Lessons from Australian Drought

David McGavin & Greg Butler

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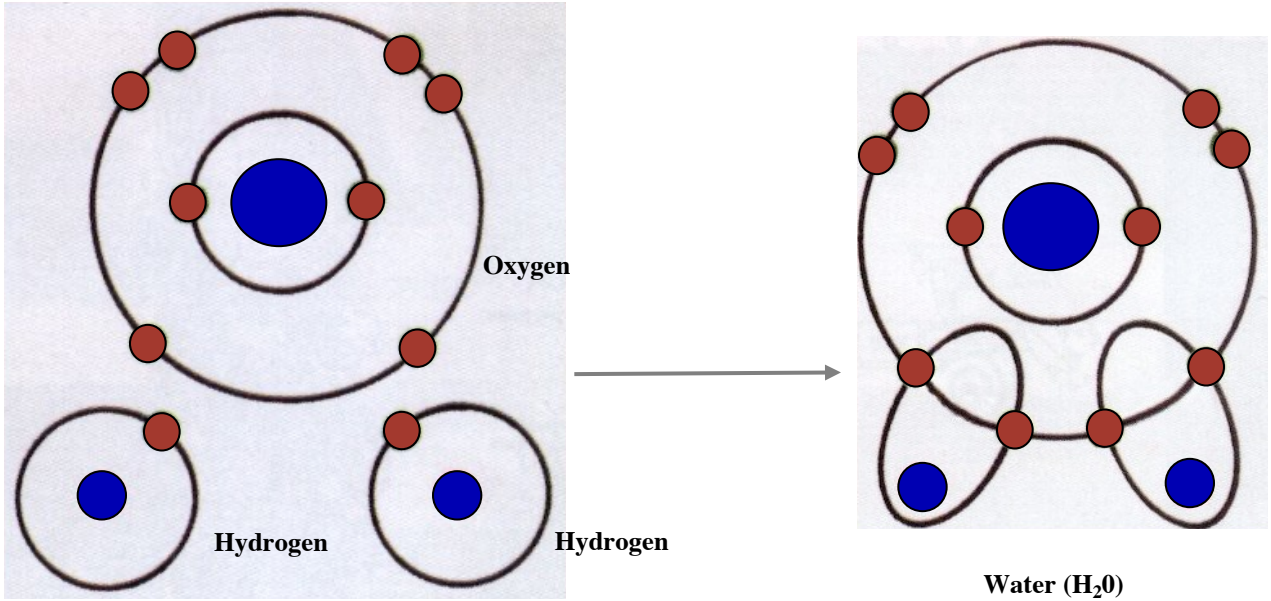
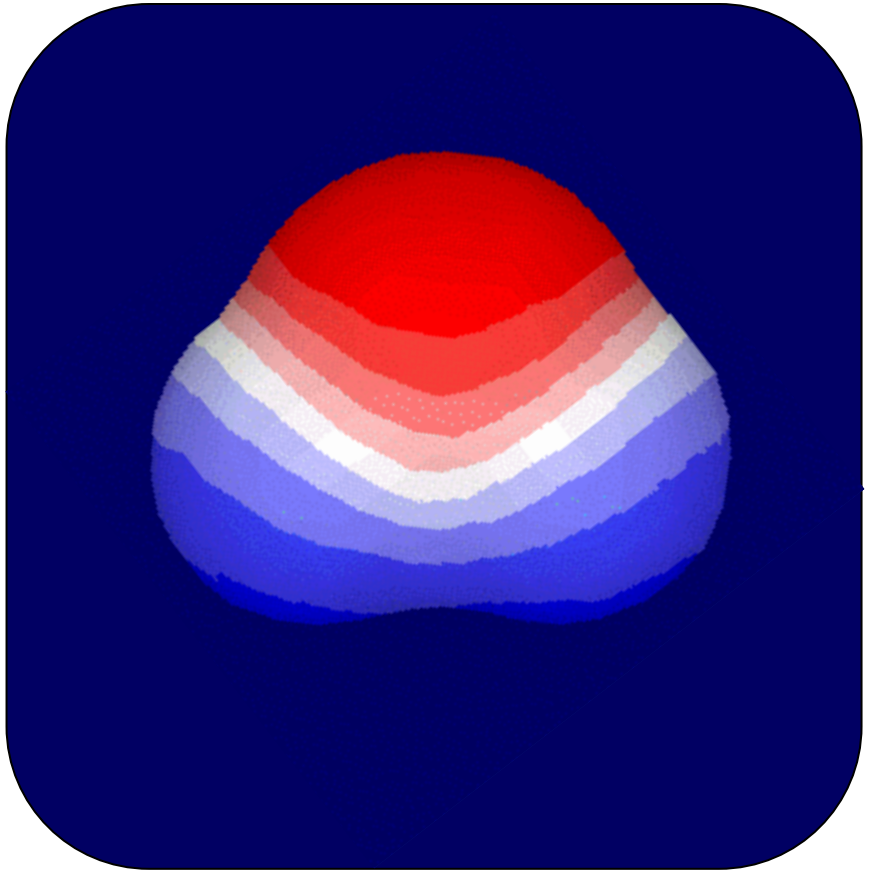
A) In season drought

B) Drought on drought



Water (H_20)



Negative polarity

Positive polarity

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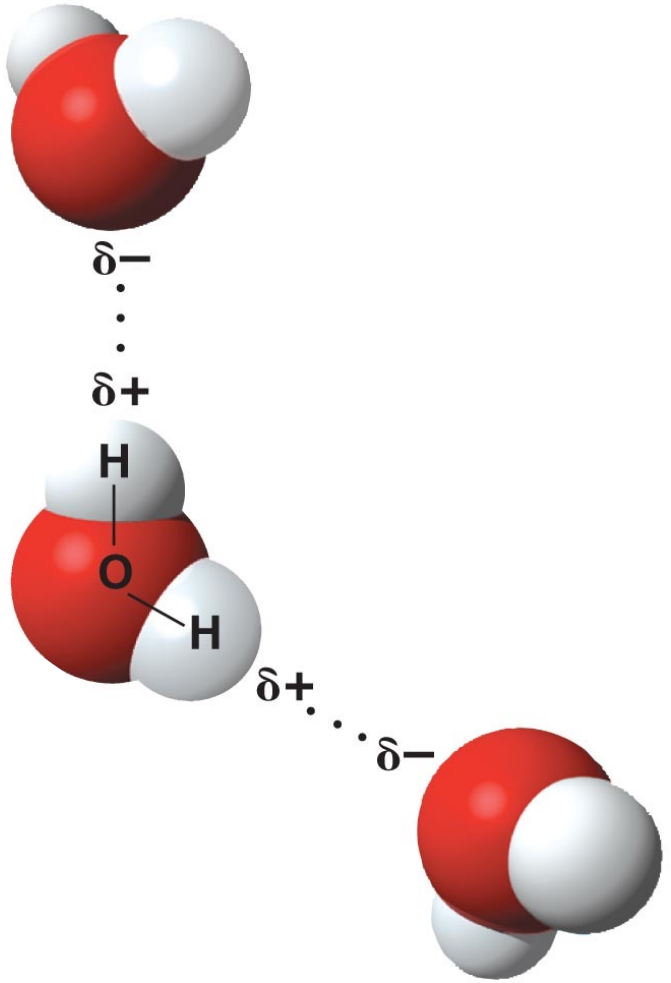

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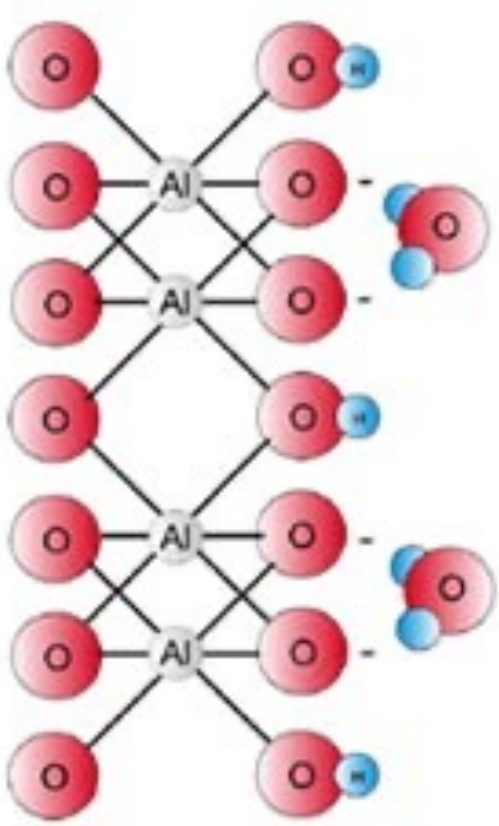
Soil Surface



