The Soil Phosphorous property report – through "FORAGE"

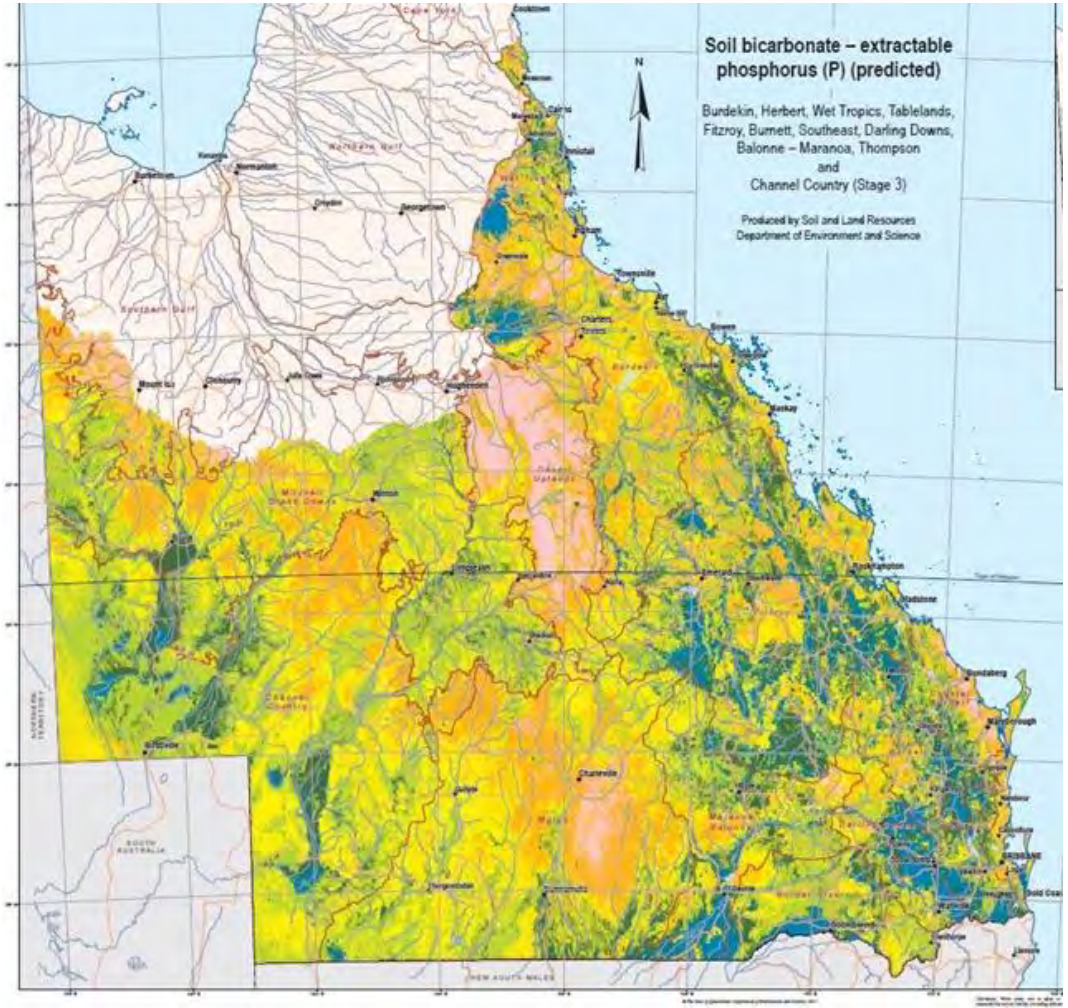
Grant Stone (and the Long Paddock Team)

