



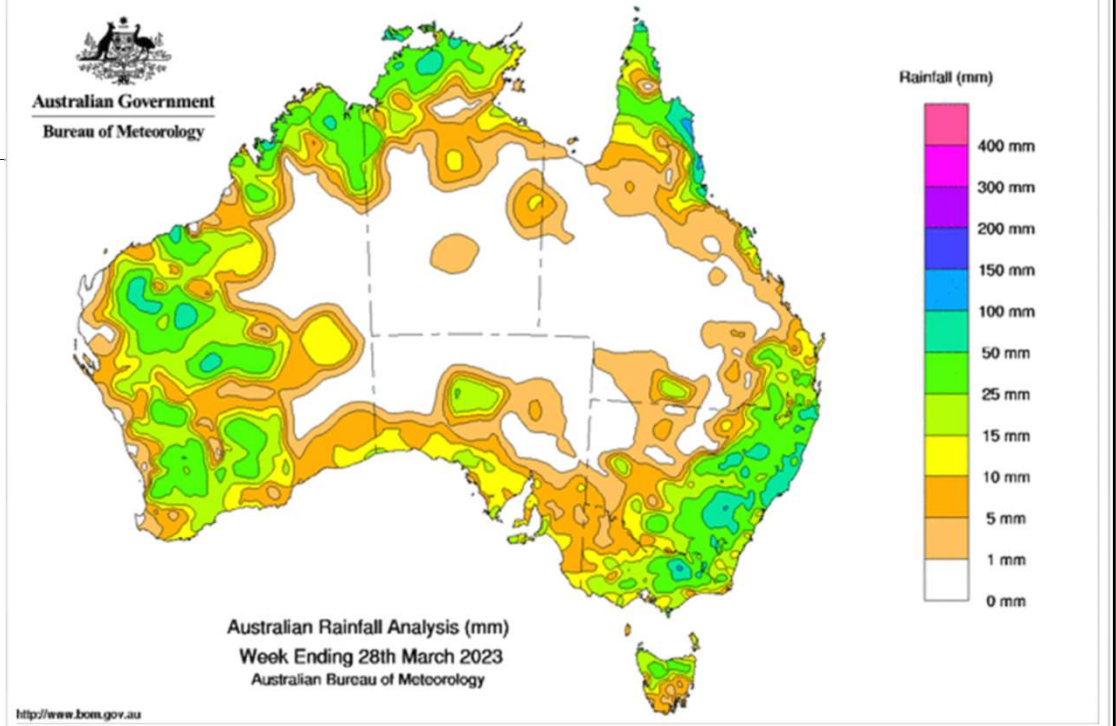
TFS Autumn Seasonal Update

The Collective
Goulburn 31 March 2023

Matthew Lieschke
Senior Agricultural Advisor | Goulburn

Weekly rainfall totals

Week ending 28 March



Local Land Services

Source: BOM

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Recent rainfall has been ideal – staggered over a number of days and mild/overcast conditions in-between rain events.

This will result in a good germination and establishment of clover and annual grasses which will be a big positive for both pasture quality (clover) and winter growth rates (annual grasses). Pasture quality will be better than last winter which will have a positive impact on livestock health and performance.

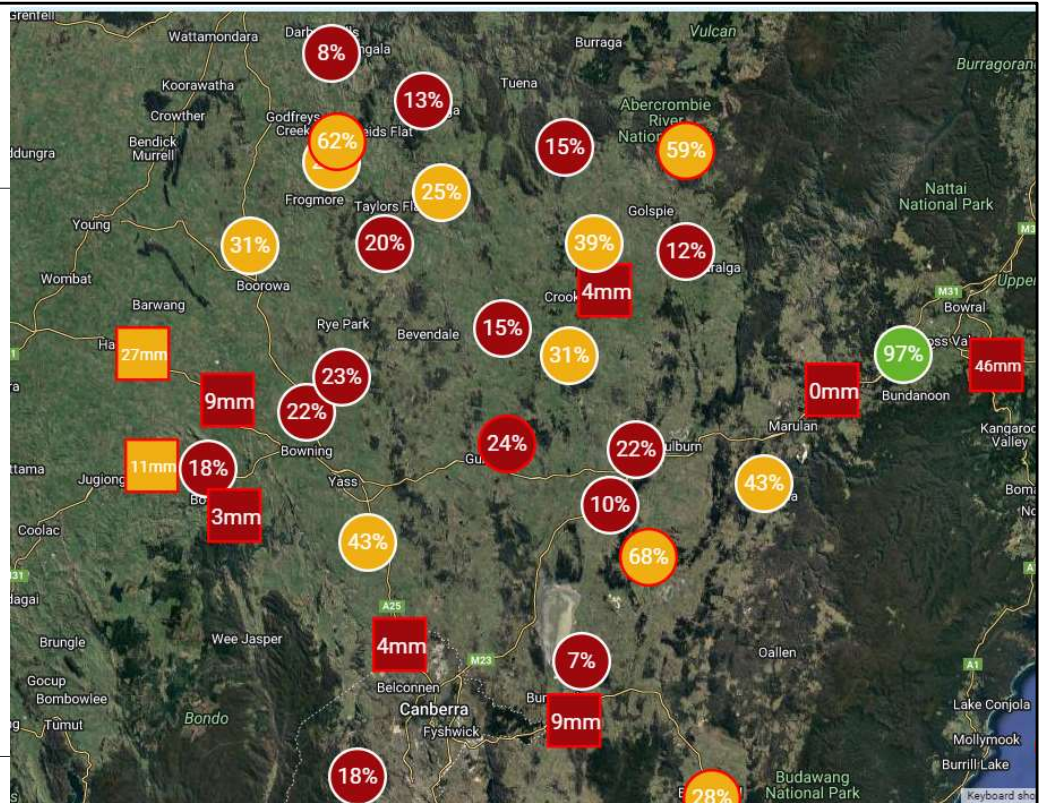
(as of 27 March)

