yet on Minyumai.

Recommendations:

- 1. All effort is to be taken to only import materials from nurseries or farms that are clear of Myrtle Rust.
- 2. Any suspected sightings of Myrtle Rust are to be reported to NPWS.



4.3.2.5 WEEDS

At least 40 weeds occur on the property including 7 declared noxious weeds (mainly grasses) and two Weeds of National Significance (Bitou Bush and Lantana, which have also been listed as a Key Threatening Processes under the NSW *Threatened Species Conservation Act 1995*). The weeds are mainly confined to the previously grazed areas and road, except for Lantana which is widespread, particularly in gullies. [A full list of weed species is in the *Minyumai Vegetation Restoration and Management Plan.*]

Level of threats

<u>Weeds on Minyumai could be thought of as falling into four categories: woody weeds, herbaceous weeds, climbing weeds and water weeds.</u> These can pose different threats to different native communities:

- 1. WOODY WEEDS observed to date on Minyumai number about seven. The following are to be considered 'notifiable' weeds by Minyumai personnel and given a high priority for systematic mapping and treatment programs.
 - Lantana is already widespread on Minyumai and can severely affect
 Rainforest, wet gully and creek bank vegetation by invading quickly after
 a fire or other disturbance and then excluding native regeneration. This
 has already occurred in rainforest areas that have been previously
 disturbed by logging. Because of the relatively high resilience of
 rainforests, systematic weed removal can result in successful rainforest
 regeneration
 - Camphor Laurel is highly invasive in all forest types and is currently a 'sleeper weed' in the locality and only present on Minyumai in small quantities.
 - Groundsel Bush largely affects cleared areas and grassy wetlands. This
 has received treatment in the past and control is ultimately feasible
 given it is also receiving treatment in Bundjalung National Park.
 - Ochna is a very difficult to treat bird-spread weed, only currently present at very low levels.
 - Senna outbreaks (both species) are present on Minyumai and are a

priority because of their long-lived seed.

- 2. CLIMBING WEEDS observed to date on Minyumai number about four. As climbing weeds can present a threat to all communities, but particularly creek areas, all these climbing weeds are to be considered 'notifiable' on Minyumai. Climbing weeds observed to date on Minyumai are:
 - Coastal Morning Glory (*Ipomoea cairica*)
 - three *Passiflora* species
- 3. WATER WEEDS observed to date on Minyumai number only one, the exotic Blue Water Lily. No declared noxious water weeds have yet been located. Because of the large area of floodplain wetland on the site, however, it is important to be vigilant about observing any new species and avoiding the introduction of new species, particularly including Alligator Weed.
- 4. HERBACEOUS WEEDS observed to date on Minyumai number about 27. The following are to be considered 'notifiable' weeds by Minyumai personnel and given a high priority for mapping and systematic mapping and treatment programs.
 - Grass weeds can severely affect native grassy understoreys in the EEC floodplain wetlands as well as derived native grasslands in all slashed firebreaks. The most problematic on Minyumai are: Setaria, Giant Parramatta Grass, Giant Rats Tail, African Love Grass, Giant Paspalum, Broad-leaved Paspalum, Whisky Grass and Common Couch. (Other species may be added over time.)
 - Forb weeds can be highly invasive, affecting both native grassy understoreys and moist areas. The most problematic on Minyumai are: Crofton Weed, Yellow Catsear, Cuphea.

Because all these weeds are favoured by disturbances, they are usually worsened by fire, grazing, slashing and importantly – they can be worsened by poorly implemented weed control treatments that create disturbances without appropriate follow up treatments. This means that these disturbances should be minimized and follow up should always be carried out after any unavoidable disturbances.

WEED INVASIONS

Right: The wetland conditions of Minyumai are highly suited to Groundsel Bush, which has been a substantial problem in Minyumai in the past. Work is still required to keep this Declared Noxious weed in check.

Below: The better-drained upland areas of Minyumai (particularly the sheltered gullies) also have been invaded by Lantana. This Weed of National Significance is increasing in the precinct.

Lower right: Setaria is a highly invasive grass of wetlands, and a very persistent weed, difficult to treat. Treatment needs to be incremental

Middle: Broad-leaved Paspalum is arguably the most problematic weed at Minyumai as it has potential to spread into uncleared areas.











Recommendations:

A systematic program of native vegetation protection and weed control is to be carried out (See Map 7) according to the recommendations detailed in the *Minyumai Vegetation Restoration and Management Plan*. This plan is to be updated on a 3-5 year basis. Funding is to be sought from a range of quarters wherever possible.

The plan is based on the following general principles:

- 1. Avoid new reintroductions by maintaining vigilance in any nursery operations and soil or mulch importation.
- 2. Ensure all on-ground personnel practice weed <u>avoidance</u> during earthworks, slashing or other operations. This means:
 - o Quarantine some areas from access by vehicles and people
 - Avoid unnecessary slashing where conversion to native vegetation is the goal, preferring use of brushcutters where weed seed requires cutting to avoid spread by cars.
 - Avoid spreading weedy topsoil during earthworks, preferring burial of it under native topsoil or subsoil
 - Ensure all equipment or vehicles used in weedy areas is washed down in approved areas prior to use in non-weedy or less weedy areas.
- 3. Ensure all weed control operators are competent in best practice bushland weed <u>control</u> approaches and techniques. This means:
 - Direct or indirect supervision by a person with at least Cert III in Conservation and Land Management (Natural Area Restoration) or equivalent gained from a TAFE course with experienced teachers in this field
- 4. Undertake weed control works in a manner than optimizes native regeneration to ensure replacement of weed at the earliest opportunity. This means:
 - Work from areas of lower infestation to areas of higher infestation, upslope to downslope and upstream to downstream to avoid treated areas being rapidly reinfested.
 - Ensure only take on as much area as can be safely followed up (multiple times) prior to new generations of weed seeding.
 - Avoid scattering the effort...work in a systematic way so that treated areas abut each other.

- Apply the most cost-effective treatments practicable in each situation.
- o Undertake weed control after any wildfire wherever possible.

Specific recommendations

ON GROUND ACTIONS (in priority order)

- 1. Regenerate buffers to rainforest stands (by removing Lantana) and actively exclude fire from these highly important habitats
- 2. Utilise opportunities near the depot to train Rangers in the control of herbaceous weeds from Spring to Autumn
- 3. Commence the control of herbaceous weeds starting in areas of lower infestation such as the entrance road to Minjehla Track and the isolated outliers shown in Map 1. (The idea is to prioritise treatments in areas where light infestations occur and work these infestations back to their sources rather than waste resources attacking intense infestations in areas with low native resilience where the result will just be more weed.)
- 4. Develop and implement a policy of reducing the potential of weed on the roadside to spread on vehicles. This is likely to involve regular spraying in some areas, seasonal brushcutting in others, while other areas will need to be quarantined. Consideration should also be given to scalping weedy roadside sites and stockpiling weed on an already degraded upland location for at least 15 years before it is used as fill in a benign location
- 5. Undertake trials to treat both Setaria and Broad-leaved Paspalum in the second clearing area. Monitor and write up these trials so that these can inform future potential programs in these areas.
- 6. Develop and implement a design for managing the Setaria pasture to foster biodiversity values (partial reconstruction as resources permit) in conjunction with sustainable land-uses such as wood lots
- Control noxious weeds in an integrated manner as part of the systematic program of weed control, with the exception of Groundsel, which should be the subject of annual forays in known outbreak areas during each flowering season.
- 8. Maintain vigilance in the case of all environmentally problematic weed species with potential to spread (e.g. Camphor Laurel, Ochna, Senna) and ensure the community is familiar with them

- 9. Ensure that weed species are not inadvertently introduced to Minyumai by restricting landscaping plantings to non-weedy species. (Preferably locally native).
- 10. Source local genetic plant material (seed, cuttings, plants) for landscaping and restoration

SURVEYING WORK

11. Continue targeted surveys, as resources allow, for Commonwealth (EPBC Act)-listed flora species such as Southern Swamp Orchid, Arrowhead Vine (known from Minyumai but requires re-location and

- mapping), and Heath Wrinkle-wort (known from Minyumai-National Park boundary).
- 12. Develop further understanding of flora species at Minyumai by continuing inventory, especially of species-rich rainforest and heaths (seasonal surveys desirable)
- 13. Liaise with NPWS as vegetation classification and conservation reassessments proceed to improve understanding of the distribution, abundance and reservation status of vegetation types known from Minyumai.

Box 3. Fire and native plants and animals.

While fire is a natural process in the Australian environment, too frequent and too extensive fire can create severe threats to native plants and animals.

FAUNA can be affected in two ways. Firstly, extensive fire can kill species that cannot take refuge underground or flee quickly enough. Secondly, frequent fire can also consume the habitats of other species, even those that can hide underground or fly (that is, habitats such as hollows in trees or timber laying on the ground, which small mammals, lizards and snakes need for shelter).