Plant unavailable water

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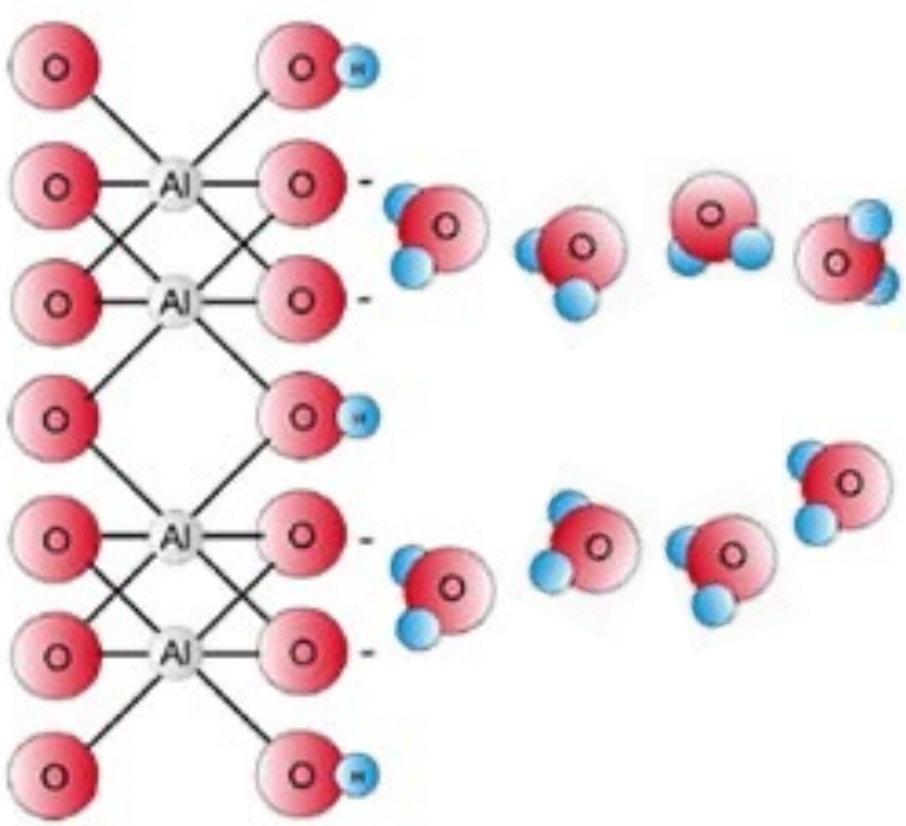
Soil Surface



Plant Available Water

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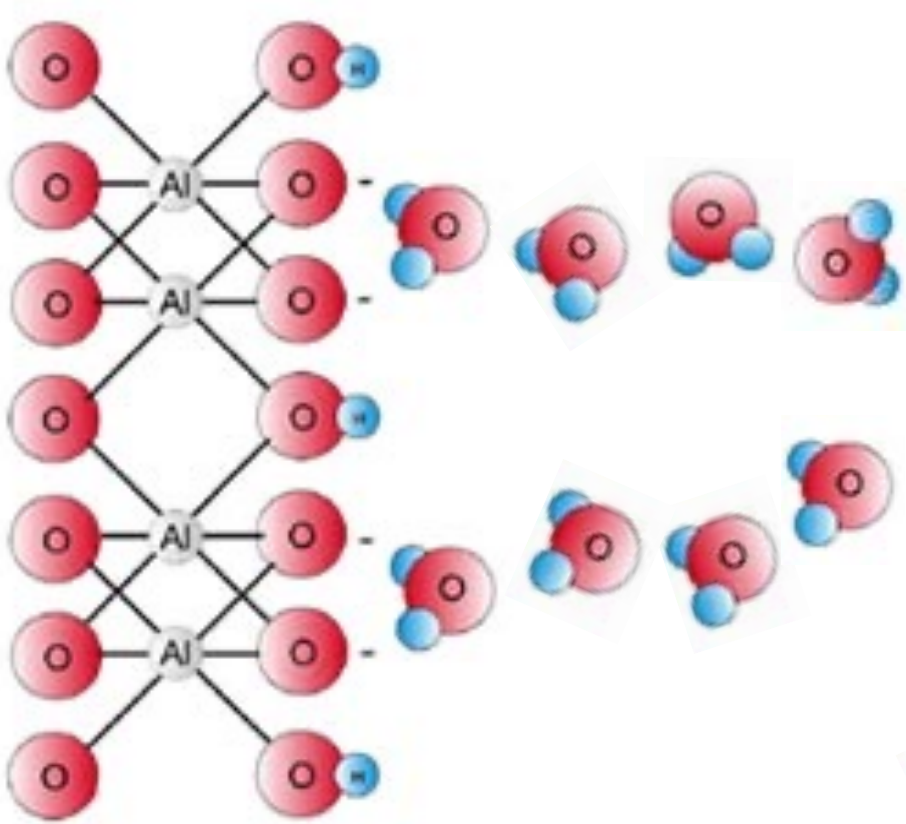
Soil Surface



Water draining

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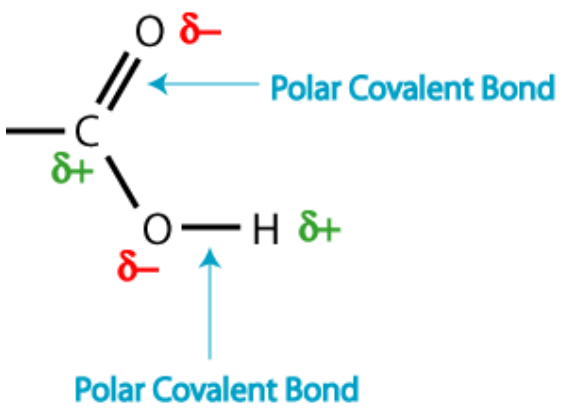
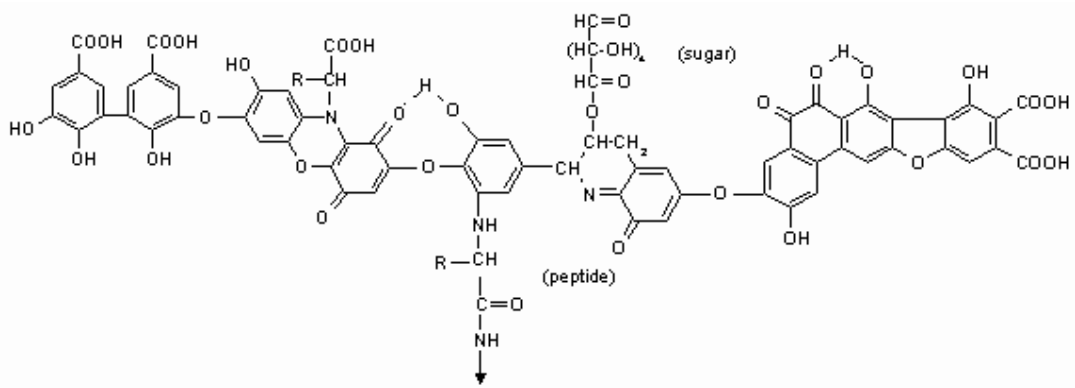
Carboxyl group