 Soil Probe
 Modelled rainfall
 (gridded data)
 BOM station

Map of New South Wales showing the distribution of 2015-16 average annual rainfall (mm) for 100 randomly selected locations. The map uses a color scale from blue (low rainfall) to red (high rainfall). Rainfall values are shown in colored boxes: purple for values above 100 mm, blue for values between 50 and 100 mm, and light blue for values below 50 mm. Some locations are marked with red circles, indicating values outside the main scale. The map includes major roads (A1, A11, A25, M23, M31) and geographical features like the Murrumbidgee River and various national parks.

Location	Rainfall (mm)
Bigga	116
Tar	44
Cwell	76
Glnb	59
Gun	71
79.4	79.4
114.2	114.2
165.2	165.2
116	116
141	141
145	145
118.6	118.6
90.8	90.8
78.5	78.5
74.6	74.6
82.6	82.6
101.2	101.2
68	68
73.2	73.2
82.6	82.6
53.9	53.9
107.6	107.6
86.4	86.4
108.6	108.6
49	49
87.2	87.2
70.8	70.8
48.8	48.8
70.2	70.2
61.1	61.1
56.3	56.3
80.8	80.8
47.2	47.2
79.8	79.8
74.2	74.2

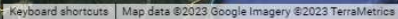
Soil moisture prior
to the recent rain
(19 March)



Local Land Services

This is what the moisture probes were showing 10 days ago before the rain started. Lots of red dots on the map.

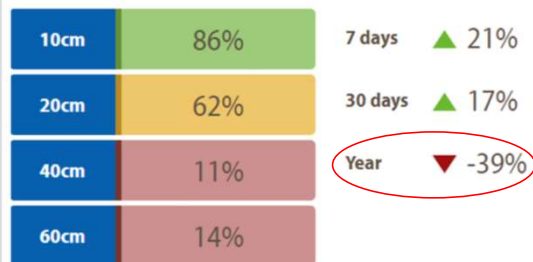
Local Land Services



The crossed out sites are those with Modem issues and haven't been updated since early December last year.

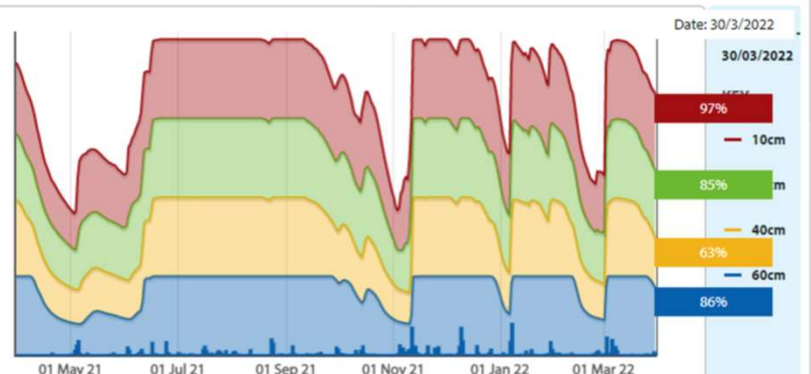
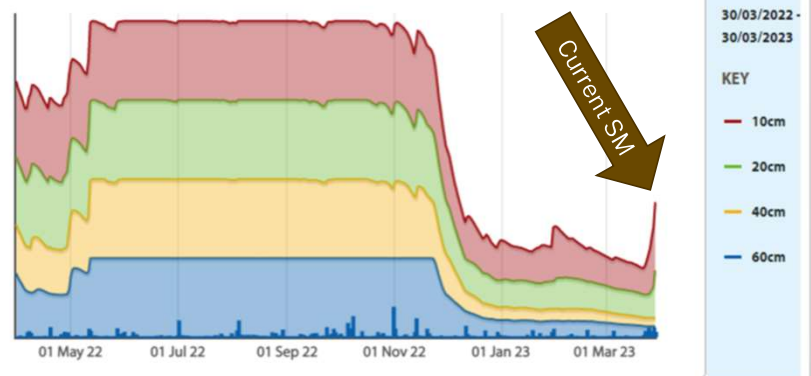
Goulburn

Soil Moisture



Site	Recent rain (21-29 Mar)	March total
Probe:	41 mm	49 mm

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The LHS graphic shows SM right now, but the probe history graph is always interesting to look at because it paints a clearer picture of what's actually going on.

