MONITORING GUIDE FOR STOCK MAXIMUM REQUESTS

Example of marker peg (1971 mulga, 2024 reo rod and poly marker)

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MONITORING GUIDE

Monitoring sites may include existing photopoints or sites established by the applicant in accordance with this guide. The primary aim of the monitoring site (photopoint) is to monitor vegetation condition in response to stock grazing intensity from a known water source. Changes in vegetation composition, density, recruitment and regeneration may result from seasonal variation and modified stock grazing regimes.

SITE SELECTION

Existing photopoint sites should be used as monitoring sites where available within the grazed estate. Lessees are required to establish new monitoring sites where changes to infrastructure (installation of new waterpoints) result in an increase in available grazing area (expansion of the grazed estate) or there is an existing photopoint that cannot be relocated.

Where the lessee intends to increase the stock numbers with no changes to existing infrastructure (no new waterpoints), a selection of photopoint sites representing the different land systems across the property will be monitored. The selected photopoints are intended to monitor the changes in pasture use in different vegetation communities from changes to grazing intensity.

Between 6 and 12 monitoring sites will be selected for annual monitoring and determined by factors including, but not limited to, the size of the property, number of land systems, and topography. The Pastoral Unit will work with lessees to inform the selection of appropriate sites and will assist to determine the number and location of sites. Monitoring sites are required to be monitored on an annual basis by the lessee. Site data will be submitted with annual stock and rainfall data sheets.

REFERENCE AREAS

Reference Areas are defined areas of less than 1 km^2 across the pastoral estate, generally remote from water, which have been selected for the purposes of evaluating the effect that the grazing of stock has on the particular vegetation communities.

Where available, reference areas within a similar vegetation community should be included in the selection of monitoring sites (Pastoral Unit will advise). This may provide further information pertaining to vegetation changes under variable climatic conditions at areas remote from grazing for reference against the selected monitoring sites.

ESTABLISH A NEW MONITORING SITE (PHOTOPOINT)

Equipment

- ☐ *Pastoral ID disc*
- ☐ *Camera/phone*
- ☐ *Compass*
- ☐ *Marker paint*
- ☐ *Marker peg (steel dropper, wooden/steel stake or equivalent)*

Site Location

Monitoring sites should be established in a homogenous vegetation community that is typical of the area in which the grazing regime will be changed.

Sites are to be located at an approximate distance from the active water point (~1.5 km sheep, ~3 km cattle) in a vegetation community typical of the area to be grazed.

Site Installation

Position the marker peg 10-50 m off the track in a clearly visible location that is not likely to be disturbed. Ensure the area to be monitored is free of vehicle track effects such as water flow, stock movement etc. to minimise external factors that may affect the vegetation community. The aim of the site is to monitor grazing impacts on the palatable vegetation and species composition. The site should be easily accessible by vehicle and foot to enable revisits. GPS coordinates (latitude and longitude in decimal degrees/UTM zone easting and northing) should be collected at the marker peg and recorded on the site sheet along with a photopoint identifier and the direction of the photo (compass bearing).

Photopoint Identifier: This is a unique number provide by the Pastoral Unit on application. A numbered disc will be provided (Pastoral Unit's photopoint series) which will be required to be permanently affixed to a dropper at the marker peg.

If the **marker peg** is positioned further than 50 m from the track, position another directional peg near the track and give clear directions on the site sheet to the location of the marker peg or post (bearing and distance from first peg). Clear descriptions are essential for site revisits into the future.

GPS location (latitude and longitude in decimal degrees/UTM zone easting and northing) details are required for all existing photopoints and newly established monitoring sites.

A second marker is used as a **sighter peg** (usually a painted peg, painted star dropper or painted rock), about 10 m (12-17 paces) from the marker peg. The sighter peg is the centre point in the photograph with the horizon and sky about 25-30% of the photo (see Plate 2).

When determining direction of photo, consider sun angle and clear markers (objects identifiable in view) to enable revisits at different times of the day and year (easterly views are best taken in the afternoon, westerly views are best taken before midday).

The photograph should be taken from the marker peg looking at the sighter peg. Record a compass bearing between the marker peg and sighter peg and record on site data sheet.

At the site, the lessee can choose to take additional photographs in other directions from the marker peg to increase the field of view and demonstrate differences at the site from multiple angles.

A similar process can be followed to establish multiple photographic directions from the one marker peg. The initial bearing will be known as the 'A' line with additional photograph directions being labeled as 'B' and 'C' lines etc.

