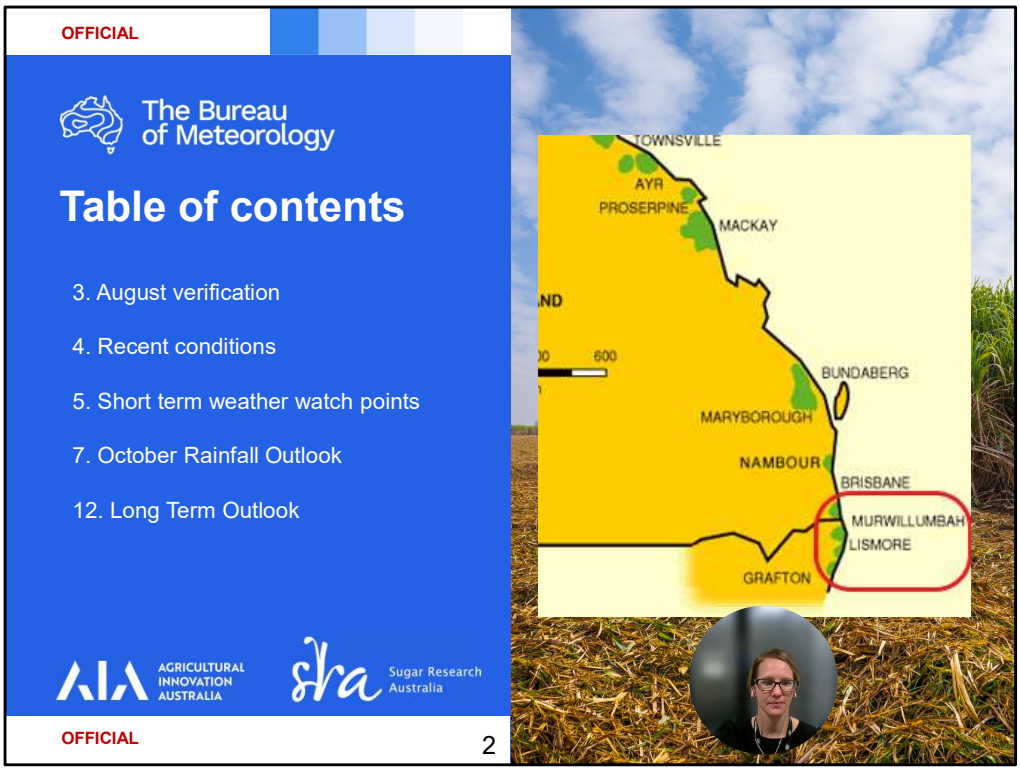
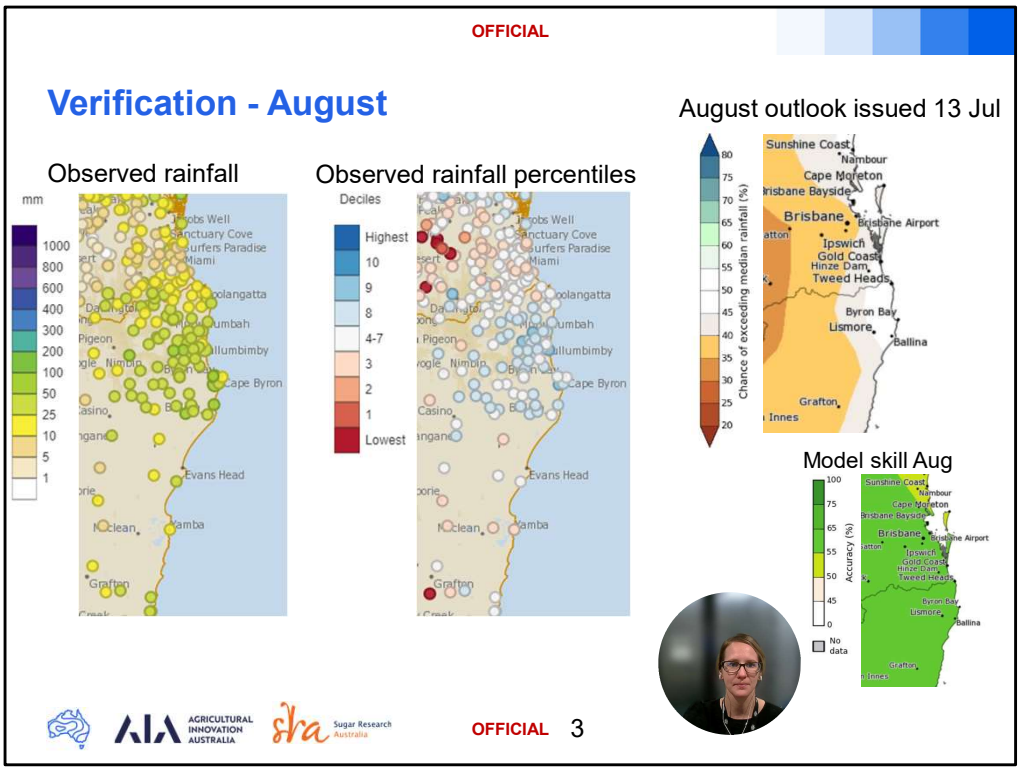
Hello and welcome to the latest update of the Sugarcane Rainfall Outlook for the Southern (Gold Coast and NSW) Sugarcane District

