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WEED MANAGEMENT PLAN

Council Area:

BLUE MOUNTAINS CITY COUNCIL

Prepared on behalf of:

Catholic Education Office

For the Site located at:-

168 Hawkesbury Road, Springwood, NSW, 2777

Prepared by:-

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SITE DETAILS

Address	168 Hawkesbury Road, Springwood
Lot/Section/Plan	Lot 1/- / DP133438, 2/-/DP133438, 56/-/DP751635, 57/-/DP751635, 7/-/DP1227293
Local Authority	Blue Mountains City Council
Local Environmental Plan	Blue Mountains Local Environment Plan 2015
Development Control Plan	Blue Mountains DCP 2015
Land Zoning	C2 - Environmental Conservation C4 - Environmental Living RE2 - Private Recreation SP2 - Infrastructure

DEVELOPMENT PROPOSAL DETAILS

Proposal Summary	-New School Buildings
Assessment Controls	-Blue Mountains Local Environment Plan 2015 -Blue Mountains DCP 2015 -Biosecurity Act 2015
Applicant Details	Catholic Education Office c/o Alleanza Architects

DOCUMENT DETAILS

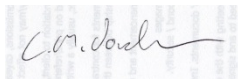
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Signed	
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INTRODUCTION

This Weed Management Plan (WMP) has been prepared by D.A. Landscape Plans on behalf of the Catholic Education Office (the applicant) to accompany a Development Application to Blue Mountains City Council (BMCC) for the property located at 168 Hawkesbury Road, Springwood (the subject site).

The applicant seeks to gain approval for new School Buildings.

The purpose of this document is to outline weed infestation on the subject site, and appropriate management strategies for weed removal, taking into account both BMCC policies and the Biosecurity Act 2015.

This WMP is to be read in conjunction with all associated plans and supporting documentation.

SITE DESCRIPTION

The subject site is located at 168 Hawkesbury Road, Springwood.

The site has a street frontage to Hawkesbury Road, Springwood (by survey).

The site currently consists of assorted school buildings, playing areas, recreation areas, and storage facilities.

The majority of the total site is Australian native bushland, while the majority of the proposed development area is primarily made up of existing maintained garden and agriculture area.

The school areas of this site sit along a ridge-line, and slope downward into bush on three sides, these being North, East and West. The ridge-line continues to the South, and it is along this ridge-line that the main access road leads to and from Hawkesbury Road.

On the Eastern boundary of the study area for this weed management report lies an endangered Ecological Community, as detailed in the Flora and Fauna Report dated December 2021.

The main weed areas within this study area are within the transition zones, between maintained garden areas and native bush.

A total of 38 weed species were identified within this study area.

METHODOLOGY

Observations and recordings of weed populations were undertaken on the 2nd of September 2022, utilising the random meander method of data collection in accessible areas of the site. Photographs were taken at the same time.

Site Plan information was taken from the Site Plan prepared by Alleanza Architecture, dated 19th July 2022.

This weed management plan has only taken into account those areas of the site that directly relate to the proposed development application, those being the primary construction zone and associated asset protection areas, as identified within the bushfire report dated 31 May 2021.



For purposes of weed management the site has been broken into 5 sections. These sections have been labelled “Zone 1 - Primary Construction Zone”, “Zone 2 – Maintained Garden Zone”, “Zone 3 – North APZ Zone”, “Zone 4 – Agriculture Fringe Zone”, and “Zone 5 – Endangered Ecological Community Zone”.

EXISTING VEGETATION / VEGETATION COMMUNITY

Zone 1 – Primary Construction Zone:- Dominant existing vegetation is maintained garden areas, made up mostly of turf, with small areas of exotic garden species.

Zone 2 – Maintained Garden Zone:- Dominant existing vegetation is maintained garden areas, made up mostly of turf, with small areas of exotic garden species.

Zone 3 – North APZ Zone:- Dominant existing vegetation is remnant native forest consisting of mostly *Corymbia gummifera*, *Angophora costata*, and *E. agglomerata*. There is a well established under-story primarily of *Acacia longifolia* and assorted *Leptospermum* species. There is also significant weed invasion at the top of the slope, with some evidence of previous unsuccessful re-vegetation plantings.

Zone 4 – Agriculture Fringe Zone:- This area is a transition area between the maintained garden areas, and the native forest (outlined above). There is also some evidence of previous successful re-vegetation plantings, namely *Imperata cylindrica*. There are small areas of weed invasion beginning, most notably African Lovegrass.

