Compliance Report - Permit E2020-0180

Permit to Undertake Grassland Cultural Burning at Hobart Airport, Tasmania

11 November 2020 – 1 November 2025

TAC Members Undertaking Cultural Burning at Hobart Airport 2025

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1. General

Permit E2020 – 0180 to undertake cultural burning of EPBC listed grasslands at Hobart Airport, Tasmania was issued in 2021 and is valid until 1 November 2025. At the time of issue, it's five-year period of cover was expected to permit 5 annual events, each of approximately 4Ha, totalling the 20Ha grassland area identified on the western side of Hobart Airport.

The grassland boundary defined in the permit, along with the allocated burn areas contained within the Cultural Burn and Monitoring Plan is depicted in Figure 1 below.

This report has been prepared to fulfill reporting and compliance requirements of the abovementioned permit. Separate data/spatial files are included in the submission of this report to the Department and the report is to be published on the Hobart Airport Website.

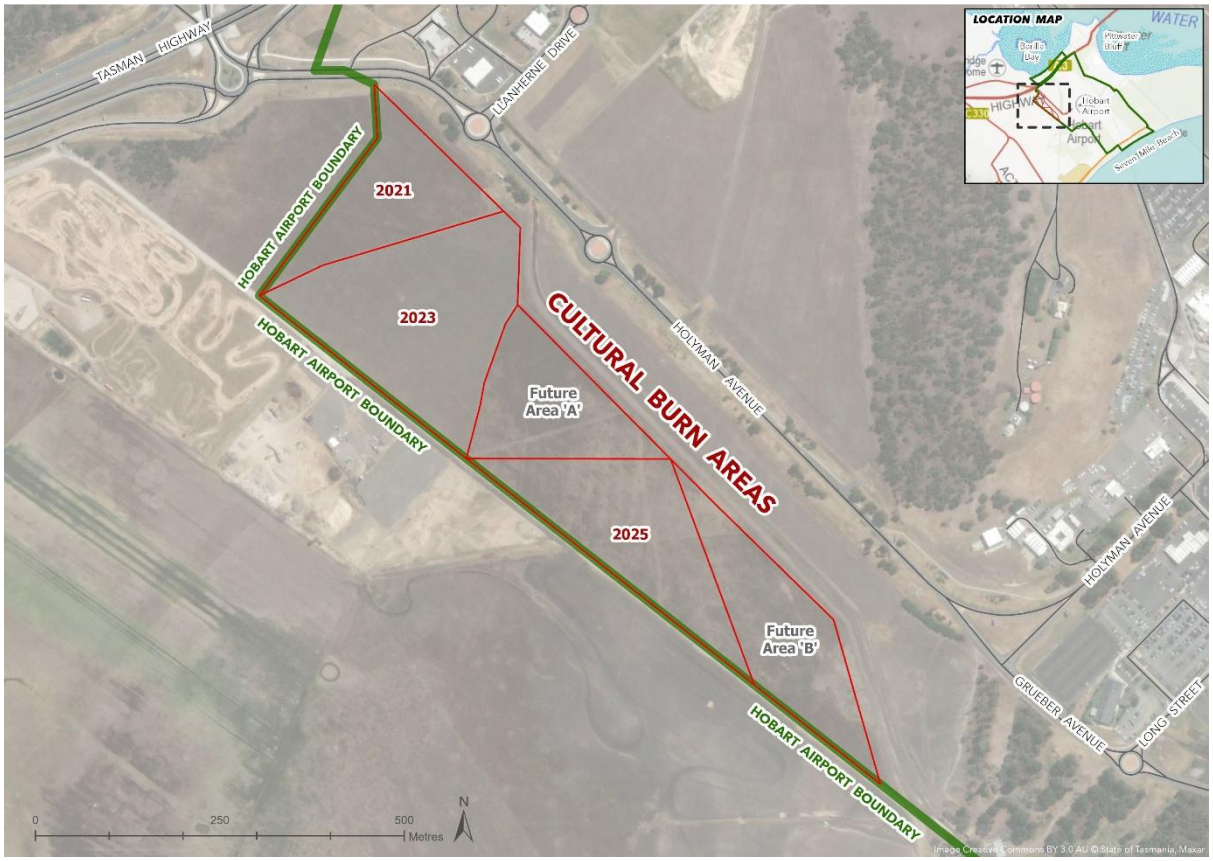

Figure 1 Hobart Airport Grassland Burn Plots

2. Description of Activities

EPBC Number:	E2020-0180
Project Name:	Permit to undertake grassland cultural burning at Hobart Airport, Tasmania.
Approval Holder:	Hobart International Airport Pty Ltd.
ABN:	27 080 919 777
Approved Action:	To undertake grassland burning activities at Hobart Airport using expertise and knowledge of Tasmanian Aboriginal Rangers.
Location:	Hobart Airport, Plot 2 (4.1 ha) of the Critically Endangered Lowland Native Grassland of Tasmania (LNGT) (20.64 ha in total).
Responsibility:	Norris Carter (CEO) of Hobart Airport.
Reporting Period:	11/11/2020 to 01/11/2025
Prepared:	21st October 2025

3. Approval Conditions

All conditions of the EPBC approval and associated Permit E2020-0180 were considered and reviewed prior to the grassland cultural burning occurring. A Compliance Summary Table is provided in **Appendix A**.

A Declaration of Accuracy is provided in **Appendix B**.

3.1 Cultural Burning Site Management

Cultural burning was undertaken on 3 separate occasions during the permitted period. First in 2021, then 2023 and finally in 2025. These were timed for optimal environmental conditions aligned with availability of Tasmanian Aboriginal Council rangers.

The proposed methods for managing and monitoring the grassland, outlined in Hobart Airport's *Grassland Cultural Burning Management and Monitoring Plan*, were adhered to. A copy of the Plan is provided in **Appendix C**.

A Permit from the Tasmanian Fire Service was developed and in principal approval received. As the burn occurred outside of permit season, formal approval was not required.

3.2 Grassland Monitoring

In accordance with EPBCA 1999 – E2020-0180 the (4.1 ha) area (Plot 1, above in Figure 1) was burnt, using Aboriginal cultural practices in August 2021. This was a controlled cool burn, following a wet spring. When assessed in March 2022, this area was found to be in excellent condition in comparison with the un-burnt areas. The Poa tussocks were small with very little other native grass or weed cover, and the threatened daisies, swamp everlasting and lemon beauty heads were abundant in this area.

A second burn was undertaken in May 2023, roughly corresponding to Plot 2, shown in Figure 1 above. In the spring (November) of 2023, the success of this operation in aiding the ecosystem health of the grasslands was examined. Decreased coverage of Poa species was partially attributed to an unseasonably dry period in spring 2023, leading up to the monitoring event with July-September recording precipitation below the historical 10th percentile. It was however noted that the benchmark criteria for classification as Lowland Native Grassland of Tasmania under the EPBC act is expected to be met as the *Poa labillardierei* tussocks continue to recover from the effects of the controlled burn in May 2023. Copies of ecological monitoring reports are contained within **Appendix D.**

3.3 Non-Compliance

A non-compliance with Condition 2, requirement not to injure more than 4.2 hectares of LNGT per calendar year, occurred during the scheduled cultural burn in August 2025. Details are contained below:

EPBC Approval Condition: E2020-0180 Condition 2

Detected by: Chris Churcher

Date detected: 14/10/2025

Department Notification 14/10/2025 via Email (Appendix E)

Corrective Action: Ongoing monitoring of grassland ecology.

Responsible person: Chris Churcher - HBA Head of Environment and Sustainability

Date of Corrective Action: Spring 2026

The non-compliance resulted from an incidental overburn which occurred on 19th August 2025, during a prescribed cultural burn, being undertaken in accordance with permitted conditions and plans.

At approximately 14:00 on 19/08/2025, developing gusty wind conditions permitted the controlled fire to cross the pre-established containment line at the northern end of plot 4. The fire was quickly contained and extinguished using the appliances (water carts and backpack units) and subsequently extinguished. It was not until the area was again accessed for accurate survey that the total extent or the burn and subsequent non-compliance with Condition 2 became apparent.

In preparing data for the compliance report required under Condition 8 of permit E2020-0180, Hobart Airport was made aware that the extent of the overburn breaches Condition 2, whereby the permit holder must not injure more than 4.2 Ha of LNGT per calendar year. The overburn resulted in a total burn of 6.8 Ha. The additional area is part of plots 3 and 2 and comprises part of the total 20.64 Ha of LNGT within the greater Project Area.

The Department was notified of the non-compliance on 14/10/2025, after Hobart Airport became aware of the extent of the burn area. A copy of the notification, provided by email, is contained within **Appendix E.**

The area will be subject to ecological impact and assessment in accordance with the management plan during Spring 2026 when conditions are suitable.

3.4 New Environmental Risks

No new environmental risks associated with the grassland cultural burn were identified.

Appendix A – Compliance Summary

Condition Number/ reference	Condition	Compliant/ Non-Compliant/ Not applicable	Evidence/Comments
1	To manage the impacts of the action on the LNGT, in taking the action, the permit holder must not injure more than 20.64 hectares of LNGT within the project area.	**Compliant**	The 20.64 hectares of LNGT has been divided up into five plots of 4.1 hectares. Plot 1 was burnt in 2021, Plot 2 in 2023, and recently Plot 4 was burnt during August 2025 (*see Figure 1 of this report).*
2	To manage the impacts of the action on the LNGT, in taking the action, the permit holder must not injure more than 4.2 hectares of LNGT per calendar year within the project area.	**Non-compliant**	Prior to commencement of each burn activity, fire breaks were cut/established and measures taken in accordance with the burn plan and Tasmanian Aboriginal Centre burn managers direction. An incidental overburn occurred during a burn in August 2025 which subsequently resulted in a non-compliance with this condition as detailed in Section 3.3 above.
3	The permit holder must carry out the action as per the methods described in the permit application submitted to the Department on 12 October 2020.	**Compliant**	The methods proposed in the application and the Grassland Cultural Burning Management and Monitoring Plan were undertaken throughout the cool burning activities, specifically: Ignite from point and allow slow moving fire. Extinguish by water or self-extinguish at dusk when approx. 20% area burnt. Areas will be selected by wind direction and rate of spread potential. Monitor throughout burn. Burning activities commenced at 11am and were extinguished by 6pm on the same day. The week prior to the burn, all boundaries were slashed approx. 4 m in width to act as a fire break to the subsequent plots and fence lines. Vehicles with water were positioned strategically to ensure the fire did not leave airport land and encroach on state owned land.
4	The permit holder may give another person written authority to take, for or on behalf of the holder, any activity authorised by the permit. When an authority is given to another person, the condition	**Not applicable**	The permit holder has not changed and remains Hobart International Airport Pty Ltd.

	requirements also apply. The giving of an authority to another person does not prevent the permit holder from undertaking the authorised activity. The permit holder who gives an authority to another person must inform the Department in writing within ten (10) business days after giving the authority. The permit holder may only give an authority to another person who has sufficient experience and competence in the activities of this permit.		
5	The permit holder must inform the Department in writing within seven (7) business days if, whilst the action that is authorised by this permit is being carried out, any EPBC Act listed threatened, migratory or marine species, other than that specified in this permit and identified in the permit application, is found to be impacted by the action. In the event that this occurs, the action must cease immediately and must not recommence unless authorised in writing by the Department.	**Not applicable**	Not required.
6	The permit holder must hold and comply with any permit required and granted under State, Territory, or other Commonwealth legislation in relation to specimens affected within any area to which that legislation applies.	**Not applicable**	Not required.
7	Within thirty (30) business days after the completion of the action, the permit holder must	**Compliant**	This Compliance Report and associated documentation was provided to the Department within thirty (30) business days on completion of the action. A shape file of relevant data has been provided with this report.

	notify the Department in writing and provide completion data.		
8	The permit holder must prepare a compliance report prior to the completion of the action, or as otherwise agreed to in writing by the Minister. The permit holdermust: a. publish the compliance report on their website within thirty (30) business days after the completion of the action; b. notify the Department by email that a compliance report has been published on their website within five (5) business days of the date of publication; c. exclude or redact sensitive ecological data from the compliance report published on the website; and d. where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within five (5) business days of publication.	**Compliant**	This Compliance Report has been prepared prior to the completion of the cool mosaic cultural burning for the 20.64Ha of LNGT. a. This compliance report is published on the Hobart Airport website within thirty (30) business days, after completion of the burning of Plot 1. b. The Department was notified by email within five (5) business days that this Compliance Report had been published on our website. c. There is no sensitive ecological data within this Compliance Report that required exclusion. d. The full Compliance report has been provided to the Department within five (5) business days of publication.
9	The permit holder must notify the Department in writing of any: incident; non- compliance with the conditions; or non-compliance with the commitments made in the permit application. The notification must be given as soon as practicable, and no later than two (2) business days after	**Compliant**	Notification of a non-compliance with condition 2 of the permit was provided to the Department on 14/10/2025. This notification was given on the same working day as Hobart Airport became aware of the non-compliance, having surveyed to the total area impacted by the recent cultural burn in August 2025.

	becoming aware of the incident or non-compliance. The notification must specify: a. the condition which is or may be in breach; and b. a short description of the incident and/or non-compliance.		
10	The permit holder must provide to the Department the details of any incident or non-compliance with the conditions or commitments made in the permit applicationas soon as practicable and no later than ten (10) business days after becoming aware of the incident or non-compliance, specifying: a. any corrective action or investigation which the permit holder has alreadytaken or intends to take in the immediate future; b. the potential or actual impacts of the incident or non-compliance; and c. the method and timing of any remedial action that will be undertaken by the permit holder.	**Compliant**	This compliance report, provided to the department within the specified time frame of ten (10) business days after becoming aware of the non-compliance contains the details of the non-compliance in Section 3.3 above. a. The grasslands will be subject to ecological survey and reporting during spring 2026 to ascertain the ecological impact and response to the cool aboriginal cultural burning and over-burn. b. The additional area of plots 3 and 2 burnt during the August 2025 cool burn has been surveyed at 2.6 Ha. c. The ecological survey and specialist recommendations will be completed in spring 2026 in accordance with the Grassland Cultural Burning Management and Monitoring Plan approved as part of this permit application and issue.

Appendix B – Declaration of Accuracy

Declaration of accuracy

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Christopher Churcher

Head of Environment and Sustainability

Hobart International Airport Pty Ltd

ABN: 27 080 919 777

21/10/2025

Appendix C – Grassland Cultural Burning Management and Monitoring Plan

Hobart Airport Grassland Aboriginal Land Management and Monitoring Plan 2021-2025

Connecting Communities

Hobart Airport
TASMANIA

Hobart Airport
Tasmanian Lowland Native Grassland

Aboriginal Land Management & Monitoring Plan

October 2020

Hobart Airport
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1. Background

Hobart Airport is home to one of Australia's most critically endangered vegetation communities, the Tasmanian Lowland Native Grassland. The grassland is currently listed under the *Environment Protection Biodiversity Conservation Act* (EPBC) 1999 and therefore requires management and monitoring to ensure its integrity is not only maintained but improved over time.

Historically, the grassland has been managed using weed control methods, annual species monitoring and condition assessments every 5 years by qualified grassland ecologists. Over time the biomass of the grassland increases and can potentially limit the successful growth of the native herbs within the grassland. A range of land management efforts have been applied in the past to reduce this risk, however due to the land area involved, the Airport is seeking more traditional methods of land management (i.e. burning) to ensure the continued health of the grassland, and to apply best practice land management to a valued natural asset. Furthermore, the opportunity to engage and work collaboratively with the Aboriginal community provides an educational opportunity for other land managers who may benefit from traditional land management knowledge. Indigenous land management is an ideal approach for integrating traditional land management knowledge and practices into the way we manage our biodiversity values.

This document outlines our collaborative approach with the Tasmanian Aboriginal Centre Inc. (TAC) in the management and monitoring of grassland burning, for the purposes of maintaining and improving on the ecological integrity of our EPBC listed grassland. We are seeking a permit under Part 13 of the EPBC Act to engage in the activities outlined.

Figure 1 EPBC listed grassland at Hobart Airport

2. Introduction

For tens of thousands of years, Aboriginal Australians have actively managed land using cool burning techniques. Their knowledge of the seasons and local conditions have enabled them to manage the land through the effective use of fire. Traditional Aboriginal methods of managing Country through early dry season cool burning has been shown to dramatically reduce the incidence and intensity of hot fires over the summer months. Cool burning reduces the amount of damage done by hot fires to ecosystems by promoting new plant growth and clearing natural waste materials. Cool fires are also used in careful patterns to promote grass growth to maintain grazing areas for native animals and reduce flammable fuel load (Australian Academy of Science 2020).

Hobart Airport is eager to work collaboratively with Tasmania's traditional land managers to enable us to manage a critically endangered natural asset to the best of our ability. We believe this approach demonstrates best practice land management and underpins the reciprocal relationship and concept of Caring for Country. We know that fire management is at the very heart of this relationship.

3. Proposed Method

Today's prescribed burning practices are conducted with the aims of not only reducing fuel loads to prevent catastrophic fires, but also improving ecological systems. The timing and location of fires will be carefully managed over many years and in a way that the landscape would become patterned in a 'mosaic' of areas that represent varying degrees of regeneration. A mosaic approach to burning is essential given the size and critically endangered status of the grassland.

Cool fire techniques will be used, resulting in a slow and less volatile burn, promoting new growth as new herbs reappear post fire. Proposed burning areas will be identified each year and carefully monitored post fire to ensure species integrity is maintained and that native herbs flourish. It is estimated that at least 20% land areas within the grassland will be identified for burning each year. An outline of our proposed management method is provided below:

Table 1 Proposed Management of Cool Mosaic Burning of Grassland

Plot	Description	Method	Timing
1	Hobart Airport Lowland Tasmanian Native Grassland	Ignite from point and allow slow moving fire. Extinguish by water or self-extinguish at dusk when approx. 20% area burnt. Areas will be selected by wind direction and rate of spread potential. Monitor throughout burn.	April-May or Sept-Oct 2021
2	Hobart Airport Lowland Tasmanian Native Grassland	Repeat in unburnt area. Assess timing after first burn. Responses of species present to be examined and adjusted accordingly for future burns.	April-May or Sept-Oct 2022
3	Hobart Airport Lowland Tasmanian Native Grassland	Repeat in unburnt area.	April-May or Sept-Oct 2023
4	Hobart Airport Lowland Tasmanian Native Grassland	Repeat in unburnt area.	April-May or Sept-Oct 2024
5	Hobart Airport Lowland Tasmanian Native Grassland	Repeat in unburnt area.	April-May or Sept-Oct 2025

An aerial plan of the site identifies the proposed plot areas based on a 20% land area estimate (Figure 2). The area of burn may be reduced in plots, pending outcomes of the first cool mosaic burn. Whilst burning over a five-year period is desirable, it may take longer to achieve and will be based on monitoring results. The sequential order of the plots may also change depending on response.

A risk assessment has been undertaken for the proposed mosaic burning and is provided as Attachment 1. A Communications Plan will be developed and distributed to all relevant parties involved in the activity prior to the commencement of the burn.