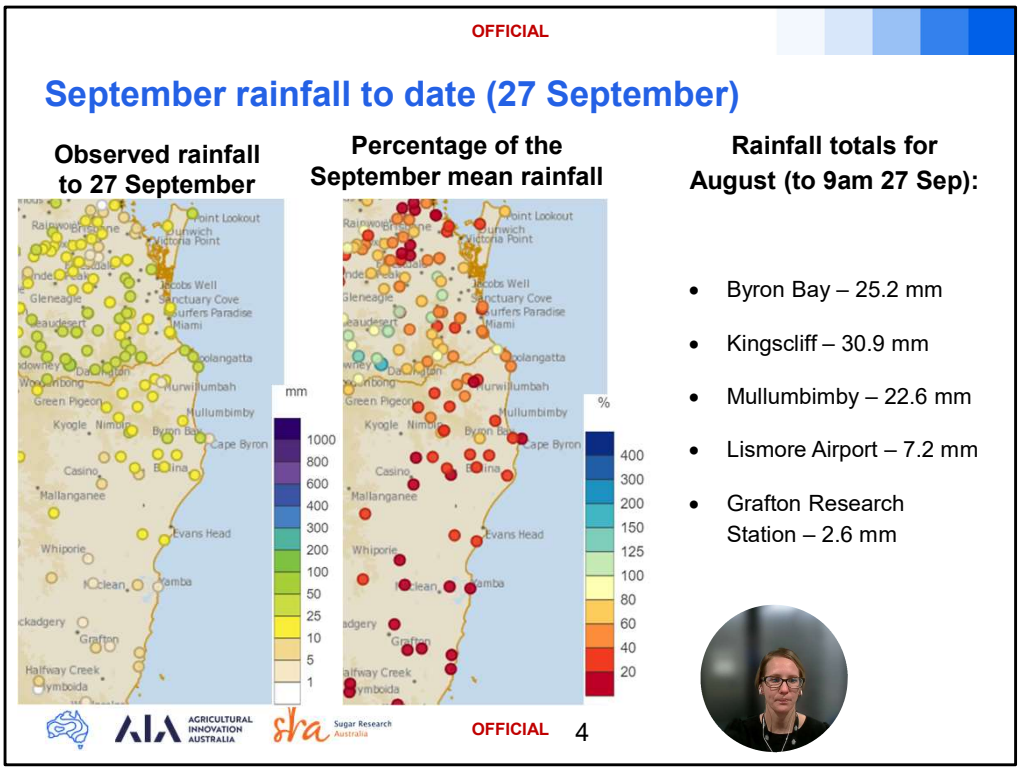


In this issue we will investigate into how the ACCESS-S model verified for rainfall over August before covering September rainfall to date. We'll then look into the short-term weather watch points before seeing what the ACCESS-S and international rainfall outlooks have in store over the coming months.

