

meatup

FORUM

For the latest in red meat R&D

Near-Real-Time Pasture Monitoring For Every Producer

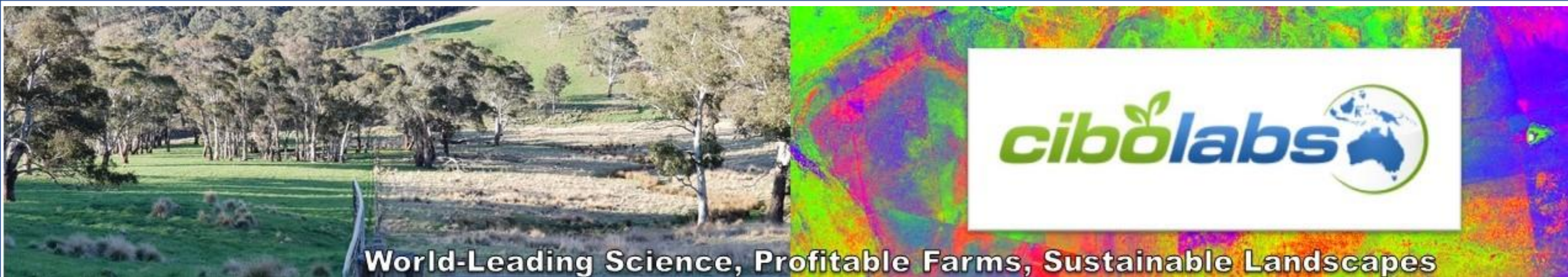
Nation to paddock in a couple of “clicks”

Phil Tickle

Cibo Labs

Email: ptickle@cibolabs.com.au





Cibo Labs is bringing new and more effective approaches to the monitoring and management of Australia's grazing lands.

Our goal is to underpin more profitable farms and more sustainable landscapes.

- *How many kg of available pasture do I have per paddock?*
- *How many grazing days do I have ahead of me with no rain?*
- *What are my ground cover levels, and how do they compare to last month?*
- *How is my land condition tracking relative to regional benchmarks?*

Creating the environment for a producer to bring together information on productivity, profitability and natural capital at paddock or property scales every week or month for a fraction of current costs.

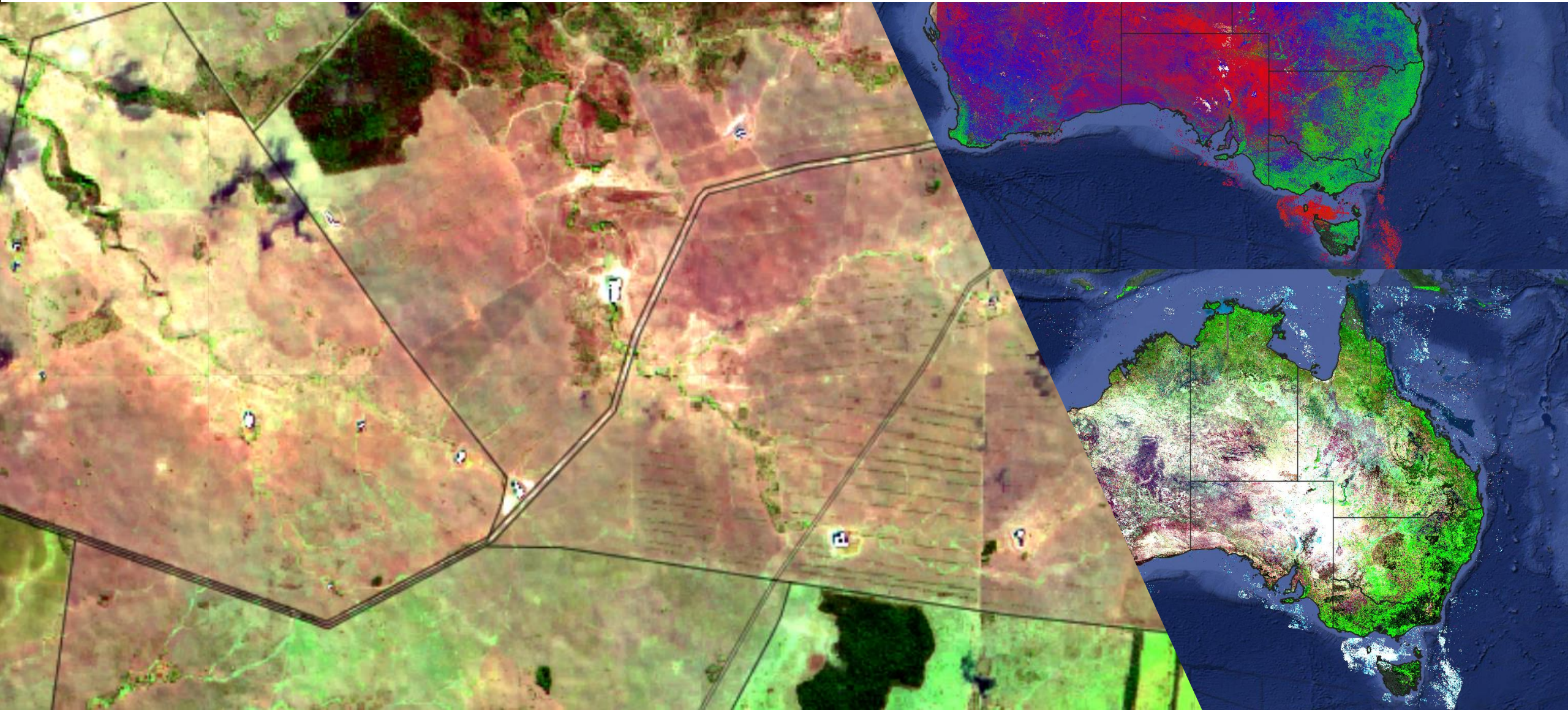
Collaborating with other specialist service providers to deliver seamless information to producers

40 million hectares and counting per week.

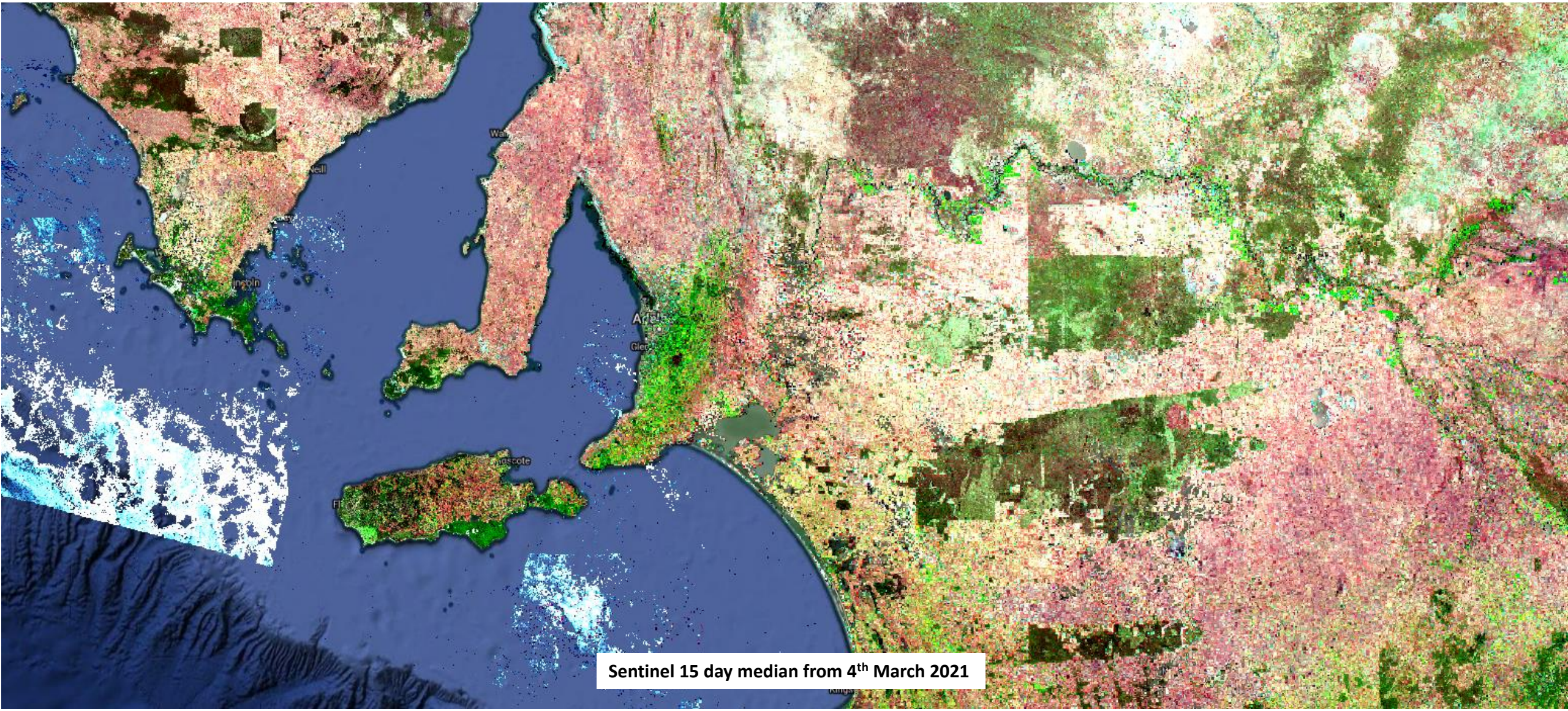


Helping make decisions less complicated, more profitable, lower risk and more sustainable

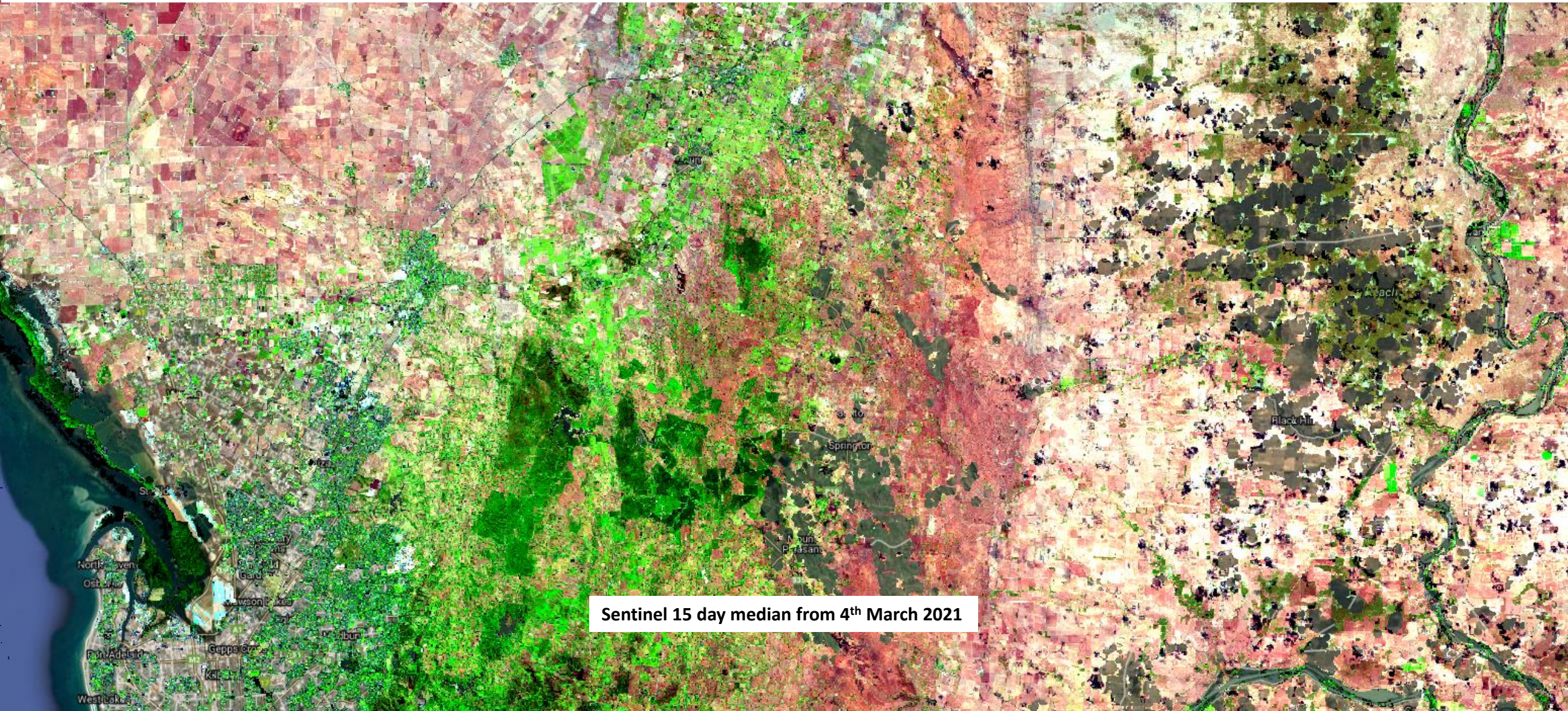
Seamless nation to paddock satellite imagery every 5 days (or daily if you need it)