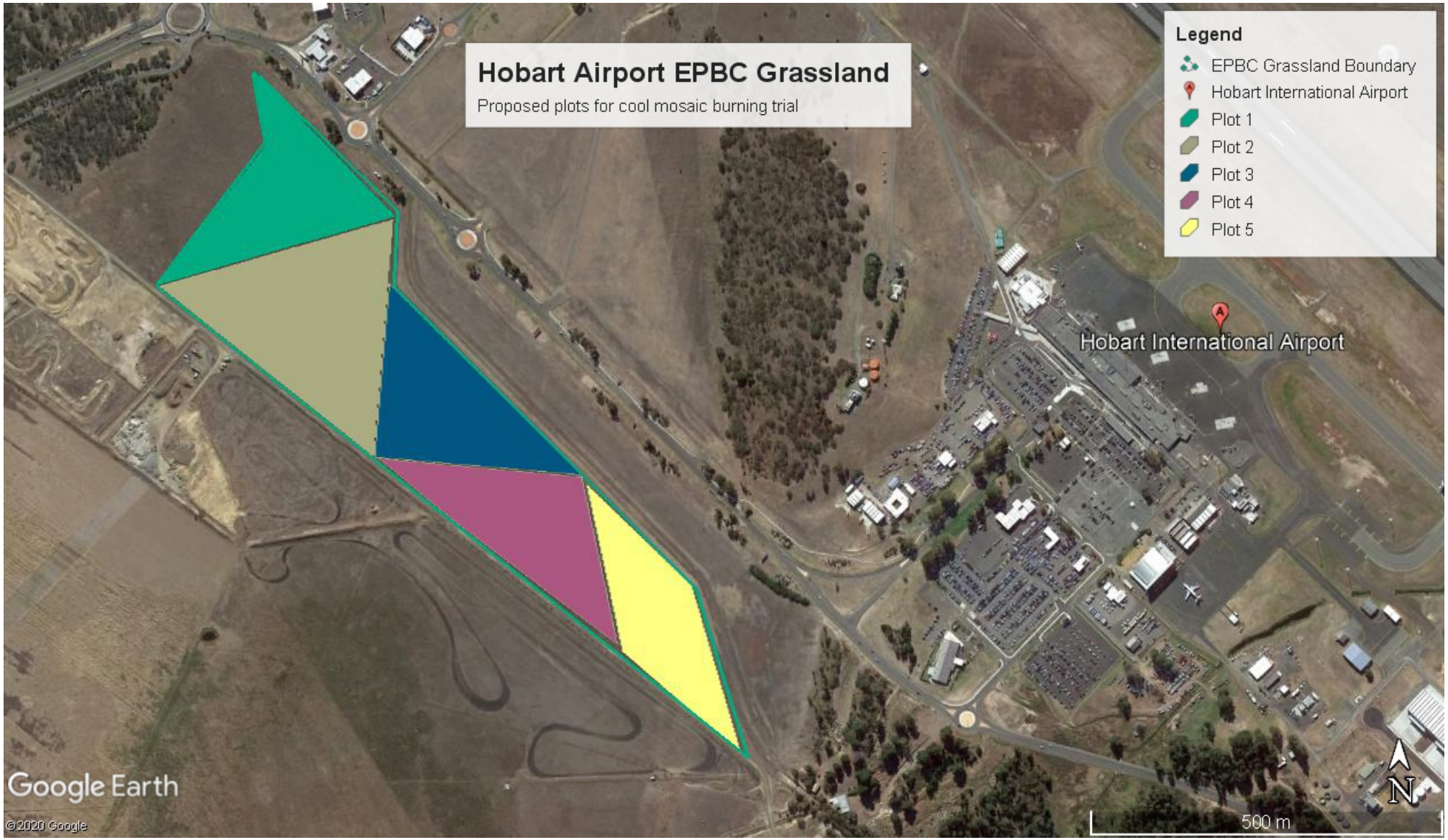


Figure 2 Aerial view of Grassland and proposed plot areas

4. Grassland Monitoring

Prior to burning, each land area will be subject to a floristic survey to determine the range of species present, including both weeds and native herbs. All species will be documented for reporting purposes.

Following the burning application, the grassland land area will be monitored for the emergence of weed species and native herbs. While weed species will be monitored throughout the year and removed/treated, targeted investigations will occur in spring to document the number and type of native species emerging. All data on threatened species will be recorded and provided to the Tasmanian Natural Values Database for inclusion (Department of Primary Industries, Water and Environment).

The outcomes of the spring surveys will be included in the Airport's Annual Environment Report, which is submitted to the Commonwealth annually for review (Department of Transport, Cities and Regional Development). The monitoring report will also be provided to the Department of Agriculture, Water and Environment in accordance with permit requirements.

The monitoring will be undertaken by a qualified ecologist in collaboration with the Tasmanian Aboriginal Centre Inc (TAC).

Attachment 1: EPBC Grassland Risk Assessment

RISK REGISTER

Last Updated: 28th February 8 October 2020 Latest Changes highlighted in RED

Context				Risk Description		Risk Details				Risk Treatment / Control	Risk Assessment after treatment			Action Tracking	
Suggested Board Focused Risks					Who is accountable for managing this risk?	What controls do I currently have in place to manage this risk?	Risk Analysis Assess the risk considering Consequence &			What more do I need to do to manage this risk?	Risk Analysis Assess the risk considering Consequence &				
Active Archived	Risk	Risk Category	Risk Name	Risk Description	Risk Owner	Existing Controls	C	L	Level of Risk	Proposed Controls	C	L	Level of Risk	Action Owner	Due date
Active	OPERATIONAL	Operational Safety	Poor Visibility	Smoke causes risks to ATC and aircraft traffic, including Rotorlift	Aboriginal land managers, Tas Fire Service, Hobart Airport	A project plan which includes safety controls and timeframes for applying cool mosaic burning, reviewed by Operational and Risk & Safety Managers	Major	Possible	High	Project Plan, Comms Plan, presence of TFS personnel and fire trucks on site at time of burning. Communication via radio to Operational team.	Moderate	Unlikely	Medium	Hobart Airport	
Active	OPERATIONAL	Environment	Impact to EPBC listed grassland	Irreversible damage to grassland species	Environment Manager/Aboriginal land managers	A project plan which includes a proposed methodology approved by the Commonwealth	Major	Possible	High	Project Plan, Permit to burn, indigenous land management knowledge and expertise, TFS to extinguish if deeemed detrimental	Moderate	Unlikely	Medium	Hobart Airport	
Active	COMPLIANCE	Legal	Impact to EPBC listed grassland	Irreversible damage to grassland species	Environment Manager/Aboriginal land managers	A project plan which includes a proposed methodology approved by the Commonwealth	Major	Possible	High	Project Plan, Permit to burn, indigenous land management knowledge and expertise, TFS to extinguish if deeemed detrimental	Moderate	Unlikely	Medium	Hobart Airport	
Active	OPERATIONAL	Workplace Health & Safety	Impact to HBA staff	Smoke inhalation and/or injury	Environment Manager/Aboriginal land managers	PPE, Project Plan, access to immediate first aid	Major	Unlikely	Medium	Adhere to Project Plan and its safety guidance	Minor	Unlikely	Low	Hobart Airport	
Active	OPERATIONAL	Operational Safety	Traffic Management	Impact to traffic flow due to smoke	Hobart Airport	Tas Fire Service will be on site to control burning and minimise operational impacts	Moderate	Possible	High	Adhere to Project Plan and its safety guidance	Minor	Unlikely	Low	Hobart Airport	

Appendix D – Grassland Ecological Monitoring Reports

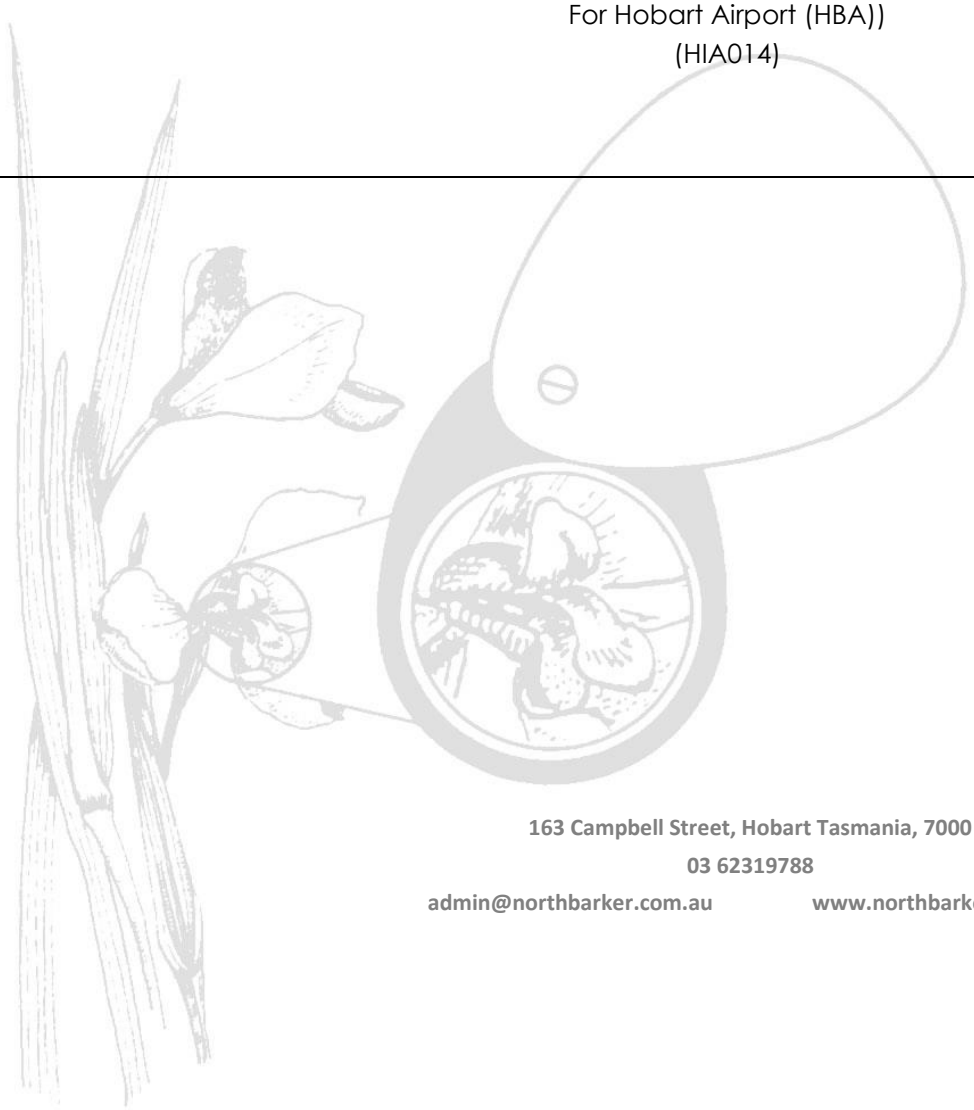
northbarker
ECOSYSTEM SERVICES

Hobart Airport

GRASSLAND ASSESSMENT

28 June 2022

For Hobart Airport (HBA))
(HIA014)



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SUMMARY

Hobart Airport supports some significant areas of silver tussock (Poa) grassland, a portion of which qualifies as 'Lowland Native Grasslands of Tasmania' (LNGT) ecological community, which is listed as critically endangered on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA).

90 ha of grasslands were surveyed and assessed against EPBCA criteria. The total area of deemed to qualify as LNGT has remained stable since the last survey in 2015 at ~ 21ha. However, spatial distribution of qualifying grassland has changed, with some Poa grassland patches increasing in qualifying area and some decreasing. These changes can be attributed to environmental variation and management practices.

The increase in area is mostly in the area west of Holyman Avenue where improvement in quality can be attributed to a management regime that has included Poa biomass control through mowing and a successful cultural burn while allowing the grasslands to mature enabling the silver tussocks to enlarge and smother many weeds. However, from a general inspection it can be seen that in some places the tussocks are also smothering desirable native plants including threatened species. Woody weeds, and in some cases native shrubs, are also invading the grasslands.

Long term viability of the grasslands requires some form of biomass control. Various options are explored including mowing, slashing, and burning. Recommendations are given to continue the burn program west of Holyman Avenue, and to carry out biomass reduction burn or mowing in other Poa grasslands. Targeted woody weed control should be continued. Vigilant monitoring and treatment of declared weeds, in particular crow garlic, Spanish heath, serrated tussock, and African love grass are required.

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Project Details

Client Contact: Nicole Sherriff, Environment and Sustainability Manager, HBA

Field Survey and Photos: Aleida Williams

Report: Aleida Williams (lwilliams@northbarker.com.au)

Mapping: Aleida Williams

Project Management and Review: Andrew North (anorth@northbarker.com.au)

File Control:

Version	Date	Author / Comment
V 0.1	05/05/2022	Aleida Williams
V1.0	11/05/2022	Andrew North Review
Review	7/06/2022	Nicole Sherriff
V1.1	17/06/2022	Andrew North
V1.2	28/06/2022	Andrew North
V1.3	7/07/2022	Andrew North

1. Background

In June 2009, the 'Lowland Native Grasslands of Tasmania' ecological community was listed as 'critically endangered' under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This community is comprised of two major subtypes that approximate to TASVEG[1] mapping units 'Lowland *Poa labillardierei* grassland' (GPL) and 'Lowland *Themeda triandra* grassland' (GTL). At Hobart Airport predominantly the former subtype is present. This subtype is relatively species poor and consists of grasslands typically dominated by *Poa labillardierei*. Remnants of the Lowland *Poa labillardierei* grassland sub type are typically found on alluvial flats on the valley bottoms and on gentle slopes. Where water inundation of sites is common, the tussocks are often interspersed with flood-scored and water filled hollows[2].

Protection by the EPBCA is focussed on the most important examples of the ecological community. As such, grasslands must meet a suite of condition thresholds relating to density of *Poa labillardierei* tussocks (referred to as *Poa* in this report), weed cover, native herb cover, and shrub cover. Refer Box 1. Inappropriate management can result in a decline in condition of grasslands. In the absence of biomass control the *Poa* tussocks can swamp out smaller herbs that would occupy the inter-tussock spaces. Conversely over intensive management, and removal of biomass, can deplete the *Poa* tussocks and encourage other species to dominate.

Hobart International Airport Pty. Ltd. or Hobart Airport (HBA) manage Environmentally Significant Areas (ESAs) identified in the Hobart Airport Master Plan in accordance with Commonwealth *Airport (Environment Protection) Regulations (AEPR) 1997*.

North Barker Ecosystem Services (NBES) have conducted several surveys of grassland vegetation over the last 20 years and provided management options for HBA to maintain the quality of its native grasslands:

In 2005[3] NBES assessed the large area (40 ha) of GPL each side of Holyman Avenue against the EPBCA criteria. This assessment determined that much of the land east of Holyman Avenue, covering 15 ha failed to meet the listing criteria. This site was then identified for future development and was excluded from investigations in 2011 and 2015. HBA have managed the area with periodic(typically annual) slashing to reduce fire hazard and maintain visual amenity.

In 2011[4] and 2015[5] NBES surveyed **all** Hobart Airport grasslands (except the development area) and identified areas that qualify, and on what grounds areas that fail to qualify fall short of the condition thresholds. Both reports describe a mosaic of patches of qualifying grassland amongst more extensive areas that fail to meet the necessary condition thresholds. In 2011 total of 16 ha and in 2015, 22 ha were considered to meet the condition thresholds, with the majority of qualifying grassland in both surveys coming from the largest area of *Poa* grassland GPL west of Holyman Avenue. Those grasslands that did not meet the condition thresholds to qualify as EPBCA grassland either supported insufficient silver tussock *Poa* labillardierei (<50% cover) or were overly infested by herbaceous perennial weeds (>20%).

In 2015, 3.5 ha within the Llanherne ESA were identified as potentially qualifying grassland. This area was surveyed in more detail in 2017[6] and found 2.6 ha qualified against the EPBCA criteria.

[1] Kitchener and Harris (2013)

[2] DEWHA (2010)

[3] North Barker Ecosystem Services (2005).

[4] North Baker Ecosystem Services (2011).

[5] North Baker Ecosystem Services (2015).

[6] North Baker Ecosystem Services (2017).

NBES have been re-engaged to qualitatively assess all the grassland on Hobart Airport land against EPBCA criteria and determine the full extent of grassland that qualifies as EPBCA listed ecological community 'Lowland Native Grasslands of Tasmania'. Recent management of the grassland is reviewed and future management recommended.

1.1 The Study Area

The Hobart International Airport property occupies 476 ha and supports a significant extent of native grassland. Previous assessments[7,8] have identified ~90 ha of native grassland, the extent and make up of which is changing over time (Figure 1). The grassed areas within the runway precinct immediately adjacent to the runway are not included in this assessment. Although locally dominated by native wallaby grasses *Austrodanthonia spp*., little of the runway precinct forms a true native community.

1.2 Survey and Assessment

The five-yearly grassland reassessment (stipulated by the Hobart Airport Master Plan) was due for completion in 2020. It was, however, delayed by Covid until the 2021/22 season.

The grasslands were inspected over three days between 23 December 2021 and 10 March 2022. All areas (90 ha) previously mapped as native grassland (Figure 1) were surveyed and qualitatively assessed against the EPBCA criteria for LNGT. Little quantitative data were collected, instead *Poa* cover was estimated and evidence of weeds considered. Obvious boundaries, pertaining to *Poa* dominance were walked using hand held GPS to redefine boundaries. Attention was focused upon the general condition of the grassland, including health of the *Poa* tussocks, impact to native herbs, and the extent of herbaceous and woody weeds and threat they pose to the grassland.

1.3 Limitations

Assessment of the grassland is qualitative and mapping is indicative only of the areas that would potentially qualify or not as EPBCA grasslands.

The grassland east of Holyman Avenue was mown in February 2022 just prior to this assessment. The presence of Poa tussock s and their density was sufficient to inform classification of this area to *Poa labillardierei* grassland (GPL). However, it was not possible to assess the grassland against condition thresholds for EPBC LNGT.

[7] North Baker Ecosystem Services (2011).

[8] North Baker Ecosystem Services (2015).

HBA grasslands

GPL Lowland Poa labillardierei grassland

GCL Lowland grassland complex

Base data from theLIST (www.thelist.tas.gov.au),
© State of Tasmania
Base image by TASMAP, © State of Tasmania
Datum: GDA94, AHD Grid: MGA Zone 55

GDA

0 250 500m
metres

The mapping has been undertaken using a non-differential GPS and interpretation of aerial photography. Average accuracy of data is +/- 10m.

northbarker
ECOSYSTEM SERVICES

HIA009 18/06/2015

Figure 1– Study Area: Native Grassland at Hobart Airport (from 2015 assessment)

Box 1 – Summary of EPBCA listing criteria for 'Lowland Native Grasslands of Tasmania'

- Patch must be ≥ 1 ha
- Native perennial grass tussock cover –
    - *Poa* must be > 50% of perennial native tussocks **OR**
    - Native herbs + *Poa* (not including other grasses)
- Native Herb abundance – 5 or more native herbs per 0.5 ha to qualify.
- Trees and shrubs –
    - ≤ 5 mature *Eucalyptus* trees per ha **AND**
    - ≤ 30% solid crown cover of other native trees and tall shrubs greater than 2m **AND**
    - ≤ 10% solid crown cover of regenerating *Eucalyptus* trees or other woody native species
- Weeds - Perennial non-native plants species account for < 20 % of total ground cover at any time of year.