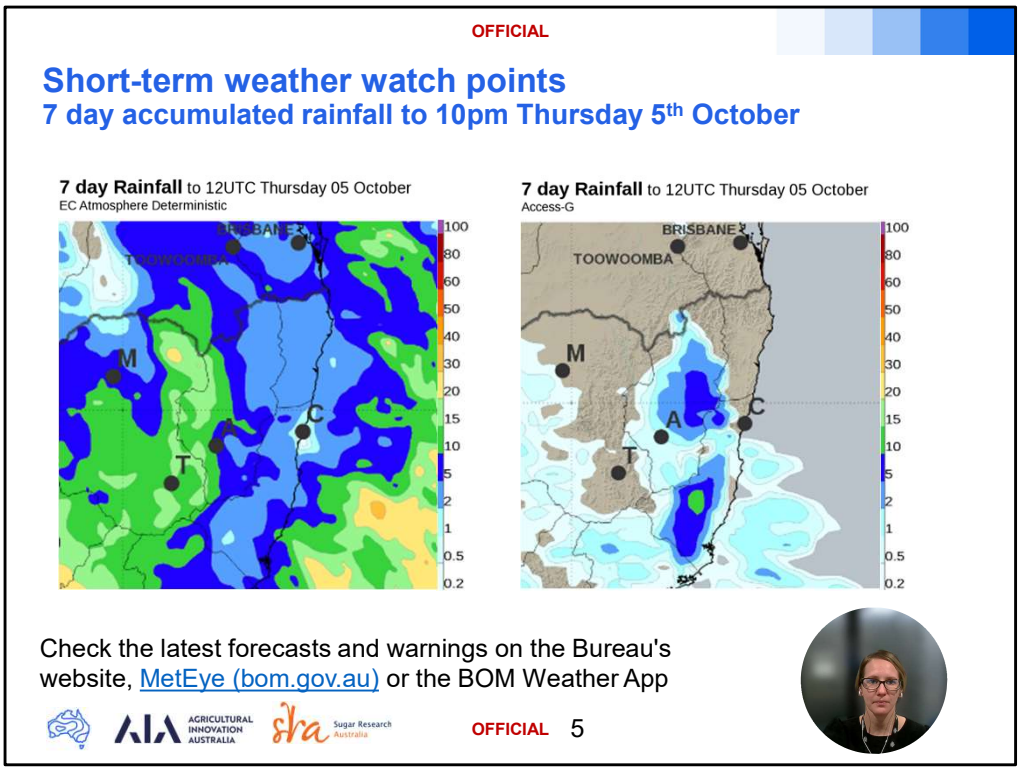


So how did the Bureau's long-range ACCESS-S model perform over the month of August? On the left we have the observed rainfall for August, in the middle panel we have those rainfall totals converted to rainfall percentiles or deciles (with white dots representing near-median rainfall, darker blue dots above median rainfall and darker red dots below median), , and on the right we have the ACCESS-S August outlook issued on the 13th July with the accompanying skill map. We can see that ACCESS-S has moderate skill of 55-65% past accuracy for the month and

was forecasting average (or 45-55%) chance of exceeding median August rainfall near the coast between the Gold Coast and Ballina region, and a low chance (35-45%) of exceeding median rainfall south of Ballina along the Richmond and Clarence River growing regions. In the middle panel we can see the colour of the dots ranged from light red and white over the Gold Coast, Richmond and Clarence River growing regions and light blue and white across the Tweed/Northern NSW growing regions. Generally, the ACCESS-S model on the whole performed well with August remaining climatologically dry for the growing region, with most locations falling short of their average August rainfall. However, there were some very localised locations along the Brunswick River which recorded above average rainfall across August, which was not well captured by the models. These can be traced back to a few thunderstorms events which occurred in the region during August, and this level of detail is beyond the limitations of the seasonal ACCESS-S model.



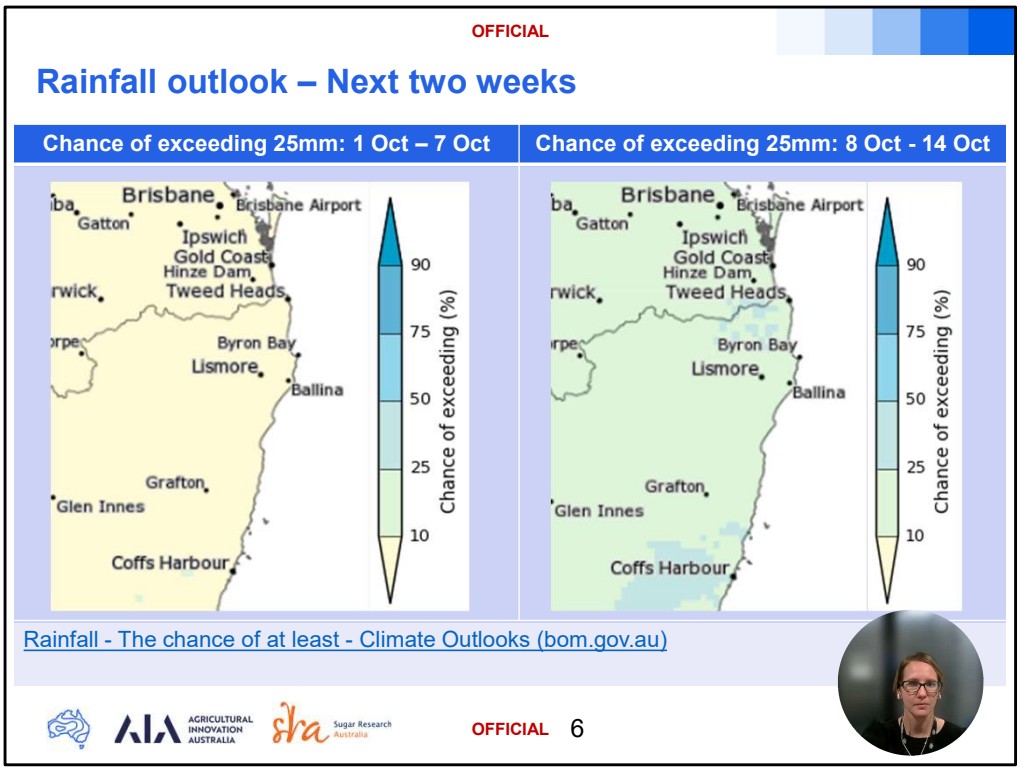
It has been a dry month with September rainfall to date well below what we'd expect for the month, most notably along the Clarence and Brunswick Rivers where September rainfall totals to date are in the lowest 20% of the climatological mean. Along the Tweed and around the Gold Coast growing region rainfall this month has been slightly higher, reaching broadly 45-70% of their mean September rainfall, with some isolated locations along the coastal fringe and inland recording near-average rainfall (around 80-100% of their mean).



