2025 Rehabilitation Report

Holcim Quarry Mt Shamrock

General Information

Disclaimer

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Report Scope

This report addresses all revegetation and maintenance works carried out by Naturelinks Landscape Management over the 2025 calendar year. Following this, a summary of proposed future management actions is detailed.

Works were undertaken in the following areas depicted in Figure 1:

- Net Gain (Yellow)
- Phase C (White)
- South-East Extraction Backslope (Cream)
- 0.8 Hectare (Dark Red)
- 2023 Planting Area (Dark Green)
- Landslip (Pink)
- Southern Hillside (Purple)
- Chilean Needle Grass Monitoring & Control (Sky Blue)
- Extraction (Peach)
- South-East Extraction (Blue)
- Southern Extraction (Brown)
- 1.2 Hectare (Dark Blue)
- Phase A&B (Ash)
- Paddock Replacement (Turquoise)
- Northern Boundary (Bright Red)
- Lower Car Park (Hot Pink Marker)

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

Revegetation Approach

A total of 3325 infill species were installed in the 2025 financial year with the aims of increasing density and species biodiversity in all previously revegetated zones. Species planted and numbers are listed under site location sub-headings in tables.

Revegetation objectives and techniques remain inline and consistent with the 2024 Rehabilitation report.

All plants are supplied by a local indigenous nursery. Many of the species are sourced specifically from RJ Chambers Flora and Fauna Reserve and Beaconsfield Nature Conservation Reserve. Other sources include Hillview Bushland Reserve (Pakenham) and Donazzan's Property (415 Pakenham Road, Pakenham Upper). Seeds and cuttings are also collected from numerous sections of remnant roadside vegetation such as Pakenham Rd (Pakenham Upper), Army Road (Pakenham), Thewlis Road Aqueduct (Pakenham) and Reynolds Road (Pakenham).

Challenges, Observations and Recommendations

Challenges remain consistent with the previous 2024 report. Challenges unique to a specific site are discussed in their own section of this report. A general recap of them is as follows.

- **Fauna:** Physical damage to plants caused by a collision, grazing and ringbarking by Samba Deer & Grey Kangaroos.
- **Wind:** Strong winds impact the following sites posing a major challenge to revegetation: South East Extraction, Southern Extraction, .8 Hectare, 1.2 Hectare and 2023 Planting area. Strong winds can cause the dislodgement and dispersal of guards particularly if they are already damaged by prior collision from Kangaroos or if stakes integrity has been compromised by waterlogged soft ground. Trees and shrubs can be blown over, at times blown completely out of the ground and can be found 10 or even 20 meters away down a slope. Main branches and central trunks can be snapped occurring more often with semi-mature trees and some specific shrub species.
- **Dry conditions:** Predominately affecting South East Extraction, Southern Extraction, .8 Hectare, 1.2 Hectare and 2023 Planting area. Most severe in the first few years of revegetation at times significantly affecting plantings survival rates.
- **Exotic weeds:** Exotic weeds are present at all sites to varying degrees. Some species have only a minor negative impact and may even disappear naturally over time. Others if not adequately controlled can pose a significant challenge to revegetation efforts. Weed volumes are typically worse in the first few years of revegetation for newly constructed and planted sites. They can also be high in areas that fall outside of regular weed management responsibilities, sites bordering land where weeds are not managed, or done so infrequently and or subject to regular disturbance such as cattle grazing.

If high winds and dry conditions continue to impact on revegetation efforts via broken stems, dislodgement and heat stress. A greater emphasis placed on Allocasurina's (She-Oaks) along high wind ridge lines may be implemented going forward to help reduce the loss of 4 to 5-year-old Eucalypt and Acacia species. Allocasurinas are also more tolerant to these conditions and when mature enough can potentially act as a buffer against wind as Eucalypts get to that critical 4–5-year mark where they can be prone to snap half way at the stem. Drought tolerant shrub species such as Hakea's can also be utilised in this way.

New Species used for revegetation

An additional two species were approved for revegetation this 2025 Calander year. With one already found locally on site. Observations are still to be made on their success rate as new species are often trialled in low quantities at first to test their survivability.

The species are;

- **Dandenong Ranges Cinnamon Wattle** *(Acacia stictophylla)*
- **Silky Daisy-Bush** *(Olearia myrsinoides)*

Sustainability

Stakes & Guards: A previous stockpile of corflute guards and recycled hardwood stakes were repurposed for 2025's infill planting. Each year all stakes and guards no longer required for protection of plantings are removed and stored at Naturelinks North Melbourne depot. Some stakes and guards will be reused four or five times greatly reducing costs.

Naturelinks has trialled eco-friendly tree guards made from unbleached cardboard with very poor results in the past due to very little light getting through to the plant. They are prone to collapsing at the top due to fauna crashing into them and weather conditions starving the plant of sunlight. Cardboard guards took longer to install increasing labour costs with a plant mortality rate of over 70%.

However, there is a new cardboard pod guard called green POD (400 & 450mm) which is larger than cardboard guards implemented in the past that are round instead of square which eliminates a few of the previous problems of the old cardboard guards. Wider circumference allows more light to enter through the top and potentially more wind resistant due to its round shape. Can be set with just one hardwood stake however will be sticking with two because of the quarry conditions. These new cardboard guards have been quoted for 2026 and can be hole punched to further allow for more light to enter. Advantages are the fact that they are biodegradable, don't need to be collected by on ground crews and don't release micro plastics into the environment.

Pots & Trays: All tube-stock pots and trays acquired in the process of yearly plantings are returned to the supplier for sterilisation and reuse.

Works & Management Recommendations

South-East Extraction Area

South-East extraction is split into three sections depicted in Figure 2; Bottom Half (blue), Top Half (pink) and Ridgeline (yellow). This area contains some of the driest sections in the quarry, namely Top Half (north and east), Bottom Half (northern end near Boot Hold Point) and Ridgeline (all parts). This was the second area of the quarry to be direct seeded and planted by Naturelinks after Extraction.

Figure 2: South East Extraction. Bottom Half (blue), Top Half (pink), Ridgeline (yellow), Boot hold point (black), Viewing platform (white), Scattered Chilean Needle Grass infestations (turquoise), individual Chilean Needle Grass clusters (red marker), Area of greatest tree coverage and canopy (red)

2025 Works

Works focused on keeping broadleaf weeds presence controlled to a minimum with a combination of knapsack spraying and tanker spraying using selective herbicides. Ribwort *(Plantago lanceolate)* and Cats-ear *(Hypochaeris radicata)* are still widespread across sections of the site continue to be reduced in number with periodic control also of Fleabane *(Erigeron sp.)*, Sow Thistle and Prickly Sow Thistle *(Sonchus sp.)*, Spear Thistle *(Cirsium vulgare)*.

Future Management Recommendations

The recommendations for the south-eastern extraction area include:

- Maintain broadleaf-selective herbicide application.
- Continued slashing and herbicide application of perennial exotic grasses.

- Continued hand-weeding and disposal of seeding Chilean Needle Grass followed up by herbicide spraying of younger plants.
- Continue to monitor rabbit activity and report any suspected rabbit burrows to quarry management Continue to monitor tree and shrub plantings, in particular those planted on the ridgeline.

