



**2022 Rehabilitation
Report**

Holcim Quarry Mt Shamrock





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Report prepared by: Andrew Clarke and Gerry Ho

Site Location: Holcim Mt Shamrock Quarry Mt Shamrock Rd, Pakenham Upper, Vic

Client: Leigh Elliott – Quarry Manager. Mt Shamrock Quarry, Holcim

Contact: 0457 590 161

Project Manager: Jarrod Fleming 0434 359 164

Project Leader: Andrew Clarke 0477 086 784



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Report Scope

This report addresses all revegetation and maintenance works carried out by Naturelinks over the period of 2022. Works were undertaken in the following areas depicted in Figure 1: Phase A & B (Teal), 0.8 Hectare (Green), Southern Extraction (Red), South-East Extraction (Blue), Extraction (Orange), Phase C (White), Landslip (Pink), 1.2 Hectare (Magenta), Paddock Replacement (Peach) and Net Gain (Yellow). This report outlines issues encountered and management challenges identified throughout the rehabilitation process. Following this a summary of proposed future management actions is detailed.



Figure 1: Scope of report and individual sites at Holcim Mt Shamrock Quarry.



Revegetation Approach

Holcim Quarry Mt Shamrock falls within State of Victoria's Ecological Vegetation Class (EVC) 16 Lowland Forest, and species for revegetation are selected based on this EVC.

However, for the following sites South East Extraction, Southern Extraction, .8 Hectare and 1.2 Hectare, we perceive that site conditions fall outside EVC 16. These sites are north and north-east facing with dry conditions with exposure to high winds, whereas Lowland Forests typically exist in areas of high soil fertility and relatively high rainfall. Indeed, in early years of revegetation survival of many species was low. Consequently, Naturelinks sought to expand species diversity to accommodate these site conditions to select a more dry tolerant species range.

To determine relevant dry tolerant species Naturelinks previously undertook desktop analysis using the Victorian Government "Naturekit" website.

(<https://www.environment.vic.gov.au/biodiversity/naturekit>) and located several parcels of native vegetation for all three EVC's 16, 45 and 128 within 5 km of Mt Shamrock. Naturelinks conducted on-ground species surveys in two reference areas containing these EVCs:

- RJ Chambers Flora and Fauna Reserve - Lowland Forest EVC 16 vegetation, and Shrubby Foothill Forest EVC 45 within 5 km of Mt Shamrock at RJ.
- Beaconsfield Nature Conservation Reserve - Grassy Forest EVC 128

Species in these EVC's which were also found existing in similar conditions as that found at Mt Shamrock (considering slope, soil type and aspect) were considered appropriate for future planting lists. Species from EVC's 128 and 45 were sought due to their existence within a broader category of Dry Forests, a category which Lowland Forest does not fall within.

All seed and tube stock for revegetation are sourced locally (within 5 km).

Works & Management Recommendations

South-East Extraction Area

The South-East extraction area consists of two sections depicted in Figure 2; (a) in blue and (b) in pink. In 2022 66 indigenous species and 54 weed species were recorded.

2022 Works

Planting survival has showed continued improvement due to an expanded range of dry tolerant species (Table 1). Naturelinks has continued targeted infill planting to expand diversity range with mostly shrubs such as Common Rice-flower *Pimelea humilis*, Austral Indigo *Indigofera australis*, and Mountain Grevillea *Grevillea alipina*. Expanded native species coverage by undertaking exotic weed control and planting small number of dry tolerant shrub species to the east of area B ridgeline and back slope.



Figure 2: South-East Extraction areas A (blue) and B (pink). Boot hold point (red)



Figure 3: Southern Extraction areas of note

Broad-leaf weeds including Sow Thistle (*Sonchus spp*), Fleabane (*Conyza spp*), Wild Radish (*Raphanus raphanistrum*) have been treated through herbicide application with knapsacks. These works are a continuation of restoration works undertake in previous years. Area marked red (Figure 3) which in 2020 and 2021 was subject to an incursion of Pigeon Grass (*Setaria sp.*) has now been partially invaded by Toowoomba Canary Grass (*Phalaris aquatica*). This area has now again being brush cut and targeted weed spraying has commenced to encourage native grass species to replace exotics using best land management techniques.

Chilean needle grass (*Nassella neesiana*) infestations located west of the access road towards the bottom of the slope has increased despite herbicide application since 2021, (area in pink in Figure 3). In response Chilean Needle Grass herbicide control has intensified with treatment undertaken earlier in the season before seeding has taken place.

Table 1. List of species planted South-Eastern Extraction in 2022.

Species	Common Name	No.
<i>Ampera xiphioclada</i> var. <i>xiphioclada</i>	Broom Spurge	25
<i>Daviesia leptophylla</i>	Narrow-leaf Bitter-pea	25
<i>Epacris impressa</i>	Common Heath	50
<i>Eucalyptus baxteri</i>	Brown Stringybark	25
<i>Grevillea alpina</i> (Southern Hills Form)	Mountain Grevillea	50
<i>Indigofera australis</i>	Austral Indigo	25
<i>Pimelea flava</i> ssp. <i>flava</i>	Yellow Rice-flower	25
<i>Pimelea humilis</i>	Common Rice-flower	50
<i>Ozothamnus rosmarinifolius</i>	Rosemary Everlasting	25
Total		300

Future Management Recommendations

The recommendations for the south-eastern extraction area include:

- Continued herbicide application to Chilean needle grass.
- Continued slashing and selective herbicide application to perennial exotic grasses.
- Maintain broadleaf-selective herbicide application.
- Continuation of plantings of dry-tolerant mid and lower story species along ridgeline and back slope to expand revegetation zone and reduce weed coverage (Table 2).

Table 2. List of recommended species for planting in South-Eastern Extraction Area in 2023.

Species	Common Name
<i>Acacia dealbata</i> ssp. <i>dealbata</i>	Silver Wattle
<i>Acacia pycnantha</i>	Golden Wattle
<i>Astroloma humifusum</i>	Cranberry Heath
<i>Bursaria spinosa</i> ssp. <i>spinosa</i>	Sweet Bursaria
<i>Daviesia leptophylla</i>	Narrow-leaf Bitter-pea
<i>Eucalyptus dives</i>	Broad-leafed Peppermint
<i>Eucalyptus radiata</i>	Narrow-leafed Peppermint
<i>Leptospermum myrsinoides</i>	Heath Tea-tree
<i>Lomandra longifolia</i> var. <i>exilis</i>	Cluster-headed Mat-rush
<i>Persoonia juniperina</i>	Prickly Geebung
<i>Poa labillardierei</i> var. <i>labillardierei</i>	Common Tussock-grass

Southern Extraction Area

Southern Extraction is a North facing slope that starts from the viewing area that adjoins South Eastern Extraction to its east and .8 hectare reveg to its west. In 2022 57 indigenous species and 47 weed species were recorded.