MANY PLANT species on the property are adapted to fire at different 'regimes' (i.e. varying combinations of temperature, season and frequency). Plant adaptations to fire include an ability to resprout (such as in many eucalypts) OR an ability to store seed in the soil away from the harmful effects of fire (such as some wattles and other heathy, flowering shrubs).

But too <u>frequent</u> fires in the same area can kill out heathy species that store seed in the soil. This is because, while one fire might kill the parent but stimulate its soil stored seed to germinate, sufficient time is needed without fire for those new young plants to mature and set seed again – and if fire comes again too soon, the next generation will be killed too. (This has possibly happened on Minyumai because there are not many heathy shrubs, except in very rocky areas or very wet areas that may have been protected from fire by water lying on the ground.)

A few species, such as Heath-leaved Banksia (*Banksia ericifolia*) which occurs on Minyumai, are particularly sensitive to fire because they neither resprout nor store seeds for long periods in the ground. That is, they are not well-adapted to frequent fire at all.

4.3.2.6 ALTERED FIRE REGIMES

Minyumai is located within a bushfire prone environment and has a history of fires, including some very extensive fires.

An assumed pattern of Aboriginal burning has been replaced with extensive fires, either more frequent lower intensity (lit by graziers to manage their pasture) or occasional but high intensity (lit by lightning and even arsonists). The effects of this are outlined in Box 3. Some fires have arisen from within the property while others have come onto Minyumai from neighbouring properties, whether lit for pastoral burning, by lightning or other sources.

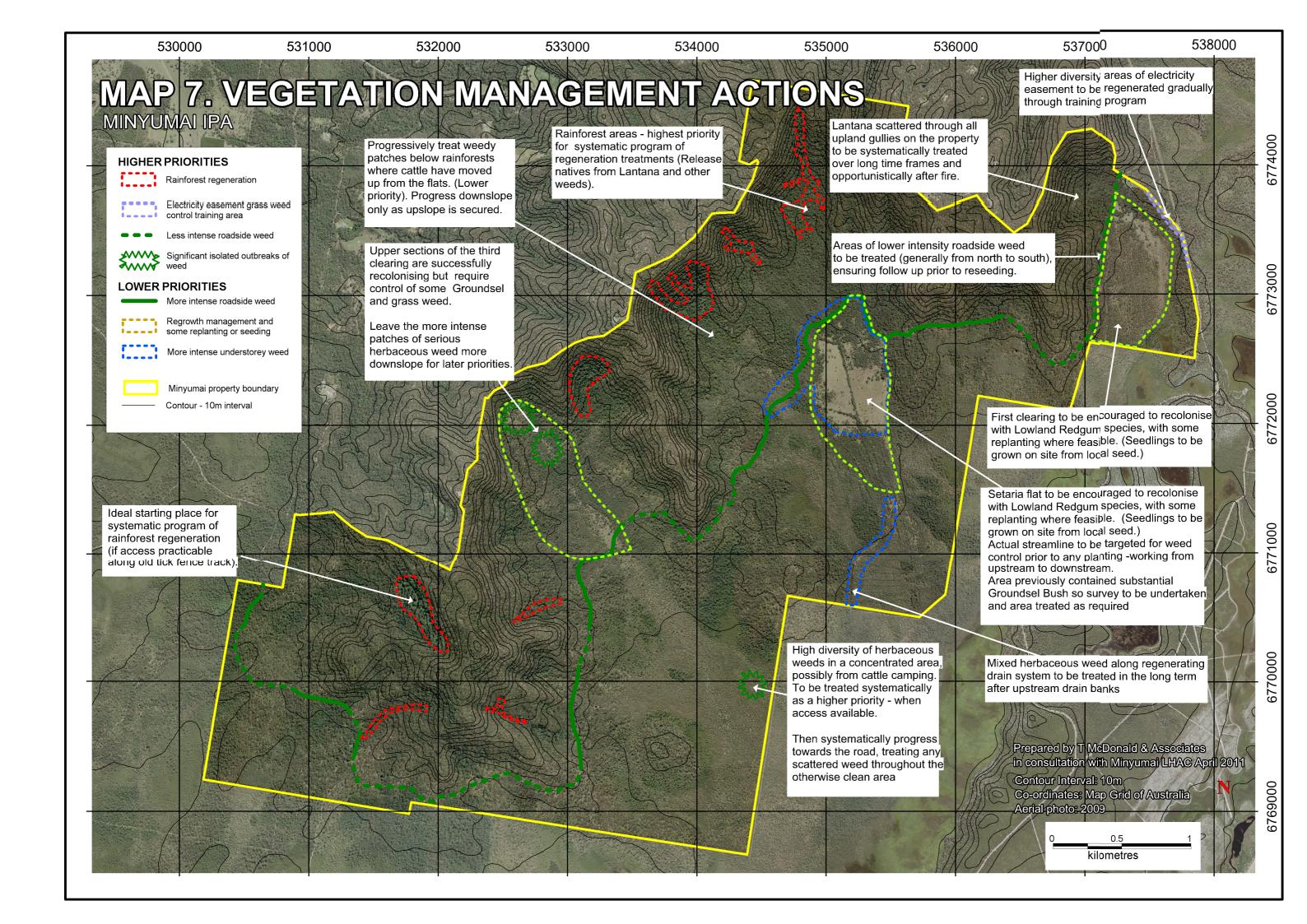
Fires have often occurred during spring, when pastoralists have traditionally burnt for green pick. But they can also occur in summer, when high and even extreme fire danger days are not unusual, leading to fires of high intensity. Although summers are usually wet and humid, the high rainfall can create high fuel buildup which can rapidly dry out with a few weeks of hot, dry weather. This means that wildfires are even possible on Minyumai in summer when water is still present in low-lying areas from earlier rainfall.

Recommendations:

- 1. Draft, adopt and implement a fire management plan that will help us (a) protect life and property, (b) conserve the property's natural values and (c) protect our neighbours from the threat of fire. This plan could be in the form of a wall poster.
- 2. This strategy will be prepared within one year of the date of this plan, in consultation with neighbours, particularly NPWS. It will also seek the guidance of the Rural Fire Service (RFS). Specific issues to be addressed by the plan will

include:

- Fire history mapping and mapping of locations of fire sensitive communities
- A list of the number of fire-free years required for the various plant communities and habitats on Minyumai
- Policy regarding frequency of fire drills, nomination of fire chief and deputies, Fire alert system, list of equipment.
- Evacuation plan for personnel and visitors
- Poster showing locations of Asset Protection Zones (APZs), intensive management zones, firebreaks, strategic fire management roads, strategic Fire advantage Zones (where more frequent burning may be permitted), and hazard reduction burning.
- Training and information needs for Minyumai personnel and visitors.
- Contacts in emergencies.
- 3. Importantly, consideration should be given in the fire plan to potential for some level of traditional aboriginal-style burning or hazard reduction burning to be carried out in some more frequently burnt strategic zones to reduce the average size of fires on the property in the future. This could lead to a gradual conversion to finer mosaic burning to protect from larger wildfires and would be dependent on substantial protocol development and training of the Rangers involved. To the extent practicable, involve Rangers in burning regimes that reflect Indigenous ecological knowledge, the best recent ecological science and the most up to date fire safety training
- 4. An annual action plan, taking the form of a smaller poster, should be updated each year by Minyumai personnel, after an evaluation of the previous year's program and needs for the coming year



4.3.2.7 CHANGED HYDROLOGY

In the late 1960s, the previous landholder undertook major earthworks to drain the three main cleared areas to improve conditions for grass and stock. In the first clearing, two lateral drains were created, which may have marginally dried the flat. In the second clearing a central drain with tributaries was created, which remains today as a deeply eroded intermittent watercourse. Drainage works were undertaken very differently in the third clearing, on advice from the Soil Conservation Service. This work did not involve any digging below the soil surface. Instead, a bulldozer was brought in to create a series of long banks (parallel with the contours) directing water from the flats into a fairly wide central 'creek', itself defined by large levee banks on each flank. This is likely to have somewhat reduced moisture levels in the flat, particularly during dry times, although moist areas would persist above each berm for longer periods than previously.

Need for remediation. The drainage works on Minyumai have two effects: effects on Minyumai and effects in Bundjalung National Park. On Minyumai the drains are likely to have somewhat reduced the overall water table in the flats, making them drier during extended dry periods and allowing them to dry out quicker after rain. However all flats still becomes saturated for long periods during extended wet weather. The current hydrology therefore appears to still support the pre-existing plant communities as the drained sites tended to be Lowland Redgum areas, a species that can survive sustained dry periods as well as intermediate levels of inundation.

In terms of effects outside the property: where the drain discharges into a pondage at the boundary of Bundjalung National Park, however, a fairly large pond exists which has substantial weed surrounding it.