Goulburn site - Guy Milson property in a Phalaris, clover and annual grass pasture.

What does the historical graph show? It shows with the recent rain there is now really good SM down to 20cm, but still very dry at 40 and 60cm – the yellow and blue bands haven't shifted.

Overall, the top 60cm is much drier compared to this time last year, largely due to the lack of sub-soil moisture at present (compared to last year).

But the good news is the recent rain has provided a very timely break to the season and small rainfall events are now valuable. Even a 5mm event is now valuable in keeping the surface moist and young plants going, whereas if we didn't get the recent rain a 5mm event in early April would have been useless. Now that temperatures are starting to cool down it won't take much to keep things going.

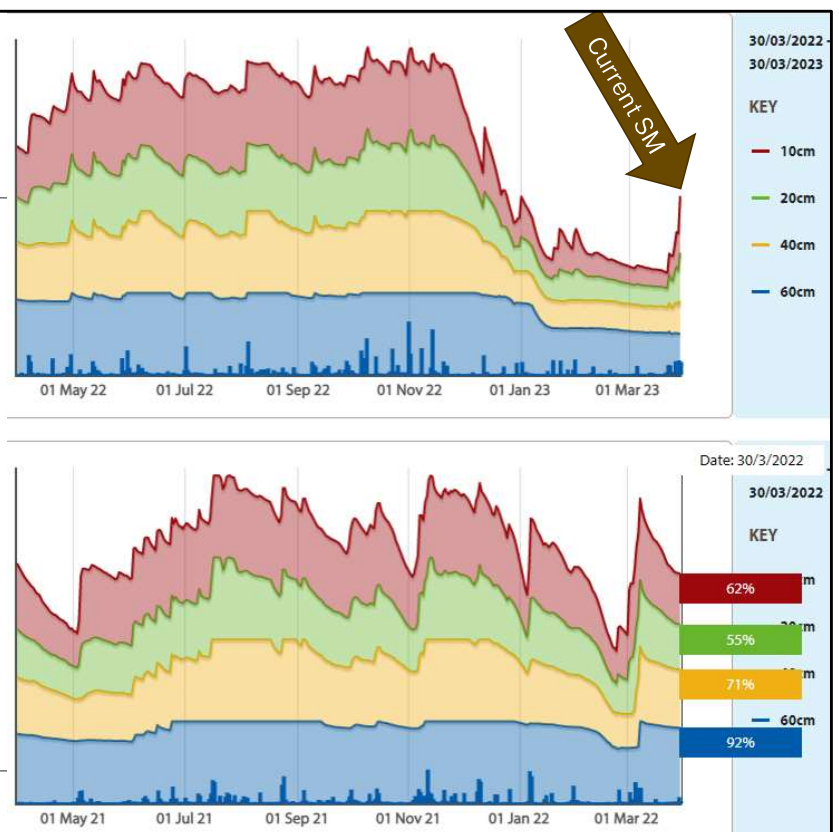
Bannister

Soil Moisture

10cm	69%
20cm	59%
40cm	40%
60cm	50%

Change

7 days	▲ 18%
30 days	▲ 21%
Year	▼ -16%



Site	Recent rain (21-29 Mar)	March total
Probe:	70 mm	83 mm

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Now dealing with a basalt soil at Bannister. Bigger, heavier soil with more clay content and hence it takes more rainfall to wet up, but this site has also appears to have had a bit more rain.

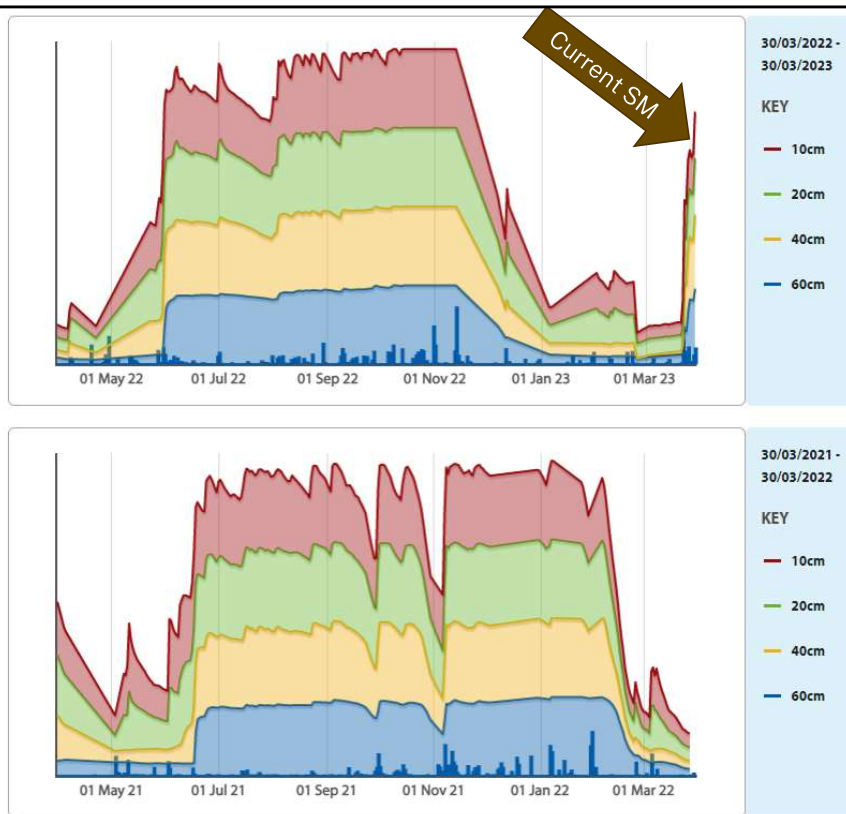
Like Goulburn, starting to see some really good SM in the top 20cm. There's been a very small response at 40cm. Year on year comparison is shows that soil moisture in the top 60cm is not far off where this site was sitting 12 months ago. SM is actually slightly better at 10 and 20cm. Overall, very good rain and looking very positive.