Funding, sampling and analysis thanks: DCAP, REEF, DPI, DETSI & MLA

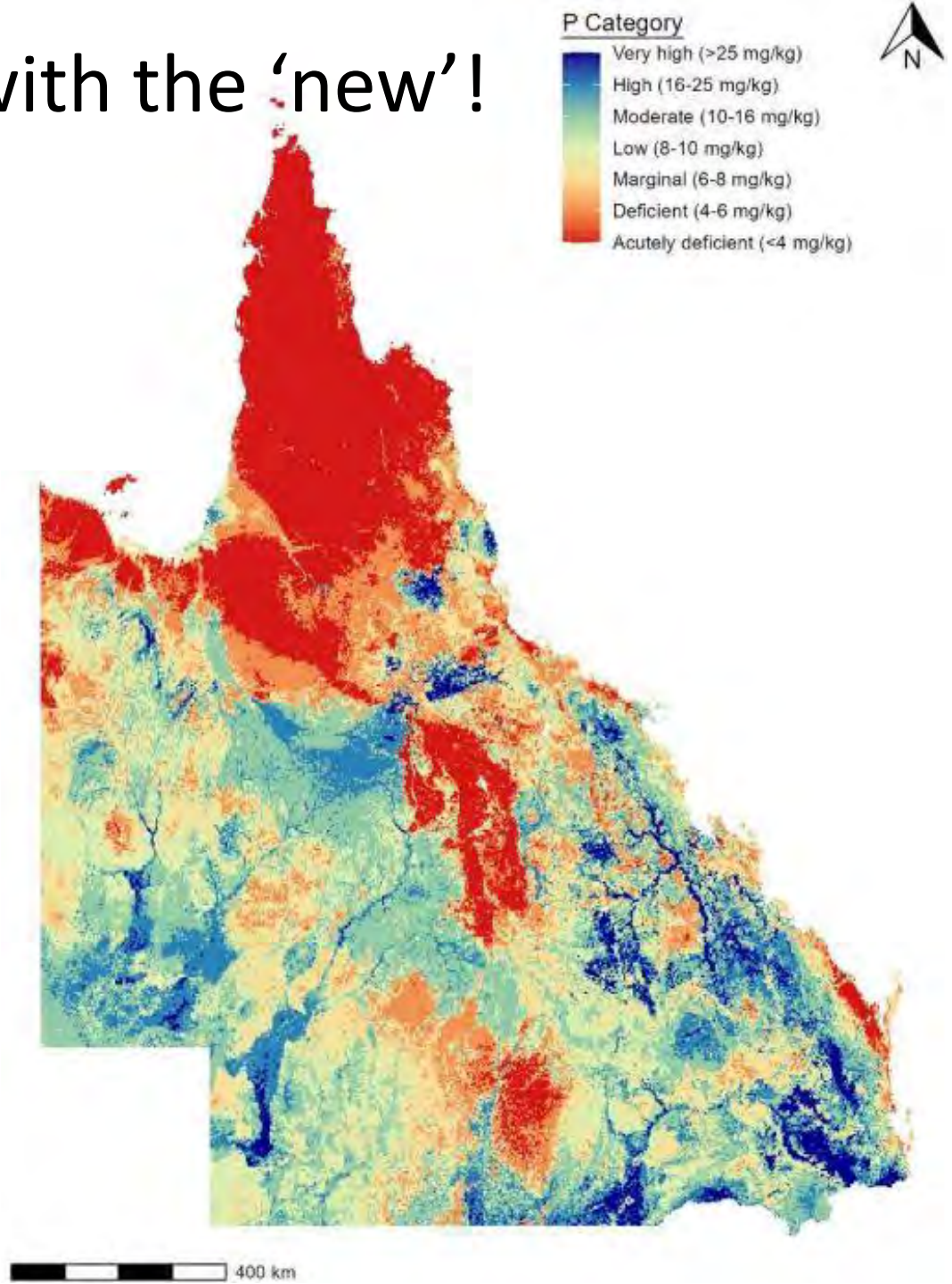
14 Individual FORAGE reports (currently)

- Land Type mapping, tables and data
- Rainfall & Pasture charts, tables and data
- Ground Cover imagery and assessments
- Seasonal Pasture Growth Alert analyses
- Long Term Carrying Capacity estimates
- Soil Phosphorus mapping and data tables
- Fire Scar mapping and graphs
- Erodible soils mapping
- Foliage Projective Cover imagery and tables
- Crop Frequency analyses and imagery
- Regional historical Climate graphs and data
- Drought Duration & Drought Assessment maps and information

