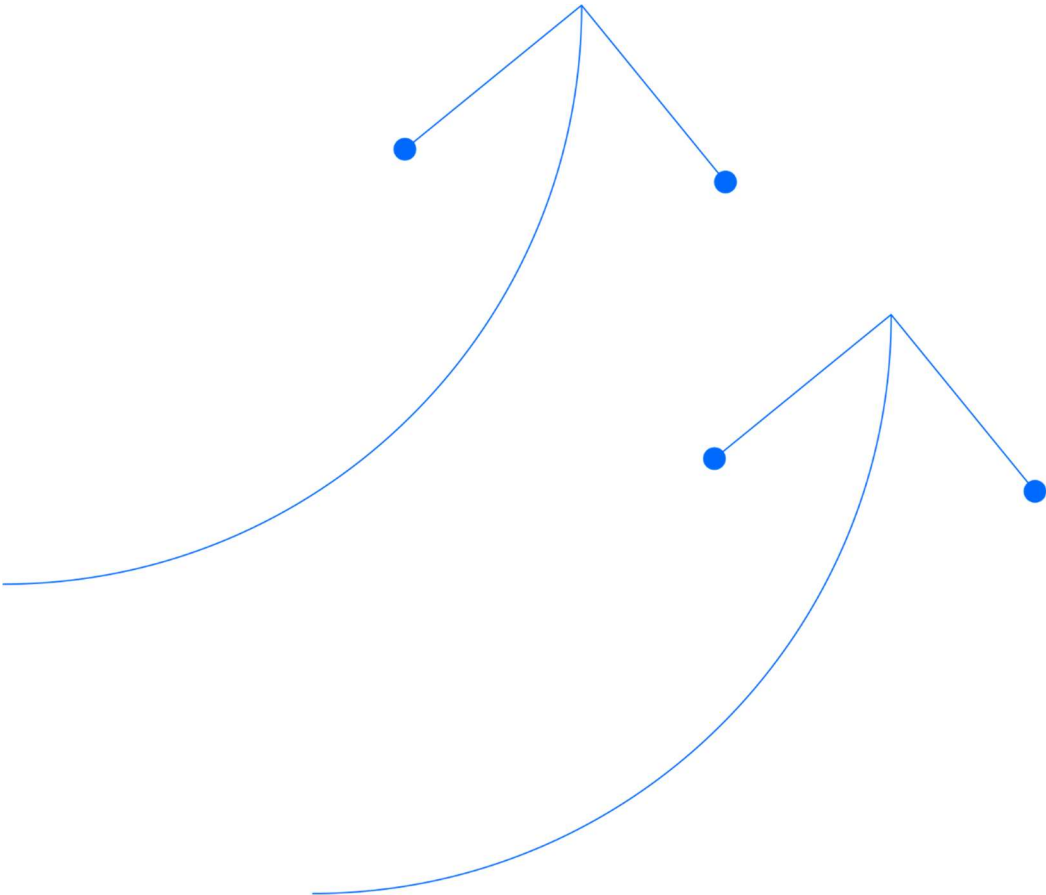


# APPENDIX C: WEED MANAGEMENT PLAN

April 2026



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# 1. Introduction

Weed Management Plan is in support of the EP 161 Beetaloo Basin Appraisal Activity Environmental Management Plan (EMP).

A weed is defined as any plant that requires some form of action to reduce its harmful effect on the economy, the environment, human health, and amenity (Australian Government Department of Agriculture, 2017). There are two types of invasions:

- Introduction of exotic plants.
- Movement by native species into new areas well outside their native range.

Weeds have an adverse effect on an area's environmental values and ecological functioning for the following reasons:

- Competition with native species.
- Change in the structure of a plant community through addition or removal of strata.
- Repress recruitment of native species.
- Change the natural fire characteristics, which can change the natural fire regime to the detriment of native species, often resulting in the loss of native species.
- Change the food sources and habitat values available to native fauna, reducing some and increasing others.
- May change geomorphological processes such as erosions.
- May lead to changes in the hydrological cycle.

## 1.1. Objectives of the Weed Management Plan

In accordance with section A.3.6 of the *Code of Practice: Onshore Petroleum Activities in the Northern Territory* (The CoP), this management plan has been developed and will be implemented to address the following:

- Conduct a baseline assessment prior to regulated activities being undertaken – Section 4.2.
- Ongoing weed monitoring – Section 7.
- Ensure that infestations are eradicated, or at the very least that existing weed infestations are controlled such that no further weed species colonise the permit area as a result of Santos activities.
- Provision of a dedicated weed officer – Section 1.3.
- Consistency with statutory requirements, including any relevant threat abatement plans under the federal *Environmental Protection and Biodiversity Conservations Act 1999*.