The 'A' line undergoes detailed assessment and additional 'B' and 'C' lines provide a visual of differing views from the marker peg. The data sheet should record the bearings for additional sighter pegs along with the intent of the extra photo.

Taking the photograph

Photographs should be captured in digital format with appropriate metadata (time/date/location/equipment) on a digital device and saved at the highest resolution (minimum 4MB) and, where possible, saved in both RAW and JPEG format.

If using a mobile device (Android or Apple) with GPS capability, it is preferable to use Context Cam (Apple) or a similar app (Open Camera – Android) that allows for further metadata to be placed on the digital photo (Plate 2). Please capture photographs at the highest resolution (minimum 4MB).

To take the photograph, stand behind the marker peg and centre photograph on the base of the sighter peg as shown in Plate 1 & 2 and Figure 1. Adjust focus to ensure an approximate width of field of view is 10 m either side of sighter peg and ensure the centre of the field of view is in focus. The horizon should be 25-30% of the top portion of the field of view in the photo (Plate 2).

Plate 1: Data collection at photpoint site

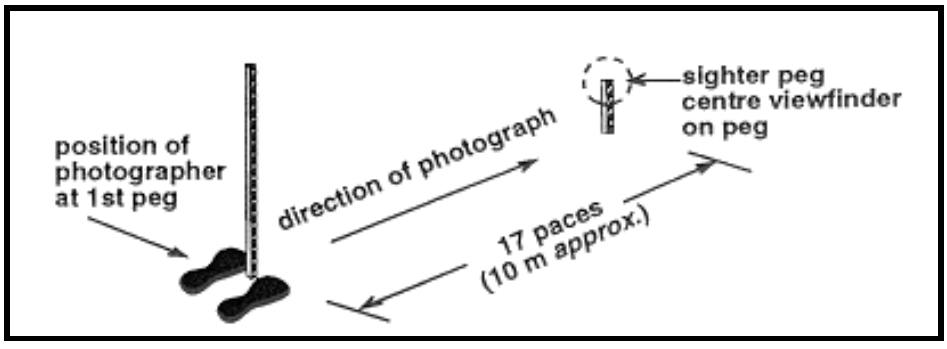


Figure 1: Directions for taking the photograph

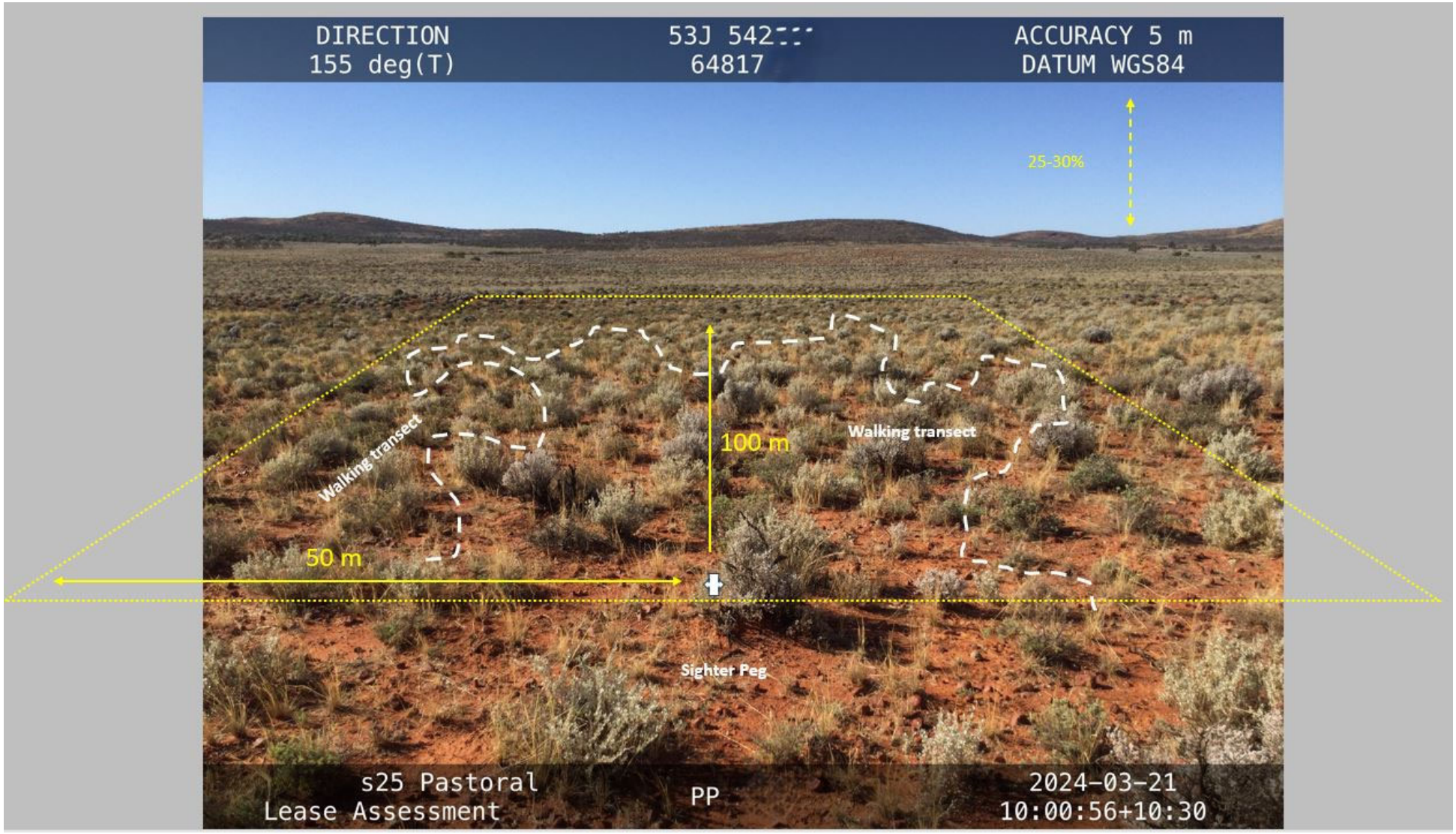


Plate 2: Photopoint site dimensions and metadata (Context Cam)

Collecting site information

Collection of appropriate data enables the observer to visualise changes through pictures and documented notes, describing the major features of the site and any change associated with grazing and/or climate.

Size of site

- Monitoring sites are 1 hectare in size. The dimension of the site is 100 m out from the siter peg (on site bearing - sighter line) and 50 m either side of the sighter line (perpendicular) Plate 2.
- Data collection should not be time consuming (maximum 30 minutes) and simple in its collection. The observer should walk out in the direction of the photo, up and loop back to the sighter peg on either side of the peg, staying within the 1 ha site (this should provide an area of observation for data collection of about 1 ha).

Data collection

Two main aspects of the site for data capture are required and can be recorded in the attached data sheet.

1. Vegetation community and species composition
    - Describe the main plant species present at the site.
    - Observers are encouraged to document as much information about the site as possible to enable clear comparisons into the future when reviewing site changes.

2. Recent rainfall and soil conditions
    - Is there evidence of a recent rainfall event resulting in a vegetation response in the past 3 months (fresh regrowth on plants, annual species)?
    - Soil surface cover and stability, including percentage litter cover, soil lichen crust (present/absent)?

