



DOES WATER = PROFIT ?

Callum March
Balaklava SA



Business Background

- 1400 Ha
- Crops: Durum, bread wheat, Barley, Canola and Lentils
- Rainfall: 350mm (2003-2011 - 297mm)
- Location: 90km north of Adelaide
- Want to improve our Water Use Efficiency

Maximising WUE

- Zero till seeder
- Full stubble retention
- Cereal stubble left as high as possible
- Summer weed control
- In crop weed control
- Early sowing (varietal selection)
- Moisture monitoring

History of Using Soil Moisture Probes

- In May 2009, Rural Directions, in partnership with SANTFA, won a grant to run a soil moisture probe project
- After gaining sponsorship from three NRM Boards, 10 probes were purchased and installed in focus paddocks
- We installed a probe in our paddock, which provided a focus for a local crop discussion group

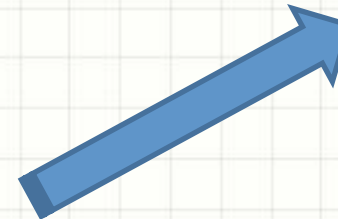




Benefits from “Working in a Group”

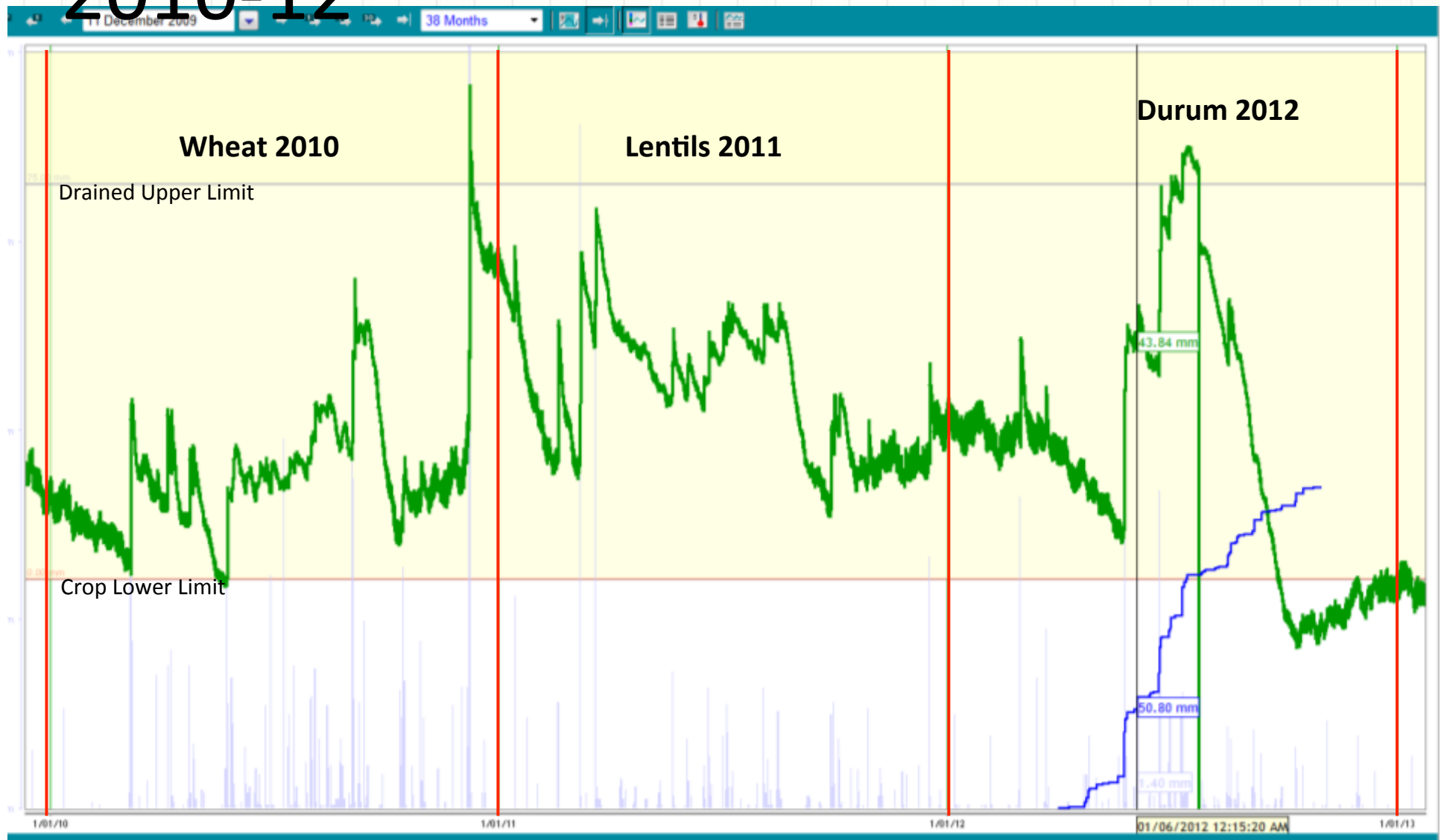
- See what is happening in other districts
- Discussion of probe data and implications with agronomists and other farmers
- Learning about how to use the technology
- Learn how different soil types work – pitfalls and advantages

What we did in 2012....