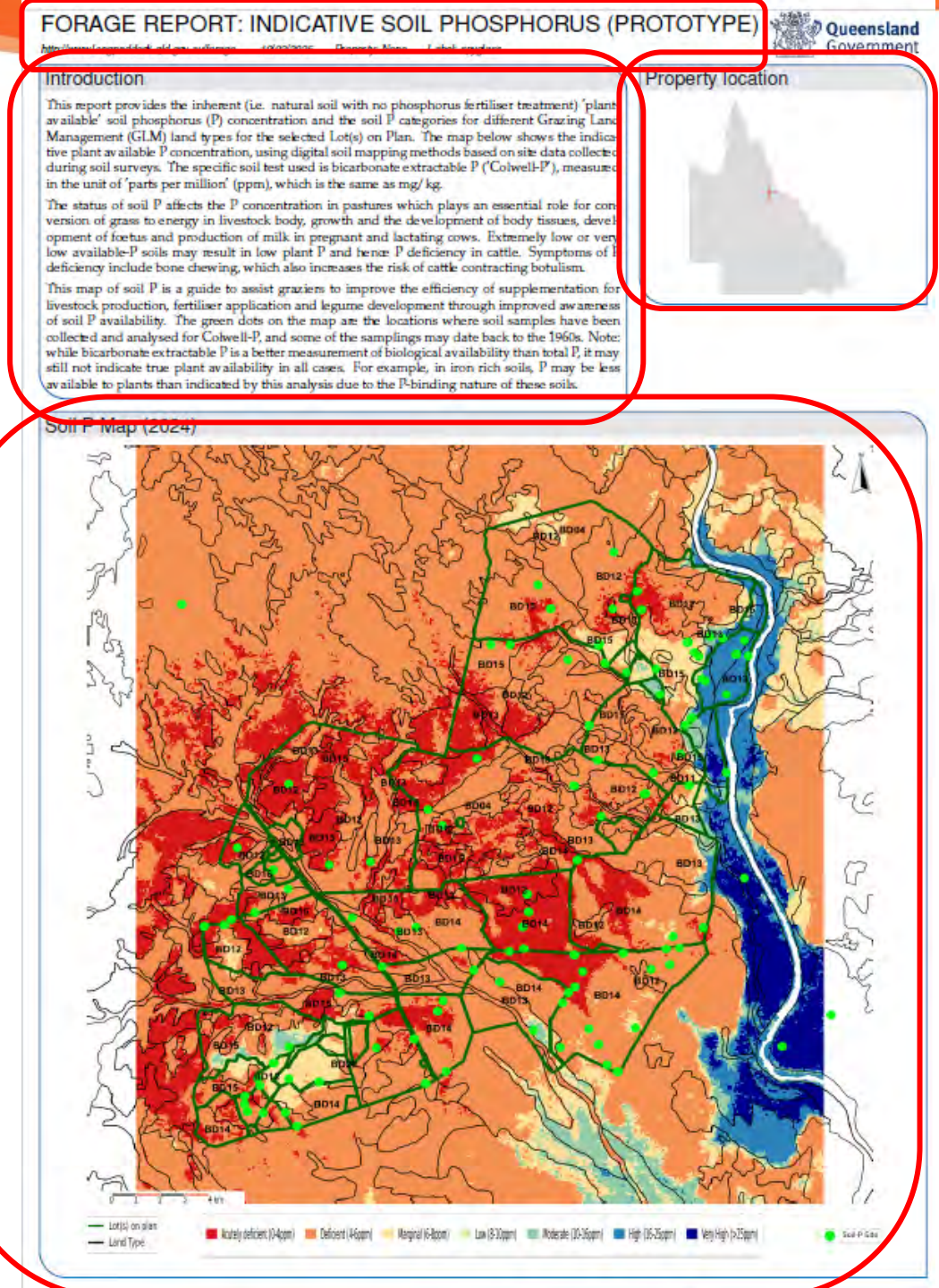
So, it's out with the 'old' and …



…in with the 'new'!



The report: Page 1 – Soil P Map


FORAGE REPORT: INDICATIVE SOIL PHOSPHORUS (PROTOTYPE)

Queensland Government

Introduction

This report provides the inherent (i.e. natural soil with no phosphorus fertiliser treatment) 'plant available' soil phosphorus (P) concentration and the soil P categories for different Grazing Land Management (GLM) land types for the selected Lot(s) on Plan. The map below shows the indicative plant available P concentration, using digital soil mapping methods based on site data collected during soil surveys. The specific soil test used is bicarbonate extractable P ('Colwell-P'), measured in the unit of 'parts per million' (ppm), which is the same as mg/kg.

The status of soil P affects the P concentration in pastures which plays an essential role for conversion of grass to energy in livestock body, growth and the development of body tissues, development of foetus and production of milk in pregnant and lactating cows. Extremely low or very low available-P soils may result in low plant P and hence P deficiency in cattle. Symptoms of P deficiency include bone chewing, which also increases the risk of cattle contracting botulism.

This map of soil P is a guide to assist graziers to improve the efficiency of supplementation for livestock production, fertiliser application and legume development through improved awareness of soil P availability. The green dots on the map are the locations where soil samples have been collected and analysed for Colwell-P, and some of the samplings may date back to the 1960s. Note: while bicarbonate extractable P is a better measurement of biological availability than total P, it may still not indicate true plant availability in all cases. For example, in iron rich soils, P may be less available to plants than indicated by this analysis due to the P-binding nature of these soils.

Property location

Soil P Map (2024)

Components:

- Title
- Introduction
- Location map
- Soil P Map
  - Seven categories
  - acutely deficient (0-4ppm) – very high (>25ppm)
  - soil P sample sites (continually adding)
  - GLM land types

Use to:

- assess property Soil P status
- soil P sample sites
- spatial view of areas of land types
  - for - supplementation / stock allocation / legume potential

The report: Page 2 – Land type table

FORAGE REPORT: INDICATIVE SOIL PHOSPHORUS (PROTOTYPE)

Queensland Government

http://www.longpaddock.qld.gov.au/forage 10/02/2025 Property: None Label: spyglass

Soil P Categories for Land Types

This table shows the indicative areas (ha) and percentage of different soil P categories present for each GLM land type for the selected Lot(s) on Plan.
The categories are classified based on soil P concentrations and include: Acutely Deficient (0-4ppm); Deficient (4-6ppm); Marginal (6-8ppm); Low (8-10ppm); Moderate (10-16ppm); High (16-25ppm); and Very High (>25ppm).

Land type code and name	Area (ha)	Acutely Deficient (ha) (%)	Deficient (ha) (%)	Marginal (ha) (%)	Low (ha) (%)	Moderate (ha) (%)	High (ha) (%)	Very High (ha) (%)
BD12 - Lancewood - bendee - ro	10,513	5,714 (54.3)	3,968 (37.7)	548 (5.2)	101 (<1)	156 (1.5)	25 (<1)	<1 (<1)
BD14 - Narrow-leaved ironbark	8,524	4,617 (54.2)	3,756 (44.1)	132 (1.5)	10 (<1)	9 (<1)	<1 (<1)	<1 (<1)
BD15 - Narrow-leaved ironbark	8,404	4,300 (51.2)	2,719 (32.4)	882 (10.5)	32 (<1)	251 (3.0)	209 (2.5)	10 (<1)
BD13 - Loamy alluvials	7,411	1,315 (17.7)	4,228 (57.1)	221 (3.0)	50 (<1)	252 (3.4)	1,207 (16.3)	138 (1.9)
BD04 - Box and napunyah	1,154	21 (1.8)	1,042 (90.3)	61 (5.3)	5 (<1)	17 (1.5)	8 (<1)	<1 (<1)
BD20 - Yellowjacket with other	791	120 (15.2)	557 (70.4)	113 (14.3)	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)
BD16 - Ranges	358	138 (38.5)	220 (61.5)	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)
BD11 - Goldfields country - re	200	<1 (<1)	99 (49.4)	65 (32.5)	2 (1.0)	5 (2.5)	29 (14.3)	<1 (<1)
AL10 - Wetland	7	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)	7 (100.0)	<1 (<1)
AL09 - Water	5	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)
BD05 - Box country BD	2	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)	<1 (<1)
Total	37,370	16,225 (43.4)	16,589 (44.4)	2,022 (5.4)	202 (0.5)	690 (1.8)	1,485 (4.0)	148 (0.4)

- **Soil P Categories (ppm)**
- **land types areas (ha)**
- **Categories x area and percentage of different soil P categories present**
- **Use to:**
  - rank country/areas
  - assess areas of land types to supplement / allocate stock