Classic silver tussock *Poa labillardierei* grassland

2. Results of grassland assessment

2.1 Extent of native grassland

All 90 ha of previously mapped grasslands (2015) shown in Figure 1 were inspected and assessed against EPBC LNGT criteria where possible. 77 ha were confirmed as native grassland; Lowland grassland complex (GCL) and Lowland *Poa labillardierei* grassland (GPL), both of which have the potential to qualify, or be managed in a way that they could qualify, as LNGT. The remaining surveyed areas were re-attributed to lowland grassy sedgeland (GSL, 1.7 ha), freshwater aquatic sedgeland and rushland (ASF), 1.7 ha), and disturbance induced units Regenerating Cleared Land (FRG, 1.7 ha) and Permanent Easements (FPE, 8.2 ha). These are shown in Figure 2.

Lowland *Poa* labillardierei grassland (GPL)

Grassland areas that are dominated by silver tussock are classified as the TASVEG community Lowland *Poa labillardierei* grassland. In 2010 and 2015, 43 ha and 51 ha of GPL were mapped respectively. In 2022, 37 ha of GPL were mapped. The marked 14 ha decrease in area from 2015 is due to:

- The remapping of the most south-eastern GPL patch as FPE (described below) (8.2 ha);
- Conversion of area opposite Tasmanian Gourmet Seafoods and around Llanherne Hill to weedy GCL (>3 ha);
- Small losses of GPL to Tasman Highway roadwork, conversion to other grassland mapping units (particularly east of the runway and patches of the large area west of Holyman Avenue), and expansion of forest/ woodland vegetation into the grasslands.

Grassland east of Holyman Avenue has been extended to the north to take in an area of approximately 1 ha previously mapped as FUM (extra urban miscellaneous). Although mown just prior to assessment numerous patches of *Poa* tussocks were evident and further survey work is warranted to confirm this classification.

GPL East of the runway (Land side)

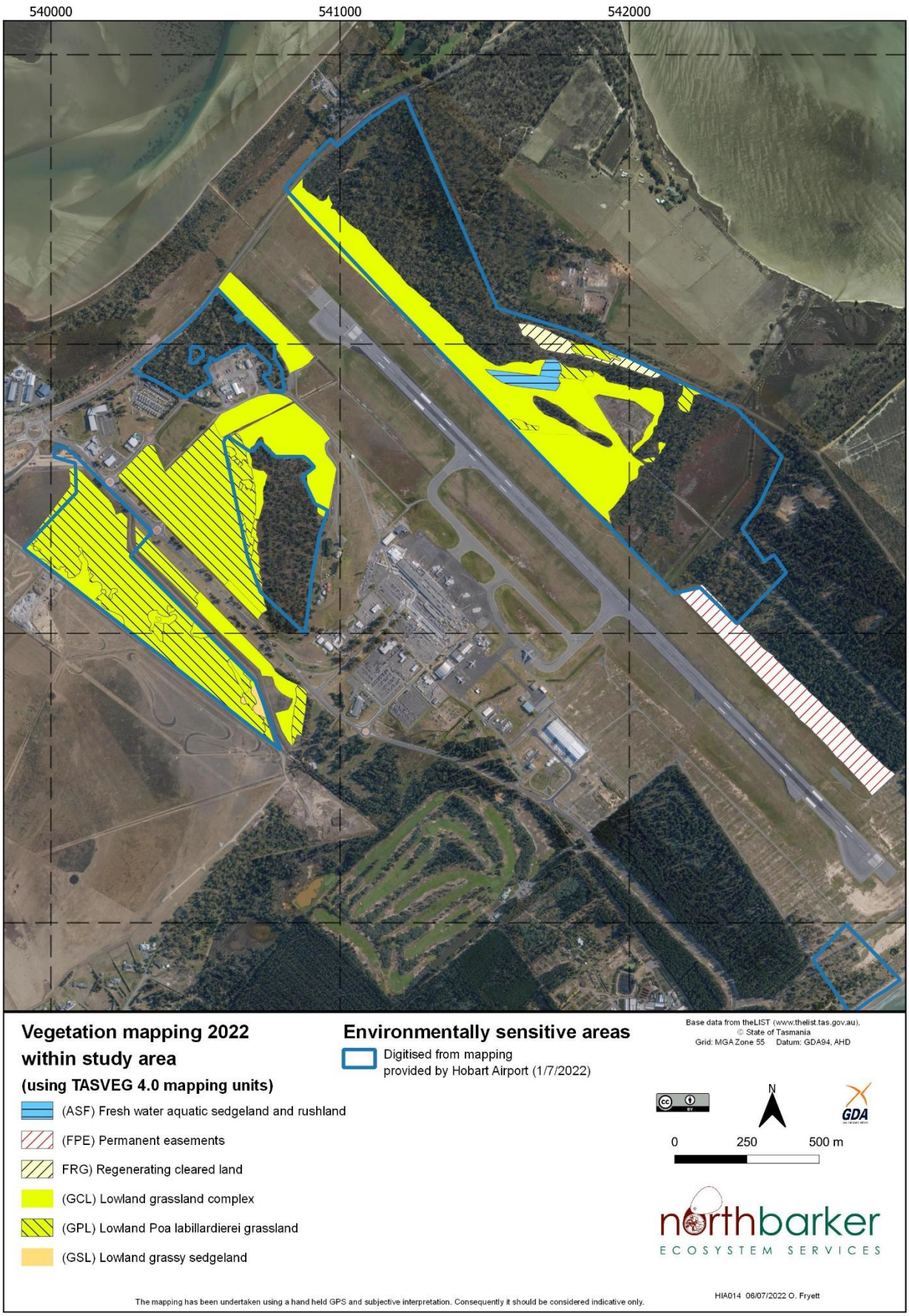


Figure 2: 2022 vegetation within study area

Lowland grassland complex (GCL)

Native grassland areas dominated by wallaby grass are classified as Lowland grassland complex GCL. Some areas of Hobart Airport GCL contain significant *Poa* despite being dominated by wallaby grass. These areas warrant assessment against LNGT criteria as GCL units can qualify if the *Poa* + herb cover is greater than the cover of other native grasses. GPL mapping units have been converted to GCL where *Poa* is no longer the dominant grass.

GCL located between Loop road and Llanherne Hill. This was mapped as GPL in 2015

Lowland grassy sedgeland (GSL)

Small area of low lying ground in the southeast corner of the grassland west of Holyman Avenue has been reclassified from FUM to this community. It is an area frequently subject to inundation in wet seasons which supports sufficient native component to qualify as grassland. The prominence of non grassy graminoids such as *Juncus, Carex* and *Eleocharis* species make this the most appropriate classification even though the composition doesn't correspond closely to standard GSL TASVEG description. The dominant lifeform/species composition is likely to fluctuate with seasonal rainfall and is likely to revert to GCL following a run of drier years.

Regenerating cleared land (FRG)

The grassy area east of the airport has clearly been disturbed in the past. The resulting skeletal soil and furrowing are visible on aerial imagery, the vegetation that has colonised this area can mostly be fitted into native TASVEG mapping units but it should be kept in mind that this is a derived landscape and not a historically naturally occurring one. The area mapped as FRG in 2022 (1.7 ha) does not easily fit into a TASVEG mapping unit as it is a mix of native and exotic grasses, with rushes and sedges in the furrows. This is typical of regenerating land, and the species composition and structure is likely to fluctuate over time. Part of this area has been mapped as GPL where it is dominated by *Poa* with *Carex teretifolia* with patches of *Coronidium gunnianum*.

Aerial (Bing VisualEarth) of the modified land area east of the runway

FRG surrounding a centre patch of Poa dominated area of GPL

Permanent easement (FPE)

FPE is artificially maintained low vegetation that supports a modified form of the adjacent vegetation[9]. 8.2 ha mapped as GPL in 2015 was mapped as FPE in 2022. This area is not within an Environmentally Sensitive Area, and is mown routinely as part of Airside corridor requiring the maintenance of a very low sward. The area has a high percentage cover of weedy grass, flat weeds, and other herbaceous pasture weeds, but also native herbaceous and woody species common to the adjacent native forest vegetation. Thus if this area were to be left unmanaged, it is likely to return to the adjacent woodland/forest units, defining it as FPE.

Although *Poa* is present in this area, it is patchy and of inadequate cover to qualify as grassland. The prominence of mown shrubs and trees are not consistent with a grassland classification.

Mown native hop bush (*Dodonaea viscosa*) and sagg (*Lomandra longifolia*) in FPE area

[9] Kitchener and Harris (2013).

Herbaceous and grassy weeds, and mown siler wattle (*Acacia dealbata*) in FPE area

2.2 EPBCA qualifying grassland

Figure 3 distinguishes those areas of grassland that qualify as the nationally threatened ecological community Lowland Native Grassland of Tasmania. Table 1 outlines the distribution of qualifying grasslands. In total, 21 ha of grassland were deemed to qualify as EPBCA grassland and a further 13 ha were identified as potentially qualifying after qualitative assessment in 2022. While EPBCA grasslands can encompass TASVEG mapping units other than GPL, in this case at Hobart Airport all qualifying grasslands were mapped as GPL.

The qualifying area and distribution has changed little from 2015 when 22 ha were reported to qualify as EPBCA grassland. Comparison of qualifying grasslands since 2011 can be found in Appendix 2.

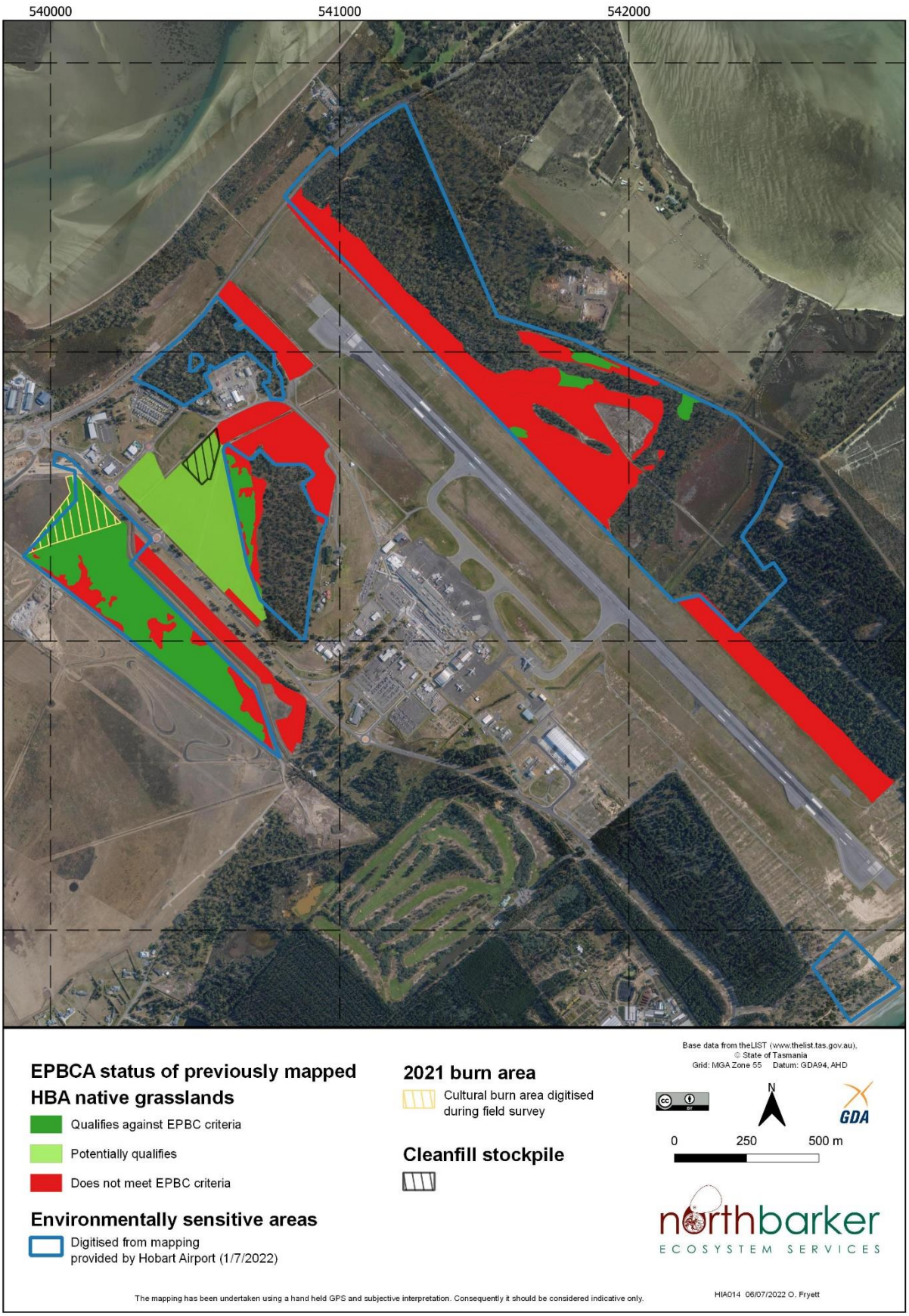


Figure 3: EPBCA status of previously mapped grasslands

Table 1: area of grassland that is considered to meet the EPBCA criteria for LNGT

Location	Qualifying area (ha)	Potentially qualifying area (ha)
East of runway (2 patches)	0.6	
Adjacent to Pittwater Road (2 patches)	0.9	
Llanherne Hill ESA	1.7	
West of Holyman Ave	17.8	
East of Holyman Ave (development area)		13.2
Total	21.0	13.2

Grasslands west of Holyman Avenue

The grassland area west of Holyman Avenue continues to be the largest and best quality patch of *Poa* grassland at Hobart Airport. This triangle patch bounded by the drain, private property boundary, and the Tasman Highway occupies 21.3 ha. A small parcel of land which was previously part of this patch, and the ESA, has been cleared as part of the Tasman Highway Interchange upgrade. Of the 21.3 ha patch, 19 ha is mapped as GPL of which 18 ha is deemed to qualify against EPBCA criteria. In 2015, 13 ha of the this grassland patch was considered to meet condition threshold. The increase in qualifying area in the last 7 years is largely due to the increase in condition of the grassland in the northwest corner of this patch. Previously this area was mapped as GCL and was weedy after a small wild fire in 2014. *Poa* has since increased colonisation and weeds have been out competed resulting in good quality *Poa* grassland.

LNGT qualifying Poa grassland west of Holyman Avenue

The boundaries of patches of non-qualifying LNGT grassland in the centre and southern end of this area have changed sightly reflecting local changes in relative dominance of Poa.

Currently, this patch is in excellent condition. Wildflowers are abundant, there are few woody or herbaceous weeds. This grassland is representative of the community type recognised by the listing of LNGT where "water inundation of sites is common, the tussocks are often interspersed with flood-scored and water filled hollows"[10]. Generally the Poa cover is dense and the inter-tussock spaces appear to be closing out. Biomass reduction will be required in the near future to maintain grassland quality and habitat for smaller herbs.

Grasslands East of Holyman Avenue

An area of grasslands east of Holyman Avenue that extends over 13.2 ha was excluded from assessments in 2011 and 2015. They had been previously determined in 2005 as not qualifying as EPBC LNGT and have been identified for commercial development. The area was mown in February just prior to our inspection in 2022. Some of the land in the north west corner, previously mapped as FUM has been reclassified to GPL. It is unclear whether all criteria necessary to qualify as LNGT are met but our qualitative assessment suggests it is possible that some of this area may now qualify. The extent of Poa density appears to have increased over time and the extent of perennial weed cover appears to be low. The diversity of wildflower necessary to qualify as LNGT was not able to be considered. Further quantitative assessment in spring and early summer prior to mowing would be necessary to confirm whether or not any parts of this area of grassland would qualify as the EPBCA listed LNGT. This requires transects with regular quadrats to measure the necessary parameters listed in Box 1 on page 4.

Development approvals for involving conversion of LNGT qualifying grasslands may trigger a need for referral under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Previously mapped FUM now supports a good cover of Poa tussocks

Area between Holyman Avenue and Llanherne Hill requires further survey to assess against the EPBCA criteria

[10] DEWHA (2010)

Llanherne Hill ESA

This area is the eastern edge of the *Poa* grassland at the base of Llanherne Hill and within the ESA. This area was last assessed in 2017[11] when 3.3 ha of GPL was identified of which 2.6 ha qualifies as LNGT. In 2022, 2.8 ha was mapped as GPL and 1.7 ha was deemed likely to qualify as LNGT, although potentially less as there is some uncertainty whether the wildflower component consistently meets the 5 species per 0.5 ha threshold.

The reduction in GPL area is mostly due to the expansion of pasture grasses, particularly *Agrostis spp*. into the GPL from the western edge. The reduction in qualifying GPL is due to insufficient *Poa* cover in some areas and herbaceous and grassy weed cover in others.

In general, this grassland is in poor condition with patches of grassy (particularly patchy Toowoomba canary grass *Phalaris aquatica* and herbaceous weeds (particularly patches of bristly oxtongue *Helminthotheca echioides*, some woody weeds, and thick *Poa* swathes in areas which are prohibiting wildflower diversity.

This degradation in quality is a function of high rainfall and inadequate biomass control.

Thick Poa within the Llanherne Hill ESA lacks inter tussock spaces and smothering herb and wildflower species

Grasslands east of the Runway

Immediately east of the airport runway, there has been some loss of GPL and further reduction of LNGT qualifying grassland. This is primarily due to reduction in *Poa* cover, both in size and number of tussocks.

[11] North Baker Ecosystem Services (2017).

GPL patch mapped in 2015 as LNGT is now GCL with insufficient *Poa* to qualify

The runway end of the same patch which is lower-lying and regularly inundated is good quality LNGT qualifying grassland

GPL mapped in 2015 east of service road as LNGT is now GCL with insufficient *Poa*

Adjacent to Pittwater Road the GPL patch within FRG is in good condition in 2022 after a number of wet seasons. The patch within the forest community, however has decreased in patch size as the forest boundaries encroach and woody species are colonising the grassland.

Poa and *Carex tereticaulis* adjacent to Pittwater Road

GPL adjacent to Pittwater Road. Forest margins are encroaching and woody species are colonising the grassland

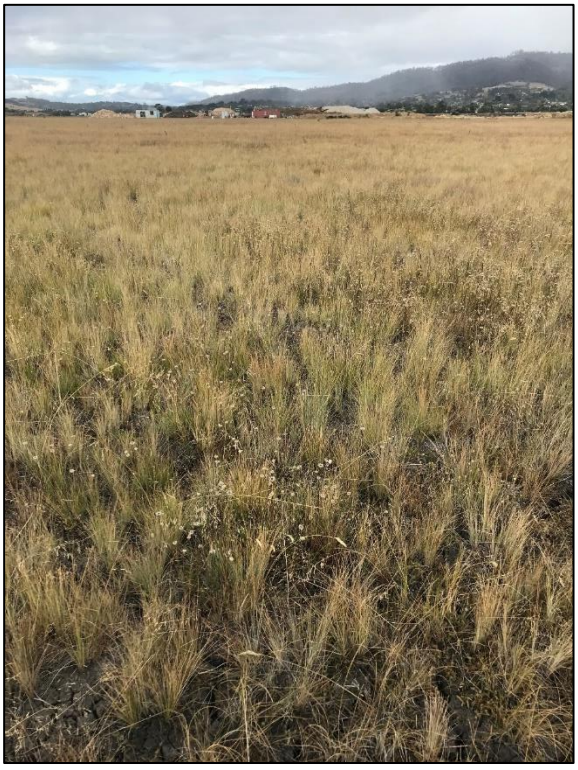
Qualifying GPL areas east of the runway are all greater than 0.5 ha in area but too small to individually qualify against the EPBCA criteria (minimum 1 ha). They can qualify collectively as from an ecological function perspective they are interrelated and connected to the larger grassland areas of the airport. Generally this area has been derived from previous disturbance and *Poa* grasslands here are not characteristic of the typical Poa facies of LNGT.

