

MAKING EFFECTIVE IRRIGATION DECISIONS

April 2020 Irrigation Report: February-March period



Visit the website [HERE](#) for an abundance of practical irrigation resources and the latest seasonal video from the Gloucester soil moisture monitoring sites.

Key points of the period

- Forecasted rainfall events eventuated in February and March resulting in nearly 360mm of rain and no irrigation required on either farm.
- Rainfall has not only refilled the soil moisture profile on both farms, but has resulted in significant run-off, restoring flow to the Bowman and Barrington Rivers.
- The storage dam on Bowman farm, which was empty in late January, is now at full capacity providing twelve months supply of stock and irrigation water.
- The immediate forecast is for minimal rainfall, but ETo has dropped to a range 25% lower than 2 months ago. Rainfall will remain lower than this period in the coming three months with a forecasted 75% chance of between 100-200mm until 30th June.

Date	ETo* mm	Chance of Rain %	Rain Range mm	Rain Estimate mm	Temp Range °C	Avg R. Humidity %	Avg Wind Speed km/hr
Mon, 06-Apr	3.1	5	< 1	0.0	10-25	68	6
Tue, 07-Apr	2.1	75	1-3	2.4	14-21	80	6
Wed, 08-Apr	2.3	70	2-5	4.2	13-22	81	5
Thu, 09-Apr	2.4	65	1-4	3.0	13-22	82	5
Fri, 10-Apr	2.9	15	< 1	0.0	11-26	77	6
Sat, 11-Apr	3.7	20	< 1	0.0	14-26	71	11
Sun, 12-Apr	3.0	15	< 1	0.0	11-23	74	8
TOTAL	19.5			9.6			

Forecast provided by the [Bureau of Meteorology](#), © Commonwealth of Australia. Sponsored by [SWAN Systems](#).

Bowman Farm Soil Moisture Commentary

- Recovery from a very difficult 12-18 month has been described as “ridiculously good” by Tom. A reliable water supply is now in place for stock and irrigation for at least a 12 month period.
- The SWAN Systems 7 day forecast notification email has been used broadly to plan activities around the farm such as sowing and harvesting silage. Tom believes it has been very accurate for their location.

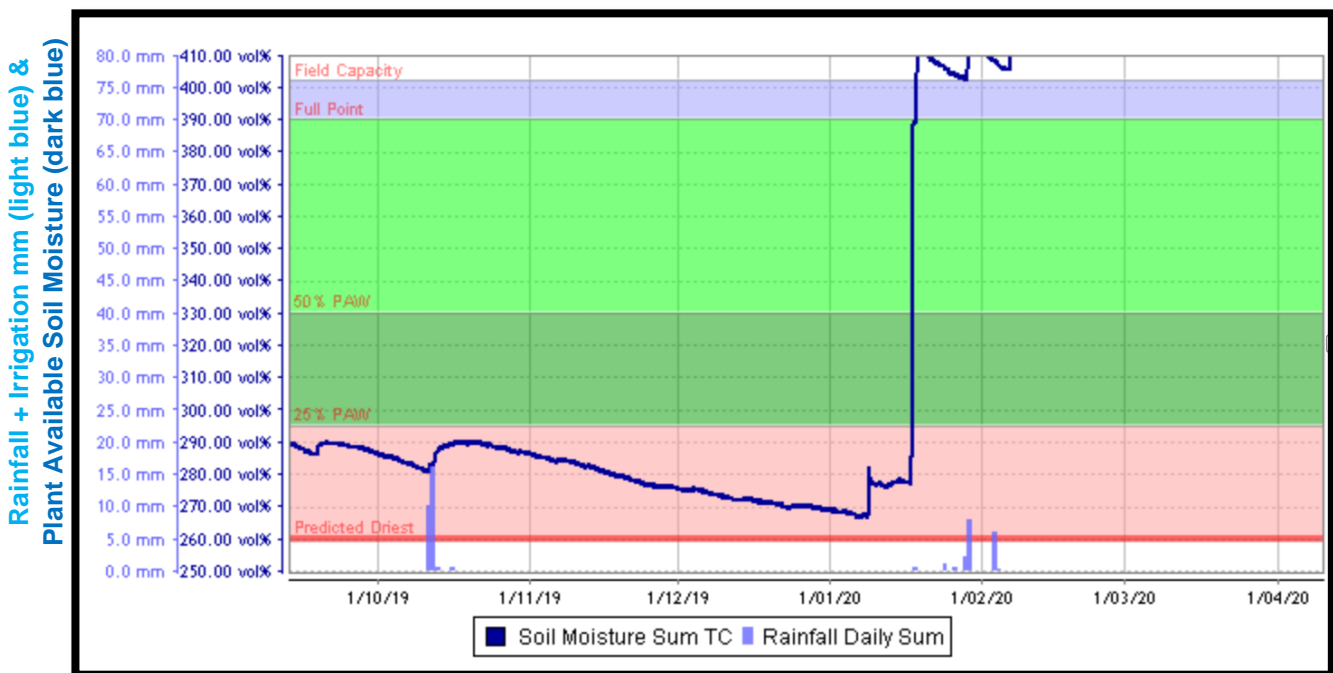
Left: Tom Middlebrook. The study site at Bowman Farm is flush with a Barley/Italian Rye/Brassica mixed pasture. Grazing commenced after 32 days and water security has been restored to the farm following 350mm of rainfall in the past two months.