Page 3 - Soil P 'Uncertainty Map'

FORAGE REPORT: INDICATIVE SOIL PHOSPHORUS (PROTOTYPE)

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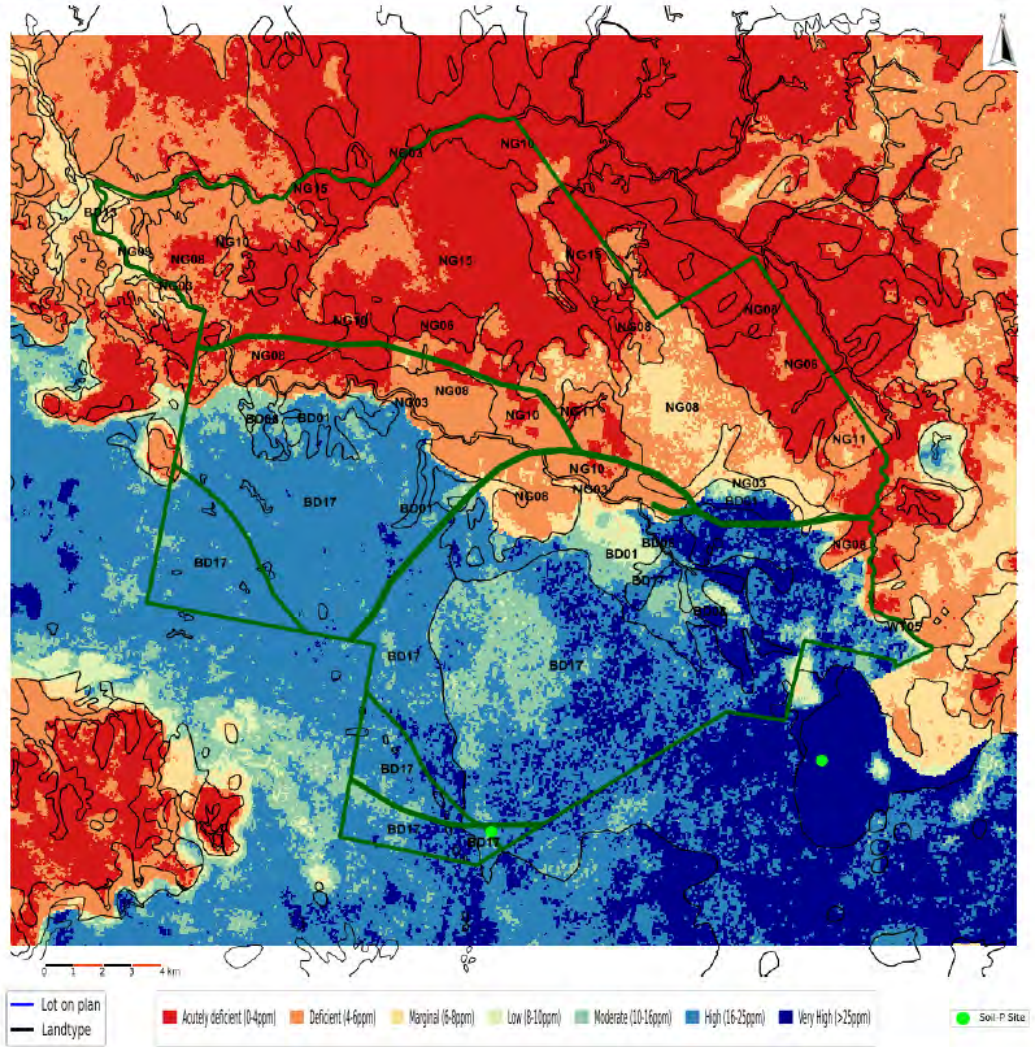
http://www.longpaddock.qld.gov.au/forage 10/02/2025 Lot on Plan: None Label: spyglass