Bigga



Site	Recent rain (21-29 Mar)	March total
Probe:	100 mm	114 mm

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Now moving to our most northern site at Bigga. More rain again and over 110mm for the month.

Can see a big spike in SM levels down to 60cm. This soil is a coarse sandy loam, so water tends to move through the soil quite freely which is why we are seeing the big responses deeper down in the profile. The downside is there isn't much clay in the sub soil, which limits water holding capacity.

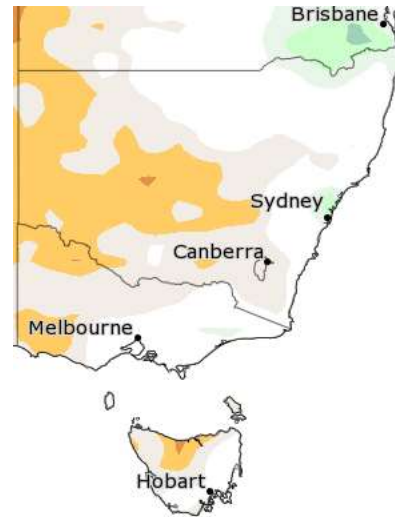
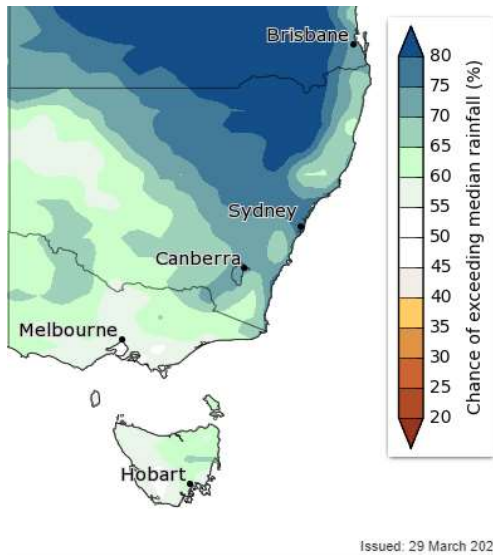
At this site current SM is much better compared to this time last year.

It might seem surprising, but there are a number of sites in the network that have much better SM right now compared to this time last year (Bigga, Crooked Corner, Rugby, Boorowa). Wheeo and Laggan are sitting around the same SM as 12 months ago.

