

Dwellingup Community
DRAFT Position Statement
Bauxite Mining in and Around a
Dwellingup Discovery Forest Area
Position Statement Technical Report

Contents

Position Statement Technical Report Introduction

Consultation

Governance

Values

Threats

Opportunities

Discussion

Community Aspirations: Concerns, Workshop Outcomes

Local Action Plan

Feasibility of mining in Dwellingup and surrounds

Key stakeholders and public-interest groups

Summary and Conclusion

Bibliography

Position Statement Technical Report Introduction

Bauxite mining is again being proposed in and around Dwellingup. This issue was addressed in the 1970s and 1980s, resulting in a Forest Green Belt and later a Ministerial imposed bauxite “indefinitely deferred zone” with more than 8 years of meetings trying to unsuccessfully achieve a mining exclusion zone.

The Dwellingup Community is again negotiating for an exclusion zone, but this time with support from the Shire of Murray, which acknowledges the effects of mining on property values and the future potential for Dwellingup in achieving a National and International Trails Adventure Town Status. Local government would like to help fulfil Dwellingup’s potential to achieve the vision for this high-profile, higher purpose national/international trails/adventure town.

Values, threats and opportunities for the town are discussed in this paper, with a map to show the range of values. Recreation sites and sites of scientific interest on the outskirts of Dwellingup such as Scarp Pool, Oakley Falls, Turner Hill Cycle Trail and the historic townsites such as Inglehope and its Jarrah silvicultural measurement plots form the proposed boundary of a new proposed Dwellingup Discovery Forest and bauxite mining exclusion zone. The Murray River Water Basin Catchment Ridge forms the boundary to the east. This allows for visual resource management along with water and phytosphthora dieback management within a catchment. Support for helping to negotiate a “non-negotiable” exclusion zone for bauxite mining was resolved by the Shire of Murray with full Murray Council support in 2017.

Dwellingup needs protection of its landscape amenity so it can reach its full potential as a thriving community, based on long-term sustainable self-determination, nature-based tourism, scientific study and education values.

Consultation

The map of the proposed Dwellingup Discovery Forest (Mining Exclusion Zone) and the peer-reviewed Dwellingup Community Compact Position Statement documents have been made available to the Dwellingup Community for comment during a three-month submission period and a Community Workshop/Meeting in the town was conducted using an independent consultant facilitator with the workshop part of the meeting preceding the

presentations given by the Dwellingup Community Compact and Shire of Murray. Key submission responses to the written position statement are included below:

- Having worked for Alcoa for 18 years, I have observed when Alcoa came close to Dwellingup ie the POW Camp and Marrinup Golf Course in the late 70s mid 80s. These days the orchards must have their water maintained along with dust buffer areas so buffer distances need to increase. Alcoa previously bought out the orchard at the corner of Nanga Road and River Road. Alcoa couldn't make it pay and the area was eventually bulldozed.
- The cost to the local industry and businesses should mining go ahead close to town, needs to be spelled out. The damage mining would cause to local tourism and the likely damage caused by pollution are underplayed in the Position Statement. Accessibility from major population centres with its seven or eight accommodation facilities three or four catering facilities, a Hotel and General Store – the viability of many of these businesses would be jeopardised if the exclusion zone was not adopted. A solid case to government must have well-researched credible Cost Benefit Analysis undertaken by a reputable organisation to counter any claims by those who may mount an opposing case. Mining to the west and north of the townsite would be an ongoing source of dust and noise pollution. Cost Benefit Analysis is critical documenting damage from noise, dust, damage to the physical environment and impact to the viability of local businesses as tourism withers and possibly disappears all together as a result of mining.
- Alcoa is paying greenies to shut up. Do not trust the greenies. Alcoa is using our water excessively and wasting it
- Leave Dwellingup alone from mining. It's such a beautiful place and needs to be preserved.
- I have used the Dwellingup Area for Recreation and Tourist for 25 years and we need to protect this jewel of WA.
- Please respect the precious nature of this region. Once it's gone its ruined. Despite what they say about reforestation.
- I have been a visitor to Dwellingup all my life, and deeply value the landscape both aesthetically and from a biodiversity perspective. This area is such a rich and precious resource for both human life, flora and fauna which are local to this area. Regeneration after mining can never return the microorganisms and biodiversity which exist now. Please do not sacrifice the forest for financial gain.

- Tourism is essential for the future wellbeing of Dwellingup and a reserve area will allow for this.
- To do this to a beautiful part of our State is not right and really should not go any further.
- Every time I look at Goggle Maps in Satellite mode I see the scars that mining has left behind amongst our beautiful forest and it makes me feel ill. Please leave our forests alone and at least preserve the forests nearest to our towns and waterways.
- I am a very concerned resident of Dwellingup and am horrified at the thought of mining coming any closer than it already is.
- We don't want Alcoa near our property's water supplies which are for our use, for fruit trees and for stock.
- I live in Dwellingup and own a small retail business which relies on tourism. This lovely little town needs to be protected from bauxite mining to sustain the future of Dwellingup.
- Eleven historic school sites exist within the Discovery Forest area and these should be included on the map. Interpretive informational signage should be developed in and around Dwellingup and an action included in the Local Action Plan to continue to set up tour guides in and around Dwellingup so visitors to Dwellingup can be have an enriched experience when they visit Dwellingup by being shown in and around Dwellingup by local young and older tour guides.
- Tourism is WA's future and we need to preserve and promote WA to attract Tourists looking for eco adventure.
- Employment associated with the forestry and timber milling industries is now only a fraction of what it was, and bauxite mining and refining employment locally has declined. Tourism is on the rise and is the sustainable future for this town with its close proximity to Perth and the natural advantages Dwellingup has, such as the Murray River and the Hotham Valley Railway Steam Train line. Mine sites are not attractive to visitors and a bauxite mining exclusion zone is a small ask in the greater scheme of things and will serve to protect the most valuable features of the environment surrounding Dwellingup
- Dwellingup is a lovely iconic town close to the city with brilliant attractions for tourists. Countless school kids have benefitted from an outward-bound bush experience in this region. It would be a national embarrassment if mining was to overtake the town and or surrounding forest. Broader community consultation is required. The beauty and forest heritage and history for our grandchildren, once lost is lost forever. I would like to see the forest around the town under a covenant

for future generations to be able to enjoy as a place for tourists to continue to visit and experience the forest.

- As a Dwellingup Resident I feel it is imperative to create a buffer zone around Dwellingup as its future is in tourism businesses continuing to be established in the town and surrounding areas. Without tourism the town will lose most of the businesses including peripheral businesses in Dwellingup. Jobs for young and old depend on tourism. The bauxite mine lease area was done before there was any understanding of the fragility of this ecosystem. Rehabilitation will take 200 years before any trees are good bird habitat again. Protection of one half of one percent of Alcoa's lease area is all that is being asked. We cannot let Dwellingup be destroyed by ugly, unsightly and noisy mining. The local council, politicians and professors from WA Universities are all in favour of Dwellingup's protection. Alcoa will be able to hold their heads up high if they are able to come on board to support this.
- An exclusion zone is supported within a 10 kilometres radius of Dwellingup where mining would be prohibited. No further mining should be allowed in this 10-kilometre exclusion zone. Where there is any mining rehabilitation within the area, all rehabilitation should be reworked to be brought back to pre-mining flora and fauna levels.
- The position statement should be informed by people who were there in 1984 when Alcoa wanted to mine in and around Dwellingup. (ie the Forest Greenbelt Sub-Committee of the Dwellingup Progress Association)
- I support a buffer zone and believe this will not adversely affect mining.
- As a resident property owner for 17 years in Dwellingup, I chose to live in Dwellingup for its pristine, unique forest, tranquillity and serenity. As a horse owner and animal lover, I can go out of my property and safely ride and carriage drive and hike with my dogs for hours on end. I am devastated and shocked that this unique area is under very real threat from Alcoa's bauxite mining. Bauxite mining in and around Dwellingup will destroy Dwellingup's community and its future potential. This will be shameful and all for short term dollar value gain. If this bauxite mining exclusion zone is not supported, it will be shame on Australia, shame on the government and shame on all of us.
- As visitor to Dwellingup for the last 28 years with years of experiences of horse riding in Dwellingup, I can't believe Dwellingup could be sacrificed to mining. The peace, tranquillity and old-world charm of the trails and its closeness to Perth, Pinjarra and Mandurah offers so much to tourists coming from WA, other States and internationally. Dwellingup is a jewel

with its amazing jarrah forest and incredible diversity of attractions and wildlife. Please protect Dwellingup and its flora and fauna from mining destruction to showcase to the world a recreational, educational, tranquil retreat with which to escape from the stresses of and strains of life.