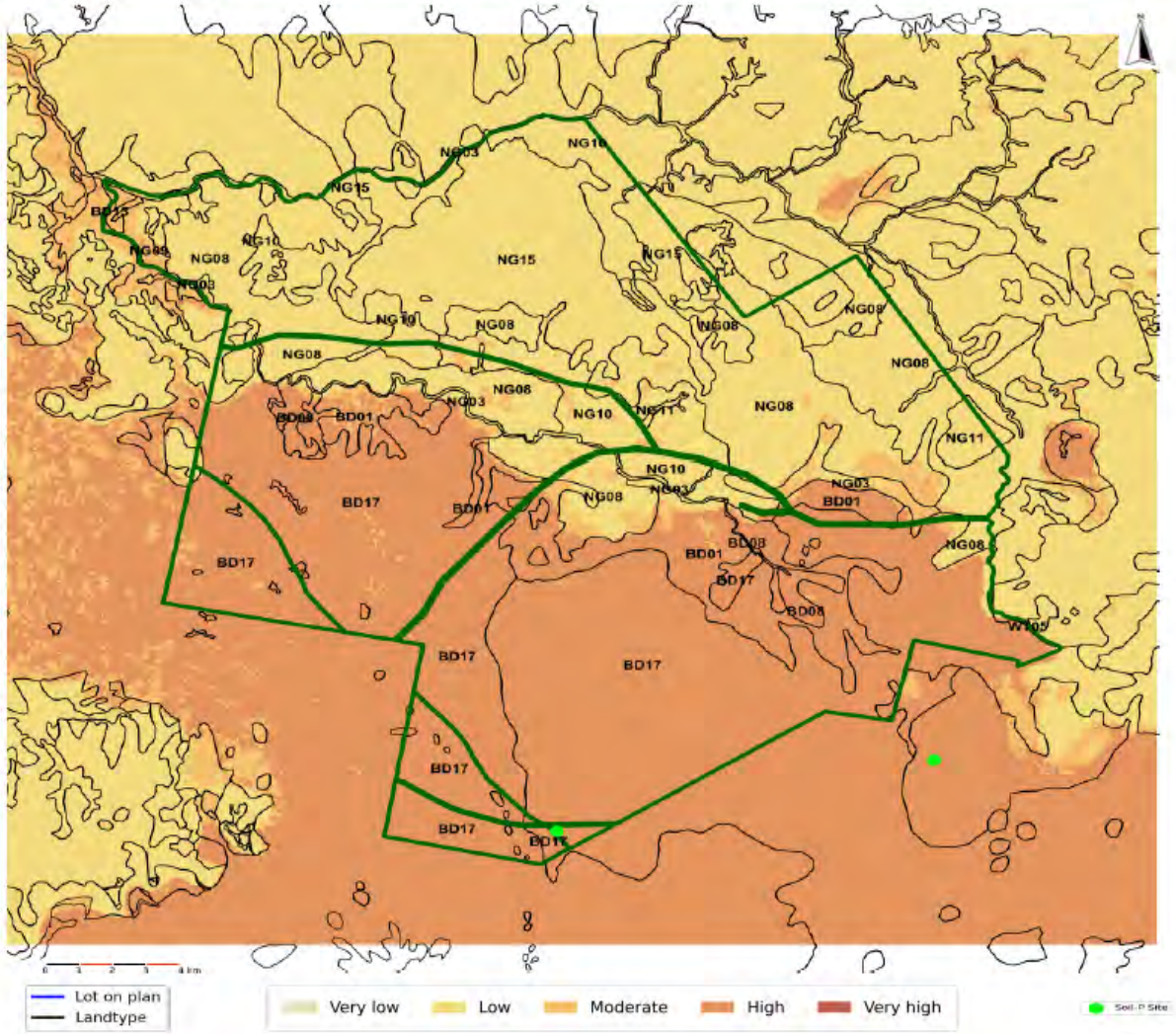
Relative Uncertainty of Soil P Data

The indicative soil P map on page one is generated using complex digital mapping techniques. The map below indicates the 'relative' uncertainty of

Soil P Map (2024)

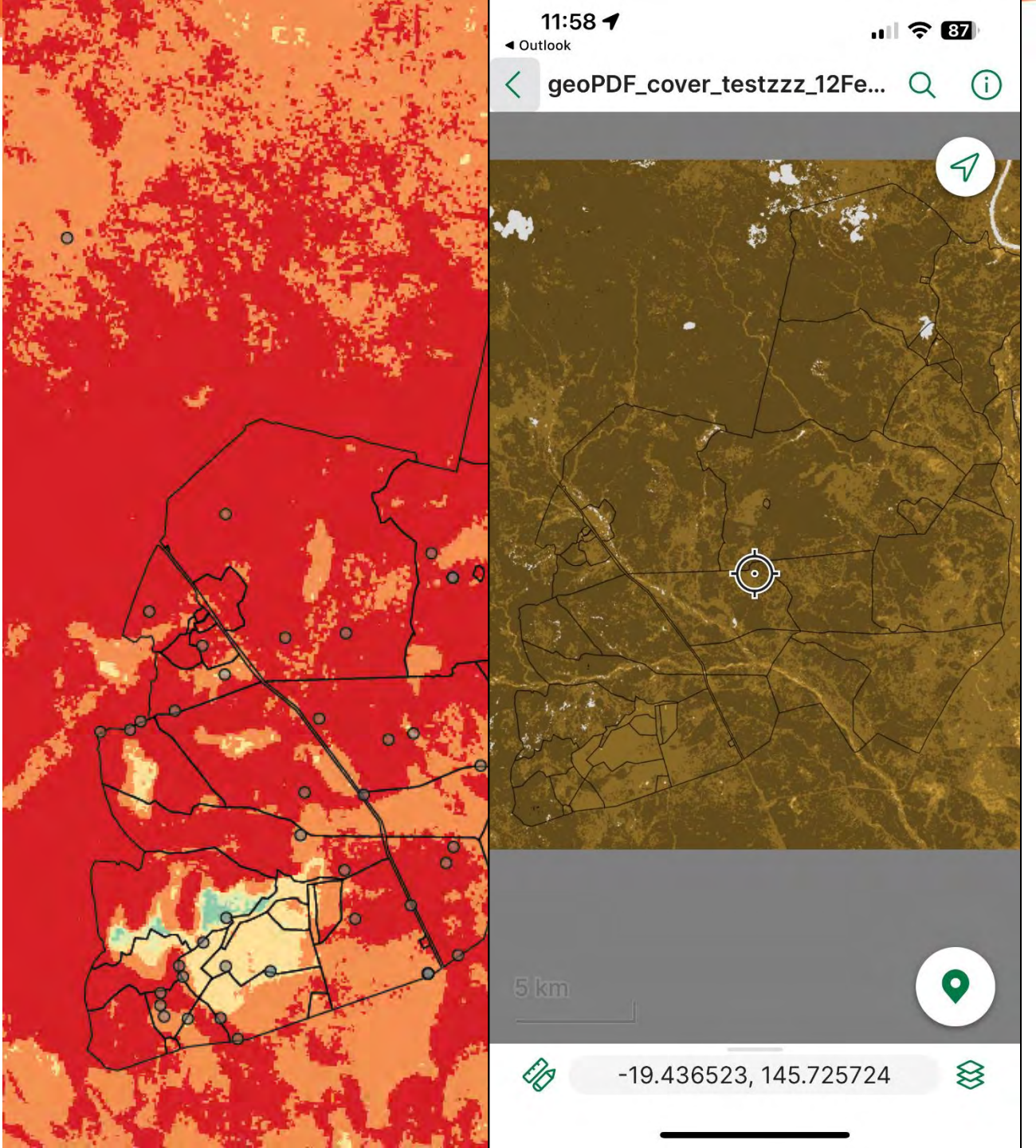


Map of Relative Soil P Data Uncertainty (2024)