- The study site's paddock restoration went ahead as planned with a short fallow and sown to barley, from the silo, on the 28th of February with a mix of Italian Ryegrass and Brassica. Silo barley was used because of recent issues with seed access and associated costs.
- There was an impressive turn-a-round, with first grazing at 32 days, 4 days earlier than last year. The plan is for 5-6 rotations across the site with the farm currently on a 22 day rotation across 70 hectares, to be lengthened as growth rates decline with lowering soil temperatures.
- 240 new milkers have been brought into the herd as part of the business plan for the farm. Conditions across the farm have seen average production lift from 20L/cow to 28L/cow in a fortnight.
- Purchased hay over the summer hasn't been needed, with 25-30 tonne of hay now stored but at times being fed to provide a more balanced diet to the herd that is still adjusting to the new flush of quality pastures. There is also 200 tonnes of conserved sorghum which was planted as a summer crop when rains commenced in January.
- Learning from recent times, future proofing the farm in a unpredictable climate and for potentially dryer springs/ early summers, the Middlebrooks have commenced their plans now. The plan is to purchase protein and short fibre but not fodder. Barley has been contracted and palm kernel (or similar) is also on the plans to ensure 1-200 tonnes of protein is locked-in.
- With irrigation to be available on the study site, the current mixed pasture will be pushed through until November when a maize or forage sorghum will be planted.

Seasonal Summaries for Bowman Farm

Soil moisture levels on the study site are above field capacity (off the graph!) but no water logging is apparent on inspection. Rainfall has not been logged over the period due to an electrical fault with the rain gauge. This in itself is a learning of the project as soil moisture monitoring equipment needs ongoing maintenance to provide confident data on which to base critical decisions.