Model structure of humic acid

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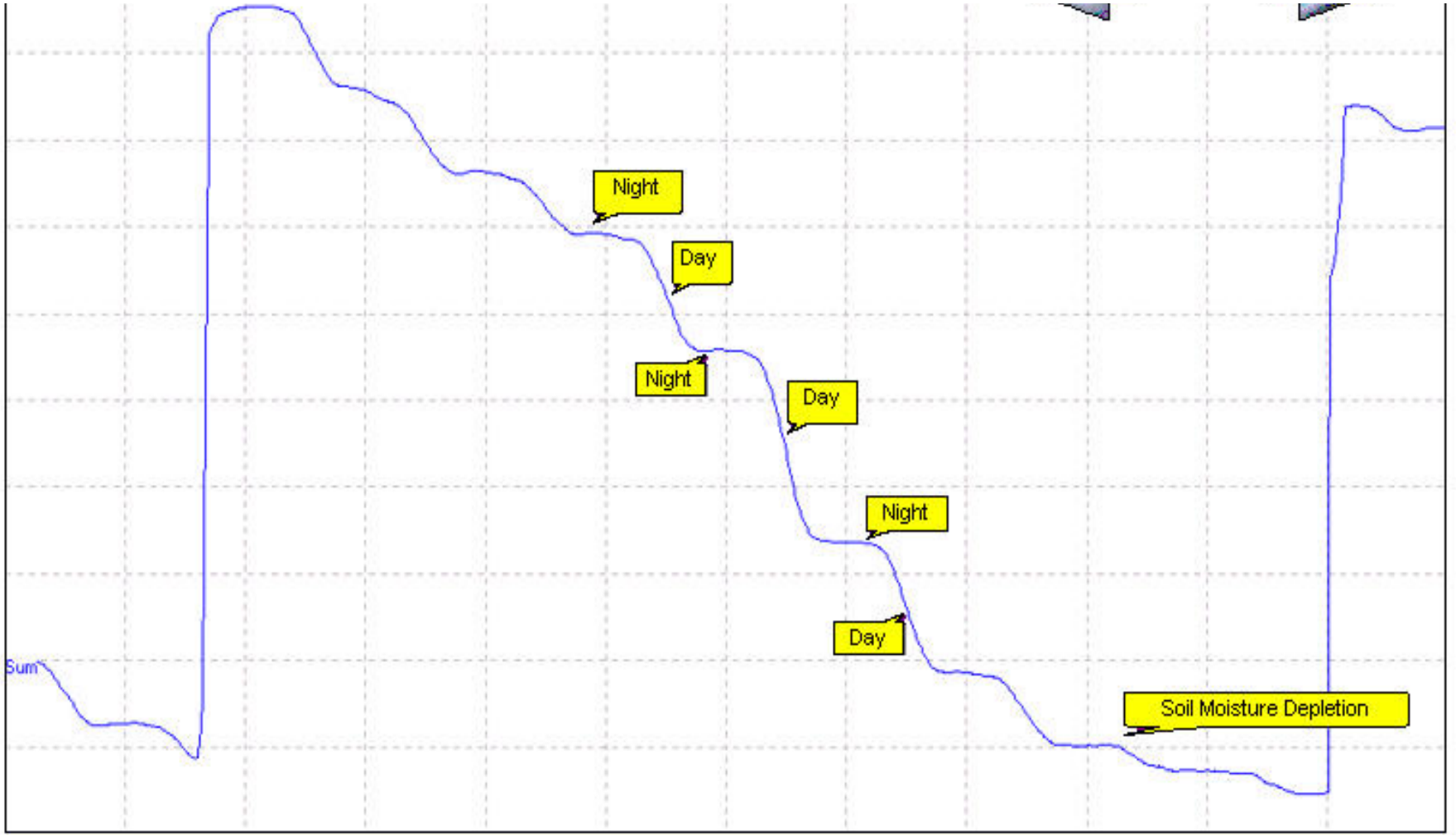
Night
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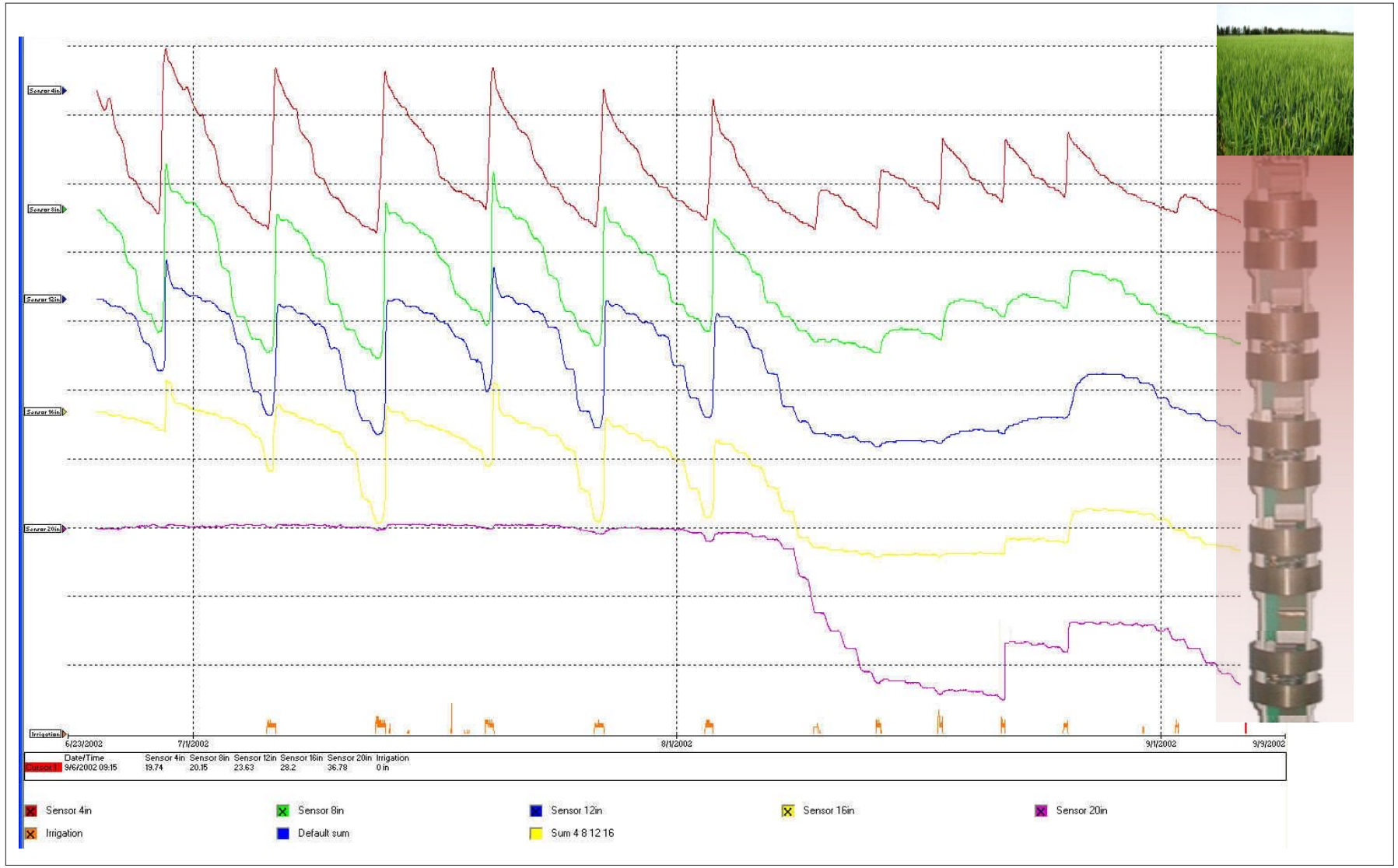
Soil Moisture Depletion



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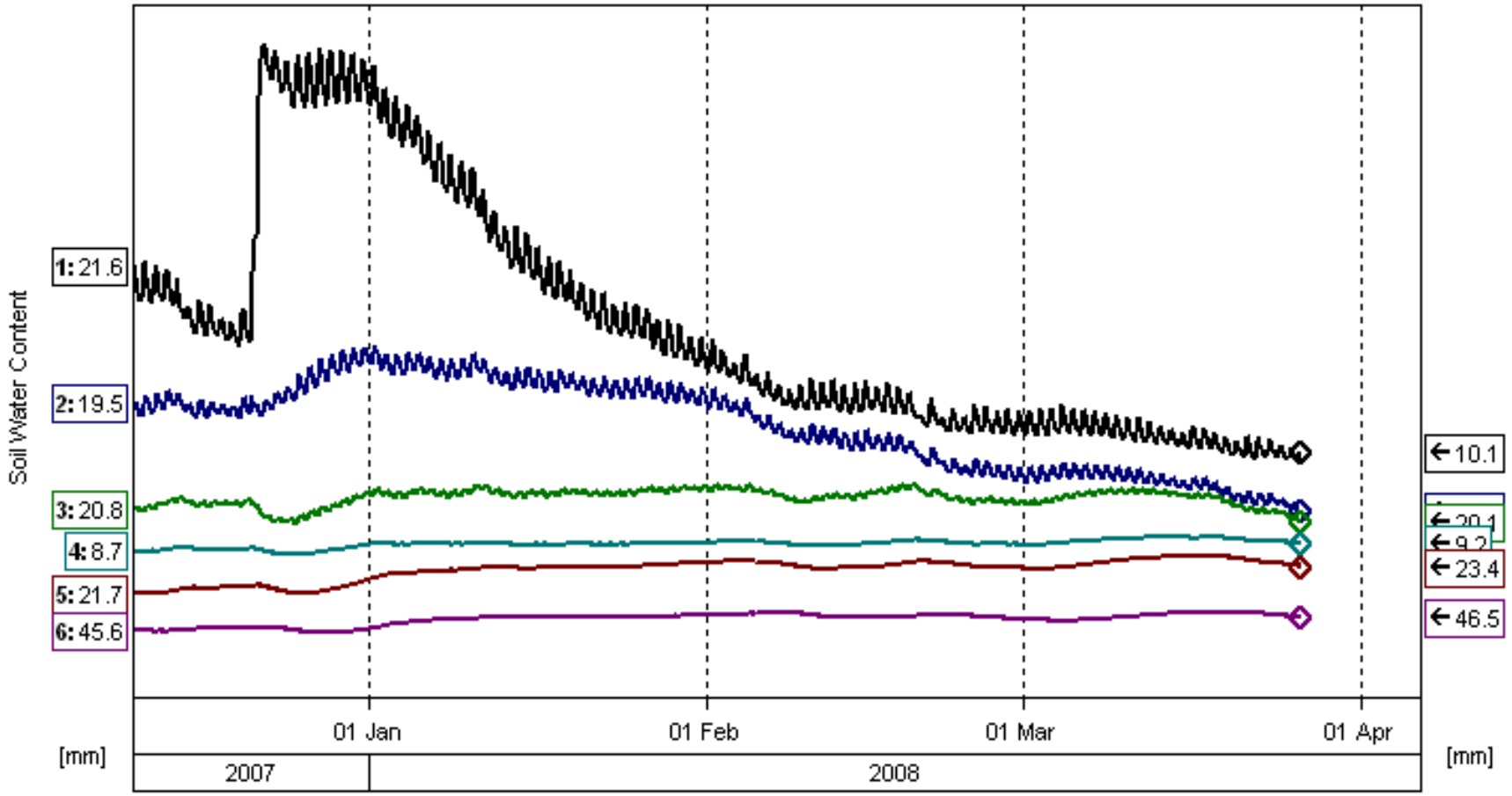
Loss of moisture from shallow summer rainfall