Bureau rainfall outlook: April

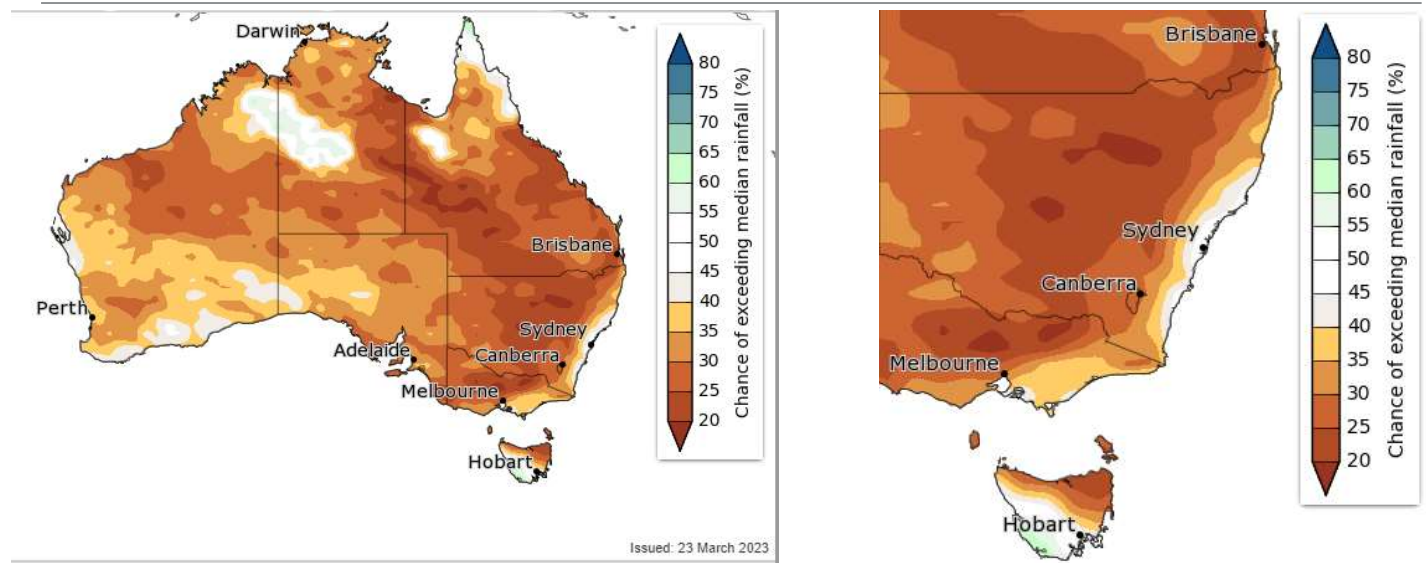
3 Apr – 9 Apr

April



April not looking as pessimistic as forecasted a month ago, looks to be a bit of moisture hanging around for at least the first half of April which will be good to consolidate this break, especially for annuals that are establishing their root systems.

Bureau rainfall outlook: May



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The El Niño–Southern Oscillation (ENSO) is currently neutral, but BOM are forecasting a strong El Nino to develop in the coming months, hence the dry May rainfall forecast. This is when the influence of El Nino is expected to start kicking in.

It will be important to keep an eye on El Nino development in the coming months to see how strong it is going to be and where it ends up sitting in the Pacific Ocean. Will also be important to keep an eye on the IOD as this also has a significant role on our winter/spring rainfall (currently neutral).

Now that we have a start, we won't need a lot of rain to keep things ticking over for the remainder of autumn and through winter. A drier than normal winter might be a positive for animal health. The downside of a dry winter is it places a lot of pressure on spring rainfall. Watch to see how things unfold in the coming months. The end of August will be an important assessment point re soil moisture and the spring forecast.

Pasture growth – looking ahead...



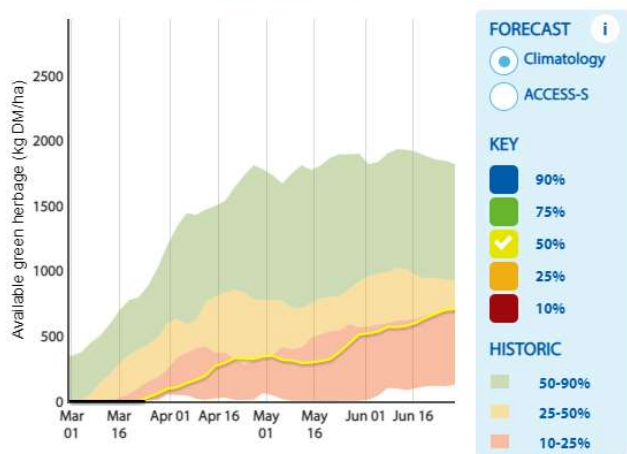
Pasture Forecast

Last Update: 4 days ago

Goulburn

Provided by CSIRO

Projected green herbage available relative to historic variation



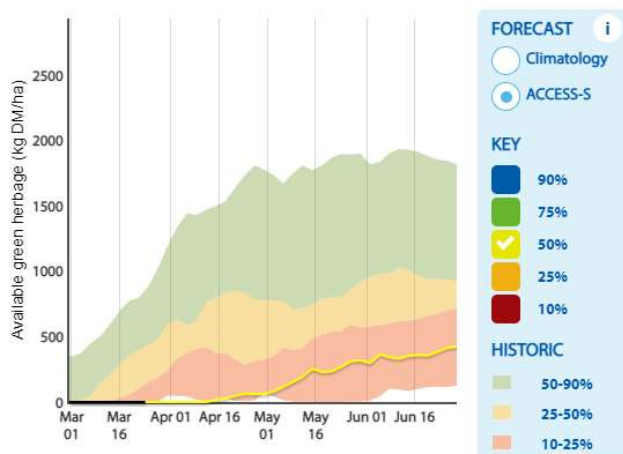
Pasture Forecast

Last Update: 4 days ago

Goulburn

Provided by CSIRO

Projected green herbage available relative to historic variation



The pasture forecast will be updated at the start of April, normally around the 3rd or 4th of the month. Keep an eye out for the update – the April forecast will look a lot more positive than the current forecast.

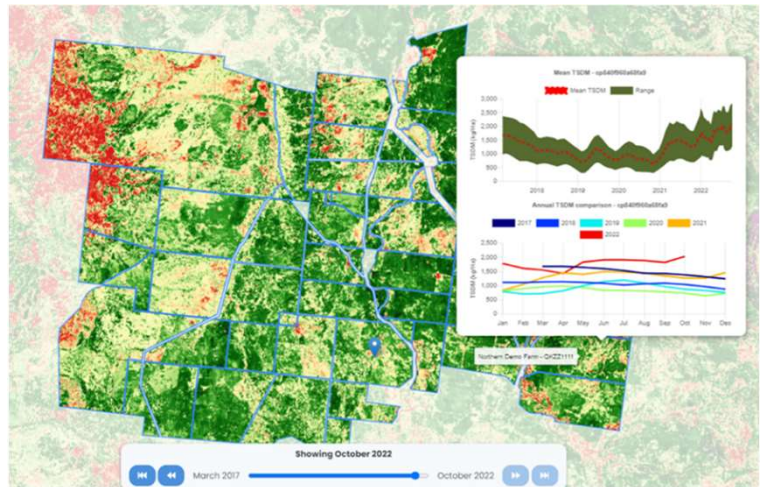
The projection lines give us a sense of the likely range in **green herbage** over the next 3-4 months. Sometimes it's easier to turn off the projection lines and just look at them individually. Given the long range rainfall outlook you might look at the 50 and 25 percentile lines.