There are a few small localised patches of grassland close to the boundary of the east side of the runway that are dominated by kangaroo grass *Themeda triandra*. These have not been separated from general GCL mapping and are considered too small and fragmented to qualify as LNGT.

2.3 Threatened flora

The LNGT ecological community supports many threatened species[12]. The grasslands at Hobart Airport are no exception and are important for the habitats that they provide for several rare herb species. Populations of lemon beauty heads *Calocephalus citreus*, leafy fireweed *Senecio squarrosus* and roundleaf wilsonia *W. rotundifolia* are perhaps unrivalled in Tasmania. All three species are listed as rare on the Tasmanian *Threatened Species Protection Act 1995*. In addition, *Poa* grasslands on Hobart Airport land support large populations of the recently described swamp everlasting *Coronidium gunnianum*. This species is under consideration for listing as endangered under the TSPA as it is considered to occupy less than 10 ha, its distribution is severely fragmented, and its population is forecast to continue to decline[13]. Threatened flora counts are not part of this project, however, estimates based on field observation in 2022 suggest that this subpopulation of *C. gunnianum* occupies 11 ha of at Hobart Airport and could constitute as many as 5000 plants. This is likely to be a significant subpopulation the knowledge of which could influence ultimate listing or at least inform appropriate criteria eg endangered, vulnerable or rare.

***C. gunnianum* in full flower east of the runway; December 2021**



Vast patches of *C. gunnianum* have come back after the cultural burn in the area west of Holyman Avenue; March 2022

[12] DEWHA 2010

[13] Threatened Species Section 2021

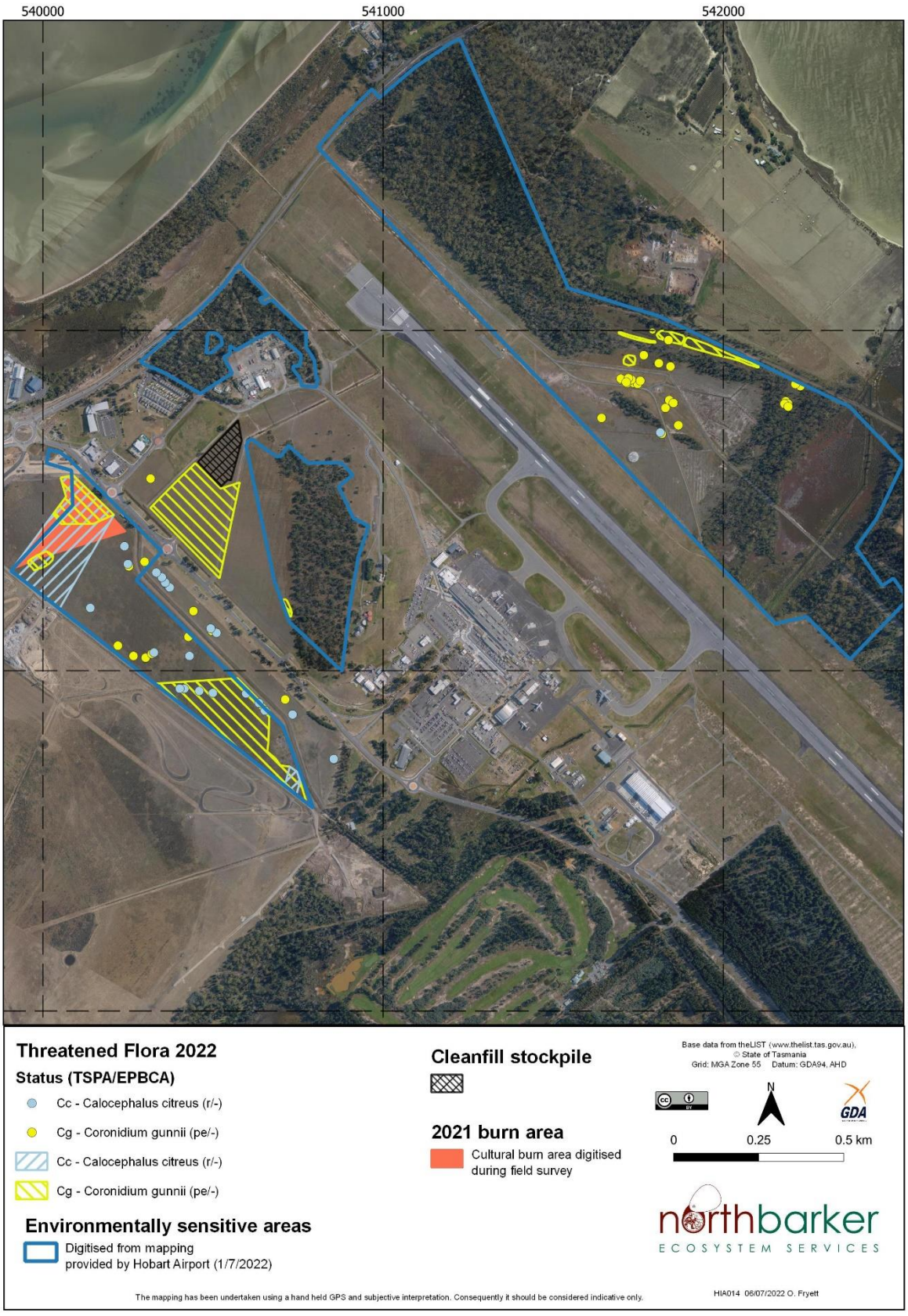


Figure 4: Threatened flora observed while assessing grassland quality

[NB. Comprehensive threatened flora mapping was not undertaken – observations were incidental to our investigations. R = rare TSPA, pe - proposed endangered which means listing is currently under review and status has not been gazetted]

3. Grassland Condition and Management

The silver tussock grasslands within the vicinity of Hobart Airport support many threatened flora species. Vertebrate and invertebrate fauna are diverse, benefitting from the structural and compositional variation within the native grasslands. Grassland management can impact on these values. Broad acre wildfires can be destructive to wildlife and affect some flora. However, a carefully planned spatial and temporal burning regime can encourage increased diversity. Likewise, grazing can be used to reduce biomass, favour ground covers and control weeds, but if over applied can adversely affect grassland health. Mowing provides another form of biomass management that can be used to manipulate structure and habitat suitability for the resident flora and fauna.

Options for management of grasslands are limited by operational requirements. In 2015 NBES presented various options for biomass control including mowing, slashing, grazing and burning. Recommendations were given to graze the largest area west of Holyman Avenue and to trial a patch burn. Targeted woody weed control was advised and options to introduce *Poa* and improve soil suitability were discussed. A review of management by HBA is provided in Appendix 3.

Current biomass maintenance activity is shown in Figure 5.

Mowing

HBA have a mowing procedure largely dictated by operational obligations within the runway precinct and aesthetic landscape management land side. Routine mowing is undertaken in the vicinity of infrastructure, specifically to keep grass height within prescribed thresholds. Grassy areas airside are mown to 50 mm six times a year to ensure that grass heights never exceed 100-150 mm. Frequent low-cut mowing removes much of the tussock of a *Poa* and probably encourages smaller more prostrate species. This is likely to benefit wallaby grasses along with various flat weeds. Such a mowing regime is likely to discourage the colonisation by *Poa*. It could have the consequence of downgrading areas of EPBCA qualifying grassland by converting GPL to GCL with the dominance shifting to wallaby grass which is considerably more tolerant of this regime.

Mowing of grasslands landside is less frequent and less constrained by airport management protocols. Some areas are mown twice a year, some areas annually and others infrequently. Mowers are set to cut at approximately 100 mm. Less frequent mowing favours the growth of larger tussock forming species such as *Poa*. Exclusion of mowing from some grassland areas mapped as GCL in 2010 resulted in increased *Poa* prominence with some areas in being reassigned to GPL in 2015[14]. The enlargement of the *Poa* tussocks helps close out weeds and other competing species, however, if *Poa* grasslands are left unmanaged, quality is also affected as the biomass of *Poa* tussocks becomes too great, closing the inter-tussock gaps, smothering the ground layer and excluding herb biodiversity which is key for good quality grassland. Ultimately the over mature tussocks will decline themselves. Consequently there is a 'happy medium' of moderate biomass control where Poa tussocks are allowed to develop but not to the point of excluding associated native herbs or of early senescence.

Grassland on the northern face of Llanherne Hill has lost Poa density to the point that we have reallocated some areas of GPL to GCL. Even though these areas are typically only mown annually. It is possible drought in the period 2016-2019 may have had an influence here. The well drained slopes are not consistent with the preferred habitat of Poa labillardierei at Hobart Airport which are typically low lying flats subject to regular inundation.

[14] North Barker Ecosystems Services (2015)

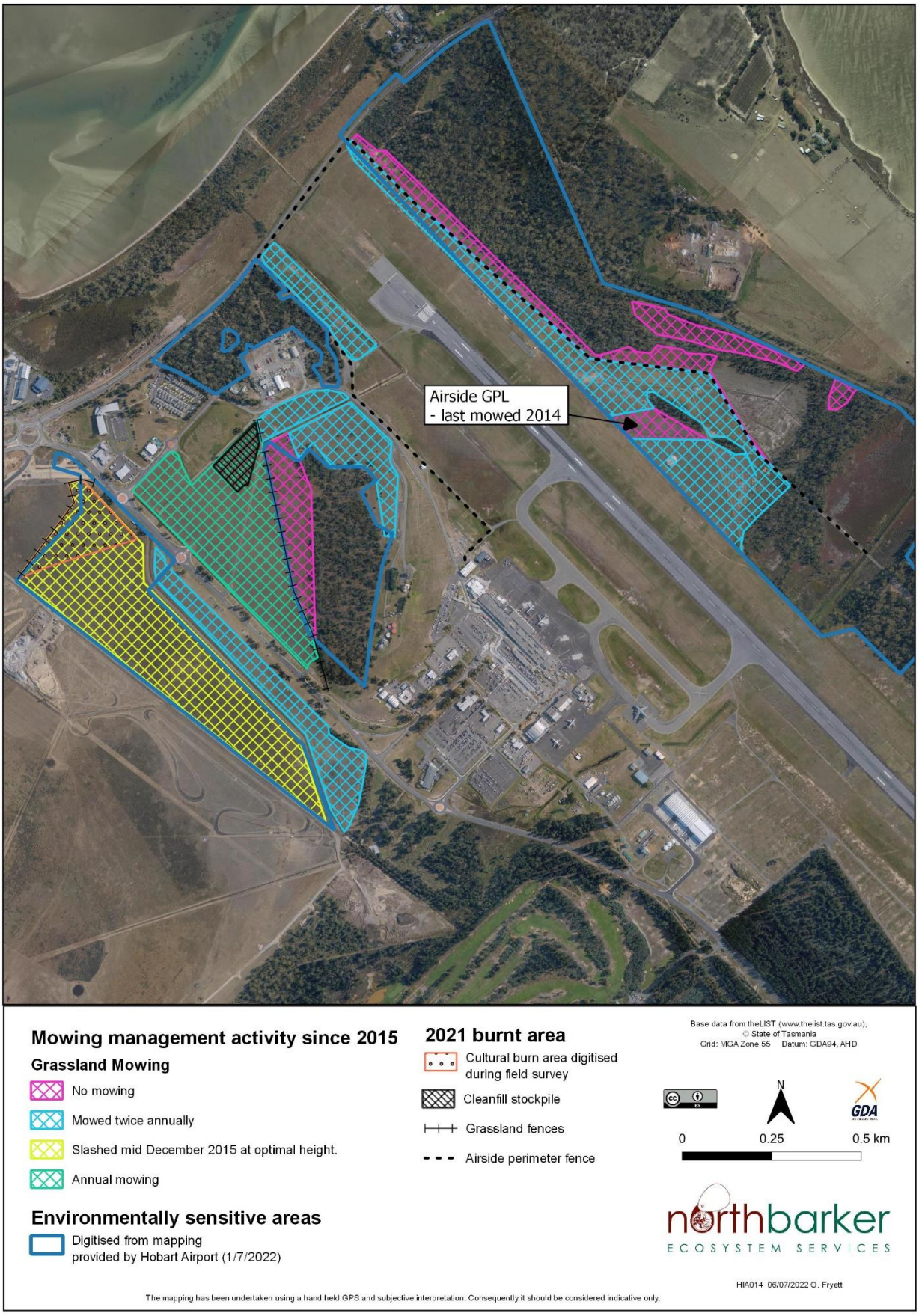
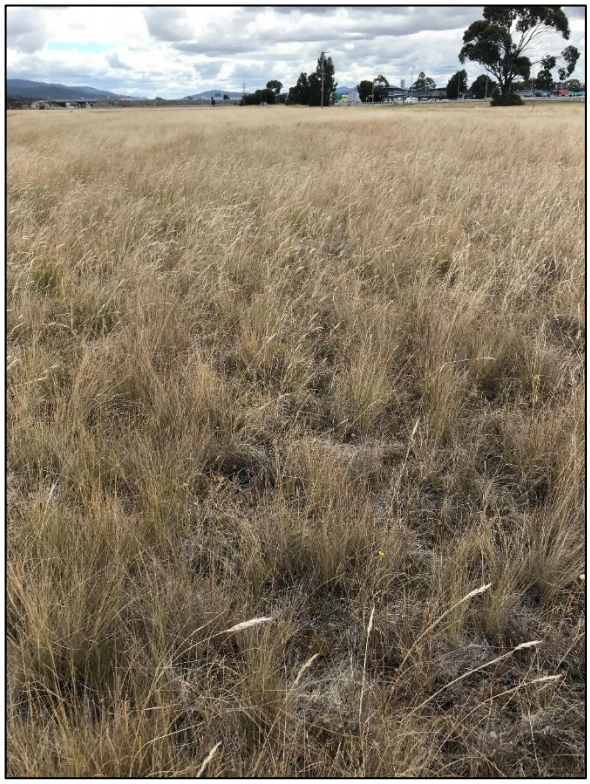


Figure 5: Management of grassland areas

The areas of GPL within the ESAs have not been mown since pre 2015 except the large area west of Holyman Avenue which was mown December 2015[15]. The GPL area within the Llanherne Hill ESA has become extremely thick with a no inter-tussock spaces for a large proportion of the area. As a result, few wildflowers or other herbs were noted. This area requires biomass reduction to retain the quality of this grassland. This is in contrast to the GPL on the other side of the exclusion fence which was mown in 2020 and 2022 and seems to have increased in *Poa* cover since 2015.

The large area west of Holyman Avenue benefited from being mown in 2015 as the *Poa* cover is less dense and wildflowers more abundant (even in March) than near Llanherne Hill. The inter-tussock spaces are starting to disappear in places and the area would benefit from a timely mow.



Poa mown routinely as part of HBA maintenance immediacy west of Holyman Avenue is thin and patchy

Thick Poa within the Llanherne Hill ESA lacks inter tussock spaces and smothering herb and wildflower species

[15] K Leggett , HBA, Appendix 3

Qualifying Poa grassland west of Holyman Avenue is becoming overly thick.

Burning

The negative and positive effects of wildfire have been shown within the area west of Holyman Avenue. In 2014, a wildfire burnt the western most corner of this area and in 2015 that area was reported to be dominated by weeds with little *Poa*. In 2021 the same area was burnt as part of a larger (4.1 ha) planned cultural burn in August 2021. This was a controlled cool burn and after a wet spring. When assessed in March 2022 this area was found to be in excellent condition. The *Poa* tussocks are still small but there is very little other native grass or weed cover, and the threatened daisies, swamp everlasting and lemon beauty heads are abundant in this area.

HBA have developed a 5 year burning plan for the grasslands west of Holyman Avenue supported by a permit under the EPBCA 1999 – E2020-0180. [16]This will create a mosaic burn effect over this whole area and if the conditions and effect are the similar to the 2021 burn, the quality of this area of grassland should be maintained and improved.

The Llanherne Hill Grassland and Grasslands east of the runway would also benefit from a managed burn, although management in these areas may be restricted by operational requirements as they are in closer proximity to the runway.

[16] Hobart Airport 2020

West of Holyman Avenue grassland cultural burn interface March 2022. LHS burnt 202, RHS not mown since 2015

Lemon beaty heads recovered well after the controlled burn

Swamp everlasting recovered well after the controlled burn

Weed management

Herbaceous weeds can be managed indirectly through general biomass management. Benign neglect allows the *Poa* tussocks to enlarge, coalesce and suppress herbaceous weeds beneath. Frequent low mowing in these habitats can encourage exposure of bare ground which favours colonisation by weeds. This is unless there are grasses suited to mowing already established. Burning has similar effect and it is noticeable how herbaceous weeds can proliferate after a fire.

HBA undertake regular weed management focusing particular attention on the ESAs bit also taking a property wide approach. This is in line with the Hobart Airport Weed Management

Plan[17]. The practical guidance for weed management is informed by the Weed Management Manual and Field Notes 2014[18] which addresses fifteen priority species.

One of the most significant and challenging threats to lowland native grassland in south east Australia comes from the invasion of aggressive large tussock forming grasses such as Chilean needle grass *Nassella neesiana*, serrated tussock *Nassella trichotoma* and African lovegrass *Eragrostis curvula*. All three have naturalised in Clarence and the latter two of these species are present but localised. Until eradicated they will present and ongoing threat to the integrity of native grasslands being capable of spreading and displacing the native grasses. Serrated tussock appears to have consolidated its cover in the mown grasslands on the west side of the runway adjacent to the taxiways.

Crow garlic (*Allium vineale*) has been reported and treated on airport land previously and was noted in the grassland west of Holyman Avenue in August 2021. Clarence is a Zone A municipality for this weed, meaning that eradication is the management aim. It has also been located on the neighbouring property and the risk of it consolidating across the grassland ESA is high. This area should be monitored and treated annually in spring for crow garlic. Crow garlic is not included in the Hobart Airport Weed Management Manual and Field Notes 2014.

Grassy weeds that have established in the grasslands include bent grass (*Agrostis stolonifera* and A. *capillaris*), paspalum *P. dilatatum* and canary grass *Phalaris aquatica*. The most prominent herbaceous weeds include the biennial hairy hawkbit *Leontodon* taraxacoides with its distinctive dandelion-like yellow flowers and annual/short-lived perennial buckshorn plantain *Plantago coronopus* (especially in the more salt affected areas). Both of these are short-lived and arguably not in need of consideration under the EPBCA criterion of perennial weeds. In 2022 bristly oxtongue *Helminthotheca echioides,* a rough leaved herb with dandelion-like yellow flowers has formed large enough patches to affect the quality of grassland areas at Llanherne Hill and west of Holyman Avenue.

Woody weeds allowed to establish can also degrade the quality of grassland and have the potential to cause some areas to no longer qualify under the EPBCA criterion. Localised occurrences of macrocarpa *Hesperocyparis macrocarpa*, cypress pine *Callitris* sp., introduced sheoak (possibly *Casuarina cunninghamiana*), Cootamundra wattle *Acacia baileyana* and mauve paperbark *Melaleuca decussata* seedlings have been tackled. Woody weeds on Llanherne Hill including pine *Pinus radiata* and golden wattle *Acacia pycnantha* threaten the adjacent grasslands. Sweet briar persists in a few locations with the grasslands. East of the runway pine wildlings and Spanish heath *Erica lusitanica* persist despite ongoing control actions.