Seamless nation to paddock satellite imagery every 5 days (or daily if you need it)



Seamless nation to paddock satellite imagery every 5 days (or daily if you need it)



Seamless nation to paddock satellite imagery every 5 days (or daily if you need it)



Sentinel 15 day median from 4th March 2021

Seamless nation to paddock satellite imagery every 5 days (or daily if you need it)



Novatel Barossa

Sentinel 15 day median from 4th March 2021

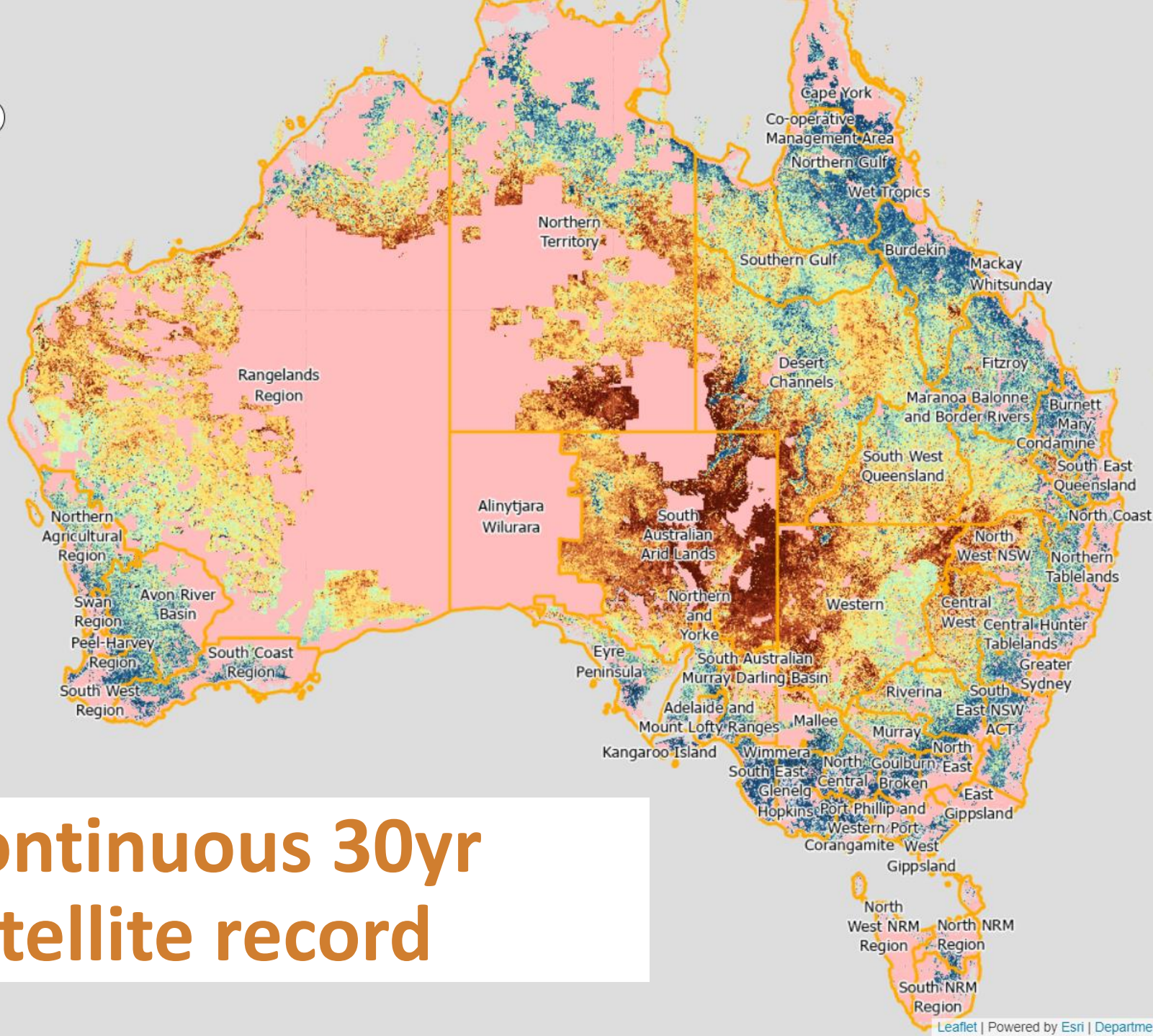
[CLICK HERE](#)



Date: 2020-06

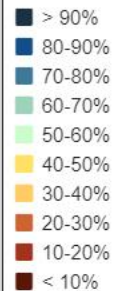


Search...



North Coast - Lord Howe Island

Ground Cover Legend



Boundaries Legend



1000 km

Continuous 30yr satellite record

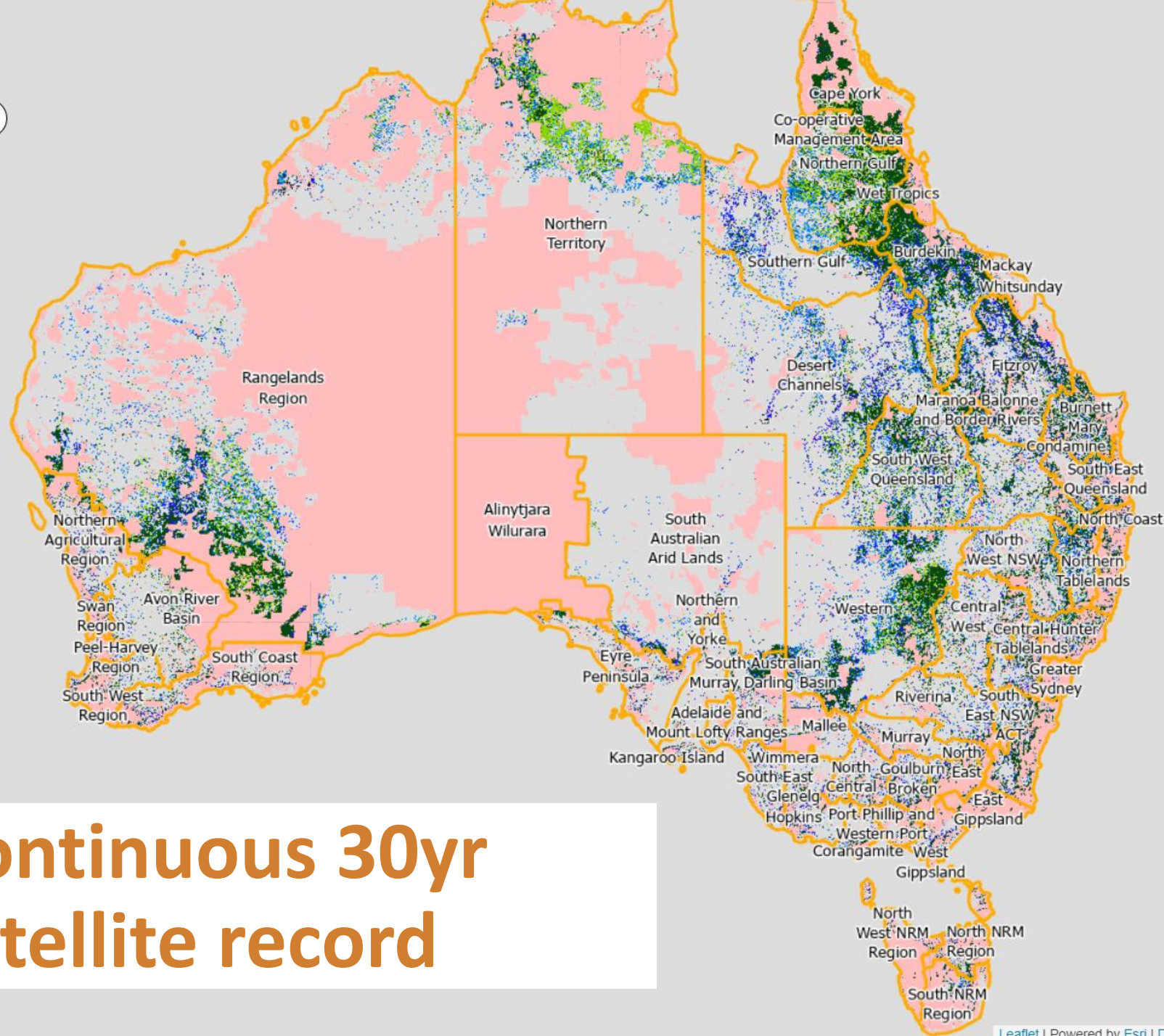
[CLICK HERE](#)



Date: 2018-2019



Search...