General site observations

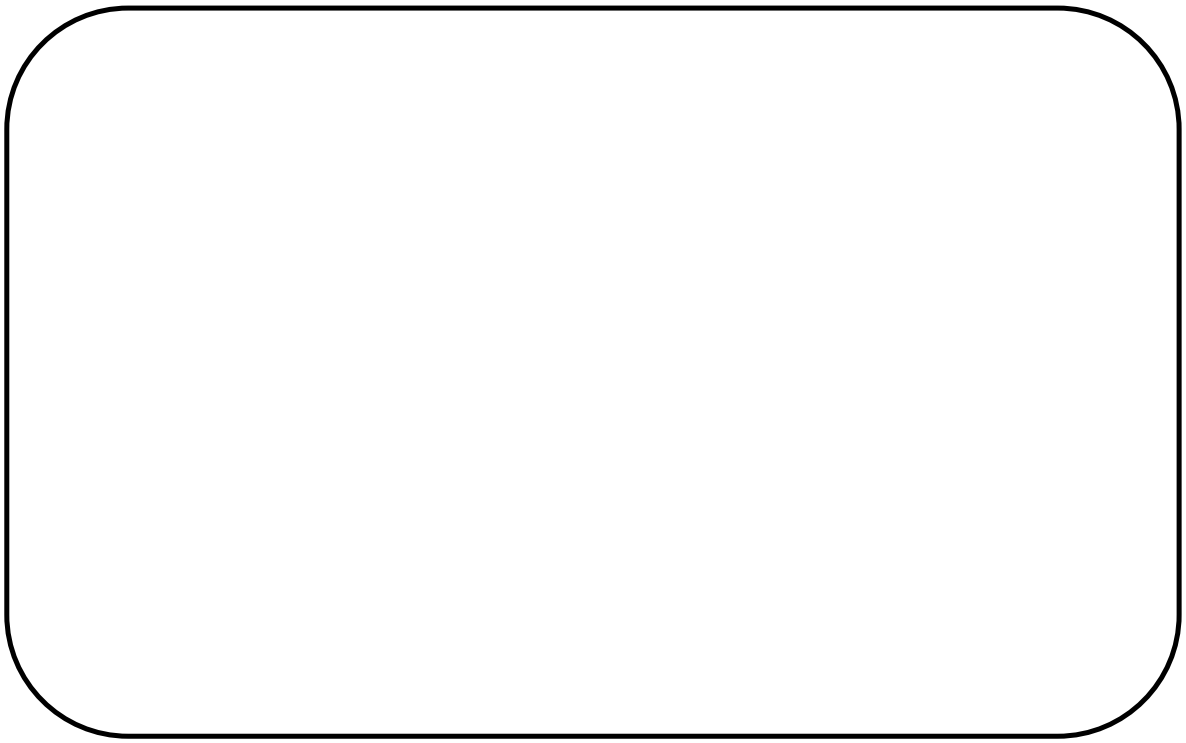
- General observations made at time of visit, including grazing effects, health of palatable species, amount of litter cover and the dominance/prevalence of annual species and weed species (tick box options).

Other grazing animals (total grazing pressure)

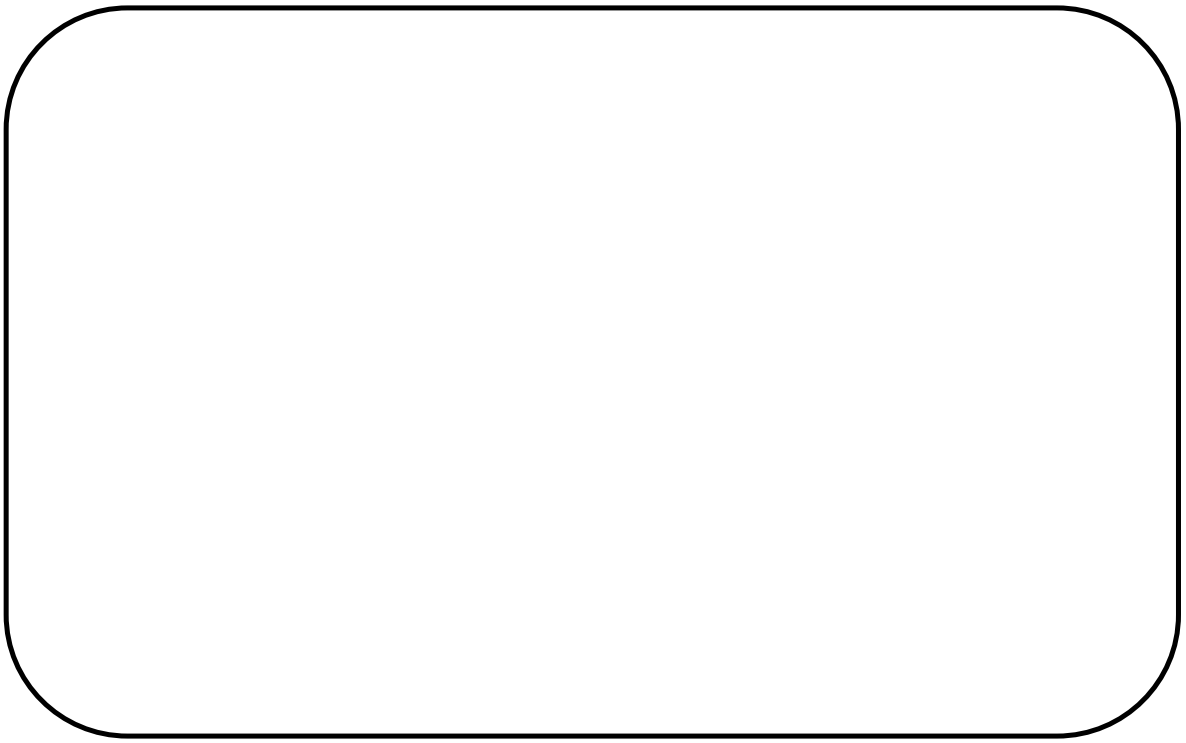
- Provide a brief description of the presence of other potential grazing effects at the site, including goats, kangaroos, horses, camels (tick box options).