Climatology is based on history – i.e. applying the last 30 years of climate data for that location. ACCESS-S is applying forecast climate data. The ACCESS_S version will look a bit more negative due to the current forecast for below median rainfall.

Pasture growth – looking ahead...

Pasture growth will be variable across your property depending on:

- **Soil moisture**
rainfall amount/intensity; ground cover, slope, soil type/depth
- **Fertiliser history**
- **Amount of shading from dead pasture**



For good germination and growth we need light getting to ground level and hitting the solar panel of the new green material. Managing pasture overburden has been an ongoing challenge for the last 2 years and continues to be a challenge on some properties.

The amount of shading will be better in some paddocks than others, so it's important to think through what paddocks will you be relying on this year and have a close look at what's going on.

Key paddocks will be lambing/calving, finishing, weaning paddocks etc. If you are running sheep and scanning, highest priority are future twinning paddocks due to higher nutrient requirements of these ewes, especially in the first 6 weeks of lactation.

Pasture growth – looking ahead...

Assessing the impact of shading...

Priority paddocks - look down into the pasture – what percentage of ground is light getting to?

If light is only getting to ~ 40% of ground, it's worth trying to do something to 'open up' the pasture

- Crash grazing (dry/adult stock). Cattle better suited than sheep.
- Slashing/mulching



If you are lambing or calving in late winter or spring, one of the big advantages right now is you can use cows or ewes in early pregnancy, to crash graze paddocks to open them up a bit. The new green growth coming through means stock will do better, but will make it more difficult to clean up the old feed, especially with sheep.

Even if sheep don't eat much of the old feed, there will be benefit through knocking some of the dead feed down so it comes into contact with the soil and starts to break down.

Don't aim for perfection. If you've got several paddocks to graze back, you are better off doing a reasonable job and moving on to the next paddock rather than spending an extra 2 weeks trying to get the paddock in a perfect state.

Nutrition – what can we expect from pastures this year?



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Because pastures contain a mix of green and dead, it makes it quite difficult to accurately assess pastures and predict livestock performance.

In winter last year we sampled and tested a wide range of pastures to get a feel for where they were sitting in terms of nutritional value.

Pasture test results | Green only | Winter 2022



Location	Pasture type	Green/dead	Digestibility (%)	Energy (MJ/kg DM)	Crude Protein (%)	Dry Matter (%)
Gunning	Phalaris	GREEN	70	11.2	18.6	16.4
Bookham	Micro/dan	GREEN	70	11.2	30.0	21.4
Laggan	Micro/dan	GREEN	70	11.3	21.0	28.2
Bookham	Fog Grass	GREEN	70	11.3	23.9	24.7
Roslyn	Fescue	GREEN	69	10.9	16.8	26.2
Taralga	Per Ryegrass	GREEN	66	10.5	20.2	25.1

All green samples were from temperate species. The results from the lab are what we expected to see at this time of the year, with the green component sitting around 70% digestible.

Pasture test results | DEAD ONLY | Winter 2022



Location	Crop type	Green/dead	Digestibility (%)	Energy (MJ/kg DM)	Crude Protein (%)	Dry Matter (%)
Piambong	Phalaris	DEAD	48	6.8	7.2	57.0
Roslyn	Fescue	DEAD	44	5.9	6.8	69.7
Bookham	Micro/dan	DEAD	40	5.1	6.2	82.0
Piambong	Red Grass, Pdk lovegrass, slender rats tail, panics	DEAD	39	4.9	6.3	81.7
Mendooran	Wire grass, panic, slender rats tail, native lovegrass	DEAD	39	4.8	5.2	72.6

As expected, the results are also showing the dead feed is very low in digestibility, energy and protein.

Native pasture, Gunning

- Native pasture containing mainly Microlaena, Wallaby Grass and some carry-over dead Red Grass
- Sample was mainly green leafy material **but also contained approx 20 - 25% dead pasture**

Test Description	
Digestibility (DOMD)	50%
Energy (MJ/kg DM)	7.1
Crude Protein (%)	15.4
Dry Matter (%)	32



The key message here is that a relatively small amount of dead feed in the bag can make a big difference to the overall test result.