Figure 4: Southern Extraction

2022 Works

Control of Toowoomba Canary Grass has been undertaken by brush cutting to the ground with herbicide spraying targeting regrowth 4 – 6 weeks later, with a 50% success rate. This led to an increase in annual grassy weed growth as expected but an overall biomass reduction was still achieved. The increase in annual grassy weeds growth will be addressed in the following year.

Chilean Needle Grass continues to be treated with herbicide which expanded coverage from the previous year. This could be explained by the reduced visibility of Chilean Needle Grass germinates by annual grassy weed growth, precluding herbicide treatment during germination period. However, Chilean Needle Grass were successfully targeted during their mature stage before seeding has taken place, and it is expected that the seed bank would see a reduction from previous years.

Broadleaf weed control continued from previous gains with Wild Radish *Raphanus raphanistrum* specifically targeted.

Infill planting of dry tolerant species continued increasing diversity as well as indigenous canopy and understory coverage. Austral Indigo *Indigofera australis*, Yarra Burgan *Kunzea leptospermoides* and Silky Tea-tree *Leptospermum myrsinoides* were added to species range for the site.

Table 3. List of species planted within Southern Extraction in 2022.

Species	Common Name	No.
<i>Banksia marginata</i>	Silver Banksia	25
<i>Indigofera australis</i>	Austral Indigo	25
<i>Kunzea leptospermoides</i>	Yarra Burgan	25
<i>Leptospermum myrsinoides</i>	Heath Tea-tree, Silky Tea-tree	25
Total		100

Future Management Recommendations

The recommendations for the Southern extraction include:

- Continue targeting of *Phalaris aquatica* via slashing and follow up herbicide application in 2023 to encourage native germination
- Continual management of broad-leaf exotic species with selective herbicide application.
- Continual management of Chilean needle grass via herbicide application.
- Plant additional drought tolerant species (Table 4).

Table 4. List of recommended species for planting within the Southern Extraction Area in 2023.

Species	Common Name
<i>Astroloma humifusum</i>	Cranberry Heath
<i>Banksia spinulosa</i> var. <i>cunninghamii</i>	Hairpin Banksia
<i>Daviesia leptophylla</i>	Narrow-leaf Bitter-pea
<i>Eucalyptus baxteri</i>	Brown Stringybark
<i>Eucalyptus dives</i>	Broad-leafed Peppermint
<i>Lomandra longifolia</i> var. <i>exilis</i>	Cluster-headed Mat-rush
<i>Persoonia juniperina</i>	Prickly Geebung
<i>Pimelea flava</i> ssp. <i>flava</i>	Yellow Rice-flower
<i>Pultanea gunnii</i> ssp. <i>gunnii</i>	Golden Bush-pea
<i>Pultanea scabra</i>	Rough Bush-Pea
<i>Poa labillardierei</i> var. <i>Labillardierei</i>	Common Tussock-grass

Extraction Site

The Extraction site is south facing starting from the ridgeline of the northern side of the quarry through to the base of current operational area. This is the first zone that Naturelinks direct seeded with native grass and planted. Extraction is the wettest of the revegetation zones with the wettest area marked in pink (Figure 5). However, a small rise south of the main access track that divides the site in half opposite and to the east of the cargo container is somewhat drier. Although not as dry as the revegetation zones to the south of the quarry, this areas conditions sits between the two and thus the species range chosen for revegetation varies accordingly. In 2022 77 indigenous species and 56 weed species were recorded.



Figure 5: Extraction area, Mt Shamrock Quarry

Works 2022

Broad leaf exotic species have been successfully managed in previous years thus requiring minimal management in 2022. Small amounts of thistle species (*Sonchus spp*), Wild Radish (*Raphanus raphanistrum*) and Blackberry *Rubus fructose agg.* required herbicide treatment.

Exotic grass species prevalent within the site include Toowoomba Canary Grass (*Phalaris aquatica*), Cocksfoot (*Dactylis glomerata*), Caterpillar Grass (*Paspalum dilatatum*) and Kikuyu (*Chenchrus clandestinum*).

Plantings focused on increasing diversity in the area above the main access track that divides the site into top and bottom sections. Species selected were those adapted to wetter conditions with the exception of Chocolate Lilies *Anthropodium strictum*, Wattle Mat-rush *Lomandra filiformis ssp. filiformis* and Wattle Mat-rush *Lomandra filiformis ssp. coriacea* which were planted at a small open area at the top of the site (Table 5).

Table 5. List of species planted within the Extraction Area in 2022

Species	Common Name	No.
<i>Ampera xiphoclada var. xiphoclada</i>	Broom Spurge	25
<i>Anthropodium strictum</i>	Chocolate Lily	50
<i>Correa reflexa var. lobatus</i>	Powelltown Correa	25
<i>Epacris impressa</i>	Common Heath	25
<i>Lomandra filiformis ssp. filiformis</i>	Wattle Mat-rush	25
<i>Lomandra filiformis ssp. coriacea</i>	Wattle Mat-rush	25
<i>Ozothamnus rosmarinifolius</i>	Rosemary Everlasting	25
<i>Polyscias sambucifolia ssp. 3</i>	Elderberry Panax	50
Total		250

Future Management Recommendations

The recommendations for the Extraction area include:

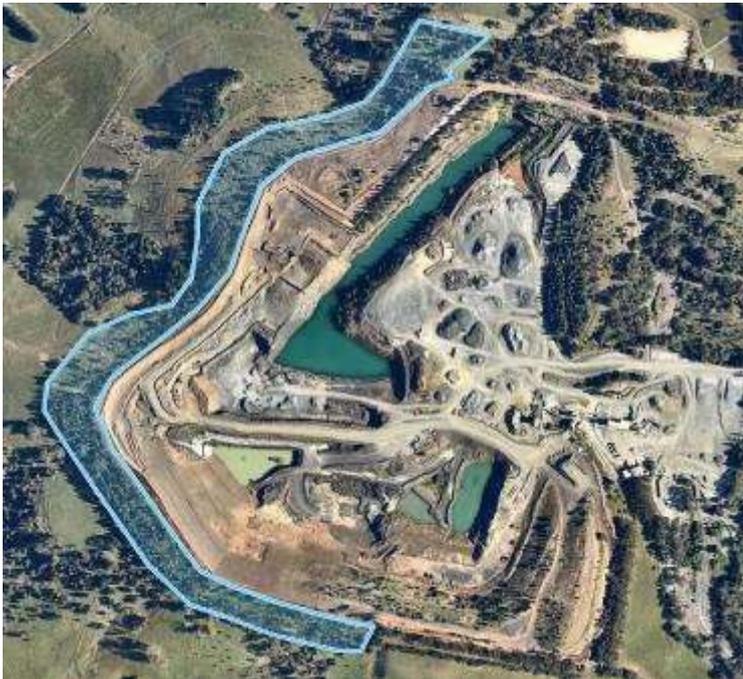
- Planting of small dry tolerant shrubs on rise below main access track (Table 6).
- Targeting broad leaf exotic species and blackberry with herbicide application by knapsack.

