



SCF WeatherNet

By Philip Honey (Smart Farms Coordinator)

SCF in action



Smart Farm 3 in production

Joint partnership with WAPC.



AgTech Focused

All new funded projects have an AgTech component written into the proposal.



Community Weather Stations:

GRDC Hyperyielding Demo Site (Smiths)
GRDC Sub Surface Drainage Demo Site (Prestons)



Community Rain Gauges:

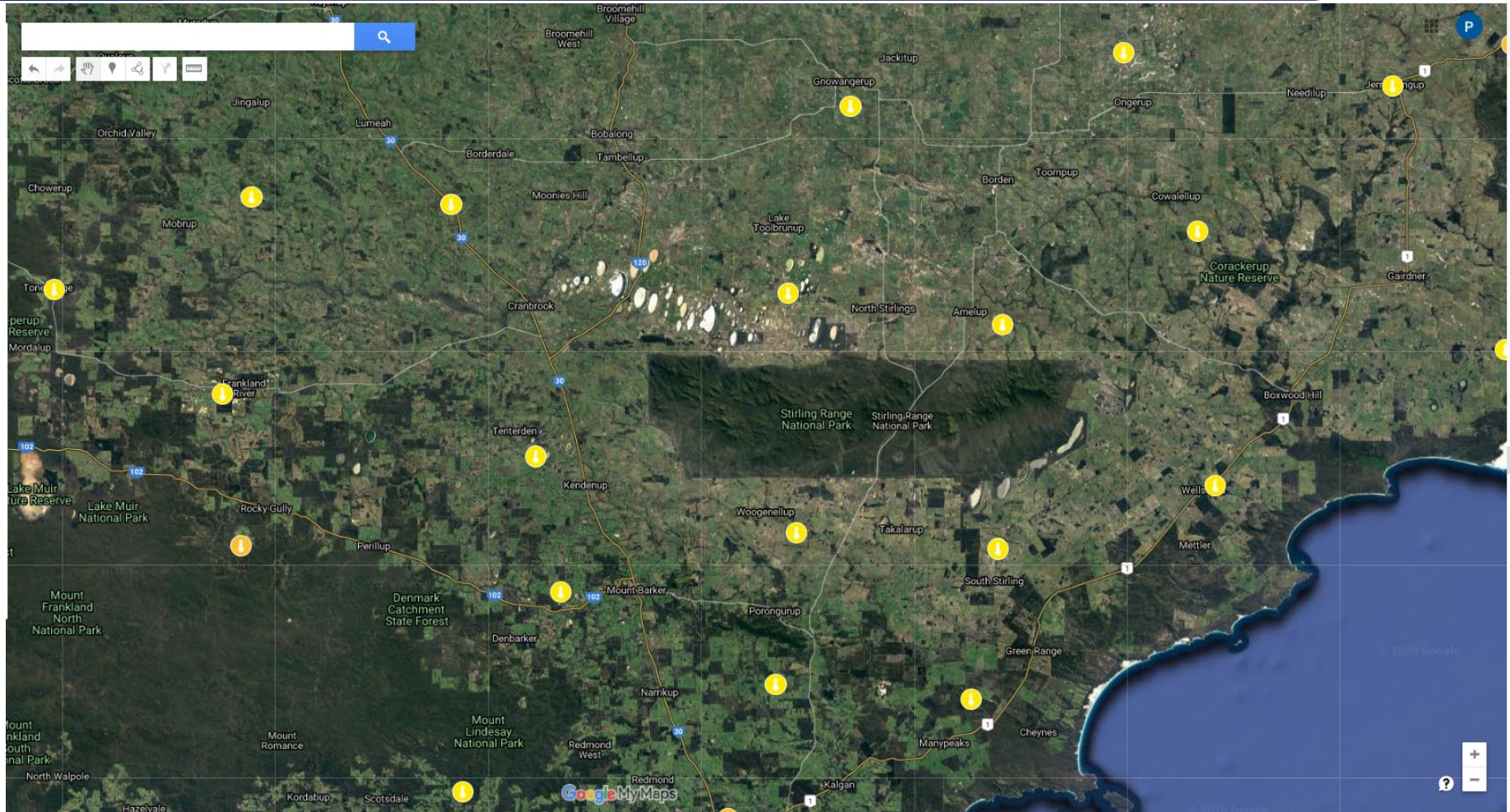
- Chillinup Road (Willis)
- Pfeiffer Road (Howard)
- Woogenellup Road (Adams)



Supported Service Offerings:

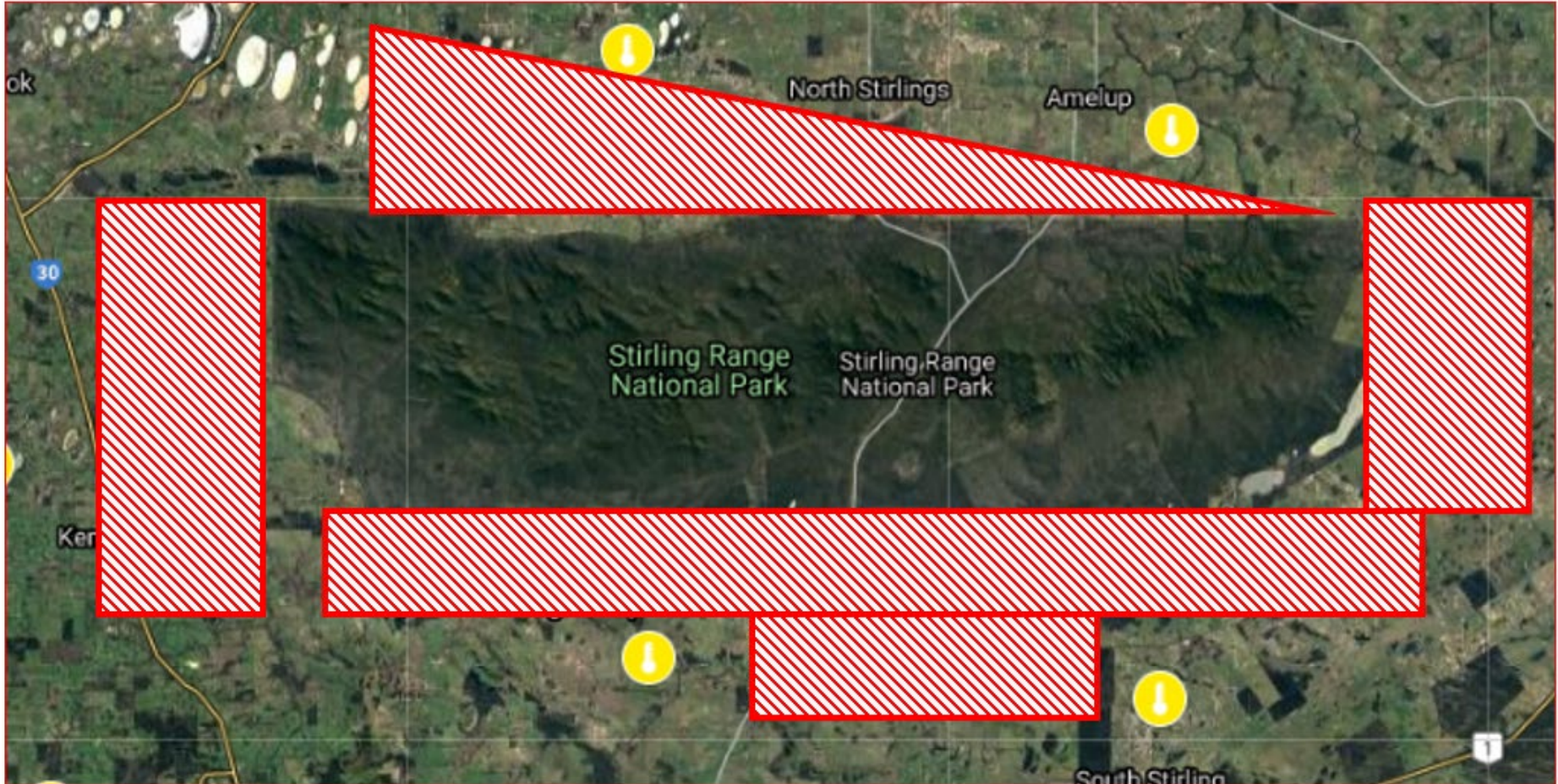
- AgTech Installs & Support
- Farm Communication & Security
- Precision Ag Support & Trials