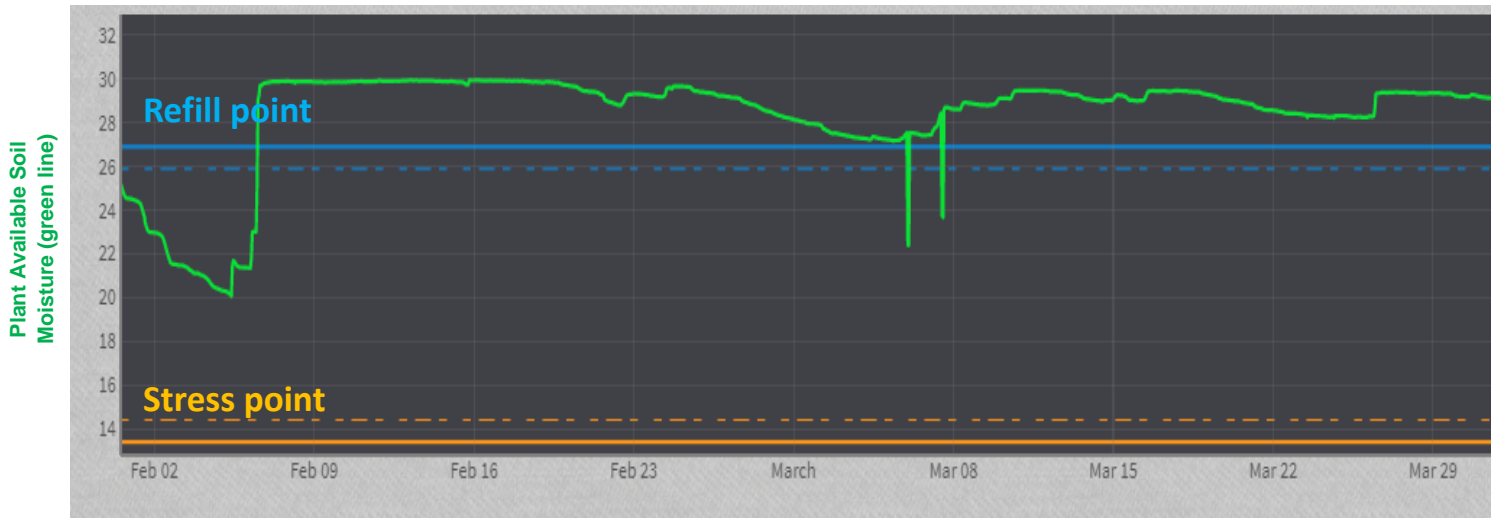


The stacked graph for the site demonstrates that soil moisture has been at capacity right down the soil profile to the last measured depth of 95cm. This moisture returned in early February and has remained unchanged.

Soil temperature has declined from 30 degrees at the end of January to 20 degrees currently at 9am.

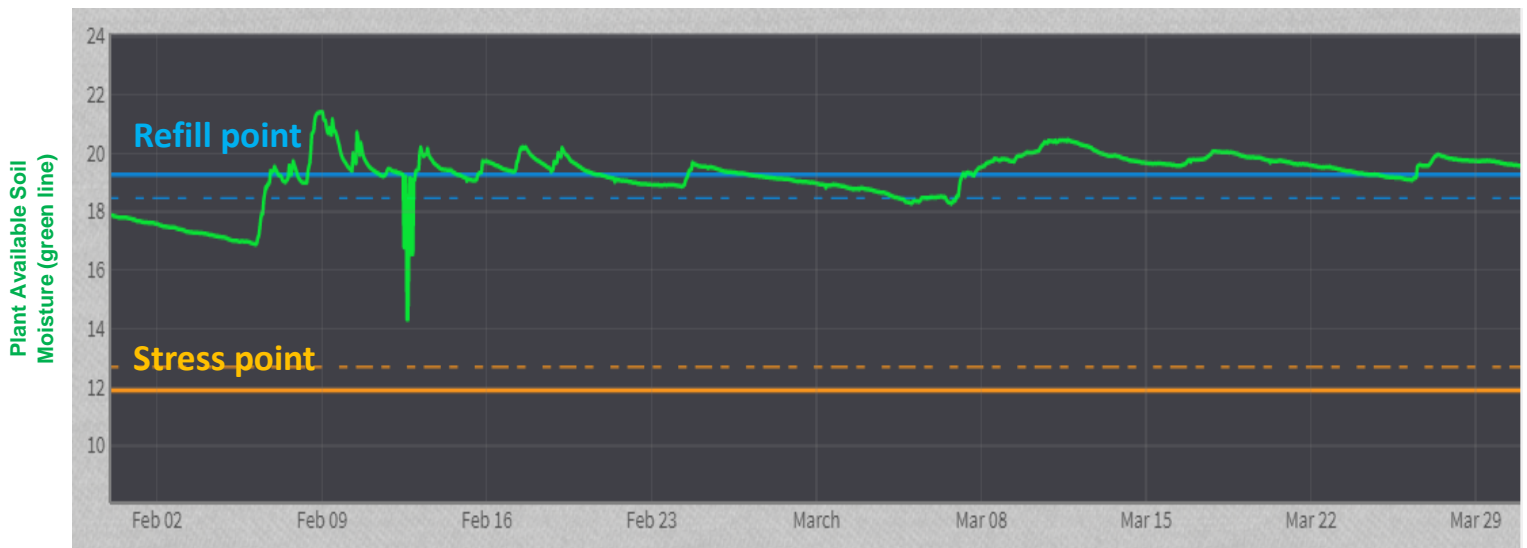
Seasonal Summaries for Kywong Flat- Paddock F3 Italian Ryegrass/ White Clover