- The position statement and local action plan are supported. As some 22 years plus resident drawn to the forest and bush environment, I have seen nature based tourism become part of the culture and economy of Dwellingup. Rerouting Munda Biddi trail and mining south of the Murray River has had ongoing impacts. The future of tourism opportunities will be damaged, and investment stifled if further mining occurs. Guided nature tour jobs as part of the nearer to nature program held out of the Forest Heritage Centre will not survive with mining close to town driving customers away. A Discovery Forest and mining exclusion zone in and around town will allow for the environmental values of the town to be preserved and nature based tourism to be expanded. The local action plan will allow Dwellingup to become a place of natural and environmental importance into the future.
- Alcoa has not kept pace with scientific, environmental and public perception including with relation to climate change. Governments are responsible for the legacy of flora and fauna extinction and the detriment to the environment and losses to the population of WA. Alcoa needs Ministerial/Premier approval and the long-term future of Dwellingup must be secured and not under constant threat from mining. Even more than just indefinitely deferred mining zones are needed. A mining exclusion zone in the form of a relatively small permanent buffer, compared to the total Alcoa lease area, would be not unreasonable in the mind of the general public.
- The Peel Riding for the Disabled use the Murray District Carriage Driving Club facilities in Marrinup. The Australian National Carriage Driving Championship are in 2019 at the Murray District Carriage Driving Club. Vintage Veteran Car and Motorcycle Clubs, music, quilting, bridge and other clubs use Dwellingup. Dwellingup provides affordable holidays in a unique environment and is the closest area to Perth and various regional towns centres. Concerns include ground water effects and the impacts of waste and workshop mining facilities developed by Alcoa. Cost benefit analysis is needed to compare tourism to mining long term values and impacts. Other Australian States have town/village mining exclusion zone areas.

Following the Community Meeting and the Submission Summary and Analysis it became clear that wider stakeholder consultation will be required to provide those living outside Dwellingup opportunity to comment particularly those from the scientific, educational and nature based tourism communities who regularly visit Dwellingup. It should also be determined that a State government–sanctioned public submission planning process take place either with an Environmental Review process and/or a Management Plan Amendment process. The State’s Conservation and Parks Commission, the Department of Water and Environmental Regulation, Department of Biodiversity Conservation and Attractions and the Commonwealth Government are critical stakeholders for longer-term protection consideration of this Dwellingup Discovery Forest opportunity.

Governance

The State’s Conservation and Parks Commission comprises a group of representatives from a cross-section of the community with the vesting of all land and waters managed on their behalf by the Department of Biodiversity, Conservation and Attractions.

All management plans such as the current Forest Management Plan and the Lane Poole Reserves Management Plan are prepared by the Department of Biodiversity, Conservation and Attractions with full public consultation, and endorsed and adopted in draft and final forms formally by the State’s Conservation and Parks Commission.

Adjoining land which is suitable for management under the auspices of the Lane Poole Reserve would be subject to assessment of values. State Forest is no longer appropriate in and around Dwellingup given the specific important multiple use forest management values identified in this Position Statement. More specific important multiple use forest management values warrant a different approach to management.

Where significant nature-based tourism, scientific study and education values can be identified, an area such as the Dwellingup Discovery Forest Area should be proposed to be added to the Lane Poole Reserve as a 5(1)(h) Reserve. In doing this a better opportunity for the multiple use values of the area can be more widely acknowledged, recognised and further developed. A proposed addition through an amendment to a management plan can be progressed under the umbrella of the management plan. This new area could

then be managed consistent with the principles of the current Lane Poole Reserve and Proposed Reserve Additions Management Plan 2011.

The Mine and Management Program Liaison Group (MMPLG) comprises representatives of relevant State government agencies. The MMPLG receives a rolling five-year Mining and Management Program (MMP) from Alcoa for review on an annual basis. Agencies provide comments through the MMPLG on the adequacy of the information provided by Alcoa. The MMPLG is formally endorsed under the *Environmental Protection Act 1986* (WA). The MMPLG recommends to the relevant Minister or Ministers, the approval or otherwise of Alcoa's annual MMP. Prior to approval being granted, for an area to be added to the five-year plan, the Minister or Ministers seek the endorsement of the Minister for Environment that sufficient consultation has taken place, including local community consultation.

State Premier and Ministerial intervention has occurred in the past in at least two instances due to community opposition to Alcoa's mining. In 1970s and 1980s, the State Premier and Minister or Ministers supported an "indefinitely deferred zone". A Forest Green Belt area going back to 1978 was the subject of a petition and various public meetings which resulted in a specific area being determined "indefinitely deferred" to the northwest of Dwellingup. This area was taken out of the five-year MMP and bauxite mining operations were relocated from Del Park to Huntly one year earlier than planned.

Deferral of mining was imposed again as "deferred indefinitely" (Ministerial Statement 728) in the Murray Valley to protect this area from the adverse impacts of bauxite mining (Consultative Environmental review, 1994 Figure 10). There is therefore a precedent set for protection. It was made clear in Ministerial Statement 728 that the Lane Poole Reserve Advisory Committee be reactivated to consult with the local community and activation has again become critical. State Premier and Ministerial intervention can occur, and this can be detailed in a new or revised Ministerial Statement. Relevant correspondence, maps and letters are included in the Resources Document component of the Position Statement.

Values (Forest-based tourism, education and scientific study assets)

1. Residences, with a focus on those in outlying areas

- A. Private residents' private properties where international visitors are likely
- B. Tourism-related businesses: accommodation providers (17+); food and wine sellers (8+); retail shops (5+)
- C. Educational, tourism and scientific study facilities including accommodation for school group outdoor education, scientists or other groups (Christ Church (ICCOEF), Trinity College, Scotch College and other school groups that sublet these facilities, including Saint Hilda's and Icy Creek (1CIC) and Nanga Bush Camp (1CNBC), Saint Stephens (1CSS) and Dwellingup Forest Lodge (ICFL) which accommodates a substantial proportion of the public schools through the year.

2. Water resources

- D. Dwellingup water-dependant horticultural properties and other water points for firefighting (2D1)
- E. Murray River Water Reserve
- F. South Dandalup Drinking Water Catchment Area

3. Rail, scenic roads and trail/river connectivity

- G. Hotham Valley Tourist Railway and scenic roads
- H. Bibbulmun Track (bushwalking)
- I. Munda Biddi Trail (mountain biking)
- J. Yarragil to Nanga Bridge River Trail (3J)

4. Day use and camping destinations

- K. Lane Poole Reserve camping and day use site clusters (4KA Bobs Crossing, 4KB Toms Crossing, 4KC Nanga Bridge, 4KD Nanga, 4KE Nanga Falls, 4KF Island Pool, 4KG Baden Powell, 4KH Charlie's Flat, 4KI Tony's Bend)
- L. Marrinup Forest camping and day use site cluster (4L)
- M. Inglehope and Del Park Arboretums (day use only) (4MI, 4MD)
- N. Scarp Poole and Scarp Lookout (day use only) (4N1, 4N2)
- O. Oakley Falls Dam & Lookout (day use only) (4O)

5. Recreation/tourism walking and cycling trails (not all included on the Discovery Forest map)

- P. Island Pool Walk
- Q. Marrinup Falls Walk
- R. Xanthorrhoea Walk
- S. Chuditch Walk
- T. Holyoake Hike
- U. King Jarrah and Lane Poole Walk
- V. Marrinup Cycle (5V)
- W. Waterous Loop
- X. South Shore Network
- Y. Turners Hill Cycle (5Y)
- Z. Oakley Dam Walk

6. Equestrian trails, including horse and carriage

- i. Les Couzens Bridle Trail
- ii. Marrinup Bridle Trail
- iii. Murray District Carriage Club Trails (Murray District Carriage Club)

Historical, science, research, tertiary education and heritage

7. Places with historical interpretive value, including towns, their school sites, mills and railway stations

- v. Isadora
- vi. Marrinup
- vii. Holyoake
- viii. Etmilyn
- x. Plavins
- xi. Amphion
- xii. Pindalup
- xiii. Marrinup Prisoner of War Camp

xiv. Chadora

xv. Teesdale Hill

xvi. Teesdale Formation

8. Research plots, navigational locations and scientific reference areas (one of the 10 most vulnerable ecosystems in Australia)

According to a team of 26 leading ecologists from the Innovative Research Universities of Australia, **our grandchildren might never have the opportunity to see the Northern Jarrah Forest, which runs from the Perth Hills south to Collie.**

Professor Giles Hardy, Director of the Centre of Excellence for Climate Change, Woodland and Forest Health, has said that the drought-related death of vegetation and the loss of stream flow in the Northern Jarrah Forest is a sharp reminder of the vulnerability of Mediterranean ecosystems to climate change.

Preliminary desktop information gathering is not complete, as important data that might become available in the future has not been included. This data may relate to features such as significant trees, fauna habitat zones, hydrogeomorphology (e.g. sandy dolerite dykes, confined or semi-confined aquifers), catchment characteristics of the 30 or so sub-catchments within the Discovery Forest area, such as drainage density, flora, vegetation, ecological communities, floristics, forest structure, density, composition, Havel site-vegetation types, ecological corridors, long vertical hollows and other fauna habitats particularly important for nationally listed black cockatoo species and other important fauna species.