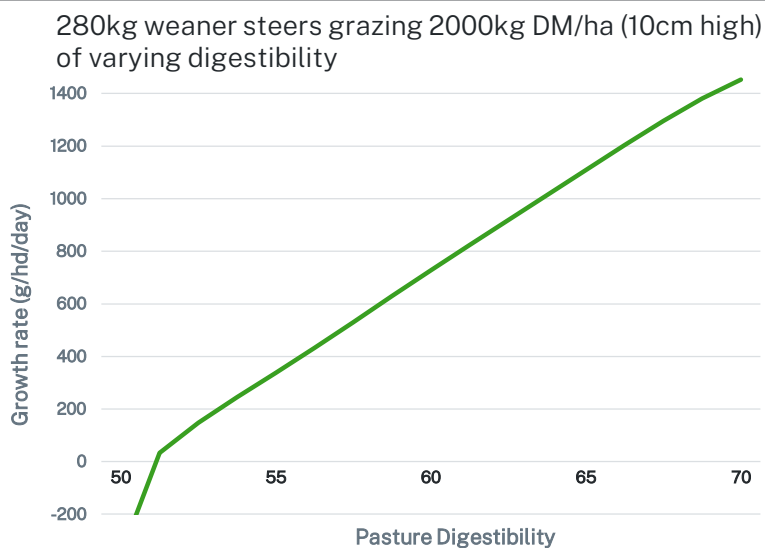
The danger in this scenario is you could look at this result and think the green feed has no guts in it, but it's the dead feed that's the issue. So the question then becomes, how much green is in the paddock and can the stock access the green without having to consume dead as well.

Weaner sheep and cattle

- Young stock will benefit from new growth
- **Height and availability of the green component** will determine growth rates
- Recent rain has been ideal for worm eggs to hatch → continue to monitor worms closely
- Consider future use of 'weaner' paddocks as infective larvae can survive over winter → lambing/calving paddocks?



Weaner steers: impact of digestibility



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Source: Grazfeed

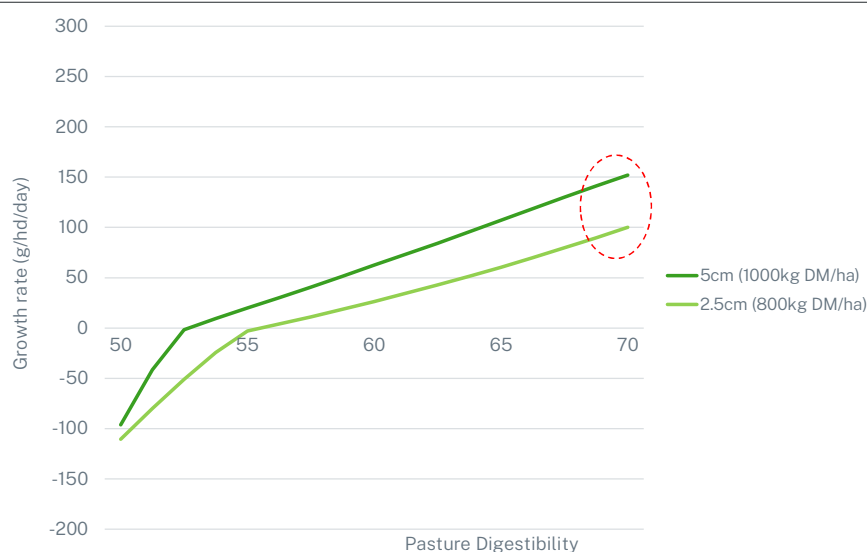
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Weaner performance will be driven by height of the green component and how much dead feed they have to take in trying to access the green.

Assumptions

- Weaners steers are 280kg (lwt)
- 550kg mature cow weight, British breed
- Pasture contains 2000kg DM/ha (10cm in height) of varying digestibility

Weaner lambs: impact of digestibility



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Your target growth rate (and feeding rate) will be driven by the current weight of your weaners. The lightest ewe weaners need to reach 25 kg (minimum) by 1 June if they are to reach a 40kg joining weight by Feb/ March next year.

80g/day is seen as a rough rule of thumb to keep merino weaners going forward and to put on between 2.0 and 2.5kg/month. To achieve this on high quality green feed (68% digestibility or better) you need at least 2.5cm of height in the green component.

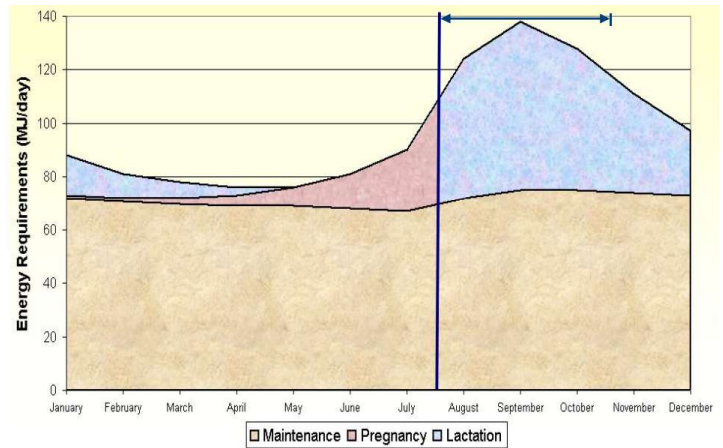
Assumptions

- Merino lambs are 30kg lwt @ 7months of age
- Merino lambs are out of a 55kg mature wt

Cows: energy requirements

- Late winter/early spring calving herds → autumn is lowest nutrient requirement
- Autumn calving herds → carefully assess pastures and supplement if required

Energy requirements of 550kg British Breed Cow (calving 1 August)



One of the big benefits at present if you are a late winter or early spring calving system is the cow nutrient requirements are at their lowest point. Weaning is it gives you greater flexibility and control as a manager. Weaners can go onto best pastures and cows can be allocated to priority paddocks and start doing a clean up job.