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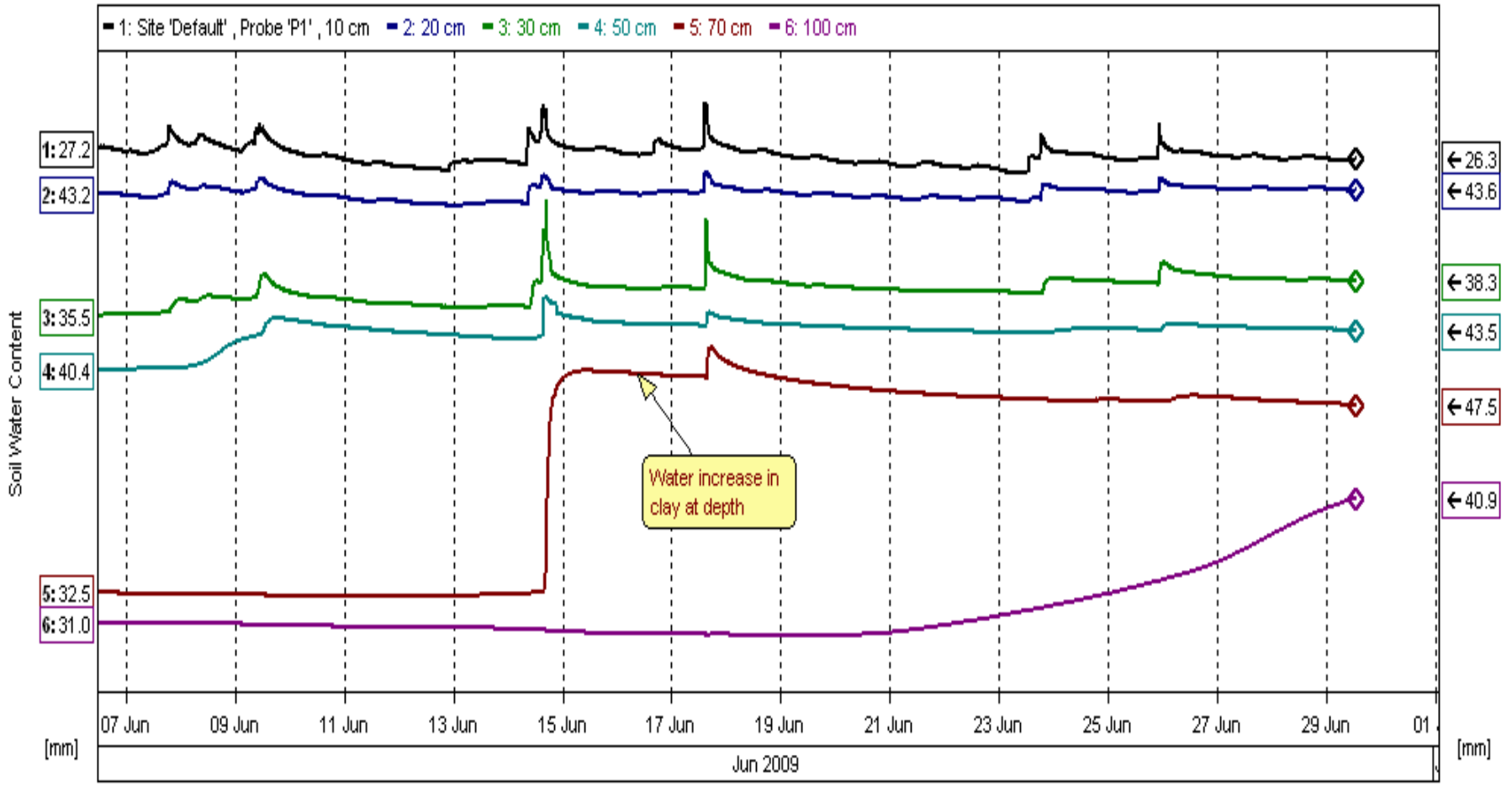
Deep moisture penetration (Winter)



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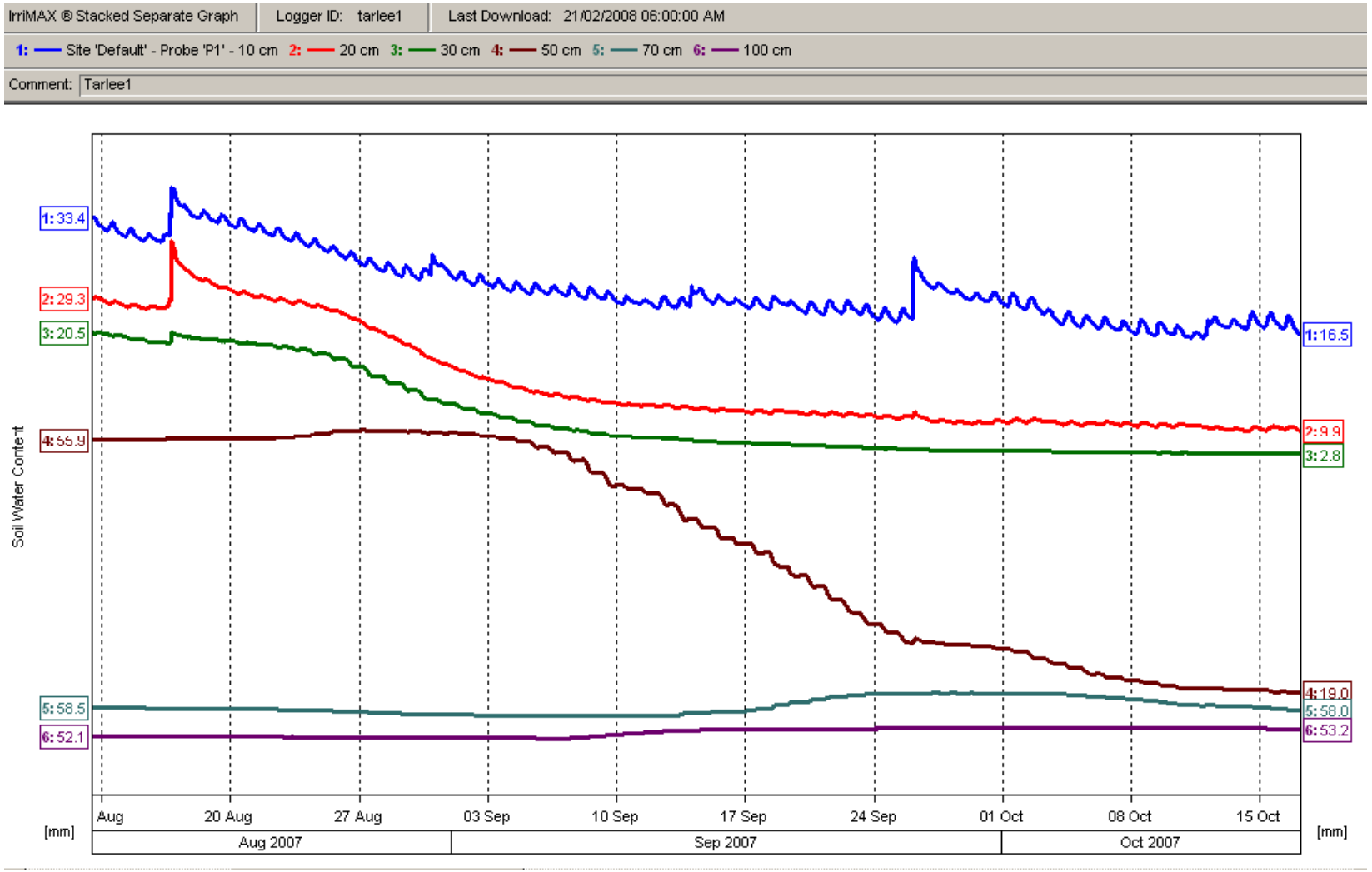

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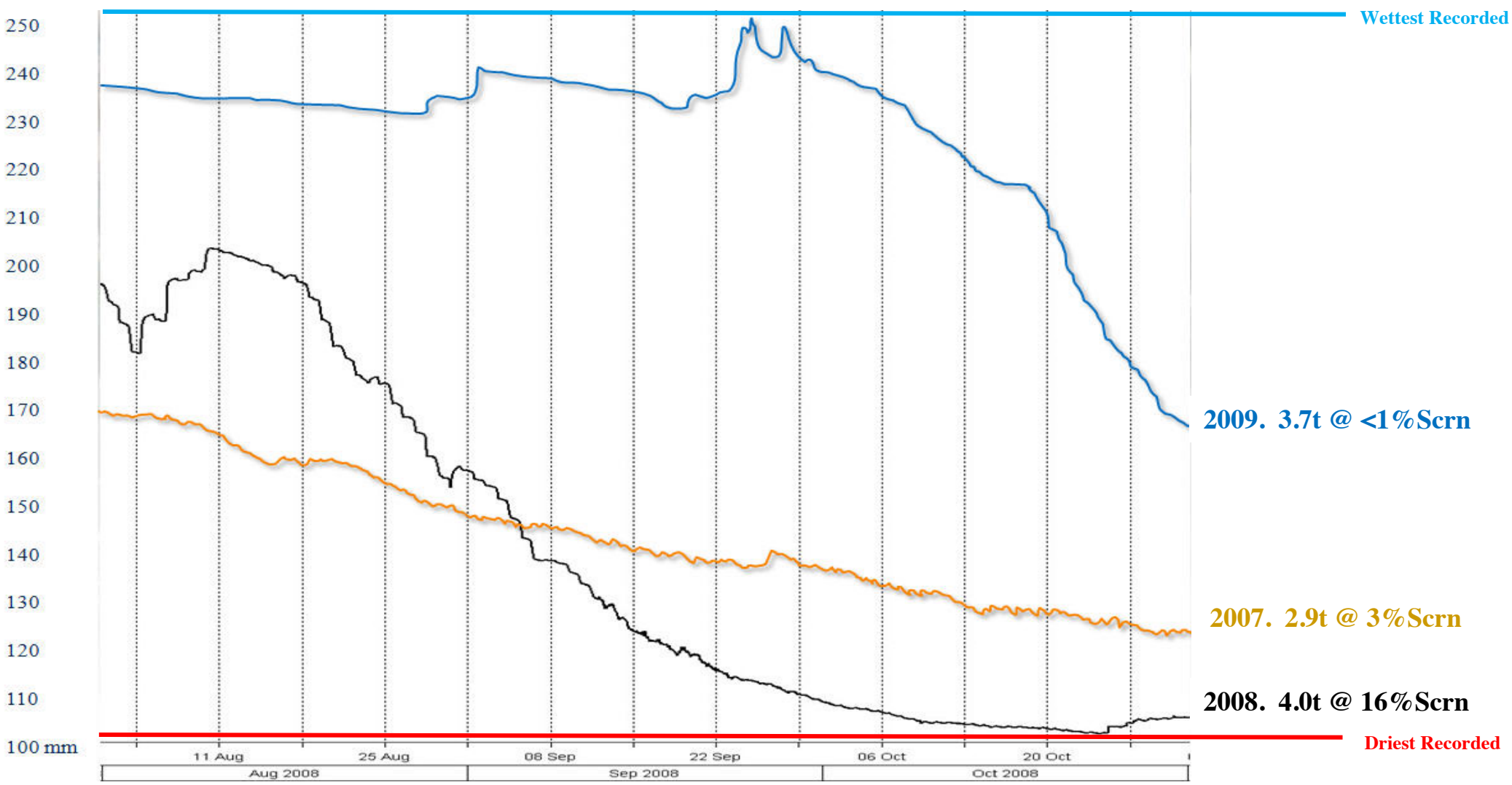