Woody Cover Legend

- Primary Forest (no change)
- Primary Woodland (no change)
- Primary Woodland to Primary Forest
- Primary Forest to Primary Woodland
- Secondary Forest (no change)
- Secondary Woodland (no change)
- Secondary Woodland to Secondary Forest
- Secondary Forest to Secondary Woodland
- Primary Forest to Non Woody
- Primary Woodland to Non Woody
- Secondary Forest to Non Woody
- Secondary Woodland to Non Woody
- Non Woody -> Secondary Forest
- Non Woody -> Secondary Woodland

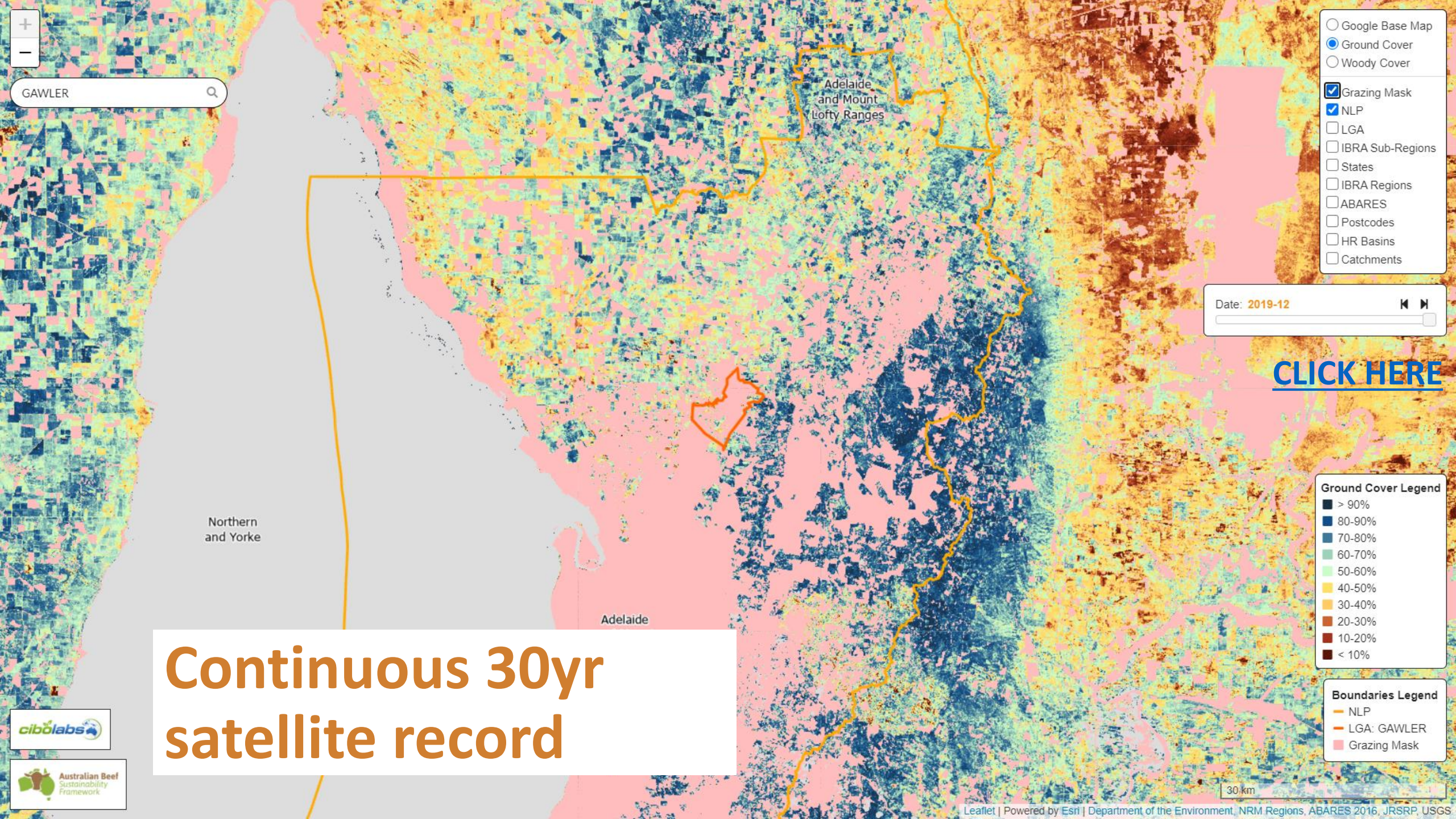
Boundaries Legend

- NLP
- Grazing Mask

1000 km

Continuous 30yr satellite record





GAWLER

Adelaide
and Mount
Lofty Ranges

Northern
and Yorke

Adelaide

- ☐ Google Base Map
- ☒ Ground Cover
- ☐ Woody Cover
- ☒ Grazing Mask
- ☒ NLP
- ☐ LGA
- ☐ IBRA Sub-Regions
- ☐ States
- ☐ IBRA Regions
- ☐ ABARES
- ☐ Postcodes
- ☐ HR Basins
- ☐ Catchments

Date: 2019-12

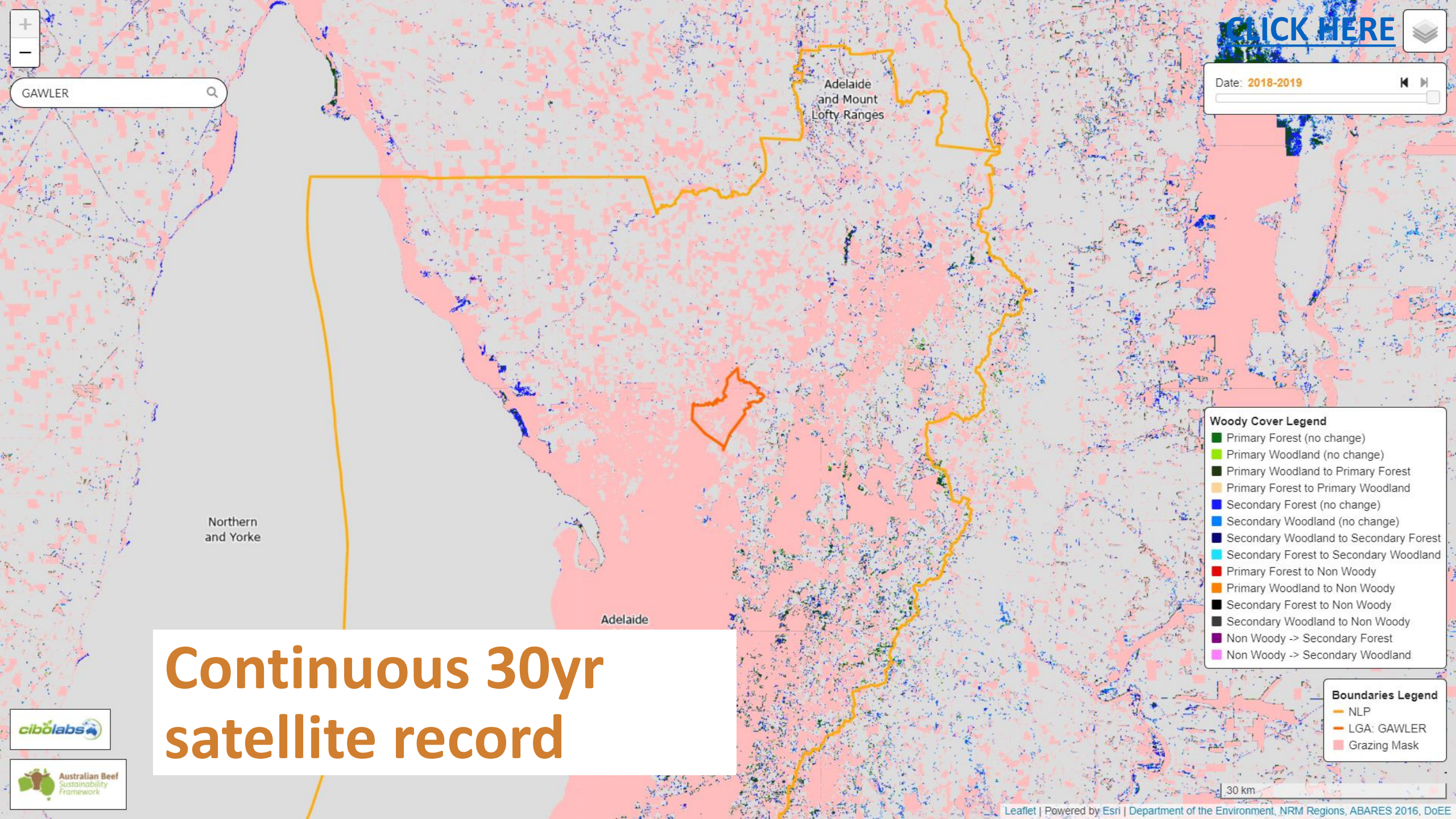
[CLICK HERE](#)

- Ground Cover Legend**
- > 90%
 - 80-90%
 - 70-80%
 - 60-70%
 - 50-60%
 - 40-50%
 - 30-40%
 - 20-30%
 - 10-20%
 - < 10%

- Boundaries Legend**
- NLP
 - LGA: GAWLER
 - Grazing Mask

Continuous 30yr
satellite record





[CLICK HERE](#)



Date: 2018-2019



GAWLER



Adelaide
and Mount
Lofty Ranges

Northern
and Yorke

Adelaide

Continuous 30yr satellite record

Woody Cover Legend

- Primary Forest (no change)
- Primary Woodland (no change)
- Primary Woodland to Primary Forest
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- Secondary Woodland (no change)
- Secondary Woodland to Secondary Forest
- Secondary Forest to Secondary Woodland
- Primary Forest to Non Woody
- Primary Woodland to Non Woody
- Secondary Forest to Non Woody
- Secondary Woodland to Non Woody
- Non Woody -> Secondary Forest
- Non Woody -> Secondary Woodland

Boundaries Legend

- NLP
- LGA: GAWLER
- Grazing Mask

30 km





Vegetation Trends Dashboard 2020
Woody Changes Summary - Page 1[Next Page](#)


The land parcels used to calculate the statistics in this dashboard can be filtered using the nine regional filters on the right. To reset a filter to include all possibilities, click on the filter, then click the minus symbol in its top left corner.


A forest is defined as woody vegetation with a minimum 20% canopy cover (CC), potentially reaching 2 meters high and a minimum area of 0.2 hectares. Sparse woody is defined as woody vegetation with a canopy cover between 5-19%. Primary forest ($\geq 20\%$ CC) or woodland (5-19%CC) is defined as woody vegetation present in 1988. Secondary forest or woodland has been disturbed at anytime post-1988. "Woody" is inclusive of both forest and woodland.


Total Hectares Selected
485.1MTotal Land Parcels
1.3M


NLP 


Local Government Area 


IBRA Region 


IBRA Sub-Region 

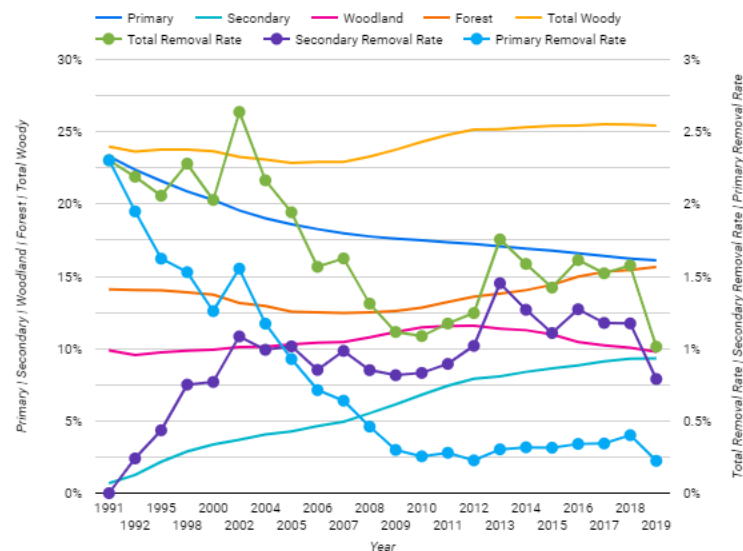
Post Code 

State / Territory 

Basin 

River Region 

Is in RFA 



The left y-axis in the above chart represents the percentage of area belonging in the corresponding category. A value of 20% for primary indicates that 20% of the area is classified as primary woody.