The Current Scenario - DPIRD



180 weather-stations located across WA, covering 25,000,000 hectares = 1 station per 142,000 hectares

The Challenges – Zones of Uncertainty

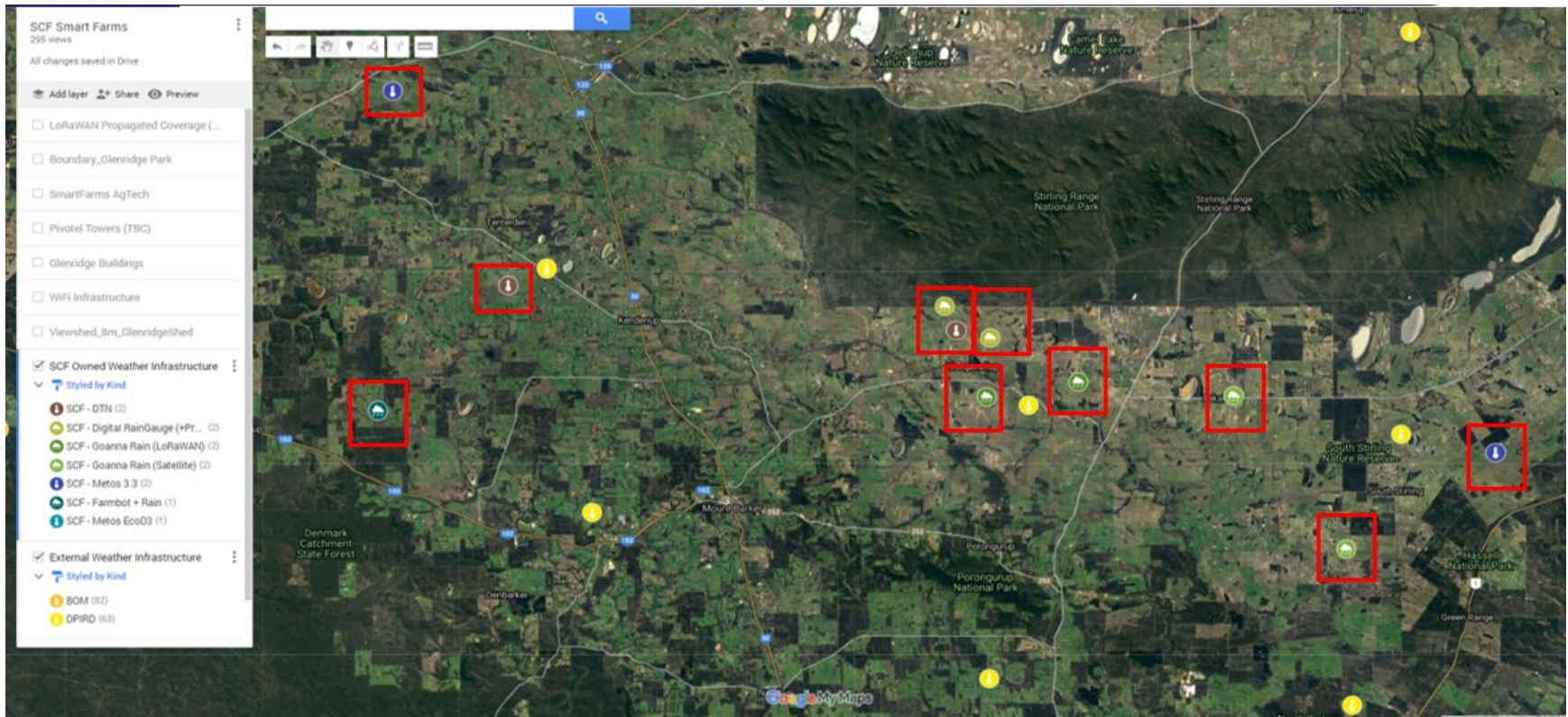


Weather Forecasting

To increase our local forecasting accuracy, we need to:

- Increase the number of data points geographically placed across the landscape.
 - Spatially distribute stations around impediments (i.e. Porongurup's, Stirling Ranges, etc)
 - Spatially distribute stations between current forecasting points for in-filling.
- Increase the length of data availability (“time/data available since install”)
- Provide easier ways of ingesting farmers climatic data into forecasting or production models (SCF is supporting data aggregation services for members through organisations like AxisTech & PairTree)
- Understand that forecasting is most accurate to that point, and there’s currently an unknown level of variation in-between forecasting locations.
 - Utilise weather stations or remote rain gauges to in-fill points for use both, proactively (forecasting) and reactively (water-use efficiency) mapping