In contrast, if you are an autumn calver, then your nutrient requirements are at their highest point during autumn and you are under a lot more pressure at present. Need to carefully assess pastures for lactating cows and supplement if required.

Cows and calves: summary of the first 8 weeks of lactation

Pasture Digestibility	Cow Lwt change (kg)	Cow fat score change	Calf Lwt (kg)	Calf Ave Growth Rate (kg/hd/day)
55	-83	-1.0	70	0.6
60	-60	-0.7	95	1.0
65	-35	-0.4	107	1.2
70	-11	-0.1	115	1.4

Using Grazfeed, this table shows the overall impact of digestibility for the first 2 months of lactation – i.e. what is the predicted cow and calf performance if digestibility of the diet was held constant at varying levels during the first 2 months of lactation. Nutrition is really important in the first 2 months as it not only sets up the foundation for lactation but it also affects the speed of which cows start cycling again for the next joining.

Assuming quantity isn't a limiting factor, if cows have access to pasture that is 65% digestible or above (i.e minimal dead feed in the diet), then we can expect good performance.

Prograze benchmarks for sheep and cattle

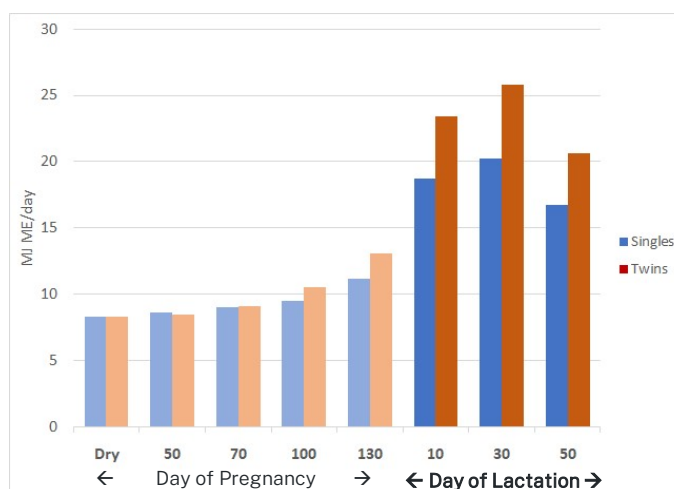


	Pasture digestibility (green)		
Sheep Class	75%	68%	60%
Dry sheep	400	600	1200
Pregnant ewes			
mid	500	700	1700
last month	700	1200	ns
Lactating ewes			
single	1000	1700	ns
twins	1500	ns	ns
Growing stock, % of potential growth			
30 [116 g/d]*	400	700	1700
50 [194 g/d]	600	1000	ns
70 [270 g/d]	800	1700	ns
90 [348 g/d]	1600	ns	ns

	Pasture digestibility (green)		
Cattle Class	75%	68%	60%
Dry cow	700	1100	2600
Pregnant cow (7-8 months/ not lactating)	900	1700	ns
Lactating cow + 2 mth old calf	1100	2200	ns
Growing stock, % of potential growth			
30 [0.45 kg/d]*	600	1100	2900
50 [0.76 kg/d]	800	1600	ns
70 [1.07 kg/d]	1200	2600	ns
90 [1.37 kg/d]	2200	ns	ns

Sheep: energy requirements

- For both single and twin-bearing ewes, nutrient requirements are similar to a dry sheep up until scanning (~ day 80 - 90 of pregnancy)
- Autumn lambing flocks → carefully assess pastures and supplement if required



Autumn lambing



SINGLES: Summary at end of 6 weeks

Digestibility	Ewe Lwt change (kg)	Ewe FS Change	Lamb Lwt (kg)	Lamb Ave GR (g/hd/day)
55	-6.4	-1.2	11.7	124
60	-4.0	-0.7	15.6	217
65	-1.1	-0.2	17.2	255
70	1.3	0.2	18.2	278

TWINS: Summary at end of 6 weeks

Digestibility	Ewe Lwt change (kg)	Ewe FS Change	Lamb Lwt (kg)	Lamb Ave GR (g/hd/day)
55	-10.3	-1.9	9.1	61
60	-8.0	-1.5	12.0	131
65	-5.0	-0.9	13.4	165
70	-2.1	-0.4	14.2	182

Similar table to last time, this time we are dealing with Merino ewes. Table on LHS for singles and RHS for twins.

As with cattle, we see a big drop off in performance once digestibility falls below 65%, especially with twin bearing ewes.

Summary



Right now

- Recent March rain has been ideal (timing, amount, pattern)
- Good soil moisture = small amounts of rain are now valuable
- Young stock will benefit from new, high quality green feed → performance will depend on height and availability of green component
- Assess high priority paddocks – crash graze/mulch ASAP if shading is an issue

Looking further ahead

- Keep an eye on El Nino development in the coming months
- Assess conditions at the end of winter to see how spring is shaping up → soil moisture, BOM forecast

Coming up



Livestock Market Outlook with Simon Quilty

Thurs May 18 2023