The following information is publicly available:

- Department of Parks and Wildlife Science and Research Plot locations important for creating within the Discovery Forest area, a mosaic of management techniques critical for scientific study (8MP1 ... 2, etc., 8TP, 8PP, 8HP)
- Significant Trees and Forest Management Branch Plots in Banksiadale, Marrinup, Nanga and Holyoake (8ST1, 8ST2, 8BFM1, 8BFFM2, 8MFM1, 8FMT2, N8FM1, N8FM2, N8FM3, N8FM4, N8FM5, N8FM6, N8FM7, N8FM8, 8HFM1, 8HFM2, 8HFM3, 8HFM4, 8HFM5, 8HFM6, 8HFM7)
- Old Growth Forest, including those previously classified and those under review (8OGF1 & 8OGF2)

- Jarrah – no record of harvesting or last harvested prior to 1986 (but not since) (8OGF2)
- Jarrah Measurement Plots – Inglehope, Urbrae, Holmes Blocks (8JMPI, 8JMPU, 8MPH)
- Scientific Reference Areas and Fauna Habitat Zones in Marrinup, Holyoake and Holmes (8MSRA1, 8HFH1, 8HFH2)
- Marrinup Proposed Conservation Park 1 (MPCP1)
- Marrinup Proposed Conservation Park 2 (MPCP2)
- Scientific Reference Areas including for nationally listed species including the mainland quokka, rainbow bee-eater and spotted quoll have not been found
- Reference Shield Trees along Duncans and Inglehope Roads (8CT651, 8CT663, 8CT666, 8CT675, 8CU681, 8CV684, 8CV683, 8CV682, 8CW683)
- Significant Trees and places of Aboriginal Significance

All material sourced from the Department of Biodiversity, Conservation and Attractions (Standard Maps or Forest Management Branch: Fauna Habitat and Period Since Last Harvested) or Forest Products Commission Coupe online from various websites: Holyoake 02 and 04 and Nanga 02 and 03 are the only areas so far sourced for specific Detailed Coupe Maps.)

Maps are available to the public from the Dwellingup Hills District Office or Forest Products Commission.

Information requests are continuing; however, some information is not available to the public currently, such as that covering the Marrinup area. Fauna habitat information has been removed in some cases from some maps. This information will be reinstated once mining and rehabilitation operations are complete. Relocation may occur in accordance with Guidelines for the Selection of Fauna Habitat Zones. This approach is currently under review. The Dwellingup Community's view is that mining and rehabilitation represent permanent loss of value in any local area, and careful consideration of this loss is needed not only in terms of a satisfying comprehensive reserve criteria but also in terms of other multiple-use forest management values and synergies related to this. **For example, in the case of Dwellingup, there is a dense convergence of clusters of multiple use forest values (tourism assets) from a historical silvicultural perspective coupled with both scientific study and educational opportunities.**

Threats

Residents

1. A Forest Green Belt was created around Dwellingup approximately 30 years ago, and now Alcoa is again proposing to mine close to the Dwellingup townsite. This time we have a confirmed drying, warming climate, with the State Agreement (1961) outdated and not adequately addressing current biodiversity and jarrah silviculture management requirements, Commonwealth Regional Forest Agreement intentions, bilateral black cockatoo management and formal reporting and other nationally listed species protection. These are considered prominent issues needing to be resolved.
2. The bauxite mining threat is affecting school children and outdoor environmental education opportunities and other visitor experiences in this area. Current and future possible landscape impacts are and will affect property values.
3. Threats include mining right up to people's properties with noise from blasting and from conveyor belt noise, dust and traffic. Currently double glazing paid for by Alcoa is being used by some residents to deal with the noise, earth tremors and air concussions that have historically cracked walls and resulted in potential lawsuits and involvement of the Commonwealth (see Attachment C). It is considered by the local community that financial compensation for dealing with impact or compensating for loss with money is no longer a kosher way of satisfying consultation requirements when longer term sustainability is at stake.

Scientific study and education

1. The Institute of Foresters of Australia recognises the Northern Jarrah Forest as the only existing forest in the world in such an extreme Mediterranean-type climate featuring a water storage capacity of unusual soil profile depths. Due to our drying warming climate underground water storage has been drying up, resulting in groundwater–surface water separation, stopping the flow of numerous waterways in summer and affecting horticulture and stream zone flora and fauna. Rainfall declines have been 15 to 20%. This is a major new threat to conservationists and industry in aiming to restore this unique forest ecosystem. Large jarrah trees require access to a high storage water table capacity particularly in areas of low fertility. The hydrological conditions will determine whether a jarrah tree grows into a shrub or a large straight, tall tree. Areas in stream zones are now much

more susceptible to bushfire impacts. A significant amount of water is drawn down from drinking water and groundwater reserves by Alcoa annually, competing with Dwellingup's current and future water requirements. Groundwater levels have fallen up to 11 meters in some forested areas. Over 16,000 hectares of forest suddenly collapsed in the northern jarrah forest with mortality rates of 10.5 times greater than normal.

2. There appears to be a great deal of uncertainty regarding the various impacts of mining in our drying, warming climate, suggesting that more research is critical including research into the geomorphology and hydrological processes important for maintaining important springs and stream flows in the Northern Jarrah Forest. The new, drier water regime will need to be recognised with all restoration efforts and restoring areas with trees to provide future saw logs is much less likely to be possible. **We are at the cross roads, where decisions need to be made as to what we want our forests to look like in the future and how best we can adapt the northern jarrah forest to water regime changes.** It is predicted that many more stands of jarrah forest will die and future trees will be scrub like and not replace them in stature. The future vegetation of the jarrah forest is less likely to include tall and straight jarrah forest trees so important for recreation and landscape aesthetics so those that we have are becoming more important to retain.

Recreation/tourism

1. Recreational values and landscape vista values under threat include popular and regular historic steam train trips, motoring and motorcycling daytrips, hiking and camping, horse riding, horse-and-carriage riding, cycling and mountain biking and wider public scientific study values, education, nature appreciation, farm stays, tours and other intrinsic sense-of-place values. At risk is the long-term sustainability of this valuable State, national and international tourist destination and its popularity being affected by non-sustainable non-renewable resource use.
2. The Department of Parks and Wildlife camp site development within Lane Poole Reserve. Lane Poole Reserve is the largest reserve in the Northern Jarrah Forest, covering more than 50,000 hectares. Recreation sites along the Murray River in particular are very popular, with growing demand for mountain bike riding for example which is not encouraged or permitted in much of the rest of the Lane Poole Reserve due to conservation values, remoteness and possible dieback spread. The Department of Biodiversity, Conservation and Attraction's Science and Research Branch is remeasuring old bores to determine current groundwater levels and remeasuring

established thinning plots throughout the forest, particularly around Dwellingup and Inglehope, with concerns relating to permanent drying, warming climate impacts are increasing.

3. The future of Dwellingup at risk is in tourism-related economic growth, with a thriving events industry and the potential to become recognised as an International Trails and Adventure Town, attracting millions of dollars that will further the town's tourism industry development and provide greater certainty and a strong transition towards a more fully based thriving sustainable nature-based tourism economy.

Fire management

1. Drilling and exploration operations are interfering with the provision of recreational and firefighting management access. Bauxite mining operations in State Forest restrict planned burns, can result in fast and furious bushfires and do not contribute to a coordinated collaborative firefighting network. The drier warmer climate will result in more extreme fires making bushfires more frequent and severe, as fuels dry more readily and burn for longer once ignited. Forest ecosystems under stress will take longer to recover and unburned moister areas will be less likely to be able to provide fauna refuges from fire.
2. Hazard-reduction burning is severely limited by the vulnerability of young vegetation regrowth resulting from current rehabilitation completion criteria. Although the goal is to re-establish the pre-existing forest and associated multiple-use forest values including biodiversity, sustainability, forest products, catchment protection and forest access, there are limits to being able to achieve this and community concerns exist with relation to fire hazard, fire protection and fire management in particular.
3. Access to and within the mining lease area is slow and difficult. The terrain is very rough, even for heavy earthmoving machinery, with contoured rip lines (constructed to aid revegetation) along with mine pits and haul roads. Conveyors and power easements also slow down firefighting response capabilities (Ferguson Report into the Waroona fires).

Opportunities

1. A more formal and permanent agreement for a Dwellingup Discovery Forest Reserve (Mining Exclusion Zone), which is critical to protect property values and government tourism funding commitments and future opportunities such as for nature-based tourist interpretive projects including featuring a mosaic of

management techniques within a series of forest management demonstration areas.

2. Improvements to fire management in and around Dwellingup, with intervention opportunities such as silvicultural thinning to increase jarrah growth rates of the State's tallest, straightest and highest-quality jarrah trees.

3. A Partnership Approach towards sustainability and the long-term wellbeing of the town, its forest and its community, including bringing Alcoa along with the mainstream nature-based tourism, scientific study and education programs. This could include expansion of the existing Discovery Centre based at the Pinjarra Railway Station.

4. A more permanent solution for Dwellingup and its future protection as a reserve consolidating the proposed national parks, conservation parks and proposed 5(1)(h) reserve areas of the Lane Poole Reserve for values including nature-based tourism, scientific study and education around Dwellingup. This connecting area (Discovery Forest) could also embrace a Nature-based Tourism Research Centre and Discovery Forest Centre and some community use and involvement within the Old Marrinup Nursery Facility (which was closed by Alcoa in August 2016).

Discussion

The demographics of Dwellingup have changed considerably since the 1980s, when there was a large commercial timber mill whose workforce lived in the town, with the other half of the town's population working for the Forest Department. Each of these workforces at the time lived in houses supplied by their respective employer.

At this time, the Dwellingup Research Station expanded to include a new focus on bauxite mining, forest hydrology and phytophthora dieback research. Many of the mill and forestry houses were sold, and the town's population now includes a broader demographic with a much more diverse work base. Many residents these days either work from home or commute to other centres including Pinjarra, Mandurah and Perth. A much larger component of the population is also now dependent on tourism for their income.