Here we have a model comparison of the 7 day rainfall accumulations from 10pm Thursday 28th September to 10pm Thursday 5th October. We can see from the different amounts of rain the European EC and the Australian Access-G short-term models are forecasting that there's a high level of uncertainty around the forecast across the entire growing region.

Despite the rainfall depicted in the models shown, there is strong consensus across all model guidance that the NSW growing region will remain dry until at least Wednesday next week as a high pressure system gradually moves across Australia over the next few days, maintaining a ridge over Qld and northern NSW into early next week. A cold front is then forecast to reach the region mid-late next week, increasing the risk of showers and possible thunderstorms during Wednesday and Thursday. The current run of the EC model has analysed a stronger front which pushes further northwards over the growing regions, whereas Access-G has a weaker front which slips further south. The EC model is currently the outlier, with all other model guidance (including the US and Japanese short-term models) more in line with our Access-G analysis, so at this stage we can have more confidence in a dry week ahead.

However, if the EC scenario does eventuate, showers may develop about the Tweed and Gold Coast growing region from Wednesday next week, with the wettest day expected to be Thursday 5th October, with 2-day rainfall totals in the range of 2-8mm are possible.



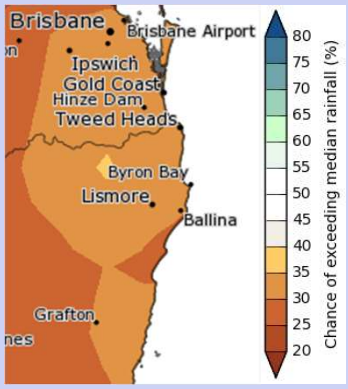
Here we're looking at the ACCESS-S model forecast chance of exceeding 25mm of rainfall over a week starting from the 1st October (left) and the 8th October (right). You can access these maps from the BOM Climate Outlooks page and choose from a number of rainfall thresholds, with this model data being updated daily.

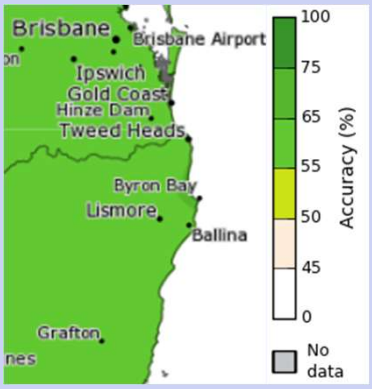
Looking at week 1, the modelling suggests there is less than 10% chance of receiving 25mm or more of rainfall across the growing region.

Slightly higher odds in week 2 across the region, where the odds of receiving 25mm or more increases to 10-25%, reaching 25-50% chance along the Tweed and Brunswick Rivers.