Zone 5 – Endangered Ecological Community Zone:- This area is mostly dominated by *Syncarpia glomulifera*, with a few smatterings of *E. gummifera*. The understorey for this area has mostly been cleared for asset protection works. There are small numbers of weed species beginning to take hold in the cleared areas.

WEED INFESTATION PROCESS

The site is an old school, built on a ridge-line, with a long history of maintained exotic garden areas. There are also large turfed areas between buildings. The majority of weeds stemming from these areas is in the form of escaped grasses making their way into the surrounding bushland. The garden areas have not presented as great a threat as the turfed areas. The notable exception to this rule is the area at the rear of the agriculture storage sheds, where garden waste has been routinely dumped off the edge of the embankment, into surrounding bush.

The school also has an extensive agriculture section, and the feed of the animals has been responsible for importing many of the weed species seen around the site, an example of which is the *Urtica* (Stinging nettle) species below the Turkey coop.

The area within the North Asset Protection Zone is heavily infested with weeds making their way downslope through overland water flow, and as a result of the clearing and dumping within this area.

The majority of weed infestation on this site is the result of either clearing, thereby opening the soil to infestation, or dumping of garden waste and rubbish into the surrounding bush.



Other evidence suggests bird dispersal methods (e.g. *Rubus* sp. - Blackberry), Wind dispersal (e.g. *Conyza* sp. – Fleabane), and overland water flow (e.g. *Ageratina adenophora* – Crofton Weed).

The bush areas around the school demonstrate great resilience against weed invasion, and overall, given the age and nature of the institution, St Columbas staff have done a remarkable job of minimising weed threats on this site.

WEED MANAGEMENT GOALS

The general purpose of weed management is to reduce, control, or eradicate from site, plant species which pose a risk to the surrounding ecological area, economy, or human health. Minimising environmental and ecological damage, and also potential erosion and sediment risk, whilst controlling weeds, should be at the forefront of mind. Often single-minded focus on weed removal can open the way for other, and potentially worse, ecological problems. An example of this might be the eradication of a stand of *Phormium* sp. (Flax), only to open the way for an infestation of *Ehrharta erecta* (Panic Veldt Grass) and significant erosion problems.

Priority for re-vegetation of a weeded site should be given first to Australian Native seed stock, if it is in evidence within the soil. If native seed stock is not in evidence, then priority should be given to species which will limit the potential for weed growth in the future through thickly “shading” the soil and restricting seed germination of weed species. An example of this might be re-vegetating an area with a dense cover of *Allocasuarina* sp. (She-Oak). Planting should be supported, where possible, by dense mulching of the weeded area to limit weed seed germination.

Priority for weed removal should be given first to species identified as “Weeds of National Significance” under the Australian Weed Strategy, followed by species recognised as “Priority Weeds” by State and Local regulatory bodies. Further attention should then be given to species that, whilst not recognised by legislative bodies, are either present as, or have the potential to become, “over-abundant”.

WEED MANAGEMENT STRATEGY

The property has been divided into five (5) Work Zones. Each zone will require a different strategy, and this has been outlined below:-

ZONE 1 – PRIMARY CONSTRUCTION ZONE

This area is predominantly made up of existing buildings and asphalt, gently sloping turf area, and associated garden areas, with a small amount of exotic varieties.

It is expected that most of the weeds in this area will be removed as part of the construction process, and taken to appropriate disposal facilities.

In this zone spot/target spraying of individual weed species remaining after excavation should be under-taken over time as required. Maintenance weeding, consisting of hand-weeding or spot/target spraying, should be conducted once a month in perpetuity, as part of the schools existing garden maintenance programme.



ZONE 2 – MAINTAINED GARDEN ZONE

This area is predominantly made up of existing buildings and asphalt, gently sloping turf area, and associated garden areas, with a small amount of exotic varieties.

As most of this area is made up of turf areas, either mowed or grazed, the weed levels in this area are fairly minimal (see Photos #1, 2, & 3).

Turf areas should continue to be maintained as previously, with careful attention paid to the interface between this area and the surrounding bush. Escaped *Cenchrus clandestinum* (Kikuyu) and *Cynodon dactylon* (Couch) remain the largest weed threat for this zone, and ample evidence can be seen of these species making their way into the surrounding bush areas.

Bordering of this area, in a manner consistent with the log and spray buffer areas (see Photo #14) should be investigated for all turf/bush interface areas. These buffer areas have been quite successful where they have been placed, and give maintenance crews a clear indication of the limits to the turf areas.

In this zone spot/target spraying of individual weed species should be under-taken over time as required.