Building more accuracy into the system - Strength in numbers



Weather (and asset) Monitoring



SCF Soil Moisture + Rain



Goanna LoRaWAN Rain Gauge



Farmbot Tank Level + Rain



Metos 3.3 Ultrasonic Station



AxisTech Rain Gauge



Goanna Satellite Rain Gauge



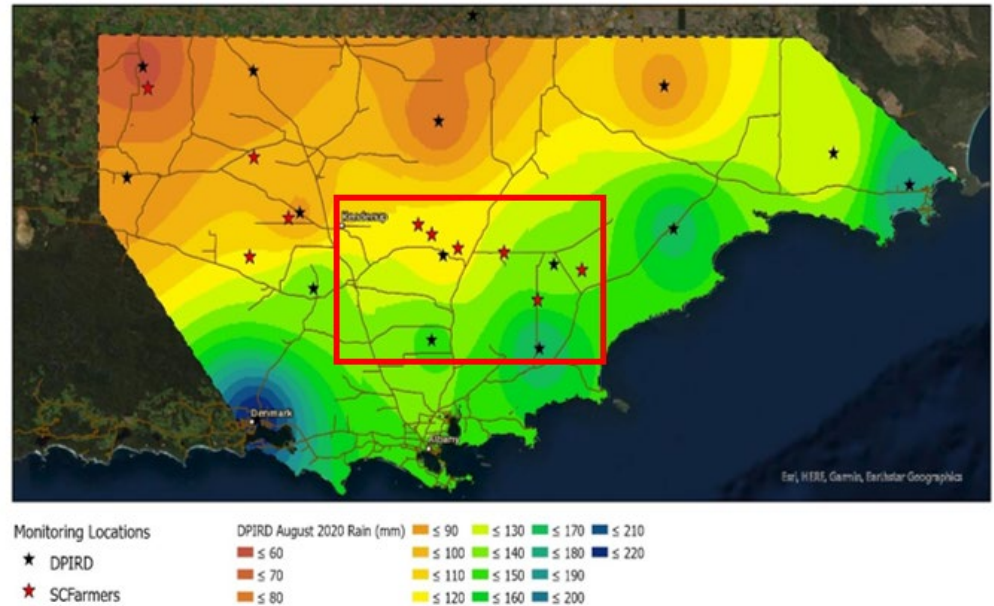
DTN Mechanical Weather



Metos EcoD3 Moisture Station

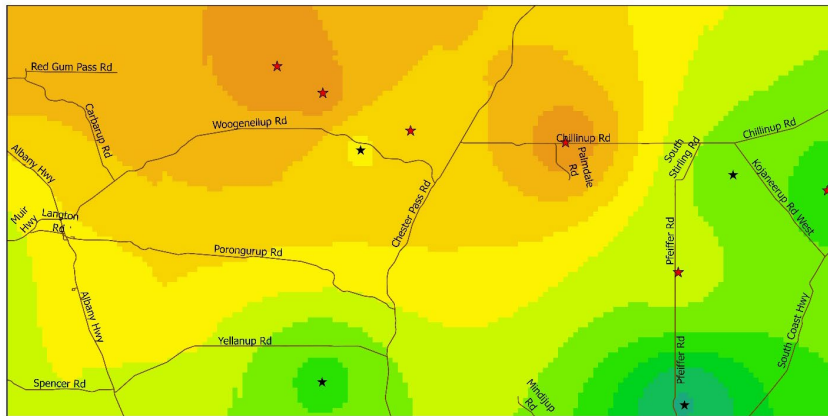
Rainfall Variation Mapping

Name	Latitude	Longitude	AugTotal
Bremer Bay (BY001)	-34.38289	119.32666	180.4
Cowalellup (CP002)	-34.14239	118.59109	84.6
Denmark (DM001)	-34.95226	117.37093	219.6
Frankland (FR)	-34.36490	116.98063	82.6
Gairdner (GA001)	-34.30543	119.09855	119.8
Gnowangerup GRDC (GN002)	-33.97145	118.01766	70.6
Jingalup (TU002)	-34.09559	117.02843	56.4
Kendenup West (MB002)	-34.45003	117.49899	88
Kojaneerup South (KO002)	-34.57549	118.26050	134.6
Manypeaks (MP)	-34.77983	118.21717	170.8
Mount Barker (MB)	-34.63421	117.53937	138.4
Narrikup (NA003)	-34.75940	117.89390	142.2
Stirlings North (SN001)	-34.22785	117.91500	69.8
Stirlings South (PL001)	-34.55359	117.92830	112
Tone Bridge (TB001)	-34.22258	116.70422	61.8
Tunney (TU001)	-34.10612	117.35937	80.8
Wellstead (WE)	-34.48921	118.61926	165.8

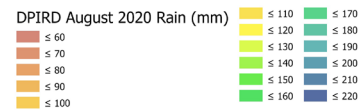
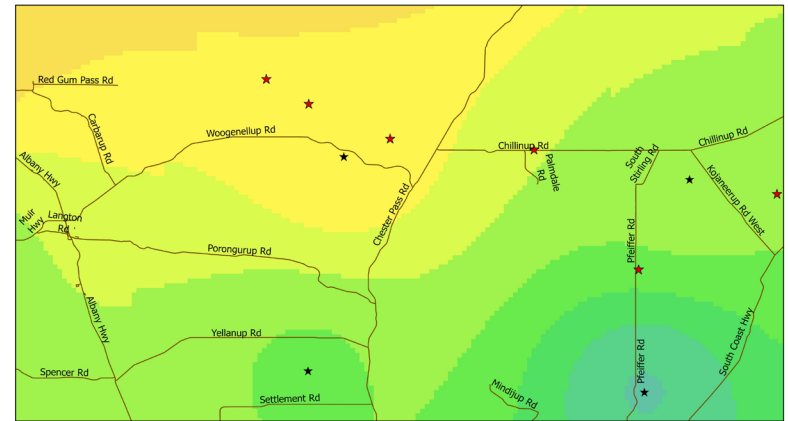


Rainfall Variation Mapping

DPIRD + SCF August Rainfall



DPIRD August Rainfall



The Opportunity – Improving forecast models

If we can improve our forecast models on-farm, we can then:

- Improve chemical efficacy & better manage our spray/fertiliser management decisions (both timing & rate),
- Better predict disease incidence or likelihood,
- Ultimately improve modern tools available (yield or pasture forecasting) that will improve both yield & quality potential, and be more profitable



Thankyou

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Department of
Primary Industries and
Regional Development