Table 6. List of recommended species for planting in the Extraction Area in 2023.

Species	Common Name
<i>Pimelea humilis</i>	Common Rice-flower
<i>Pultanaea scabra</i>	Rough Bush-Pea
<i>Pultanaea gunnii ssp. gunnii</i>	Golden Bush-pea

Phase A & B Site

The Phase A and B site encompasses a planted area bordering the outer quarry fence-line to act as a visual barrier as well as a screen for noise and dust pollution.



2022 Works

Weed control focusing on thistle species and blackberry was undertaken prior to planting. A Chilean Needle Grass infestation located behind the quarry is encroaching into a section of Phase A & B. This could be the likely source of other quarry infestations in the managed zones. .

Evidence of Deer are continuing to cause damage to softwood trees and shrubs particular Banksia species. Damage includes removing bark or damaging and breaking the main stem. It has been noted that damage by deer and visual sightings are noticeably increasing.

250 trees were planted in areas with die off from the northern end planting southward. Previous years' planting have been subjected to damaging grazing by deer and collision of guarded trees by Kangaroos. Large guards had been mounted with a single stake which provided insufficient protection, many being found scattered and broken throughout planting zone. To address this, a second stake was used to lessen damage by deer and kangaroos which appears to of been largely successful. This will be monitored over the next year.

Table 7. List of tree and shrubs planted within the Phase A & B area in 2022

Species	Common Name	No.
<i>Acacia mearnsii</i>	Black Wattle	100
<i>Acacia pycnantha</i>	Golden Wattle	50
<i>Eucalyptus baxteri</i>	Brown Stringybark	50
<i>Eucalyptus radiata</i>	Narrow-leaf Peppermint	50
Total		250

Future Management Recommendations

The recommendations for Phase A & B include:

- Follow up annual targeted herbicide application of Chilean Needle Grass with the aim of eventual elimination is recommended.
- Conduct off site survey on Holcim owned properties to better understand infestations of Chilean Needle Grass encroaching on Phase A & B's future impact on rehabilitation.
- Herbicide application targeting blackberry in this area is recommended in the autumn of 2023.
- Continued managing thistle species by herbicide application using knapsack and tanker spray units.
- Additional plantings to be undertaken on the northern end of site to bolster screening for nearby stakeholders (Table 8).
- Recommend deer impact to be independently assessed by a pest management consultant and that repair of external fencing to be considered.
- Expand species diversity by planting a small number of over storey species (Table 8).

Table 8. List of recommended species for planting Phase A & B area in 2023

Species	Common Name
<i>Acacia mearnsii</i>	Black Wattle
<i>Eucalyptus baxteri</i>	Brown Stringybark
<i>Eucalyptus dives</i>	Broad-leafed Peppermint
<i>Eucalyptus goniocalyx</i>	Long Leafed Box, Bundy
<i>Eucalyptus Radiata ssp. radiata</i>	Narrow-leafed Peppermint)

Phase C Site

The Phase C site comprises of disturbed remnant and revegetated areas that border the Extraction site to the west. The most significant remnant areas include:

A small open area (yellow in Figure 7) northeast of Extraction where many Slender Sun-orchid (*Thelymitra pauciflora*) and Common Onion-orchid (*Microtis unifolia*) persist.

Gully north of the graveyard (orange in in Figure 7). Due to a wet winter and Spring in 2022, the gully provided a breeding ground for large numbers of native frogs. Additionally just north of the gully are two remnant adult Rough Tree-ferns (*Cyathea australis*) (Blue markers in in Figure 7) and a single remnant Clover Tree (*Goodia lotifolia*) (Green marker in Figure 7).

Other remnant vegetation includes two areas shown in red (Figure 7) containing scattered Tall Sword-sedge (*Lepidosperma elatius*) east of graveyard and north of Extraction.

Prevalent exotic species include Blackberry (*Rubus fruticosus* agg.), and Thistle species.

In 2022 51 indigenous species and 76 weed species were recorded.



Figure 7: Phase C, Mt Shamrock Quarry

Works 2022

Weed control in 2022 was undertaken by a combination of tanker and pack spraying for broadleaf weeds and blackberry. Woody weeds were targeted by pack spraying when small or cut and painted when larger. At the southern tip of the site marked in blue and to the south of the area marked in red (Figure 7), larger woody weeds too big for cut and paint remain. Some of these woody weeds border access roads that are actively used by mining vehicles and will be left for safety and visual screening purposes. But treatment of larger woody weeds requiring chain sawing which can be done safely and without undermining visual screening; works to be undertaken in 2023.

Planting was undertaken with wet tolerant eucalypt species in area marked in red to increase canopy cover. The rest of the plantings were in and around the gully, marked in orange with wet tolerant eucalyptus and shrub species. Lilies, sedges and grasses suited to season flooding, were located in and around the area of the gully which after heavy rain fills with water. This area provides habitat for several frog species.

Table 9. List of species planted Phase C in 2022

Species	Common Name	No.
<i>Bursaria spinosa ssp. Spinosa</i>	Sweet Bursaria	25
<i>Cyperus lucidus</i>	Leafy Flat-sedge	50
<i>Dianella tasmanica</i>	Tasman Flax-lily	25
<i>Eucalyptus cephalocarpa</i>	Silver-leafed Stringybark. Mealy Stringybark	50
<i>Eucalyptus ovata var. ovata</i>	Swamp Gum	75
<i>Ozothamnus rosmarinifolius</i>	Rosemary Everlasting	25
<i>Poa ensiformis</i>	Purple-sheath tussock-grass	50
Total		300

Future Management Recommendations

The recommendations for Phase C include:

- Continue control of broadleaf weeds and blackberry with herbicide.
- Chainsaw large woody weeds in area marked in blue and to the south of the area marked in red (See Figure 7).
- Increasing species diversity by planting a small number of Poweltown *Correa reflexa var. lobatus* (Table 10).

Table 10. List of recommended species for planting in the Phase C area in 2023

Species	Common Name
<i>Correa reflexa var. lobatus</i>	Poweltown Correa

0.8 Hectare Revegetation Site

The 0.8 Ha site is north facing slope adjacent to the Southern Extraction Zone (see fig 8). In 2022 38 indigenous species and 33 weed species were recorded.



Figure 8: 0.8Ha Revegetation Area

2022 Works

The area was direct seeded and first round of planting was undertaken in 2021. Survival rates overall for the first year for trees and shrubs was substantial with the exception of some areas in the top third (southern end), where conditions are drier and the top soil layer appears to be thinner. Second year infill plantings appear to be doing well, with the addition of a number of species better suited to more stabilised site conditions.

Losses were relatively high for Cluster-headed Mat-rush *Lomandra longifolia* var. *exilis* planted during winter 2022 due to accidental overspray from broadleaf control. Usually lilies and grasses are planted unguarded to limit labour and material costs. To address this issue in the early years of weed management, where broadleaf weed growth is high, they will be guarded in the same way as trees and shrubs.