The severe erosion of the drain is revegetating of its own accord, which is likely to increasingly slow further erosion as water velocity is slowed by the vegetation. If weed were controlled along the drain and within the pondage in the park, potential for weed to spread further into the park will be reduced. Remediating the severe erosion in the main drain in the second clearing through creation of major check dams is possible but problematic as the creation of any further large pondages would create additional habitats for the Cane Toad and so are not

recommended.

Recommendations:

- 1. Continue to allow the drain to revegetate naturally and 'resnag' with its own fallen timber over time, while continuing to drain to the east.
- 2. Include weed control on the drain as described in the *Minyumai Vegetation Restoration and Management Plan*.
- Seek funding to collaboratively treat weed in the discharge area in Bundjalung National Park.



4.3.2.8 PROLIFERATION OF TRACKS

Roads and tracks can disrupt faunal passage and become a route for the spread of weeds and feral animals such as the Cane Toad. In the past, tracks have been created opportunistically for logging and access to the Hell Hole area of Bundjalung National Park.

Recommendations:

- Agree to close any unnecessary and disused roads, reducing active roads to the minimum.
- 2. Place logs on the roads where possible to act as a barrier to vehicles as well as to assist their revegetation
- 3. Ensure roadside weed management is undertaken in a way that minimizes spread of weed and optimizes potential for native regeneration, by following principles outline in the *Minyumai Vegetation Restoration and Management Plan*.
- 4. Ensure roads are well drained to reduce conditions suitable for weed development.
- 5. Ensure that road materials have a pH of below 6.5 as measured with a Raupach-type test kit.

4.3.2.9 HUNTING

Members of the Bandjalang clan do maintain the practice of hunting native fauna for food, particularly wallabies, echidna and turtle. Little hunting has occurred on Minyumai to date and that is likely to have been confined to the Red-necked Wallaby.

Pig hunters have been permitted in the past to hunt on Minyumai. This has resulted in loss of hunting dogs on the property. Whether these have survived is unknown, but as predators, if they have survived it is likely they have placed pressure on Minyumai's mammal fauna.

Recommendations:

- 1. Develop a hunting policy in consultation with the Bandjalang community that will ensure no impact on native faunal populations
- 2. Support and enforce this policy through Ranger activities and educating visitors and campers regarding the vulnerability of threatened species and other native animals on Minyumai including echidnas.
- 3. Phase out pig hunting on the property, with explanations given to the participating hunters

5 OTHER CONSIDERATIONS AND OPPORTUNITIES

5.1.1.1 ARCHAEOLOGICAL SITES

There are currently two sites of archaeological interest identified at Minyumai and it is likely that more will be found in the future. It is the current policy of Minyumai that any artifacts found are to be left in place and the Bandjalang Custodians and Minyumai Directors are to be notified of their location. As all archaeological sites and artifacts are protected under the *National Parks & Wildlife Act, 1974*, the Directors are to notify NPWS of the existence of any further artifacts or sites.

Recommendations:

- Conserve all archaeological sites and notify NPWS of any new sites or artifacts found
- Ensure that all earthworks are monitored for potential archaeological sites. .
 Any roadworks or other earthworks on Minyumai must be monitored by a Bandjalang person nominated by the Custodians.
- 3. Any artifacts or archaeological sites found at Minyumai are to be notified to the Minyumai Directors, who in turn are to notify NPWS so that the sites can be registered.

5.1.1.2 ACCESS

Minyumai trail runs north-east to south-east through the property of Minyumai. It is linked at the southern end to the Pacific Highway via Wonder trail (a fire trail through Tabbimoble Nature Reserve) and a portion of crown road reserve named Minyumai Road. It has potential to provide *primary* access to most areas as it runs along the base of the footslopes that divide the hilly country from the floodplain wetlands. This is the most appropriate location for a trail as a higher road would involve steeper slopes (which would be more erodible) and a track that took in more of the swampy flats would be impassable during the wet season.

Secondary access to other parts of the property from Minyumai trail is largely off-road, with 4WD car access restricted only to already cleared areas during dry periods. Access to more remote parts of the flats, whether upslope or downslope, is likely to be dependent on quad bikes, particularly in wet weather – although this too will be restricted by the density of trees, roughness of the terrain and level of flooding. (e.g. Access to steep slopes and gullies will be largely only by foot).

Access for tractor maintenance of the firebreak between Minyumai and Bundjalung National Park is confined to dry weather conditions.

Condition of Minyumai trail. The road running through Minyumai was created during the pastoral era and, at which time drains and berms were constructed to protect the trail. Some of these were inadequate or have lacked maintenance for many decades. Prior to the property being handed over to the Minyumai group, the Indigenous Land Corporation funded an upgrade of the northern part of the trail, which is still in passable condition. Since the last rainy seasons, however, the southern part of the trail is now impassable in quite a few places due to stream washouts and detours through swampy areas.

That is, in the southern sections, pipes and causeways have washed out in the Tabbimoble NR section, and deep erosion has now occurred in many places within Minyumai, making the trail impassible at those points (See photos). In the central section on Minyumai, the previous owner appears to have rerouted the

road through the swamp, perhaps as an expediency in dry weather. This section is, however, impassible in wet weather, with the road some 30cm underwater – suggesting relocating the road back to the footslopes would be desirable. (See photos and Map 8).

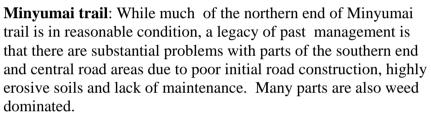
Recommendations:

- Incrementally upgrade Minyumai trail with the short term aim of achieving at least 4WD access along the whole trail, so that work zones can be reached and for fire safety – and a medium term goal of achieving 2WD access to the centre of the property.
- 2. Prepare a concept plan for the rehabilitation of the entire trail to 4WD standard. This plan should:
 - identify the condition and priority works along the three main sections of the trail (Front gate to Old Shed Hill; Old shed hill to the Third Clearing Dam; Third Clearing Dam to southern entrance)
 - o consider relocating the trail away from low-lying, swampy areas by reopening the old track through the foothill areas
 - o develop a set of guidelines for construction, drainage and use of the trail, based on standards for gravel roads
- 3. Prepare, prior to any major expenditure on the trail, a detailed sketch plan for optimum feasible drainage works for each section being upgraded (consistent with the trail upgrade concept plan) This can be prepared with the assistance of contractors quoting for the works and should be approved by the Minyumai directors prior to works commencing.
- 4. Identify opportunities for Minyumai to expand our own physical capacity to undertake roadworks (through obtaining our own backhoe and training for our workers in construction and maintenance of road drains).
- 5. Seek partnership funding with fire authorities for upgrading the trail as a strategic fire trail as soon as possible. This potential is limited while the road is in poor condition.

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5.1.1.3 NEIGHBOUR RELATIONS

We consider it important for Minyumai IPA to be recognized and valued locally and regionally for the role we play as responsible and active conservation managers. This role is already recognized by Minyumai's five neighbours:

- At least half of Minyumai's boundary to the north, east and south is shared with Bundjalung National Park or Tabbimoble NR (managed by NPWS).
- Most of the north-western boundary is shared with four private properties which also have important conservation values.

An important reason for the declaration of Minyumai IPA is to conserve adjoining areas of habitat with Bundjalung National Park to increase the viability of both habitats. Already, excellent relations exist between Minyumai and NPWS; and there is likely to be further potential to formalize more co-operative approaches to improve outcomes for both Minyumai IPA and Bundjalung National Park in future.

We aim to ensure that our activities act as a role model for all other land managers in our local area and region – through our ecotourism program and program of cultural tours. A higher profile for the activities of Minyumai IPA is likely to be enhanced by media publicity around activities such as the declaration of Minyumai IPA. The media publicity surrounding the hand back of Minyumai, for example, allowed us to convey the importance of the land to our people. The late Lawrence Wilson described it in language:

"Nguli weyhuni ba muhnya yirali. Wehehni ba muhnya nguli, ngulingah jugoon bowurma. Muhnyu yirali wal, gun.nguhla wal ngulingi. Gun.guhla wal ngai, wehmula muhnya. Ngai wehehni boo muhnyu wa, ngulingah jugoon ngulingah land all the way. Muhnyoo yirali camera, TV. Gun.nguhla war muhnya wal. Nguburr nguburrnga ngai gula wehmula."

[We spoke-to-those-white people to make them understand about our land. They heard me tell them that it was <u>all</u> our land. Those whitefellas with their TV camera, they were listening alright. I was talking non-stop.]

Recommendations

- 1. Strengthen negotiations between Minyumai, NPWS and others as appropriate to formalize more co-operative approaches to managing land to improve outcomes for both Minyumai IPA and Bundjalung National Park.
- 2. Negotiate agreements with all surrounding landholders to encourage the minimization of weed spreading across boundaries and to optimize habitats for native fauna.
- 3. Seek publicity for any successes in management, to convey to others in the area and region the good work being done by Minyumai, which could be copied by others.