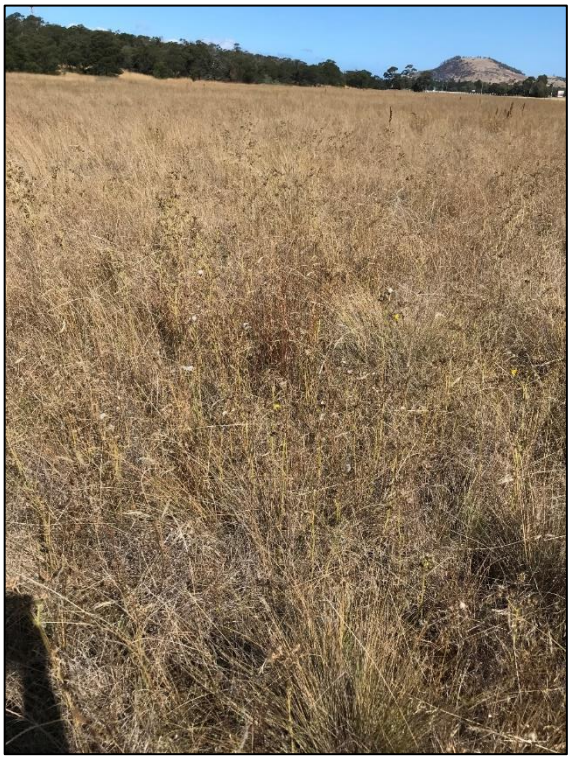
Increased weed management effort may be required in areas post burning. Following fire there is an elevated risk of the germination and establishment in open areas of herbaceous weeds. These should be discouraged from flowering and setting seed. The area burnt in 2021 was relatively weed free and has remained so post burn, however other areas of that grassland have patches of weedy grasses and herbaceous weeds.

The priorities for weed management identified in this report can be integrated into the Weed Management Schedule.

[17] Hobart Airport 2019

[18] Hobart Airport 2014

Llanherne Hill: *Agrostis* spp (RHS of photo) are taking over Poa grassland (LHS photo)



Patches of bristly oxtongue, canary grass and thistles at Llanherne Hill

Patches of canary grass west of Holyman Avenue

Treated but recurring Spanish heath infestation between runway and Pittwater Road

Pine recruitment in Poa Grassland east of the runway

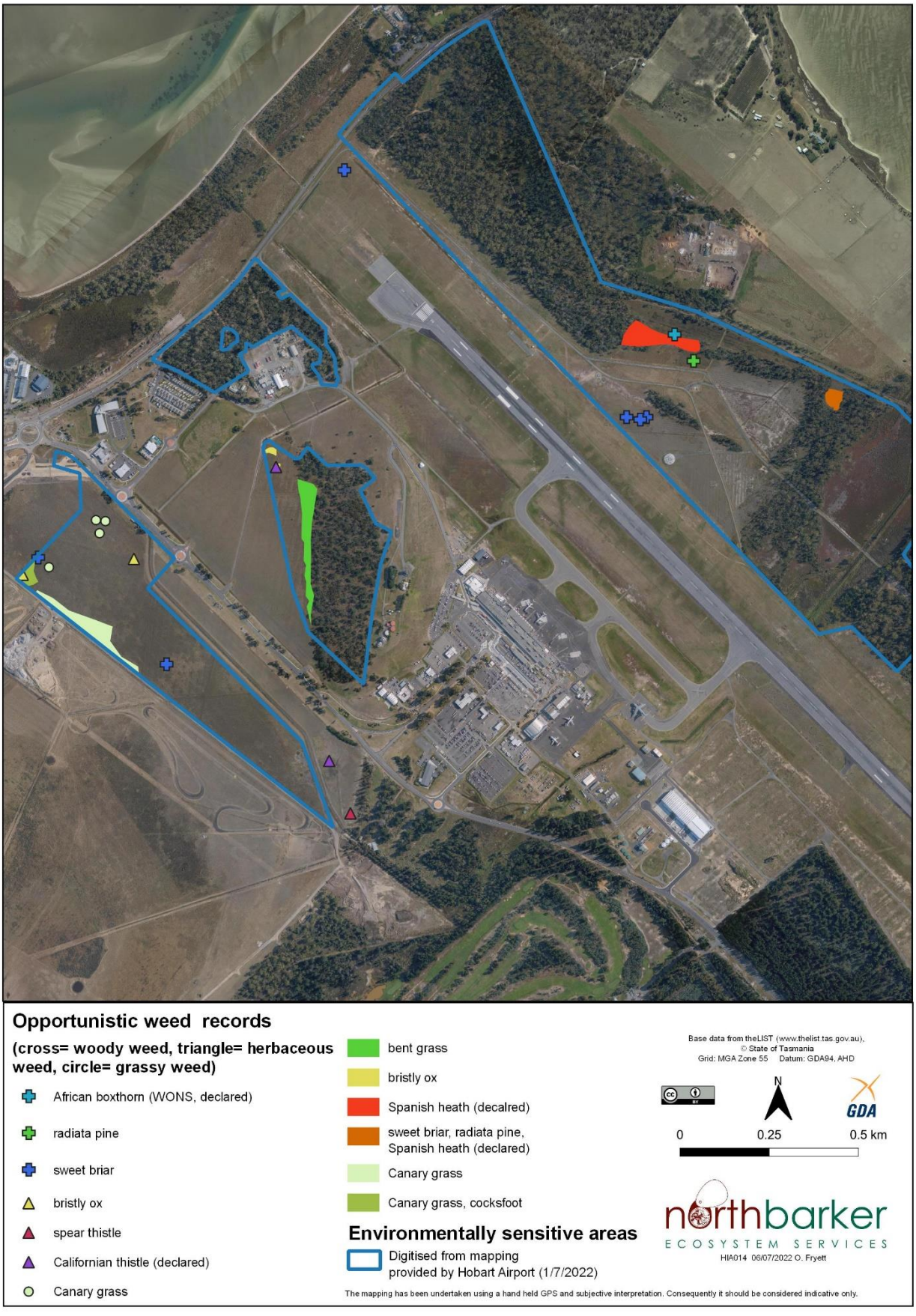


Figure 6: Weeds opportunistically recorded with in ESA grassland areas

Invasion by native woody recruitment

GPL in areas adjacent to Pittwater Road surrounded by wooded vegetation continue to be invaded by woody species, particularly silver wattle *Acacia dealbata,* honey myrtle *Melaleuca gibbosa* and native hop bush *Dodonaea viscosa*, through the natural process of succession. This is reducing the patch size of the grassland as the edges encroach, and these areas will not qualify as LNGT if the cover of woody species reaches 30%. This area is otherwise good quality grassland, though not large enough to qualify in its own right. To retain this area as *Poa* grassland the native woody trees, will need to be removed. Whether or not this is considered a priority, the woody weeds should be managed to avoid higher management expense in the long term.

GPL adjacent to Pittwater Road. Forest margins are encroaching and woody species are colonising the grassland. Small woody honey myrtle shrubs *Melaleuca gibbosa* are also becoming more abundant

Grazing

Grazing grasslands west of Holyman Avenue was recommended in 2015 in conjunction with the burning regime[19]. Sheep will preferentially graze weedy species over the less palatable *Poa* tussocks, thus aiding in maintain grassland quality. However, fencing and the movement of animals was not considered a preference for management due to the resources required and costs associated with new fencing[20].

Restoration

Management options to proactively restore *Poa* in areas where it is absent or insufficient cover were discussed in 2015[21]. Restoration trials have not yet been undertaken. Planting of Poa tillers can only lead to LNGT qualifying Poa grassland should all other attributes of the grassland community be present.

Greater success tipping the balance in favour of Poa is likely to be achieved through maintaining the optimum biomass control.

[19] North Barker Ecosystem Services 2015

[20] K Leggett 2021 Appendix 3

[21] North Barker Ecosystem Services 2015

4. Recommendations

Activity	Issue	Recommendation	Timing
Grazing	All grasslands	Retain this option for future planning decisions noting areas require stock access and good fences.	Onging
Burning	West of Holyman Ave *Poa* Management	Continue with annual burning plan to burn whole area	2021-2025
	Llanherne Hill *Poa* Management	Brush cut along fence line, burn area to reduce biomass. Critical if mowing is not an option due to nature of terrain.	2022
Mowing	*Poa* management	Review mowing program of *Poa* areas not under a current burn program. *Poa* grassland areas should be subject to regular regime of biomass control. Mowing could vary 1-5 years. Timing is critical as spring mowing leaves dense piles of slash that smother grasses and herbs. Frequency is partly dependent on growth rates dependent on rainfall but also on desired character. Monitor mowing regime to assess impacts on *Poa* quality. Investigate potential to mow area at base of Llanherne Hill in ESA.	Ongoing
Weed Management	Weed threat to ESA grasslands	Update Weed Management Plan and Weed Management Manual and Field Notes to reflect priority grassland weeds. Particular attention should be paid to: • Spanish heath • African love grass • Serrated tussock • Crow garlic • Pine wildlings	Ongoing
Development Area Grassland Assessment East of Holyman Avenue	Unknown status of grassland; potentially qualifies as LNGT	Before mowing event undertake detailed quantitative assessment of grassland to determine quality and qualifying status against EPBCA	Late 2022

		criteria. This needs to be timed for the spring/ early summer flowering time to identify all flora species.	
General	Holyman Avenue ESA fencing	Remove old fence material from grassland Repair fence between grassland west of Holyman Ave and State Growth Land	2022-23

References

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APPENDIX 1 – EXCERPT FROM LISTING ADVICE FOR 'LOWLAND NATIVE GRASSLANDS OF TASMANIA' JUNE 2009

Key diagnostic characteristics

The key defining attributes for the Lowland Native Grasslands of Tasmania ecological community are:

- It is typically found in valley bottoms and gentle slopes below 600 m asl (but can occur up to 700 m asl);
- It is typically treeless with, at most, a sparse tree cover;
- The vegetation is predominantly native;
- Dominant[1] grasses often form a dense sward;
- The ecological community occurs in two forms:
    - Grasslands dominated by *T. triandra* (Kangaroo Grass) – including sub-coastal grasslands co-dominated by *T. triandra* and *P. rodwayi* (Velvet Tussock Grass).
    - Grasslands dominated by *P. labillardierei* (Silver Tussock Grass)
- Inter-tussock spaces are occupied by native herbs, including grasses, grass-like plants, lilies, daisies and orchids;
- It may be utilised by a wide range of native animal species;
- It can be in a mosaic where *Themeda, Poa, Austrodanthonia* or *Austrostipa* species co-occur (but *Themeda* or *Poa* remain dominant);
- It can include natural and disturbance-induced grassland; and
- The geographic distribution is limited to the following bioregions in Tasmania: Ben Lomond, Northern Midlands, Northern Slopes, South East, King, Flinders, Central Highlands and Southern Ranges.

5. Condition Thresholds

The protection provisions of the EPBC Act will be focused on the most valuable elements, of the ecological community. Significantly degraded areas that do not meet the Condition Thresholds will not be part of the listed ecological community.

Many patches of the Lowland Native Grasslands of Tasmania ecological community are now disturbed and occur as small, fragmented patches. Some form of ongoing management is required to maintain or enhance the biodiversity of the remaining patches.

The Lowland Native Grasslands of Tasmania ecological community comprises those patches that meet the *Description* (including the *Key Diagnostic Characteristics*), above, and the *Condition thresholds*, below.

The diagnostic characteristics and condition thresholds generally are based on features which apply all year round, with the exception of the ground cover of native herbs. This feature is best assessed during spring and summer because it is only during this time when many native species with bulbs or tubers (e.g. lilies, orchids) occur above ground and when most species are flowering. Assessments should be taken at this time to best ascertain the biodiversity value of a grassland patch. As well, the site must not have been excessively disturbed by, for instance fire, heavy grazing or mowing, for at least two months prior to sampling. This approach is recommended because many plant species may not be visible immediately after a disturbance. In addition, the area with the most apparent diversity of native species should be selected to determine estimates of native species richness and cover.

[1] Dominance is where a species (or two more species for co-dominance) comprises the major component of its vegetation layer, usually measured as ≥ 50% of the projective foliage cover.

A patch of the listed ecological community is here defined as a discrete and continuous area of the ecological community, as described, and does not include substantial elements of other ecological communities, such as woodlands. However, a patch of the listed ecological community may include small-scale disturbances, such as tracks or breaks, that do not alter its overall functionality, for instance the easy movement of wildlife or dispersal of plant propagules, and may also include small-scale variations in vegetation that are noted in the Description and National Context.

- Patch size must be ≥1 ha

AND

- Perennial Native Tussock cover:
  - ≥ 50% of the cover of perennial tussocks must be represented by the grass genera *Poa* and/or *Themeda;* OR
  - Where the perennial tussock cover represented by these two genera is <50%, then the ground cover of native herbs (excluding grasses, other than from the genera *Poa* or *Themeda*) needs to be ≥50% of total ground cover[2].

AND

- Species Richness:
  - When *P. labillardierei* is the dominant native perennial tussock species the grassland has ≥5 native wildflower[3] species per 0.5 ha during September to March; OR
  - When *T. triandra* or *P. rodwayi* is the dominant native perennial tussock species the grassland has ≥10 native wildflower[3] species per 0.25 ha during September to March;

AND

- Tree and shrub cover:
  - ≤5 mature (>5 m tall) *Eucalyptus* trees per hectare; AND
  - ≤30% solid crown cover[4] of other native trees and tall shrubs greater than 2 m (e.g. *Bursaria, Acacia* and/or *Allocasuarina* species); AND
  - ≤10% solid crown cover[4] of regenerating *Eucalyptus* trees or other woody native species.

  The ecological community may also contain tree stumps or dead trees. Where present, these do not contribute to the calculation of solid crown cover

AND

- Weeds
  - Perennial non-native plant species account for <20% of total ground cover at any time of the year.

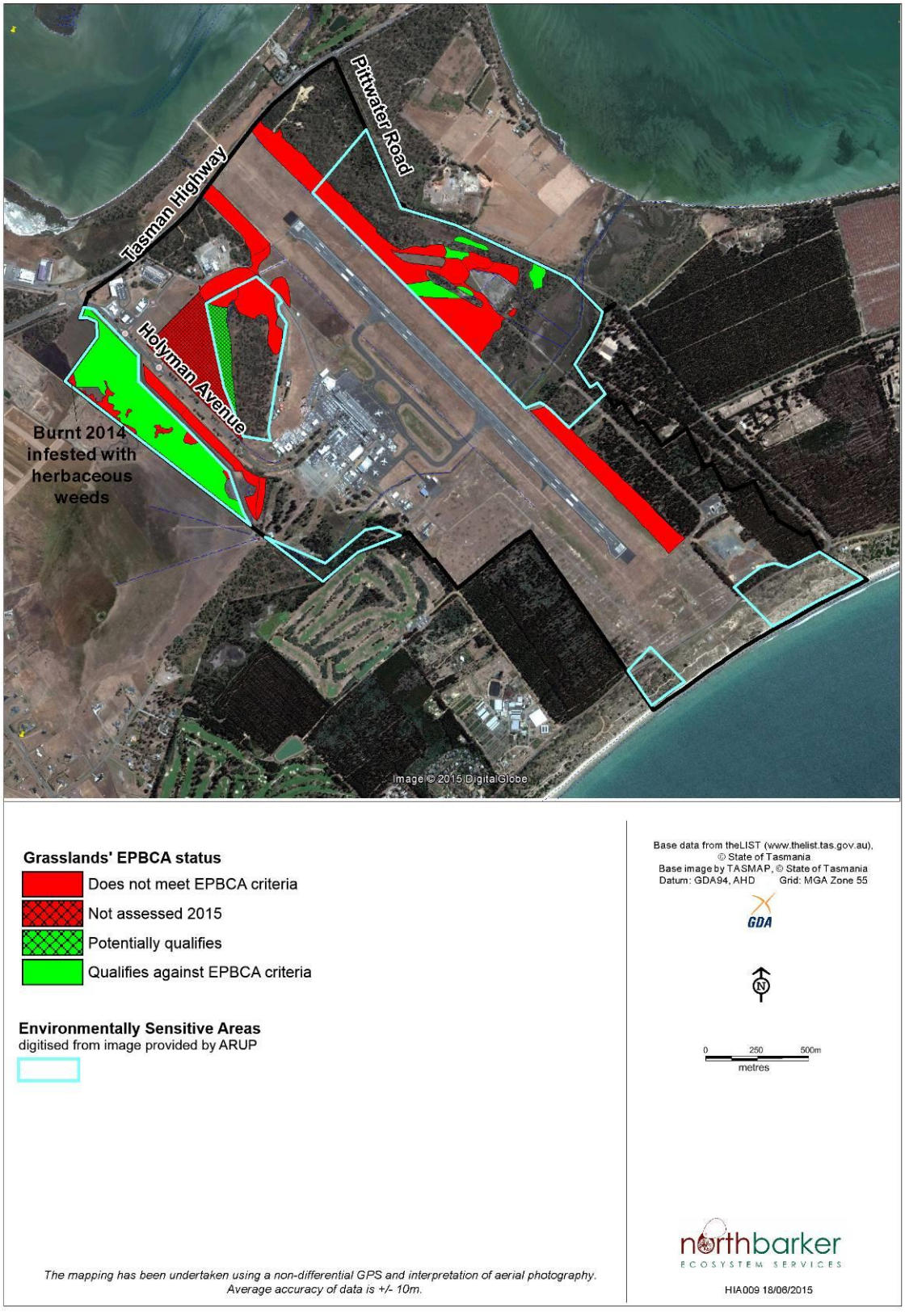
[2] Ground cover includes all living material in the ground layer (e.g. herbs, lichens).

[3] Wildflowers include all native herbaceous plant species, excluding grasses, sedges and rushes.

[4] Solid Crown Cover assumes the density of tree canopy is solid rather than opaque. It is equal to the crown-diameter method of cover measurement.