Southern Extraction Area

Southern Extraction is a north facing slope that borders South Eastern Extraction to the east and 0.8 hectare to the west. It is not as dry as SE Extraction and has the most developed canopy of the direct seeded and planted quarry sites on the Southern and Eastern slopes.

Figure 3: Southern Extraction

2025 Works

Works focused on keeping broadleaf weeds presence controlled to a minimum with a combination of knapsack spraying and tanker spraying using selective herbicides. The main broadleaf weeds requiring control are Fleabane *(Erigeron sp.)*, Black Nightshade *(Solanum nigrum)* and Wild Radish *(Raphanus raphanistrum).*

Exotic weed grass coverage has been reduced by targeted herbicide spraying. Regularly timed brush-cutting very low to the ground for repeated years has decreased the accumulation of biomass for grassy weeds. The main grassy weeds are Toowoomba Canary Grass (*Phalaris aquatica*), Cock's-foot (*Dactylis glomerata*), Paspalum (*Paspalum dilatatum*), Yorkshire fog (*Holcus lanatus*), Bromus (*Bromus* sp.) and Pigeon Grass (*Setaria* sp.).

Reduced weed coverage is noticeable in Southern Extraction area due to canopy starting to form as previous years plantings are now maturing. This provides suppressing leaf matter, cooler temperatures and additional fauna traffic that impacts on ground flora due to repeated compaction and disturbance as animals shelter under canopy.

Chilean Needle Grass (*Nassella neesiana*) presence remains at similar levels as last year. This time round the patch was caught sooner and species as tall as an inch or less were removed ensuring that next year's visit should have excellent results. Dot points taken using Qfield application to monitor in future.

Plantings focused where tree coverage is the greatest and canopy most developed. Species planted here were those adapted to partial and full shade most new to the quarry or had only been planted previously low in numbers. Most planting installations have established well.

Table 1. List of species planted within Southern Extraction in 2025.

Species	Common Name	No.
Allocasuarina littoralis	Black Sheoak	20
Hakea teretifolia spp. Hirsuta	Dagger Hakea	15
Oleria myrsinoides	Silky Daisy-bush	15
Acacia stictophylla	Dandenong Ranges Wattle	25
Banksia marginata	Silver Banksia	10
Pultanaea scabra	Rough Bush-pea	40
Dianella tasmanica	Tasman Flax-lilly	25
Eucalyptus Radiata spp. Radiata	Narrow leafed peppermint	50

Future Management Recommendations

The recommendations for the Southern Extraction area include:

- Maintain broadleaf-selective herbicide application.
- Continued slashing and herbicide application of perennial exotic grasses.
- Continued hand-weeding and disposal of seeding Chilean Needle Grass followed up by herbicide spraying of younger plants.
- Spot spray with knapsack weedy grass species growing amongst and near Weeping Grass *(Microlaena stipoides)* to reduce competition and encourage Weeping Grass recruitment and spread.

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 direct seeded and revegetation zones its sites conditions best match EVC 16 Lowland Forest. However, a 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.

Figure 4: Extraction area. Chilean Needle Grass cluster (red marker).

2025 Works

Many aspects of revegetation work for this site are complete except for weed management which will need to remain ongoing. With appropriate weed management a native understory will continue to develop over exotic. Chilean needle sweeps will likely take place early 2026 and will need to be targeted again towards the end of the 2026 Calander year.

Exotic broadleaf weeds remain at low levels. The following species were sprayed with selective herbicide by knapsack: Sow thistle *(Sonchus sp.)*, Wild Radish *(Raphanus raphanistrum)*, Fleabane *(Erigeron bonariensis)*, Cat's-ear *(Hypochaeris radicata)* and Ribwort *(Plantago lanceolata)*.

Blackberry (*Rubus fruticosus sp. agg.*) will be followed up on.

Exotic grass herbicide spraying and control is currently a low priority. Weedy grass species prevalent within the site include: Toowoomba Canary Grass *(Phalaris aquatica)*, Cocksfoot *(Dactylis glomerata)*, Caterpillar Grass *(Paspalum dilatatum)* and Kikuyu *(Chenchrus clandestinum)*.

Chilean Needle Grass (*Nassella neesiana*) will need to prioritised in this section early and late 2026 to ensure there is no rapid break out of Chilean Needle Grass.

A single Coastal Wattle *(Acacia longifolia ssp. sophorae)*, was located back in 2024 and has not yet been removed by Naturelinks.

Future Management Recommendations

The recommendations for the Extraction area include:

- Targeting broad leaf exotic species with herbicide application by knapsack.
- Targeting blackberry with herbicide application by knapsack and cut and paint with glyphosate where there is a risk of damage to native vegetation.
- Hand-weeding and disposal of any seeding Chilean Needle Grass and Serrated Tussock (If located) followed up by herbicide spraying of younger plants. Maintain vigilance for any new infestations.
- Removal of Coastal wattle *(Acacia longifolia)* along with any germinates and hybrids.

Phase A & B Site

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

Figure 5: Phase A&B Boundary. Chilean Needle Grass cluster (red marker and polygon).

2025 Works

Further knapsack spraying in and around Phase A&B and follow up tanker spraying on the SW corner thistle patch previously recorded in 2024. The broadleaf herbicide treatment combined Associate (active ingredient Metsulfuron Methyl) and Kamba M (active ingredients MCPA & Dicamba) after promising results on wild carrot from the prior year.

Broadleaf weed species sprayed were Spear thistle (*Cirsium vulgare*), Variegated thistle (*Silybum mariamum*), Slender winged thistle (*Carduus tenuiflorus*), Bristly ox-tongue (*Helminthotheca echiodies*), Wild radish (*Raphanus raphanistrum*) and Wild carrot (*Daucus carota*).

Blackberry (*Rubus fruticosus spp. agg*.) will need follow up to prevent any new scattered individuals from getting a foot hold. Continued herbicide treatment into 2026.

Previous years infestation of Chilean Needle Grass (Nassella neesiana) located at (red marker figure 5) has not been monitored and observed since the in-house handover. The patch is likely recovering in the absence of treatment this 2025 period although Glyphosate alone is not an effective control measure in preventing a Chilean Needle Grass outbreak. It is strongly recommended to use a pre-emergent herbicide such as Tussock *(Flupropanate)* as this prevents grass seeds from germinating for 2-3 years and will drastically remove larger infestations of Chilean Needle Grass and guarantee its rate of spread is diminished before individual outbreaks reach areas outside of Holcim's influence where it could potentially damage agricultural industries. Early 2026 visits will assess the scale of the threat and act accordingly. Rapid and decisive quarantine action is critical to containing high threat weeds even if that means minor environmental setbacks to do so.

Deer program appears to be reducing damage to softwood trees and shrubs planted along the ridge line of Phase A & B according to testimonies. Deer refuge in the Net Gain Offset before adventuring over to the quarry at night. Continued deer shooting can change behaviour patterns and scare them out of revegetation zones.

Planting has continued picking up from previous years efforts with the largest areas of formerly patchy distribution of surviving native trees and shrubs on the north and western sections of this site infill planting is now mostly complete. Due to natural die-off and damage due to dear infill plantings in these areas will likely need to be periodically addressed with additional plantings in subsequent years.