Broadleaf weed control is progressing on target. Native grass coverage predominantly by Wallaby Grass (*Rytidosperma* spp.) now dominates the understory and produced a high volume of seed over the Christmas 2022 period, which is likely to germinate next winter.

Table 11. List of species planted within the 0.8 Hectare Revegetation Area in 2022

Species	Common Name	No.
<i>Acacia implexa</i>	Lightwood	50
<i>Acacia melanoxylon</i>	Blackwood	50
<i>Acacia pycnantha</i>	Golden Wattle	25
<i>Acacia stricta</i>	Hop Wattle, Straight Wattle	50
<i>Banksia marginata</i>	Silver Banksia	25
<i>Eucalyptus Radiata ssp. Radiata</i>	Narrow-leafed Peppermint	50
<i>Eucalyptus dives</i>	Broad-leafed Peppermint	25
<i>Eucalyptus goniacalyx</i>	Long Leafed Box, Bundy	25
<i>Eucalyptus oblique</i>	Messmate	25
<i>Eucalyptus viminalis ssp. Viminalis</i>	Manna Gum	25
<i>Kunzea leptospermoides</i>	Yarra Burgan	25
<i>Lomandra longifolia var. exilis</i>	Cluster-headed Mat-rush	200
Total		625

Future Management Recommendations

The recommendations for 0.8 hectare include:

- Continue targeting broadleaf exotic species with herbicide application.
- Continue expanding species diversity in particular shrub species more adapted to stabilised conditions (Table 12).
- Lily plantings to be double staked and guarded in the same way as trees and shrubs

Table 12. List of recommended species for planting in the 0.8 Hectare Revegetation Area in 2023

Species	Common Name	No.
<i>Acacia Verticillata ssp. Verticillata</i>	Prickly Moses	25
<i>Cassinia longifolia</i>	Long-leaf Cassinia	25
<i>Daviesia leptophylla</i>	Narrow-leaf Bitter-pea	25
<i>Dianella admixta</i>	Spreading Flax-lily	50
<i>Eucalyptus radiata</i>	Narrow-leafed Peppermint	25
<i>Grevillea alpina (Southern Hills Form)</i>	Mountain Grevillea	25
<i>Leptospermum myrsinoides</i>	Silky Tea-tree	25
<i>Lomandra longifolia var. exilis</i>	Cluster-headed Mat-rush	100
<i>Pimelea humilis</i>	Common Rice-flower	25
<i>Pultanaea gunnii ssp. gunnii</i>	Golden Bush-pea	25
Total		350

Landslip Sites

The Landslip sites for 2022 were three separate sites, the largest Mass 4 containing a small natural seasonal spring, south of the quarry in a fenced area surrounded by former grazing paddocks. The second Mass 5 is located a hundred meters to the south east of Mass 4 in an openly grazed paddock, is a circular scarp. The third Mass 13 is a small circular failure measuring about 2 meters across to the west of the quarry.



Figure 9. Mass 4

2022 Works

Mass 4: Revegetation of a range of deep rooted grasses, lily and wet tolerant eucalyptus and shrub species within, above and below circular failure and natural spring was undertaken. This site was covered in dense mostly exotic grassy vegetation that required extensive brush cutting to be undertaken prior to planting. There are several thickets of Blackberry *Rubus fruticosus agg.* and Spear Thistle *Cirsium vulgare* expanding into the site.

Mass 5: Planting of a small number of deep rooted grass species in circular failure and above. This site was more easily accessible by vehicle and site conditions were more favourable. Vehicular access allowed plantings to be thoroughly watered so plant survival rates are expected to be higher.

Mass 13: Planting of a small number of deep rooted grass species in circular failure and above. This site was extremely dry as works were undertaken very late in the planting season due to site access issues with unseasonably wet spring and early summer. Survival of plantings is uncertain at this stage.

Table 13. List of native tree, shrubs, lily and grass species planted within the Landslip area in 2022.

Location	Species	Common Name	No.
Mass 4	<i>Acacia verticillata</i> ssp. <i>verticillata</i>	Prickly Moses	50
	<i>Coprosama quadrifida</i>	Prickly Currant-bush	25
	<i>Eucalyptus cephalocarpa</i>	Silver-leafed Stringybark	15
	<i>Eucalyptus ovata</i>	Swamp Gum	15
	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	100
	<i>Poa ensiformis</i>	Sword Tussock-grass	50
	<i>Poa Labillardierei</i>	Common Tussock-grass	150
	<i>Solanum aviculare</i>	Kangaroo Apple	
	Mass 5	<i>Poa Labillardierei</i>	Common Tussock-grass
Mass 13	<i>Poa Labillardierei</i>	Common Tussock-grass	50
Total			605

Future Management Recommendations

The recommendations for Landslip plantings include:

- Due to extremely late planting monitor plant survival and possible plant replacement in 2023.
- Herbicide treatment of blackberry stands and Spear Thistles Mass 4.

Net Gain Site

The Net Gain Site comprises two offset zones located on the “Donson” property adjacent to the quarry. It contains a Northern and Southern section. This is the most diverse area of all sites with the highest amount of remnant vegetation. In 2022 120 indigenous species and 90 weed species were recorded.



Figure 10: Net Gain North and South, Mt Shamrock Quarry



2022 Works

Planting was undertaken of wet tolerant tree species at two locations to suppress exotic understory weed growth and expand canopy cover (Table 14). The first was undertaken through the bottom part of Northern Zone and the second along creek-line sections of Southern Zone.

Leafy Flat-sedge *Cyperus lucidus* was planted along the eastern edge of the boggy area, adjacent to the creekline bottom half of Southern Zone. A single plant had been previously recorded a number of years ago, now absent from the site although a small number of remnant plants can now be found in the bottom section of Phase C.

Several invasive weed species continue to be of concern and have been the focus of weed control activities. Monitoring will continue through this area.

Bishop's weed (*Ammi visnaga*) is prevalent in the SW corner of Southern Section west of the spillway (Figure 9.). Prolific seeding and germination mean the weed requires regular herbicide application. So far Naturelinks has managed to limit the species spread but eradication has proved difficult.

English ivy (*Hedera helix*) is prevalent in the Northern Section and germinates can be difficult to spot within the undergrowth.

Japanese honeysuckle (*Lonicera japonica*) is confined to the northern section top swamp area, it is difficult to access except in dry conditions. Herbicide application and hand weeding has produced positive results although it is unlikely to be eliminated as yet. (Figure 9.).

St. Augustine grass (*Stenotaphrum secundatum*) is prominent within the bottom NE corner of Northern section (Figure 9.). This weed was sprayed with herbicide by tanker with follow up spraying to be undertaken in the early months of 2023 when it is the most accessible by vehicle.

Damage by Deer has worsened now they appear to be the source of the largest negative environmental impact for the site. Small Trees and shrubs are now regularly being lost to deer activity and potential reduction of biodiversity if remedial actions are not taken in the near future may be a real possibility.