Median Rainfall Outlook – October

Chance of exceeding median rainfall	Past accuracy



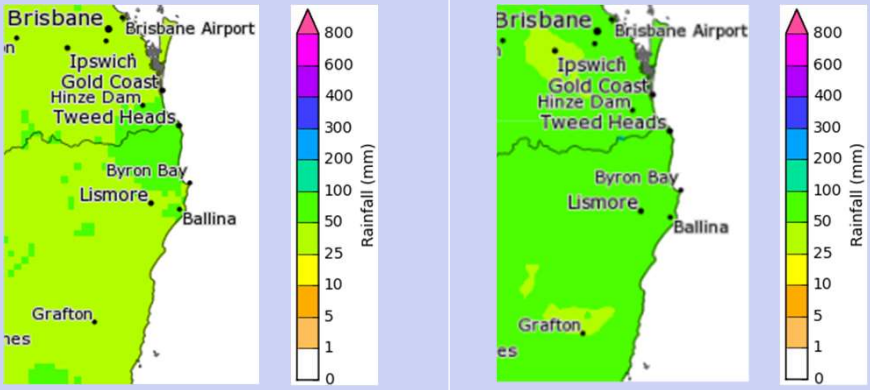


Rainfall—Summary - Climate Outlooks (bom.gov.au)
*Between 1980-2018

Moving on to the whole of October outlook, and the forecast is for lower odds (30-40% chance) of exceeding the October median rainfall for NSW growing regions, decreasing to 25-30% chance along the Richmond River. There is moderate model skill during October for the region with 55-65% past accuracy for the month, so we can have reasonable confidence in the dry outlook.

Rainfall outlook – October

50% chance of receiving at least	Historical median* – 50th percentile



*Between 1980-2018

This means rainfall amounts slightly lower than the historical median for the month is more likely, as we can see by comparing the 50% chance of at least map on the left with the historical median map on the right. For areas south of Ballina/Lismore, rainfall amounts are expected to be much lower throughout October, while Rocky Point growers may see closer to average rainfall.

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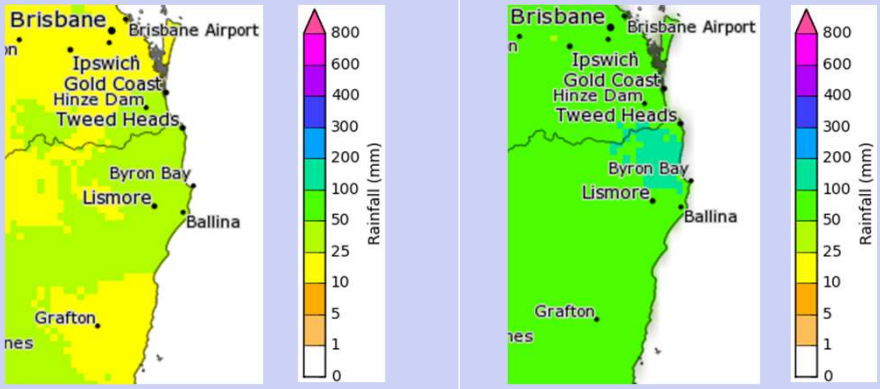
Rainfall outlook – October

75% (high chance) of receiving	25% (low chance) of receiving



- High chance scenario (left) and low chance scenario (right); like the BOM App rainfall range.

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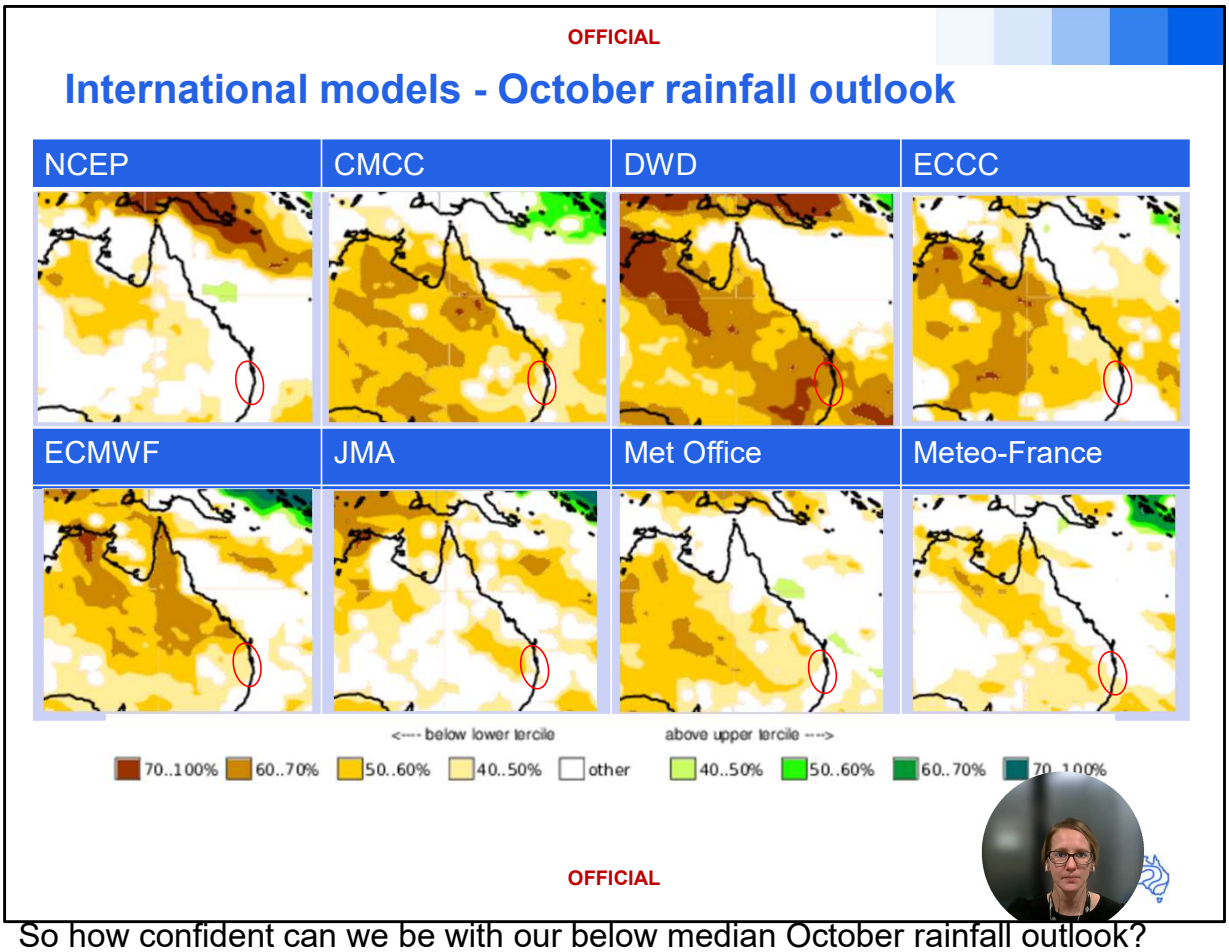
And here we delve deeper into the potential rainfall for October with the high (or 75%) chance of receiving at least values on the left – and the lower (or 25%) chance of receiving at least values on the right, gives us an idea of the potential rainfall spread for the month. Eyeballing the maps, we can expect rainfall totals across most growing regions to be around 25-50mm for the month, except for around Grafton and along the Clarence River where totals around 10-25mm can be expected.