Maintenance weeding, consisting of hand-weeding or spot/target spraying, should be conducted once a month in perpetuity, as part of the schools existing garden maintenance programme.

ZONE 3 – NORTH APZ ZONE

This area is the most problematic area on site. It is located above the headwaters of a creek, heavily infested and disturbed, and has the appearance of previous weed control measures which have clearly failed. It is doubtful that there is existing native seed stock held within the soil of this area.

Escaped *Cenchrus clandestinum* (Kikuyu) and *Cynodon dactylon* (Couch) remain the largest weed threat for this zone (see Photo #4), and ample evidence can be seen of these species making their way downslope into the creek area.

The cliff cutting off the areas below is currently the only line of defence in this zone, and should be assisted with further sediment, stabilisation and replanting works.

The nature of the slope, entailing both erosion and occupational safety risks, means that removal of the roots of weed species is neither feasible, nor desirable.

Non-woody and trailing/climbing weeds in this area should be hand-slashed to a manageable level, retaining sufficient foliage for poison intake, and then sprayed as per the treatment methods outlined. Species that are resistant to foliar spray should be carefully removed by hand, paying particular attention to slope stability and erosion control.

There is some evidence of previous slope stabilisation and sediment control measures may have been put in place, though these have not been maintained. Notably an area near the top of the slope appears as though it may have, at one time, been prepared as a formal sediment trap (see Photo #5). Investigating whether this area can be re-designed and constructed for the purpose of directing water and seed flows into it would be highly beneficial for mitigating the weed infestation process in this zone.

At a minimum, following spraying of the grass weed species, this area should have sediment control fences installed and maintained in perpetuity.



It is noted that previous plantings of *Imperata cylindrica* (Bladey Grass) in other areas of the site have been largely successful for either stopping or slowing down the weed infestation process (see Photo #15), and planting should be investigated and carried out as soon as weed species are removed in this area. Soil stabilising native species (e.g. *Grevillea x gaudichaudii*) should be utilised in all steeply sloping sections of this area. All planting design should be mindful of the fact that this area is a bushfire Asset Protection Zone, and recommendations within the Bushfire report should be adhered to.

A qualified and experienced Bush Regeneration service provider should be employed to complete all weed removal works for this zone.

ZONE 4 – AGRICULTURAL FRINGE ZONE

This area has been identified as a separate zone primarily as a result of the unique situation faced below the agricultural areas of the college. Animal feed may contain many weed seeds, and the embankments behind the kayak storage shed has been used as a garden waste dump (see Photos #7 & 8).

The weed infestation in this area is, at this point, fairly minimal. The future threat, however, is deemed such that action should be taken in the short term to contain it.

Cenchrus clandestinum (Kikuyu) and *Eragrostis curvula* (African Lovegrass) are currently the greatest threat within this zone.

Garden waste dumping poses the greatest future threat to this zone. Tree and shrub cuttings, as well as grass clippings, have routinely been tipped off the edge of the fill area, that the shed sits on. It is recommended that this garden waste be cleared and disposed of at the local waste management facility. It is further recommended that an ongoing waste storage and disposal system be instituted, and adhered to, to minimise the threats of future weed infestation.

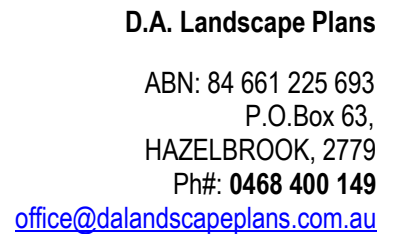
The slope of the shed fill area is steep, and bears no evidence of existing native seed stock. It is recommended that erosion and sediment control fencing be placed along the contours, and at the base, of the slope, and planting of soil stabilising native species (e.g. *Grevillea x gaudichaudii*) be planted across the entirety of the slope.

The areas, outside the fence, that interface between the agriculture areas and the bush, show a moderate grass weed threat. It is noted however that previous plantings of *Imperata cylindrica* (Bladey Grass) have been largely successful in slowing and stopping weed infestation. Following weed removal it is recommended that this regime of *Imperata* planting be followed for all transition areas.

Within the agricultural paddocks the grazing and mowing regime as instituted has largely been successful at minimising weed threat, and should be continued as previously.

ZONE 5 – ENDANGERED ECOLOGICAL COMMUNITY ZONE

This area consists mostly of existing *Syncarpia glomulifera* trees, with a few assorted species interspersed. The ground and shrub stratum has largely been removed to accommodate the required Asset Protection Zones (see Photos #9 & 10). The remaining stubble bears only small evidence of weed infestation, at this stage. However the transition areas display evidence of weed creep and, if weed reduction measures are not put in place and soil light exposure not reduced, will result in total infestation of the area.