< Yield Potential **Grain Fill >**

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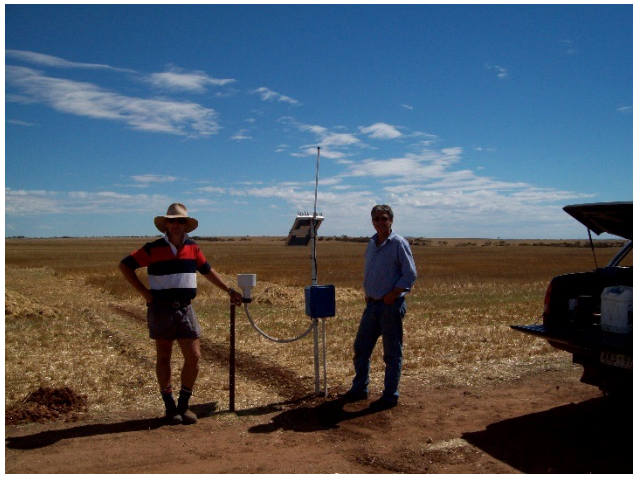
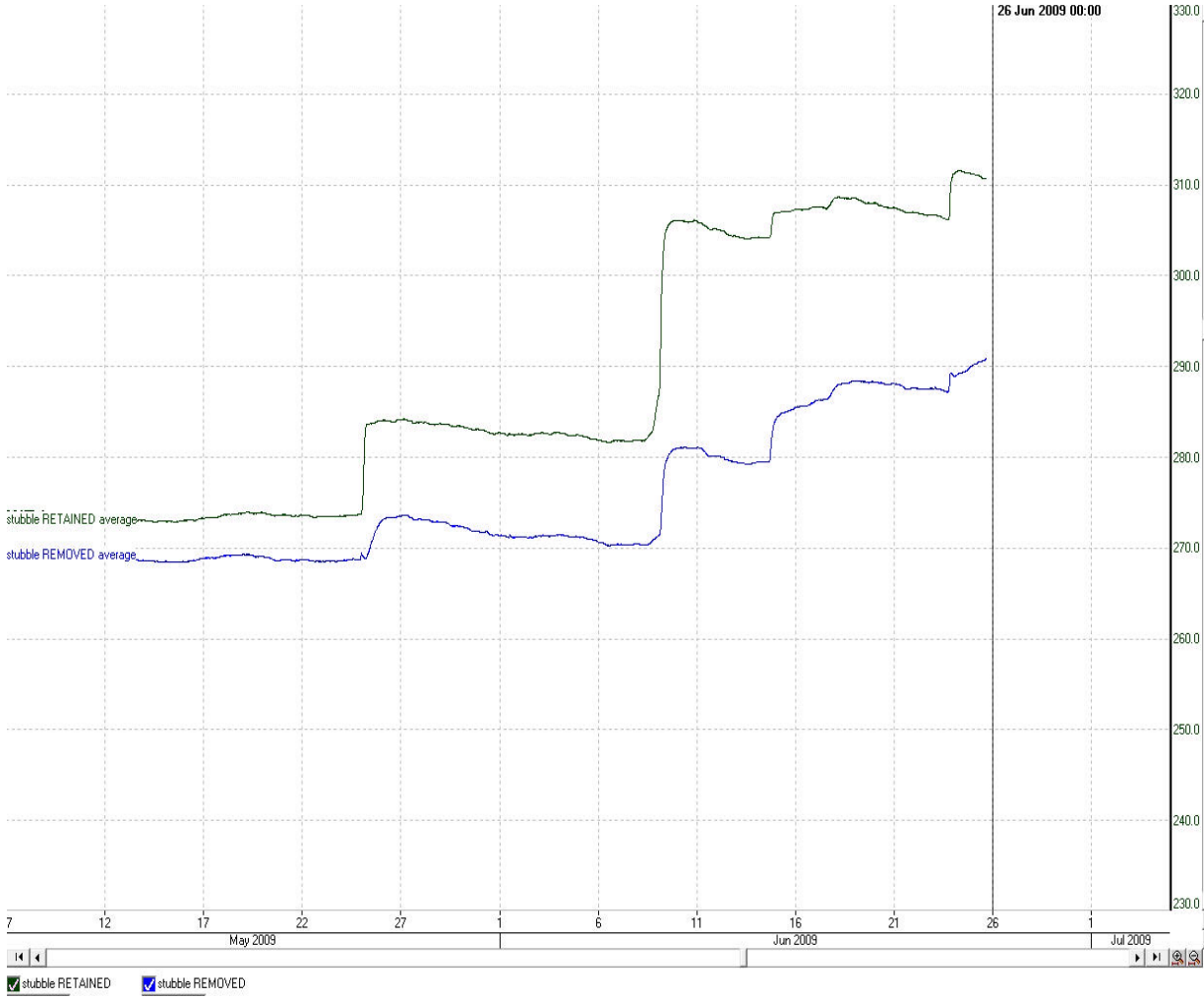
groundcover, groundcover & groundcover





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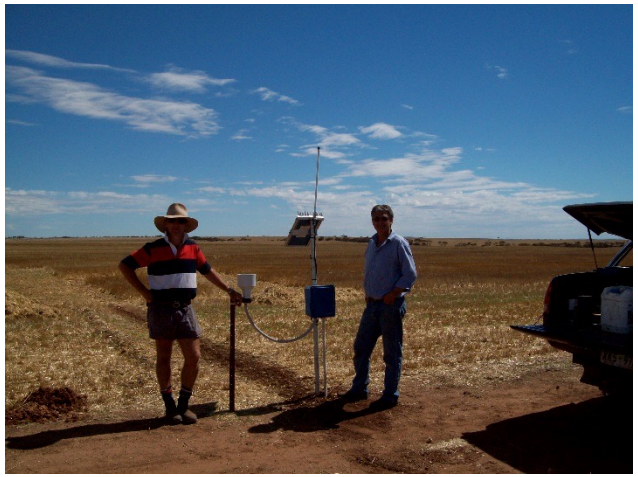