Template – Mud map location details for Monitoring sites

Paddock plan details



Monitoring site placement



MONITORING GUIDE FOR STOCK MAXIMUM REQUESTS

Template – data sheet for Monitoring Points

MONITORING POINT DETAILS

Monitoring Site name: _____ Photopoint identifier: **PP** ___ ___ ___ ___

Paddock: _____

Waterpoint: _____ Stock type: _____

Visit date: ___/___/20__ **GPS coordinates:** Zone: 5__ Easting: _____

Northing: _____

Photographs: Photo: A Compass bearing: _____

Photo: B Compass bearing: _____

Photo: C Compass bearing: _____

VEGETATION DESCRIPTORS

Describe the main plant species present at the site:

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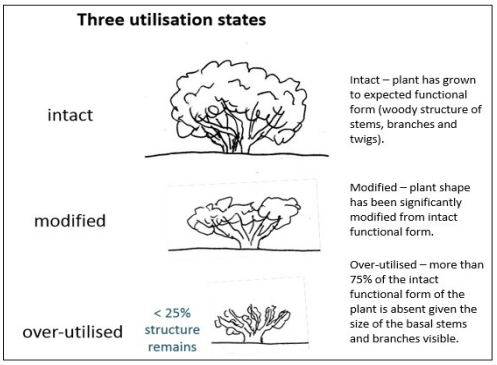

Palatable Species *5 main palatable species observed)*	Recruits OR Juveniles	Grazing impacts (utilisation state)			Comments
		Intact (nil or low)	Modified (moderate)	Over-utilised (high)	

GENERAL SITE OBERVATIONS

Recent rainfall: ☐ Yes Amount ____mm (if known)

☐ No

Soil surface cover: ☐ Litter cover ☐ Leaf drop (dry conditions)

☐ Lichen cover/crust ☐ Other _____

OTHER GRAZING ANIMALS

(dung, grazing impacts observed or animal sighted) ☐ Kangaroos ☐ Horses ☐ Goats ☐ Rabbits ☐ Other _____

Weed Species

☐ No

☐ Yes _____

ADDITIONAL COMMENTS

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MONITORING GUIDE FOR STOCK MAXIMUM REQUESTS

Data sheet for monthly rainfall figures

Available monthly rainfall data for _____ (station / lease name)

The figures are derived from:

Bureau of Meteorology data from _____ weather station

or

Homestead of _____ rain gauge

TIME PERIOD	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
Stage 1													
20													
20													
Stage 2													
20													
20													
20													
20													
Stage 3													
20													
20													
20													
20													

MONITORING GUIDE FOR STOCK MAXIMUM REQUESTS

Data sheet for annual stock figure updates

Property: _____ (station/lease name)

Date: _____/____/ 20____

The figures are derived from: ☐ Stock placements

☐ Stock mustering (branding/shearing/crutching/other)

☐ Other (provide details):

_____

Supplied by: _____

Please identify paddock and water point where applicable.

TIME PERIOD	STOCK NUMBERS														
	Paddock: _____					Paddock: _____					Paddock: _____:				
	Water _____	Date On-Off	Water _____	Date On-Off	TOTAL	Water _____	Date On-Off	Water _____	Date On-Off	TOTAL	Water _____	Date On-Off	Water _____	Date On-Off	TOTAL
Stage 1 (12 months)															
20															
20															
Stage 2 (24 months)															
20															
20															
20															
20															
Stage 3 (24 months)															
20															
20															
20															
20															

MONITORING GUIDE FOR STOCK MAXIMUM REQUESTS

Data sheet for annual stock figures

Property: _____ (station/lease name)

Date: _____/____/ 20____

TIME PERIOD	STOCK NUMBERS														
	Paddock: _____					Paddock: _____					Paddock: _____:				
	Water _____	Date On-Off	Water _____	Date On-Off	TOTAL	Water _____	Date On-Off	Water _____	Date On-Off	TOTAL	Water _____	Date On-Off	Water _____	Date On-Off	TOTAL
Stage 1 (12 months)															
20															
20															
Stage 2 (24 months)															
20															
20															
20															
20															
Stage 3 (24 months)															
20															
20															
20															
20															