National
Landcare
Program





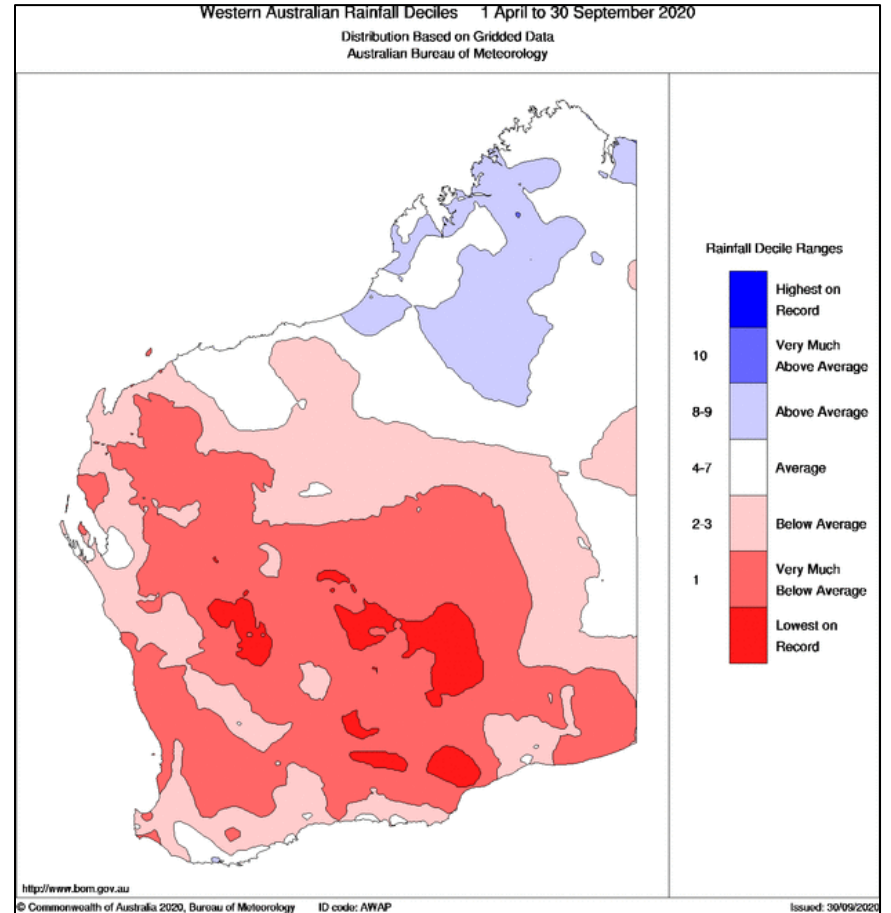
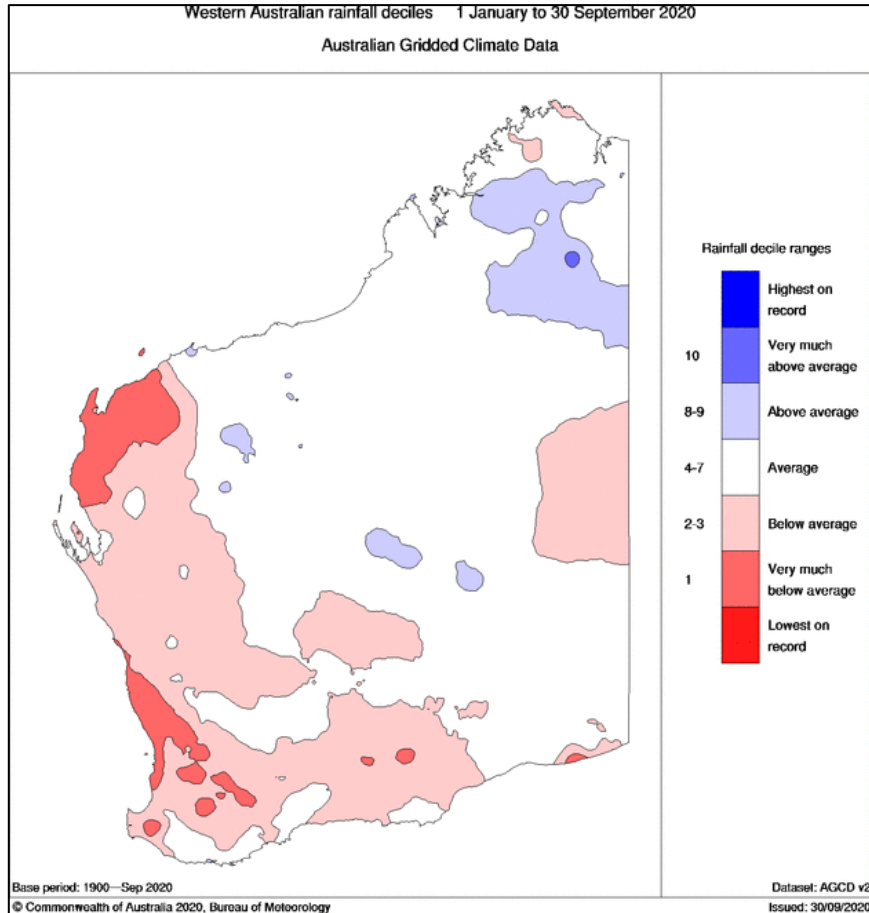
Department of
Primary Industries and
Regional Development

Season 2020 – climate and weather stations

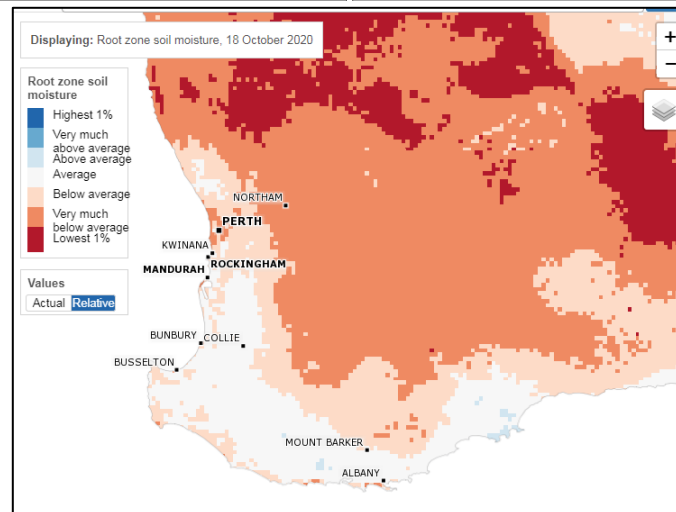
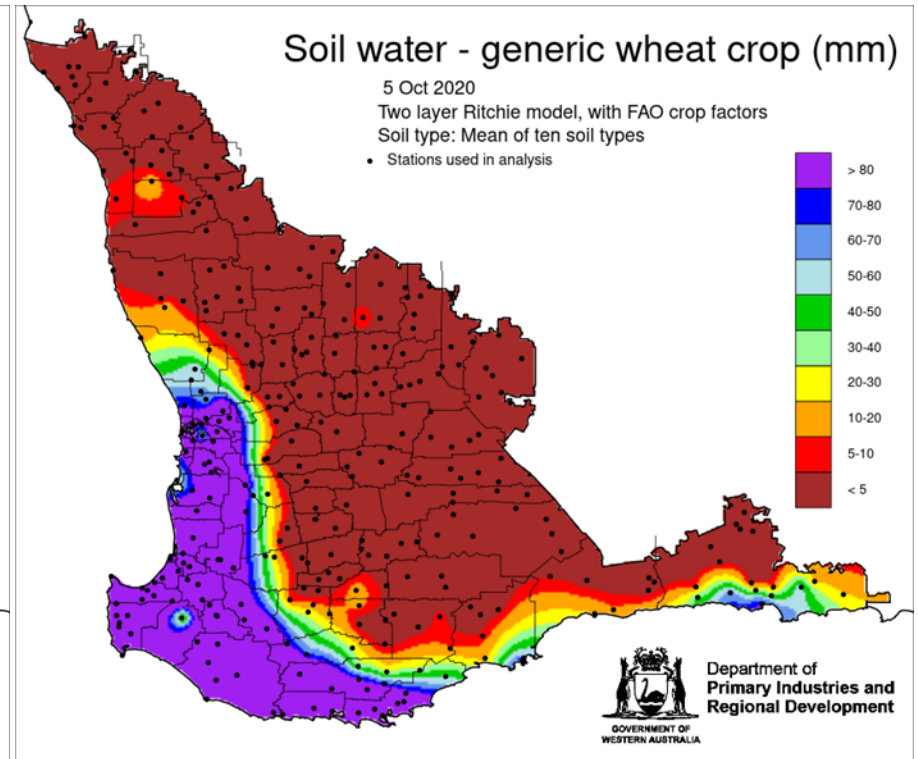
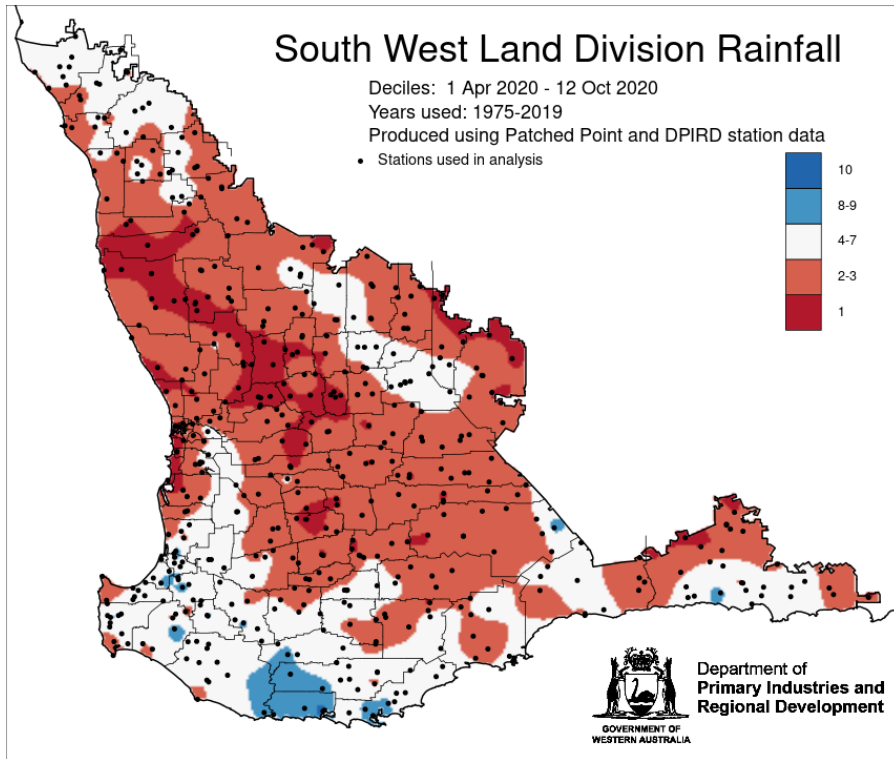
Great Southern Livestock'20
23 Oct 2020