At request of quarry management plantings here from now on will be more evenly balanced between trees and shrubs to more effectively minimise environmental impacts from Quarry Operations.
Infill plantings will continue progressing further south of the site from where 2025 plantings ended.

Table 2. List of tree and shrubs planted within the Phase A & B area in 2025

Species	Common Name	No.
Acacia mearnsii	Black Wattle	150
Euclyptus baxteri	Brown Stringybark	200
Eucalyptus dives	Broad-leafed Peppermint	200
Eucalyptus goniocalyx	Long Leafed Box, Bundy	200
Acacia myrtifolia	Myrtle Wattle	15
Acacia oxycedrus	Spike Wattle	15
Acacia paradoxa	Hedge Wattle	15
Acacia stricta	Hop Wattle	15
Hakea nodosa	Yellow Wattle	15

Future Management Recommendations

The recommendations for Phase A & B include:

- Continue herbicide application by both knapsack and tanker spray unit targeting broadleaf weed species.
- Continue herbicide application by knapsack targeting blackberry and small woody weeds.
- Continue herbicide application of Chilean Needle Grass with the aim of eventual elimination.
- Planting of additional trees to bolster screening for nearby stakeholders *(Table 3).*
- Continue with deer control program.

Table 3. List of recommended tree species for planting Phase A & B area in 2026

Species	Common Name
Acacia mearnsii	Black Wattle
Eucalyptus baxteri	Brown Stringybark
Eucalyptus dives	Broad-leafed Peppermint
Eucalyptus goniocalyx	Long Leafed Box, Bundy
Eucalyptus Radiata ssp. radiata	Narrow-leafed Peppermint
Acacia oxcyedrus	Spike Wattle
Acacia paradoxa	Hedge Wattle
Acacia myrtifolia	Myrtle Wattle
Acacia muncronata var. longifolia	Narrow-leaf Wattle
Acacia stricta	Hop Wattle
Acacia stictophylla	Dandenong Ranges Wattle

Acacia vernicifolia	Common Varnish Wattle
Allocasuarina littoralis	Black She-oak
Eucalyptus cypellocarpa	Mountain Grey gum
Dianella revoluta	Spreading Flax-lily
Goodia lotifolia	Golden-tip
Hakea nodosa	Yellow Hakea
Hakea decurrens spp. physocarpa	Bushy Needlewood
Hakea teretifolia spp. Hirsuta	Dagger Hakea
Lomandra longifolia	Cluster-headed Mat-rush
Oleria myrsinoides	Silky Daisy-bush

Phase C Site

The Phase C site comprises of disturbed land that has both naturally regenerated and been replanted, it borders the Extraction site to the west. Following high rainfall, a gully fills with water (orange figure 6*)* that provides a breeding ground for large numbers of native frogs. Just north of the gully are two adult remnant Rough Tree-ferns *(Cyathea australis)* (blue markers figure 6*)* and a single remnant Clover Tree *(Goodia lotifolia)* (Green marker figure 6).

East of the Graveyard and North of Extraction are two areas with scattered Tall Sword-sedge *(Lepidosperma elatius)* (red figure 6). This species cannot be supplied from indigenous nurseries due to the difficulty of its propagation. Native fern species including a small number of Rough Tree ferns *(Cyathea australis)* are recruiting naturally below the east/west Graveyard track (green figure 6).

Figure 6: Phase C. Gully (orange), tree ferns (blue marker), clover tree (green marker), Tall sword sedge (red), recruiting tree ferns (green), Pampas grass (yellow), treated Willows (dark blue), sprayed English ivy (hot pink).

2025 Works

Knapsack spraying treated re-shooting stands of blackberry and broadleaf weeds along the sites southern edge weeds bordering the Sales yard. Young woody weeds chest-height and below have been sprayed with herbicide.

A large patch of English Ivy *(Hedera helix)* located in the SE corner of the site has been eradicated by herbicide spraying over successive years. Scattered individuals of Ragwort *(senecio jacobaea)* are either hand-weeded and left in-situ, or if small, sprayed with herbicide. Ragwort prevalence remains small and controlled.

An infestation of Pampas grass *(Cortaderia selloana)* (yellow figure 6) just above the Sales Yard was eliminated the previous year. The remains of a stand of woody weeds predominantly Willow *(Salix sp.)* (blue figure 6) bordering the southern end of Phase C and east of the main Graveyard track is now a low priority.

Because of plans in the future to possibly to extend mining operations through much of this zone, and with the current rehab objectives being met; all plantings in this area have ceased for the time being and effort is focused on weed control.

Future Management Recommendations

The recommendations for Phase C include:

- Continue control of broadleaf weeds, blackberry, English ivy and small woody weeds with herbicide.
- Herbicide spray and hand weed all Ragwort when encountered.
- Notify quarry management and those undertaking deer control location of fox den.

0.8 Hectare Revegetation Site

The 0.8 Ha site is north facing slope adjacent to Southern Extraction to the east with 1.2 Hectare and 2023 Planting area to the west. This site was first direct seeded and planted in 2021. Overall survival and growth for planted trees and shrubs have been good except for the very top of the site at its southern end. This part of the site is much drier, the ground hard and the top soil layer appearing to be thinner. A canopy particularly from the bottom half of the site down is starting to develop in some areas.

Figure 7: 0.8 Hectare Revegetation Site. Drier area (red), Chilean Needle Grass clusters (yellow

2025 Works

Broad leaf control via selective herbicide application using 4-man crews with knapsacks to reduce broadleaf weeds to moderate levels. Garlon600 *(Triclopyr)* was used this time round as a broad leaf herbicide.

Stands of Flea Bane (*Conyza albida*) a fast-growing annual weed remains an issue seasonally, however control with a combination of hand weeding and herbicide application remains effective.

Weedy grass species presence still remains at low to moderate levels across this site. Toowoomba Canary Grass (*Phalaris aquatica*) is starting to spread has been controlled by brush cutting low to the ground with follow up spraying with glyphosate taking place one to two months later. The annual grassy weed Pigeon Grass (*Setaria sp.*) can be seasonally locally abundant but due to its temporary nature its control is currently a low priority.

The single isolated Chilean Needle Grass (*Nassella neesiana*) just above the dividing track halfway down the site has been thoroughly treated with manual removal. Will need further monitoring to ensure all specimens have been removed.

Both 0.8 and 1.2 Hectare had seed collected from it in November 2024. This was done using a small plant manually propelled seed harvester. Harvested seed was transferred to unused stock feed bags and stored for future use. To ensure that this seed is still viable for use 2026 crews will collect some more as a back-up this coming 2026 financial year to guaranteed successful sow of Southern Extractions new revegetation zone. This seed is intended to be used to direct seed new areas for revegetation. If successful this will result in a considerable saving in revegetation costs.

List below lists the number of Scattered infill planting that occurred in 2025.