CUT/PAINT METHOD

- This method should be used as the primary method for woody weeds removal on this site, unless it is determined that the Drill/Frill and Fill method will be superior for the species being treated.
- The woody weed should be removed to ground level and treated with Glyphosate at rates recommended under the NSW "Weedwise" guidelines.
- Woody material removed should be removed from site and taken to an appropriate disposal facility, unless being utilised for slope stabilisation as outlined in other sections of this report.

SCRAPE/PAINT METHOD

- This method is a version of the Cut/Paint method which has proven more effective on certain, hard to remove, species e.g *Ochna serrulata* (Ochna), *Ligustrum* spp. (Privet), *Cestrum parqui* (Green Cestrum) etc.
- The woody stem is injured with several large scrapes down its length and then treated along the scrape with Glyphosate. The Stem is NOT cut down, and the plant is left in place until it has died.
- Woody material removed should be removed from site and taken to an appropriate disposal facility, unless being utilised for slope stabilisation as outlined in other sections of this report.

FOLIAR SPRAY METHOD

- This method should be the primary method for removal of annual and non-woody weeds.
- Areas of transition should include a first pass to hand removal to clear areas around existing native vegetation seedlings, prior to spray operations.
- Foliar spray should be applied at rates recommended under the NSW "Weedwise" guidelines.

DRILL/FRILL AND FILL METHOD

- This method should only be utilised in the event that the Cut/Paint method is deemed unsatisfactory. It will require woody weeds to be left on slope until the poison has been deemed effective, and dead material removed at a later date.
- The method involves drilling or "frilling" (chiselling a ring around the base of the tree) that is deep enough for glyphosate or Garlon 600 to be poured in, ready for uptake by the plant's internal systems. The tree is then left to die.
- Dead woody material remaining should be removed from site and taken to an appropriate disposal facility, unless being utilised for slope stabilisation as outlined in other sections of this report.

HAND-TOOL REMOVAL METHOD

- This method should be utilised for weeds where root removal is deemed necessary. The steepness of the slope within "Zone 3 – North APZ zone" is such that power tool removal is deemed inappropriate.
- The method involves digging the soil around the roots of the plant until sufficient soil has been removed to extract the plant, either in its entirety or partially (if this is deemed satisfactory – species dependent). The soil is then replaced into the hole and smoothed over.



- Material removed in this fashion should be removed from site and taken to an appropriate disposal facility.

TIMING OF WORKS

Initial/Primary weed removal should be undertaken as soon as practical, with a follow-up pass completed within 4-8 weeks. If required an additional pass should be completed within 3 months of the Initial pass to assess and control any regrowth.

Slope stabilisation and Erosion control should be completed at the time of the Initial pass, and in accordance with the "Slope Stabilisation and Erosion Control" section of this report. Mulching and erosion matting should be completed as soon as practical after weed species are deemed to be dead, and prior to re-germination of weed seed.

Planting should be completed as soon as practical after weed removal, and prior to the completion of works. Planting should be in accordance with the "Post-Weed Revegetation" section of this report.

Spot/Target spraying should be carried out as required once monthly, in perpetuity, in conjunction with regular garden maintenance.

SLOPE STABILISATION AND EROSION CONTROL

Areas of this site are predominantly made up of either fill, or excavated material dumped in-situ. The nature of the fill is uncertain.

The North APZ Zone is very steep, with large areas of existing rock outcrop, infilled with what appears to be dumped soil. This embankment is populated almost exclusively with weed species that require removal, and soil stabilisation is critical. Root retention has been proposed within the "Weed Management Strategy" section of this report, however the level of weed removal proposed will definitely require erosion mitigation.

Slope stabilisation methods, erosion control methods, and re-vegetation will be the predominant method of controlling soil stability on this site.

Resources such as "A resource guide for local councils: erosion and sediment control" should be deferred to when designing and installing erosion and sediment control measures. A further useful resource, though it is now superseded, is "Managing urban stormwater: soils and construction – volume 1", also known as the "Blue Book".

A qualified and experienced Bush Regeneration service provider should be employed to complete all erosion and slope stabilisation works for this site.

Recommended erosion and slope stabilisation methods are outlined below:-

SEDIMENT FENCE

- A sediment fence is a temporary barrier of permeable geotextile, partially installed in a trench and supported by posts on the downhill side.