5.1.1.4 FENCES

During the late 1960s to early 1970s, boundary fences were established on Minyumai; with 20m within the fenceline kept clear of regrowth and 5m outside it. Internal fences were also installed to control cattle movements. As these fences are now in a poor state of repair and present obstacles to the free movement of wildlife and can injure animals, their removal (as resources allow) would be beneficial.

Recommendations:

- 1. Mark the boundary between Minyumai and Bundjalung National Park using fireproof metal posts rather than fencing
- 2. Maintain the fence along the north-eastern boundary (parallel to The Gap Road) in good condition.
- 3. Gradually remove all other unnecessary fencing on the property ensuring the appropriate recycling or disposal of the materials.

5.1.1.5 WASTE DISPOSAL

Currently there is no problem with the disposal of waste. However, as more work is done on the property, fencing is removed and more visitors bring waste, a system of waste disposal will be needed. This system would involve the following principles:

Recommendations:

- Remove from the property (particularly primary conservation areas) any debris such as stored/discarded building materials, car bodies or old machinery to remove shelter sites for introduced species such as Cane Toad, House Mouse, Feral Cat
- 2. Divide solid waste into recyclables and dispose of it regularly at the Municipal waste depot
- 3. Compost green waste in a dedicated area within the main utility area, for use on gardens
- 4. Do not dispose of sewage on site
- 5. Dispose of any nursery drainage in a way that does not add nutrient or pesticides into the natural environment.
- 6. Ensure there is a single dedicated mixing and cleaning gravel pit for agricultural pesticide equipment, located carefully to ensure no impact on flora, fauna, soil organisms and groundwater.
- 7. Ensure any tourist developments include specifications and resources for the safe, environmentally friendly and aesthetically acceptable disposal of waste.

5.1.1.6 TOURISM AND CAMPING AREAS

Minyumai currently offers camping for members and conducts cultural activities and tours and there is potential for further expansion.

The following principles can minimize impact of tourism on Minyumai's natural values.

Recommendations

- 1. Ensure water supplies are provided by enclosed tanks rather than more dams to avoid creating new habitats for the Cane Toad.
- 2. Maintain visitor areas to reduce weed, including new weed that may be brought in by visitors
- 3. Ensure visitors are educated about the policies of Minyumai including minimizing weed and accidental Cane Toad importation
- 4. Keep visitors to approved walking areas by providing a range of graded walks, with the more sensitive bushland areas confined to guided walks. Construct boardwalks as necessary to improve environmental education opportunities.
- 5. Ensure any new camping areas are away from primary conservation areas

and that any clearing and draining of them is undertaken in the most ecologically sustainable manner possible, maintaining the area's visual character.

5.1.1.7 GARDENS AND NURSERY PRODUCTION

There is a desire for the cultivation of vegetables and fruit trees on Minyumai for use by our members and Bandjalang visitors. These will require tending and some improved soil fertility. Potential also exists for the development of bush food areas. A shade house may be required for raising seedlings for replanting works on the property or other small scale commercial production purposes. Irrigation from closer dams may be required for gardens fruit trees and a nursery.

Recommendations

- 1. Locate productive gardens where their improved fertility will not cause weed problems in natural areas.
- 2. Avoid importing mulch, soil or manure that will introduce new weeds or Cane Toad eggs
- 3. Be vigilant to remove wind or fauna-dispersed weeds from gardens so they do not spread to natural areas.
- 1. Prohibit the use of exotic species in ornamental or orchard plantings that could become invasive in natural areas. (A list of these species is provided in the *Minyumai Vegetation Restoration and Management Plan*).

5.1.1.8 INFRASTRUCTURE, PLANT AND EQUIPMENT

[Note: Roads are dealt with under 'Access']

Minyumai has one large machinery shed which doubles as a kitchen/tea room/office. This has the advantage of allowing people involved in office and machinery activities to communicate often and remain in touch in terms of day-to-day decision making, planning and monitoring. However, as this shed is not insulated and the noise of the machinery shed can be disruptive, it would be desirable to insulate the roof and internal wall of this building (to cool it and reduce noise). As Minyumai purchases other plant and equipment in the future for use in an IPA, however, more space will be needed and consideration could instead be given to extending the shed or building a second, insulated, one for use as an office. If the latter option is decided on, a shaded outdoor relaxation area between the machinery shed and office should be constructed at the same time to allow those working in the different areas to maintain good

communication.

There are four small dams on the property, used in the past for stock watering. The more remote of these are no longer required but those closer to the main shed area may be of use for irrigation for fruit trees or nursery production. Water supply to the shed is from tanks fed by rainfall collected on the shed roof. A toilet/shower block is located within walking distance of the shed. Hot water is heated by electricity but potential exists for a solar hot water system to be fitted. Power is supplied to the shed and telephone and satellite internet are available. Potential exists for grid interactive solar electricity to be installed at the shed.

Minyumai's currently operational machinery and equipment include a twin-cab ute, a 4WD tractor; slasher and blades; and some light spraying equipment. Chainsaws and other equipment are in need of repair – and other machinery such as quad bikes and a range of equipment need to be acquired to undertake management work on the property.

Recommendations

- Insulate the current shed to enable office work during the summer months or build a separate office linked to the machinery shed by an outdoor shaded relaxation area.
- 2 Acquire additional machinery and equipment including 2 quad bikes to



- enable work to be efficiently carried out
- 3 Expand shed capacity as needed to accommodate additional machinery
- 4 Install solar water and electricity as finance allows.
- Avoid the construction of any more dams as these could provide habitats for the Cane Toad.

5.1.1.9 COMMUNICATIONS

Communication within the Minyumai membership and Bandjalang visitors is a key to the success of the Minyumai IPA program. In addition, visitor education is a key mechanism for Minyumai to contribute to the improved understanding of appropriate natural area management throughout the region and elsewhere.

Recommendations

 Implement ongoing, comprehensive biodiversity conservation education program directed to both Minyumai members and visitors including illustrated booklets and posters, audio-visual presentations, inclusion of members and visitors in field monitoring programs. Install a boardwalk on Minjehla track to attract visitors and enable opportunities for wider education.



Box 4. These are our first priorities – Ngulingah goobun.gin

- 1. Seek partnership funding with fire authorities for upgrading the Minyumai trail and commence priority roadworks as possible
- 2. Ensure all earthworks on Minyumai are monitored by a Bandjalang person nominated by the Custodians to protect cultural heritage.
- 3. Monitor for native threatened species using hair tube trapping and infra-red cameras
- 4. Monitor pest animals to identify the need for any trapping or baiting to complement NPWS programs. Undertake controls only if pests located. (Give highest priority to the prevention, monitoring and control of the Cane Toad)
- 5. Attract funding for the employment, initial mentoring and training of Minyumai Rangers in pest animal and plant surveying and control
- 6. Ensure that weed species are not inadvertently introduced to Minyumai and undertake weed control in rainforest stands as a priority, alongside commencing control of grass weed in more lightly infested pedestrian and road areas.
- 7. Draft, adopt and implement a fire management plan that addresses the need for protecting both life and property and the environment and, to the extent practicable, involve Rangers in burning regimes that reflect Indigenous ecological knowledge, the most recent ecological science and the most up to date fire safety training
- 8. Enhance public relations by building a boardwalk at Minjehla track as an educational resource for our people and other visitors. Seek an agreement between the NPWS and Minyumai IPA to formalize more co-operative approaches to managing land to improve outcomes for both Minyumai IPA and Bundjalung National Park.
- 9. Gradually remove all other unnecessary fencing on the property ensuring the appropriate recycling or disposal of the materials.
- 10. Remove from the property (particularly primary conservation areas) any debris such as stored/discarded building materials, car bodies or old machinery
- 11. Improve office facilities as possible, enhancing a common meeting area for both office and outdoor staff.
- 12. Acquire additional machinery and equipment as required to enable work to be efficiently carried out

Program Logic for Minyumai IPA – What is our Vision, desired outcomes and outputs?