Soil Moisture Graph



Seasonal Summaries for Kywong Flat- Paddock F6 Oats

Soil Moisture Graph



Kywong Flat Soil Moisture Commentary

- Soil moisture has been consistently optimal over the period with no irrigation applied. F3, which can be prone to water-logging, has not caused any issues to date for Adam.
- F3 was mulched hard on the 20th of March, then grazed on the 27th of March, followed by over-sowing of the Italian Ryegrass (30kg/ha)/ Clover (2kg/ha) on the 28th of March. The plan is to graze early to help control shading of any residual kikuyu/ paspalum.
- F6 was sown to Oats on the 3rd of March and will be grazed in 10-13 days times when some annual ryegrass will also be spun into the pasture mix.
- The plan is to renovate the irrigation area of F6 prior to sowing for Lucerne/ Chicory again in Spring.

- Contracted hay from Victoria is also being used in the autumn transition, though the feed gap is actually smaller than previous years because of the decision to plant early Oats.
- The decision to plant early Oats on the milking platform has proved to be a valuable feed source in the autumn gap. Usually the gap is supplied by home grown summer maize and spring ryegrass silage which was not possible due to the drought conditions
- In the past week 700 tonnes of pit silage (kikuyu/paspalum) was harvested opportunistically from neighbouring properties. Although not high quality, the idea is to have a source of drought feed to manage risk and exposure to climatic variability.
- Cropping irrigation blocks on the property went directly into wheat and will be direct chopped for silage before early maize in October.
- The Forbes are investigating currently available finance options to convert 16 ha of bike shift, plus an additional 10ha of dryland, to a single pivot and also exploring options to develop a further 16ha of dryland to lateral. They will be waiting until the end May milk price indication to make any decisions on this.



Adam Forbes near paddock F3. Recent drought conditions have required autumn transition feed to be supplemented by contracted hay rather than usual supply of home grown conserved summer crops.. The decision to plant early Oats has reduced the feed gap substantially.

Forecast tips

- The rainfall forecast for the next three months is a 75% chance of between 100-200mm.
- At Kywong Flat, reduced rainfall will assist to manage the heavier soils that are prone to saturating on F3.
- With irrigation water available, both farms should monitor soil moisture levels closely and use irrigation to keep soil moisture within the Readily Available Water (RAW) zone, if needed.
- With soil temperatures still around 20 degrees, plant growth is active and strategic N use should be considered along with budgeting N from mineralised soil sources after the long-dry spell. Care must be taken to ensure N is not applied to saturated soils volatilisation loss is a waste of money.
- Both businesses are actively looking forward to address potential risks and have strategies in place to make the most of the current and immediate outlooks to conserve or contract feed as required.
- The SWAN Systems 7 day forecast Rainfall & ETo daily email notification provides timely and as accurate as available information straight to your smartphone. This information allows a simple water balance to be undertaken. Register: <https://weatherwise.swansystems.com.au>

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