Figure 11: Bishops Weed (blue), St Augustine grass (orange), Japanese Honeysuckle (green)

Table 14. List of understory species planted within the Net Gain area in 2022.

Location	Species	Common Name	No.
Northern Section	<i>Acacia melanoxylon</i>	Blackwood	25
	<i>Eucalyptus cephalocarpa</i>	Silver-leafed Stringybark	25
	<i>Eucalyptus ovata</i> var. <i>ovata</i>	Swamp Gum	50
Southern Section	<i>Cyperus lucidus</i>	Leafy Flat-sedge	50
	<i>Eucalyptus cephalocarpa</i>	Silver-leafed Stringybark	25
	<i>Eucalyptus ovata</i> var. <i>ovata</i>	Swamp Gum	25
Total			225

Future Management Recommendations

The recommendations for Net Gain include:

- Managing problem exotic species with herbicide application and hand-weeding including Bishop's Weed (*Ammi visnaga*), English ivy (*Hedera helix*), Japanese Honeysuckle (*Lonicera japonica*) and St. Augustine Grass (*Stenotaphrum secundatum*).
- Increasing species diversity by planting a small number of Powelltown Correa, *Correa reflexa* var. *lobatus* (Table 15).
- Recommend deer impact to be independently assessed by a pest management consultant.

Table 15. List of recommended species for planting in the Net Gain area in 2023.

Location	Species	Common Name
Northern Section	<i>Correa reflexa</i> var. <i>lobatus</i>	Powelltown Correa
Southern Section	<i>Correa reflexa</i> var. <i>lobatus</i>	Powelltown Correa

1.2 Hectare Revegetation Site

The 1.2 Ha site is directly to the west .8 Revegetation Site sharing similar environmental conditions such as north facing, mostly dry with occasional high winds. In 2022 31 indigenous species and 24 weed species were recorded.

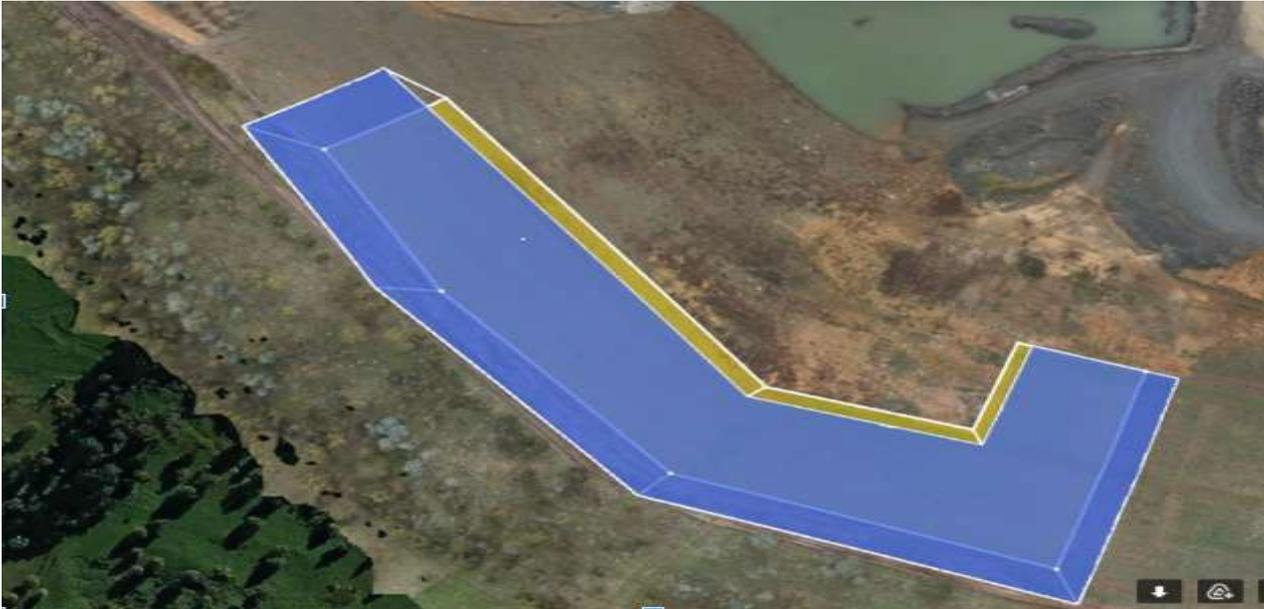


Figure 12. 1.2 Hectare site

2022 Works

Preliminary weed control prior to direct seeding was undertaken in two spray runs, the first in late 2021 and the second in June 2022. Initial spreading of topsoil layer covered only part of the site with additional topsoil being spread only a few months before direct seeding and planting. The later section only received a single preparatory weed spray resulting in a much higher weed seed bank. The ground for this second area was soft and ideally still needed time to settle before direct seeding and planting was to be undertaken.

This led to a much higher weed growth post direct seeding and more challenging planting due to soft ground. How much the higher rate of disturbance caused during planting and the increased weed growth has adversely affected the germination rates of direct seeded grasses for this area remains uncertain.

Direct seeding included 20% weeping grass (*Microlaena stipoides* var. *stipoides*) and 80% Wallaby Grass (*Rytidosperma* spp.) seed at 40kg/Ha. *Rytidosperma* species included ~50% of *setaceum*, *caespitosum*, *duttonianum*, *racemosum* & *fulvum* and 50% of *geniculatum*, *caespitosum*, *pilosum* & *setaceum*. Sterile rye and native wallaby grass species from direct seeding have successfully germinated at the site.

Previously plantings in Southern and SE Extraction which had similar dry conditions had a low survival rate in some areas for the first year. Given this experience that as a site matures conditions become more favourable and plant survival increases, our first-year plantings done at this site were deliberately sparse. They will then be supplemented by an equally sized second-year planting in

2023. Our method is to plant the most robust, dry tolerant and fast-growing species are to be planted first, with each additional year increasing native diversity and density.

So far survival rates for 2022 planting appear to be high, winter and early summer were extremely wet. Small sections toward the western end of site have had their guards removed while leaving both stakes in the ground. This is unlikely due to Kangaroo activity as they typically collide with planting breaking stakes and leaving guards damaged nearby. It is assumed that the guards are being removed by deer most likely with their antlers. So far the any potential damage to the actual plantings appear minimal. Monitoring for future impact however is needed.

Dealing with broadleaf weeds and accessing this site to tanker spray during the wetter months will likely pose the greatest challenges in managing this site.

Table 16. List of tree and shrub species planted in 1.2 Hectare Revegetation Area in 2022.