Vision	IPA – A future Minyumai, excellently managed by our Bandjalang people in a way that allow us to continue our deep relationship with our land and our culture as well as generate employment for our clan.		C for C- A healthy and resilient mosaic of ecosystems that continues to provide a full range of ecosystem services and habitats for all our native plants and animals, strongly connected to neighbouring conservation lands.		
Longer term outcomes	Secure protection of Minyumai's threatened plants and animals and endangered ecological communities.	Restored native vegetation communities and animal populations. Very low weed presence.	Outstanding eco-tourism businesses on Minyumai, assisting the crossgenerational transfer of traditional culture	Increased and positive involvement in Minyumai by larger numbers of Bandjalang clan members	
Intermediate outcomes	Improved complementary management between Minyumai and Bundjalung NP.	Increased sightings of uncommon native small mammals and reptiles	Increased use of traditional ecological knowledge and language in land management	Increased capacity to recognise environmental problems and come up with environmentally appropriate solutions	
Immediate	Survey of pest and native animals	Control of pest animals (esp. Cane Toad)	Reduced weed while increasing the health of native vegetation – prevent new weed	Increased conservation fire planning and works in partnership with neighbours	
outputs	Removal of unnecessary fencing and repair necessary fencing	Construction of visitor- education boardwalk along Minyumai track	Increased involvement in cultural practices and language use	Reduced debris and rubbish on property	
Foundational	Secure sources of income for Minyumai	Good core working team (combination of paid and volunteer)	Good and consistent governance by Directors	Improved infrastructure – particularly road, work shed and visitor accommodation	
	Sound business plans	Continued custodial involvement	Secure necessary plant and equipment	Excellent relationships with the public	

MONITORING, EVALUATION, REPORTING AND IMPROVEMENT (MERI PLAN)

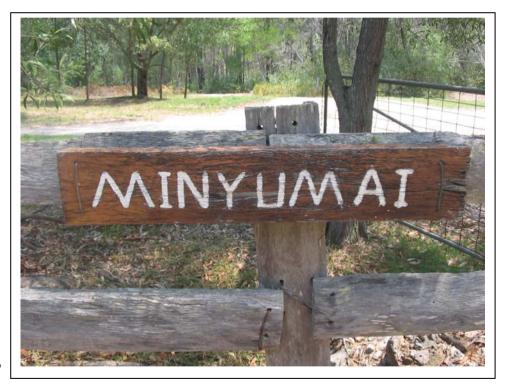
Declaration as an IPA brings with it a requirement for all programs to be monitored, consistent with a Monitoring, Evaluation, Reporting and Improvement Plan (MERI Plan).

What is MERI?

Monitoring is basically about keeping tabs on what work we are doing – as well as whether these activities are achieving the goals we are aiming for. This allows us to get early feedback on our work in case we need to find better ways to achieve our goals. (This process of considering whether our work is progressing well is called 'evaluation'.) At the end of the year, we can use the information we collected to report back to the group and IPA about our achievements and any difficulties we encountered or new information we gained. This way we can improve our work in the following year.

Checking results regularly is extremely important for natural area management because no-one can predict exactly what is going to happen when, say, weed is removed, planting is undertaken or other tasks are undertaken. So we need to know if our treatments are actually working....and if they are not, we might have to change our approaches. This is the essence of 'adaptive management' or the MERI process.

Similarly, the administration side of Minyumai is a relatively new process for our team, requiring us to be involved in many new tasks and processes, requiring us to check in with each other regularly to make sure it is working well.



LONG TERM MEASURES OF SUCCESS FOR BIODIVERSITY OUTCOMES

Measuring the extent to which our programs are achieving success requires us to commence a program of monitoring prior to works, and continuing this on an ongoing basis. This would require the sampling of areas of each condition class prior to works, for a range of parameters such as number of large trees, hollows, amount of coarse woody debris. (Fire is already mapped by NPWS and those maps can be used as baseline data for reduction in fire size.) Photopoint monitoring is also to be undertaken of key areas under treatment (See Appendix 3).

Improvements in habitat for small mammals and reptiles [measured by]

- No increase in populations of Cane Toads
- Reduction in the number of pest animals being found in surveys prior to and after control
- Reduction in size of fires at Minyumai
- Increase in amount of coarse woody debris surveyed on ground
- Increase in number of trees with diam>50 dbh
- Increase in number of large, old trees with hollows
- Increase in number of threatened species being found in hair tube and infra-red camera surveys
- Number of new Threatened species observed at Minyumai

Improvements in the weed status of sites

- Reduced cover of Lantana in rainforests and their edges and the area treated in which follow up demand is reducing
- Reduction in the density of other woody weeds and the area treated in which follow up demand is reducing
- Reduction in isolated outliers of herbaceous weeds, and the area treated in which follow up demand is reducing
- Reduction in herbaceous weed on roadsides, and the area treated in which follow up demand is reducing





Monitoring our progress as a team

Success at Minyumai IPA needs effective teamwork – and a MERI process is needed for

- (a) the **Rangers** (who work on the ground) and
- (b) the **Coordinators/Trainers/Directors** (who work on the administrative and advisory side).

Both groups are teams in their own right as well as being part of the larger team.

Regular meetings of each of the sub-teams and the whole team are therefore needed to ensure success at Minyumai.

MERI for the Minyumai IPA Rangers.

The Minyumai IPA Rangers to be highly involved in monitoring their own works. This means finishing work a little early each day to fill in the information on the master map and log books. This allows the coordinator to then transfer that information to the computer so that reports can be done at the end of each quarter and at the end of the year.

Rangers will also be involved in monitoring native animals and the level of pest animals on the property prior to any control works (eg. Cane Toads at water bodies, Red Fox scats along tracks) – as well as monitoring after these works to determine the effectiveness of habitat restoration and improvement actions

MERI for **the Coordinators, trainer and Directors** is also important because we are still breaking new ground, finding ways to manage our land while conforming to the needs of good governance.

For both teams, one of the most important parts of teamwork is reporting back about tasks that have been agreed upon. If we don't report back, no-one knows whether the task has been done or is still to be done. Regular meetings of the whole team are needed to make sure that success is acknowledged and any problems are addressed early.





INDICATORS FOR CARING FOR COUNTRY:

Biodiversity outcomes.

Positive indicators

- Improvements in cover of native vegetation and reduction in weed cover in previously degraded areas
- Number of new sightings of uncommon native small mammals

Negative indicators

- Amount of seeding of high priority weed species in sites already treated
- Instances contaminated machinery or equipment used in low or nil weed areas.
- Instances of new invasions of domestic or feral animals
- Instances of hunting of native species listed in Minyumai's policy as protected
- Instances of removal of habitat of target native species

Capacity building.

- Degree that available traditional ecological knowledge is drawn on and language is use in land management
- Number of CLM TAFE units successfully completed or being undertaken by team members
- Monitored increase in capacity to recognise native and pest plants animals
- Monitored increase in capacity to survey and record sightings of native and pest plants and animals
- Monitored increase in capacity to recognise environmental problems and come up with environmentally appropriate solutions.
- Level of familiarity with both traditional fire management and contemporary fire management.

On-ground team outputs

Positive indicators

- Increase in number of areas surveyed and pest species information recorded on main map in office

- Increase in days of high priority weed control undertaken and area and species effectively treated. (Divided into primary and follow up works)
- Increase in number and season of pest animal survey and/or control days
- Changes in number of pest animals found and/or treated
- Level of fire management planning undertaken and degree of collaboration with neighbours
- Level of fire management activities undertaken

Negative indicators

- Instances of road closures where road is under maintenance program



INDICATORS FOR MONITORING CLOSING THE GAP:

[See self assessment forms in Appendix 4]

Minyumai offers opportunities for improving skills, employability, positive identity and wellbeing of Bandjalang Clan members. The flow of benefits in this direction can only be realized through self-management, where capacity building is woven into programs in which Bandjalang community members can work in teams to achieve self-identified goals while demonstrating the achievement of those goals. A MERI process is a key to any successful self-management as it offers a way of 'learning by doing'. Adopting a MERI process is therefore a way Indigenous groups can tap into the best available tools for success rather than being set up (using a manager or manager substitute) for failure.

FOR BOARD GOVERNANCE (DIRECTORS)

- Degree of self-management of administration¹
 - o Regularity of meetings and keeping minutes books;
 - o Efficiency in managing mail and dealing with correspondence;
 - o managing receipts, vouchers and bank statements,
 - o degree of involvement in annual reporting
 - Contentedness of bookkeeper
 - o Contentedness of ORIC
- Success in self-management of conflicts / potential conflicts
 - o internally
 - o externally
- Success in optimizing opportunities for the achievement of Minyumai's goals.
 - o Grant applications made
 - o Grant applications won
 - External partnerships developed

FOR PROPERTY MANAGEMENT (DIRECTORS.)

Operational

- Reliability of access to and within property
- Degree of protection of assets from theft and fire
- Reliability and availability of relevant resources, tools and equipment
- Adequacy of insurance
- Level of OH&S
- Cleanliness of grounds

Financial

- Number of contracts successfully tendered for
- Degree of profit for Minyumai from those contracts to enable future developments
- Wages paid to workers from those contracts

Social

- Number of events that have reinforced Bandjalang culture
 - o Language reinforcement sessions
 - Art events
 - Guided tours
- Bandjalang member attendance at those events
- Number of events in which there is sharing of knowledge among generations

¹ (Self assessment on a scale of 1-5 where 1 is barely functional and 5 is a professional level as would be expected of a very well-run corporation)

FOR ON-GROUND TEAMS (Combining monitoring for both Caring for County and Closing the Gap).