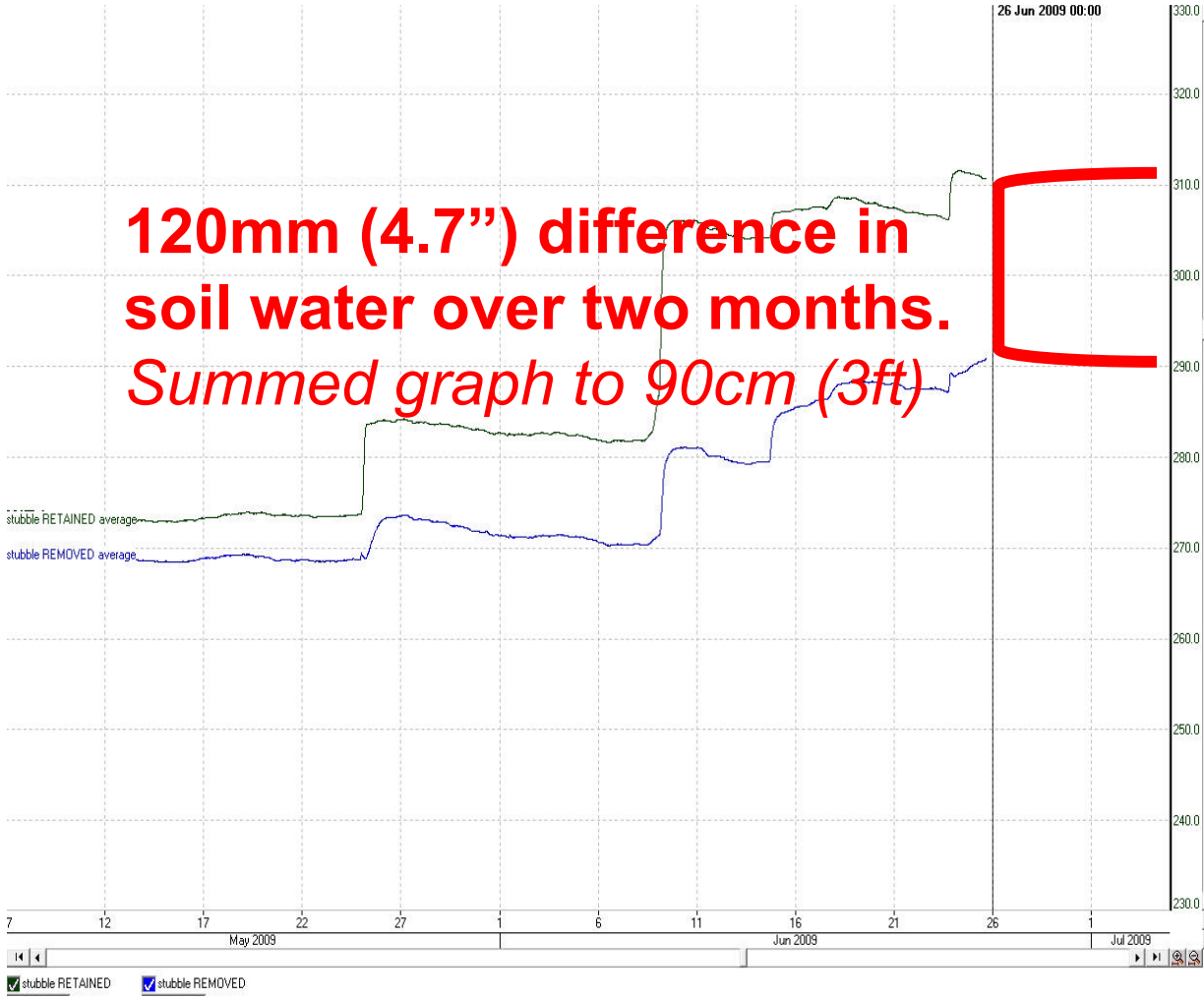

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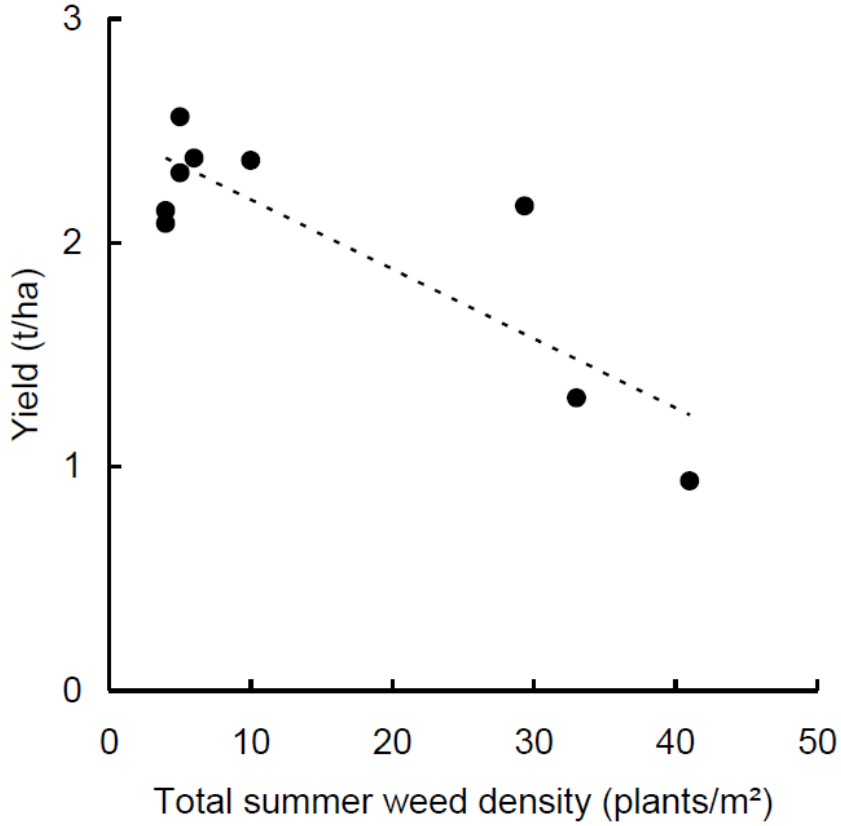
Summer Weed Control



Courtesy James Hunt, CSIRO & GRDC

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Summer Cover Crops

Tweets 1,300 | Following 162 | Followers 2,924 | Likes 310 | Following

Tweets | Tweets & replies | Media

SANTFA @SANoTill · Dec 14

Cover Crops in marginal Aust cropping! yield map tells same story it has (for me) the last 3 years. A 1tn/ha or more yield decline after mixed summer cover terminated @ flowering. What's the key to seeing the benefits from biodiversity etc without the yield penalty?@phillisfarms

13 4 44

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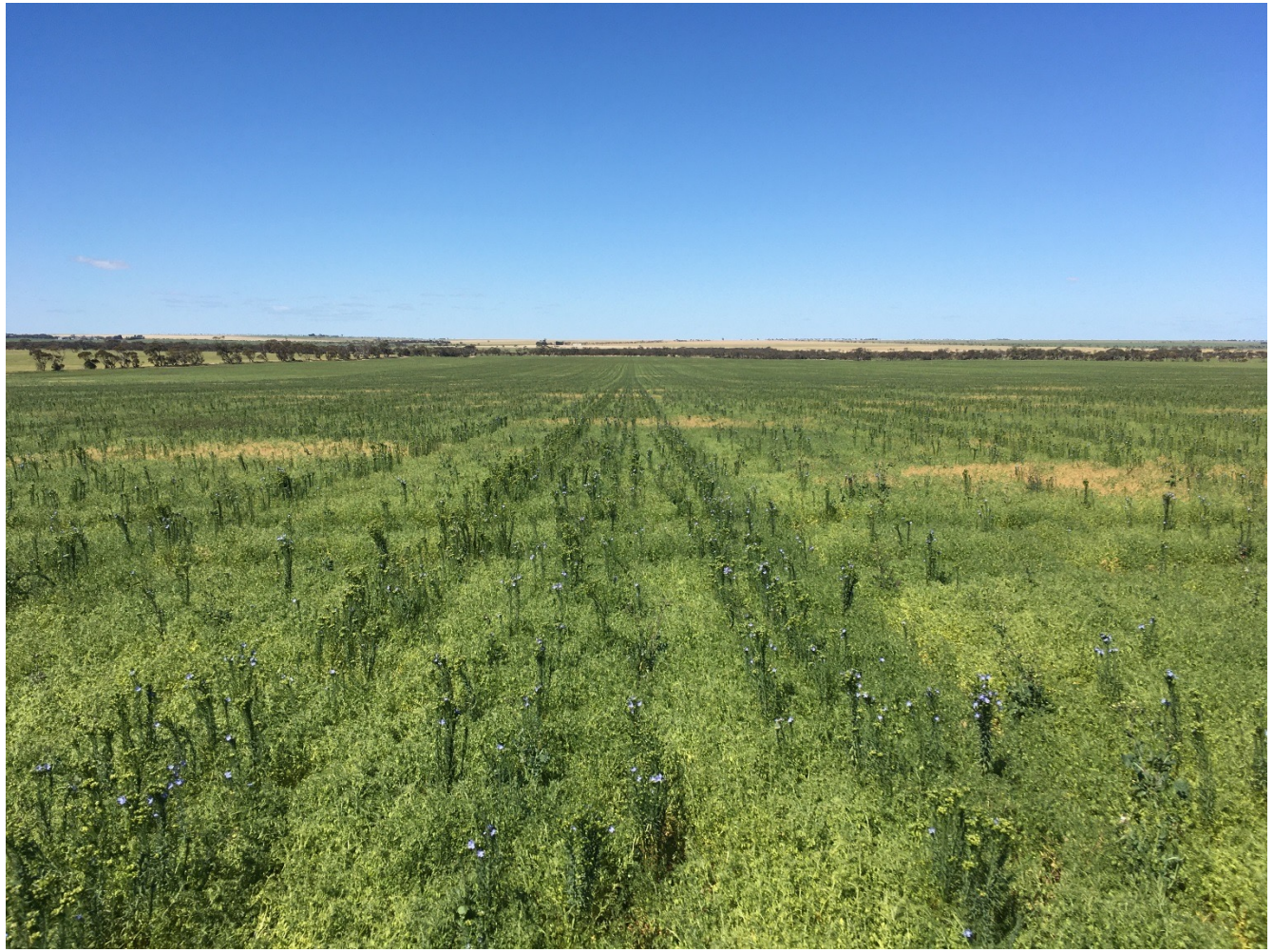
Companion and Intercrops



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Baling: Failed Crops and Straw.