MONITORING GUIDE FOR STOCK MAXIMUM REQUESTS

Data sheet for annual stock figures

Property: _____ (station /lease name)

Date: _____/____/ 20____

TIME PERIOD	STOCK NUMBERS														
	Paddock: _____										Paddock comments:				
	Water _____	Water _____	Water _____	Water _____	Water _____	Water _____	Water _____	Water _____	Water _____	TOTAL					
Stage 1 (12 months)															
20															
20															
Stage 2 (24 months)															
20															
20															
20															
20															
Stage 3 (24 months)															
20															
20															
20															
20															

MONITORING GUIDE FOR STOCK MAXIMUM REQUESTS

LESSEE TOOLS & REFERENCES

Maps	• Land system paddocks plans • Property paddocks plans
Remote Sensing	• Lond Paddock QLD Government; FarmMap4D, CiboLabs, VegMachine
Vegetation descriptions	• Soil conservation district plans
Field guides	• Field Guide to the Plants of Outback South Australia by Frank Kutsche and Brendan Lay • Plants of NSW by Cunningham, W.E. Mulham, P.L. Milthorpe and J. H. Leigh • The Glove Box Guide to Plants of the NSW Rangelands, Greg Brooke and Lori McGarva • Acacias of South Australia, DJE Whibley and DE Symon • Grasses of South Australia by John Jessop, Gilbert R.M Dashorst and Fiona M. James • Simply Saltbush by Nadine Brown • Field Identification Guide for Cacti by Biosecurity SA • A Field Guide for Maintaining GAB Wells/Bores by SA Government • Plant species lists – from Pastoral Lease Assessments – Round I & Round II
Useful Links **Department for Environment & Water**	Department for Environment and Water - Home
Pastoral Board and Unit	Department for Environment and Water - Pastoral Board
Water Licensing DEW	Department for Environment and Water - Water licence and permit forms
SA Arid Lands Landscape Board	Landscape South Australia - SA Arid Lands | Far North Prescribed…
Native Vegetation Council	Department for Environment and Water - Native Vegetation Council
Native Vegetation references	Native Vegetation Act 1991 (legislation.sa.gov.au) Native Vegetation Regulations 2017 (legislation.sa.gov.au) Grazing no change in practices Regulation 8, Schedule 1, clause 5 Department for Environment and Water - Grazing: ongoing practices Change in grazing info Regulation 11, Schedule 1, clause 26 Department for Environment and Water - Grazing: changed practices Associated Guideline NVInfoSheet54_(environment.sa.gov.au) Dam on pastoral land Regulation 12, Schedule 1, clause 38 Department for Environment and Water - Dam: create new or expand… Infrastructure (water point) Regulation 12, Schedule 1, clause 34 Department for Environment and Water - Infrastructure: construct or… Clearance application S28 of NV Act Department for Environment and Water - Clearing Native Vegetation see section *Clearance under the Act requires approval* And Department for Environment and Water - Clearance application forms section *Application to clear under the Act*

MONITORING REPORTING

Data sheets for stock numbers and placements, rainfall figures, monitoring site details and photographs are to be submitted to the Pastoral Unit at annual intervals. The timeline and dates at which information is to be supplied to the Pastoral Unit will be determined after consultation with applicant and Pastoral Unit.

Applicants are encouraged to review and incorporate the use of Remote Sensing tools to demonstrate sustainable land management.