APPENDIX 2 – HISTORY OF GRASSLAND EPBCA STATUS

EPBCA status of surveyed grasslands 2011



EPBCA status of surveyed grasslands 2015

APPENDIX 3 – REVIEW OF HOBART AIRPORT GRASSLAND MANAGEMENT 2015-2021

Management activity recommendation table provided to HBA by NBES 2015.
Action response to recommendations provided by K Leggett 2021

Activity	Issue	Recommendation	Timing	Request for information (A North 2/9/2021)	HBA Response (K Leggett 2/9/2021)
Mowing	Grassland impact to ESA north side of Llanherne Hill	• Review mowing area boundaries to exclude that supporting *Poa* tussocks	Aug 2015	Plan of mowing and slashing./ bailing of all native grassland areas mapped Fig 1 (2015)	Slashing of the grassland only occurred in the largest section west of Holyman Ave which comprises the majority of qualifying area. The slashing occurred in mid-December 2015. The slashing occurred at an optimal height so that the plants were not damaged. Slashed vegetation was then baled and removed from the grassland site. GCL lowland native grassland complex areas are subject to mowing as part of routine mowing regimes. These are generally twice a year but may vary depending on season and operational need. The GPL area airside has not been mown since 2014. It is monitored annually and inspected quarterly for weed species.
Burning West of Holyman Ave	Poa Management	• Develop a burning plan • Implement year one trial; monitor its effect	Nov 2015 Jan 2016	Info from cultural burn project	An EPBC referral to the Commonwealth was accepted as a non-controlled action in November 2020. Conditions apply to the planned cultural burn. A copy of the conditions has been attached. The permit

					has been issued for a 5 year period, with one 4.1 ha plot to be burned each year. A monitoring and management plan apply and has been approved by the Commonwealth. The plan is also attached for reference.
Grazing West of Holyman Ave	Fencing and infrastructure	• Repair and complete fencing of grassland. • Investigate option and cost new internal fences • Identify gate locations. • Water troughs	Dec 2015	Decision on why this wasn't proceeded with	Fencing and the movement of animals was not considered a preference for management due to the resources required and costs associated with new fencing.
	Sheep	• Negotiate with neighbour (Casimaty) for grazing options.	Aug 2015	n/a	NA. As above.
	General	• Liaise with Dept State Growth over anomalous boundary and management planning	Aug 2015	Is the correct property boundary now fenced?	Yes. The grassland boundary with DSG was delineated.
Weed Management	Weed threat to ESAs	• Prepare weed management plan that: ○ Prioritises ESA over whole of property ○ Includes costed Action table ○ Recommends management techniques	Sept 2015	Mngt Plan. Info on any mapped weeds or mngt actions / methods in grassland areas	A weed management plan for the whole of the airport site exists. This was first developed in 2014 and is updated every year with new weed species. In the ESA areas any emergent are targeted as a priority as are weed infestations. A weed management field manual has been developed for contractors. This manual includes DPIPWE guidelines on herbicides and weed control. Contractors are also provided with a weed management schedule, that identifies optimal times to address specific weeds.

Restoration Trial	Poa improvement	• Set up Poa establishment plots in ESA north side of Llanherne Hill • Set up management trial plots east of Pittwater Road	May 2016	Reason not progressed Is this of interest for future??	Yes this could be addressed in the future. The last assessment of Llanherne Hill was undertaken in 2017 and this area is monitored annually. No slashing has occurred however in this area. The Pittwater Road site is not mown however the site in general is regularly inspected for weeds (part. Spanish heath) and controlled accordingly.

PROJECT NOTE

To:	Nicole Sherriff	**From:**	Ryan Francis, Wade Bone
Date:	02/02/2023	**Pages:**	19
Project Code:	24HBA-BURN	**Note Ref:**	
Re:	Grassland Cultural Burning Management and Monitoring 2023	**CC:**	

Introduction

The native grasslands present at Hobart Airport are among the most critically endangered vegetation communities in Australia and are listed as critically endangered under the *Environment Protection and Biodiversity Act 1999* (EPBC). An active management and monitoring plan was established to ensure grassland condition is maintained and improved over time.

This project note details ecological data collected across four transects in January 2023, forming the baseline for ongoing ecological monitoring. Monitoring quadrats for threatened species within the grasslands have also been established to enable monitoring of grassland management and the impacts to threatened flora.

Figure 1 Native grassland transect HBA01

Ecological health and composition

Four transects (Figure 1) were established to collect baseline ecological data from various locations throughout the grassland, incorporating points from plots proposed for ecological burning trials. The assessments utilized a 50 x 10 m biocondition plot methodology for native plant species richness and non-native plant cover; 1x1m quadrats were used to assess sedge, grass, herb, bare ground and organic litter cover (Eyre et al 2015). All transects were marked with steel droppers so that the same site can be returned to in the future.

A summary of bioassessment results from January 2023 are listed in Table 1. Species lists for each biocondition plot are in Table 2, Table 3, Table 4 and Table 5.

Photographs of starting points for each transect are included in Appendix 1 – Photo dossier.

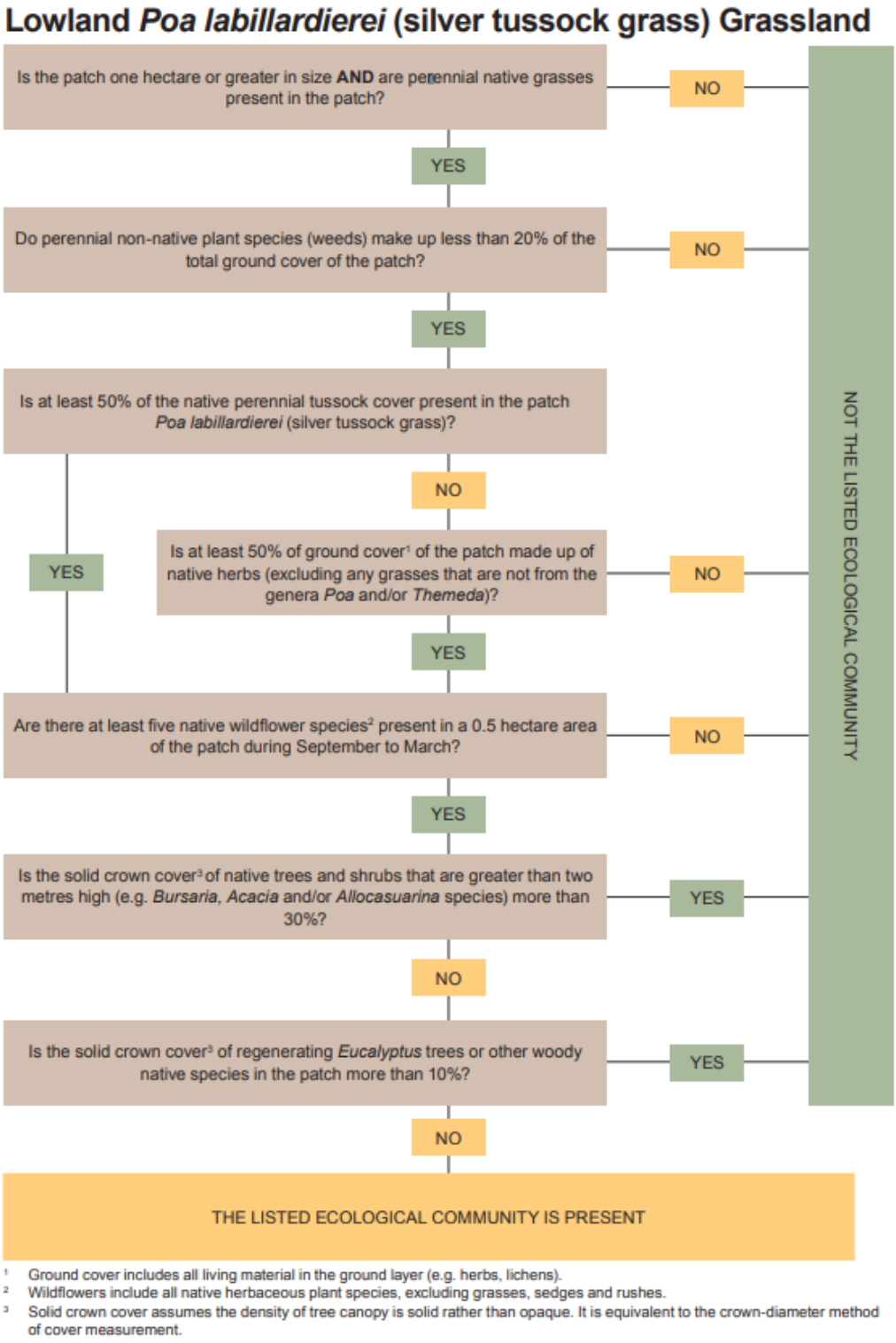


Figure 2 Lowland grassland flowchart to determine if it qualifies for the EPBC listed LNGT ecological community (DEWHA 2010)

Table 1 Bioassessment 1x1m quadrat data 2023

1x1m Plot Averages	**GPL (*Poa labillardierei* grassland)**					GPL
Ground cover (%)	HBA01	HBA02	HBA03	HBA04	MEAN	Benchmark
Native perennial grass	86	32	79	94.6	73	60
Native other grass	0	45*	0	0	11	1
Native forbs and other species	2.2	0	7	3	3	5
Native shrubs <1m in height)	0	0	0	0.6	0	1
Non-native grass	0	0	0	0	0	-
Non-native forbs and shrubs	0	0	0	0	0	-
Litter	2.8	4	8	9.6	6	10
Rock	0	0	0	0	0	-
Bare ground	24	41[#]	10	2.8	19	-
Cryptograms	0	1	0	0	0	5
Total	115	123	104	110.6	113.2	
Species richness	**GPL (*Poa labillardierei* grassland)**					
	HBA01	HBA02	HBA03	HBA04	MEAN	
Shrub species richness:	0	0	0	2	1	1
Grass species richness, inc. sedge, rush, sagg and lily:	10	6	11	17	11	10
Forbs and others species richness:	8	6	11	11	7	14
Non-native plant cover (%)	0%	0%	1%	0%	0	-
Shrub canopy cover	**GPL (*Poa labillardierei* grassland)**					
	HBA01	HBA02	HBA03	HBA04	MEAN	
Total native (m)	0	0	0	0	0	
Total exotic (m)	0	0	0	0	0	
Total native (%)	0.0%	0.0%	0.0%	0.0%	0%	
Total exotic (%)	0.0%	0.0%	0.0%	0.0%	0%	

* Comprised of dead *Poa labillardierei* due to long term waterlogging

[#] Bare ground comprised of standing water during survey.

Figure 3 Map showing layout of bioassessment transects and burn plots

Threatened flora species diversity and abundance

Using existing threatened species records for the site, representative populations in quadrats (4m x 4m) were assessed, the quadrats align with the bioassessment quadrats to ensure they can be found easily in the future. The following data were collected from each quadrat: species; population count (the number of plants flowering, the number in bud, the number in fruit, and the number in a vegetative state). The threatened flora quadrats were established over populations of Lemon beauty heads (Calocephalus citreus) and Swamp everlasting (*Coronidium gunnianum*). There were no quadrats established for Leafy fireweed (*Senecio squarrosus)* or the Narrowleaf new-holland-daisy (*Vittadinia muelleri*) as only individual plants were found with no dense populations.
Threatened species monitoring quadrats are detailed in Appendix 3.

Commentary

Baseline biocondition data were collected for the ongoing monitoring of grassland condition. The distribution of the grassland qualifying under the EPBC as the critically endangered vegetation community "Lowland Native Grasses of Tasmania" (LNGT) varies over time, which can be attributed to both management practices and environmental variation (North Barker, 2022). The establishment of bioassessment monitoring transects creates a more robust methodology for identifying long-term trends and seasonal changes to grassland condition.

Benchmark criteria for the EPBC listed LNGT ecological community were met at transects HBA01, HBA03 and HBA04, following the Lowland *Poa labillardierei* (silver tussock grass) Grassland flowchart (DEWHA 2010). Due to the loss of *Poa labillardierei* tussock within the sampled area of transect HBA02, grassland at this transect does not currently meet benchmark criteria for the listed grassland vegetation community, although the Poa labillardierei will likely recover if the area dries out.

The construction of roadside drains along Holyman Avenue has impacted hydrology within the grassland area, with large areas of standing water remaining throughout much of the southern area of grassland surrounding transect HBA02. The vegetation present at this flooded site was significantly different to other sampled areas (Table 1) with a mortality event appearing to have impacted the majority of Poa labillardierei tussocks along HBA02.

The initial assessment shows that the trial burn in 2021 may have provided a benefit to the grasslands, with HBA03, in the area burnt in 2021, showing a higher diversity and coverage of forbs and a lower percentage of bare ground compared to the other two monitoring sites to the south of Holyman avenue.

Recommendations

Future alterations to roadside drainage along the southern side of Holyman Avenue should prevent the ongoing build-up of surface water within the grasslands, allowing rainfall runoff to drain naturally.

References

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Environment Protection and Biodiversity Conservation Act 1999

Eyre, T.J., Kelly, A.L, Neldner, V.J., Wilson, B.A., Ferguson, D.J., Laidlaw, M.J. and Franks, A.J. (2015). *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland*. Assessment Manual. Version 2.2. Queensland Herbarium, Department of Science, Information Technology, Innovation and Arts, Brisbane.

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Appendix 1 – Photo dossier

Figure 4 Transect HBA01 start

Figure 5 Transect HBA02 start

Figure 6 Transect HBA03 start

Figure 7 Transect HBA04 start

Appendix 2 – Species lists

Table 2 HBA01 Species richness with listed threatened species (blue) and introduced species (red).

HBA 01 - 50x10m area: Native plant species richness:	**Total**
Shrub species richness:	0
Grass species richness, inc. sedge, rush sagg and lily:	10
Poa labillardierei, Juncus pallidus, Juncus sp., Deyeuxia quadriseta, Isolepsis sp., **Phalaris aquatica**, **Panicum sp**., **Holcus lanatus**, Microlaena stipoides, Juncus bufinius	
Forbs and others species richness:	9
Coronidium gunnianum, **Hypochaeris sp**., Epilobium billardierianum, Acaena echinata, **Centaurium erythraea**, **Cirsium sp**., Lythrum sp., **Senecio squarrosus**, Epilobium ciliatum	
Non-native plant cover (%)	2%

Table 3 HBA02 Species richness with listed threatened species highlighted blue and introduced species highlighted red.

HBA02 - 50x10m area: Native plant species richness:	**Total**
Shrub species richness:	1
Grass species richness, inc. sedge, rush sagg and lily:	6
Poa labillardierei (dead), Juncus pallidus, Isolepsis sp., **Panicum sp**., Rhytidosperma sp., Juncus sp.	
Forbs and others species richness:	6
Coronidium gunnianum, **Hypochaeris sp**., Epilobium billardierianum, Lythrum sp., **Senecio squarrosus**, Eleocharis sp.	
Non-native plant cover (%)	1%

Table 4 HBA03 Species richness with listed threatened species highlighted blue and introduced species highlighted red.

HBA03 - 50x10m area: Native plant species richness:	Total
Shrub species richness:	0
Grass species richness, inc. sedge, rush sagg and lily:	11
Poa labillardierei, Juncus sp., Isolepsis sp., **Phalaris aquatica**, **Lolium perenne**, Rhytidosperma sp., **Panicum sp**., Deyeuxia quadriseta, Microlaena stipoides, Juncus bufinius, **Briza minor**	
Forbs and others species richness:	11
Vittadinia muelleri, **Calocephalus citreus**, **Coronidium gunnianum**, Epilobium ciliatum, Lythrum sp., **Centaurium erythraea**, **Hypochaeris sp**., Plantago coronopus, Eryngium vesiculosum, **Cirsium sp.**, **Lysimachia arvensis**	
Non-native plant cover (%)	2%

Table 5 HBA04 Species richness with listed threatened species highlighted blue and introduced species highlighted red.

HBA04 - 50x10m area: Native plant species richness:	**Total**
Shrub species richness:	2
Unidentifiable shrub, Leucopogon sp.	
Grass species richness, inc. sedge, rush sagg and lily:	17
Juncus pallidus, **Panicum sp.**, Poa labillardierei, **Dactylus glomerata**, **Lolium perenne**, **Briza minor**, Deyeuxia quadriseta, **Agrostis capillaris**, **Avena fatua**, Rhytidosperma sp., **Aira caryophyllea**, Unidentifiable graminoid 1, Isolepsis sp., Unidentifiable graminoid 2, Austrostpia sp., **Holcus lanatus**, Juncus bufonius	
Forbs and others species richness:	11
Plantago coronopus, **Hypochaeris sp.**, **Trapopogon porrifolius**, **Centaurium erythraea**, Asperula conferta, Acaena echinata, **Senecio squarrosus**, **Coronidium gunnianum**, **Plantago lanceolata**, **Hypochaeris glabra**, **Cirsium sp.**	
Non-native plant cover (%)	10%

Appendix 3 – Threatened flora quadrats

1≤6%
400

Threatened quadrat monitoring

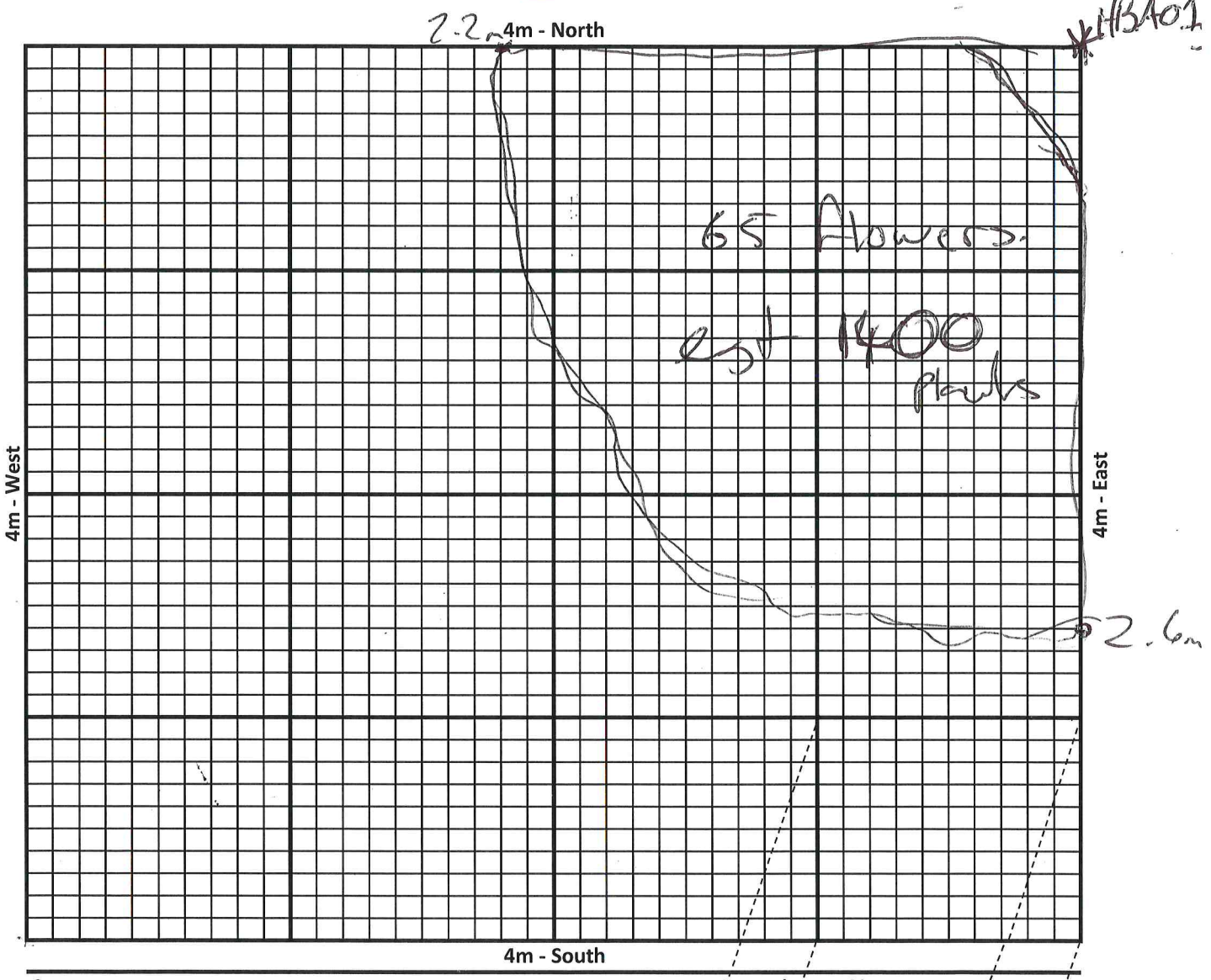
pinion ADVISORY

Site: HBA01 S
Easting:
Legend

Leaf	L
Bud	B
Flower	F

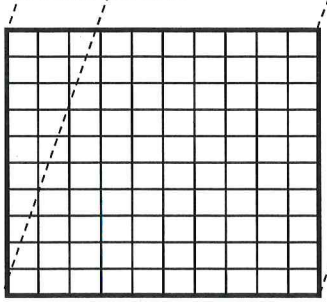
Date:
Northing:

Swamp exclusion



Comments:

Ground cover %



Other species/forms and approximate cover:

Threatened quadrat monitoring

pinion ADVISORY

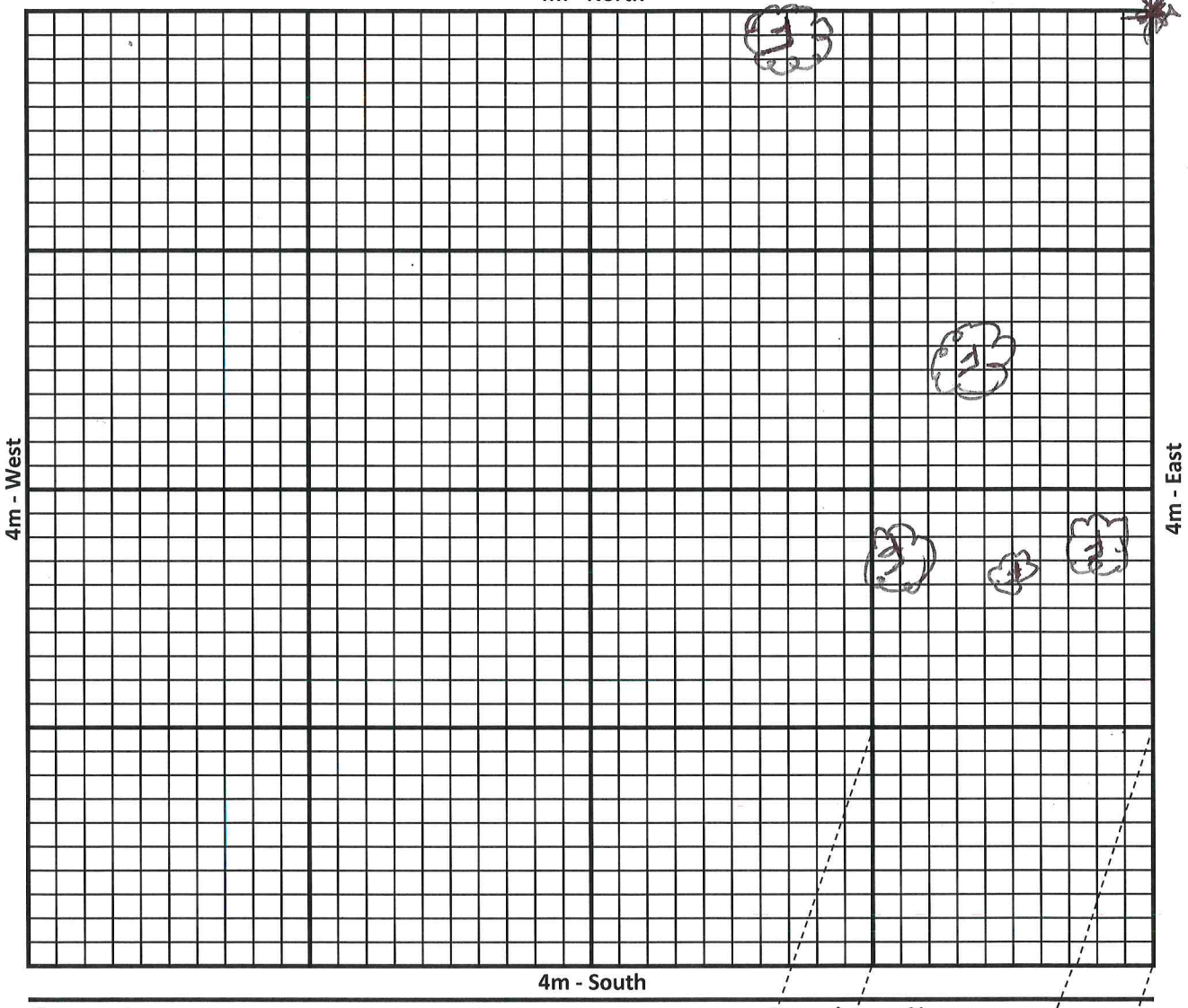
Site: HBA035 Date: 12/1/23

Easting: Northing:

Legend		
	Leaf	L
	Bud	B
	Flower	F

Lemon beauty heads SSO F/SH

4m - North



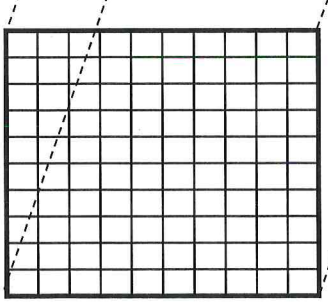
4m - West

4m - East

4m - South

Comments:

Ground cover %



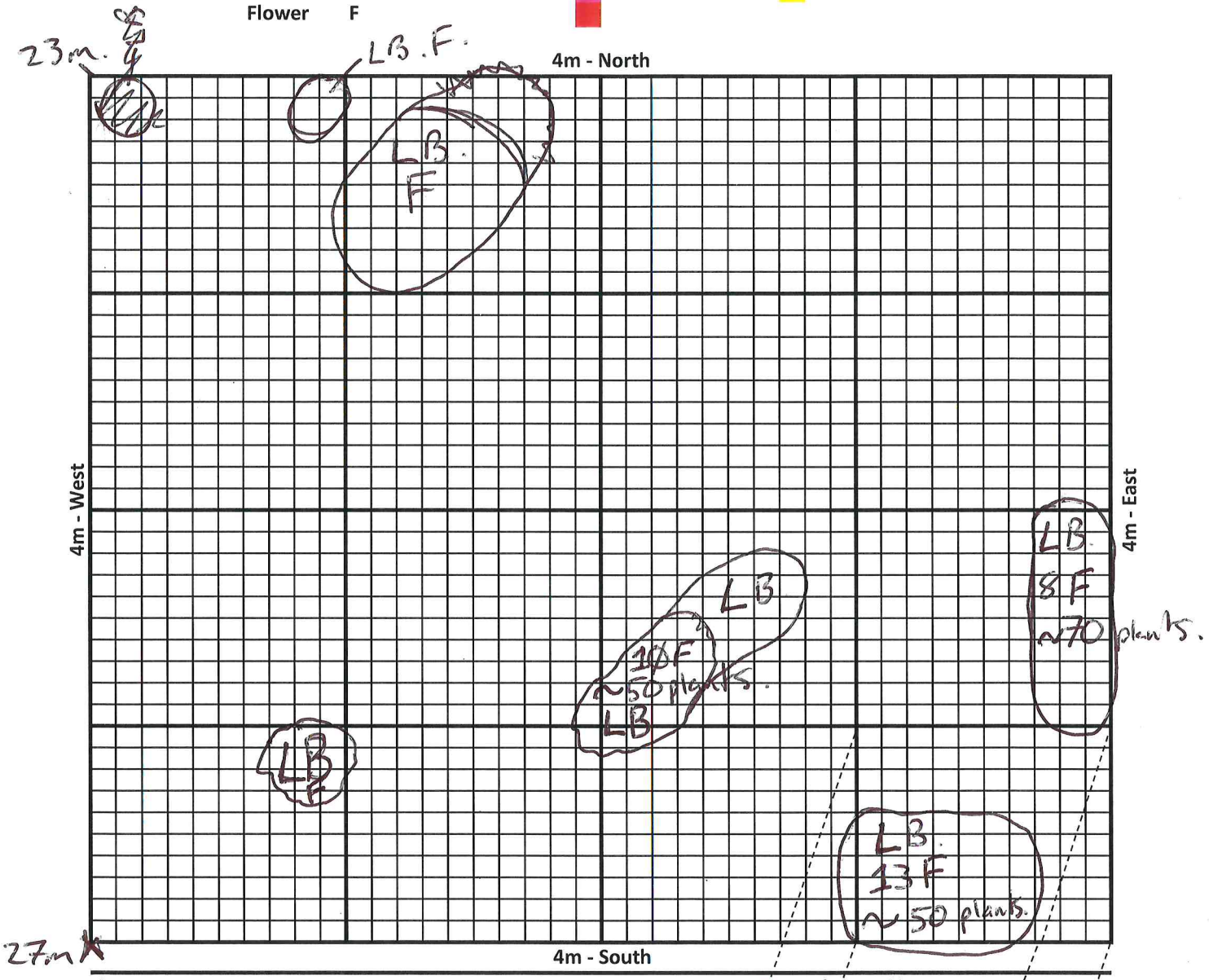
Other species/forms and approximate cover:

Threatened quadrat monitoring

pinion ADVISORY

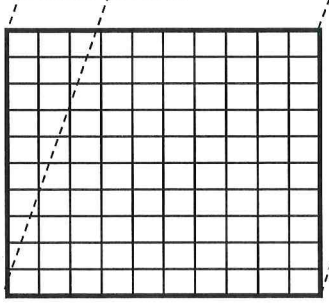
Site: HBA 03
Easting: 1641671.
Date: 12/01/23.
Northing: -5286866.

Legend		
	Leaf	L
	Bud	B
	Flower	F



Comments:

Ground cover %



Other species/forms and approximate cover:

Threatened species quadrat monitoring

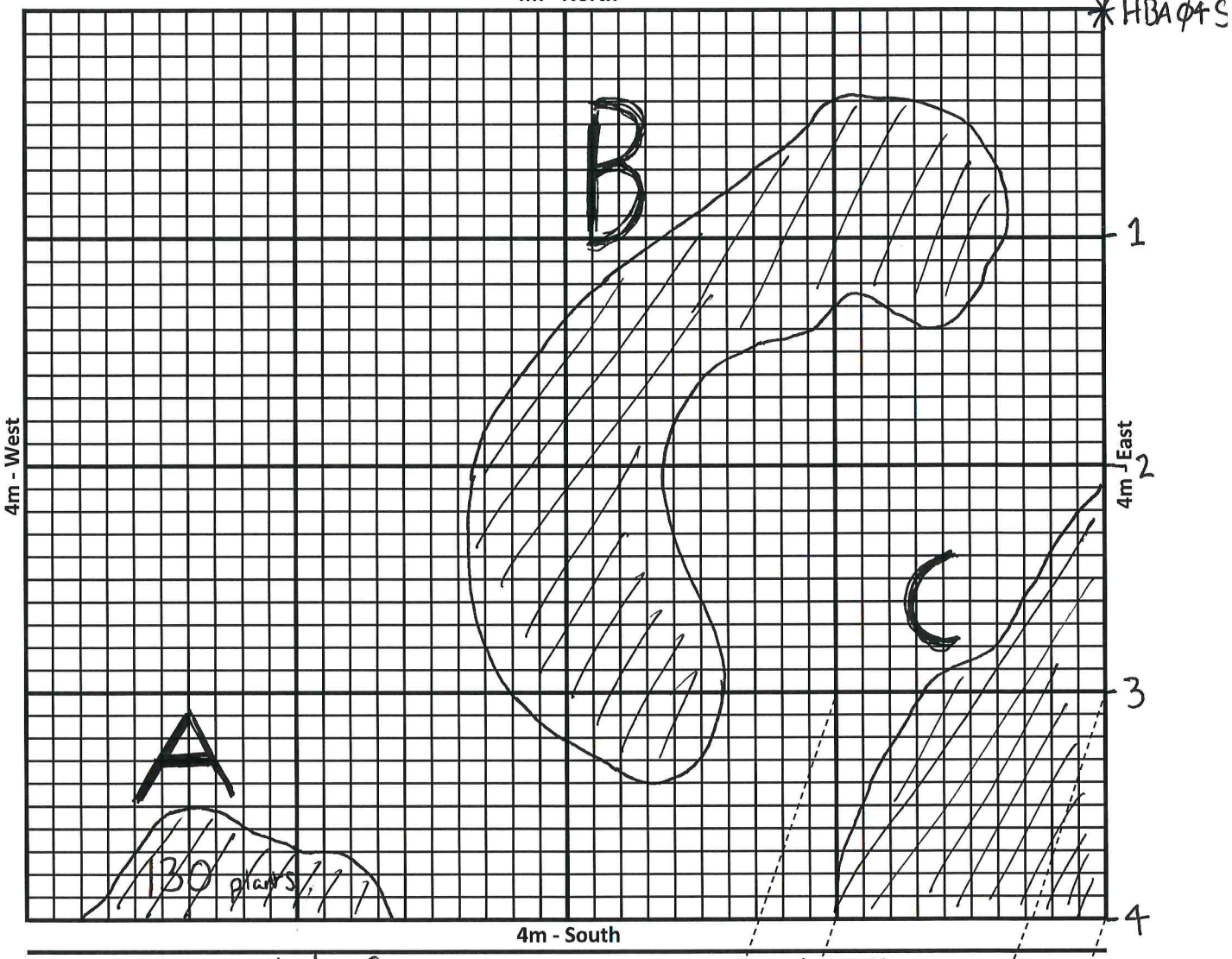
pinion ADVISORY

Site: HBA ϕ4 S
Easting:
Legend

Leaf	L
Bud	B
Flower	F

Date: 12/01/23
Northing:

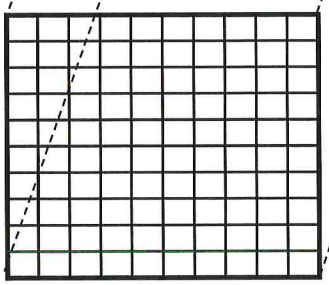
Swamp everlasting



Comments: A = 130 plants, 9 flowers
B = ~360 plants, 107 flowers
C = ~150 plants, 47 flowers

Other species/forms and approximate cover:

Ground cover %



PROJECT NOTE

To:	Chris Churcher	**From:**	Wade Bone, Ryan Francis
Date:	11/12/2023	**Pages:**	
Project Code:	24HBA-BURN	**Note Ref:**	
Re:	Grassland Cultural Burning Management and Monitoring 2023	**CC:**	

Introduction

The native grasslands present at Hobart Airport are among the most endangered vegetation communities in Australia and are listed as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA). An active management and monitoring plan was established to ensure grassland condition is maintained and improved over time.

This project note details ecological data collected across four transects in November 2023, being the first ongoing ecological monitoring assessment after baseline condition was assessed in January 2023. Monitoring quadrats for threatened species within the grasslands have also been established to enable monitoring of grassland management and the impacts to threatened flora. This assessment follows a cultural burn undertaken on Plot 2 (Figure 3) in May 2023.

Figure 1 Native grassland following burn undertaken to Plot 2 in May 2023 (photo taken November 2, 2023)

Ecological health and composition

Four transects, with locations established in January 2023 (Figure 1), were reassessed on 2 November 2023. Assessments utilized a 50 x 10 m biocondition plot methodology for native plant species richness and non-native plant cover; 1x1m quadrats were used to assess sedge, grass, herb, bare ground and organic litter cover (Eyre et al 2015).

A summary of bioassessment results from November 2023 are listed in Table 1. Significant differences to grassland condition were observed following changes to site drainage on Plot 4, and cultural burning completed on Plot 2 since baseline assessments were conducted.

Photographs from each transect are included in Appendix 1 – Photo dossier.

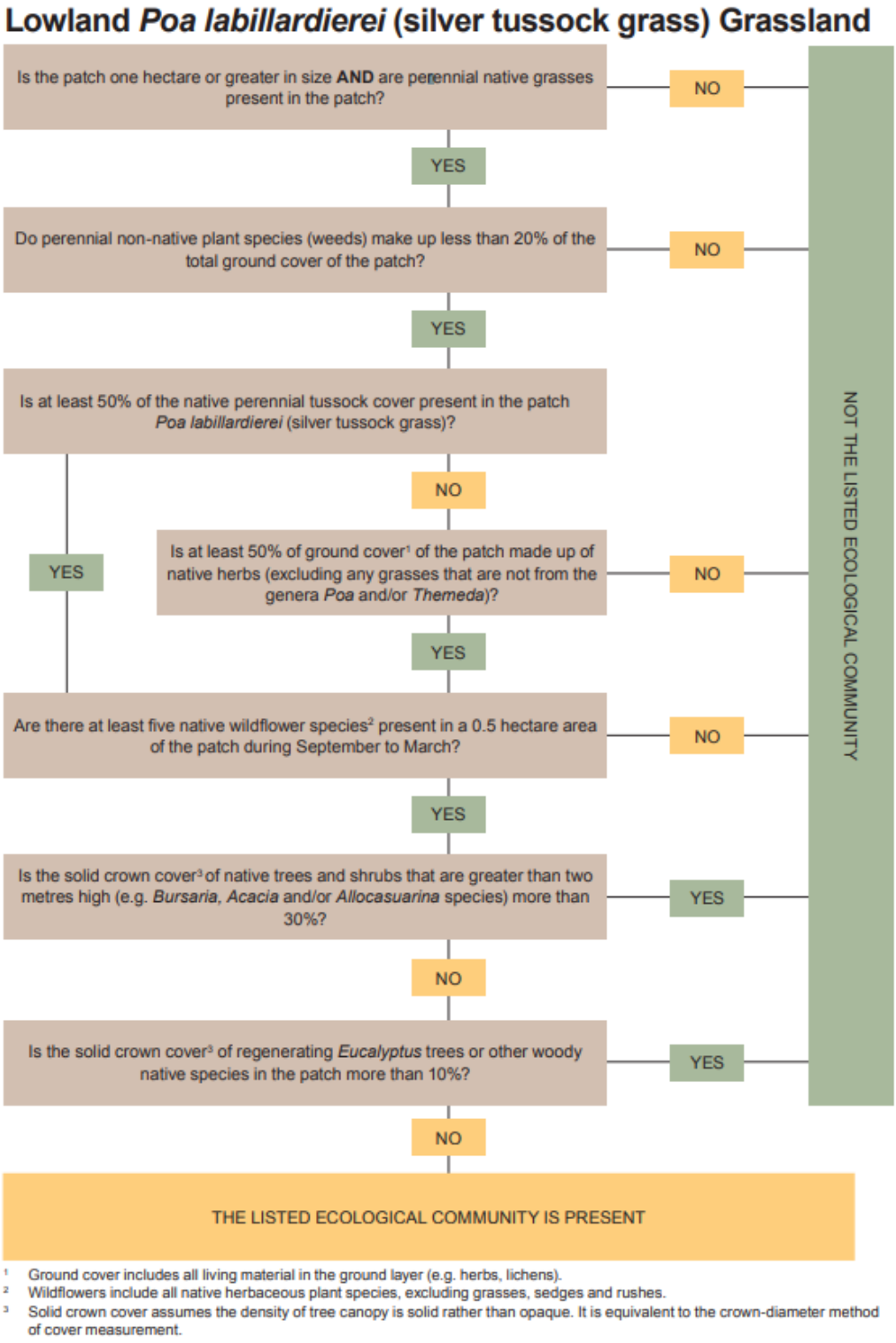


Figure 2 Lowland grassland flowchart to determine if it qualifies for the EPBC listed LNGT ecological community (DEWHA 2010)

Table 1 Bioassessment 1x1m quadrat data November 2023

1x1m Plot Averages	GPL (*Poa labillardierei* grassland)					
Ground cover (%)	HBA01	HBA02	HBA03	HBA04	MEAN	GPL Benchmark
Native perennial grass	31	91	77	36	59	60
Native other grass	0	0	0	0	0	1
Native forbs and other species	4	0.2	6	1.6	3	5
Native shrubs <1m in height)	0	0	0	0.2	0	1
Non-native grass	1.4	6.2	2	43	13	-
Non-native forbs and shrubs	0.6	1.4	2	8.2	3	-
Litter	20	95.4	28	73	54	10
Rock	0	0	0	0	0	-
Bare ground	43	1.4	6	0.8	13	-
Cryptogams	0	0	0	0	0	5
Total	100	204.6	122	162.8	147.3	
Species richness	GPL (*Poa labillardierei* grassland)					
	HBA01	HBA02	HBA03	HBA04	MEAN	
Shrub species richness:	0	0	0	2	1	1
Grass species richness, inc. sedge, rush sagg and lily:	6	8	9	10	8	10
Forbs and others species richness:	10	6	7	7	8	14
Non-native plant cover (%)	2%	1%	3%	10%	4	-
Shrub canopy cover	GPL (*Poa labillardierei* grassland)					
	HBA01	HBA02	HBA03	HBA04	MEAN	
Total native (m)	0	0	0	0	0	
Total exotic (m)	0	0	0	0	0	
Total native (%)	0.0%	0.0%	0.0%	0.0%	0%	
Total exotic (%)	0.0%	0.0%	0.0%	0.0%	0%	

Figure 3 Map showing layout of bioassessment transects and burn plots

Threatened flora species diversity and abundance

Using existing threatened species records for the site, representative populations in quadrats (4m x 4m) were reassessed. The following data were collected from each quadrat: species; population count (the number of plants flowering, the number in bud, the number in fruit, and the number in a vegetative state). Consistent with baseline assessments, the threatened flora quadrats include populations of Lemon beauty heads (*Calocephalus citreus*) and Swamp everlasting (*Coronidium gunnianum*). It was noted during November 2023 assessment that quadrats with higher flower abundance observed in baseline quadrats in January 2023 had decreased, and vice versa quadrats with fewer flowers had increased. Further data will assist in better understanding flowering patterns for these species.