Meat & Livestock Australia. FutureBeef: Phosphorus supplementation of cattle in northern Australia.
https://www.mla.com.au/globalassets/mla-corporate/research-and-development/program-areas/livestock-production/mla---phosphorus-management-of-beef-cattle-in-northern-australia---2nd-edition_v19.pdf
Meat & Livestock Australia. Phosphorus hub.
https://www.mla.com.au/research-and-development/livestock-production/livestock-nutrition/phosphorus-hub/
Meat & Livestock Australia. (2024) B.GBP.0063 - Phosphorus Map of Queensland Grazing Lands 2.
https://www.mla.com.au/research-and-development/reports/2025/b.gbp.0063---phosphorus-map-of-queensland-grazing-lands-2/

Geo-PDF accessory file



- Same map as page 1:
  - Soil P x categories
  - Soil P sample sites
  - Paddocks
  - Need an application (e.g. Avenza map App)

- Use Geo-PDF file to:
  - assess ‘on-ground’ property/paddock areas
  - identify extra sample sites
  - available with other FORAGE report maps
    (e.g. Ground cover, FPC-Woody cover, Fire Scar)

- Note:
  - no legend
  - suggest using hard copy / pdf report


MyFORAGE
ONLINE MAPPING TOOL

FORAGE
About FORAGE
MyFORAGE
FORAGE (Lot/Plan)
Report Examples
Indicative Soil Phosphorus Report
Long-Term Carrying Capacity Report (prototype)
Pasture Growth Alert Report
Indicative Land Type Report
Rainfall and Pasture Report
Ground Cover Report
Ground Cover - Regional Comparison Repo
Drought Duration Report
Drought Assessment Information
Foliage Projective Cover Report
Fire Scar Report
Regional Climate Projections Report
Erodible Soils Report
Crop Frequency Report
Satellite Imagery
Subscription service
Awareness Videos
Understanding Percentiles and Terciles in Climate and P
Webinar Videc

FORAGE (Lot/Plan)

Select FORAGE report(s)