Seasonal rain 2020 to date

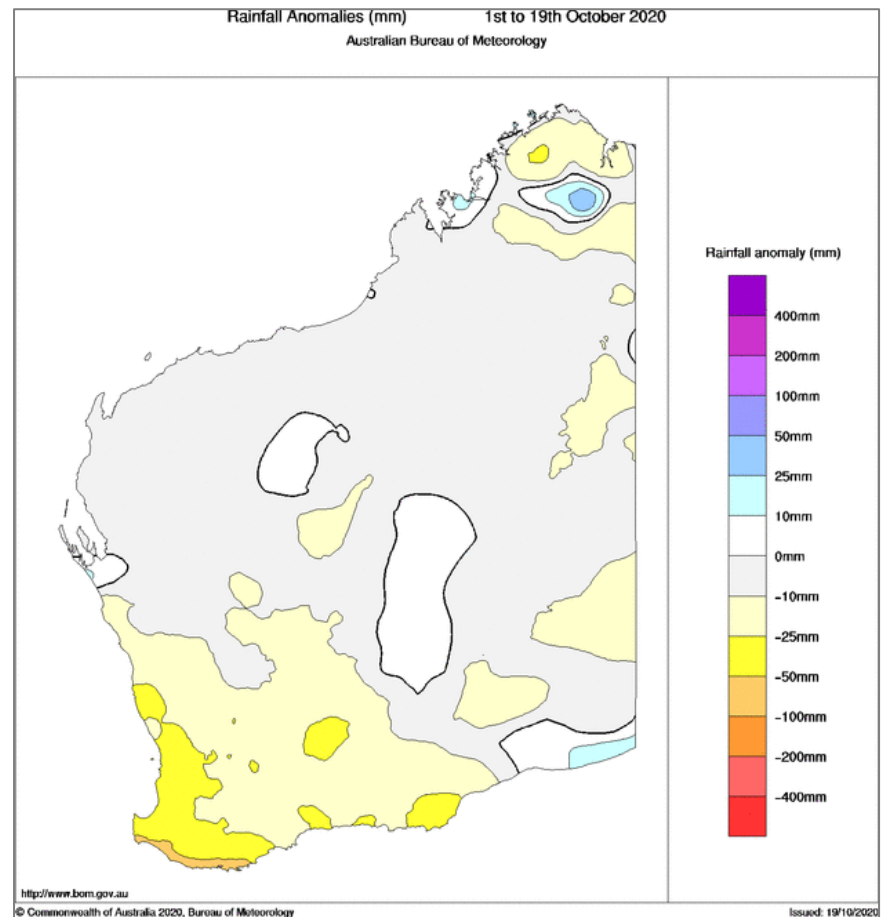
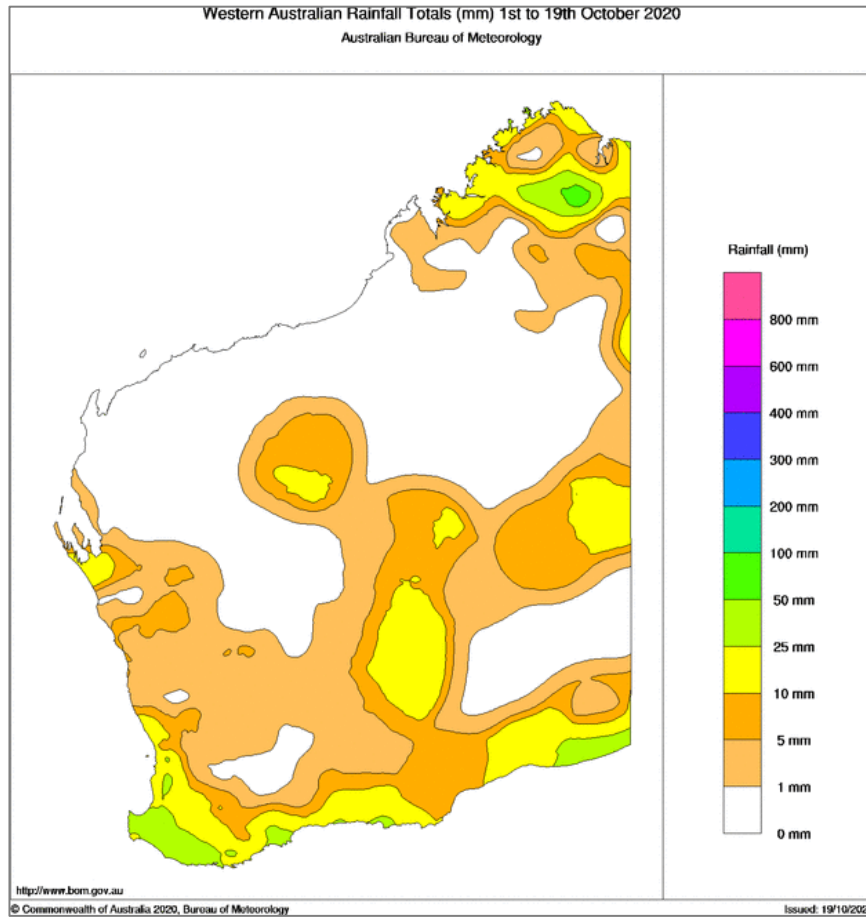