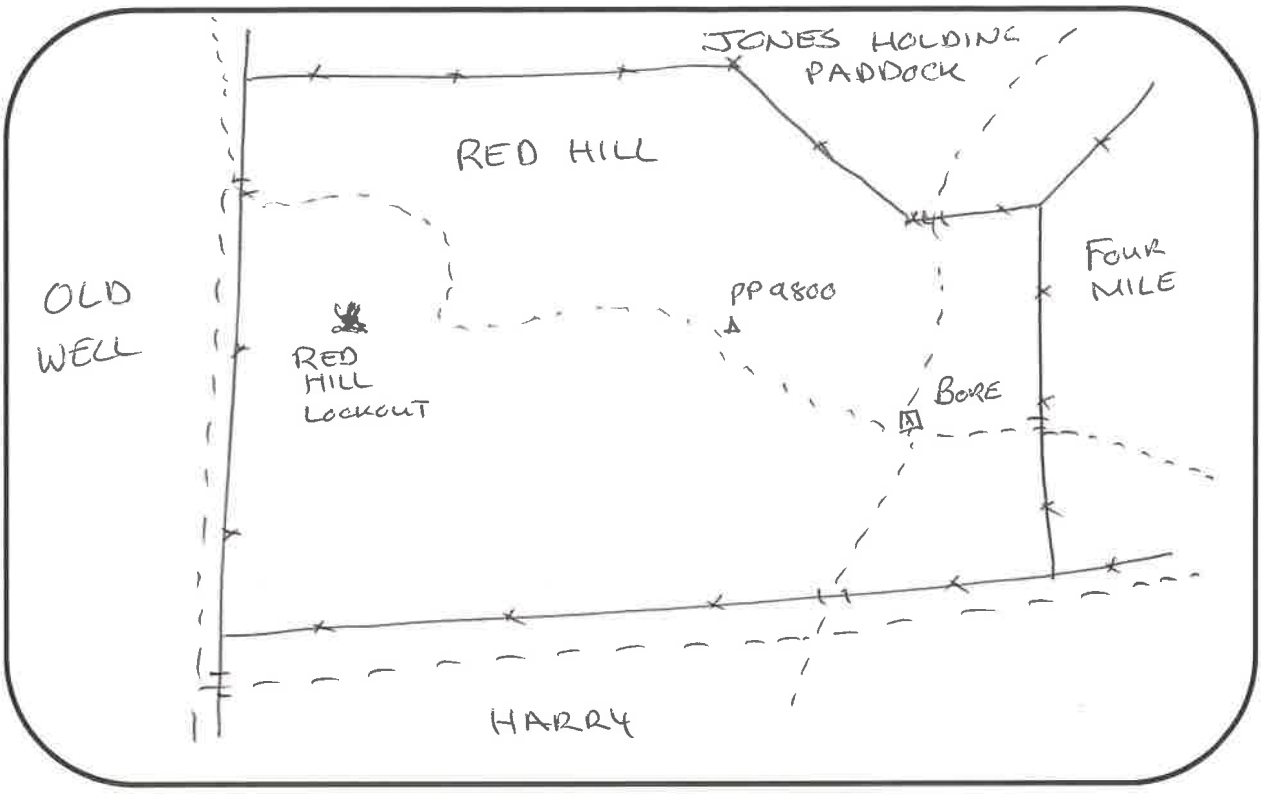
The data will be reviewed to track changes in land condition over time and reported to the Pastoral Board at the end of each period. This information will support the board's decision on the extension and/or changes to the temporary maximum with a final decision on a change of defined stock maximum to occur at the end of the 5-year monitoring program.

A final decision of the application for an amendment to a defined pastoral lease stocking maximum is dependent on the findings of the reports and any supplementary information provided by the lessee or other parties.