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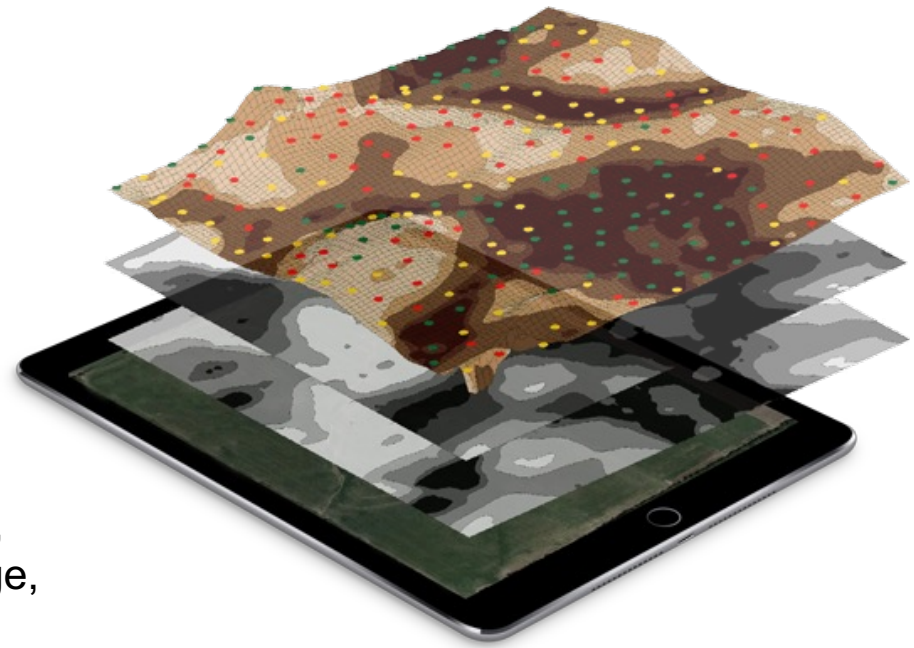
Measure

Organic Matter

Soil OM is both evidence of previous productivity and a driver of future yields. The increased water availability, soil structure and nitrogen mineralization are keys to guiding inputs.

Multi-depth Texture (EC)

Measuring soil electrical conductivity is a proven method of mapping soil texture. The major driver of water holding capacity, Cation-Exchange Capacity (CEC), drainage, topsoil depth and nutrient use, loss, and storage. Recording EC at several depths provides these insights throughout. the rooting zone.



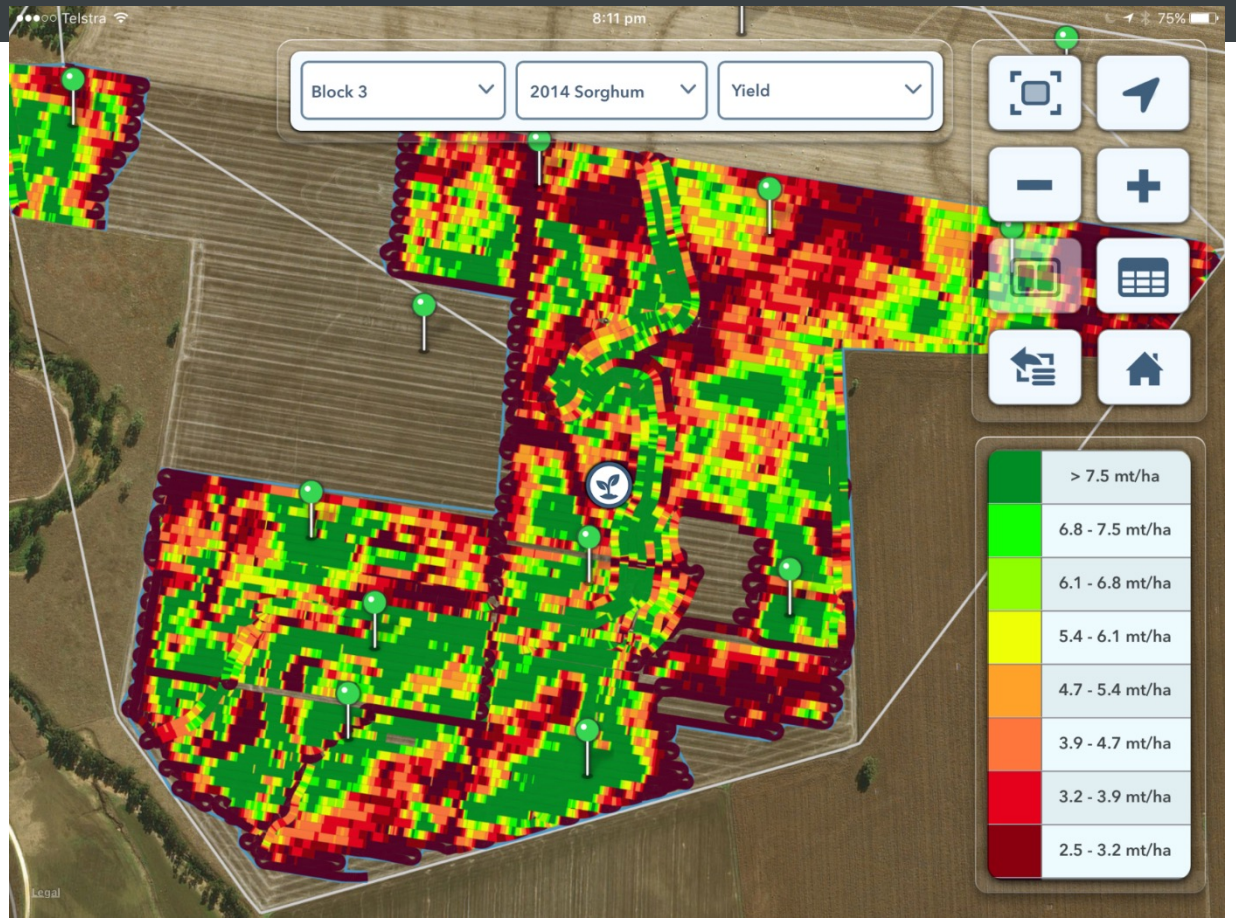
Soil pH

Nutrient use, crop growth, and herbicide activity are all affected by the pH of the soil. Extreme variability within fields demands the dense sampling of on-the-go soil sensing.

U Series

Veris Soil EC and OM mapping is now available in a compact yet powerful package. This reduces the total equipment investment and widens the mapping window.

Map Layers



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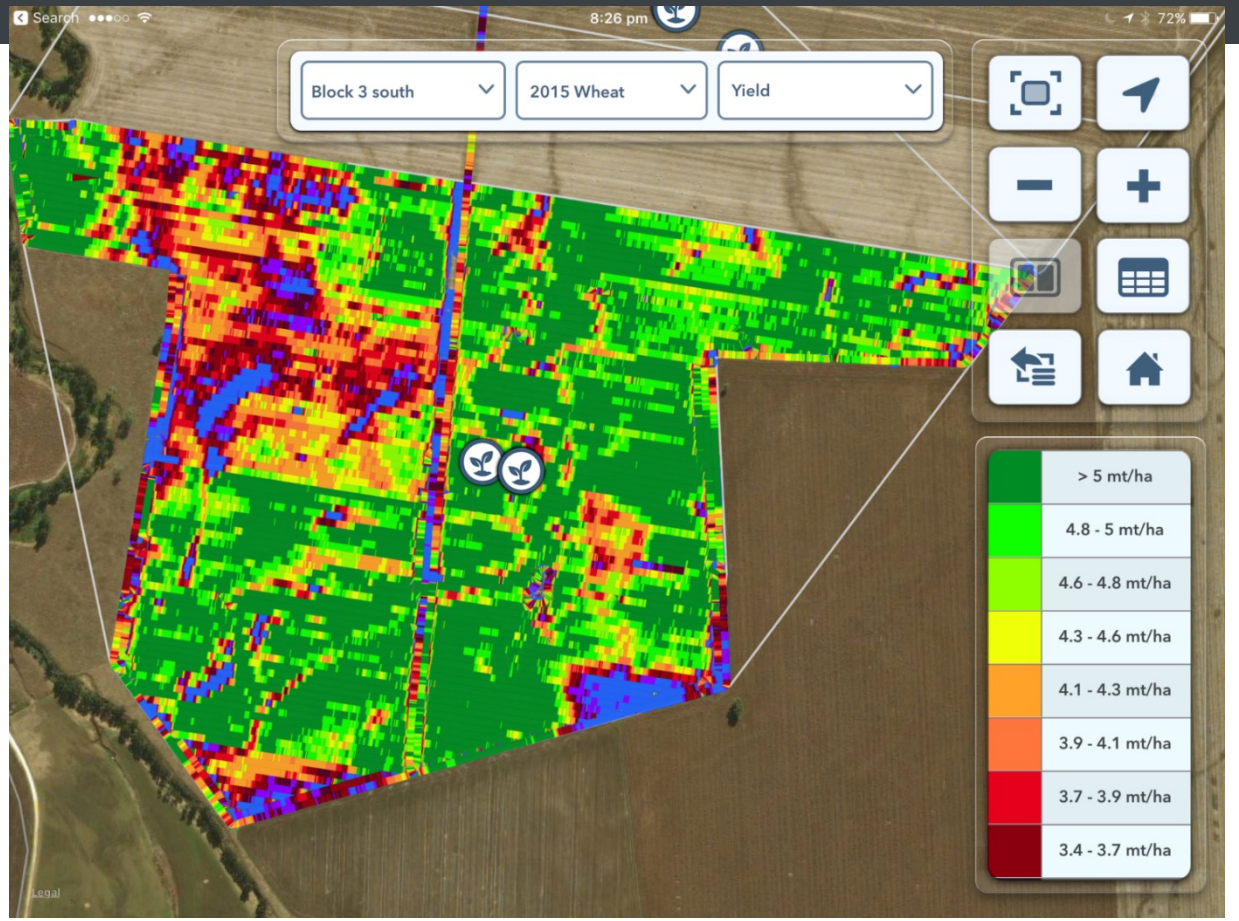