Threatened species monitoring quadrats are detailed in Appendix 3.

Commentary

Biocondition data were collected for the ongoing monitoring of grassland condition over the four sites. The distribution of the grassland qualifying under the EPBC as the critically endangered vegetation community "Lowland Native Grasses of Tasmania" (LNGT) varies over time, which can be attributed to both management practices and environmental variation (North Barker, 2022). The establishment of bioassessment monitoring transects creates a more robust methodology for identifying long-term trends and seasonal changes to grassland condition.

Benchmark criteria for the EPBC listed LNGT ecological community were not met at any transects in November 2023, following the Lowland *Poa labillardierei* (silver tussock grass) Grassland flowchart (DEWHA 2010). Due to the decreased coverage of *Poa labillardierei* tussock within the burnt area of Plot 2, grassland at this transect does not currently meet benchmark criteria for the listed grassland vegetation community, although this is expected to change as *Poa labillardierei* tussocks recover. Likewise transects HBA02 and HBA03 narrowly missed benchmarks, but this may be a result of survey timing following a dry spring and is likely to change in the future.

A possible contributing factor to the poor survey conditions in November 2023 is a period of very low rainfall in the lead-up to the assessment, with July-September recording precipitation below the historical 10th percentile. October recorded rainfall slightly above the historical mean, though soil moisture at each transect was noted as being dry, with survey conditions difficult due to a lack of identifying material on many species. Variation is to be expected in long-term sampling programs, and ongoing assessments will be required to identify significant changes to grassland condition.

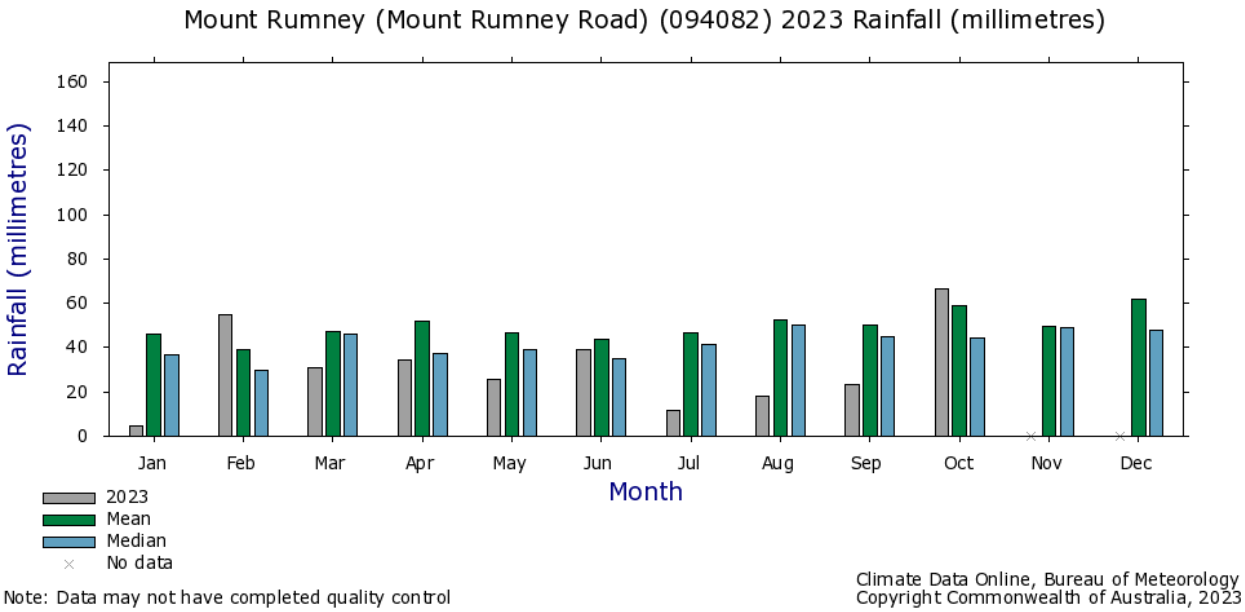


Figure 4 Rainfall data for Mount Rumney prior to November 2023 grassland assessment (BOM, 2023)

Data collected during November 2023 suggests that changes to hydrology at HBA02 have likely provided a benefit to the grassland condition, with HBA03, showing recovery of the Poa tussocks and a lower percentage of bare ground compared to the waterlogged conditions observed in January 2023.

Recommendations

Being the first assessment following baseline conditions were recorded in January 2023, further monitoring is required to identify long-term trends in grassland condition. It is recommended that the next assessment be undertaken during summer 2024-25, with specific timing determined by weather conditions prior to the survey period.

References

Department of the Environment, Water, Heritage and the Arts (DEWHA) (2010). Lowland Native Grasslands of Tasmania — a nationally threatened ecological community. Environment Protection and Biodiversity Conservation Act 1999 Policy Statement 3.18. Australian Government, Canberra.

Environment Protection and Biodiversity Conservation Act 1999

Eyre, T.J., Kelly, A.L, Neldner, V.J., Wilson, B.A., Ferguson, D.J., Laidlaw, M.J. and Franks, A.J. (2015). *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland*. Assessment Manual. Version 2.2. Queensland Herbarium, Department of Science, Information Technology, Innovation and Arts, Brisbane.

North Barker Ecosystem Services (2022) *Hobart International Airport Grassland Assessment*. Hobart, Tasmania.

Appendix 1 – Photo dossier

Figure 5 Transect HBA01 start

Figure 6 View north to transect HBA02 start

Figure 7 View south from transect HBA03 start

Figure 8 Quadrat assessed at HBA04 start

Appendix 2 – Threatened flora quadrats

Threatened species quadrat monitoring

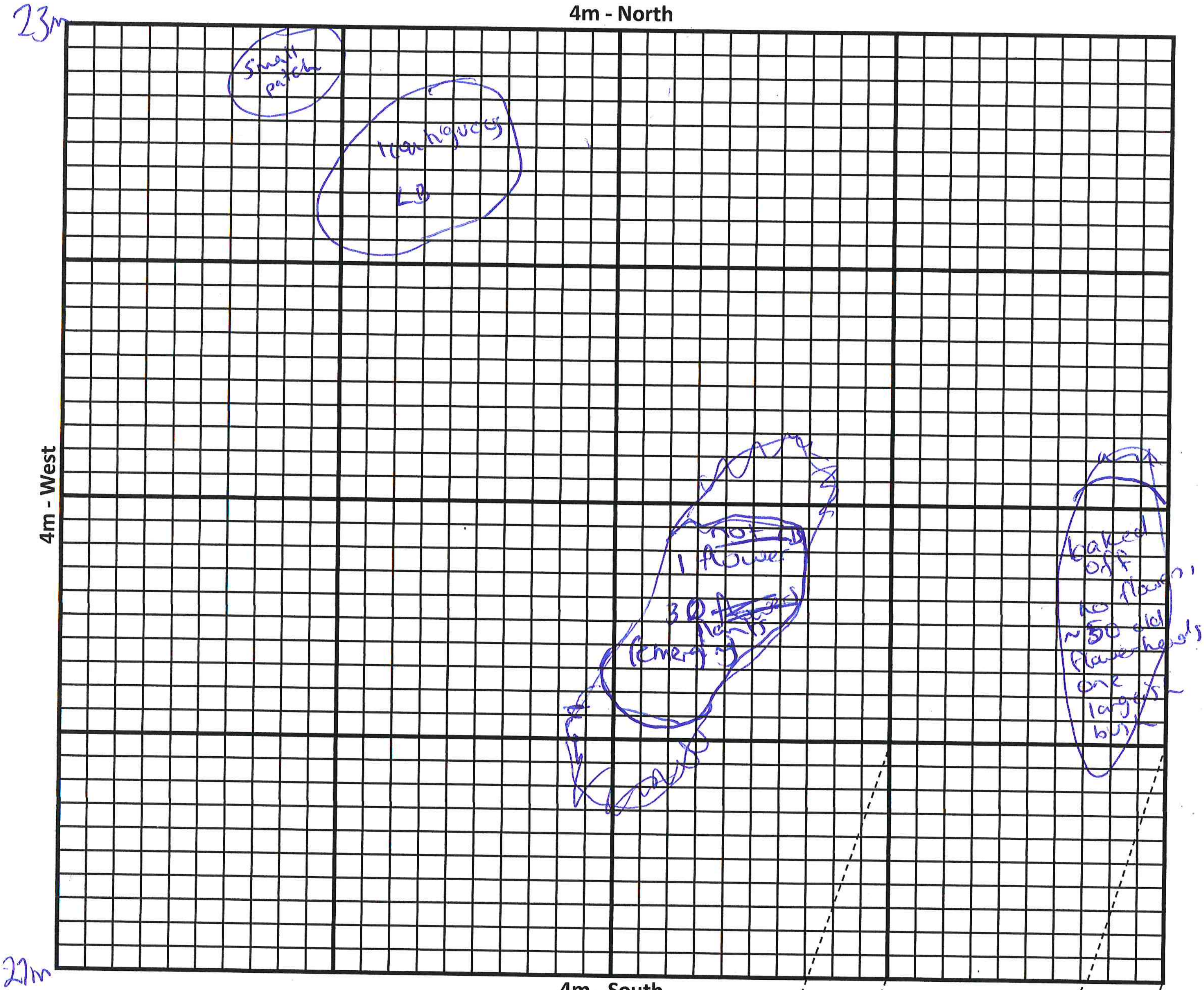
Site: HB103 **Date:** 2/11/23

Easting: **Northing:**

Legend

Leaf	L	
Bud	B	
Flower	F	lemon beautyheads

4m - North



4m - South

Comments:

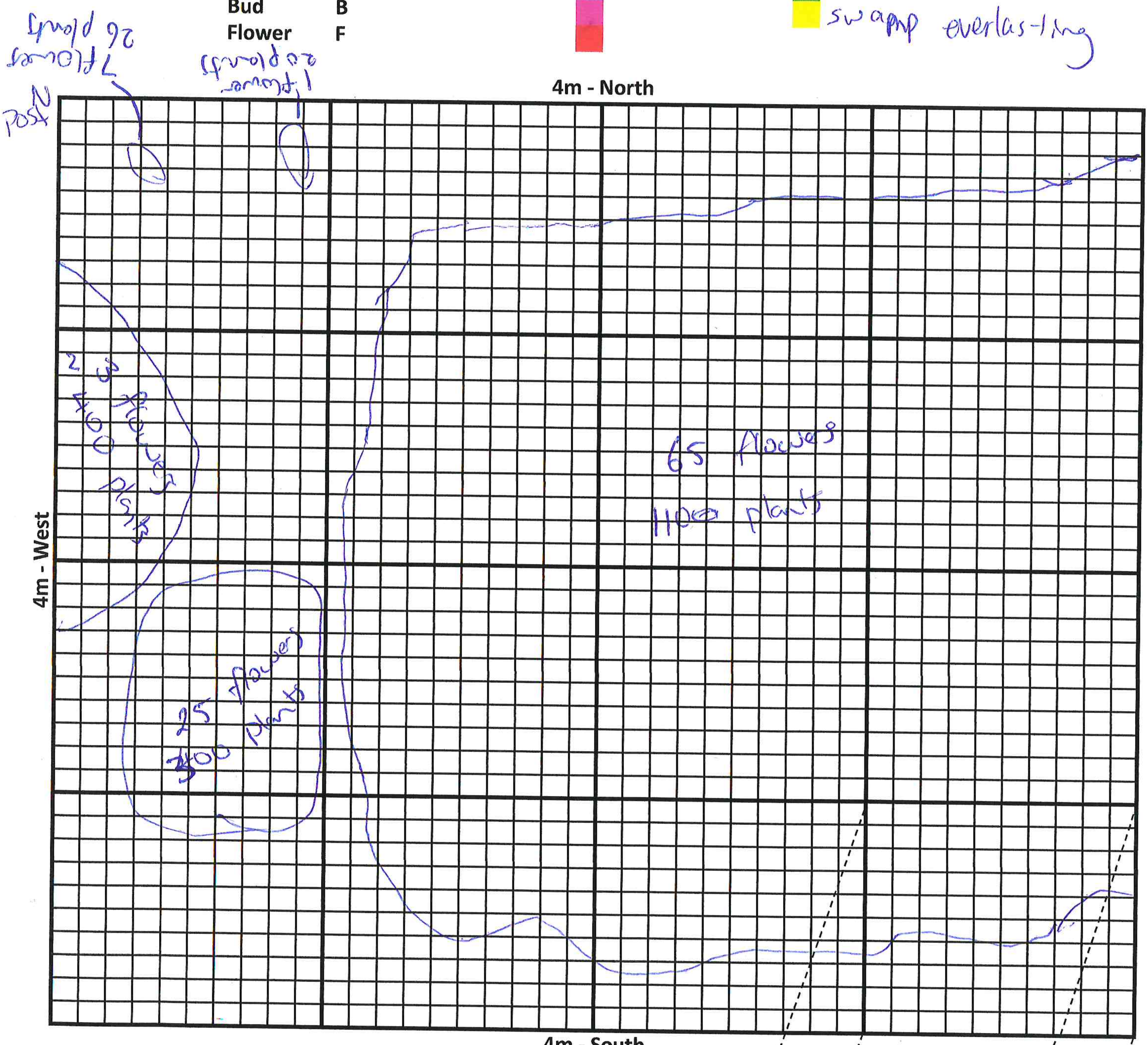
Ground cover %

Other species/forms and approximate cover:

Threatened species quadrat monitoring

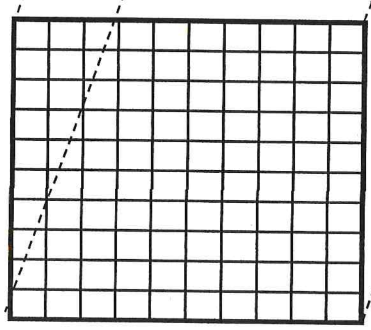
Opinion ADVISORY

Site: HB01 5 **Date:** 2/11/23
Easting: **Northing:**
Legend Leaf L / Bud B / Flower F — swamp everlasting



Comments:
extends out of the 4x4

Ground cover %



Other species/forms and approximate cover:

Threatened species quadrat monitoring

pinion ADVISORY

Site: HB01 S
Easting:
Legend

Leaf	L
Bud	B
Flower	F

Date: 2/11/23
Northing:

swamp everlasting

4m - North

N to

55 flowers
935 plants

4m - West

4m - East

4m - South

4m

Comments:

Ground cover %

Other species/forms and approximate cover:

Threatened species quadrat monitoring

pinion ADVISORY

Site: HB01 S
Easting: 147°29'32" E
Legend
Leaf L
Bud B
Flower F

Date: 02/11/23
Northing: 42°50'11"S

from SE corner

swamp everlasting

4m - North

31.

135 flowers
~1600 plants

4m - West

4m - east

4m - South

35.

Comments:

Ground cover %

Other species/forms and approximate cover:
poa and juncus scattered within

viridinnea located outside quadrat to south

Threatened species quadrat monitoring

pinion ADVISORY

Site: HBA 04
Easting:
Legend

Leaf	L
Bud	B
Flower	F

Date:
Northing:

swamp everlastings

4m - North

N pos

4m - West

43 flowers

400 plants

1 flower

60 plants

4m - South

4m

Comments:

Ground cover %

Other species/forms and approximate cover:

Appendix E – Department Notification

Outlook

Incident - Permit E2020-0180

From Chris Churcher <cchurcher@hobartairport.com.au>
Date Tue 14/10/2025 10:52
To epbcmonitoring@dcceew.gov.au <epbcmonitoring@dcceew.gov.au>
Cc Gail Wilson <gwilson@hobartairport.com.au>

To whom it may concern,

In accordance with **Permit E2020-0180, Condition 9**, I wish to provide formal written notification of an incident.

The incident occurred during the undertaking of the permitted action, cultural burning activities at Hobart Airport, Tasmania as outlined in the permit application. During a prescribed burn on Tuesday 19th August 2025, the fire crossed the established northern containment line and proceeded to burn a portion of the adjacent plot.
The plot is part of the total 20.64 Ha of LNGT within the greater Project Area.
In preparing data for the compliance report required under Condition 8 of permit E2020-0180, Hobart Airport has been made aware that the extent of the overburn breaches Condition 2, whereby the permit holder must not injure more than 4.2 Ha of LNGT per calendar year.

At approximately 14:00 on 19/08/2025, developing gusty wind conditions permitted the controlled fire to cross the pre-established containment line at the northern end of plot 4. The fire was quickly contained and extinguished using the appliances (water carts and backpack units) and subsequently extinguished.
As the fire was wholly contained within the Hobart Airports grounds and Project Area covered by the permit, no further action was deemed necessary. It was not until the area was again accessed for accurate survey that the total extent and non-compliance with Condition 2 became apparent. This area is shown below.

The 3 cultural burn events undertaken during the permitted 5 year period, including the incidental overburn, do not total more than the permitted 20.64 Ha of LNGT specified in the Permit.

Further details will be provided in the compliance report with completion data as required by the permit.

Please feel free to contact me on the details below, should you have any further questions.

Regards,

Chris

Chris Churcher
Head of Environment and Sustainability
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