Table 4. List of species planted in 0.8 Hectare Revegetation Area 2025

Species	Common Name	No.
Banksia marginata	Silver Banksia	15
Pultanaea scabra	Rough Bush-pea	10
Eucalyptus Radiata spp. radiata	Narrow-leafed Peppermint	25
Goodia lotifolia	Golden-tip, Clover Tree	25
Dianella Tasmanica	Tasman Flax-Lilly	25
Eucalyptus goniocalyx	Long Leafed Box, Bundy	25

Future Management Recommendations

The recommendations for 0.8 hectare include:

- Continue targeting broadleaf exotic species with a combination of Kamba M & Associate (Associate at half standard rate).
- Control Toowoomba Canary-grass *(Phalaris aquatic)* by brush cutting and follow up spraying with herbicide.
- Continued hand-weeding and disposal of seeding Chilean Needle Grass followed up by herbicide spraying of younger plants.
- Harvest Wallaby grass seed in December 2025 to be used for future direct seeding

Landslip Sites

In 2025 weed management and planting works were conducted at Mass 4, Mass 5 and Farm Dam 13. All of which contain some form of erosion due to being located in or surrounded by grazing paddocks. These sites boarder Phase A&B from North East to South East with natural springs occurring in both Mass sites potentially forming boggy soils contributing to soil erosion.

Figure 8: Mass 4. Circular failure (red), natural spring (blue), natural spring planting zone (yellow), northern planting zone (purple)

Figure 9. Mass 5

Figure 10. Farm Dam 13

2025 Works

Mass 4: Weed control focused on spraying re-shooting blackberry and thistles as a follow up to the previous year's works. This was conducted prior to planting as a further 165 tube stock was installed later in year aiming to increase biodiversity density, prevent future erosion and replace previously damaged plantings caused by deer (see Table 5).

Table 5. Species planted Landslip site Mass 4 2025

Species	Common Name	No.
Eucalyptus cypellocarpa	Mountain Grey Gum	50
Eucalyptus fulgens	Green Scentbark	65
Leptospermum continentale	Prickly Tea-tree	25
Leptospermum lanigerum	Woolly Tea-tree	25

Mass 5: Planting took place in the middle of a grazed paddock; it is uncertain how successful this will be as it would not be practical to stake or guard any plants with cattle present whom would almost certainly quickly dislodge or break any guards. Plants were spread out and strategically placed around the perimeter of the collapse to both help stabilise erosion and protect from grazing by hiding tube stock in low visibility zones and tricky to access locations for large cattle (see Table 6).This will need to be monitored as it is unlikely to stop kangaroos and rabbits. Species selected have evolved to be grazed as long as they planted correctly and not dug out.

Table 6. Species planted Landslip site Mass 5 2025

Species	Common Name	No.
Dianella revoluta	Spreading Flax-lily	75
Lomandra longifolia var. exilis	Cluster-headed Mat-rush	50
Lomandra longifolia var. longifolia	*Spiny-h*eaded Mat-rush	50
Poa labillardierei var. labillardierei	Common Tussock-grass	100

Farm Dam 13: Planting took place around dam perimeter with graminoid species to prevent erosion from hard hooved livestock and other animals as water bodies are frequently visited by all manner of fauna. Weed control also took place with crews conducting herbicide treatment prior to planting targeting Blackberry and thistles (see Table 7).

Additional plantings could and most likely will occur in future depending on survival rates.

Table 7. Species planted Farm Dam 13 2025

Species	Common Name	No.
Dianella revoluta	Spreading Flax-lily	75
Lomandra longifolia var. exilis	Cluster-headed Mat-rush	50
Lomandra longifolia var. longifolia	*Spiny*-headed Mat-rush	50

Poa labillardierei var. labillardierei	Common Tussock-grass	100

Future Management Recommendations

The recommendations for Landslip plantings include:

- **Mass 4.** Herbicide treatment of blackberry stands/Spear thistles Mass 4.
- Continue to monitor deer activity and any damage caused to plantings
- **Mass 5.** Assess the success of plantings openly grazed paddock, report findings to quarry management.
- **Farm Dam 13.** Assess the success of plantings in openly grazed paddock, report findings to quarry management.
- Work with quarry management to determine whether additional planting will be successful and necessary. Fencing may be required.

Table 8. List of recommended species for planting Landslip Site Mass 4 in 2026

Species	Common Name
***Poa labillardierei* var. longifolia**	Common Tussock-grass (Substitutions only)
Lomandra longifolia var. longifolia	Spiny-headed Mat-rush (Substitutions only)

Net Gain Site

The Net Gain Site is located at the Donazzan's Property' 415 Pakenham Road (Quarry owned) comprises of two offset zones Northern and Southern section. Net gain both North & South Revegetation Zones fall within EVC 16 Lowland Forest and EVC 83 Swampy Riparian Woodland. This is the most species diverse of all the sites with the highest amount of remnant vegetation.

Figure 11: Net Gain: North (top) & South (bottom) both marked in yellow, Winter heliotrope (blue marker), eradicated St Augustine Grass (red marker), Wild carrot (dark pink marker), Muttonwood plantings (green marker).

2025 Works

Broad leaf weed control via herbicide application with knapsack is most commonly spent spraying thistles and nightshades. Wild carrot (*Daucus carota*) located along spillway below Donazzan's Dam continues to sprayed the herbicide Associate (active ingredient Metsulfuron-methyl), which better targets species with tuberous roots.

An infestation of Winter heliotrope (*Petasites gragrans*) above the middle swamp of the Northern section was sprayed in summer of 2024 with Associate herbicide. The spray works were successful, with follow up spray work in 2025. Ragwort (*Senecio jacobaea*) a highly invasive species and a priority weed for control is hand weeded and or sprayed with herbicide when encountered. This weed is observed in very low numbers in the Northern section only, spreading occasionally from adjacent land to the east and is consistently targeted with each visit.

Black berry spraying was conducted throughout Northern and Southern Sections between the months of March – April and September – December when herbicide treatment is most effective. Regular spray runs of this weed has kept its prevalence at low levels with the exception of hard to access swamp areas of Northern section.

Exotic grass coverage is somewhat reduced in the Northern section where large perennial grass coverage remains low. In the Southern Section top half Tall Fescue (*Festuca arundinacea)* was sprayed with glyphosate either side of the creek line allowing for regeneration of native revegetation to take place.

St. Augustine grass *(Stenotaphrum secundatum)* thought previously to of been possibly eradicated has returned NE corner of the Northern Section. This weed will be treated with herbicide in early 2026 to stop this weed spreading with the intention of final eradication.

Native Weeping Grass (*Microlena stipoides var. stipoides*) has increased, in several locations mostly weed free producing in summer sufficient quantities of seed worth harvesting. The timing Weeping Grass seed collection can be tricky as the optimum time period for its harvest frequently falls during the Christmas & new year break.

Lots of damage to fencing was caused by falling branches and trees due strong winds in the Northern section of Net Gain that allowed cows access to the site from adjacent paddocks. Quarry management was alerted and repair to fences was arranged.

Evidence of introduced Sambar Deer in both Northern and Southern section continues to be observed. Damage to trunks of trees by the rubbing of their horns, grazing and trampling of young plants, disturbance from trails and wallows all have a measurable a negative impact on the site. However now that a deer control program has been initiated, damage caused by deer is no longer increasing.

Mutton wood (*Myrsine howittiana*) was planted at the bottom half of Southern Section along the creek line. Plantings should continue to do well provided deer steer clear.