## 1.2. Scope

The Weed Management Plan applies across the full lifecycle of activities within the defined EP 161 project footprint, including:

- Areas subject to new disturbance under the Beetaloo Appraisal Program; and
- Existing disturbance areas approved by STO7-4: EP 161 2D Seismic and Ground Gravity Survey Program and STO1-4: McArthur Basin Civil and Seismic Program where ongoing access, monitoring, maintenance, or rehabilitation activities may occur (including area established via STO2-7, STO2018A and STO2018B).

Figure 1 illustrates the spatial extent of the newly proposed works and existing disturbed areas within EP 161 to which this Weed Management Plan applies.

### 1.3. Designated weed officer

As per recommendation 8.3 of the *Scientific Inquiry into Hydraulic Fracturing*, gas companies must have a dedicated weed officer for each gas field. To ensure the required weed management outcomes, the weed officer must have relevant skills and experience and availability to successfully manage weed related issues for the project, including:

- Knowledge of the biology/ecology of local weeds, including but not limited to gamba and grader grass.
- Knowledge of relevant weed management frameworks including NT legislation and plans, the EPBC Act.
- Understanding of existing weed management arrangements being undertaken by landholders.

The nominated Weed Officer for the project is:

Name: James Laverty

Role: NT – Senior Supervisor Civil Works

Email: [REDACTED]

Phone: [REDACTED]

## 2. Project Context

This Weed Management Plan applies to all civil, drilling, stimulation, rehabilitation, and ongoing access and monitoring activities undertaken by Santos within its permit areas, as shown in Figure 1.

Activities covered by the Plan include, but are not limited to:

- Construction and upkeep of access tracks
- Seismic survey operations and subsequent line rehabilitation
- Construction and operation of exploration well pads and gravel pits
- Drilling, stimulation, completion, and maintenance of petroleum exploration wells
- Routine inspection, access, and monitoring of exploration areas