Rainfall since April 2020

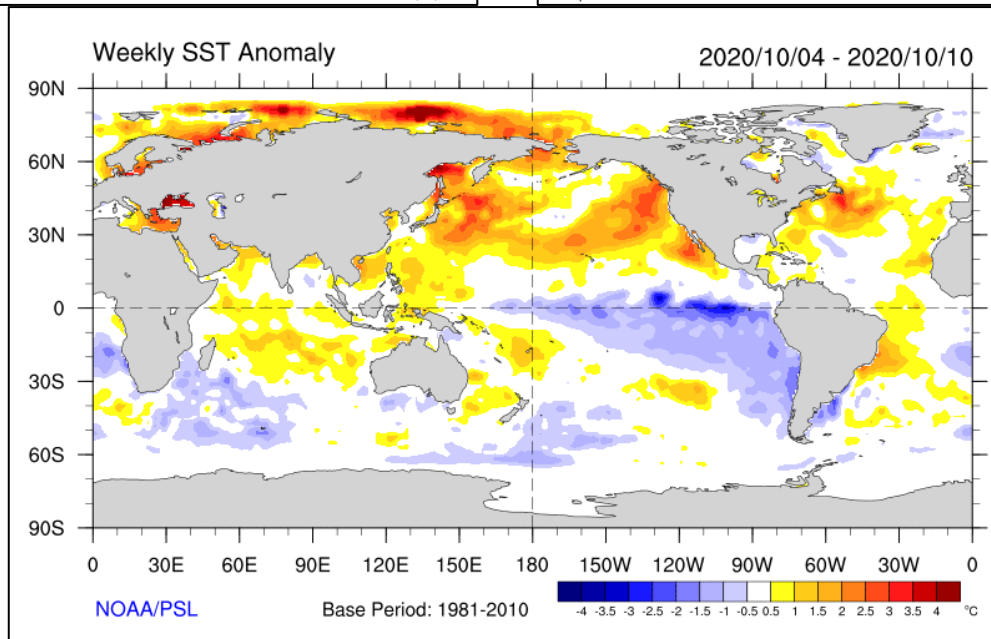
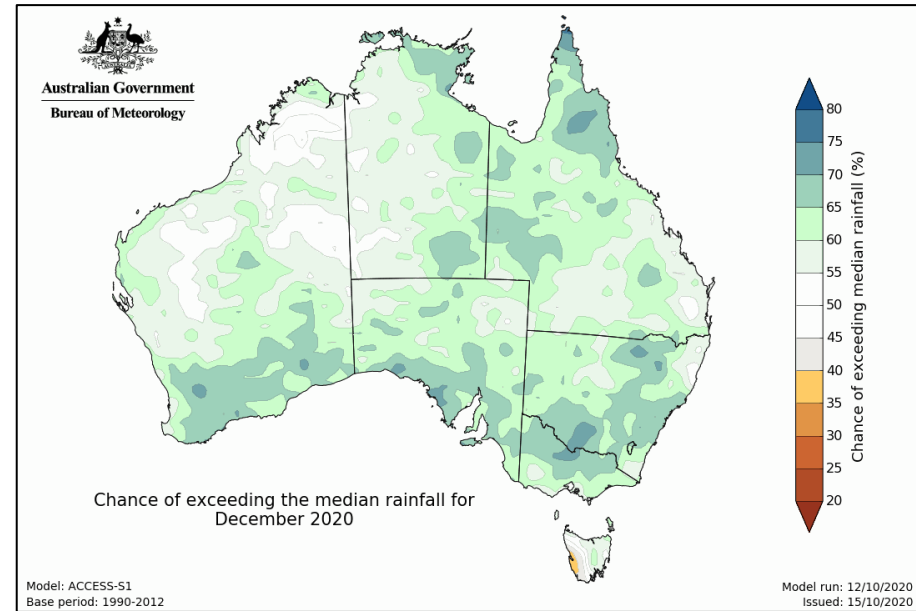
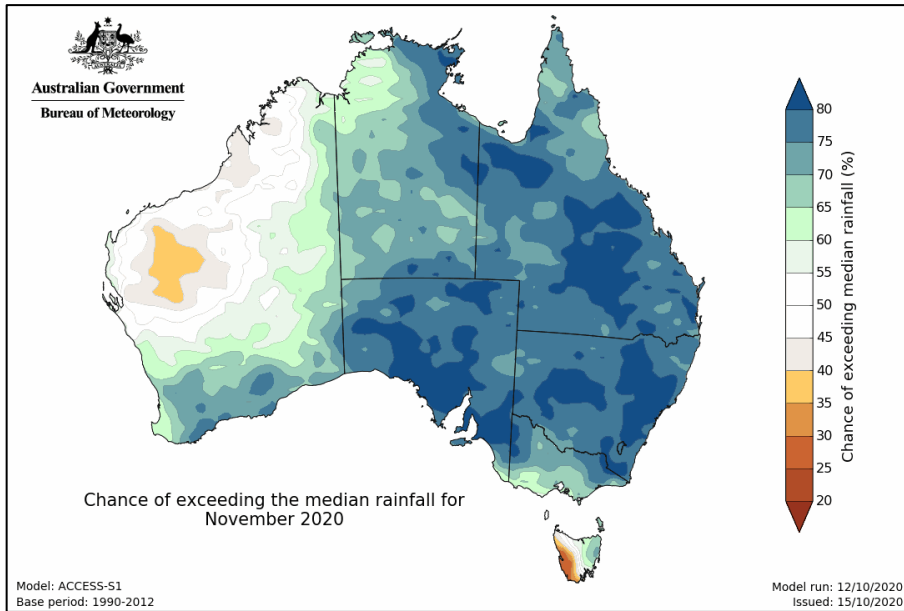


Relative soil water from BoM

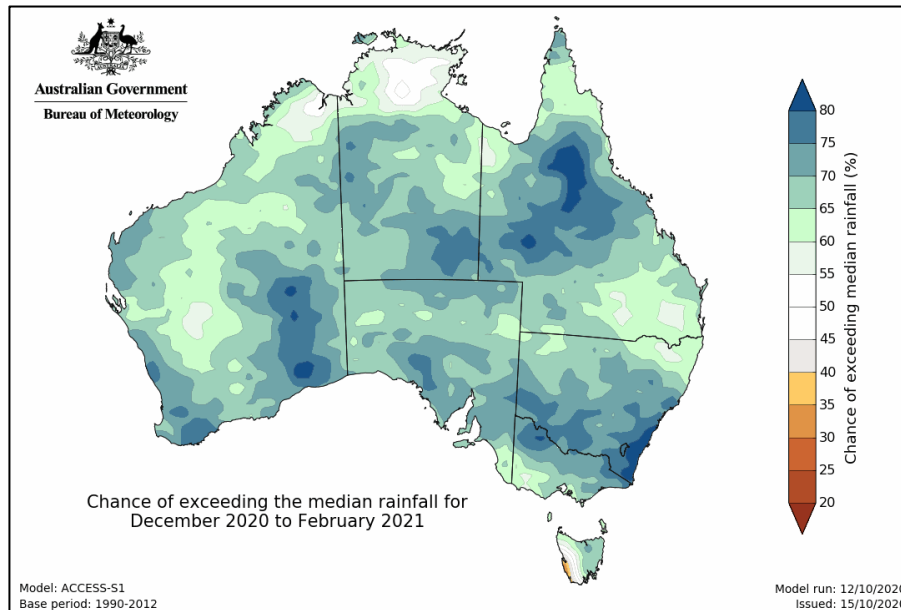
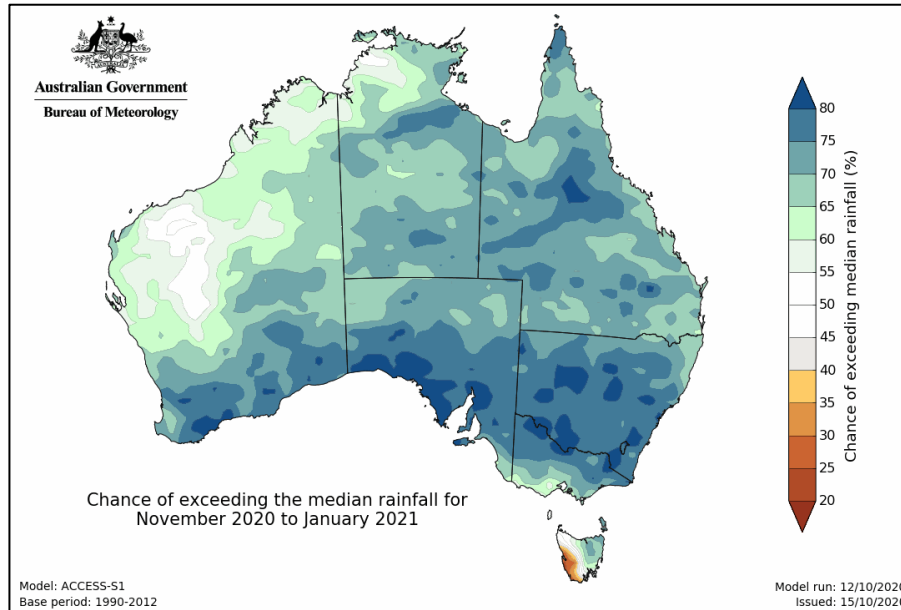
October rain to date