Indicative Soil Phosphorus ×

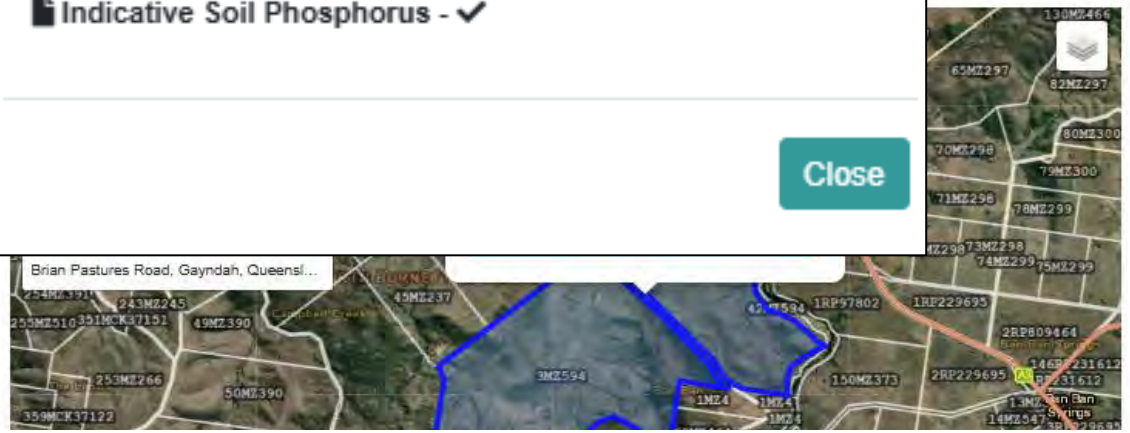
Specify location using lot on plan

Submit Result

FORAGE report request(s) submitted successfully

Indicative Soil Phosphorus - ✓

Close



Delivery information

*Email grant.stone@qld.gov.au

Label Brian_Pastures

Click on map to select/remove your Lot on Plan

Submit

rtment of Resources) 2024

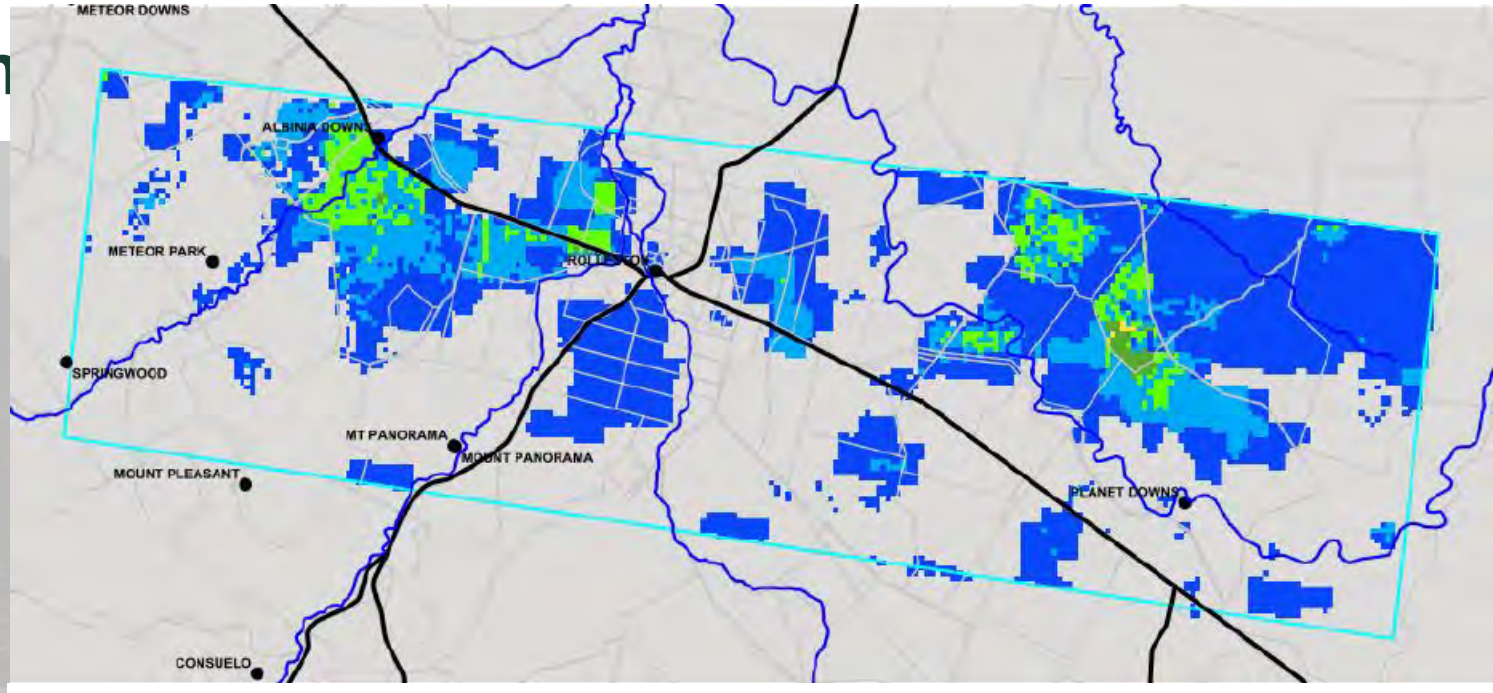
Soil P report progress (to date)

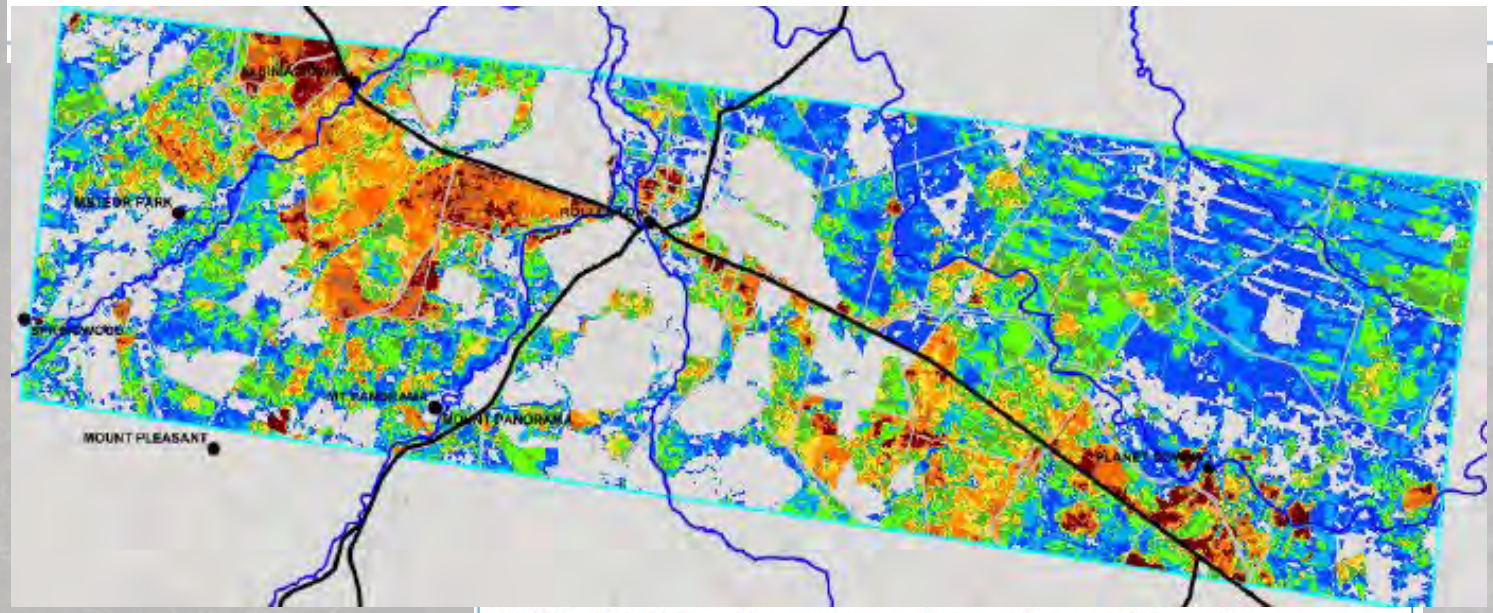
- First Release Dec 2022
- Reports requested (to date) = 2,500
- Oct-Dec 2024 = 390
- Customer focus – 70 report requests held – now delivered
- for awareness – request a new report
- Soil P information – inc. new DCAP Factsheets
  - “Evaluating grazing management strategies to improve drought resilience - Improving land condition and P supplementation”.
  - “Over-sowing native pasture with stylo and applying adequate phosphorus to deficient soil can improve profitability”.