Table 9. List of species planted within the Net Gain area in 2025.

Species	Common Name	No.
Eucalyptus ovate var. ovate	Swamp Gum	25

Future Management Recommendations

The recommendations for Net Gain include:

- Continue managing exotic broadleaf and grassy weeds via herbicide application.
- Continue spraying Wild Carrot and Winter Heliotrope with Associate (metsulfuron methyl) herbicide.
- Continue to control Ragwort by a combination of herbicide application and hand weeding.
- Continue to monitor NE Corner of Northern Section for St. Augustine grass.
- During summer months when water levels are the lowest brush cut access paths into the two main swamp areas of the Northern sections, allowing access for weed control.
- Continue spraying of blackberry with herbicide, access blackberry in swamp areas by using brush cut paths.
- Monitor Weeping grass seed development to determine optimal time for harvest. Attempt to harvest viable seed for future direct seeding.
- Continue with deer control program and monitor species impact
- Monitor and control Rabbits, in accordance with CALP requirements for net gain sites.

1.2 Hectare Revegetation Site

The 1.2 Ha site is directly to the west 0.8 Revegetation Site sharing similar environmental conditions such as north facing, mostly dry with occasional high winds.

Figure 12: 1.2 Hectare site. NW corner direct seeded by hand (green)

2025 Works

Seasonal tanker spraying with selective herbicide was used to control broadleaf weeds. The most prevalent broadleaf weed species remaining is Flea Bane (*Conyza albida*). Flea Bane can be best controlled by herbicide application when young and a combination of hand weeding and cut and paint for larger plants.

Exotic grassy weeds remain under control although Toowoomba Canary Grass (*Phalaris aquatica*) is starting to spread. Toowoomba Canary Grass is best controlled by brush cutting low to the ground with follow up spraying with glyphosate taking place one to two months later.

The north eastern end of the site from the point that it narrows was not direct seeded with native grass alongside the rest of the site. To remedy this Wallaby grass seed previously harvested from 0.8 Hectare and Weeping grass seed harvested from Net Gain was direct seeded in December of 2024 by hand after all grassy weeds had been sprayed. By February of 2025 Wallaby grass & Weeping grass had germinated (see Picture 1 & 2), with ongoing management of pack spraying competing weedy grass species native grass will become dominant.

Picture 1. Recruiting wallaby grass.

Picture 2. More recruiting wallaby grass.

A large number of trees and shrubs were re-assigned to SE Extraction after another planting area scheduled for direct seeding and planting was delayed by a year. Trees and shrubs were spread evenly across the site.

Table 10. List of tree and shrub species planted in 1.2 Hectare Revegetation Area in 2025.

Species	Common Name	No.
Cassinia longifolia	Long-leaf Cassinia	25
Daviesia leptophylla	Narrow-leaf Bitter-pea	50
Epacris impressa	Common Heath	50
Acacia pycnantha	Golden Wattle	35
Eucalyptus dives	Broad-leafed Peppermint	100
Eucalyptus goniocalyx	Long Leafed Box, Bundy	90
Grevilliea alpina (Southern Hills form)	Mountain Grevilliea	50

Future Management Recommendations

The recommendations for 1.2 Hectare Revegetation Site include:

- Keeping broadleaf weeds controlled via selective herbicide application using tanker or knapsacks.
- Control of Toowoomba Canary-grass by brush cutting and follow up spraying with herbicide.
- Harvest Wallaby grass seed to be used for future direct seeding projects

Paddock Replacement

This site encompasses 5 separate paddock areas that are grazed by cattle. Stock proof fencing has been erected around 150 approximately 1.5m^2 quadrants in which Eucalyptus was originally planted in 2018.

Figure 13: Paddock Replacement 5 zones (ash)

2025 Works

Reduced amount of 8 Eucalyptus was replanted inside fenced enclosures; death had occurred for a variety of reasons similar to previous year. Several fenced enclosures were damaged and failed to protect planted Eucalyptus from cattle grazing and rubbing. Eucalyptus had reached a sufficient size then blown over by strong winds snapping main stem. Some had not survived from the previous year's plantings possibly due to dry conditions.

Table 11. List of Eucalyptus species planted in Paddock Replacement site 2025.

Species	Common Name	No.
Eucalyptus fulgens	Green Scentbark	10

Future Management Recommendations

The recommendations for Paddock Replacement Site include:

- Monitor plant survival and replace any dead plantings.
- Notify quarry management if any additional quadrants need repair.

2023 Planting Area

2023 Planting Area sits directly below 1.2 Hectare Revegetation Site, north facing subject to occasional dry winds but with a higher degree of fluctuation in site conditions than adjacent areas.
It can be similarly dry during hot periods but its lower elevation also accentuates wet conditions. This variability will pose difficulties for establishing some species particularly during early years of revegetation.

Figure 14: 2023 Planting Area, seasonally wet areas (blue)

2025 Works

Broadleaf weeds have been controlled by the application of herbicide with tanker spray unit and crews with knapsacks. Below and to the east of site in border areas large volumes of broadleaf weeds have also required treatment.

Grass germination of sterile rye and native wallaby grass appears to be increasing from the previous year but will need to continue treating broad leaf weeds for best results.

Small amount of infill plantings to account for previous seasons not having accurately predicted the volatile weather patterns. Generally, all round tolerant plant species were selected in 2025 to prevent die off.

Each following year it is expected that as grass coverage increases, and trees and shrubs grow that temperature fluctuation on the surface will lessen. It is also expected that as the ground continues to stabilise during wet periods improved drainage will reduce the duration of waterlogged ground.

Table 12. List of tree and shrub species planted in 2023 Planting Area in 2025.

Species	Common Name	No.
Eucalyptus Radiata ssp. radiata	Narrow-leafed Peppermint	25
Leptospermum myrsinoides	Heath Tea-tree Silky Tea-tree	25
Banksia marginata	Silver Banksia	25

Future Management Recommendations

The recommendations for 2023 Planting Area include:

- Maintain control of broadleaf weeds with selective herbicide application by spray tanker for 2023 Planting Area and adjacent areas.
- Monitor lower half of site recording the survival rates by species.

South East Extraction Backslope

This site borders South East Extraction to its west starting from the back end of the ridgeline to the track that borders the bottom of the hillside. Many sections of this site are steep with deep soft soil making planting and spray works difficult in wet conditions.

Figure 15: South East Extraction Backslope

2025 Works

Unlike the majority of other revegetation areas direct seeding has yet to take place. This is because the weed load is still very high. In particular Toowoomba Canary Grass would very easily out compete any direct seeded native Wallaby & Weeping grass in most areas. Combination of herbicide spraying and slashing will be required to control this area as it is a particularly prone to Common vetch *(Vicia sativa)* which is an oddly frustrating weed in the sense as it's not the most invasive species and can be left as it will disappear by late summer/autumn but can grow rapidly enough to smother guards and plants in the meantime. Last observed the vetch was in the process of smothering guards so this will need to be targeted as soon as possible if it hasn't died off already.

All broadleaf and grassy weeds will continue to be tanker sprayed or knap sacked until there comes a time when the weed seed bank is reduced enough to make direct seeding worthwhile. Though direct seeding may only be a temporary erosion stabiliser as the continued growth and density of existing plantings combined with a more southern topography could potentially shade out grasses in a very short time frame.