[See self-assessment forms in Appendix 3b]

To allow the on-ground team to provide records of their own work in a way that can (a) improve their own performance, (b) report to the Directors and IPA and (c) enable adjustments to programs, the team needs to keep up the following records on a regular basis.

Whole team updates the:

- 1. List on the main wall for all to report at end of each work day
- 2. **Maps on wall for all animal sightings and weed etc treatments** to be recorded at end of work day.
- 3. **Calendar on the wall** on which we record the number of deliberate language and culture learning sessions in the workplace (10 mins or more)
- 4. **Any survey** recording sheets (e.g. hair tube, pest species etc) filled in when any surveying done and kept in filing cabinet.

Team coordinator updates the:

- 5. **Daily record sheet** on which the type of work is recorded, and who attended. [This would be kept in a folder]. This will allow assessment of:
 - Number of work days performed by the team during period
 - **Size** of the team
 - Average **level of attendance** of each worker
 - Length of time individual team members have remained with the team
 - Number of team members who have gained jobs elsewhere as a result of Minyumai training or work

Numbers of team members who have chosen to work at Minyumai as a career

6. Training register

External planner and whole team work together to update the:

- 7. **Knowledge assessment** (6 monthly)
 - Degree that available traditional ecological knowledge is drawn on
 - Percent of time language names etc are used for animals and plants while working
 - Number of **CLM** TAFE units successfully completed or being undertaken by team members
 - capacity to **recognise** native and pest plants animals
 - capacity to **survey and record** sightings of native and pest plants and animals
 - capacity to **recognise environmental problems** and come up with environmentally appropriate solutions.
 - Level of familiarity with both traditional and contemporary fire management principles.
- 8. **Vegetation condition classification assessment of selected sites** of the property (for results of works as well as monitoring regrowth).
 - Photopoint monitoring of regrowth before and at 5 yearly intervals
 - Reduction in weed cover class
 - Increase in native cover class

9. Faunal monitoring and reporting.

Evaluation process

Minyumai is a very 'flat' organization, which means it values a cooperative spirit with no single person dominant over others. There is a need, however, for a central coordinator for work activities, to make sure things are operating smoothly. While workers in a team will always be checking how they are going and trying to improve, it is important for the team to spend ½ hr to 1 hour at the end of each week, formally checking how the team is tracking with their goals and seeing how things can improve. The group will look over the maps and sheets and assess whether the works are according to last year's targets. Ways to improve are identified by the group.

Reporting

Regular reporting between team and Directors

It is up to the Directors and the team to communicate regularly about how things are going...ideally using the wall maps and charts. This gives everyone plenty of opportunity to incorporate good ideas into the plans and to change anything that needs to be changed.

Twice-yearly reporting to IPA

Reporting is required to IPA in February, which prepares us for our application in March for the next year's funding. (see point in 'Improvement' below) A final

acquittal report needs to be completed by August. (Funding is on a financial year basis.)

The coordinator needs to process the information provided by the team and the accountant to ensure both reports and the funding application are provided on time.

All reports and applications are to be consistent with the goals outlined in this POM, MERI plan and Program Logic.

Improvement

This plan of management (POM) and the POM poster will include enough work for a 10-50 year period, showing general priorities. Each year, a detailed works program is identified to include:

- 1. Weed actions
- 2. Road improvement and maintenance actions
- 3. Faunal survey actions
- 4. Pest animal actions
- 5. Fire / fire protection actions.
- 6. Public relations and visitor education

The plans for the next year's program needs to be developed in time for submitting to the funding body in March. This means that the team should be thinking throughout the year, what changes are needed to improve the plans for the following year, which starts in July/August when the next year's funding is due.

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APPENDICES.

7.1 APPENDIX 1. YIRULI LAW APPLYING TO MINYUMAI

The list of legislation to protect soil, air, water, vegetation and native animals is too long to include in this section. However, the following are the main ones to be aware of.

LOCAL GOVERNMENT ZONINGS

The Richmond Valley Local Environment Plan 2010 (LEP 2010) zones the majority of Minyumai as Zone RU1 Primary Production. Two sections of land within Minyumai, however, are zone Environmental Conservation (E2), both of which are plotted on Map 3 of this Plan of Management and are protected in this Plan by their inclusion in Minyumai's Primary Conservation Zones.

The more substantial of these areas occurs near the south-eastern boundary of Minyumai and is in good condition except for one patch of pasture weed grasses that have been identified as a high priority for treatment as resources allow and skill levels are high.

The smaller of these areas occurs in the north-eastern part of Minyumai and is also mapped as a 'SEPP 14 coastal wetland' (part of a larger mapped wetland within Bundjalung NP). As a SEPP 14 wetland (governed by the Environmental Planning and Assessment Act 1979), this area is subject to strict protection by the State and the only permitted activities in them is the treatment of noxious weeds and minor clearing for fencing or to maintain boundary fencing.

How the zonings are defined:

Zone RU1 Primary Production. The objectives of this zone are to encourage sustainable primary industry production by maintaining and enhancing the natural resource base; to encourage diversity in primary industry enterprises and systems appropriate for the area; to minimise the fragmentation and alienation of resource lands; to minimise conflict between land uses within the zone and land uses within adjoining zones; to maintain the rural landscape character of the

land; and, to ensure that development does not unreasonably increase the demand for public services or public facilities. Permitted without consent: Extensive agriculture: Home occupations: Home-based child care: Intensive plant agriculture. Permitted with consent: Airstrips: Air Transport Facilities: Animal boarding or training establishments; Aquaculture; Bed and breakfast accommodation; Boat sheds; Caravan parks; Cellar door premises; Cemeteries; Charter and tourism boating facilities; Community facilities; Correctional centres; Depots; Dual occupancies (attached); Dwelling houses; Educational establishments; Environmental facilities; Environmental protection works; Extractive industries; Farm buildings; Farm stay accommodation; Flood mitigation works: Forestry: Function centres: Group homes: Helipads: Highway service centres: Home businesses: Home industries: Home occupation (sex services): Hospitals; Information and education facilities; Intensive livestock agriculture; Kiosks; Landscape and garden supplies; Mining; Moorings; Passenger transport facilities; Places of public worship; Recreation areas; Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Restaurants; Roads; Roadside stalls; Rural industries; Rural supplies; Rural workers' dwellings; Service stations; Signage; Tourist & Visitor Accommodation; Turf farming; Veterinary hospitals; Waste management facilities; Water recreation structures. Prohibited: Backpacker's Accommodation; Hotel or Motel Accommodation; Serviced apartments; Any development not specified as permitted with or without consent.

E2 – **Environmental Conservation**. The objectives of this zone are: to protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values; and to prevent development that could destroy, damage or otherwise have an adverse effect on those values. Permitted without consent: nil. Permitted with consent: Building identification sign; Business identification sign; Environmental facilities; Environmental protection works; Information and education facilities; Jetties; Roads; Water reticulation systems. Prohibited: Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3

To undertake a development that requires consent, a Development Application (DA) would need to be lodged with Council, accompanied by an application fee.

Because of the fire prone nature of Minyumai, a Fire certificate would also be required as part of the consent process. To obtain the certificate, the DA would need to show how the development complies with the guidelines in *Planning for Bush Fire Protection 2006*. (See next section on Fire.)

FIRE REGULATIONS

Minyumai is designated as bush fire prone land and, as such, all developments on the land have a legal obligation to consider bush fire and meet the requirements of *Planning for Bush Fire Protection 2006* and *AS3959 – 2009*.

The document *Planning for Bush Fire Protection 2006* addresses a number of bush fire protection measures that can be incorporated in to a proposed development to minimise the bush fire impact on life and property.

The aim of *Planning for Bush Fire Protection 2006* is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bush fire, while having due regard to development potential, on-site amenity and protection of the environment.

LAND CLEARING REGULATIONS

Land clearing is governed by two State Acts of Parliament, the Native Vegetation Act 2003 (NV Act) and Native Vegetation Regulation 2005 (NV Regulation). Applications for clearing are submitted through the Richmond Catchment Management Authority (CMA) and the system is based on Property Vegetation Plans (PVPs), voluntary agreements between landholders and CMAs. Plans are developed with the support of a computer modeling program - the Native Vegetation Assessment Tools (NVAT). NVAT weighs up the positive and negative aspects of different management plans and activities, allowing landholders to make practical decisions based on the best scientific information available. Experts from the local CMA will use these tools and their professional judgment when assessing clearing proposals.