Dwellingup and its surrounding forest have in recent decades become an increasingly popular nature-based tourist attraction, drawing growing numbers

of international, national, regional and local visitors. Funding has been sought with a great deal secured to support a world-class nature trails and adventure town development in and around Dwellingup, which will significantly contribute to the long-term economic sustainability of the town.

The current demographics and tourism profile of the town justify a different approach to public consultation. In addition to the diverse population of residents, stakeholders in the future of Dwellingup include a scientific research and educational community as well as a number of nature-based recreation and tourism industries coming from Perth and the wider international communities. Any activity affecting the natural environment in and around Dwellingup would constitute a threat to the future interests of all of these groups.

Numerous school groups own properties dedicated to outdoor environmental education programs and group camping activities in and around Dwellingup, include Scotch College, Trinity College, Saint Stephens and Christ Church. Along with the Nanga Bush Camp, Old Nanga Townsite and Icy Creek, these facilities cater to Perth and Peel-region schools. Other schools also sublet these facilities each year so there are numerous school groups from the Perth metropolitan area using the Dwellingup area both public and private and the number of these has been estimated to exceed 50 looking at the annual bookings.

A huge expansion of publicly accessible group camping areas around Dwellingup has occurred in recent years, with outdoor kitchen facilities having been established in some areas. This has resulted in a significant increase in the numbers of group campers and hence public interest groups.

The Murray River remains a wild river for canoeing, not harnessed for drinking water because the water is brackish due to historic agricultural clearing to the east. Water-based eco-tourism and agricultural tourism have therefore expanded enormously in the area, suited perfectly in this high rainfall zone.

Many of these groups are already being affected by noise from bauxite blasting, and would be affected further if mining activities were to continue or expand.

The future sustainability of Dwellingup is no longer dependent on timber and mining industries, but more and more on nature-based tourism, scientific study and education. Dwellingup's popularity as a destination for groups and events based on a wide range of recreational and tourist activities is growing at

a rate greater than any other forest town in Western Australia as evidenced by the Pumpkin Festival and Dwellingup 100 Mountain Bike event in 2017.

The bauxite mining industry has never been and will never be a forest management multiple-use activity. The traditional multiple-use forest management values have always included timber, water, recreation/tourism, scientific study and education, based on principles of sustained yield, sustainability and resource renewability.

The jarrah tree is slow-growing, and jarrah forests do not thin naturally. The jarrah forest around Dwellingup has become second-growth forest for the most part, with dense young trees competing vigorously for food and water and the forest overall therefore is becoming slower-growing and less productive. Jarrah forest thinning was carried out in the 1940s, and a 'Forest Improvement Program' was also carried out in the 1970s to address this overcrowding competition between trees for nutrients and water. The straight and tall jarrah forests of Holmes Block, Urbrae Block and Inglehope Block areas all have plots for the measuring the growth rates of jarrah and there are numerous forest management branch plots throughout the Dwellingup forest area needing continuous monitoring.

According to a team of 26 leading ecologists from the Innovative Research Universities, our grandchildren may never have the opportunity to see the Northern Jarrah Forest, which runs from the Perth Hills south to Collie.

Professor Giles Hardy, director of the Centre of Excellence for Climate Change, Woodland and Forest Health, has said that the drought deaths of vegetation and the loss of stream flow in the Northern Jarrah Forest are a sharp reminder of the vulnerability of Mediterranean ecosystems.

"In the case of the Northern Jarrah Forest, which runs from the Perth Hills south to Collie, we need to apply a mosaic of management techniques to ensure its survival"

A Dwellingup Discovery Forest would provide greater opportunities for ongoing monitoring, particularly through tapping in to existing and potential student and citizen science participation in monitoring.

While a mosaic of ecosystems and different forest structures for study is needed to ensure the survival of the Northern Jarrah Forest, the expansive areas of bauxite mining rehabilitation result in trees and scrubs the same age

(even aged stands) and new starting over ecosystems which will not be fully functional for between 100 and 300 years.

Bauxite is not a renewable resource like timber or water, which can be managed sustainably for the long-term future. An increased emphasis on scientific study and education is clearly needed. Dwellingup has been the centre for research into the Northern Jarrah Forest since 1918 – almost 200 years. This has resulted in large numbers of science and research plots being established close to the town, an ideal location for demonstrating a mosaic of historic management techniques. These plots are particularly important for the science and research staff to develop longer-term records for experimental controls and trials. The slow growth rates of jarrah and its ancient soils and ancient vegetation require long-term historic monitoring sites for acquiring useful data. **A Discovery Forest function particularly for scientific study and education like other Discovery Forests in Western Australia is not being recognised or adequately incorporated into the Lane Poole Reserves and Proposed Reserve Additions Management Plan area.**

Due to its high elevation and fire history, Dwellingup contains some of the State's tallest, straightest jarrah trees and associated high-scenic-quality landscapes. These 'pole stands', as they are called, give Dwellingup a landscape value that surpasses all other areas of Northern Jarrah Forest in the State. Landscape-scale protection in this high-elevation, low-temperature and high-rainfall zone is warranted to acknowledge its uniqueness along with its vulnerability. The activity concentration in the high-rainfall zone for bauxite mining would be competing with recreation/tourism and horticulture and eco-tourism industries. The future for the Dwellingup tourist community lies in nature-based tourism, scientific study, education along with agricultural tourism and eco-tourism. Numerous wineries and boutique horticultural establishments in the Dwellingup area are becoming more and more popular to visit and are at the same time being effected along with their visitors from the noise and visual impacts from bauxite mining.

Bauxite mining rehabilitation results in new ecosystems with different soil profiles and different combinations, densities and compositions of species. Attempts are being made to replicate the original forest with local-provenance seed; however, replication is extremely difficult in such a relatively short period of time, given that the existing forest's evolution has taken such a long time and these forest ecosystems are so ancient. New ecosystems (nouveau ecosystems) established are fraught with complexities of management, and often unforeseen consequences, particularly where the natural ecosystems

attempting to be replicated are so complex, fire and water-dependant and under stress due to increased drought and increased risk of bushfire.

It is important to acknowledge that the Northern Jarrah Forest is the only forest in the world that exists in such an extreme Mediterranean-type climate. Water-storage capacity of unusually deep soil profiles is critical for the survival of the jarrah forest. The groundwater–surface-water separation stopping the flow of numerous streams and creeks in summer affects both flora and fauna biodiversity conservation as well as the horticultural and other industries within and around Dwellingup.

The economics associated with the price of bauxite is instrumental to the current bauxite mining boom, with the State benefiting with timber and bauxite royalties temporarily in the short term. With the new Chinese market for bauxite there is a significant increase in areas of clearing and mining being proposed by Alcoa.

Rehabilitated forest is not likely to be able to replace the original northern jarrah forest with all its multiple use forest values and there is a significant time period to wait before the replacement values can even be compared.

The Ferguson Report on the Waroona and Yarloop fire disaster identified a growing bushfire threat associated with Alcoa's infrastructure and rehabilitation activities. Dwellingup has historic mining rehabilitation areas directly to the north (Del Park and Huntly) and south (Orion). These mine sites are already threatening the town values. Bauxite mining proposed to the east (Holyoake), will result in Dwellingup becoming a virtual 'island' surrounded by increased bushfire threats. The fire risk concerns outlined in the Ferguson Report are very real to the Dwellingup Community and further research and risk analysis is needed before any further mining and rehabilitation activities are planned in this area.

Community Aspirations: Concerns, Workshop Outcomes

Community concerns relate to:

The lack of State government policies to protect multiple-use forest values other than conservation (comprehensive reserve system) particularly taking into consideration the traditional timber, water, recreation, tourism, scientific study and outdoor environmental education multiple-use forest management values.

The unfair advantage that State government agreements give mining companies, including having consultation requirements which encourage funds given to individuals, communities, towns, local governments or State government agencies towards meeting mining company objectives.

A clearer understanding that local governments and not State government agencies take responsibilities for communities and towns without any formal roles given to them for being able to either regulate or have some effect to orderly planning where State government agreements are in play.

Not recognising the difference between multiple-use forest management values and non-renewable resource extraction and the resulting irreversible changes to biodiversity, landscape and unique soil profiles

Landscape characterization, cultural heritage and a mosaic of management techniques need to be integrated in the Dwellingup Discovery Forest area. This can be done through mapping of Havel site types superimposed with scenic quality and cultural heritage values including historic research plots, historic sites and their buffers. Old growth areas, areas with no record of harvesting and areas last harvested prior to 1986 (but not since) need to be mapped in more detail, a breakdown of areas by historical timber harvesting practices, fire history, forest density, timber harvesting coupe areas and composition and structure (ie tallest straightest even aged forest pole stands) are all important in developing this Dwellingup mosaic of management techniques. The Dwellingup Research Station has been actively creating plots since 1918 and Sustainable Forest and Ecosystem Management Branch have been establishing forest management coupes and trials since its inception.

Community Workshop Participation

A Dwellingup Community Workshop/Meeting was held November 14th 2017.

Approximately 100 stakeholders attended the Dwellingup Hall Community Meeting to discuss the values of the town with respect to bauxite mining within the proposed Dwellingup Discovery Forest Area (bauxite mining exclusion area).