Species	Common Name	No.
<i>Acacia implexa</i>	Lightwood	50
<i>Acacia mearnsii</i>	Black Wattle	200
<i>Acacia melanoxylon</i>	Blackwood	200
<i>Acacia paradoxa</i>	Hedge Wattle	100
<i>Acacia pycnantha</i>	Golden Wattle	100
<i>Acacia stricta</i>	Hop Wattle, Straight Wattle	200
<i>Allocasuarina littoralis</i>	Black Sheoak	100
<i>Eucalyptus baxteri</i> ,	Brown Stringybark	250
<i>Eucalyptus dives</i>	Broad-leafed Peppermint	250
<i>Eucalyptus goniacalyx</i>	Long Leafed Box, Bundy	20
<i>Eucalyptus oblique</i>	Messmate	100
<i>Eucalyptus Radiata ssp. Radiata</i>	Narrow-leafed Peppermint	300
<i>Eucalyptus viminalis ssp. Viminalis</i>	Manna Gum	100
<i>Hakea decurrens ssp. Physocarpa</i>	Bushy Needlewood	100
<i>Hakea Ulcina</i>	Furze Hakea	100
Total		2170

Future Management Recommendations

The recommendations for 1.2 Hectare Revegetation Site include:

- Keeping broadleaf weeds controlled via selective herbicide application by spray tanker. Site access by vehicle with attached trailer mounted tanker may be challenging during the wetter months. Continue to work with Quarry management about improved vehicle track access.
- Undertake second round of planting similar to the first broadening species diversity and increasing indigenous tree and shrub coverage (Table 17).
- Recommend deer impact to be independently assessed by a pest management consultant.

Table 17. List of recommended species for planting in 1.2 Hectare Revegetation Site in 2023.

Species	Common Name
<i>Acacia genistifolia</i>	Spreading Wattle
<i>Acacia Verticillata ssp. Verticillata</i>	Prickly Moses
<i>Banksia marginata</i>	Silver Banksia
<i>Bursaria spinosa ssp. spinosa</i>	Sweet Bursaria
<i>Cassinia aculeata</i>	Dogwood
<i>Cassinia longifolia</i>	Long-leaf Cassinia
<i>Correa reflexa var. reflexa</i>	Common Correa
<i>Daviesia latifolia</i>	Hop Bitter-pea
<i>Daviesia leptophylla</i>	Narrow-leaf bitter-pea
<i>Eucalyptus baxteri,</i>	Brown Stringybark
<i>Eucalyptus dives</i>	Broad-leafed Peppermint
<i>Eucalyptus goniocalyx</i>	Long Leafed Box, Bundy
<i>Eucalyptus oblique</i>	Messmate
<i>Eucalyptus Radiata ssp. Radiata</i>	Narrow-leafed Peppermint
<i>Eucalyptus viminalis ssp. Viminalis</i>	Manna Gum
<i>Kunzea leptospermoides</i>	Yarra Burgan
<i>Leptospermum myrsinoides</i>	Silky Tea-tree

Paddock Replacement

This site encompasses 5 separate paddock areas that are grazed by cattle. Stock proof fencing has been erected around 150 approximately 1.5 m² quadrants in which *Eucalyptus* were originally planted in 2018.



Figure 13. Paddock Replacement zones



2022 Works

Approximately 30 Eucalyptus had perished and needed to be replaced. A mixture of Messmate *Eucalyptus obliqua* and Manna Gums *Eucalyptus viminalis* ssp. *viminalis* were chosen as they are some of the largest Eucalyptus species indigenous to the area, and due to their size, likely providing the greatest amount of shelter for stock and habitat for wildlife.

A number of stock-proof quadrants had been damaged. Some require sections of wire, pine posts and frame replacement.

Like the Landslip plantings, a very wet winter and early summer limited site access by vehicle and a high risk of car bogging led to planting being undertaken very late in the season. All plants were generously watered, but combined with a number of damaged quadrants survival of some plantings is uncertain.

Table 18. List of *Eucalyptus* species planted in Paddock Replacement site 2022.

Species	Common Name	No.
<i>Eucalyptus obliqua</i>	Messmate Stringybark	15
<i>Eucalyptus viminalis</i> ssp. <i>Viminalis</i>	Manna Gum	15
Total		30

Future Management Recommendations

The recommendations for Paddock Replacement Site include:

- The repair of damaged quadrants to exclude cattle.
- Potential replacement of a small number of dead plantings in 2023.

Fauna considerations and concerns

Only fauna of high conservation value or may pose a negative environmental impact are mentioned here. A full list of fauna observed by Naturelinks staff have been added as attachments.

Introduced species

- Sambar Deer, *Rusa unicolor* are observed to adversely impact some sites. Naturelinks recommend that deer impact be independently assessed by a pest management consultant.
- European Hare *Lepus europaeus* are occasionally seen but appear to have no noticeable negative environmental impact.
- European Rabbit *Oryctolagus cuniculus* are occasionally seen but appear to have no noticeable negative environmental impact. Twice, young animals have been observed that are in poor health, and they seem not to be aware of close human presence. They appear to be visually impaired, and may in fact be diseased.
- Red fox *Vulpes vulpes* are occasionally seen or their tracks observed. Their environmental impact remains uncertain.

Indigenous species

- Eastern grey kangaroo *Macropus giganteus* a decade ago were rarely seen but are now abundant. Collision with guarded trees and shrubs is a big issue in most managed areas. Fence repair may reduce this issue, in particular in Phase A & B. Grazing does not yet appear to be a serious problem.
- At least One Peregrine Falcon had been observed nesting in the box in 2022.
- *Callocephalon fimbriatum*, Gang-Gang Cockatoo have been observed at the quarry for a number of years. Recently the species' conservation status has been elevated to Endangered. In 2022 they were regularly seen and heard both at the Net Gain site and around the Quarry.

Aspects and Impacts Assessment

Table 19. Aspects and Impacts Assessment – Mt Shamrock

Activity	Aspect	Impacts	Controls
Working onsite	Naturelinks-owned vehicles, trailers, powered plant (electric / petrol), hand tools and PPE (footwear etc.) entering and exiting site	Spread weed seed, pathogens & weed propagules into and out of site	<ul style="list-style-type: none"> All Naturelinks employees are to be trained on Hygiene HSEP Crew leaders are to clean down all vehicles, trailers, powered plant (electric / petrol), hand tools and PPE (footwear etc.) before entering site Crew leaders are to complete site-specific inspection before entering site “HSE Daily Inspection Checklist - Holcim - Mt Shamrock” which includes questions about hygiene Before exiting the site, crew leaders are to complete site-specific inspection “HSE Exit Inspection Checklist - Holcim - Mt Shamrock” If vehicles, trailers, powered plant (electric / petrol), hand tools and / or PPE (footwear etc.) need to be cleaned contact site contact to be provided with access to wash down area See Table 14: List of noxious weeds in West Gippsland region
<p>Detailed Controls by area</p> <p>Landslip</p> <p><i>Noxious weeds West Gippsland region present or potential:</i> Blackberry, Slender Thistle, Spear Thistle, Variegated Thistle</p> <p><i>Actions taken to reduce risk:</i> Walk into site from adjacent paddock eliminating contamination risk for vehicle from weed seed. Manually clean all petrol-driven plant and hand tools of loose soil and visible weed seed. More thorough cleaning to be undertaken in designated quarry wash down area as required.</p> <p>Paddock replacement</p> <p><i>Noxious weeds West Gippsland region present or potential:</i> Blackberry, Ragwort (potential), Slender Thistle, Spear Thistle, Variegated Thistle</p> <p><i>Actions taken to reduce risk:</i> Avoid driving in areas where seeding thistles are present, manually clean all petrol driven plant and hand tools of loose soil and visible weed seed. More thorough clean to be undertaken in designated wash down quarry area as required. Do not remove Ragwort from site; any hand-weeded ragwort is to be left <i>in situ</i>; any seed head with viable seed is to be buried where possible.</p>			