Assessment will take into account consideration of impact upon plant or animal species and communities scheduled under State and Federal Acts relating to the protection of Threatened species and communities. (See next section)

THREATENED SPECIES AND COMMUNITIES

<u>State level</u>: A list of (state level) Threatened species and Endangered Ecological Communities is scheduled for protection under the NSW *Environmental Planning and Assessment Act 1979* (Section 5A) as amended by the NSW *Threatened Species Conservation Act, 1995.* (*TSC Act 1995*)

<u>Federal level</u>: Another list of (nationally) significant Threatened species and Endangered Ecological Communities is scheduled under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).*

Under these Acts, no activities (including weed control works) are permitted that would harm threatened species and prosecutions can arise. It is possible to obtain a permit under Section 91 of the NSW Threatened Species Conservation Act, 1995 should Minyumai wish to protect itself from questions relating to weed control or other activities carried out near threatened species. This permit can be obtained from the NSW National Parks & Wildlife Service for any works (including weed control and seed collection) affecting or potentially affecting Threatened Species on Minyumai. It requires an outline of how the works would be carried out in a manner that would protect threatened species.

There are at least 3 threatened plant and 18 threatened terrestrial vertebrate species on Minyumai as well as one freshwater fish [Oxleyan Pygmy Perch (Nannoperca oxleyana)] listed as Endangered at State- and Commonwealth-levels. This fish is confined to the coastal region of northern NSW and SE Queensland. There is also one Endangered Population of animals (Emu), individuals of which have been observed on Minyumai – as well as at least 5 Endangered Ecological Communities (EECs).

The National Parks & Wildlife Act 1994 also regulates the activity of land adjoining National Parks and Nature Reserves. As such, land management activities on Minyumai must avoid impact upon the flora and fauna of the adjacent Bundjalung National Park. As many of the fauna resident within the park also reside in Minyumai, particular care needs to be taken to consider the impact of activities upon fauna.

PROTECTED SPECIES.

All native birds, reptiles, amphibians, some fish and mammals, except the dingo, are protected in NSW under the *National Parks and Wildlife Act 1974*. Some birds that are also pests are not protected, nor are land based invertebrates (insects, spiders etc) unless they are listed as Threatened. Aquatic invertebrates and most fish are the responsibility of the Department of Primary Industries. Some native birds are not protected in certain parts of NSW because they are either agricultural or pastoral pests

NOXIOUS WEEDS

The NSW Noxious Weeds Act, 1993, requires that the landholders and / or occupiers of land to control weeds that are declared noxious under the Act within the local government area in question. (In Minyumai's case this is the Richmond Valley Shire.) For our northern Shires, the body who administers noxious weeds notices is North Coast Weeds.

CONSERVATION STRATEGIES

Finally, while there is no legal requirement for land managers to adopt a conservation attitude the management of land in general, the voluntary adoption

of conservation management principles and to participate in the common goal of conserving flora and fauna is sought by State and Commonwealth Governments.

In acknowledgement of this and the indigenous community's expressed interest in a conservation approach, this Plan takes into account of the principles outlined in the following federal and state government policies:

- <u>A National Conservation Strategy for Australia</u> (Australian Government Publishing Service, 1984).
- A <u>National Strategy for the Conservation of Australia's Biological Diversity</u> (Commonwealth of Australia, 1996)
- NSW Biodiversity Strategy (NSW National Parks and Wildlife Service, 1997)
- NSW Local Government Amendment (Ecologically Sustainable Development)
 Act 1997.
- Guiding Principles for a Sustainable Future: Part 1. Northern Rivers Regional Strategy, (1998) Northern Rivers Regional Economic Development Organisation, Northern Rivers Regional Organisation of Councils and the Department of Urban Affairs and Planning.

7.2 APPENDIX 2: LIST OF ALL RECOMMENDATIONS ARISING FROM THE MINYUMAI IPA PLANNING PROCESS.

THREATS

Clearing and logging

- 1. Prevent any clearing in Endangered Ecological Communities and upland forested ecosystems
- 2. Allow clearing only for designated firebreaks or eco-tourism in tertiary conservation zones (after well environmental assessments and where consistent with State land-clearing legislation).
- 3. Ensure no logging of mature or old-growth trees with trunks greater than 50cm at breast height or with visible hollows
- 4. Ensure no felling of large stags (standing dead trees) with trunks greater than 50cm at breast height),
- 5. Limit firewood and timber gathering to designated woodlot areas
- Foster regeneration in (or replant in) already cleared areas using likely preexisting native trees to provide additional fauna habitat as well as provide areas that can be used as 'woodlots' for timber and firewood supply.

Pest animals

- Prepare a program of pest animal management activities before mid March each year in time to apply for funding for the following financial year. Allow flexibility to enable work to complement monitoring and control programs carried out by NPWS in Bundjalung NP.
- 8. Monitor pest animals to identify the need for any trapping or baiting. If not present, no baiting is to be carried out.
- Give very high priority to the prevention, monitoring and control of the Cane Toad to protect Minyumai's native fauna and to provide a buffer to Bundjalung NP
- Actively control feral pig population in conjunction with NPWS (preferably by supervised trapping), particularly along shared boundaries with the NPWS estate
- 11. Formulate a domestic dogs and cats policy to control introduction of these animals to Minyumai
- 12. Report any wild dog sightings to the Livestock Health and Pest Authority (LHPA) and neighbours including.
- 13. Remove and prevent debris such as stored/discarded building materials, car bodies, old machinery from primary conservation area and other areas

- where possible, to remove shelter sites for introduced species such as Red Fox, House Mouse, and feral Cat
- 14. Monitor for signs of introduced fauna species (eg. Cane Toads at water bodies, Red Fox scats along tracks) to determine the effectiveness of habitat restoration and improvement actions
- 15. Ensure appropriate training of Rangers to carry out any pest animal control programs to a very high standard

Weed control

- 16. Commence a systematic program of native vegetation protection and weed control according to the recommendations detailed in the *Minyumai**Vegetation Restoration and Management Plan (Note this will require the training of Rangers to a minimum standard and supervision by an appropriately qualified person.)
- 17. Control noxious weeds as required by legislation
- 18. Regenerate buffers to rainforest stands (by removing Lantana) and actively exclude fire from these important habitats).
- Identify and manage environmentally problematic weed species with potential to spread and ensure the community is familiar with them and maintains vigilance
- 20. Manage Setaria pasture as best possible to develop biodiversity values (partial reconstruction as resources permit) in conjunction with sustainable land-uses such as wood lots
- 21. Ensure that weed species are not inadvertently introduced to Minyumai in imported landscaping or road materials or as ornamental or fruit tree plantings
- 22. Source local genetic plant material (seed, cuttings, plants) for any ecological restoration or woodlot plantings
- 23. Continue targeted surveys, as resources allow, for Commonwealth (EPBC Act)-listed flora species such as Southern Swamp Orchid, Arrow-head Vine (known from Minyumai but requires re-location and mapping), and Heath Wrinkle-wort (known from Minyumai-National Park boundary).
- 24. Develop further understanding of flora species at Minyumai by continuing inventory, especially of species-rich rainforest and heaths (seasonal surveys desirable)
- 25. Liaise with NPWS as vegetation classification and conservation reassessments proceed to improve understanding of the distribution, abundance and reservation status of vegetation types known from Minyumai.

Fire management

- 26. Draft, adopt and implement a fire management plan that addresses the need for protecting both life and property and the environment.
- 27. To the extent practicable, involve Rangers in burning regimes that reflect Indigenous ecological knowledge, the most recent ecological science and the most up to date fire safety training

Drainage

- 28. Continue to allow the main drain in the second clearing to revegetate naturally and 'resnag' with its own fallen timber over time.
- 29. Include weed control on the drain in the program of works described in the *Minyumai Vegetation Restoration and Management Plan*.
- 30. Seek funding to treat weed, in collaboration with NPWS, in the discharge area in Bundjalung NP.

Proliferation of tracks

- 31. Agree to close any unnecessary and disused tracks, reducing active tracks to the minimum.
- 32. Place small logs flat on the ground on any closed tracks where possible to assist the tracks' revegetation
- 33. Ensure roadside weed management is undertaken in a way that minimizes spread of weed and optimizes potential for native regeneration, by following principles outline in the *Minyumai Vegetation Restoration and Management Plan*.

Hunting

- 34. Develop a hunting policy in consultation with the Bandjalang community that will ensure no impact on native faunal populations
- 35. Support and enforce this policy through Ranger activities and educating visitors and campers regarding the vulnerability of threatened species and other native animals on Minyumai including Echidnas.
- 36. Phase out pig hunting on the property, with explanations given to the participating hunters

OTHER CONSIDERATIONS

Archaeological sites

- 37. Conserve all archaeological sites and notify NPWS of any new sites or artifacts found
- 38. Ensure that all earthworks are monitored for potential archaeological sites by a Bandjalang person nominated by the Custodians.
- 39. Notify the Directors and NPWS of any artifacts or archaeological sites

found at Minyumai

Access

- 40. Incrementally upgrade Minyumai trail, according to a concept plan and working sketches approved by the Directors, with the short term aim of achieving at least 4WD access along the whole road and a medium term goal of achieving 2WD access to the centre of the property.
- 41. Ensure roads are well drained to protect the road from further erosion and to reduce conditions suitable for weed development
- 42. Ensure that road materials have a pH of below 6.5 as measured with a Raupach-type test kit to reduce weed.
- 43. Identify opportunities for Minyumai to expand our own physical capacity to undertake roadworks (through obtaining our own backhoe and training for our workers in construction and maintenance of road drains).
- 44. Seek partnership funding with fire authorities for upgrading the road as a strategic fire access road as soon as possible. This potential is limited while the road is in poor condition.