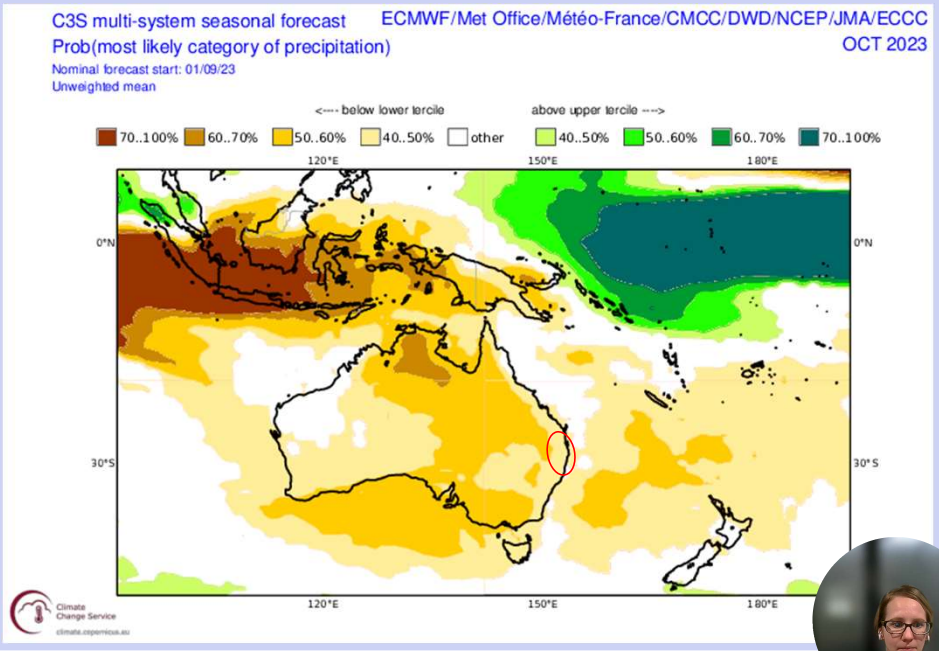
So how confident can we be with our below median October rainfall outlook? Here we have a comparison of the October rainfall outlook from various international climate models from the US (NCEP), Italy (CMCC), Germany (DWD), Canada (ECCC), Europe (ECMWF), Japan (JMA), the UK (Met Office) and France (Meteo-France). The colour scheme here is representing terciles – so the rainfall is partitioned into thirds - with rainfall amounts in the yellow and brown colours representing forecast rainfall in the lower third, so a drier than median forecast, white colours indicating rainfall in the middle tercile so close to median, and the green and blue colours indicating rainfall forecasts in the upper tercile – so wetter or above median rainfall.

