



EQUATORIAL
LAUNCH
AUSTRALIA

ASC Vegetation & Weed Management Plan

ELA-000182

VERSION 1.1

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VERSION APPROVAL

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APPROVAL HISTORY

CR No.	Title	Date
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1 PURPOSE

ELA has a legal requirement, as a land occupier in the Northern Territory, in relation to declared weeds as described in references A and D to take reasonable measures to

1. Protect identified areas of sensitive vegetation
2. Prevent the land becoming infested with a declared weed
3. Prevent a declared weed spreading to other land, and
4. Follow a statutory weed management plan for any weeds on the ASC.

The Vegetation and Weed Management Plan has primarily been implemented to reduce the risk of spreading identified weeds and / or introducing new weed species, as they relate to references A and D.

2 SCOPE

Any clearing of land creates increased opportunities for weeds to be introduced from off-site (through vehicles and machinery) or spread (by existing weeds). The risk of weeds is most acute in areas of total clearing; however, some risk remains in partially cleared areas where the native vegetation ground cover is still present but heavily disrupted.

This Vegetation and Weed Management Plan (VWMP) is to guide the ongoing management of vegetation and weeds throughout the life of the ASC by:

1. Compliance with all legislated requirements
2. Preventing the spread of declared weeds, Weeds of National Significance and / or environmental weeds,
3. Controlled eradication of existing weed populations (where appropriate), and
4. Enhancing rehabilitation and landscaping success through weed management.

For the purposes of this plan, a weed is:

- As declared under the NT Weeds Management Act, or
- A species identified as of national significance, or
- A species not declared under the Act but represents a key threatening process for conservation values.

Weed management may also be addressed in the following sub-management plans:

- Bushfire Management
- Waste Management
- Environmental

3 REFERENCES

3.1 EXTERNAL REFERENCES

Serial	Title	Author	Date
A	Darwin Regional Weeds Strategy, 2021-2026, Department of Environment, Parks and Water Security	NT Government	2021
B	Department of Land Resource Management, Weed Management Handbook @ weed-management-handbook.pdf	NT Government	2015
C	Sensitive Vegetation in the Northern Territory, Monsoon Rainforest @ sensitive-vegetation-monsoon-rainforest-english.pdf (nt.gov.au)	NT Government	2018
D	Weeds Management Act, NT 2001	NT Government	2023

3.2 ELA DOCUMENTS

Serial	DIN	Title	Version
E	ASC-XXXXX	ASC Bushfire Management	Latest Version
F	ELA-000035	ELA Environmental Plan	
G	ELA-000039	ASC Waste Management Plan	
H	ELA-000182	ASC Weed Management Register	
I	Not required	ASC Vegetation Management / Identification Register	
J	ELA-000031	ELA Terminology and Definitions	

3.3 DEFINITIONS AND ACRONYMS

Definitions and acronyms applicable to this document may be listed in ELA-000031, ELA Terminology and Definitions (reference J).

4 ASC CONTEXT

4.1 VEGETATION MANAGEMENT

One declared area of sensitive vegetation (Monsoon vine forest) has been identified on the ASC site (Figure 1). The area defined in figure 1 is managed, during and after clearing, to ensure ongoing protection. Ongoing monitoring of Monsoon vine forest area(s) most at risk from launch events is scheduled to occur 6 monthly. During scheduled monitoring,

- A photographic record is taken and uploaded to the ASC vegetation management register
- Observed changes are documented in the vegetation management register along with possible reasons.
- If the monsoon vine forest appears to be showing signs of damage, a review is undertaken, and remediation measures implemented.
- The monsoon vine forest is a restricted access area, and all foot and vehicular traffic will be limited to essential personnel and activities only including:
 - environmental and heritage surveys,
 - weed and environmental management, and
 - matters of safety.

All vegetation at the ASC site is subject to regular, documented management to prevent the spread of invasive weed species.