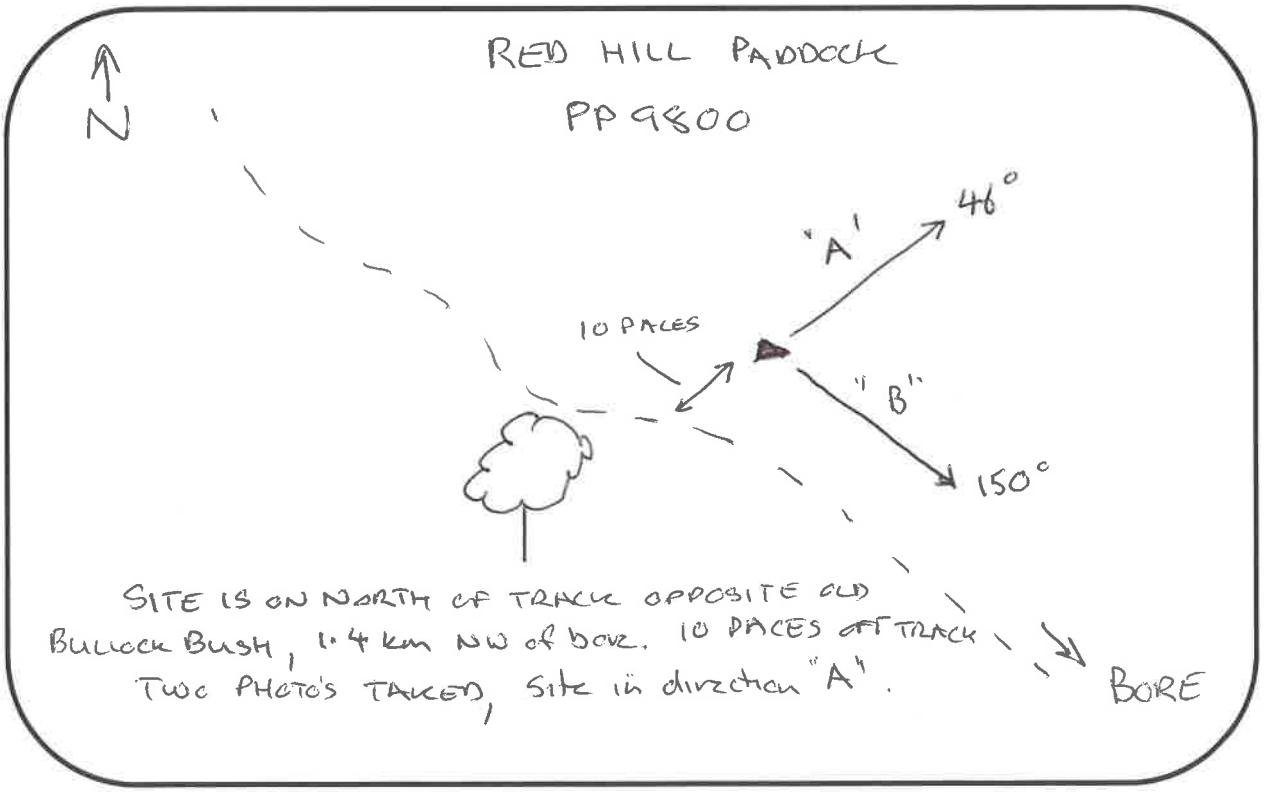
MONITORING GUIDE FOR STOCK MAXIMUM REQUESTS

Template – Mud map location details for Monitoring sites

Paddock plan details



Monitoring site placement



MONITORING GUIDE FOR STOCK MAXIMUM REQUESTS

Template – data sheet for Monitoring Points

MONITORING POINT DETAILS

Monitoring Site name: RED HILL SITE 1 Photopoint identifier: PP 9800

Paddock: RED HILL

Waterpoint: RED HILL BORE / TROUGH Stock type: MERINO / wethers

Visit date: 9/10/2025 **GPS coordinates:** Zone: 53 Easting: 535000

Northing: 6896600

Photographs: Photo: A Compass bearing: 46°

Photo: B Compass bearing: 150°

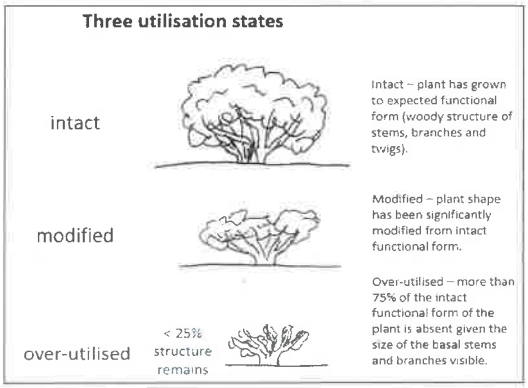
~~Photo: C~~ Compass bearing: _____

VEGETATION DESCRIPTORS

Describe the main plant species present at the site:

Bladder saltbush plain with scattered punty bush.

Salt bindyi and buckbush with patches of kerosene grass.



Palatable Species *5 main palatable species observed)*	Recruits OR Juveniles	Grazing impacts (utilisation state)			Comments
		Intact (nil or low)	Modified (moderate)	Over-utilised (high)	
Atriplex vesicaria	0	15	25	5	Fresh growth.
Arrhida contorta	20	25	0	0	seeding
M. appressa	5	15	10	0	
M. georgei	0	10	5	0	fruiting

GENERAL SITE OBERVATIONS

Recent rainfall: ☑ Yes Amount 5 mm (if known)

☐ No

Soil surface cover: ☑ Litter cover ☐ Leaf drop (dry conditions)

☑ Lichen cover/crust ☐ Other _____

OTHER GRAZING ANIMALS

(dung, grazing impacts observed or animal sighted)

☑ Kangaroos ☐ Horses

☐ Goats ☐ Rabbits

☐ Other _____

Weed Species

☑ No

☐ Yes _____

ADDITIONAL COMMENTS

Paddock is spelled and used for 4 months post shearing with wethers to go to market. Currently holding extra wethers for market. Recent rain has provided a good response with fresh growth on bladder