Data Last Updated: 3/4/2021 3:19:58 PM | [Privacy Policy](#)

Measure	17/18	18/19	10-Year Annual Averages (2009-2018)	10-Year Annual Averages (2010-2019)
National Woody Cover Gain	3.07%	1.73%	3.76%	3.51%
National Forest Cover Gain	1.19%	0.75%	1.59%	1.49%
National Woodland Cover Gain	5.88%	3.23%	6.44%	6.03%
National Woody Cover Loss	-3.15%	-2.02%	-2.84%	-2.82%
National Forest Cover Loss	-1.60%	-1.15%	-1.46%	-1.43%
National Woodland Cover Loss	-5.48%	-3.36%	-4.58%	-4.59%
National Woody Cover Extent	-0.08%	-0.29%	0.92%	0.69%
National Forest Cover Extent	0.90%	1.31%	2.13%	2.19%
National Woodland Cover Extent	-1.56%	-2.75%	-0.65%	-1.27%

The below table is comparing the date period:
(Month and Day choice do not matter)


Jan 1, 2017 - Jan 1, 2018

State / Territory	NLP	Total Woody Area Change	Total Woody Area Change (Ha)	Primary Woody Area Change	Primary Woody Area Change (Ha)
ACT	ACT	5.64%	1,000	-0.03%	-3
NSW	Central Tablelands	2.61%	20,022	-0.3%	-1,508
NSW	Central West	0.57%	9,683	-1.88%	-20,085
NSW	Greater Sydney	0.09%	75	-0.37%	-206
NSW	Hunter	-0.13%	-957	-0.91%	-4,170
NSW	Murray	4.68%	20,895	-0.84%	-1,847
NSW	North Coast	2.04%	11,418	-0.52%	-1,953
NSW	North West NSW	0.92%	17,907	-1.13%	-12,366
NSW	Northern Tablelands	4.98%	72,927	-0.28%	-2,603
NSW	Riverina	4.08%	30,657	-1.09%	-4,307
NSW	South East NSW	1.57%	23,871	-0.26%	-2,872
NSW	Western	-0.24%	-25,499	-0.86%	-58,523
NT	Northern Territory	-1.89%	-197,123	-1.78%	-124,962
QLD	Burdekin	0.38%	33,342	-0.42%	-27,810
QLD	Burnett Mary	-0.33%	-7,379	-0.75%	-12,678

[CLICK HERE](#)

- Data summarised or stored for every land parcel >1ha
- Dominant land use to identify parcels with potential to be grazed

MyFarmKey – A Verifiable Digital Record for every Farm

 My Profile My Properties Add Property Benchmarking

Malanga
PIC:
Malanga, 845 Bimbil Road, Thallon QLD
4497, Australia

Verify with LPA

Add Owner Details

Edit Property

Add Property Key to Cart

Delete

RawdonVlaeEast
PIC:

Verify with LPA

Add Owner Details

Edit Property

Add Property Key to Cart

Delete


My Profile My Properties Add Property Benchmarking Log Out

Chosen property:
Lorraine

Auto-Select Tool

Selected Comparison Land Parcels: 0

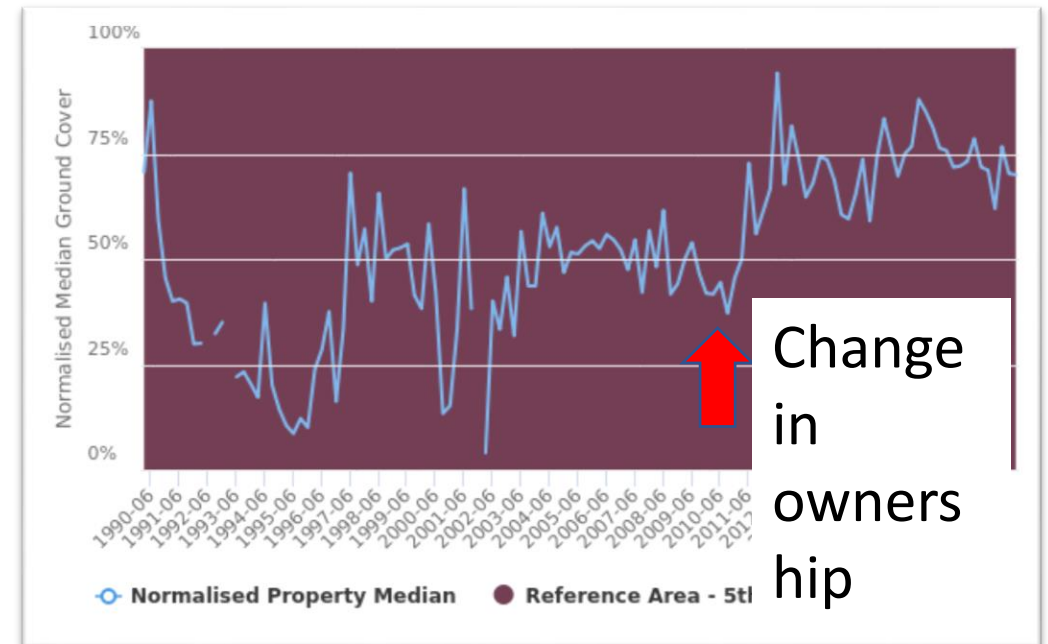
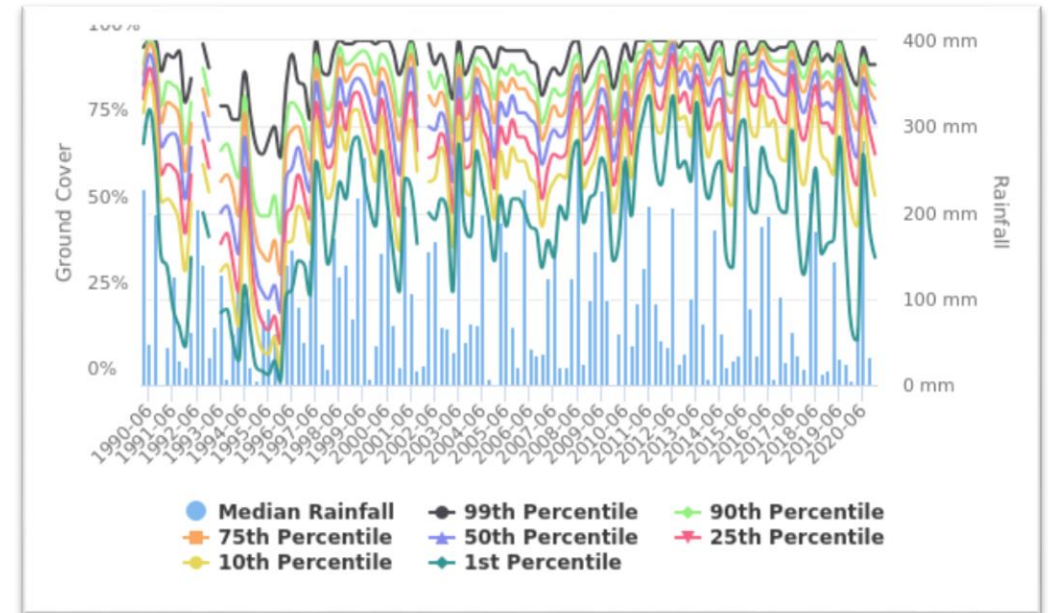
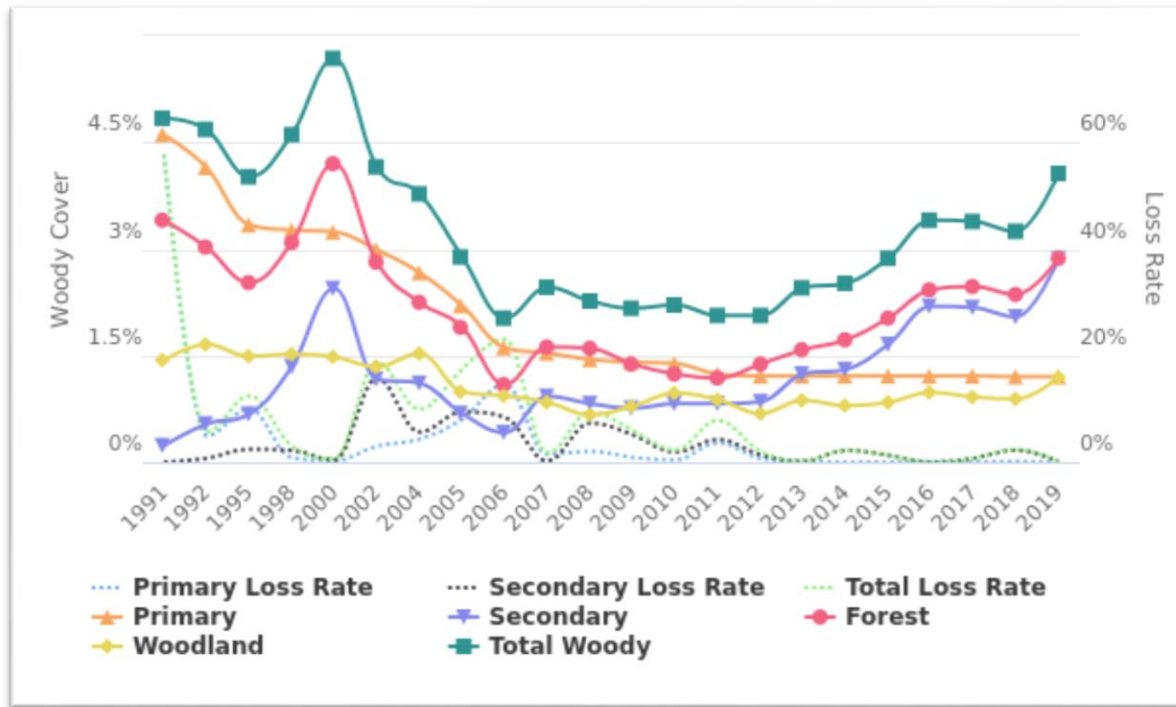
Optional: Visualise Data
Woody Cover
Woody Cover
Ground Cover



*Personal, business, front-gate address, land parcels boundaries , land title and LPA credentials integrated into single, verified digital record
Solves the PIC Register problem and delivers immediate value to the producer.*

www.cibolabs.com.au/myfarmkey

MyFarmKey – 30 years of satellite data products and auditable reports in a few minutes



MyFarm Mapper

Lack of consistent, high quality farm mapping is a major barrier to technology adoption and system integration

The screenshot displays the 'MyFarm - Property Mapper' web application, powered by WebApp Builder. The interface includes a top navigation bar with the CiboLabs logo, the application title, and links to the 'Property Mapper User Guide' and 'CiboLabs Support Centre'. Below this is a toolbar with icons for map navigation and a search bar labeled 'Find address or place'. The main map area shows a satellite view of a rural landscape with various farm features overlaid: red dashed lines for property boundaries, yellow dashed lines for water features, and numerous blue and yellow icons representing different farm assets. A legend on the left side categorizes these features into 'Legend' (Lime Kiln Site, Fuel Tank, Gravel Pit, Mine, Mine shaft, Rubbish Tip, Washdown Area), 'MyFarm Water' (Bore, Pump, Tank, Dam, Earth Tank, Trough, Watering Hole), and 'MyFarm Piping' (Bore Drain, Irrigation Channel). The bottom of the interface features a breadcrumb trail with tabs for '1. Property Mapper', '2. Projects Management', '3. Select and Download', '4. Ground Cover Change Map', 'a. Biomass Tools', 'b. Benchmarking Tools', and 'c. Advanced Mapper'. The '1. Property Mapper' tab is currently selected. The bottom right corner indicates the last update was 'a minute ago'.