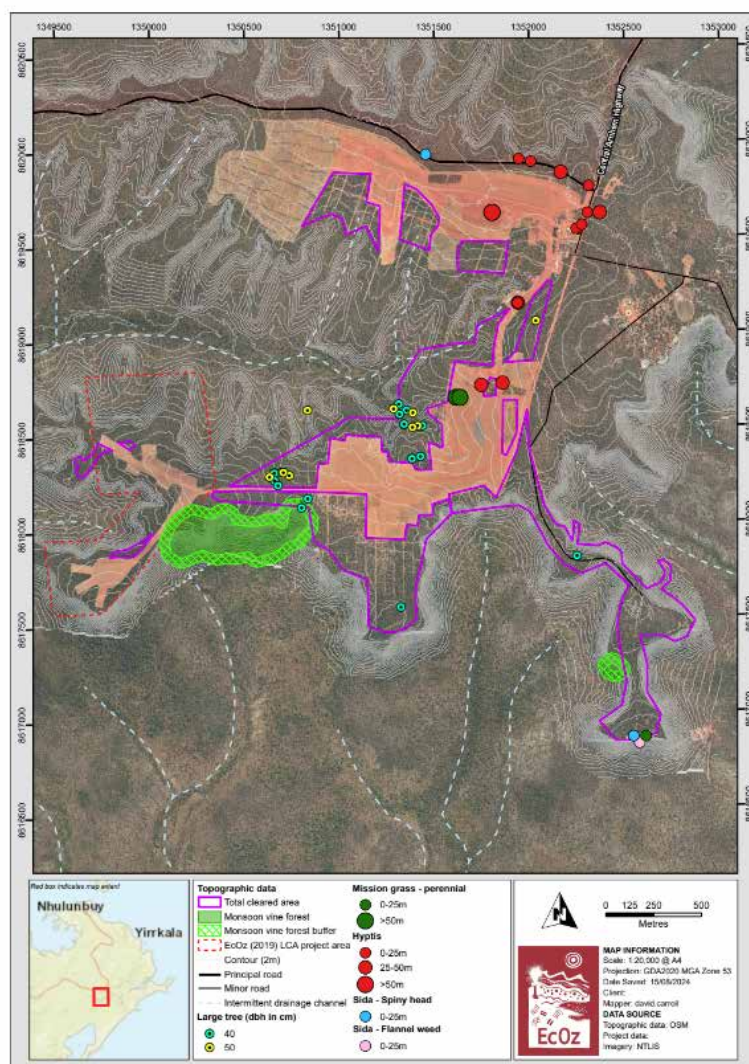


Figure 1: Map of significant vegetation and weeds identified at ASC

4.2 VEGETATION MANAGEMENT ACTIVITIES

Vegetation management is conducted as a routine site maintenance activity undertaken as:

1. A bushfire management strategy,
2. A measure to control regrowth in operational areas, and
3. A response to the requirement to identify declared weeds, if they appear.

The ASC Vegetation Identification Register (reference I) is maintained by the ASC Facilities team to inform all vegetation management activities. The register includes information on species

1. Origin - Native or Introduced
2. ASC site location(s) identified
3. Size, quality and spread at each location
4. Recommended controls to be undertaken (where required), and in accordance with (reference
5. NT Reporting requirements in regard to the particular vegetation species (weed or otherwise).

4.3 WEED MANAGEMENT

There are currently 4 declared weeds identified on the expanded ASC site area (Figure 2) with Figure 3 showing the management methods and activities conducted as part of routine site management.

Species	Date of record	Longitude (GDA94)	Latitude (GDA94)	Infestation size and description
<i>Cenchrus polystachios</i>	29/5/2020	136.8117	-12.3822	Diameter: 100m Density: 4
<i>Mesosphaerum (Hyptis) suaveolens</i>	26/3/2021	136.8177	-12.374	Diameter: 20m Density: 3
<i>Sida acuta</i>	25/5/2012	136.8204	-12.3981	Diameter: 5m Density: 6
<i>Sida cordifolia</i>	25/5/2012	136.8204	-12.3981	Diameter: 5m Density: 6