If the seed is collected from Holcim, then it is an expense free problem and worth doing regardless.

Wallaby grass recruitment in the last year on the track below SE Extraction Backslope has been notable. Wallaby grass does well in areas of compacted ground, careful spraying of weedy grass along the track has taken place to maintain and increase Wallaby Grass presence with the intention to see it start to recruit into the lower sections of the site.

Plantings once established particularly eucalyptus species are growing fast. Rates of survival have been good. This is due to the high fertility of the soil and being a steep east facing slope many plants benefit from increase run off and are not as harshly affected by the midday sun. Because of this many species are planted

here that require a more sheltered conditions.

In 2025 plantings were directed to replace dead plants and fill in spaces between existing plants to reach the required density. Species selected for planted were primarily chosen to further expand species site diversity and plant species that would not be suitable for other sites.

This is an ideal location for deep rooted trees due to fertile soil and because they could compete the broad leaf and weedy grass species in this zone.

The top half of the site was sprayed and planted in 2023 with infill planting occurring in 2024. The bottom half was sprayed out and planted in 2024 for the first time. Plantings, particularly eucalyptus species are establishing well and rates of survival have been good. 2025 plantings yet to be monitored for results.

Table 13. List of tree and shrub species planted in South East Extraction Backslope in 2025.

Species	Common Name	No.
Acacia Pycantha	Golden Wattle	15
Daviesia latifolia	Hop Bitter-pea	25
Eucalyptus cephalacarpa	Silver-leafed Stringbark	25
Eucalyptus fulgens	Green Scentbark	25
Eucalyptus goniocalyx	Long-leafed Box, Bundy	10
Leptospermum continentale	Prickly Tea-tree	25
Leptospermum lanigerum	Woolly Tea-tree	25
Oleria lirata	Snowy Daisy-bush	25

Future Management Recommendations

The recommendations for SE Extraction Backslope include:

- Regular control of all broadleaf and grassy weeds throughout the site with herbicide application via tanker.
- Herbicide spraying of reshooting blackberry by knapsack on slope and immediate area
- Continue careful spray works from ridgeline and down the slope to protect recruiting native Wallaby grass.
- Maintenance of guards around plantings as frequent tanker spaying poses a higher risk of off-target damage
- Undertake additional plantings prioritising species that are well suited to moist deep soils with high fertility

Southern Hillside

This site runs south of the road bordering quarry administration, east of the workshop and west of a grazing paddock, going up the hillside to the track that runs along the base of South East Extraction Backslope. Lower levels of disturbance and the presence of a fair degree of remnant vegetation are likely due to the slope's topography. Some of the remnant species present are Kangaroo Grass *(Themeda triandra)*, Austral Bracken *(Pteridium esculentum*), Native Raspberry *(Rubus parvifolius)*, Common Tussock-grass *(Poa Labillardierei),* Weeping grass *(Mircrolena Stipoides*) and Wallaby grass *(Rytidosperma sp*.).

Figure 16: Southern Hillside. Priority area for seasonal brush cutting (red)

2025 Works

Natuelinks has managed native vegetation by reducing exotic weed prevalence via brush cutting and herbicide spraying through much of the site. Primary weeds controlled have been Blackberry (*Rubus fruticosus sp. agg.*), Hawthron (*Crataegus monogyna*), Toowoomba canary grass (*Phalaris aquatica*), Cocksfoot (*Dactylis glomerate*) and thistles sp.

Austral Bracken (*Pteridium esculentum*) in particular has expanded by the management technique described above with Cocksfoot the dominant grass where the Bracken is prevalent. Austral Bracken has a very low presence in the quarry but it a dominant understory plant in much remnant vegetation in the area, thus an important part of the local ecosystem.

The main access road bordering the southern hillside was prioritised by quarry management to implement strategies to limit the amount maintenance works taken place there. The solution was to plant Silver Wattles in the lower sections of the site so that their future dripline shade-out large perennial weedy grass species in a number of years. This will need to be monitored and potentially expanded upon but there are no immediate plans to add more infill plants this coming 2026 financial year. Can revisit this option in future.

Table 14. List of tree and shrub species planted in Southern Hillside in 2025.

Species	Common Name	No.
Acacia stictophylla	Dandenong Ranges Cinnamon wattle	25
Banksia marginata	Silver Banksia	25
Daviesia latifolia	Hop Bitter-pea	25
Goodia latifolia	Golden-tip, Clover tree	25

Future Management Recommendations

The recommendations for Southern Hillside include:

- Control of blackberry by application of herbicide
- Control of grassy weeds through herbicide application with an effort to protect and promote

recruitment of native grass species

- Control of broadleaf weeds across the site with care taken to limit off target damage to Austral bracken
- Maintain seasonal brush cutting regime along quarry entrance road, collection and removal of woody debris to reduce fire risk and for aesthetic purposes.
- Undertake additional plantings prioritising species suited for fertile deep soils

Northern Boundary

The Northern Boundary borders the Huxtable Road Horse Riding Reserve (HRR) and lies to the north of Phase C. An established canopy is present but a shrub/understory layer largely absent. Naturelinks was directed by quarry management to plant a row of shrubs along the boundary to act as a visual screen.

Figure 17: Northern Boundary

2025 Works

Infill planting was continued from previous years heading further west from where 2024 plantings finished. Stakes and guards were collected from dead plants and those that no longer need protection. Plant survival from last year's plantings was good but growth overall was poor probably due to established canopy trees competing with new plantings for moisture and soil fertility.

Infill species of trees and shrubs were planted this financial year with intention of increasing species biodiversity and implementing buffer/screens from neighbouring properties. Estimated 500 species were used as buffer screen along the Northern HRR boundary with the aim to use shrub species densely packed together to minimise environmental impacts from Quarry Operations. Revegetation from HRR boundary spans directly from the fence to 20 metres inwards on Holcim land. This compliments existing plantings and aids in thickening up vegetation from previous efforts.

A further 500 shrubs and trees are to be installed in this 2026 financial year building on the screen.

Table 15. List of shrub species planted Northern Boundary in 2025.

Species	Common Name	No.
Acacia stricta	Hop Wattle, Straight Wattle	100
Acacia oxycedrus	Spike Wattle	35
Acacia myrtifolia	Myrtle Wattle	35
Acacia paradoxa	Hedge Wattle	35

Hakea nodosa	Yellow Hakea	85
Hakea decurrens spp. physocarpa	Bushy Needlewood	85

Table 16. List of shrub species recommended Northern Boundary in 2026.