Neighbour and public relations

- 45. Strengthen negotiations between NPWS and Minyumai IPA and others as necessary to formalize more co-operative approaches to managing land to improve outcomes for both Minyumai IPA and Bundjalung National Park.
- 46. Negotiate agreements with all surrounding landholders to encourage the minimization of weed spreading across boundaries and to optimize habitats for native fauna.
- 47. Seek publicity for any management successes, to convey to others in the area and region the good work being done, which could be copied by others.
- 48. Construct boardwalks as needed to educated visitors about wildlife.

Fences

- 49. Mark the boundary between Minyumai and Bundjalung National Park using fireproof metal posts rather than fencing
- 50. Maintain the fence along the north-eastern boundary (parallel to The Gap Road) in good condition.
- 51. Gradually remove all other unnecessary fencing on the property ensuring the appropriate recycling or disposal of the materials.

Waste disposal

52. Remove from the property (particularly primary conservation areas) any debris such as stored/discarded building materials, car bodies or old

- machinery to remove shelter sites for introduced species such as Cane Toad, House Mouse, Feral Cat
- 53. Divide solid waste into recyclables and dispose of it regularly at the Municipal waste depot
- 54. Compost green waste in a dedicated area within the main utility area, for use on gardens
- 55. Do not dispose of sewage on site
- 56. Dispose of any nursery drainage in a way that does not add nutrient or pesticides into the natural environment.
- 57. Ensure there is a single dedicated mixing and cleaning gravel pit for agricultural pesticide equipment, located carefully to ensure no impact on flora, fauna, soil organisms and groundwater.
- 58. Ensure any tourist developments include specifications and resources for the safe, environmentally friendly and aesthetically acceptable disposal of waste.

Tourism and camping

- 59. Ensure water supplies are provided by enclosed tanks rather than more dams to avoid creating new habitats for the Cane Toad.
- 60. Maintain visitor areas to reduce weed, including new weed that may be brought in by visitors
- 61. Ensure visitors are educated about the policies of Minyumai including minimizing weed and accidental Cane Toad importation
- 62. Keep visitors to approved walking areas by providing a range of graded walks, with the more sensitive bushland areas confined to guided walks. Construct boardwalks as needed to educated visitors about wildlife.
- 63. Ensure any new camping areas are away from primary conservation and archaeological areas and that any clearing and draining of them is undertaken in the most ecologically sustainable manner

Gardens and nursery production

- 64. locate productive gardens where their improved fertility will not cause weed problems in natural areas.
- 65. Avoid importing mulch, soil or manure that could introduce new weeds or Cane Toad eggs
- 66. Be vigilant to remove wind or fauna-dispersed weeds from gardens so they do not spread to natural areas.
- 67. Prohibit the use of exotic species in ornamental or orchard plantings that could become invasive in natural areas.

Infrastructure, plant and equipment

68. Insulate the current shed where desirable to enable office work during the summer months or build a separate office linked to the machinery shed by

- an outdoor shaded relaxation area.
- 69. Acquire additional machinery and equipment as required to enable work to be efficiently carried out
- 70. Expand shed capacity to accommodate machinery as required.
- 71. Install solar water and electricity as finance allows.
- 72. Avoid the construction of any more dams as these could provide habitats for the Cane Toad.

7.3 APPENDIX 3. PHOTO POINT MONITORING

The idea of photo-points is to have a fixed point from which photos can be taken progressively so that you can compare the same view (a) before and (b) after treatments – and track how they are going over time.

Photo points have not yet been established on Minyumai but will be established in areas where visible changes are likely such as:

- Rainforest areas treated for Lantana
- Large clearings that are likely to regrow over time with the appropriate management.
- Burn sites.

Each photo point is to consist of two steel posts (star pickets) a few meters apart. The photographer stands at the first one and lines up the angle of the photo using the other post. The post at the end from which the photo is taken is painted white so photo orientation is obvious.

Rangers are to take photos at each photo point on an annual basis.

TIPS FOR LOCATING AND RECORDING PHOTO POINTS [I. Brodie, NPWS].

- 1. To ensure that the location of photos is the same, use a marker point in the landscape which will not
- 2. change or be hidden use a particular tree, fence post or range of hills for a guide. Or you can put in your own marker by using a painted star picket to indicate the place.
- 3. Ensure the present and future view from the camera to the point of interest is uncluttered. Remember, young tree/shrub vegetation will get taller as it grows and can become a wall of green at the front of your site. You can overcome this by taking the photo from a different angle.
- 4. Take photos when the season and light are the same.

- 5. If possible take a copy of the previous photos with you to ensure that the new photo will be framed the same way as the older ones.
- 6. Do not use a wide angle or a telephoto lens, as this alters the perspective of the photo and makes it difficult to repeat.
- 7. Sometimes an elevated position, eg standing on the back of a utility, can give the best results, especially if you wish to show understorey density.

Recording information about your Photos

- 1. Mark roughly on a map the sites of your photopoints, and use an arrow to indicate the direction of the photo.
- 2. You can also give your photopoints a number and mark this on your map
- 3. Some cameras have the capability of recording the date on the photograph. For monitoring photographs, this can be useful, as long as it does not detract from an important feature of the photo.
- 4. Note on the back of the photo the location, the direction (ie to the north of the photopoint), and date.
- 5. If you use a map to number your photopoints, indicate on the back of the photo which number it is taken from.
- 6. Keep photo record sheets.
- 7. Additional information on the photo can be notes in your field notebook. These could include Slope, aspect, soil type, erosion, salinity, list of dominant plants and any relevant fauna information
- 8. To show detailed changes in bushland, it is very useful to make a tracing of the photo and annotate it with plant species information and notes of the specific feature you wish to watch out for

7.4 APPENDIX 4 – PERFORMANCE ASSESSMENT PROFORMAS

PROPE (DIREC	INDICATORS FOR RUNNING OF THE ERTY AND ITS PROGRAMS CTORS AND STAFF - QUARTERLY)				SSME	ENT
Operat	ional	1	2	3	4	5
-	Reliability of access to property (road access and car availability)	1	2	3	4	5
-	Degree of protection of assets from theft and fire	1	2	3	4	5
-	Reliability and availability of relevant tools and equipment	1	2	3	4	5
-	Adequacy of insurance	1	2	3	4	5
-	Level of OH&S	1	2	3	4	5
-	Tidiness of grounds	1	2	3	4	5
Financi	ial	1	2	3	4	5
-	Number of contracts successfully tendered for	1	2	3	4	5
-	Degree of profit for Minyumai from those contracts	1	2	3	4	5
-	Wages paid to workers from those contracts	1	2	3	4	5
-	Sponsorships received	1	2	3	4	5
Social		1	2	3	4	5
-	Number of events that have reinforced Bandjalang culture					
	o Language reinforcement sessions					
	o Art events					
	o Guided tours					
-	Bandjalang member attendance at those events					
-	Number of events in which there is sharing of knowledge among generations					

DATE:		
ASSESSORS		
COMMENTS		
Signed:	Date:	

MERI INDICATORS FOR CforC ON-	ASSESSMENT	
GROUND TEAM OPERATIONS (TEAM	(Tally as you go)	TOTALS
MEMBERS AND TRAINER - QUARTERLY)		
POSITIVE SCORES		
Noting pest species information in field and		
transferring the info to the main map in office		
(Diff colours for done or to be done. Codes for		
species)		
Nº days of high priority weed control -		
<u>primary</u> treatment		
Nº days of high priority weed control -		
secondary (follow-up) treatment		
Successful timing of follow up (i.e. prior to		
weed seeding)		
Nº pest animal surveys and/or control days		
Nº of new sightings of uncommon native small		
mammals (then located on map)		
Sessions of fire management planning		
undertaken		
Fire management activities undertaken		
(slashing, burning, thinning)		
Metres of firebreak slashed		
Area subjected to a controlled burn		
Kms of road drains maintained in workable		
condition		
Kms of road drains repaired to a workable standard		
Metres of protective fences repaired or installed		
Metres of fences removed so not obstacle to		+
animals		
Nº times tractor cleaned after slashing in		
weedy area		
NEGATIVE SCORES		
Nº times team has missed a follow up prior to		
weed seeding		
Nº times tractor used (without cleaning it) in		
a relatively clean area after slashing in weedy		
area		
Nº new road washouts occurring in areas with		
drains		
Nº older trees cut down which could have		
become habitat trees if left		

DATE:	
ASSESSORS	
COLD TENTE	
COMMENTS	
Signed:	Date:
-	