Participants were asked to provide comments on the Vision Statement provided by the Dwellingup Community Compact:

Protected, enhanced and maintained values to achieve Dwellingup's full National Adventure Trails Town potential with particular focus on nature based tourism, scientific study and education.

Most of the participants agreed with the vision, some felt changes could be made and a few wanted Alcoa to partner with the community.

Key comments, issues and concerns were taken on board and a revised vision was produced as follows:

A unique Dwellingup Discovery Forest with its Natural, Aboriginal and European Cultural Heritage Values protected, enhanced and well maintained so that National and International Adventure Trails Town full potential can be achieved.

Two Presentations were given following the workshop:

The Dwellingup Community Compact, presented the rationale and research behind the proposal for a Bauxite Mining Exclusion Zone to protect Dwellingup values.

The Dwellingup Community Compact are striving to implement a zone surrounding the town of Dwellingup to protect the values of the Dwellingup community.

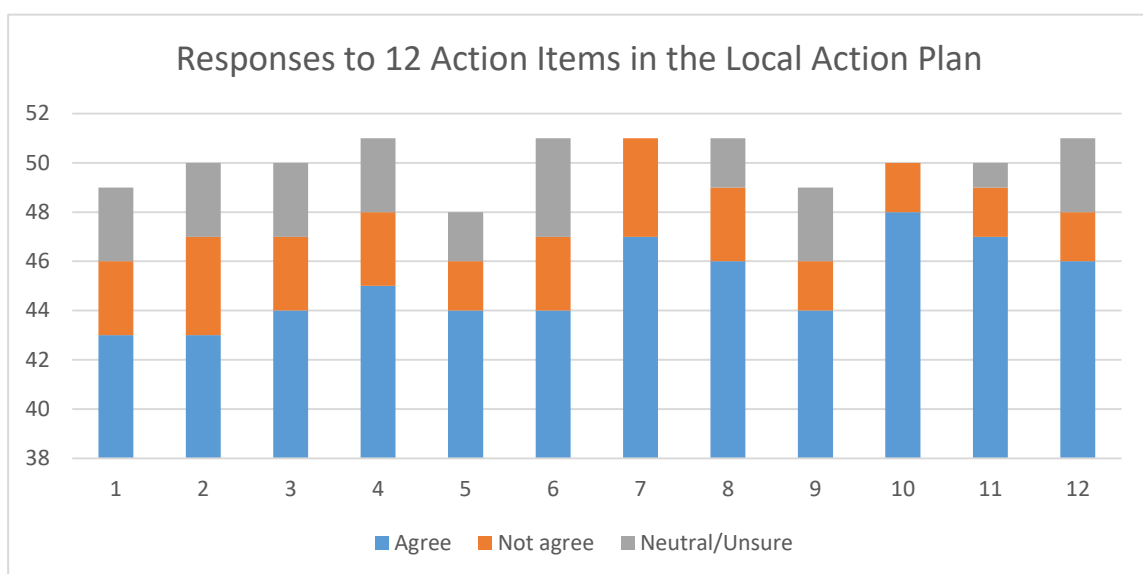
In summary, this is to maintain the integrity of the natural and cultural heritage surroundings so that they may be protected for future generations, enjoyed by locals and tourists, and to capitalise on the value of the local natural asset (the forest, its trails and destinations) to bring tourists into the region to enjoy nature tourism activities (trail bikes, walking, kayaking, etc).

The Shire of Murray presented a project plan update on the "Dwellingup Tourism Trails Hub".

The Shire of Murray has recognised the importance of biodiversity conservation in the region and recognises the natural asset value by seeking to enhance the area with a project called the "Dwellingup Tourism Trails Hub". The project will develop natural attractions to be utilised for trails for bikes, walking and

kayaking (to attract tourists both locally and internationally), build a state of the art skate park and pump park, upgrade the facilities at the Dwellingup History and Visitor Information Centre, relocate the train line, and upgrade and develop an adventure space in Dwellingup. The entire project will create over 200 construction jobs and over 80 operational jobs for the area.

The below graph depicts the general number of responses (in agreement / non-agreement or neutral) to each of the Actions within the Initial Draft Local Action Plan in the Draft Position Statement. An additional 8 local actions (6 through 13) were added to the Local Action Plan resulting from the community consultation.



Local Action Plan

Implementation driven by the Dwellingup Community

1. Collate and bring on board all input, including peer review on the Draft Position Statement, along with conducting a Residents' Community Meeting to gain support for the Position Statement incorporating a Dwellingup Discovery Forest (Mining Exclusion Zone).
2. Require that the Premier, and relevant Minister or Ministers, extend the existing "indefinitely deferred zone" and amend or replace Ministerial Statement 728 as an interim measure to protect the proposed Discovery Forest area from the impacts of bauxite mining.

3. Require that the State's Conservation and Parks Commission reactivate the Lane Poole Reserves Advisory Committee and through Amendment to the Lane Poole Reserve and Proposed Reserves Additions Management Plan to acknowledge a Dwellingup Discovery Forest.

Currently portions of State Forest 14 and 23 provide for exploitation of natural resources allowing for some non-sustainable uses. It is more appropriate that these areas of State Forest are managed for a variety of higher purposes to include scientific study, education, recreation, tourism and conservation (Lane Poole Reserve and Proposed Reserve Additions Management Plan).

4. Refer this Position Statement for assessment by the State's Conservation and Parks Commission and the Commonwealth Regional Forest Agreement Review Panel.
5. Establish an Alliance with all primary, secondary and tertiary educational institutions who are stakeholders within the proposed Dwellingup Discovery Forest area.
6. In collaboration with others increase the number of and length of formalised and registered track and trail loops within the Dwellingup Discovery Forest area toward National and International Trails Town/Adventure Status.
7. In collaboration with others continue to design and put in place bold trail and track interpretive site-specific signage on trail and track loop extensions and the Mundi Biddi and Bib trails which meet in Dwellingup, adding to connectivity between the town's Green Precinct and the wider Discovery Forest area.
8. Provide interpretive tour guide training for young and old through the Forest Heritage Centre with its Dwellingup Discovery Forest trading name.
9. Assist and support design, construction and putting in place historic town site signs (11) and historic school site signs (11) and other historic or ecosystem tourism site specific signs.
10. Characterise in collaboration with others, landscape unit and the forest structure and density within the Dwellingup Discovery Forest area for

site specific interpretation toward consolidating the critical mosaic of management techniques for scientific study, education and ecosystem tourism purposes within and around the Dwellingup Forest.

11. Extend the community participation submission consultation process to include the scientific study, education and nature based tourism communities to add value to the Draft Position Statement: Bauxite Mining In and Around a Dwellingup Discovery Forest area.
12. Refuse to continue to participate in the Alcoa community consultation process unless it becomes more interactive and cooperative taking on the community's aspirations for the Dwellingup Discovery Forest area development.
13. Continue to work closely with Local, State, Regional and Federal governments and associated elected members to roll out the mutually supportive and interconnected Green Precinct and Dwellingup Discovery Forest projects.
14. Facilitate, in collaboration with Alcoa, possible future or collaborative Dwellingup community use of the Old Marrinup Nursery Facility, the establishment of a Nature-based Tourism Research Centre in Dwellingup and further activate the Alcoa Discovery Centre in Pinjarra and the Forest Heritage Centre in Dwellingup to promote the Dwellingup Discovery Forest.
15. Subject to funding and collaborative efforts, establish research programs, including citizen science programs, for more intensive monitoring of tree decline, monitoring of mainland quokka populations within the fauna protection habitat zones, and a comparative mosaic study of the diverse range of management techniques established within the proposed Dwellingup Discovery Demonstration Forest area.
16. Request that the State's Conservation and Parks Commission, and the Department of Water and Environmental Regulations, provide advice to the Minister for Environment that further exploration and development not be supported, as they "may potentially cause significant environmental impact" particularly with relation to Dwellingup fulfilling its potential as an International Trails and Adventure Town with its nature-based tourism, scientific study, education and pristine visual

landscape values under threat (Lane Poole Reserve and Proposed Reserve Additions Management Plan, p. 93).

17. Defer mining at the Orion Mine Site to the south and relocate mining in the east to allow for the redevelopment of “high use Lane Poole Reserve Recreational Areas and their view sheds” (Lane Poole Reserve and Proposed Reserve Additions Management Plan, pp. 94–95).
18. Subject to partnerships and collaborative funding efforts, provide “opportunities for active and passive recreation and tourism that will meet public demand” in Dwellingup, so that significant “regional socio-economic benefits” can be more fully realised (State Forest Management Plan, pp. 140–141).
19. Require that the Icy Creek Environmental Educational Facility be reopened, to resume student environmental outdoor education programs and to once again allow local businesses to benefit once again from visiting groups to this facility, estimated at approximately “5,000 visits per year”. (Lane Poole Reserve and Proposed Reserve Additions Management Plan, p. 77).
20. Acknowledge, recognise and value the Dwellingup Discovery Forest area as a proposed addition to the Lane Poole Reserve management plan because of its:
 - diverse array of natural environments providing numerous research opportunities to increase knowledge associated with ecological, biological and physical processes, native flora, fauna and their habitats, and to attract and encourage greater international visitor numbers.
 - **diverse range of nature-based recreational tourism opportunities, including recreational driving, bushwalking, mountain biking, bush area day use and camping, canoeing, kayaking, rafting, swimming, fishing, horse riding, horse-and-carriage driving, historic steam train rides and various high-profile visitor attracting events.**
 - extensive range of community, tourist, educational, research and interpretive location opportunities to describe local indigenous Aboriginal and European history and the native flora and fauna through interpretive signage or mobile device linkage.

