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Resilient EP Newsletter 1 June 2020

A new project is underway on Eyre Peninsula called '*A new paradigm for resilient and profitable dryland farming on the Eyre Peninsula using data to improve on-farm decision making.*' We are calling it **Resilient EP** for short.

The project is funded by the National Landcare Program 2, Smart Farming Partnerships Program. In a nutshell, the project aims to take the information being generated by the EP soil moisture probe network and turn it into something more user-friendly that growers can use to help make on-farm decisions.

To make sure the information being produced is relevant, a Regional Innovators group of farmers and advisers will engage with researchers and link with the region's farmers to develop techniques to integrate information generated from the regional soil moisture probe network, as well as satellite imagery, climate and yield models. This will be done in a user-friendly format to assist in on farm decision making. These decisions will lead to more efficient use of limited soil water and ultimately improved profitability.

What do we want to find out?

Soil Moisture Probes

How does soil moisture probe output relate to mm of plant available water (PAW)

How does soil moisture probe output relate to surrounding paddock

How does varying soil type affect PAW

How does PAW affect yield

How does information generated by one soil moisture probe relate to similar soils

How does PAW capacity affect yield

What management practices can be used to maximise WUE

Extending the growing season - longer growing plants, establishing on minimal moisture

Increasing N availability - N bank, organic vs synthetic

Managing for frost, heat and terminal drought

Risk management/ seasonal forecasting

When can we get a reliable forecast of rain for opening to season

How can increased knowledge of PAW improve the value of seasonal forecasting

Precision agriculture

How can farmers process all this information and use it

How can farmers make money from yield maps and zoning paddocks

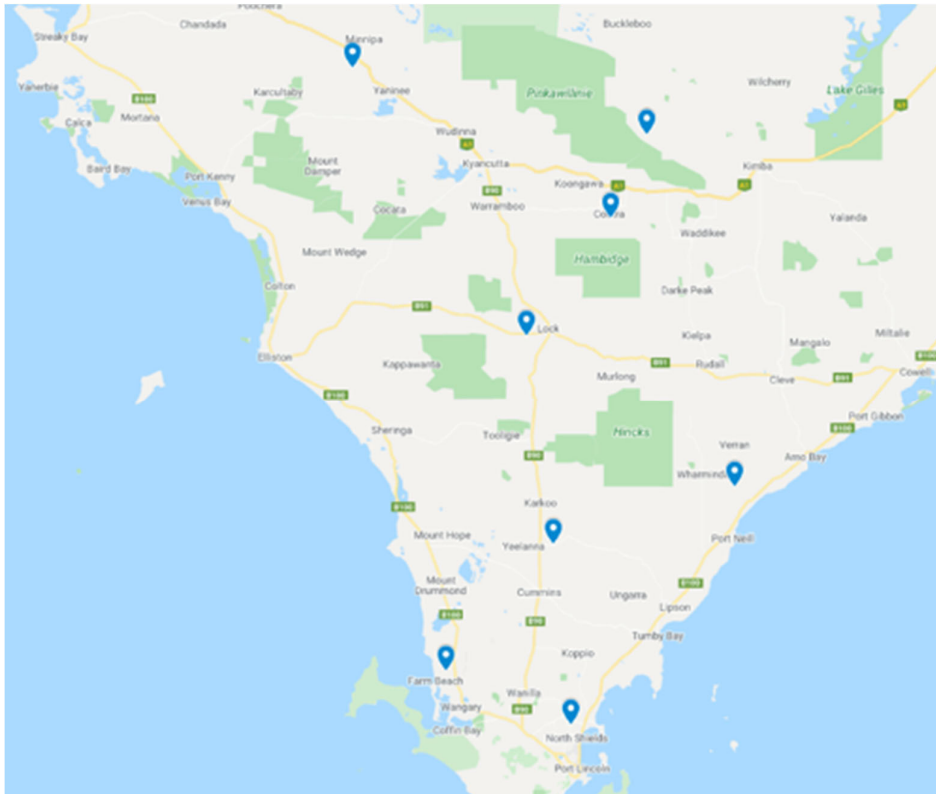
Value of EM38 and radio metrics mapping

Validation sites

In the early stages of the project, we are working on 8 'validation sites' across EP, where we are concentrating soil and plant sampling and will be testing different management strategies depending on seasonal conditions and potential yield predictions. Using Yield Prophet®, we are generating crop reports throughout the season that indicate potential yield with and without added nitrogen, growth stage of the plant and water remaining in the soil

profile. In this first newsletter we provide some extracts of the reports for your interest. As the project progresses, more information will be made accessible via the new AIR EP website, which is currently under development.

The 2020 ‘validation site’ locations:



Yield Prophet Information

Site	Soil type	Crop/ Variety	Sow Date	Current Growth Stage	Growing season rainfall (mm)	Plant available water (mm)	Plant Available Water capacity (bucket size) (mm)	Soil Water (% of full)	Crop Availabl Nitrogen (kg/h
Minnipa	Calcarsol - Sandy Clay Loam	Scepter Wheat	26-Apr	late-tillering	62 (76)	24	139	17%	133
Cootra	Sand over clay	Scepter Wheat	6-May	mid-tillering	70 (103)	(6) 41	142	29%	61
Pinkawillinie	Loamy sand over light clay	Scepter Wheat	2-May	late-tillering	62 (71)	8	105	8%	12
Lock	Grey Calcareous Sandy Clay Loam	Scepter Wheat	14-May	early-tillering	107 (82)	24	87	28%	44
Wharminda	sand over medium clay	Vixen Wheat	5-May	late-tillering	81 (66)	21	52	40%	36
Yeelanna	Clay Loam over Loamy Medium Clay	Scepter Wheat	4-May	late-tillering	132	58	126	46%	24
Coulta	Sandy loam over clay loam	Scepter Wheat	14-May	early-tillering	196 (180)	43	41	105%	25
North Shields	Sandy loam over clay loam	44Y90 Canola	30-Apr	late leaf development	208 (204)	43	41	105%	58

() = Moisture probe rain gauge compared with BOM data used by Yield Prophet

Points of clarification:

1. There are differences between the rainfall measured in the paddocks (rainfall gauge attached to soil moisture probe) and the growing season rainfall used by Yield Prophet to generate yield predictions (these are currently derived by the closed BOM station).
2. The two yield predicted yield columns represent the potential yield given a 4-7 decile rainfall season. The N limited column represents the predicted yield if no further nitrogen is added to the crop and the nitrogen unlimited column represents the predicted yield if the crop has access to an unlimited supply of nitrogen.
3. Additional nitrogen recently applied by growers may not be accounted for in the nitrogen limited yield prediction.
4. Feedback on the content of the table is welcome.

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