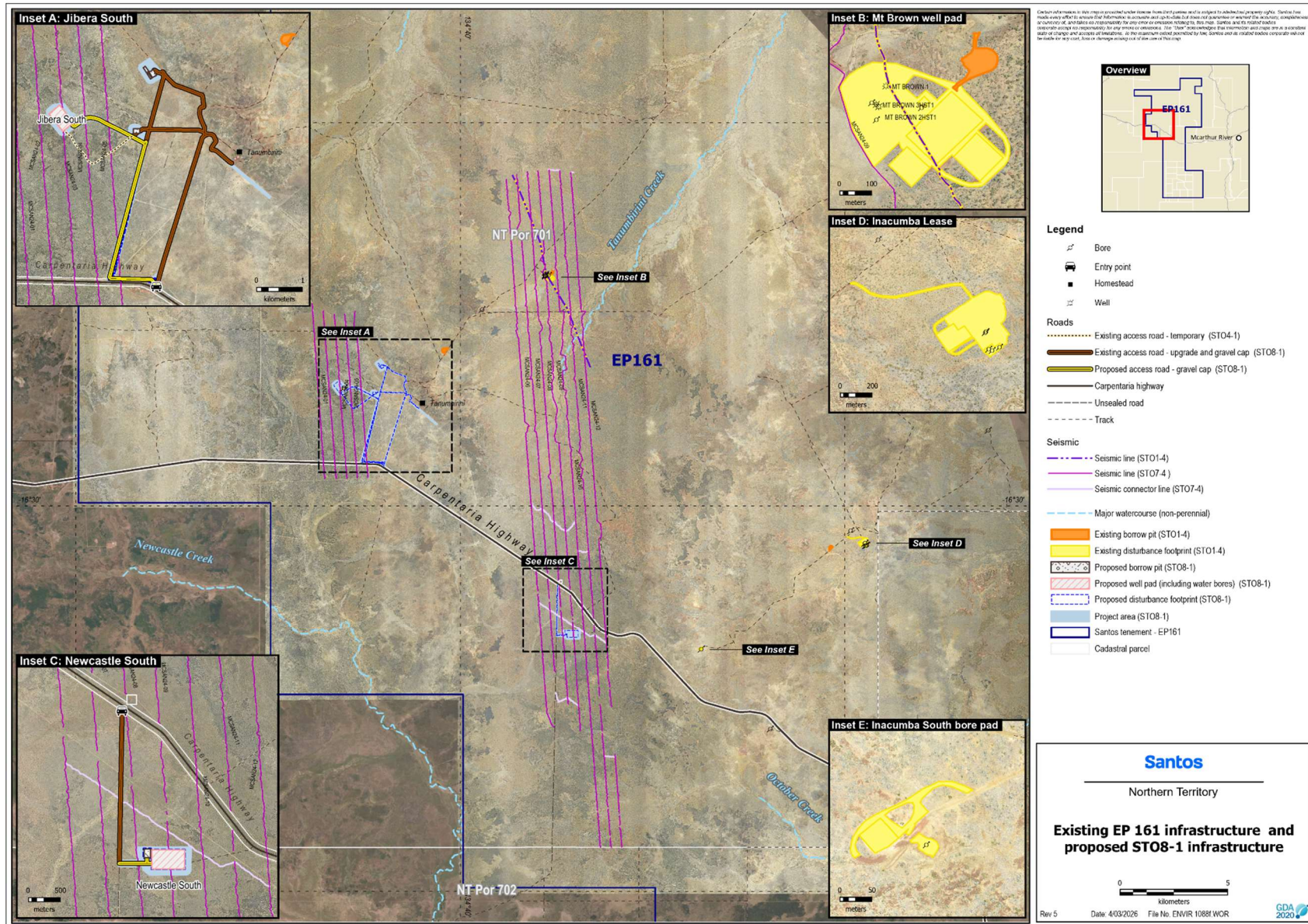


Figure 1: Existing and proposed activities within EP 161

## 3. Legislation

The following legislation, statutory obligations and guidelines were considered during the preparation of this weed management plan.

### 3.1. Petroleum (Environment) Regulations

The *Petroleum (Environment) Regulations* (PER) requires submission of an EMP prior to any petroleum exploration or production activity. This Weed Management Plan represents a component of the Beetaloo Basin Appraisal Activity EMP.

### 3.2. Weed Management Act 2001

Some species of introduced flora are declared to be weeds under the *NT Weeds Management Act 2001* because of the environmental and/or economic harm they can cause. The *NT Weeds Management Act* aims to protect the Territory's economy, community, industry and environment from the adverse impacts of weeds.

It declares undesirable species of plants as weeds, and requires these species to be controlled, eradicated or prevented from entering the Northern Territory (NT) depending on their classification. Under the Act, weeds are classified into one of four classes:

- Class A declared plant – to be eradicated.
- Class B declared plant – growth and spread to be controlled.
- Class C declared plant – not to be introduced into the NT (all Class A and B weeds are also Class C).
- Class D – prevent spread by the action of persons.

The remaining introduced flora species are referred to as environmental weeds. The Act specifies how weeds in each of the classes must be treated. Weed management plans for specific weeds are endorsed under this Act.

### 3.3. Weeds of national significance

Weed species considered to be of greatest threat to natural and economical values on a national basis have been ranked as Weeds of National Significance (WONS). Weed significance at a national level was assessed using four major criteria:

- Invasiveness
- Impacts
- Potential for spread
- Socio-economic and environmental impacts.

### 3.4. Management plans and guidelines

#### 3.4.1. Statutory weed management plans

These plans are legal documents containing specific information about management requirements for certain high priority weeds. Section 4.1 lists weeds that have been identified from the desktop assessment and are potentially present, or have the potential for introduction within the Project area and notes those with associated statutory weed management plans.

### 3.4.2. Guidelines and standards

The following guidelines associated with the management of weeds in the NT have also been considered during the preparation of the WMP:

- *Northern Territory Weed Management Handbook 2015.*
- *Northern Territory Weed Data Collection Manual* (Weed Management Branch, 2015b).

### 3.4.3. Regional weed strategies

The Northern Territory Government has developed four regional weed strategies to cover weed management across the Northern Territory – Darwin region, Katherine region, Tennant Creek region and the Alice Springs region. The strategies set out a strategic approach for the Government and key stakeholders to reduce the adverse impact of weeds. They have been developed in line with the *Department of Lands, Planning and Environment Strategic Plan 2021-24* and the *Australian Weed Strategy 2017-27*. The Project area lies within the *Katherine Regional Weeds Strategy 2021-2026* (DEPWS, 2021a). This strategy focusses on weeds that are most important to the region, categorising them as either:

- Category 1 – Priority weeds (present in the region, widely considered feasible to eradicate from the Region, typically evaluated as very high risk and have isolated and restricted distributions).
- Category 2 – Priority weeds or strategic control – including the eradication of outliers (species warranting strategic control across the landscape due to the high impact they have on land managers and on broader economic and environmental values).
- Category 3 – Weeds of concern (assessed by the weed risk management system as a medium to high risk, or have not been assessed, but have been identified by stakeholders as posing a threat to the values of the Region).
- Category 4 – Hygiene and biosecurity weeds (it is important for landholders to implement weed hygiene and other biosecurity measures to prevent the spread of weeds into clean areas, and to control these species where the opportunity arises).
- Category 5 – Alert weeds (have the potential to have a high level of impact to the region should it become established, the likelihood of the species naturalising and spreading in the region is perceived to be high).