2 of 2

cibolabs MyFarm - Property Mapper powered with WebApp Builder 1. Property Mapper User Guide 2. CiboLabs Support Centre

Find address or place

Legend

- Lime Kiln Site
- Fuel Tank
- Gravel Pit
- Mine
- Mine shaft
- Rubbish Tip
- Washdown Area

MyFarm Water

- Bore
- Pump
- Tank
- Dam
- Earth Tank
- Trough
- Watering Hole

MyFarm Piping

- Bore Drain
- Irrigation Channel

2km

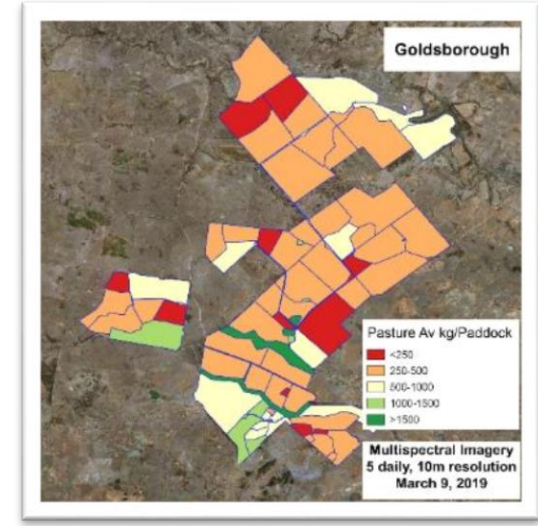
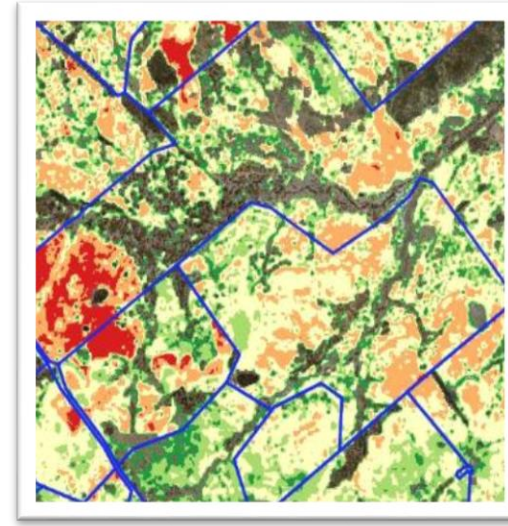
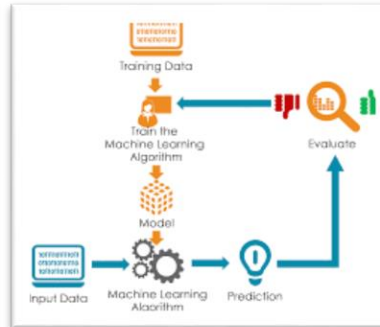
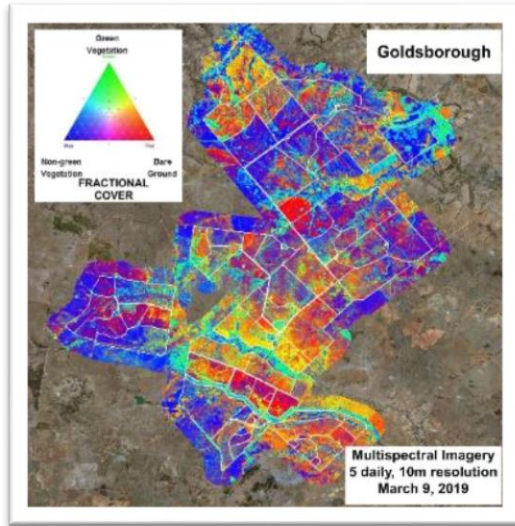
149.248 -22.640 Degrees

Powered by esri

1. Property Mapper 2. Projects Management 3. Select and Download 4. Ground Cover Change Map a. Biomass Tools b. Benchmarking Tools c. Advanced Mapper

Last update: a minute ago

Integrated Pasture Assessment and Prediction



Time-series satellite imagery scout maps to optimise field pasture assessments

Directed in-paddock sampling. Detailed pasture yield assessments. Dedicated data collection Apps

5 daily time-series satellite data. Machine Learning based on field data. A “living laboratory” based on producer and Cibo data.

Estimates of pasture biomass for every paddock every 5-15 days.
No “black boxes”

Estimates of Feed on Offer for every paddock, property and the company every 5,15-30 days

Objective, repeatable, extendable, defensible...doable, time-saving, cost-effective



CIBO0423-

- ☐ Google Hybrid
- ☐ Esri World
- ☒ Open Street Map
- ☐ Landsat Seasonal Ground Cover
- ☐ Sentinel Seasonal Fractional Cover
- ☐ No background
- ☒ CiboLabs Bounds 2021-03-01
- ☐ CiboLabs FOO 2021-03-01
- ☐ CiboLabs Display 2021-03-01
- ☐ CiboLabs Fractional Cover 2021-03-01
- ☐ CiboLabs Total Cover 2021-03-01
- ☐ CiboLabs NDVI 2021-03-01
- ☒ CiboLabs TSDM 2021-03-01
- ☐ CiboLabs Monthly Change 2021-03-01

1.2Mha every 5 days

Connells
Lagoon
Conservation
Reserve



30 km

CIBO1185-

- ☐ Google Hybrid
- ☐ Esri World
- ☒ Open Street Map
- ☐ Landsat Seasonal Ground Cover
- ☐ Sentinel Seasonal Fractional Cover
- ☐ No background
- ☒ CiboLabs Bounds 2021-02-26
- ☐ CiboLabs FOO 2021-02-26
- ☒ CiboLabs Display 2021-02-26
- ☐ CiboLabs Fractional Cover 2021-02-26
- ☐ CiboLabs Total Cover 2021-02-26
- ☐ CiboLabs NDVI 2021-02-26
- ☐ CiboLabs TSDM 2021-02-26
- ☐ CiboLabs Monthly Change 2021-02-26

7,000ha every 5 days



Building Solutions for Agriculture

1 km

CIBO1185-

- ☐ Google Hybrid
- ☐ Esri World
- ☒ Open Street Map
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- ☐ No background
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- ☐ CiboLabs TSDM 2021-02-26
- ☐ CiboLabs Monthly Change 2021-02-26

7,000ha every 5 days



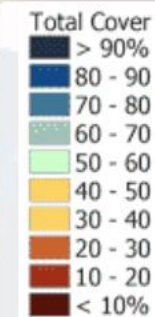
CIBO1185-

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- ☐ CiboLabs TSDM 2021-02-26
- ☐ CiboLabs Monthly Change 2021-02-26

7,000ha every 5 days



Building Solutions for Agriculture



1 km

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- ☒ CiboLabs NDVI 2021-02-26
- ☐ CiboLabs TSDM 2021-02-26
- ☐ CiboLabs Monthly Change 2021-02-26

7,000ha every 5 days

NDVI is not a robust predictor
of biomass outside peak
growth



Building Solutions for Agriculture

NDVI

- Water
- Bare
- Low
- Medium
- High
- Very High

CIBO1185-

- ☐ Google Hybrid
- ☐ Esri World
- ☒ Open Street Map
- ☐ Landsat Seasonal Ground Cover
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- ☒ CiboLabs TSDM 2021-02-26
- ☐ CiboLabs Monthly Change 2021-02-26

7,000ha every 5 days



Building Solutions for Agriculture

TSDM
Low
Medium
High

CIBO1185-

- ☐ Google Hybrid
- ☐ Esri World
- ☒ Open Street Map
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- ☐ CiboLabs NDVI 2021-02-26
- ☐ CiboLabs TSDM 2021-02-26
- ☒ CiboLabs Monthly Change 2021-02-26

7,000ha every 5 days



Building Solutions for Agriculture

Change

- Large Loss
- Loss
- No Change
- Gain
- Large Gain

3rd Party System integration.

“Live FOO” to Agriwebb

CIBO1142 [XX](#)

- ☒ Google Hybrid
- ☐ Open Street Map
- ☐ Landsat Seasonal Ground Cover
- ☐ Sentinel Seasonal Fractional Cover
- ☐ No background

- ☒ CiboLabs Bounds 2020-05-24
- ☒ CiboLabs FOO 2020-05-24
- ☐ CiboLabs Display 2020-05-24
- ☐ CiboLabs Fractional Cover 2020-05-24
- ☐ CiboLabs NDVI 2020-05-24
- ☐ CiboLabs TSDM 2020-05-24
- ☐ CiboLabs Monthly Change 2020-05-24

[Edit details](#) [Edit area](#) [Delete](#)

Gates are open
E14, E10, C42, E4, C37, C41, C47, C46, C52, C51, E15, E19, E20, E5 [View all connecting gates](#)

STATE
Grazing

TYPE
Natural grasses

TOTAL HEAD
22
1538 across 15 paddocks

TOTAL LSU
28.6
1,544.6 LSU across 15 paddocks

STOCKING RATE
0.1 LSU / ha

FEED ON OFFER
1,614.4 kg DM / ha
1,559.1 kg DM / ha across 15 paddocks

GRAZING DAYS REMAINING
100+ across 15 paddocks

PASTURE GROWTH RATE
No records

ARABLE OR GRAZABLE AREA
1,559.3 ha
22,344.4 ha across 15 paddocks

TOTAL AREA
1,559.3 ha
22,344.4 ha across 15 paddocks

WITHHOLDING PERIOD
Not within withholding

Mobs [History](#) [All](#)

Mobs in E9, E14, E10, C42, E4, C37, C41, C47, C46, C52, C51, E15, E19, E20, E5

Heifers
Brahman - 19 months old [View Details](#)

MOB SIZE
1516

AVERAGE LSU
1

AVERAGE WEIGHT
330 kg

SCORE
N/A

ESI
None

WHP
None

Herd Bulls
Brahman - 3 years 4 months old [View Details](#)

MOB SIZE
22

AVERAGE LSU
1.3

AgriWebb

Mooramong

TSDM: 2895 kg/ha
Food on offer: 1249 tonnes DM
Date: 2020-05-24
Valid data: 100% of paddock



Building Solutions for Agriculture

Paddock	Landtype	Hectares	TSDM20200524
Mooramong	Hard gidgee	2722	1655
Mooramong	Jump-ups	1302	2805
Mooramong	Open alluvial plains	1774	1928
Mooramong	Open downs	2050	2356
Mooramong	Pebbly downs	430	1991
Paddock Level		8278	2128

Intensive and extensive field data collection by Cibo Labs and producers to calibrate and validate predictions



SAMSUNG

7:10 100% 55%

Cibo-BiomassCollector1

▼ Metadata

* Email

Email of data collector

▼ SiteData

* Valid Record (Yes or No)

(NO if processing YES if valid)