- Sediment fences are not to be used in areas of concentrated flow.

- The fence should be installed in a 150mm deep trench, dug along the contour of the slope, with either end turned upslope a minimum 1500mm to avoid over-flow. Posts should be located 600mm in the soil, a maximum of 2500mm apart, on the downslope side of the fence, to support the fence under pressure. Geotextile fabric should be laid along the trench with the bottom 300mm curved into a “U” shape (or backwards “J” shape), and site soil compacted on top. The remaining 500-600mm of geotextile fabric should then be attached firmly to the posts.

- For this site a minimum of One (1) sediment fence should be located at the top of the embankment areas within “Zone 3 – North APZ Zone”, “Zone 4 – Agriculture Fringe Zone”, and “Zone 5 – EEC Zone”. A further Two (2) should be located along the embankments of “Zone 3 – North APZ Zone”, and on the slope behind the agriculture shed.

- Sediment fences should be assessed and repaired/replaced as required at minimum 3 month intervals until slope stabilisation revegetation is deemed satisfactory.

EROSION MATS AND BLANKETS

- An erosion mat or blanket is a rolled mat or blanket made from jute, coconut fibre, wool, nylon, or polypropylene that is placed on the soil surface to protect it from raindrop impacts and low velocity sheet and concentrated water flows.

- Due to the many different types of erosion matting available advice should be sort from the manufacturer on the appropriate use and installation of matting.

- For this site it is recommended to use biodegradable matting that will deteriorate as the revegetation takes hold.

- Erosion matting should be assessed and repaired/replaced as required at minimum of 6 month intervals until slope stabilisation is deemed satisfactory.

SURFACE MULCHING

- Mulching involves placing a cover of coarse organic material to protect the soil from the erosive effects of raindrop impact and shallow sheet flows. Common materials include wood chips, clean straw, wood fibre, and paper pulp.

- Mulch will be washed away where flow diversion fails and overland flow becomes concentrated.

- Mulch should be laid over the entirety of the transition zones to a minimum depth of 75mm, with 100-150mm preferred. Planting holes should be left where planting is proposed.

- Mulch should be assessed and re-applied as required at a minimum once a year, six months preferred, in perpetuity.

COIR LOGS AND RETAINED CUT BRANCHES

- Coir logs are a semi-permanent structure designed to minimise soil loss on slopes through slowing down water flow and retaining soil particles on slope.

- Coir logs effectiveness diminishes over time, with the eventual intention that soil stabilising revegetation will gradually negate their need.



- Branches from removed trees may be used in place of, and in conjunction with, coir logs. Branches should be a minimum of 150mm thick. Branches of weed species known to layer (e.g. *Ligustrum* sp. – Privet) must not be used for this purpose.
- Coir logs should be placed along the contour of the slope and staked on both the uphill and downslope sides at a maximum distance of 600mm, and tied to the stakes. Where two logs are required they should be overlapped by a minimum of 300mm to avoid concentrated water flow.
- For this site it is recommended that a qualified and experienced Bush Regeneration service provider be employed to assess the slope, and apply coir logs as required.
- Coir logs should be assessed and repaired/replaced as required at minimum six (6) month intervals until slope stabilisation revegetation is deemed satisfactory.

RE-VEGETATION

- Post weed re-vegetation is critical for erosion and slope stabilisation. It minimises the amount of raindrop impact, and root infiltration provides long-term structural stability to the slope.
- Re-vegetation on this site should be in accordance with the “Post-Weed Re-vegetation” section of this WMP.

ENVIRONMENTAL RISKS OF PROPOSED WORKS

Slope stabilisation and erosion risks are major concerns on this site. The majority of weeds are contained within “Zone 3 – North APZ Zone”, which consists of a very steep slope leading down to the headwaters of a creek-line, and containing almost exclusively weed grasses specified for removal. Slope stabilisation and erosion control measures should be completed in accordance with the “Slope Stabilisation and Erosion Control” section of this report.

Over-spray into adjoining bush and waterways should be monitored for, and controlled.

Particular attention should be paid to protecting and retaining species indicative of the Endangered Ecological Community

POST-WEED RE-VEGETATION

For the purposes of this section the site has been broken into three (3) zones.

EMBANKMENT ZONES

This area includes the embankment in “Zone 3 – North APZ Zone”, and the embankment behind the agriculture shed.

Slope stabilisation and bushfire protection are the primary concerns of these areas.

There is no Australian Native seed bank noted in the soil of these zones.