## 4. Weed assessment

### 4.1. Desktop review

The *Katherine Regional Weeds Strategy 2021-2026* provides strategic approach to reduce the adverse impact of weeds in the Katherine Region (DEPWS, 2021a). The Plan includes a list of weed species that require priority management attention. The nine priority weed species are listed in Table 1. If located, the WMP requires the Weed Management Branch to be contacted for identification and disposal.

**Table 1: Priority weed species identified for the Katherine Region (DEPWS, 2021a)**

Scientific name	Common name	Declaration
<i>Vachellia nilotica</i>	Prickly acacia	Class A
<i>Prosopis</i> spp.	Mesquite	Class A
<i>Parthenium hysterophorus</i>	Parthenium	Class A, WoNS
<i>Mimosa pigra</i>	Mimosa	Class A
<i>Cryptostegia grandiflora</i>	Rubber vine	Class A, WoNS
<i>Salvinia molesta</i>	Salvinia	Class B
<i>Cylindropuntia</i> spp.	Rope cactus	Class A

<i>Hyparrhenia rufa</i>	Thatch grass	Class A
<i>Sporobolus</i> spp.	Giant rats tail grass	Not Declared

The *Tennant Creek Regional Weeds Strategy* (DEPWS, 2021b) and *Katherine Regional Weeds Strategy* (DEPWS, Katherine Regional Weeds Strategy 2021-2026 (Weed Strategic Plan 2), 2021a) also identifies three alert weed species that potentially occur (Table 2). Alert weeds have been identified as the principal threatening weeds to specific regions of the NT.

**Table 2: Alert weed species in the Katherin and Tennant Creek regions (DEPWS, 2021b, 2021a)**

Scientific name	Common name	Declaration
<i>Themeda quadrivalvis</i>	Grader grass	Class B and C
<i>Parthenium hysterophorus</i>	Parthenium	Class A and C, WoNS
<i>Chromolaena odorata</i>	Siam weed	Class C

A review of the NT Weed Branch dataset (access July 2025 via NR Maps) shows there are weed records within 100 kilometre radius of the Project. Species recorded within, or in close proximity to the Project Footprint (within five kilometre radius) include:

- Jibera South
  - *Mesosphaerum suaveolens* (hyptis)
  - *Calotropis procera* (rubber bush)
  - *Sida, acuta* (Spinyhead sida)
- Newcastle South
  - *Mesosphaerum suaveolens* (hyptis)

The majority of records in the region of the footprint are associated with drainage systems, alluvial plains and disturbance areas.

## 4.2. Baseline Field Survey

A field survey was conducted by AECOM to baseline and document on-ground environmental values within the disturbance footprint of the proposed EP 161 lease pads prior to development and inform Santos of potential constraints that will require specific environmental mitigations. The survey was conducted generally in accordance with the *NT Guidelines for Assessment of Impacts on Terrestrial Biodiversity*.

Overall, the presence of weeds was generally rare and with low abundance. Only one weed species was recorded within the newly proposed Beetaloo Appraisal project area during field surveys; *Mesosphaerum suaveolens* (commonly known as hyptis). Hyptis is a Declared weed Class B under the *NT Weed Management Act*, and it is necessary to prevent the spread and growth.

The locations of hyptis are displayed in Figure 2. No weeds were identified at Newcastle South during surveys, with weeding mapping for this area presented in Figure 3. Overall records of recorded weeds in EP 161 Santos activity areas are provided in Figure 6.

Previous surveys of Tanumbirini Station (EP 161) for other Regulated Activities have recorded hyptis and rubber bush (*Calotropis procera*) (Santos, 2018). In addition, a range of grassy weeds are known to occur along road corridors throughout the region. This includes buffel grass and Gamba grass, which can alter fire regimes and impact biodiversity. Whilst Gamba grass has not found been found in the work areas, Santos is committed to preventing the spread of Gamba grass into the project area from known Gamba locations. Gamba grass incursions will continue to be identified, recorded and treated in accordance with the Threat Abatement Advice released by the Commonwealth Government.