☒ Yes

☐ No

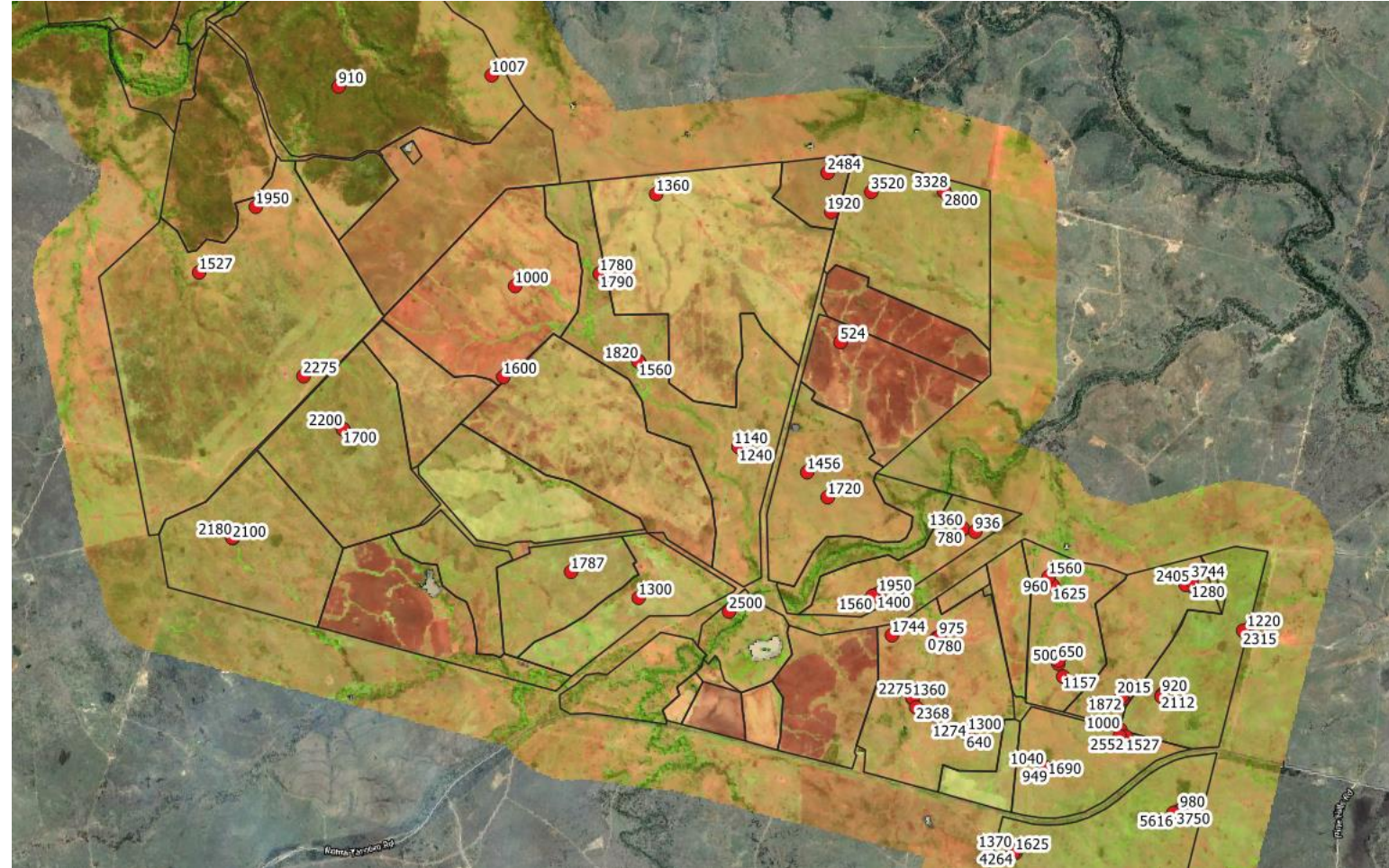
Property

Paddock Name

* GPSLocation (Location of FIRST Quadrat)

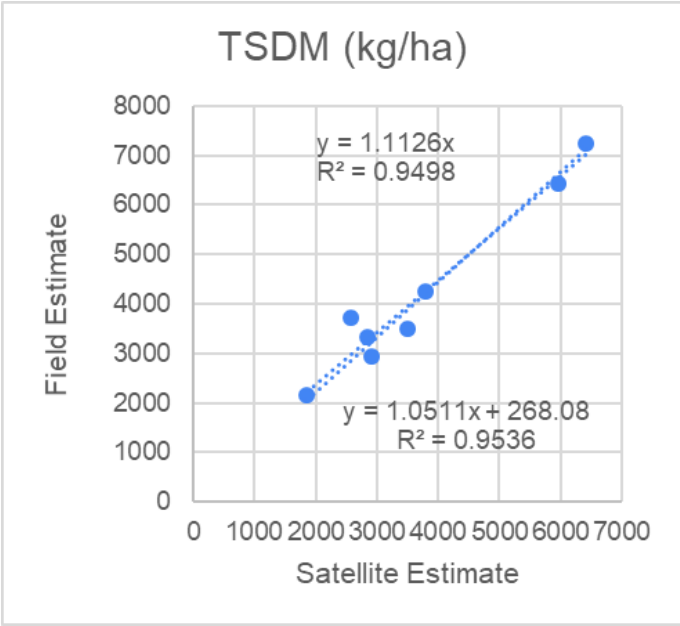
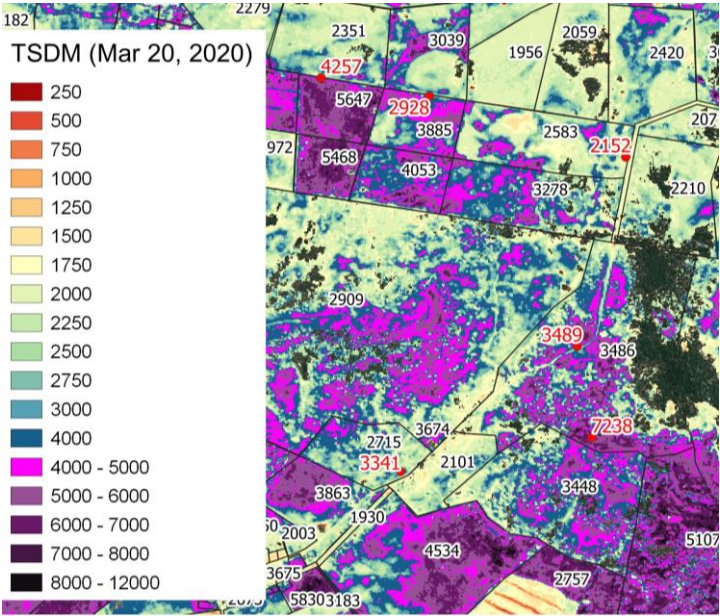
Start of Treatment >25m or 50m

Global Business Categories - Q2 2024																																							
Electronics										Clothing										Home Goods										Food & Beverage									
Category	Sub-Category	Item	Unit	Price	Quantity	Revenue	Profit	Cost	Tax	Category	Sub-Category	Item	Unit	Price	Quantity	Revenue	Profit	Cost	Tax	Category	Sub-Category	Item	Unit	Price	Quantity	Revenue	Profit	Cost	Tax	Category	Sub-Category	Item	Unit	Price	Quantity	Revenue	Profit	Cost	Tax
Electronics	Smartphones	iPhone 15 Pro	Unit	\$1,299	150	\$194,850	\$37,470	\$157,380	\$1,299	Clothing	T-Shirts	Basic Cotton Tee	Unit	\$15	500	\$750	\$150	\$600	\$15	Home Goods	Decorative Items	Modern Vase	Unit	\$45	100	\$4,500	\$900	\$3,600	\$45	Food & Beverage	Snacks	Chocolate Box	Unit	\$12	200	\$2,400	\$480	\$1,920	\$12
		iPhone 15	Unit	\$999	100	\$99,900	\$19,980	\$79,920	\$999			Graphic Tee	Unit	\$20	300	\$6,000	\$1,200	\$4,800	\$20			Crackers Bag	Unit	\$8	150	\$1,200	\$240	\$960	\$8										
		Samsung Galaxy S24	Unit	\$1,199	120	\$143,880	\$27,774	\$116,106	\$1,199			Throw Pillow	Unit	\$18	80	\$1,440	\$288	\$1,152	\$18			Coffee Beans	Unit	\$25	100	\$2,500	\$500	\$2,000	\$25										
		Pixel 8 Pro	Unit	\$999	80	\$79,920	\$15,984	\$63,936	\$999			Table Lamp	Unit	\$35	60	\$2,100	\$420	\$1,680	\$35			Pasta Box	Unit	\$5	300	\$1,500	\$300	\$1,200	\$5										
		OnePlus 12	Unit	\$899	60	\$53,940	\$10,788	\$43,152	\$899			Wall Art	Unit	\$25	40	\$1,000	\$200	\$800	\$25			Tea Bags	Unit	\$3	200	\$600	\$120	\$480	\$3										
Electronics	Smartphones	Google Pixel 8	Unit	\$699	200	\$139,800	\$27,960	\$111,840	\$699	Clothing	T-Shirts	Basic Cotton Tee	Unit	\$15	500	\$750	\$150	\$600	\$15	Home Goods	Decorative Items	Modern Vase	Unit	\$45	100	\$4,500	\$900	\$3,600	\$45	Food & Beverage	Snacks	Chocolate Box	Unit	\$12	200	\$2,400	\$480	\$1,920	\$12
		Xiaomi Mi 14	Unit	\$799	100	\$79,900	\$15,980	\$63,920	\$799			Graphic Tee	Unit	\$20	300	\$6,000	\$1,200	\$4,800	\$20			Crackers Bag	Unit	\$8	150	\$1,200	\$240	\$960	\$8										
		Huawei P60	Unit	\$1,099	50	\$54,950	\$10,990	\$43,960	\$1,099			Throw Pillow	Unit	\$18	80	\$1,440	\$288	\$1,152	\$18			Coffee Beans	Unit	\$25	100	\$2,500	\$500	\$2,000	\$25										
		Nokia 8600	Unit	\$599	40	\$23,960	\$4,792	\$19,168	\$599			Table Lamp	Unit	\$35	60	\$2,100	\$420	\$1,680	\$35			Pasta Box	Unit	\$5	300	\$1,500	\$300	\$1,200	\$5										
		ASUS ROG Phone 8	Unit	\$1,199	20	\$23,980	\$4,796	\$19,184	\$1,199			Wall Art	Unit	\$25	40	\$1,000	\$200	\$800	\$25			Tea Bags	Unit	\$3	200	\$600	\$120	\$480	\$3										
Electronics	Smartphones	Lenovo Legion Y90	Unit	\$1,299	10	\$12,990	\$2,598	\$10,392	\$1,299	Clothing	T-Shirts	Basic Cotton Tee	Unit	\$15	500	\$750	\$150	\$600	\$15	Home Goods	Decorative Items	Modern Vase	Unit	\$45	100	\$4,500	\$900	\$3,600	\$45	Food & Beverage	Snacks	Chocolate Box	Unit	\$12	200	\$2,400	\$480	\$1,920	\$12
		Wear OS by Google	Unit	\$299	90	\$26,910	\$5,382	\$21,528	\$299			Graphic Tee	Unit	\$20	300	\$6,000	\$1,200	\$4,800	\$20			Crackers Bag	Unit	\$8	150	\$1,200	\$240	\$960	\$8										
		Fitbit Sense 2	Unit	\$199	70	\$13,930	\$2,786	\$11,144	\$199			Throw Pillow	Unit	\$18	80	\$1,440	\$288	\$1,152	\$18			Coffee Beans	Unit	\$25	100	\$2,500	\$500	\$2,000	\$25										
		Garmin Venu 3	Unit	\$449	50	\$22,450	\$4,490	\$17,960	\$449			Table Lamp	Unit	\$35	60	\$2,100	\$420	\$1,680	\$35			Pasta Box	Unit	\$5	300	\$1,500	\$300	\$1,200	\$5										
		Fitbit Versa 5	Unit	\$149	80	\$11,920	\$2,384	\$9,536	\$149			Wall Art	Unit	\$25	40	\$1,000	\$200	\$800	\$25			Tea Bags	Unit	\$3	200	\$600	\$120	\$480	\$3										
Electronics	Smartphones	Fitbit Charge 6	Unit	\$129	60	\$7,740	\$1,548	\$6,192	\$129	Clothing	T-Shirts	Basic Cotton Tee	Unit	\$15	500	\$750	\$150	\$600	\$15	Home Goods	Decorative Items	Modern Vase	Unit	\$45	100	\$4,500	\$900	\$3,600	\$45	Food & Beverage	Snacks	Chocolate Box	Unit	\$12	200	\$2,400	\$480	\$1,920	\$12
		Garmin Forerunner 965	Unit	\$349	40	\$13,960	\$2,792	\$11,168	\$349			Graphic Tee	Unit	\$20	300	\$6,000	\$1,200	\$4,800	\$20			Crackers Bag	Unit	\$8	150	\$1,200	\$240	\$960	\$8										
		Garmin Fenix 7	Unit	\$599	30	\$17,970	\$3,594	\$14,376	\$599			Throw Pillow	Unit	\$18	80	\$1,440	\$288	\$1,152	\$18			Coffee Beans	Unit	\$25	100	\$2,500	\$500	\$2,000	\$25										
		Garmin Vivoactive 4	Unit	\$249	20	\$4,980	\$9,960	\$3,920	\$249			Table Lamp	Unit	\$35	60	\$2,100	\$420	\$1,680	\$35			Pasta Box	Unit	\$5	300	\$1,500	\$300	\$1,200	\$5										
		Garmin Vivoactive 3	Unit	\$149	10	\$1,490	\$2,980	\$1,490	\$149			Wall Art	Unit	\$25	40	\$1,000	\$200	\$800	\$25			Tea Bags	Unit	\$3	200	\$600	\$120	\$480	\$3										
Electronics	Smartphones	Garmin Vivoactive 2	Unit	\$99	5	\$4,950	\$9,900	\$4,950	\$99	Clothing	T-Shirts	Basic Cotton Tee	Unit	\$15	500	\$750	\$150	\$600	\$15	Home Goods	Decorative Items	Modern Vase	Unit	\$45	100	\$4,500	\$900	\$3,600	\$45	Food & Beverage	Snacks	Chocolate Box	Unit	\$12	200	\$2,400	\$480	\$1,920	\$12
		Garmin Vivoactive 1	Unit	\$99	5	\$4,950	\$9,900	\$4,950	\$99			Graphic Tee	Unit	\$20	300	\$6,000	\$1,200	\$4,800	\$20			Crackers Bag	Unit	\$8	150	\$1,200	\$240	\$960	\$8										
		Garmin Vivoactive 0	Unit	\$49	2	\$9,980	\$19,960	\$9,980	\$49			Throw Pillow	Unit	\$18	80	\$1,440	\$288	\$1,152	\$18			Coffee Beans	Unit	\$25	100	\$2,500	\$500	\$2,000	\$25										
		Garmin Vivoactive 0	Unit	\$49	2	\$9,980	\$19,960	\$9,980	\$49			Table Lamp	Unit	\$35	60	\$2,100	\$420	\$1,680	\$35			Pasta Box	Unit	\$5	300	\$1,500	\$300	\$1,200	\$5										
		Garmin Vivoactive 0	Unit	\$49	2	\$9,980	\$19,960	\$9,980	\$49			Wall Art	Unit	\$25	40	\$1,000	\$200	\$800	\$25			Tea Bags	Unit	\$3	200	\$600	\$120	\$480	\$3										