All international model outlooks are falling within the middle or slightly lower tercile, (with the German model leaning towards a stronger dry signal), indicating median to slightly drier conditions across the southern growing region, so we can have good confidence in our drier outlook from the ACCESS-S model.

Charts | Copernicus

International models - October rainfall outlook

C3S multi-system ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECC



Further to this, here's the consensus forecast of all the international models combined for October. Taking the average of all the model outlooks from the previous slide, shows rainfall probabilities fall into the lower tercile indicating near to slightly below median rainfall over the SE Qld/ NSW - a similar pattern to the ACCESS-S model.

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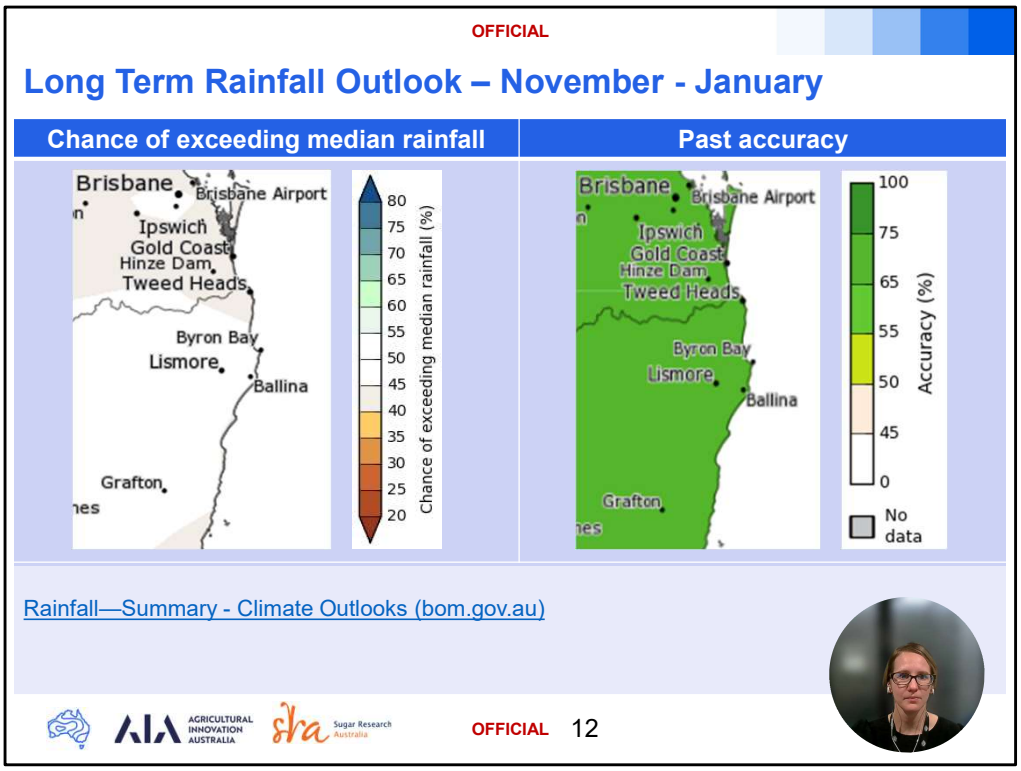
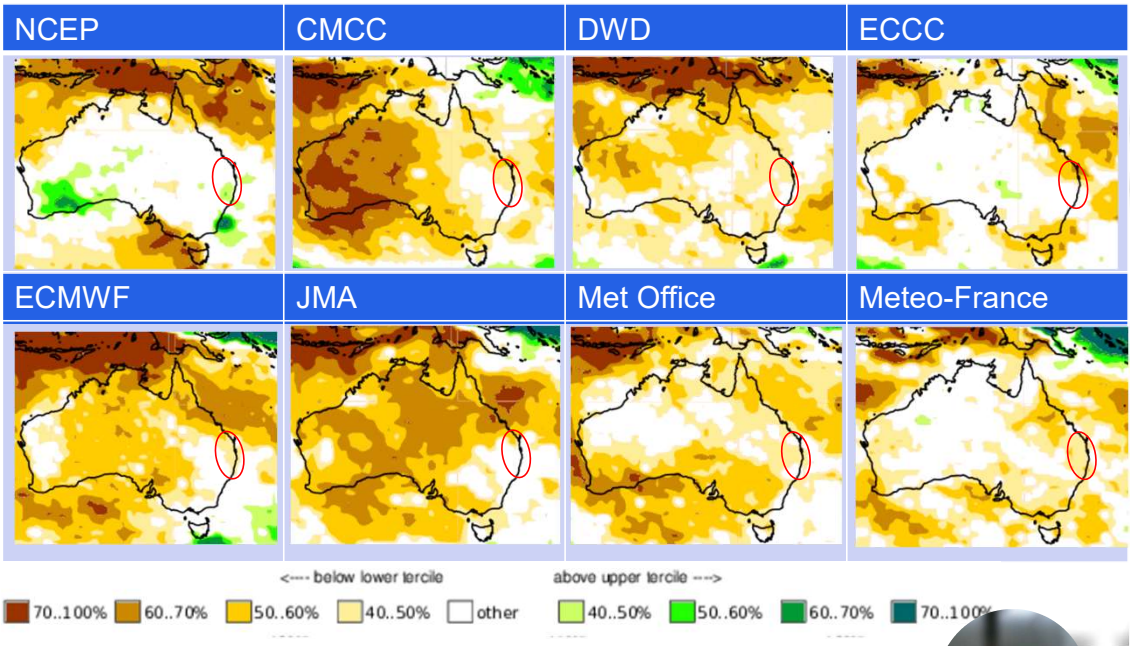