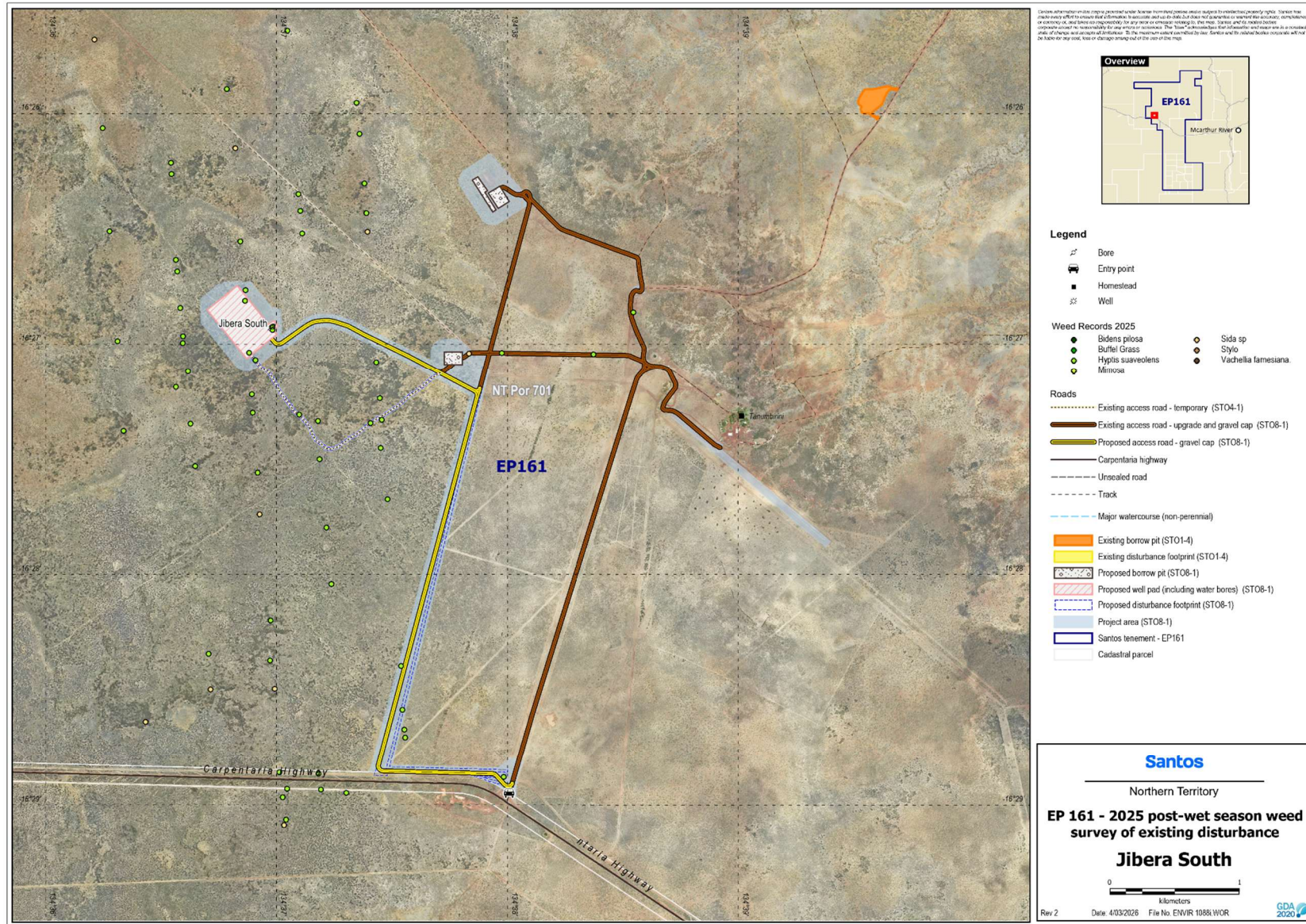


Figure 2: Weed species identified at Jibera South

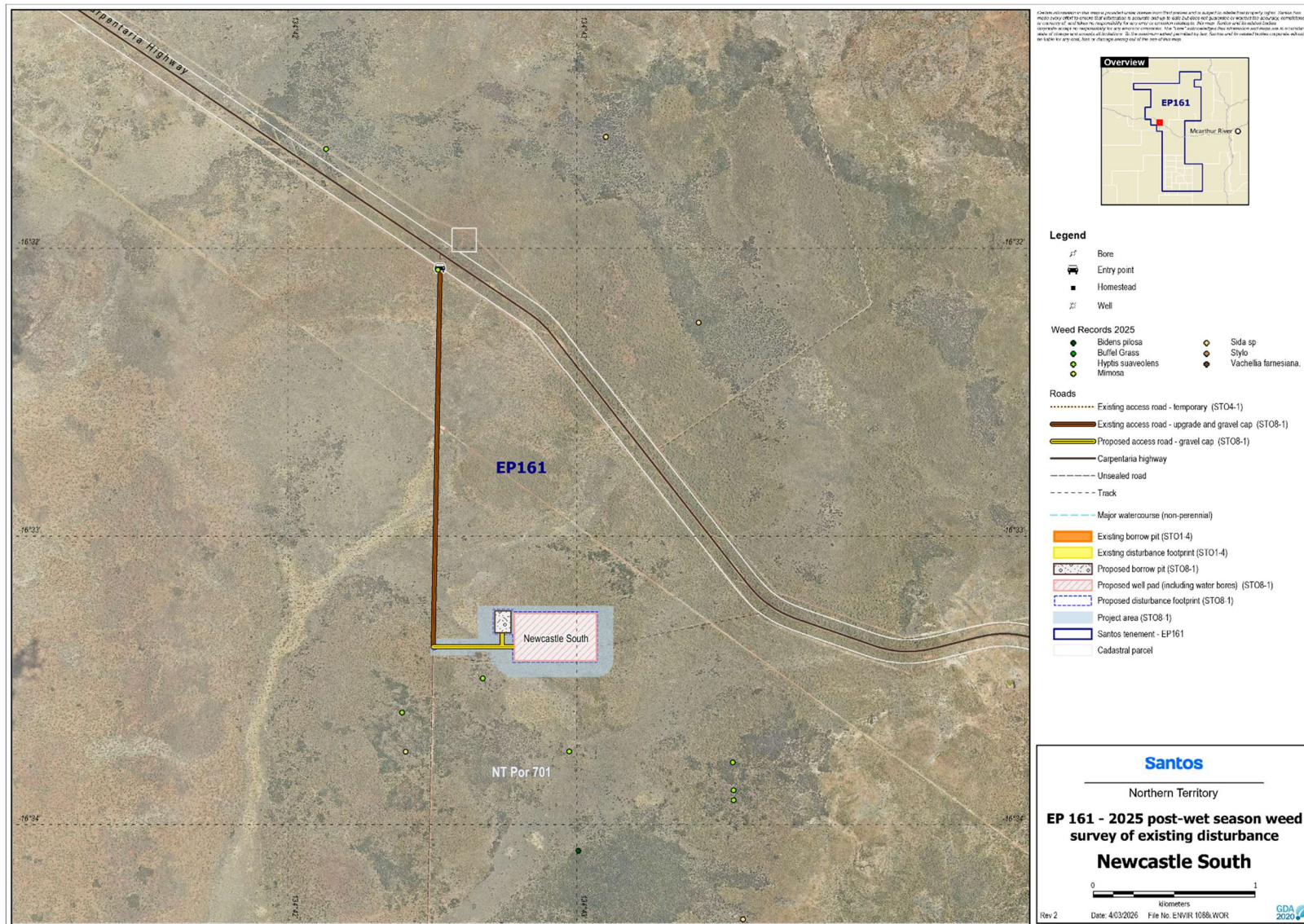


Figure 3: Weed species identified at Newcastle South

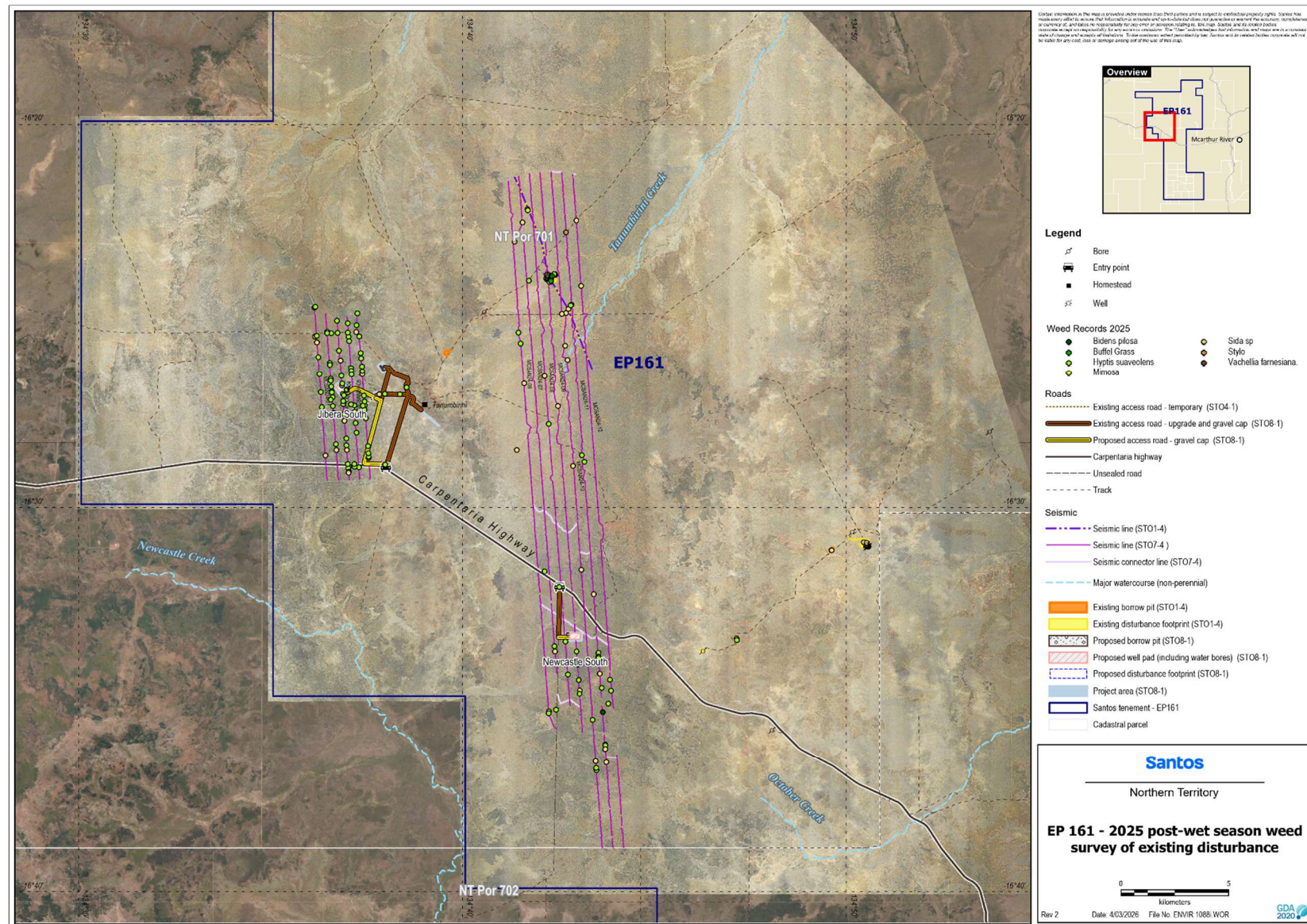


Figure 6: Records of weeds within EP 161

## 5. Weed risk mitigation measures

The EMP risk assessment process identified weed introduction and/or spread risks associated with the scope of this project as a key risk. Table 3 documents these risks as well as the mitigation measures that will be implemented to reduce this risk.

**Table 3: Weed mitigation measures**

Risk	Mitigation measure	Measurement criteria	Responsible person
Introduction of new weed species	<ul style="list-style-type: none"> <li>Baseline weed survey conducted before clearing operations for the identification and management of weeds.</li> <li>Training and inductions for project staff and contractors will cover personal and vehicle weed hygiene requirements.</li> <li>Vehicle and machinery will be cleaned down and inspected before mobilisation to the Project Area.