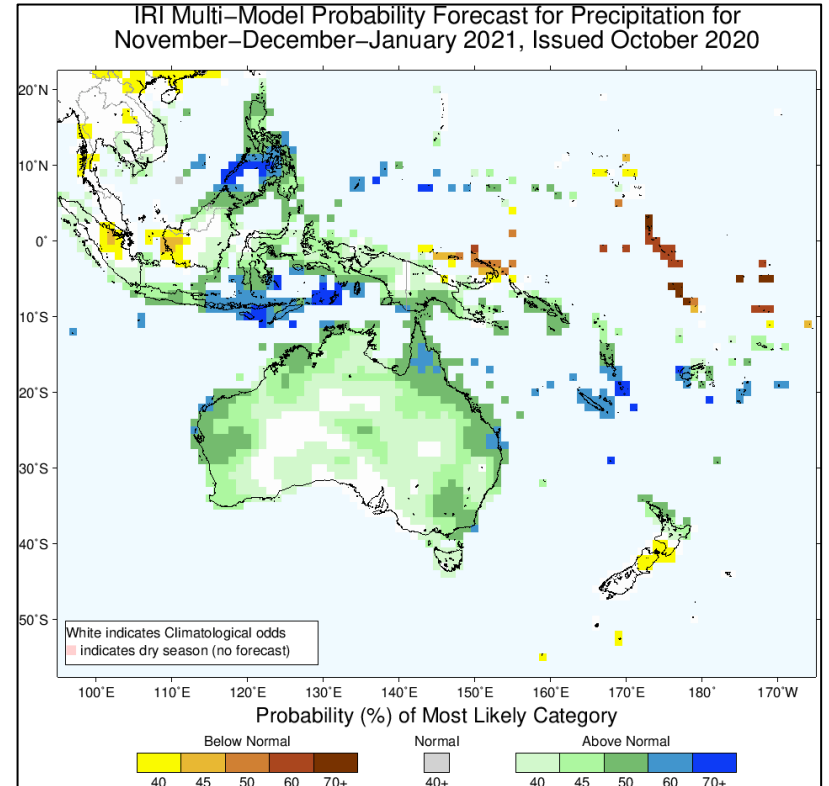
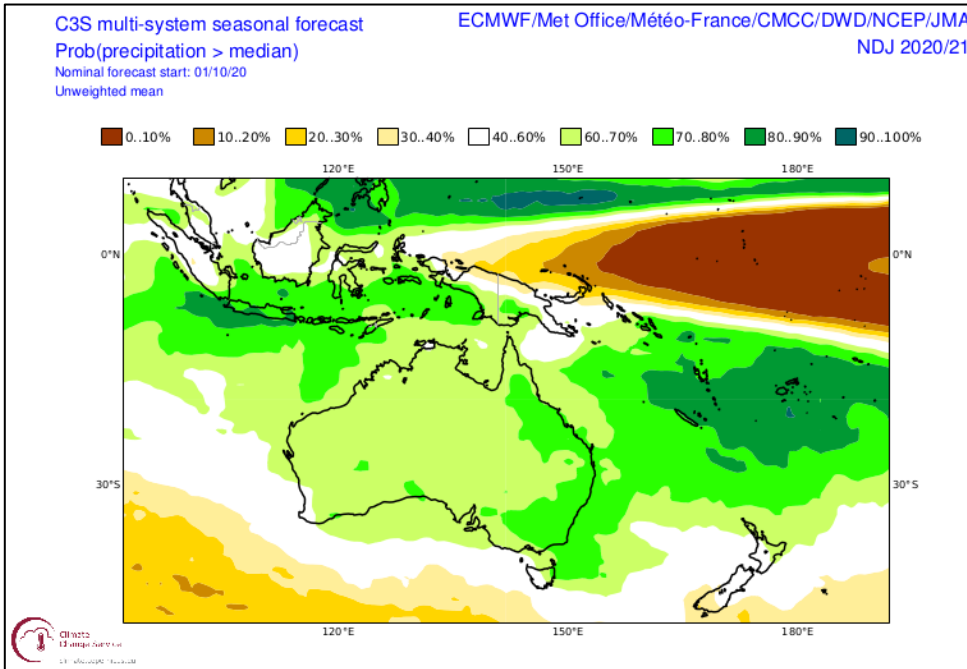
November and December rain outlook



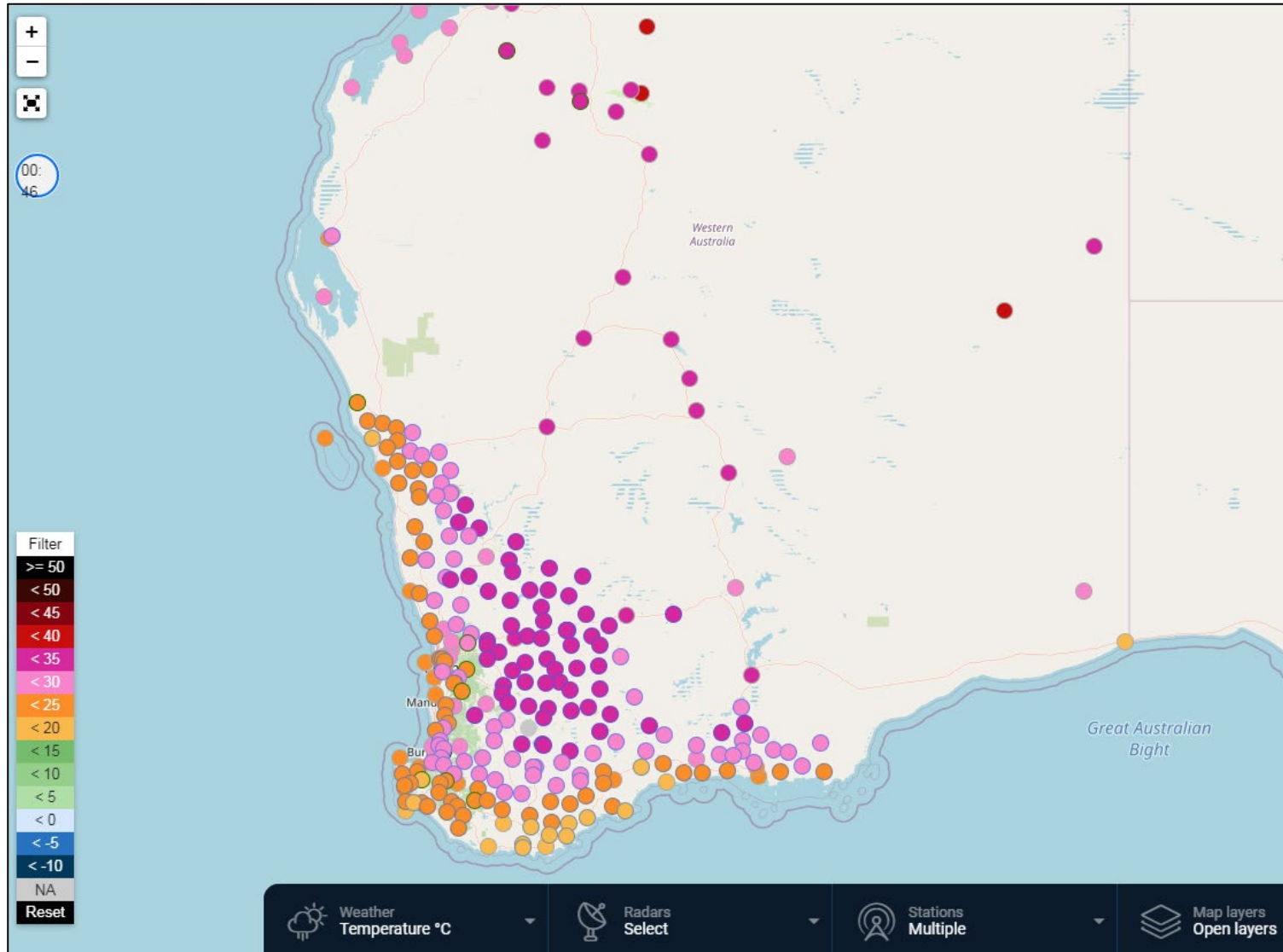
Seasonal outlooks November 2020 to January 2021