Species	Common Name	No.
Acacia stricta	Hop Wattle, Straight Wattle	25
Acacia mearnsii	Black Wattle	25
Acacia Pycnantha	Golden wattle	40
Acacia oxycedrus	Spike Wattle	30
Acacia myrtifolia	Myrtle Wattle	30
Acacia paradoxa	Hedge Wattle	30
Hakea nodosa	Yellow Hakea	35
Hakea decurrens spp. physocarpa	Bushy Needlewood	25
Goodia lotifolia	Golden-tip	20
Coprosma quadrifida	Prickly currant-bush	35
Myrsine howittiana	Muttonwood	35
Dianella revoluta	Spreading Flax-lily	20
Poa labillardierei	Common Tussock-grass	10
Hakea teretifolia spp. Hirsuta	Dagger Hakea	15
Oleria myrsinoides	Silky Daisy-bush	15
Lomandra longifolia var. exilis	Cluster-headed Mat-rush	10

Future Management Recommendations

The recommendations for Northern Boundary

- Replace dead plantings upon Quarry request
- Stake and guard collection
- Install a further 500 tube stock

Lower Car Park

Lower car park refers to the North-South Road that goes to and from the lower car park east of Mt Shamrock Road. Naturelinks was directed to plant a line of trees to offer protection to the vehicles parked in this car park from the elements.

Figure 18: Lower car park plantings (red).

2025 Works

Plantings from 2024 are doing well with only a handful of plants perishing in the last year. Stake and guard collection from dead plants and those who no longer need protection from tree guards. Intact collected stakes & guards were used for 2025 plantings elsewhere in the quarry.

Future Management Recommendations

The recommendations for Lower Car Park

- Replace dead plantings upon Quarry request
- Stake and guard collection

Chilean Needle Grass Monitoring & Control

Chilean Needle Grass (*Nassella neesiana,* CNG) is a highly invasive species that presents threats to both natural environments and agriculture. While this species is widespread in the northern and western regions of Melbourne, it is currently found only in limited areas of the outer eastern suburbs. Eradicating Chilean Needle Grass in locations where it has not yet established should be prioritized. Naturelinks recommends that efforts be made to pursue this objective.

Figure 19: Surveyed Chilean Needle Grass infestation (blue), areas of high infestation (red), new outbreak (red marker).

2025 Works

On ground crews continued to target small recruiting Chilean Needle Grass outside of previously known large patches. Vigilance needs to be maintained if full eradication is possible and it would take several years to achieve this as weed seed can remain viable in soil for over 10 years. Monitoring will take place early in 2026 to map out and track CNG populations using the Qfield application.

Patrols can be done with knapsacks containing glyphosate, but it is strongly encouraged to use the pre-emergent Tussock *(Flupropanate)* especially on small isolated break out species if there are concerns around environmental damage in paddocks. Chilean Needle grass is considered to be one of Australia's worst weeds and is capable of reducing pasture productivity by up to 50% It is damaging to live stock through the following reasons.

Physical injury: The seeds have extremely sharp points and long twisted, wire-like awns (tails) that twist when wet and penetrate fleece, skin and even muscle of grazing animals.

Eye Injuries and Blindness: Seeds frequently get caught in the wool around the eyes causing severe irritation, infection and in many cases, blindness in lambs and sheep.

Carcass Damage: Penetration of the seeds into the fleece causes significant downgrading of wool value.

Reduced Growth Rates: Because the grass is unpalatable (especially during summer when it sets seed) and has low nutritional value, it reduces the overall health and growth rates of sheep.

Seasonal Danger: the plant is most dangerous during spring and summer when it produces large amounts of sharp, unpalatable flower stalks, with little green, nutritious leaf material.

Hidden Seeds: In addition to the main seed head, the plant produces "hidden" seeds *(cleistogenes)* within the leaf sheaths, which allows it to continue spreading even if it is grazed or slashed.

Spread vis Stock: Livestock and other fauna (especially kangaroos) can easily spread the seeds on their coats, in their faeces, or in mud on their hooves.

CNG seed can be spread through various methods; Primarily the species will spread to its immediate vicinity in the area around existing seeding plants. It can also be transported by vehicles and machinery such as tractors, vehicles, trailers, motorbikes, slashing equipment, and brush cutters. For this reason, vehicle and tool hygiene is essential for any occasion where exposure to weed seed is possible.

Further increase of Chilean Needle grass could also clash with seed collection efforts if it infiltrates harvestable indigenous patches, contaminating the seed and potentially spreading it further.

Naturelinks maintains a strict regime of cleaning vehicles and equipment. Native wildlife in particular Kangaroos seem to be the most likely source of dispersal over distance, especially on this site. The exclusion of Kangaroos from contaminated areas is not viable, so stopping any seed reaching maturity needs to be a focus in management.

Naturelinks personal spent a considerable amount of time targeting localised populations of Chilean Needle grass inside the quarry boundaries between 1.2/0.8 Hectare and South East Extraction, with known outbreaks up in Phase C still needing to be followed up on.

In 2024 the species was controlled within managed areas during regular weed control works. This proved insufficient due to the species expansion. As a result, the 2025 Chilean Needle Grass Monitoring and Control budget now has budget reserved for dedicated spray runs in managed areas and was implemented this 2025 Calander year. Chilean Needle grass control budget is set to increase in 2026 to combat the emerging outbreaks from the large back paddock infestation.

Holcim's Environmental Review Committee consulted the Cardinia Shire Council for guidance on addressing the Chilean Needle Grass issue in 2024. The Council recommended that Holcim contact Agriculture Victoria, as they are responsible for administering the Catchment and Land Protection Act 1994 and are best positioned to offer advice on control measures for Chilean Needle Grass. Naturelinks contacted Agriculture Victoria on Holcim's behalf. Agriculture Victoria confirmed that the quarry was not obligated to control the weed and provided a link to a best practice management guide[1]. This is due to a grey area with privately owned land where as public land would be required to treat the weed.

In consultation with the Environmental Review Committee and quarry management, Tussock Herbicide (active ingredient Flupropanate) is not currently in use. The chemical has several drawbacks primarily based on its toxicity and residual nature. Its benefit is that it has been specifically designed to target the Nassella genus killing the plant and when applied to ground around existing plants will stop further germination of the weed for potentially long periods of time.

Its best use in this situation could be for isolated outbreaks that may be difficult to locate in subsequent years, and it could be used in conjunction with glyphosate which could remain the primary herbicide for weed control for large easily located infestations and grazed areas.

Due to the effectiveness of Flupropanate herbicide, Naturelinks strongly recommends that this option be reviewed.

Fauna – considerations and concerns

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

[1] https://www.yumpu.com/en/document/view/41300348/cng-manualindd-weeds-australia

Introduced species

As part of the requirements of the offset management plan, invasive species, including pest animals require control. Sambar deer are having the most impact through grazing on areas of remnant flora and revegetation areas, followed by Rabbits and Hares. Red fox requires control as it has a negative effect on native fauna, and is a declared pest species.

- Sambar deer (*Rusa unicolor*) are observed to adversely impact some sites. Naturelinks recommends that the deer control program currently in place continue for the following year.
- European Hares (*Lepus europaeus*) are occasionally seen and currently appear to have a minor impact. Hares can impact on revegetation due to their propensity to graze on establishing plants, and their ability to reach above tree guards by standing on their hind legs. Controlling hares along with rabbits (see below) should be undertaken if an increase in damage is observed.
- European Rabbits (*Oryctolagus cuniculus*) are occasionally seen and currently believed to have a minor impact at SE Extraction Ridgeline predating on unguarded plantings. In previous years Rabbits 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 which may be due to myxomatosis or Rabbit Haemorrhagic Disease (RHD). Monitoring of rabbit damage will be undertaken and if an increase occurs, control may be recommended.
- Red foxes (*Vulpes vulpes*) have been observed in the past. One active den with cubs was discovered underneath a large Weeping Willow in the centre of Phase C in 2024. Their full environmental impact remains uncertain. Impacts on marsupials, native birds and other wildlife is a recognised problem with foxes. Possible control in conjunction with deer or rabbit/ hare treatment could occur, but the impact of foxes is not affecting revegetation works.