A quick look into the longer-term November-January rainfall outlook from the ACCESS-S model. The model has a high skill at this time of the year across the growing region, getting it right 65-75% of the time. The odds of exceeding median rainfall remain fairly neutral at around 40-50%.

International models – November-January rainfall outlook



And looking at the international model outlooks for the same time period, we can see most model forecast rainfall falling into the lowest tercile, so drier conditions, with a couple (most notably the US NCEP model) falling into the middle tercile or near-median rainfall.

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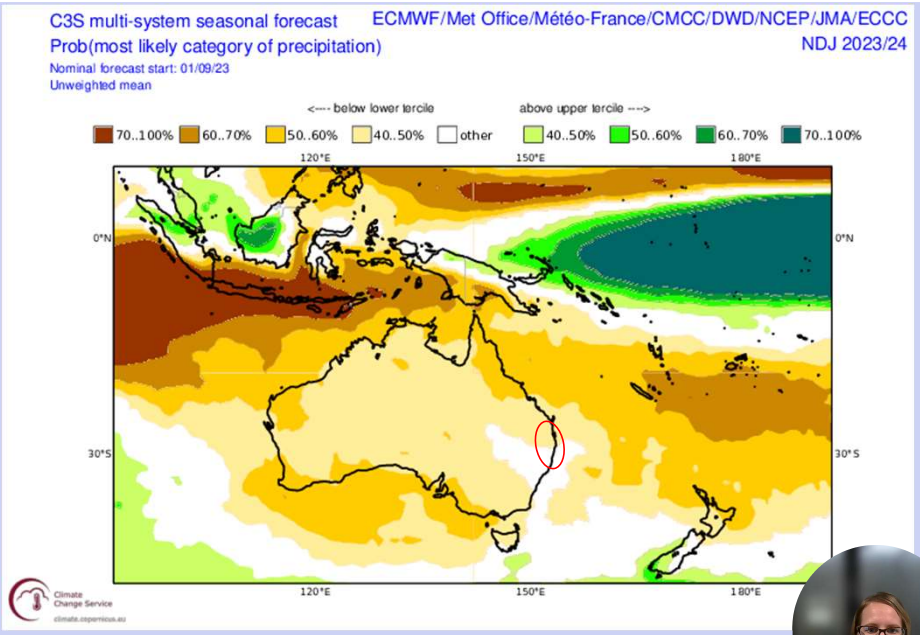
International models – November-January rainfall outlook

C3S multi-system ECMWF/Met Office/Meteo-France/CMCC/DWD/NCEP/JMA/ECC



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And here's the consensus forecast of all the international models combined for the November-January period. Taking the average of all the model outlooks from the previous slide, shows that rainfall probabilities fall into the lower tercile indicating near to slightly below median rainfall across the southeast Qld/NSW growing region. If we mapped the ACCESS-S November-January forecast of 40-50% chance of exceeding the median into terciles – that would fall into the median to slightly lower tercile on these maps – so this reinforces the ACCESS-S forecast and increases our confidence. With El Nino declared for the region last week, this forecast also aligns with expectations of slightly lower to near average spring and early summer rainfall for the SE qld/Northern NSW growing region.

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That's it for this update. This is the last video for the 2023 sugarcane rainfall outlook series. Please continue to monitor the Bureau's seasonal outlooks at www.bom.gov.au. We will monitor for any significant changes from the seasonal forecast during the harvest period and provide updates as necessary. For general queries about the Bureau's agricultural decision support services, please contact agriculture@bom.gov.au. As always, check the latest forecast and warning on the Bureau's website, or the BOM weather app. Thanks for listening.