- extensive number of nature-based tourism, scientific study and educational group visits and their associated financial benefits to the local economy, particularly international visitors attracted by the wide range of natural, cultural and recreational opportunities.
- multiplicity of ways to enrich visitor experience, through nurturing the lifelong connections between the community and the natural areas allowing scenic quality, amenity and sense of place to continue to provide opportunities to learn, explore and interact with the natural and cultural environment (State Forest Management Plan, pp. 140–141).

Feasibility of mining in Dwellingup and its surrounds

There is a good argument socially, economically and environmentally for mining not to occur within the town or immediate surrounds of Dwellingup. **The protected surrounds should include all facilities and destinations that the town has been promoting for years and mandate no visual or other impacts in reaching these areas from Dwellingup. Excluding bauxite mining from a Dwellingup area will protect access integrity to and from popular destinations – such as the Turner Hill Mountain Bike Area, Scarp Pool, Oakley Dam, Icy Creek and Inglehope.**

Tourism in Dwellingup has grown to the point where private residents are no longer the primary stakeholder group. Intertwined with the town's prosperity and with its capacity to reach its full potential is its outdoor education and recreation opportunities, such as the growing mountain bike industry and various events. The town's Recreational Tourist Hub is where the State's two major nature trails meet, and events are numerous through the year both for mountain biking, running, canoeing, biking, driving, walking, carriage driving, horse riding and numerous other activity based events.

The recreational and amenity canopy advantage of the tallest, straightest poles stands in and around Dwellingup is a critical part of Dwellingup's future viability as a sustainable forest tourism destination and critical for attracting and supporting the town's economic growth and vitality.

The landscape in and around Dwellingup has been compromised already along Nanga Brook Road, where the impacts of mining are visible. Similarly, there is already a visual impact seen from River Road, Oro Road and the Pinjarra–Williams Road.

A Report to the Environmental Protection Authority on bauxite mining in the Darling Range years ago identified that:

mining could destroy much of the natural diversification and variety of the existing forest landscape and will eventually lead to the creation of repetitive, artificial patterns; that is, a pattern in which the lateritic ridges are cleared and mined while the lower slopes and valleys remain uncleared ... areas mined often high in the landscape are the most prominent, and consequently are more sensitive to visual disturbance Mining can substantially alter the texture and appearance of the ground surface. The harsh laterites, in contrast to the deeper, more fertile soils, also take longer to visually regenerate once disturbed.

Noise and vibration along with visual impact are already occurring in the River Road and Oro Road areas. Recreational service providers including the Department of

Biodiversity, Conservation and Attractions have also been impacted at the Icy Creek Environmental Educational Facility. This facility has been closed now for more than six years due to bauxite mining and a financial arrangement with the Department of Biodiversity, Conservation and Attractions, reducing the capacity of Dwellingup to provide for school group environmental and outdoor educational activities, and there has also been an associated loss to Dwellingup businesses which cater for visitors.

With the exploration and drilling in the West Teesdale area, which is a current focus of Alcoa's, two areas stand out as having a concentration of bauxite. The area down Farley Road should not be mined due to the necessary inclusion of tandem truck movements taking bauxite out to the Pinjarra–Williams Road. Mining in the Farley Road area would result in visual impact and traffic impacts to resident and recreational road users. Farley Walk Trail users would be impacted and those normally accessing the Scarp Pool area for hiking, camping, swimming and picnicking including educational groups from Christchurch would also feel the impact.

There are also other group facilities in the Farley Road area which would be impacted. Traffic impact would be huge to locals, tourists and recreationalists entering and using Dwellingup from the Pinjarra–Williams Road and anyone accessing the Scarp Recreation Areas along any of the major roads leading to Scarp Pool. The Farley Road area is particularly valuable with its old-growth forest and jarrah stands where no record of harvesting has been found. Timber last harvested prior to 1986 (but not since) is also prevalent in this area, giving it another level of value also shared in some areas around the Dwellingup townsite. Protecting this area is critical to maintaining the mosaic of management techniques, regimes and associated diversity. It could be that the Proposed National Park area to the south is extended up to protect this area also rich in containing more than a half dozen Research Plots and the area of old growth forest.

Marrinup is another major area of focus for Alcoa. The Marrinup area has been controversial historically ever since the Prisoner of War Camp was discovered in this area through exploration activities. The former golf course has now been leased to the Murray District Carriage Club, whose members use the surrounding forest tracks for events as well as to travel to and from the facility from their surrounding private properties. Events also include mountain bike groups. The forest quality and pole stand areas are remarkable and much further to the north east, old growth forest can be found in within one of the two proposed conservation parks in this area just north of Oakley Falls.

The Marrinup area is used for events including national events often with international visitors. The Turner Hill and Marrinup Mountain Bike Trail areas link the Dwellingup townsite and the Murray Valley. The annual Dwellingup 100

mountain biking event is becoming a very popular event growing each year. Trails in Marrinup include the Marrinup Bridle Trail and a walking track to Marrinup Falls. Marrinup Townsite is a historic townsite, having a rich well documented history useful for developing interpretive material for onsite panels linked to smart phone and tablet information going back to the Marrinup Mill and Blackburn Boarding house opened in 1910.

It is neither ethical nor moral to pursue further bauxite mining in the Marrinup area given its history. The impact historically included flying debris and an associated 'no-fly zone' above areas being blasted, as the Del Park Mine Site came closer and closer to the centre of Town. Correspondence included a pending lawsuit for property damage and involvement of a Commonwealth Government Senator, Peter Cook supporting the cause for this area's protection. The history of this area would also suggest that it should already be protected within the Forest Green Belt and or the "Indefinitely Deferred Zone" northwest of Dwellingup as determined by the Minister for Mines and Petroleum in the 1980s (See Resources Document).

A Forest Green Belt was established in the late 1970s and the Dwellingup Progress Association set up a Green Belt Committee which spent years protecting this area from being mined. The then Minister for Minerals and Energy David Parker was convinced by Dwellingup residents that protection of this area from bauxite mining was important, and a letter from Alcoa's Executive Director WA Operations Roger AG Vines stated: "Following a detailed process of study and consultation, it was determined that accessing the bauxite close to Dwellingup is not acceptable in all circumstances ... It is proposed therefore that mining will cease in the Del Park area around 1989 and be replicated by additional bauxite mining in the Huntly vicinity." A petition signed by more than 300 people was submitted to the Minister for Minerals and Energy in the late 1970s, which stated: "In view that a Greenbelt has been established around Dwellingup in consultation with the Mine Management Planning Group to protect the Town from the deleterious effect of Bauxite Mining, we the undersigned object strongly to the present proposed Five-Year Mining Plan which disregards the established Greenbelt."

Similarly commencing over the Easter long weekend in 2017, a petition was signed and presented to parliament with over 1,300 signatures which states: "We the undersigned are concerned citizens who urge our leaders to act now to protect DWELLINGUP and its surrounds, by the creation of a Discovery Forest area (MINING EXCLUSION ZONE.)"

Colin J Agnew, formerly Manager of Mines, Alcoa, stated at a public meeting in Dwellingup attended by more than 100 people on 22 February 1978 that mining exclusion would not affect the profitability or viability of the overall operation. Similarly, the analysis of the Technical Advisory Group Report to the

Environmental Protection Authority (pp. 22–24) that excluding the greenbelt area would be insignificant and that “no cost would be involved in ‘foregoing’ some remaining ore bodies in the Darling Range.”

It continued: “Mining should be directed to areas where the loss of the existing use is of least consequence for timber production, water supply, recreation, science and conservation” and “Any net loss to the industry has to be weighed against net gains from forestry, recreation opportunity, scientific areas, water supplies or conservation of flora and fauna”. This was in the late 1970s to the mid-1980s, and today the stakeholders include a much greater range of scientists, educational institutions, recreationalists, international, national, regional and local tourists and other associated public interest groups as well as residents.

Indicative key stakeholder and public-interest groups

Shire of Murray

Alcoa

Department of Biodiversity, Conservation and Attractions

Department of Jobs, Tourism, Science and Innovation

Department of Mines, Industry Regulation and Safety

Mines and Management Program Liaison Group

Department of Water and Environmental Regulation

Australian, Western Australian and Southwest Mountain Bike Associations

West Cycle Mountain Bike Development Manager

Murray Districts Carriage Clubs

Bibbulmun Track Foundation

Munda Biddi Trail Foundation

Federation of Western Australian Bushwalker Inc (Bushwalking WA)

Bushwalks in the Perth Region (WalkGPS)

Southwest Land and Sea Council

Hotham Valley Railway

Outdoor-education school groups using Icy Creek, Nanga or Forest Lodge (more than 50 per year)

Trinity College, Scotch College, Christchurch and Saint Stevens' outdoor education centres

Forest Heritage Centre

Tourism and hospitality businesses and accommodation service providers

Centre of Excellence for Climate Change, Woodland and Forest Health, Murdoch University

Peel Harvey Catchment Council

Peel Development Commission

Summary and Conclusion

Premier and Ministerial intervention resulted from historic Dwellingup community involvement in the late 70s and mid 80s with the creation of an 'indefinitely deferred zone' north west of Dwellingup. Later in 2006 Mark McGowan then Minister of the Environment created a further "deferred indefinitely zone" in the Murray Valley south of Dwellingup. An "Indefinitely Deferred Zone" will be pursued for the Dwellingup Discovery Forest Area.