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, particularly in Phase A & B. Grazing does not yet appear to be a serious problem.
- Peregrine falcon (*Falco peregrinus*) A pair of Peregrine Falcons have historically nested on the western cliff-face of the quarry.
- Gang-Gang Cockatoo *(Callocephalon fimbriatum)*, have been observed at the quarry for several years. Recently the species' conservation status has been elevated to Endangered.

Pest Animal Control 2025, and 2026 proposed.

Deer control. There is a resident population of Sambar deer (*Rusa unicolour*.) As noted, they are having a deleterious effect through browsing of planted and established vegetation, along with rubbing of trees with their antlers. Only one control visit was undertaken in 2025, with no deer removed. One large female Sambar deer was observed in the net gain site, but a safe shot was not able to be taken. Personal communications from, and observations by Holcim staff verify that deer are still present. Any deer culled will have ear tissue samples taken for submission to DEECA who are undertaking genetic studies to understand population movements in Sambar deer.

The recommendation is to continue with deer control in 2026, to prevent an escalation of damage to vegetation. Holcim have indicated a willingness to contact neighbouring properties in case they are willing to engage Naturelinks to undertake deer control simultaneously on their properties, which will have the benefit of increasing the effectiveness of the program due to the mobile nature of deer. Timing. As the nights get longer, and daylight savings finishes, this presents the best opportunity for carrying out control works. The start of April is recommended, timed for nights where there is little moonlight, which favours locating deer, which prefer the cover of complete darkness to venture into the open.

Naturelinks has remotely monitored wildlife cameras, which we propose deploying in several areas to better understand movement and sheltering sites.

Rabbit control. Monitoring of rabbit damage will continue and if an increase occurs, control may be recommended. Rabbit control would include Fumigation of warrens, followed up by warren destruction (subject to approval) and follow up shooting.

Fox control. Due to the low numbers of foxes observed, we recommend only carrying out incidental fox control while deer or possible rabbit shooting is being carried out. Trapping may be required If observed numbers increase. Baiting may be necessary if trapping fails, but due to the possibility of dogs from neighbouring properties accessing baits, there would need to be notifications of neighbours informing them of the control period, and signage erected (all legal requirements).

Aspects and Impacts Assessment

Table 17. *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	• 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 notify site contact to be provided with access to wash down area • See Table 19: List of noxious weeds in West Gippsland region **Detailed Controls by area** **Landslip** *Noxious weeds West Gippsland region present or potential:* Blackberry, Slender Thistle, Spear Thistle, Variegated Thistle *Actions taken to reduce risk:* 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. **Paddock replacement** *Noxious weeds West Gippsland region present or potential:* Blackberry, Ragwort (potential), Slender Thistle, Spear Thistle, Variegated Thistle *Actions taken to reduce risk*: 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 *in situ*; any seed head with viable seed is to be buried where possible.

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; hand weeding of Chilean Needle Grass and its removal for disposal offsite is only to be done with caution (Naturelinks has required permits to do this). Avoid using any 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; hand weeding of Chilean Needle Grass and its removal for disposal offsite is only to be done with caution (Naturelinks has required permits to do this). Avoid using any 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; hand weeding of Chilean Needle Grass and its removal for disposal offsite is only to be done with caution (Naturelinks has required permits to do this). Avoid using any 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 flowing 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	Incorrect use of herbicide on plant species Off-target damage Herbicide entering waterways	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. Restricted use chemicals are to be only used by those staff holding an Agricultural Chemical User's Permit (ACUP) • Herbicides are carefully selected to each species; see Table 18. List of herbicides used at Holcim – Mt Shamrock *Alternative methods to herbicide spraying to be considered by Holcim and quoted by Naturelinks* • **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. Used for small infestations of blackberry in high quality areas or around sensitive species. 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. 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.

Table 18. *List of herbicides used at Holcim – Mt Shamrock*

Herbicide	Usage	Species Controlled	Application	Notes
Weedmaster Duo **ACTIVE CONSTITUENT: 360 g/L Glyphosate**	Commonly used across the site Control of grass and broadleaf weed species via backpack spray and tanker spray. Occasionally combined with other herbicides for specific hard to kill weeds Control of woody weeds	Agapanthus, Blue Periwinkle, Holly, English Ivy, Ragwort, Madeira Vine, Willow sp., Pittosporum, Hawthorn, Prunus sp., Chilean Needle grass, annual and perennial grasses, broadleaf weeds where off target damage risk is low.	Cut and paint of woody weeds (both with hand tools and chainsaw) Backpack spay and tanker spray application	Fast acting, non-selective, cost effective, is inactivated immediately in the soil and does not provide residual weed control
Kamba M **ACTIVE CONSTITUENTS: 340 g/L MCPA, 80g/L DICAMBA**	Commonly used across the site. For broadleaf specific weeds when off target damage to native grass species is to be avoided via backpack spray and tanker spray.	Broadleaf weed species	Backpack spray or tanker spray	Average field half-life of dicamba is 14 days. Average field half-life of MCPA is 7 days.
Associate Herbicide **ACTIVE CONSTITUENT: 600g/kg METSULFURON METHYL**	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). Occasionally combined with other herbicides for specific hard to kill weeds	Bridal Creeper (Asparagus spp.), Angled Onion, Soursob (and other Oxalis spp.), Spanish Heath, Blackberry (occasionally only but can be used all year round)	Backpack spray or tanker spray	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.
Maca 600 (most widely known by brand name Garlon) **ACTIVE CONSTITUENT: TRICLOPYR**	Control of Blackberry spp., Broom, young Hawthorn and Prunus sp., Briar Rose via pack spray or tanker spray	Blackberry spp., Broom, young Hawthorn, and Prunus spp, Briar Rose	Backpack spray or tanker spray	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.
Lontrel Advanced **ACTIVE CONSTITUENT: 600g/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 Hounds-tongue. Withholding periods: Do not graze or cut for stock food for 7 days after application. Low toxicity to fish, birds, honeybees, livestock, earthworms and aquatic organisms. Was not used for the 2024 work period partially due to concerns raised by quarry audit. As alternative herbicides are available and the prevalence of weeds which Lontrel Advanced and Apparent Clopyralid use is preferred is currently low.

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 Hounds-tongue. 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 2024 work period partially due to concerns raised by quarry audit. As alternative herbicides are available and the prevalence of weeds which Lontrel Advanced and Apparent Chlopyralid use is preferred is currently low.

Table 19. 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
Variegated Thistle	Regionally Controlled Weeds	Medium	Soil (may contain seed) Airborne Seed
Crack Willow	Restricted Weeds	Low	Vegetation

Attachments

- Provided in Excel spreadsheet: Indigenous Flora of Holcim Pakenham, Introduced and Weed Species, Mammals Observed, Reptile and Frog Observations, Bird Observations, Assessment of Species used for Revegetation