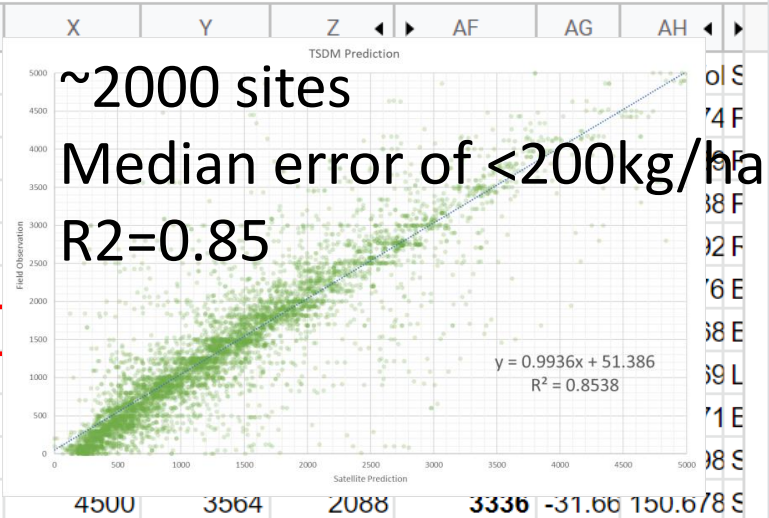
Independent client
validation PRIOR to
Local calibration

So How Good Are The Biomass Predictions?



fx 150.678319

	L	M	N	O	P	Q	R	S	T	U	V	W
1	Endtime	Valid	Prop	Paddock	SiteInfo	SiteInfoL	SiteInfo	SiteInfo	SiteImage	PastureImage	quadrat1	quadrat2
2	04/07/2020 01:15	Yes	Warr	End of Lane	-31.642	150.674	405.58	5	https://cibolabs.a	https://cibolabs.a	5972	1048
3	04/07/2020 02:15	Yes	Warr	Mailboy	-31.639	150.689	539.85	5	https://cibolabs.a	https://cibolabs.a	8320	7244
4	04/07/2020 02:48	Yes	Warr	Mailboy	-31.632	150.688	462.02	5	https://cibolabs.a	https://cibolabs.a	3315	2731
5	04/07/2020 04:23	Yes	Warr	Patersons	-31.617	150.692	421.07	5	https://cibolabs.a	https://cibolabs.a	1980	2070
6	04/07/2020 04:48	Yes	Warr	Sudax	-31.613	150.676	420.37	5	https://cibolabs.a	https://cibolabs.a	3889	1352
7	04/07/2020 05:14	Yes	Warr	Treeless	-31.611	150.668	432.95	5	https://cibolabs.a	https://cibolabs.a	5584	4472
8	04/08/2020 00:24	Yes	Winc	Sth Gangat	-31.658	150.369	377.80	5	https://cibolabs.a	https://cibolabs.a	6200	7100
9	04/08/2020 01:07	Yes	Winc	Sth Windy Ridge	-31.645	150.371	364.43	5	https://cibolabs.a	https://cibolabs.a	4698	4428
10	04/16/2020 01:31	Yes	Warr	Middle Heifer Nth	-31.600	150.698	386.38	5	https://cibolabs.a	https://cibolabs.a	2490	2310
11	04/16/2020 05:37	Yes	Warr	Ryegrass	-31.663	150.678	383.82	5	https://cibolabs.a	https://cibolabs.a	2892	3912



Publicly Available and Secure Mobile Pasture Apps

7:54

Pasture Biomass Collector

Transect Sampling Type *



Default is 'Dry Matter' sampling

☐ Wet Weight Sample ☒ Dry Weight Sample

☐ Platemeter Sampling

Transect Image *

Take photo looking along intended direction of Transect

Quadrat Size *



Default is '0.25' sampling

☒ 0.25 Quadrat Used ☐ 0.10 Quadrat Used

▼ Transect Quadrats

Pasture Image

Optional - photo looking down (at elbow height) for paddock surface

TSDM (kg/Ha) *

Total Standing Dry Matter as kg/Ha estimate for location

Estimate Pasture Height (cm)

✓



7:55

Pasture Biomass Collector

WALK TO THE NEXT LOCATION BEFORE CLICKING '+' BUTTON

Walk to next location BEFORE clicking the '+' button, as this will record the GPS coordinates

► Auto Populated (read only)

 1 of 1 

Count of Quadrat(s) *

Minimum of 5 points (view only)

Average TSDM (kg/Ha) for Transect

Average calculated based on transect point data (view only)

Average Pasture Height (cm)

Pasture Height (Average of Transect)

▼ Site Information

Dominant Species *

Please use the common name of species. If ground use 'Bare' and if not listed use 'Other'

✓

7:55

Pasture Biomass Collector

▼ Site Information

Dominant Species *

Please use the common name of species. If ground use 'Bare' and if not listed use 'Other'

Co-dominant Species

Please use the common name of species

Sub-dominant Species

Free text for multiple pasture names (separate with comma)

Unpalatable Species (%)

Percentage of Total DM that is Unpalatable Species (Average of Site)

Unpalatable 3P Species (%)

Percentage of Total DM that is old, rank 3P biomass (Average of site)

✓

- Available for free
- Data owned by the producer
- Cibo provide secure access to owners data
- Cibo licenced for internal uses and model development.

“Intelligent” photo library being developed


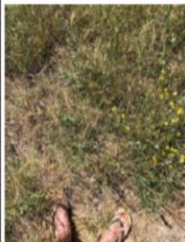



Pasture Biomass Image Library - Achilles Hill.		
Submitted By: nhenry@cibolabs.com.au - Submitted Time: February 23, 2021 11:18 AM		
Dominant Species: Kikuyu with Co-dominant: Low-THC Hemp		
Sample Id	Kik001	
Sample Type	Low	
Quadrat Green Fraction (%)	90	
Pasture Height (cm)	70 cm	
Wet Weight (grams)	140	
Dry Matter (%)	45	
TSDM (kg/Ha)	2,360	
Dominant Species: Kikuyu with Co-dominant: Low-THC Hemp		
Sample Id	Kik002	 
Sample Type	Moderate	
Quadrat Green Fraction (%)	25	
Pasture Height (cm)	51 cm	
Wet Weight (grams)	200	
Dry Matter (%)	70	
TSDM (kg/Ha)	5,360	
Dominant Species: Kikuyu with Co-dominant: Low-THC Hemp		
Sample Id	Kik003	 
Sample Type	High	
Quadrat Green Fraction (%)	30	
Pasture Height (cm)	83 cm	
Wet Weight (grams)	300	
Dry Matter (%)	65	
TSDM (kg/Ha)	7,560	