Traditional forest multiple use values have always included: Recreation, Scientific Study and Education while bauxite mining is well known to be a non-renewable resource and is widely recognised as a once off non-sustainable use. The Lane Poole Reserve and Proposed Reserve Additions Management is well over due for its implementation for actions on all the proposed reserves to be created and needs to include a Dwellingup Discover Forest and the consolidation of the fragmentation which has been allowed to occur within the reserve from bauxite mining.

In addition to the forest track impacts from exploration drilling and access restrictions, the landscape visual and noise impacts are currently affecting both residents and visitors. Dwellingup will eventually be an island surrounded by Bauxite Mining Rehabilitation and associated infrastructure with increased bushfire threats. The bauxite mining exclusion zone proposed is less than 1% of the total area of Alcoa's lease area so the Dwellingup Community do not believe it is a lot to ask.

The Perth Peel Mountain Bike documents and the Peel Regional Trail Initiative are very important as they represent ongoing community consultation and have captured a very rapidly growing recreational interest in the Dwellingup area. Trails and adventures include vehicles with guided and self-guided vehicle tours, horseback, horse and carriage, walking as well as canoeing/rafting coupled with steam train rides and mountain biking. The mountain bike strategies have not only included bringing on board the growing public interest groups but also the relevant land managers and sport and recreation agencies.

Dwellingup's current and long-term future will be dependent on nature based tourism for an economically sustainable Dwellingup community including a range of new jobs into the future. Dwellingup has made the transition from a Mining/Timber Town to a Tourist Town and the town's future potential needs to be protected.

The Dwellingup Discovery Forest (Mining Exclusion Area) has many more values than the rest of the Lane Poole Reserve combined. These are centred in and around Dwellingup. Values which have been identified are tourism assets for on-site and remote interpretive information. When mining occurs, these sites are lost forever.

The intent of bauxite mining rehabilitation is to recreate the natural forest, but starting all over with different hydrological soil profiles & more complex management regimes, means a lot of uncertainty about sustainability success and time frames. "Tourism development in natural settings can only be sustainable if the land resource is not degraded." (Regional Forest Agreement for WA)

The jarrah forest is the only forest in the world in such an extreme Mediterranean climate featuring jarrah sinker roots which reach groundwater at great depths. The Dwellingup forests are tall and straight, there are monitoring plots all through the forest in and around Dwellingup. The team of 26 leading ecologists from the Australian Innovative Research Universities have concluded that our grandchildren may never get to see the northern jarrah forest, which runs from the Perth Hills south to Collie. The Northern Jarrah forest as a unique and sensitive ecosystem and one of the ten most vulnerable ecosystems in Australia needs a mosaic of management techniques retained and monitored in and around Dwellingup to ensure its survival. The Dwellingup Discovery Forest area including demonstration forest areas is linked to the history of settlement within the Dwellingup area. Forest management techniques can be interpreted with signage, links to websites and coupled with nature based tourism for a more sophisticated audience of jarrah forest enthusiasts. For example:

Five management technique areas can be identified based on historic practices:

1. 1870s to 1920; uncontrolled cutting
2. 1920s to 1940; earlier application of silvicultural principles and use of the group selection method
3. 1940s to the mid 1960; less intensive but more extensive cutting
4. mid 1960s to 1984; a slight intensification of cutting
5. 1984 to 2003; the reintroduction of silvicultural methods based on groups of trees that could be managed to achieve objectives such as promoting growth on regrowth trees, establishment of regeneration or release of regeneration
6. 2003 to 2013; Silvicultural practices of the jarrah forest are reviewed through a comprehensive internal and external review process that runs in parallel with the development of Forest Management Plans.

Noise from Alcoa's Orion Mine site has been disrupting the function of a dozen or more environmental education establishments near the Orion Mine Site Area with the Icy Creek Outdoor environmental education facility having been impacted through closure for over six years now. This has meant that a decrease of 5,000 visitors a year estimated from the management plan for the Lane Poole Reserve has resulted with loss of contribution to businesses in Dwellingup and student outdoor environmental education programs. Schools impacted include Swan View, Lesmurdie, Duncraig, Leeming, Applecross, Harvey, Kalamunda, and Rossmoyne Senior High Schools and Santa Maria, Armadale, Methodist Ladies, Helena, Presbyterian Ladies and Penrose College.

As an Attraction a Dwellingup Discovery Forest will help raise the profile of Dwellingup to complement the National Trails Adventure and Townsite Green Precinct initiatives. Working closely with the recreational, scientific and educational communities is critical.

In summary, the Dwellingup Community does not support any bauxite mining within the Dwellingup Discovery Forest area and sees that the scientific, educational and nature based tourism communities need to be included as a bare minimum for adequate consultation to be met:

- From a wholistic perspective, multiple cumulative socio-economic impacts to values and opportunities are huge, with the wide range of stakeholders and public interest groups affected.

- The long-term environmental but also socio-economic impact considerations need to include that bauxite mining creates start over rehabilitation areas with lag periods of between 100 to 300 years before any ecosystem can be assessed to be sustainable and or fully functional again.
- Bauxite mining within the Dwellingup Discovery Forest (mining exclusion zone) will result in the permanent loss of natural cultural scientific study and education values, assets and monitoring sites critical to the future survival of the northern jarrah forest.
- Irreversible socio-economic impacts to the town will include not being able to reach its full tourism national and international potential such as has been able to occur in other similar iconic WA attractions like Rottnest and Kings Park.

Bibliography

Abbott, I. (1992) Prodrumus of the occurrence and distribution of insect species in the forested part of southwest Western Australia. CALM Science 1(4): 365-464.

Abbott, I. (1998) Detecting areas with high levels of faunal species richness – a preliminary study. A report prepared for the Regional Forest Agreement, Western Australia. Commonwealth & Western Australian Regional Forest Agreement Steering Committee.

Abbott, I., Burbidge, T., Williams, M. and Van Heurck, P. (1992) Arthropod fauna of jarrah (*Eucalyptus marginata*) foliage in Mediterranean forest of Western Australia: spatial and temporal variation in abundance, biomass, guild structure and species composition. Aust. J. of Ecology 17: 263-274.

Alcoa of Australia (1994) Wagerup Alumina Refinery: Consultative Environmental Review – Expansion of Alumina Production to 3.3 Million Tonnes Per Annum. WA.

Armstrong, R. (2004b) Ecologically based fire management – integration of multiple land use objectives. 11th Annual AFAC Conference and Inaugural Bushfire CRC Conference, 7-9 October, 2004, Perth.

Australia ICOMOS (2000) The Burra Charter: the Australia ICOMOC charter for places of cultural significance. Australia ICOMOS Incorporated.

Bamford, M.J. and Roberts, J.D. (2003) The impact of fire on frogs and reptiles in south-west Western Australia.

Abbott, I. and Burrows, N. (ed.) Fire in ecosystems of the south-west of Western Australia: impacts and management. Backhuys Publishers, Leiden: 349-361.

Burbidge, A.H. (2003) Birds and fire in the Mediterranean climate of south-west Western Australia.

Abbott, I. and Burrows, N. (ed.) Fire in ecosystems of the south-west of Western Australia: impacts and management. Backhuys Publishers, Leiden: 321-347.

Burrows, N.D. (2004) Fire management strategies for a south west Australian biodiversity hotspot.

Burrows, N.D. and Friend, G. (1998) Biological indicators of appropriate fire regimes in south west Australian ecosystems. In T. Pruden and L. Brennan (ed.) Fire in ecosystem management: shifting the paradigm from suppression to prescription. Tall Timbers Fire Ecology Conference Proceedings, No. 20. Tall Timbers Research Station, Tallahassee.

Burrows, N.D. and Wardell-Johnson, G. (2003) Fire and plant interactions in forested ecosystems of south-west Western Australia. In Abbott, I. and Burrows, N. (ed.) Fire in ecosystems of the south-west of western Australia: impacts and management. Backhuys Publishers, Leiden: 225-268.

Burrows, N.D., Tillman, J. and Maxwell, M. (2005) Implementation of adaptive fire management: Interim guidelines for forest populations of quokka; Presentation on prescribed burn outcomes at Mowen Block –Blackwood District (*Setonix brachyurus*). Department of Conservation and Land Management – 15/08/05.

Burrows, N.D., Ward, B. and Robinson, A.D. (1995) Jarrah forest fire history from stem analysis and anthropological evidence. *Australian Forestry* 58(1): 7-16.

Burrows, N.D., Ward, B. and Robinson, A.D. (1999) The role of indicators in developing appropriate fire regimes. Proceedings from the Australian Bush Fire Conference, 7-9 July 1999, Albury, Australia.

CALM (1990) Lane Poole Reserve Management Plan 1990-2000. Department of Conservation and Land Management, Perth.

CALM (1994) Reading the remote: Landscape characters of Western Australia. Department of Conservation and Land Management, Perth.

CALM (2003a) Establishment of Comprehensive, Adequate and Representative Terrestrial Conservation Reserve System in Western Australia. Department of Conservation and Land Management, Perth.