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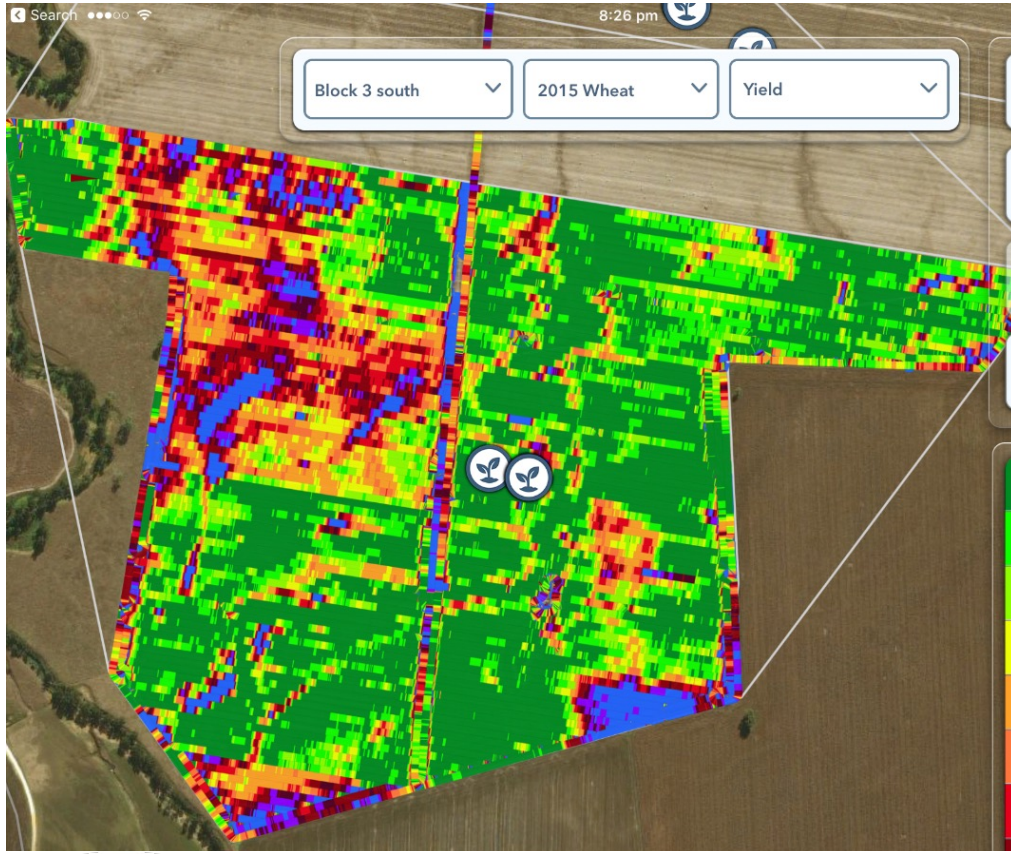

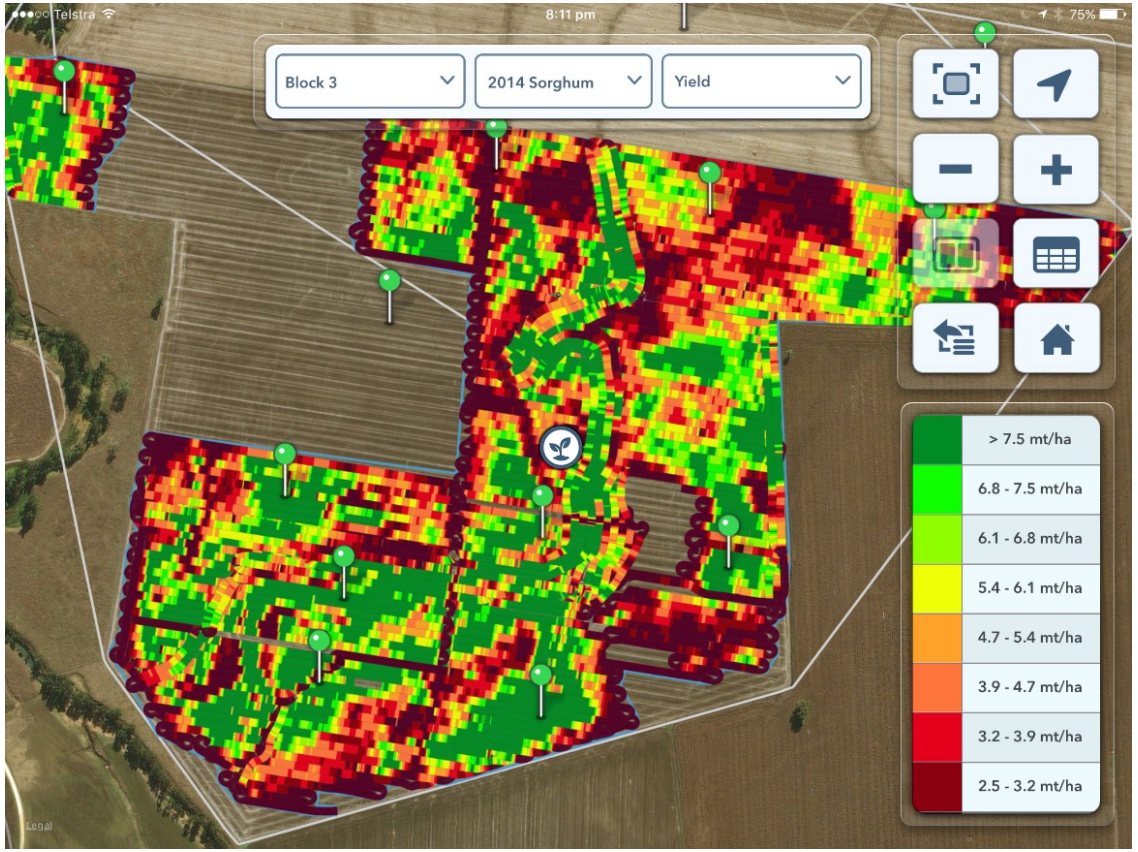

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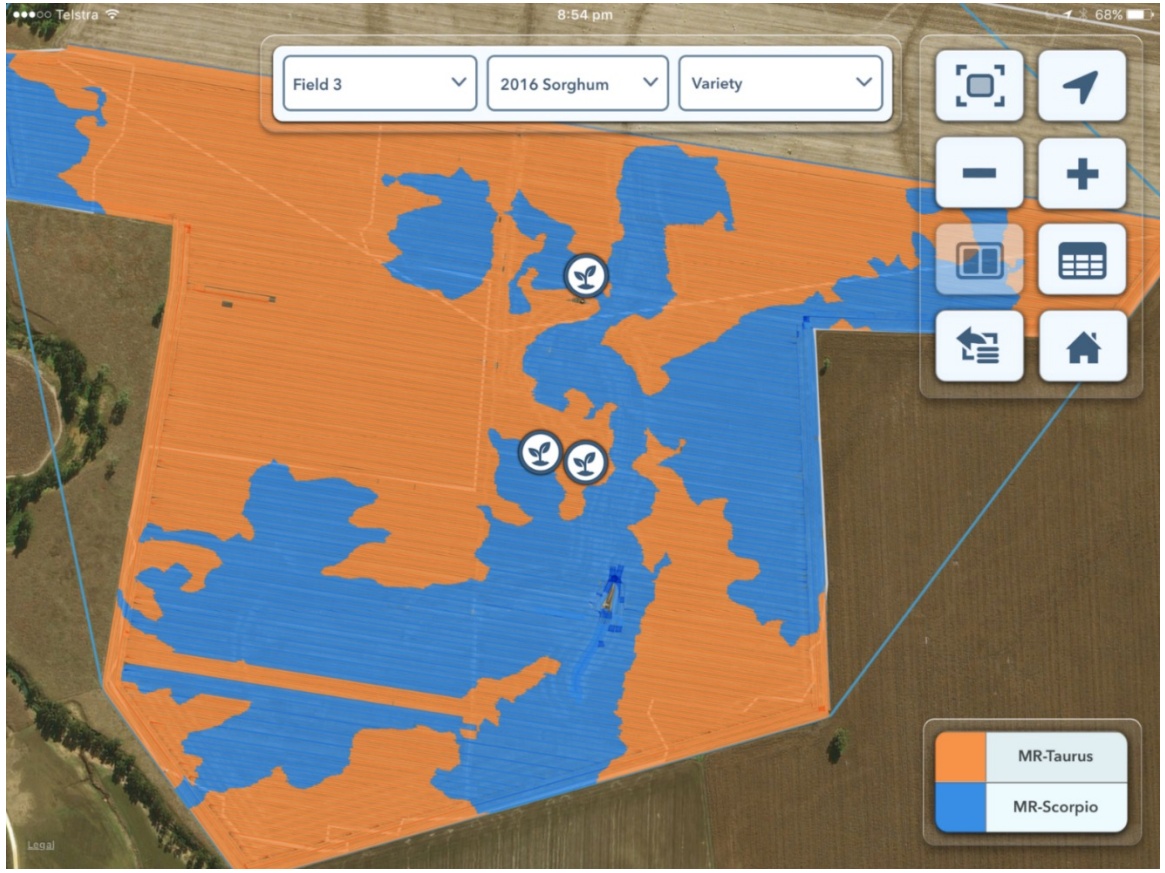

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