</li> </ul>	<ul style="list-style-type: none"> <li>A register of biosecurity/ weed hygiene inspections demonstrates vehicles have weed certification before entering the well pad.</li> <li>Site induction records show all personnel have completed site inductions, which include information on weeds in the region and method of spread.</li> </ul>	Dedicated Weed Officer
Spread of biosecurity risk material (e.g. weed and seed) to, or within the Project Area during operations	<ul style="list-style-type: none"> <li>Vehicles will stay on cleared/formed access tracks unless involved in the clearing.</li> <li>Where weeds are identified, weed control measures in line with <i>Northern Territory Weed Management Handbook</i> will be implemented (Government, 2021).</li> <li>An annual weed survey of the work areas will be completed as per the NT Code of Practice standards.</li> <li>Record weed monitoring and survey works in accordance with the <i>NT Weed Data Collection Guidelines</i>.</li> <li>Santos will notify the NT Weed Management Branch of any new weed incursions.</li> <li>Fencing of the site to minimise interaction with livestock.</li> </ul>	<ul style="list-style-type: none"> <li>Audit records show weed management plan implemented in accordance with commitments.</li> <li>Weed monitoring shows no new weed species introduced to work area.</li> </ul>	Dedicated Weed Officer

## 6. Annual action plan

Table 4 outlines the survey and control measures for weed species identified within the Project Area, including species that may alter fire regimes near Santos operations (e.g. Gamba grass and buffel grass). At this stage, the only weed species identified to be located within the newly proposed footprint is Hyptis (*Mesosphaerum suaveolens*).

Additional weed species of concern, identified through desktop studies, include Sida (*Sida acuta*) and Rubber Bush (*Calotropis procera*). No specific controls/actions have been proposed for these minor weeds as they are not declared, and expected to occur in very low densities. However, Santos is committed to not spreading weeds within and outside the Project footprint. Therefore, weed monitoring will be undertaken post disturbance (after suitable rainfall to allow germination/growth) to detect and map the extent of any infestations that germinate, so that controls can be applied – see proposed controls for these species in Table 4.