CALM (2004) Lane Poole National Park Visitor Survey Program: December 2003 – January 2004 & March - April 2004. A report on the findings of visitor survey feedback form. Department of Conservation and Land Management, WA.

CALM (2005b) Lane Poole Reserve visitor survey program: January 2005 – April 2005 – A report on the findings from the visitor feedback form. Department of Conservation and Land Management, Perth.

CALM (2005c) Swan Region Direction for Visitor Services 2005-2025. Department of Conservation and Land Management. September 2005

CALM (2006a) Conservation and Land Management Annual Report 2005-2006. http://www.naturebase.net/component/option,com_docman/task,doc_download/gid,217/Itemid,711/

CALM (2006b) Mountain Bike Management Guidelines – Draft. Department of Conservation and Land Management, WA.

CALM (2006c) Murray Plantation Harvesting Operation – Visual Landscape Management Assessment. Department of Conservation and Land Management, WA. February 2006, revised from March 2005.

Christensen, P. (1997) A review of the knowledge of the effects of key disturbances on fauna in the south-west forest region. A report to the Commonwealth and Western Australian Governments for the Western Australian Regional Forest Agreement.

Churchward, H.M. and Dimmock, G.M. (1989) The soils and landforms of the northern jarrah forest. In Dell, B., Havel, J.J. and Makajczuk, N. (eds) The jarrah forest. Kluwer Academic Publishers, Netherlands: pp13-21.

Clark, R.N. and Stankey, G.H. (1979) The Recreation Opportunity Spectrum: A Framework for Planning ,Management and Research. US Department of Agriculture. Forest Service. General Technical Report PNW 9.

- Conservation Commission (2004) Forest management plan 2004-2013. Conservation Commission of Western Australia, Perth.
- Conservation Commission (2006) Policy Statement 3 - Basic raw materials: Government and local government access to conservation estate (national parks, nature reserves and conservation parks).
- Conservation Commission of Western Australia, Perth, July 2006.
- Conservation International (2006) Biodiversity hotspots – Southwest Australia – Overview. <http://www.biodiversityhotspots.org/xp/Hotspots/australia/>. Accessed 2 August 2006.
- CSIRO (2001) Climate Change: Projections for Australia. Commonwealth Scientific and Industrial Research Organisation, Climate Impact Group, Aspendale, Victoria. www.dar.csiro.au/publications/projections2001.pdf.
- CSIRO (2007) Climate Change in Australia. Commonwealth Scientific and Industrial Research Organisation and Bureau of Meteorology. Australia. Technical Report 2007.
- de Tores, P., Hayward, M.W. and Rosier, S.M. (2004) The western ringtail possum, *Pseudocheirus occidentalis*, and the quokka, *Setonix brachyurus*. Case studies for the February 2003 review of Western Shield. *Science Western Australia*. 5(2): 235-257.
- de Tores, P., Hayward, M.W., Dillon, M.J. and Brazell, R. (2007) Review of the distribution, causes for the decline and recommendations for management of the quokka, *Setonix brachyurus* (Macropodidae:Marsupialia), an endemic macropod marsupial from south-west Western Australia. *Conservation Science Western Australia*. 6(1): 13-73.
- DEC (2008c) Wellington National park, Westralia Conservation Park and Wellington Discovery Forest Management Plan. Department of Environment and Conservation, WA.
- Department of Sport and Recreation (1984) A survey of visitors to the Murray Valley, Western Australia during Easter, 1984. In Lane-Poole Reserve Draft Management Plan, April 1986: Volume III Resource Document. Department of Conservation and Land Management, Perth.

Department of the Environment and Heritage (2004) National Biodiversity and Climate Action Plan 2004-2007
<http://www.deh.gov.au/biodiversity/publications/nbccap>. Accessed June 2005.

EPA (2006) Position Statement No. 9 – Environmental Offsets. Environmental Protection Authority, Perth, Western Australia

Forest Department WA (1969) 50 years of forestry in Western Australia. Forests Department, supplement to the 1968/9 Annual Report, 90pp. Forest Department of Western Australia.

M. Leonard, A. MacLean and I. Sieler (eds) Management of fire for the conservation of biodiversity: workshop proceedings. Fire Ecology Working Group, Department of Natural Resources and Environment, Victoria.

Goeft, U. and Alder, J. (2000) Mountain bike rider preferences and perceptions in the south-west of Western Australia. CALMScience 3(2): 261-275.

Hallam, S.J. (2002) Peopled landscapes in southwestern Australia in the early 1800s: Aboriginal burning off in the light of Western Australian historical documents. Talk to the Royal Western Australian Historical Society.

Hassell C.W. and Dodson, J.R. (2003) The fire history of south-west Western Australia prior to European settlement in 1826-1829. In Abbott, I. and Burrows, N. (ed) Fire in ecosystems of the south-west of Western Australia: impacts and management. Backhuys Publishers, Leiden: 71-85.

Hayward, M., de Tores, P., Dillon, M. and Fox, B. (2003) Local population structure of a naturally occurring metapopulation of the quokka (*Setonix brachyurus* Macropodidae: Marsupialia). Biological Conservation 110, 343-355.

Inions, G.B., Tanton, M.T. and Davey, S. (1989) Effect of fire on the availability of hollows in trees used by the Common brushtail possum, *Trichosurus vulpecula* Kerr, 1792, and the Ringtail possum, *Pseudocheirus peregrinus* Boddaerts, 1785. Australian Wildlife Research 16: 449-458.

IPCC (2001) Climate Change: Impacts, Adaptation and Vulnerability. Summary for Policymakers. Intergovernmental Panel on Climate Change.
<http://www.unep.ch/ipcc>. Accessed June 2005.

Kanowski, P.J., Cork, S.J., Lamb, D. and Dudley, N. (2001) Assessing success of off-reserve forest management in contributing to biodiversity conservation. In Raison,

- R.J., Brown, A.G. and Flinn, D.W. (eds) *Criteria and Indicators for Sustainable Forest Management*. IUFRO 7 Research Series. CABI Publishing, United Kingdom.
- Kershaw, A.P. (1986) Climate change and Aboriginal burning in north-east Australia during the last two glacial/interglacial cycles. *Nature* 322: 47-49.
- Majer, J.D. and Abbott, I. (1989) Invertebrates of the jarrah forest. In: Dell, B., Havel, J.J. and
- Mattiske, E.M. and Havel, J.J. (1998) Regional Forest agreement vegetation complexes. Department of Conservation and Land Management.
- Mattiske, E.M. and Havel, J.J. (2004) Delineation of Landscape Conservation Units in Southwest Region of Western Australia. Report prepared for the Department of Conservation and Land Management WA.
- McArthur, W.M., Churchward, H.M. and Hick, P.T. (1977) Landforms and soils of the Murray River Catchment area of Western Australia. Land Resources Management Series No. 3, Division of Land Resources Management CSIRO, Melbourne.
- McKenzie, N., Hopper, S. Wardell-Johnsons, G. and Gibson, N. (1996) Assessing the conservation reserve system in the Jarrah Forest Bioregion. In: *Journal of the Royal Society of Western Australia*, 79:241-248, 1996. Royal Society of WA, Perth.
- Muench, R. (2001) Southern Darling Range regional recreational study August 2001. Unpublished report prepared for the Department of Conservation and Land Management, Water Corporation and Water and Rivers Commission.
- Muir, B. (1986) Vegetation and flora of Lane Poole Reserve. Lane Poole Reserve draft management plan: April 1986 volume III resource document. Department of Conservation and Land Management, Perth, Western Australia.
- Nichols, O.G. and Muir, B. (1998) Vertebrates of the jarrah forest. In Dell, B., Havel, J.J. and Malajczuk, N. (eds). *The Jarrah Forest*, 133-153.
- Rodger, G.J. (1961) Report of the Royal Commission: Appointed to enquire into and report upon the bush fires of December, 1960 and January, February and March, 1961 in Western Australia, the measures necessary or desirable to prevent and control such fires and to protect life and property in the future, and the basic requirements for an effective state fire emergency organisation. Perth, WA.
- Shire of Murray (2005) Environmental Health,

http://www.murray.wa.gov.au/planning_building_health/environmental_health.html. Accessed 23/11/2005.

Underwood, R.J. and Christensen, P.E.S. (1981) Forest fire management in Western Australia. Special Focus No. 1, Forests Department of Western Australia.

van Heurck, P. and Abbott, I. (2003) Fire and terrestrial invertebrates in south-west Western Australia. In

Abbott, I. and Burrows, N. (eds.) Fire in ecosystems of the south-west of Western Australia: impacts and management. Backhuys Publishers, Leiden: 291-319.

Williams, A.A.J., Karoly, D.J. and Tapper, N. (2001) The sensitivity of Australian fire danger to climate change. *Climatic Change* 49: 171-191.

WRC (2003b) Policy and Guidelines for Recreation within Public Drinking Water Source Areas on Crown Land. Statewide Policy No. 13. Water and Rivers Commission.

Wykes, B.J. (1983) The Jarrah avifauna and its re-establishment after bauxite mining. School of Biology, Institute of Technology, WA. Bulletin No. 11.

Yates, C.J., Abbott, I., Hopper, S.D. and Coates, D.J. (2003) Fire as a determinant of rarity in the south-west Western Australian global biodiversity hotspot.