All embankments should be mulched to a minimum depth of 75mm, at least once yearly.



The recommendations within the Bushfire Report should be kept in mind when planning for these areas.

Potential species for slope stabilisation may include, but are not limited to:-

<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>HEIGHT</u>	<u>SPREAD</u>
<i>Grevillea x gaudichaudi</i>	Grevillea "Gaudi Chaudi"	0.3	2
<i>Grevillea</i> "Royal Mantle"	Grevillea "Royal Mantle"	0.3	2
<i>Viola hederacea</i>	Native Violet	0.1	0.5
<i>Dianella caerulea</i>	Flax Lily	0.5	1
<i>Lomandra longifolia</i>	Mat Rush	0.8	0.8
<i>Myoporum parvifolium</i>	Creeping Boobialla	0.1	2

BUSH TRANSITION ZONES

This area includes all areas that transition from maintained garden areas to remnant vegetation.

Slope stabilisation and bushfire protection are the primary concerns of these areas.

There is ample evidence of Australian Native seed bank within the soil of these areas.

All transition zones should be mulched to a minimum depth of 75mm, at least once yearly.

The success of previous plantings of *Imperata cylindrica* should be noted when planning for these areas, as should the recommendations within the Bushfire Report.

Potential species for this zone may include, but are not limited to:-

<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>HEIGHT</u>	<u>SPREAD</u>
<i>Grevillea x gaudichaudi</i>	Grevillea "Gaudi Chaudi"	0.3	2
<i>Grevillea</i> "Royal Mantle"	Grevillea "Royal Mantle"	0.3	2
<i>Viola hederacea</i>	Native Violet	0.1	0.5
<i>Dianella caerulea</i>	Flax Lily	0.5	1
<i>Lomandra longifolia</i>	Mat Rush	0.8	0.8
<i>Microlaena stipioides</i>	Weeping Grass	0.2	Clump
<i>Imperata cylindrica</i>	Bladey Grass	0.5	Spread

ENDANGERED ECOLOGICAL COMMUNITY TRANSITION ZONE

This area is found to the East of the area, as defined by the Flora and Fauna report dated December 2021

There is ample evidence of Australian Native seed bank within the soil of these areas.

All cleared areas should be mulched to a minimum depth of 75mm, at least once yearly.

The recommendations within the Bushfire Report should be kept in mind when planning for these areas.

Planting within this zone should be limited to species indicative of the Endangered Ecological Community, please refer to Flora and Fauna report.

Potential species for this zone (taken from BIONET PCT1284 indicative species) may include, but are not limited to:-



<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>HEIGHT</u>	<u>SPREAD</u>
<i>Blechnum cartilagineum</i>	Gristle Fern	0.5	0.5
<i>Viola hederacea</i>	Native Violet	0.1	Spread
<i>Dianella caerulea</i>	Flax Lily	0.5	1
<i>Lomandra longifolia</i>	Mat Rush	0.8	0.8
<i>Pteridium esculentum</i>	Bracken	0.5	1

WEED TREATMENT

The following weed species have been identified on site and preferred treatment method has been outlined in the table below.

The timing of treatment is outlined in the "Timing of Works" section of this WMP.

<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>METHOD OF CONTROL</u>
<i>Agapanthus praecox*</i>	Agapanthus	-Hand remove leaves, flowerheads, and crown
<i>Ageratina adenophora</i>	Crofton Weed	-Foliar spray with Glyphosate 360g/L -Hand remove roots and bag for removal
<i>Amaranthus spp.</i>	Amaranthus	-Hand remove roots and bag for removal (tubers removed)
<i>Asparagus aethiopicus*#</i>	Asparagus fern	-Hand remove roots and bag for removal (tubers remain) -Foliar spray with Fluoxypyr 333g/l
<i>Asparagus asparagoides*#</i>	Bridal Creeper	-Hand remove roots and bag for removal (tubers removed) -Foliar spray with Metsulfuronmethyl 600g/kg
<i>Biden pilosa</i>	Cobbler pegs	-Hand remove seed heads and bag prior to treatment -Foliar spray with Glyphosate 360g/L
<i>Canna indica</i>	Canna Lily	-Hand remove roots and bag for removal -Foliar spray with Glyphosate 360g/L
<i>Canna indica</i>	Canna Lily	-Foliar spray with Glyphosate 360g/L -Hand remove roots and bag for removal
<i>Cenchrus clandestinus</i>	Kikuyu	-Foliar spray with Glyphosate 360g/L -Follow-up foliar spray every 4-6 weeks until deemed successful
<i>Chlorophytum comosum</i>	Spider Lily	-Hand remove roots and bag for removal (tubers removed)
<i>Conyza sp.</i>	Fleabane	-Hand remove and bag for removal - Follow-up foliar spray every 4-6 weeks until deemed successful
<i>Cynodon dactylon</i>	Common Couch	-Foliar spray with Glyphosate 360g/L -Follow-up foliar spray every 4-6 weeks until deemed successful
<i>Digitaria sanguinalis</i>	Summer Grass	-Hand remove where practical -Foliar spray with Glyphosate 360g/L -Follow-up foliar spray every 4-6 weeks until deemed successful