Photo reference in on device

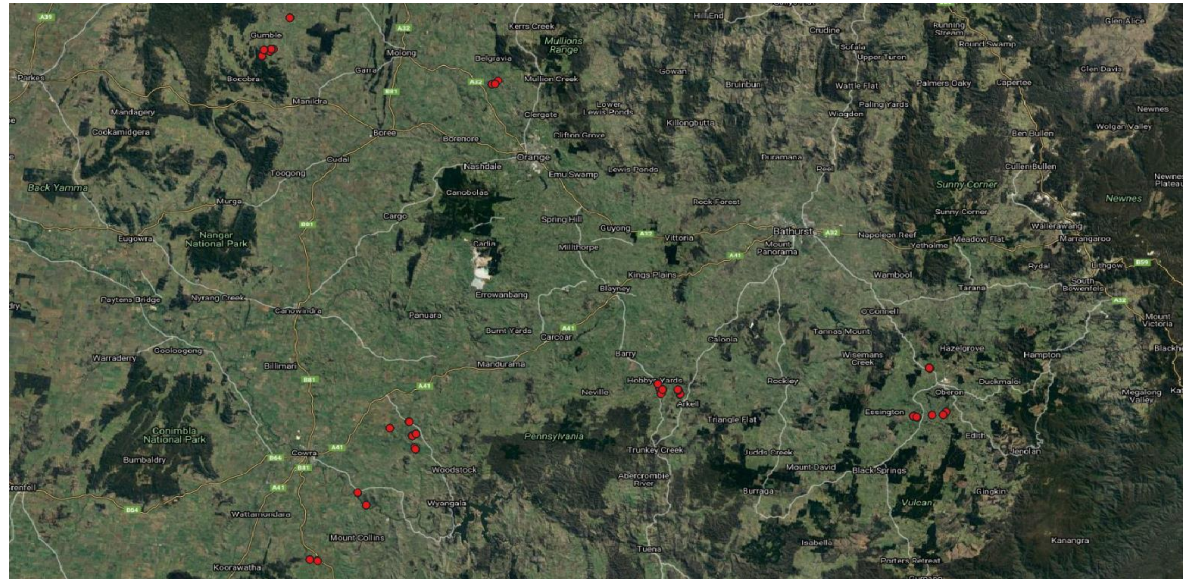


Computer Vision being developed to predict biomass directly from smart device

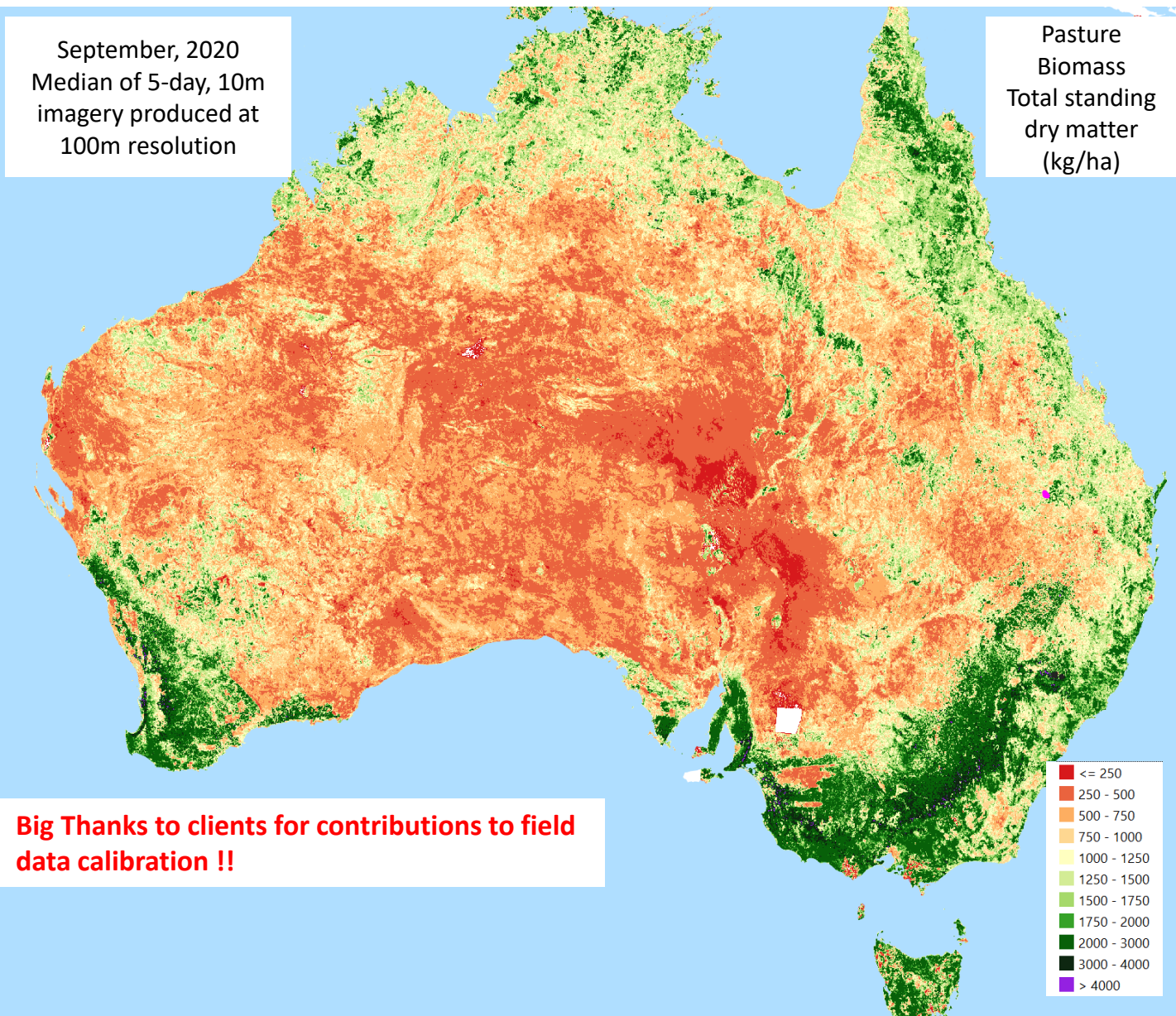
Complete revision of southern model underway



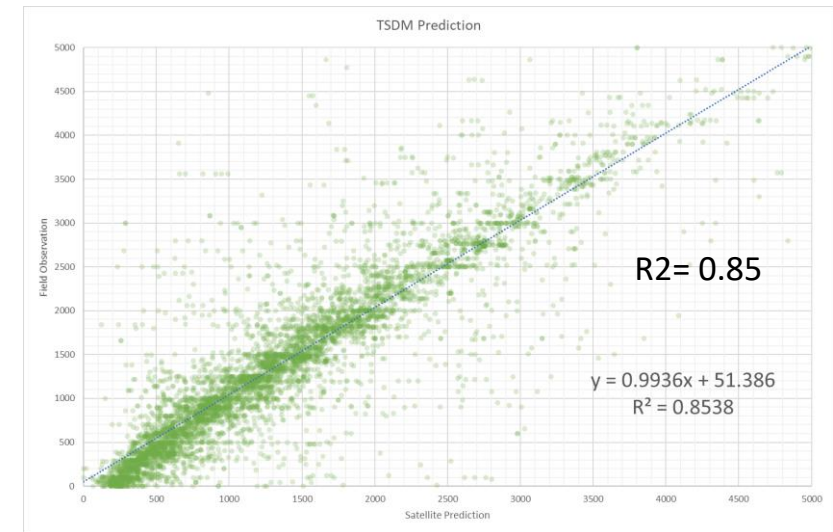
- Southern model currently under-predicting due to “drought data”
- ~1000 additional pasture site collected through collaboration 2018-20, including ~500 during cracker 2020 season
- Integrated northern and southern model planned for mid-2021



Paddock to Nation Biomass Predictions every month



- ~2000 northern pasture sites
- Sentinel-2, 10 bands + woody density
- 50% of the data held back for cross validation
- Median error of 190kg/ha
- Notice woody cover effects minimised

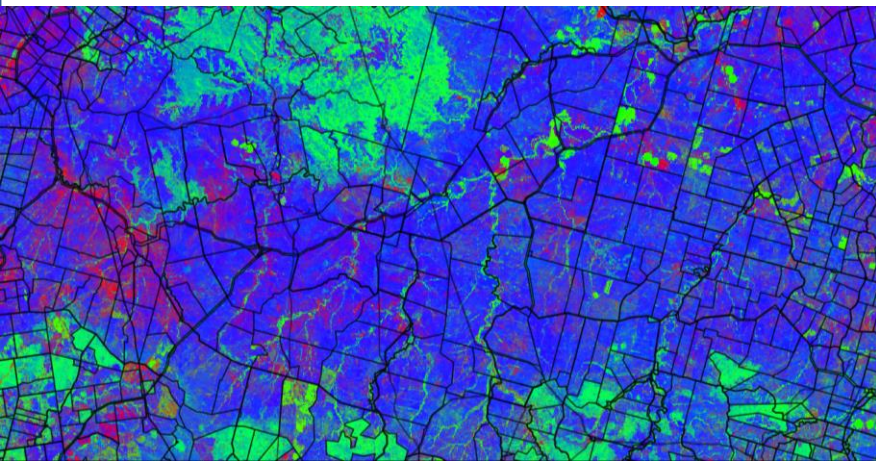
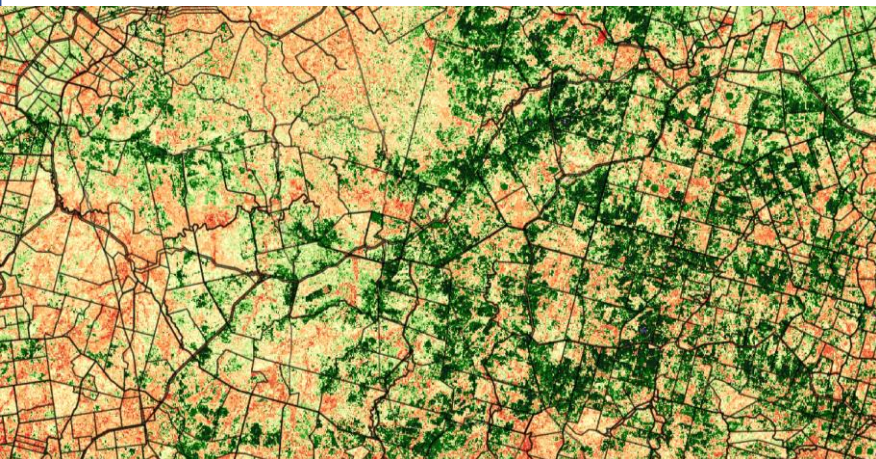
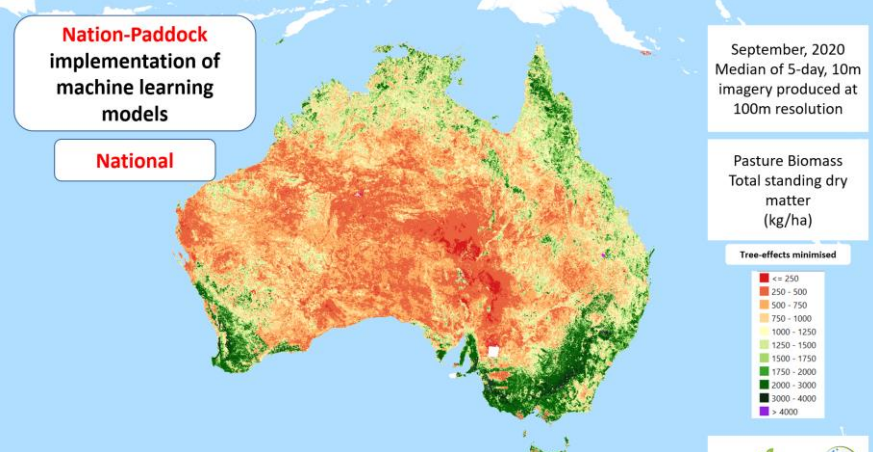




Satellite Assisted Forage Budgeting

Take control of your stocking rates





Take Home Messages

- We have demonstrated the ability to seamlessly scale from paddock to national levels. Commercial service likely to exceed 50 Mha per week of paddock level predictions.
 - National monthly 1ha national biomass and fractional cover products coming in 2021 and has the ability to provide data services to other government platforms.
 - On-demand access to RS products for every property in Australia is here through the MyFarmKey. Benchmarking Tree cover, ground cover, carbon potential and pasture biomass.
 - MyFarmKey outcomes the limitations of the PIC register and offers immediate value to a producer.
 - The old “research paradigms” of often no longer valid – Cibo Labs uses a “living laboratory approach”.
 - There are no excuses for not using GPS-based mobile apps.
 - Research organisations need to stop using publicly funded research to compete against and duplication industry capabilities that are rapidly developing as largely self-funded commercial services developed in partner with producers. Collaborate...DON’T duplicate.
 - Ongoing and increasing collaborative projects focused on both innovation and adoption through B2B collaboration is where value will be generated.
 - Still plenty of work to do:
 - Commencing work in pasture quality, land condition and automated land type prediction.
 - Integrated forage budgeting tools
 - PGS Satellite Assisted Forage Budgeting program is ready to role out but needs to engage with more with southern providers (post-COVID)
 - Expanding carbon and sustainability accreditation products rapidly developing.
 - Access to standaised digital farm mapping is a huge barrier to adoption and system integration.
- We still need to get the SIMPLE THINGS RIGHT**

Thanks for your time



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