Figure 2: Declared weeds identified on expanded ASC site

Species	Aims (e.g. contain spread, reduce extent on fences and tracks)	Methods (e.g. monitor and spot spray)
<i>Cenchrus polystachios</i>	Contain spread and prevent further entry into site. Reduce extent on road verges and fence lines, as well as known infestations elsewhere.	Annual monitoring and mapping of infestations. Small infestations will also be hand pulled. Larger infestations controlled by annual spot spraying by hand with Glyphosate 360 g/L at a rate of 10 mL / 1 L on seedling or adults in Nov-Dec.
<i>Mesosphaerum (Hyptis) suaveolens</i>	Contain spread and prevent further entry into site. Reduce extent on road verges and fence lines, as well as known infestations elsewhere.	Annual monitoring and mapping of infestations. Infestations to be slashed to encourage competition from other species. Glyphosate 360 g/L at a rate of 15 mL / 1 L on actively growing seedlings or adults in Nov-Dec.
<i>Sida acuta</i>	Contain spread and prevent further entry into site. Reduce extent on road verges and fence lines, as well as known infestations elsewhere.	Annual monitoring and mapping of infestations. Repeated slashing of areas of weed growth. 2, 4-D amine 625 g/L at a rate of 320 mL / 100 L on actively growing seedlings or adults in Nov-Dec.
<i>Sida cordifolia</i>	Contain spread and prevent further entry into site. Reduce extent on road verges and fence lines, as well as known infestations elsewhere.	Annual monitoring and mapping of infestations. Repeated slashing of areas of weed growth. Glyphosate 360 g/L at a rate of 15 mL / 1 L on actively growing seedlings or adults in Nov-Dec.

Figure 3: Management of declared weeds on expanded ASC site

4.4 WEED MANAGEMENT METHODS

The ASC uses the following methods to reduce the impact of weeds on the site and the associated operations:

1. Prevention
 - o minimising the likelihood of entry and establishment of new weed varieties, and
2. Elimination
 - o detection, elimination and eradication.

4.5 WEED IDENTIFICATION

A register of weed management activities (undertaken at the ASC is maintained and used reference H) to identify:

1. Priority weeds for **eradication** in the ASC area of species assessed in NT as feasible to eradicate as outlined in reference A being:
 - a. Water mimosa
2. Priority weeds for **strategic control** in the ASC area of species assessed in NT as requiring strategic control and managed eradication as outlined in reference A being:
 - b. Bellyache Bush
 - c. Gamba Grass
 - d. Grader Grass
 - e. Ornamental Rubber Vine
 - f. Salvinia

4.6 WEED CONTROLS

Weed management at the ASC is undertaken during routine ASC site maintenance activities using the following methods.

1. Selective herbicides
 - o Used to control weeds where there is a high risk of native vegetation damage such as natural bushland and rehabilitated areas.
 - o Recorded in the ASC site SDS register
 - o Used with the appropriate PPE
 - o Stored in accordance with the current SDS sheet
2. Non-selective herbicides are
 - o Used to control weeds in locations where there is a low risk of causing damage to native species or to areas where vegetation needs to be removed.
 - o Used to control weeds in operational areas.
3. Physical Control
 - o Grubbing with a shovel or pick, removing and bagging of seed heads to reduce seed banks may be utilised at the ASC for sensitive vegetation areas.
4. Ecological Control - Fire
 - o When fire is utilised for weed management, a risk assessment must be undertaken, to ensure weather conditions, local fire bans and the time of the season will allow for a safe and managed application.

5 MONITORING AND REPORTING

All weed management activities are recorded in the ASC Weed Management Register (reference H).

5.1 MONITORING

Weed surveys will be conducted per the ELA Environmental Plan (reference F).

- At least annually within the ASC site, undertaken towards the end of the Wet season, and
- Post construction - all project areas surveyed to ensure no new weed species have been introduced to the ASC.

The ASC Weed Management Register (reference H) is used to monitor and identify the following:

- Image of the weed being managed
- Location of weed being managed
- Observations about extent, cover and density of population
 - Single weed of type
 - Multiple weeds of same type
 - Density of weed in area
- Date of mitigation activity
- Control used
 - Physical
 - Ecological
 - Chemical
- Requirement for reporting
- Changes in the extent of weed populations
- Changes in the cover density of weed populations
- New weed species
- Success of control methods

Monitoring will provide a context for revision of this plan, or the control methods utilised.

5.2 REPORTING

Monitoring undertaken at s5.1 informs the requirement to report to the NT Government if a declared species is identified at the ASC. All reporting is in accordance with reference B and D.