Recommended treatment times and control methods are provided in the Northern Territory Government's Weeds in the NT database.

**Table 4: Priority weed species control methods**

Weed Management Area	Weed Species	Management Objective	Survey Time/s	Treatment Time/s	Control Methods	Herbicide
Whole Project Disturbance Area	Hyptis – ( <i>Mesosphaerum suaveolens</i> )	<ul style="list-style-type: none"> <li>No spread</li> <li>No introduction of new weed species.</li> </ul>	End of wet season	Immediately upon identification	Follarspray	2, 4-D amine (various trade names) or Glyphosate (various trade names and formulations)
Jibera South disturbance area	Sida ( <i>Sida acuta</i> )	<ul style="list-style-type: none"> <li>No spread</li> <li>No introduction of new weed species.</li> </ul>	End of wet season	Immediately upon identification	Follarspray	2, 4-D amine (various trade names) or Glyphosate (various trade names and formulations)
Jibera South disturbance area	Rubber Bush ( <i>Calotropis procera</i> )	<ul style="list-style-type: none"> <li>No spread</li> <li>No introduction of new weed species.</li> </ul>	End of wet season	Immediately upon identification	Follarspray	Triclopyr 300g/L + Picloram 100g/L Conqueror® + Aminopyralid 8g/L Grazon™ Extra
Whole Project Disturbance Area	Gamba Grass ( <i>Andropogon gayanus</i> )	<ul style="list-style-type: none"> <li>No introduction of new weed species.</li> </ul>	End of wet season	Immediately upon identification	Hand pulling or chemical control	Chemical and concentration: Glyphosate 360g/L with a 10ml / 1L rate
Whole Project Disturbance Area	Buffel grass ( <i>Cenchrus ciliaris</i> )	<ul style="list-style-type: none"> <li>No spread</li> <li>No introduction of new weed species.</li> </ul>	End of wet season	Immediately upon identification	Hand weeding or chemical control	For both non-chemical and chemical management: 1–3 months after rain, fire, or slashing (while plant is green and not seeding). Glyphosate 360 + adjuvant with 150mL per 15L

## 7. Weed monitoring

During periods of active operations when personnel are on site (e.g during clearing, earthworks, drilling and stimulation activities), monitoring for weed incursions will be ongoing as all operational staff will have a responsibility to report new weed incursions to the Project's Dedicated Weed Officer. Should new weed incursions be identified, appropriate controls will be undertaken, and follow-up surveys will be within three months (or as per advice from weed officer) to ensure effective eradication of the incursions.

Weed monitoring will be undertaken by someone with experience in the detection and identification of weed species known to occur in the region.

Weed inspections and monitoring will focus on all Project components associated with the drilling activities, including the following areas:

- Known weed locations/infestations
- Access track(s)

- Well pad (and associated infrastructure)
- Borrow pits.

A weed survey will occur on an annual basis (most likely in conjunction with rehabilitation monitoring), between April and July to coincide with the end of summer rainfall period (noting that rainfall is highly unpredictable in this region).

## 7.1. Recording

All weed monitoring and survey activities will be recorded in accordance with the *NT Weed Data Collection Guidelines* available at: <https://nt.gov.au/environment/weeds/weed-mapping-and-data-sharing>.

The following attributes of any new weed infestations will be recorded into a GPS-enabled device:

- Site ID
- Weed name
- ID confidence
- Date of record
- Coordinate information
- Recorder / organisation
- Infestation size (i.e. 5m<sup>2</sup>, 20m<sup>2</sup>, 50m<sup>2</sup>, 100m<sup>2</sup>)
- Infestation density:
  - 1 = Absent, no weeds of this species in the area
  - 2 = < 1%; very few, not many weeds
  - 3 = 1 – 10%; more than one or two isolate plants
  - 4 = 11 – 50%; Many plants, covering up to half the area
  - 5 = > 50%; Weed forms the dominant cover.

Weed records will be submitted via the Northern Territory Government's Weedmate application to the Weeds Management Branch (as long as the application is being reasonably maintained and operated by the Northern Territory Government).

## 7.2. Notification procedure

Any new declared and/or priority weed incursions will be reported to the NT Weed Management Branch by the Project's dedicated weed officer. Initial notification will be verbal, followed by written notification of preliminary species identification and location within seven working days.

## 8. References

- Australian Government Department of Agriculture, W. a. (2017). *Australian Weeds Strategy 2017-2027*. Retrieved from <https://www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/pests-diseasesweeds/consultation/aws-final.pdf>
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