Phase A&B

Noxious weeds West Gippsland region present or potential: Blackberry, Chilean Needle Grass, Hawthorn, Ragwort (potential), Slender Thistle, Spear Thistle, Variegated Thistle

Actions taken to reduce risk: Site is only to be accessed from cleared track within quarry fence-line by using periodical access gates with the exception of two areas with double gates in which a cleared access area is maintained. Manually clean all petrol-driven plant and hand tools of loose soil and visible weed seed. More thorough clean to be undertaken in designated wash down quarry area as required. Do not remove Ragwort from site; any hand-weeded ragwort is to be left *in situ*; any seed head with viable seed is to be buried where possible.

Any Chilean Needle Grass discovered is to be sprayed immediately with herbicide where possible; no hand weeding of Chilean Needle Grass is to be undertaken. Avoid using any hand or petrol-driven plant in or near identifiable plants including planting.

1.2 hectare

Noxious weeds West Gippsland region present or potential: Spear Thistle, Stinkwort, Variegated Thistle

Actions taken to reduce risk: Manually clean all petrol-driven plant and hand tools of loose soil and visible weed seed. More thorough clean to be undertaken in designated wash down quarry area as required.

.8 Hectare

Noxious weeds West Gippsland region present or potential: Blackberry, Spear thistle, Stinkwort, Variegated Thistle

Actions taken to reduce risk: Manually clean all petrol-driven plant and hand tools of loose soil and visible weed seed. More thorough clean to be undertaken in designated wash down quarry area as required.

Southern Extraction

Noxious weeds West Gippsland region present or potential: Blackberry, Chilean Needle Grass, Spear Thistle, Stinkwort, Variegated Thistle

Actions taken to reduce risk: Manually clean all petrol-driven plant and hand tools of loose soil and visible weed seed. More thorough clean to be undertaken in designated wash down quarry area as required. Any Chilean Needle Grass discovered is to be sprayed

immediately with herbicide where possible; no hand weeding of Chilean Needle Grass is to be undertaken. Avoid using any hand or petrol-driven plant in or near identifiable plants including planting.

South East Extraction

Noxious weeds West Gippsland region present or potential: Blackberry, Chilean Needle Grass, Slender Thistle, Spear Thistle, Stinkwort, Variegated Thistle

Actions taken to reduce risk: Manually clean all petrol-driven plant and hand tools of loose soil and visible weed seed. More thorough clean to be undertaken in designated wash down quarry area as required. Any Chilean Needle Grass discovered is to be sprayed immediately with herbicide where possible; no hand weeding of Chilean Needle Grass is to be undertaken. Avoid using any hand or petrol-driven plant in or near identifiable plants including planting.

Extraction/Phase C

Noxious weeds West Gippsland region present or potential: Angled Onion (potential), Blackberry, Crack Willow, Flax-leaf Broom, Gorse, Hawthorn, Ragwort, Slender Thistle, Spear Thistle, Soursob, Stinkwort, Sweet Briar, Variegated Thistle

Actions taken to reduce risk: Manually clean all petrol-driven plant and hand tools of loose soil and visible weed seed. More thorough clean to be undertaken in designated wash down quarry area as required. Do not remove Ragwort from site, any hand-weeded ragwort is to be left *in situ*; any seed head with viable seed is to be buried where possible.

Do not leave designated access tracks with vehicle, do not drive over any flowering weeds growing on tracks. Clean any disturbed mud that may accumulate underneath the wheel arch before leaving site at designated wash down area.

Net Gain

Noxious weeds West Gippsland region present or potential: Angled Onion, Blackberry, Bridal creeper, Crack Willow, Flax-leaf Broom (nature strip only), Garden Asparagus, Hawthorn, Maderia Vine (nature strip only), Ragwort, Slender Thistle, Spear Thistle, St John's Wort, Stinkwort, Soursob
Variegated Thistle

Actions taken to reduce risk: Manually clean all petrol-driven plant and hand tools of loose soil and visible weed



seed. More thorough clean to be undertaken in designated wash down quarry area as required. Do not remove Ragwort from site, any hand-weeded ragwort is to be left *in situ*; any seed head with viable seed is to be buried where possible.

Park vehicle near main access gate only for northern section, leave car in nearby paddock or gate entrance for southern section. Limit all driving unless necessary in northern section. Clean any disturbed mud that may accumulate underneath the wheel arch before leaving site at designated wash down area.

Controlling weeds	Use of herbicide to control weeds	<p>Incorrect use of herbicide on plant species</p> <p>Off-target damage</p> <p>Herbicide entering waterways</p>	<p>All employees who use herbicides are trained in its correct use and hold a Chemcert license, or are under direct supervision while in training, by a Chemcert holder.</p> <p>Restricted use chemicals are to be only used by those staff holding an Agricultural Chemical User's Permit (ACUP)</p> <ul style="list-style-type: none"> • Herbicides are carefully selected to each species; see Table 13. List of herbicides used at Holcim – Mt Shamrock <p><i>Alternative methods to herbicide spraying to be considered by Holcim and quoted by Naturelinks</i></p> <ul style="list-style-type: none"> • Hand weeding: Useful for high quality areas and when working near sensitive species. Inefficient for large areas, time consuming. Cut and paint: used for woody weeds when not small. Can be used for small infestations of blackberry in high quality areas or around sensitive species. Can be labour intensive depending on scale. • Brush-cutting/slashing: Useful for biomass control and maintaining access to tracks and areas with high weed load. Can be used to target annual weedy grasses to prevent seeding depending on site conditions and season. Can be cost effective in the right circumstance. Grazing: Cattle or goats in areas with high weed load and low-quality native vegetation. Environmentally friendly, requires adequate fencing so not suitable to some situations. May require additional permits. Goats will likely be the more effective particularly for control of blackberry. • Fire: Historically this method has been ruled out by Quarry management. Naturelinks does have the relevant licenses, Insurance, training, equipment to undertake controlled burns.
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Table 20. List of herbicides used at Holcim – Mt Shamrock