Seasonal outlooks November 2020 to January 2021



Weather stations



Data hosting - setup

- Location.
- Instrument types.
- Measurement heights.
- Logging schedule.
- Maintenance history.
- Technical standards for data transmission.
- Does DPIRD store historical data?
- Can DPIRD use the data and/or send it to others?
- Privacy for data owner.
- Group login/view.

Thank you

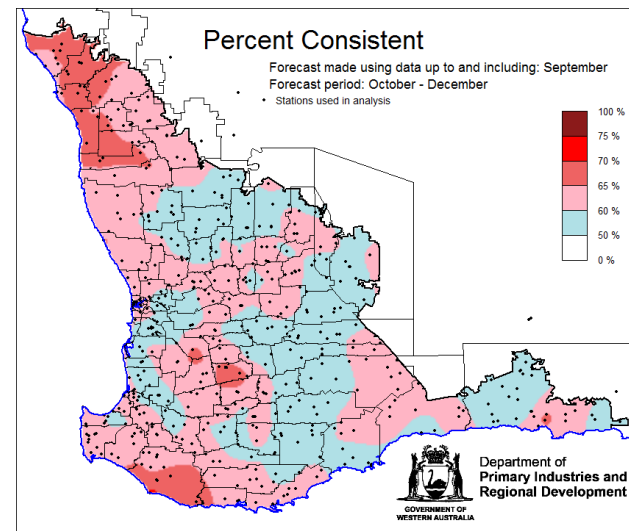
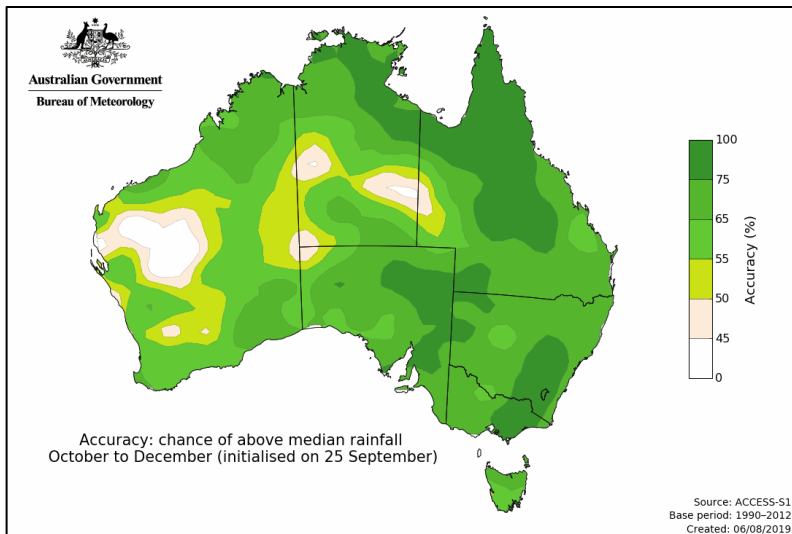
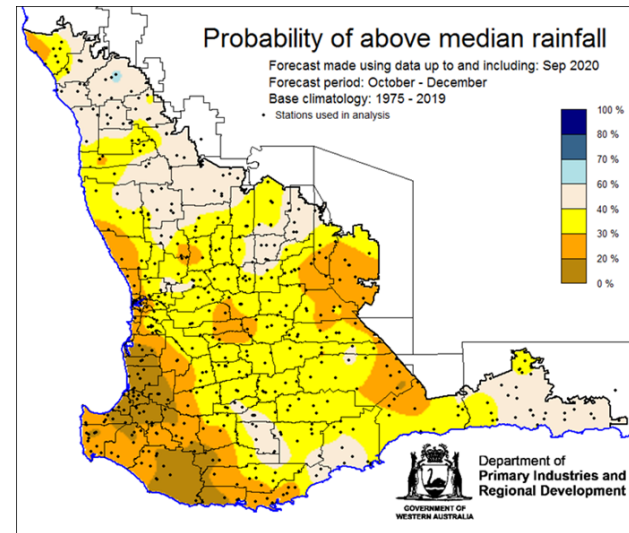
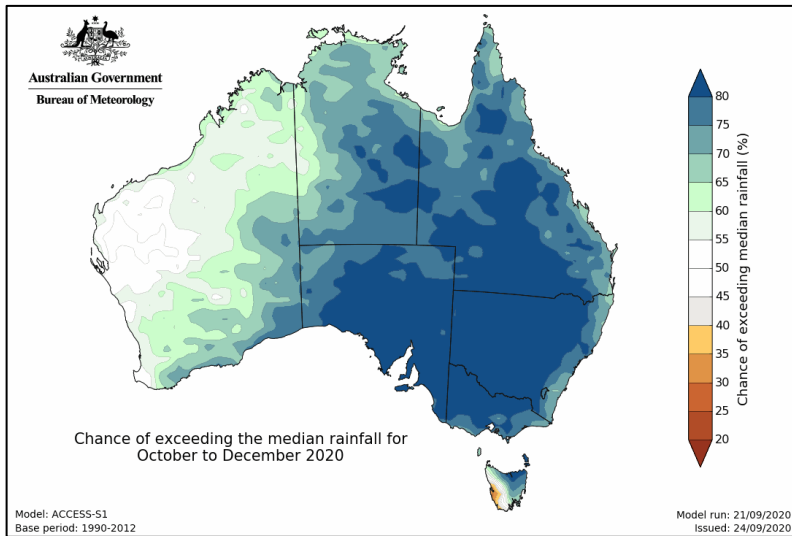
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Seasonal outlook October to December 2020



Multi-model summary