<i>Digitaria spp.</i>	Finger Grass	-Foliar spray with Glyphosate 360g/L -Follow-up foliar spray every 4-6 weeks until deemed successful
<i>Ehrharta erecta</i>	Panic Veldt Grass	-Foliar spray with Glyphosate 360g/L -Follow-up foliar spray every 4-6 weeks until deemed successful
<i>Eleusine tristachya</i>	Goose Grass	-Foliar spray with Glyphosate 360g/L -Follow-up foliar spray every 4-6 weeks until deemed successful
<i>Eragrostis curvula*</i>	African Lovegrass	-Foliar spray with Glyphosate 360g/L -Follow-up foliar spray every 4-6 weeks until deemed successful
<i>Euphorbia peplus</i>	Petty Spurge	-Foliar spray with Glyphosate 360g/L
<i>Freesia spp.</i>	Freesia	-Hand remove roots and bag for removal
<i>Hypochaeris radicata</i>	Cat's Ear	-Hand remove roots and bag for removal
<i>Ilex aquifolium*</i>	English Holly	-Remove stems to ground level. Cut/Paint w/ Glyphosate
<i>Jacaranda mimosifolia</i>	Jacaranda	-Drill/Frill
<i>Lonicera japonica*</i>	Japanese Honeysuckle	-Foliar spray with Glyphosate 360g/L
<i>Nandina domestica</i>	Sacred Bamboo	-Hand remove and bag for removal
<i>Onopordum acanthium</i>	Scotch Thistle	-Hand remove seed heads and bag prior to treatment -Foliar spray with Glyphosate 360g/L
<i>Paspalum dilatatum</i>	Paspalum	-Foliar spray with Glyphosate 360g/L -Follow-up foliar spray every 4-6 weeks until deemed successful
<i>Plantago lanceolata</i>	Plantain	-Foliar spray with Glyphosate 360g/L
<i>Plectranthus spp.</i>	Plectranthus	-Hand remove and bag for removal -Foliar spray with Glyphosate 360g/L
<i>Poa annua</i>	Winter Grass	-Hand remove where practical -Foliar spray with Glyphosate 360g/L -Follow-up foliar spray every 4-6 weeks until deemed successful
<i>Ranunculus repens</i>	Creeping Buttercup	-Hand remove roots
<i>Rubus fruticosus*#</i>	Blackberry	-Remove stems to ground level. Cut/Paint w/ Glyphosate
<i>Senecio madagascariensis*#</i>	Fire Weed	-Hand remove and bag for removal -Foliar spray with Metsulfuronmethyl 600g/kg
<i>Senna pendula var. glabrata</i>	Senna	-Hand remove where practical -Foliar spray with Glyphosate 360g/L -Scrape and Paint larger plants
<i>Solanum nigrum</i>	Blackberry Nightshade	-Hand remove and bag for removal
<i>Sporobolus africanus</i>	Parramatta Grass	-Foliar spray with Glyphosate 360g/L -Follow-up foliar spray every 4-6 weeks until deemed successful
<i>Urtica spp.</i>	Stinging Nettle	-Foliar spray with Glyphosate 360g/L
<i>Verbena spp.</i>	Verbena	-Hand remove and bag for removal -Foliar spray with Glyphosate 360g/L
<i>Zantedeschia aethiopica</i>	Arum Lily	-Hand remove roots and bag for removal --Foliar spray with Glyphosate or Fluoxypr 200g/l

* = Priority Weeds (Biosecurity Act 2015)