Herbicide	Usage	Species Controlled	Application	Notes
<p>Weedmaster Duo</p> <p>ACTIVE CONSTITUENT: 360 g/L Glyphosate</p>	<p>Commonly used across the site</p> <p>Control of grass and broadleaf weed species via backpack spray and tanker spray.</p> <p>Occasionally combined with other herbicides for specific hard to kill weeds</p> <p>Control of woody weeds</p>	<p>Agapanthus, Blue Periwinkle, Holly, English Ivy, Ragwort, Madeira Vine, Willow sp., Pitiosporum, Hawthorn, Prunus sp, Chilean Needle grass, annual and perennial grasses, broadleaf weeds were off target damage risk is low.</p>	<p>Cut and paint of woody weeds (both with hand tools and chainsaw)</p> <p>Backpack spay and tanker spray application</p>	<p>Fast acting, non-selective, cost effective, is inactivated immediately in the soil and does not provide residual weed control</p>
<p>Kamba M</p> <p>ACTIVE CONSTITUENTS: 340 g/L MCPA, 80g/L DICAMBA</p>	<p>Commonly used across the site.</p> <p>For broadleaf specific weeds when off target damage to native grass species is to be avoided via backpack spray and tanker spray.</p>	<p>Broadleaf weed species</p>	<p>Backpack spray or tanker spray</p>	<p>Average field half life of dicamba is 14 days. Average field half life of MCPA is 7 days.</p>
<p>Associate Herbicide</p> <p>ACTIVE CONSTITUENT: 600g/kg METSULFURON METHYL</p>	<p>Occasionally used across the sites when targeting particularly hard-to-kill broadleaf weeds, some woody weeds and weeds with tuberous root systems, will not harm grass via backpack spray or tanker spray (rarely).</p> <p>Occasionally combined with other herbicides for specific hard to kill weeds</p>	<p>Bridal Creeper (Asparagus spp.), Angled Onion, Soursob (and other Oxalis spp.), Spanish Heath, Blackberry (occasionally only but can be used all year round)</p>	<p>Backpack spray or tanker spray</p>	<p>Associate will remain in the soil for a period of time. The persistence of Associate in the soil is dependent on various environmental conditions e.g. soil pH, temperature, soil moisture and organic matter. Wet, warm, acid soils high in organic matter favour breakdown of Associate in the soil. It should be noted that Associate does not provide a commercially acceptable level of soil residual weed control.</p>

<p>Maca 600 (most widely known by brand name Garlon)</p> <p>ACTIVE CONSTITUENT: TRICLOPYR</p>	<p>Control of Blackberry spp., Broom, young Hawthorn and Prunus spp, Briar Rose via pack spray or tanker spray</p>	<p>Blackberry spp., Broom, young Hawthorn and Prunus spp, Briar Rose</p>	<p>Backpack spray or tanker spray</p>	<p>Cost effective, very effective and fast acting on blackberry (Spring to mid-Autumn), avoid spraying near waterways, selective but will burn grass at high rate. Should not be used when temperature may exceed 30 degrees as this product can evaporate and move through the air and harm nearby vegetation.</p>
<p>Lontrel Advanced</p> <p>ACTIVE CONSTITUENT: 600g/L CLOPYRALID</p>	<p>Semi-selective broadleaf herbicide specifically designed for control of Asteraceae and Fabaceae (daisy and pea family) but also effective against some other broadleaf families while leaving other families unharmed, will not harm grass via pack spray and tanker spray (rarely).</p>	<p>Thistles, Fleabane, Bristly Ox-tongue, Stinkwort (<i>Dittrichia graveolens</i>), Cat's ear, Plantain, Aster weed, Broom spp., Vetch, Clover, Capeweed. Can harm <i>Acacia</i> species when sprayed in high volumes and herbicide can have a detrimental effect on these species (e.g., tanker spraying)</p>	<p>Backpack spray or tanker spray</p>	<p>Local understory species not harmed by overspray: Bidgee widgee and Sheep's Burr, Kidney Weed, Native raspberry, Australian Hounds-tongue.</p> <p>Withholding periods: Do not graze or cut for stock food for 7 days after application.</p> <p>Low toxicity to fish, birds, honeybees, livestock, earthworms and aquatic organisms.</p> <p>Was not used for the 2022 work period partially due to concerns raised by quarry audit. As alternative herbicides are available and the prevalence of weeds which Lontrel Advance and Apparent Chlopyralid use is preferred is currently low.</p>



Apparent Clopyralid 300

ACTIVE CONSTITUENT: 300g/L CLOPYRALID

Semi-selective broadleaf herbicide specifically designed for control of Asteraceae and Fabaceae (daisy and pea family) but also effective against some other broadleaf families while leaving other families unharmed, will not harm grass via pack spray and tanker spray (rarely).

Thistles, Fleabane, Bristly Ox-tongue, Stinkwort (*Dittrichia graveolens*), Cat's ear, Plantain, Aster weed, Broom spp., Vetch, Clover, Capeweed. Can harm *Acacia* species when sprayed in high volumes and herbicide can have a detrimental effect on these species (e.g., tanker spraying)

Backpack spray or tanker spray

Local understory species not harmed by overspray: Bidgee Widgee and Sheep's Burr, Kidney Weed, Native raspberry, Australian Houndstongue.

Selective herbicide, useful for herbicide rotation, relatively expensive, less harmful to waterways than alternatives with the exception of Associate, residual in soil and thatch.

Withholding periods: Do not graze or cut for stock food for 7 days after application.

Was not used for the 2022 work period partially due to concerns raised by quarry audit. As alternative herbicides are available and the prevalence of weeds which Lontreal Advance and Apparent Chlopyralid use is preferred is currently low.



Table 21. List of noxious weeds in West Gippsland region

Species	Type	Risk of Spreading	Method of potential seed or propagules dispersal by Naturelinks staff
Angled Onion	Restricted Weeds	Low	Loose Seed
Blackberry	Regionally Controlled Weeds	Medium	Fruit
Bridal Creeper	Restricted Weeds	Low	Fruit
Chilean Needle Grass	Restricted Weeds	High	Soil (may contain seed) Loose Seed
Flax-leaf Broom	Regionally Controlled Weeds	Medium	Loose Seed
Garden asparagus	Restricted Weeds	Low	Fruit
Gorse	Regionally Controlled Weeds	Low	Loose Seed
Hawthorn	Regionally Controlled Weeds	Low	Fruit
Ragwort	Regionally Controlled Weeds	High	Soil (may contain seed) Airborne Seed
Maderia Vine	Restricted Weeds	Medium	Vegetation
Slender Thistle	Regionally Controlled Weeds	Medium	Soil (may contain seed) Airborne Seed
Spear Thistle	Regionally Controlled Weeds	Medium	Soil (may contain seed) Airborne Seed
St John's Wort	Regionally Controlled Weeds	Low	Loose Seed
Stinkwort	Restricted Weeds	Medium	Soil (may contain seed) Airborne Seed
Sweet Briar	Regionally Controlled Weeds	Low	Fruit
Soursob	Restricted Weeds	Low	Soil (may contain seed) Loose Seed
Variogated Thistle	Regionally Controlled Weeds	Medium	Soil (may contain seed) Airborne Seed
Crack Willow	Restricted Weeds	Low	Vegetation

Attachments

Indigenous Flora of Holcim Pakenham

Introduced and Weed Species

Mammals Observed

Reptile and Frog Observations

Bird Observations