https://www.longpaddock.qld.gov.au/forage/report-information/indicative-soil-phosphorus/

What's new an

- Water Points added to map imagery
  - Ground cover and LTCC reports
- Fire Scar report
  - 1987-2017 resolution upgrade
  - Landsat data (30m) replaces Modis (1 km)
  - More historical fires now visible; and
  - Smaller fires now mapped





Times fire scars detected:

1 2 3 4 5 6 7 8 9 >10

No fire scar detected | DCDB | Lot on Plan of interest | Road | River | Locality

Percentage out of the total area	0.0	0.0	0.1	1.3	36.7	61.9

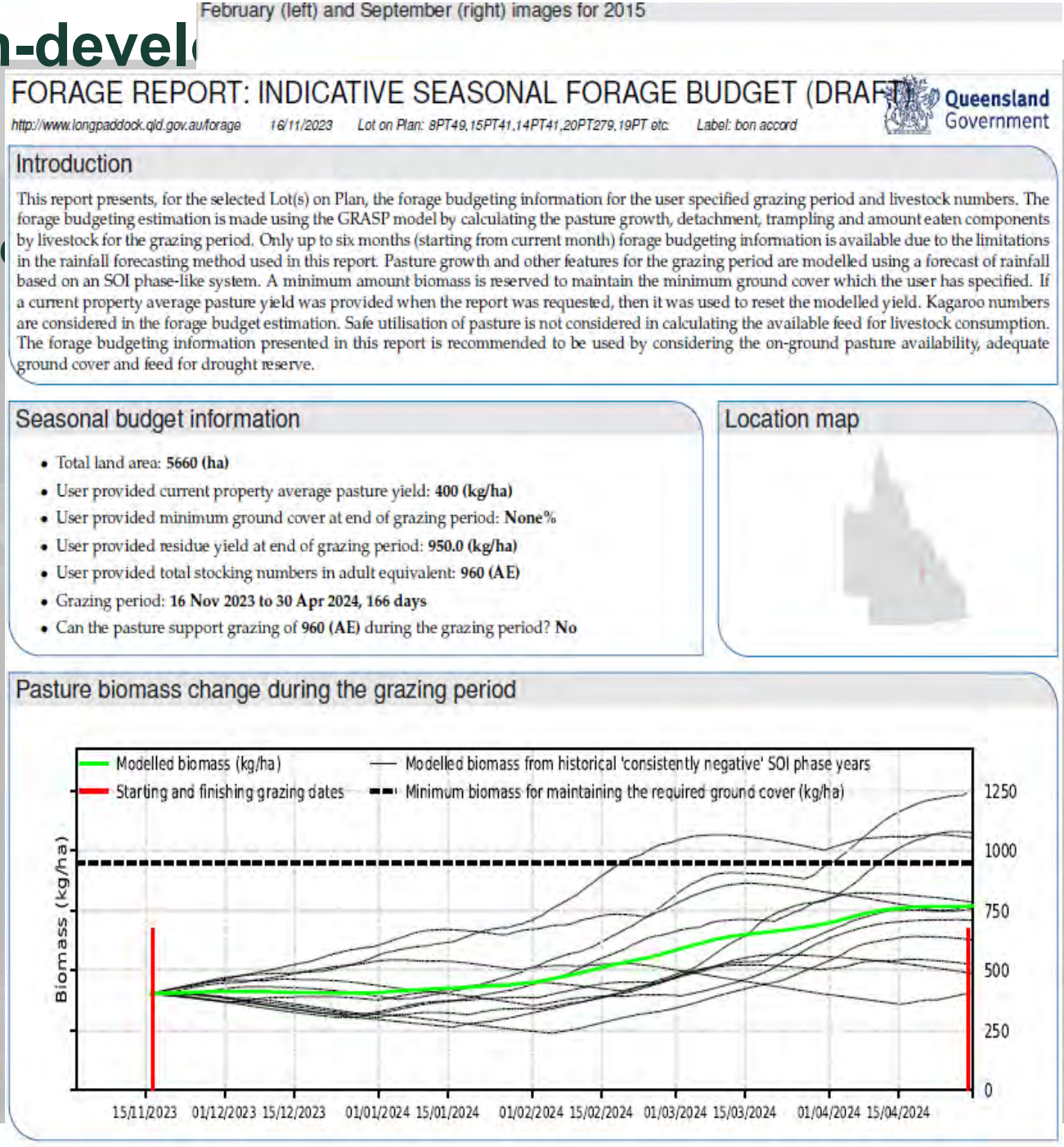
What's new and in-devel

- Crop frequency report now includes individual
  - Summer – 'banana', 'cotton', 'sugarcane' and 'other'
  - Winter – 'cereal crop' and 'chickpea'
  - Satellite images (twice yearly); and
  - Time-series plot of the proportion of area cropped
  - Expanded area (Qld only)

- Seasonal Forage budget report (in dev.)
- Current biomass/forecast of growth
- Indication of sustainable stocking potential
- A.I. analyses + Field program: 4 x property sites (CQ & NQ)

- Constant up-keep and improvement…

… to deliver the best quality information!



So, to request a FORAGE Soil Phosphorous property report…

go to: ***The Long Paddock*** website - **longpaddock.qld.gov.au – it's all free!**

Question time for the panel...