= Weed of National Significance



D.A. Landscape Plans

ABN: 84 661 225 693

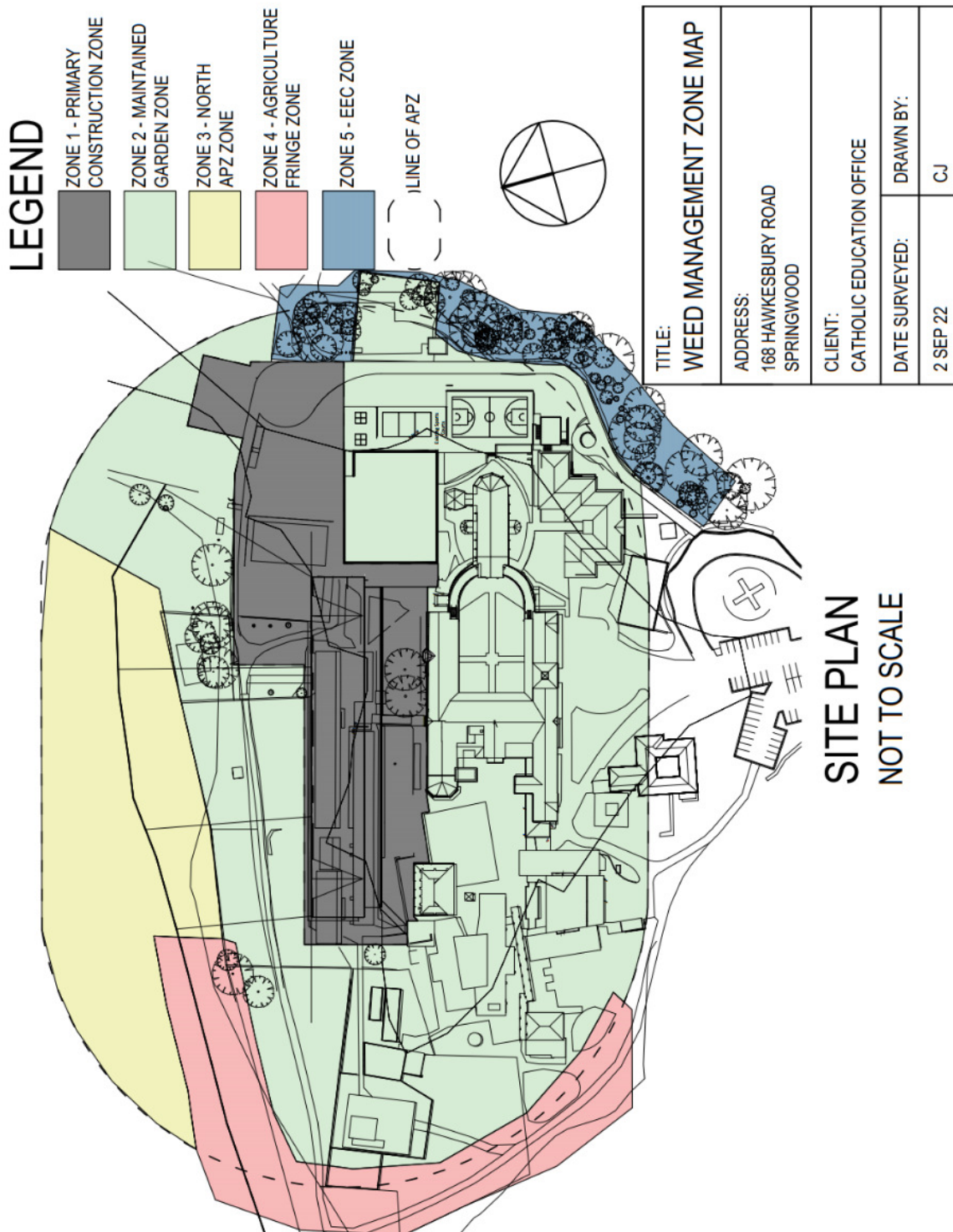
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APPENDIX 1 – SITE MAP / WEED ZONES





APPENDIX 2 – PHOTOGRAPHS



Photo 1 – Indicative maintained garden area



Photo 2 – Indicative maintained garden area



Photo 3 – Indicative maintained garden area



Photo 4 – North APZ Zone Kikuyu



Photo 5 – Possible previous sediment trap

Photo 6 – Possible previous sediment control



Photo 7 – Agriculture shed embankment used for dumping garden waste

Photo 8 – Agriculture shed embankment used for dumping garden waste



- Photo 9 - Endangered Ecological Community transition zone



- Photo 10 - Endangered Ecological Community transition zone



- Photo 11 – Stormwater pipes directed into bushland



- Photo 12 – Stormwater overflow heading into bush



- Photo 13 - Endangered Ecological Community sheet flows following APZ clearing



- Photo 14 – Successful Log and Spray buffer areas



- Photo 15 – Successful *Imperata* planting