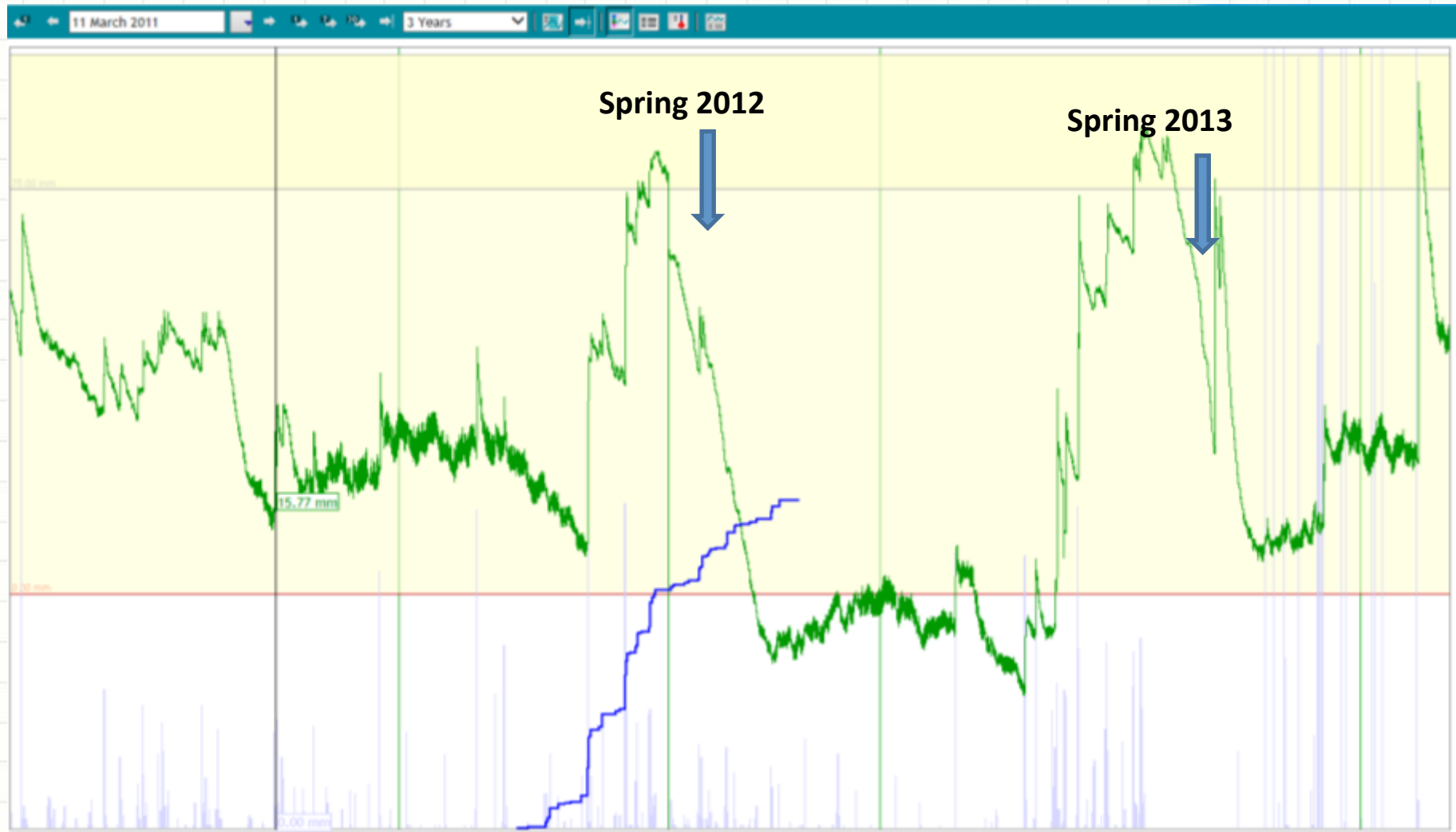


Plant Available Water (PAW)

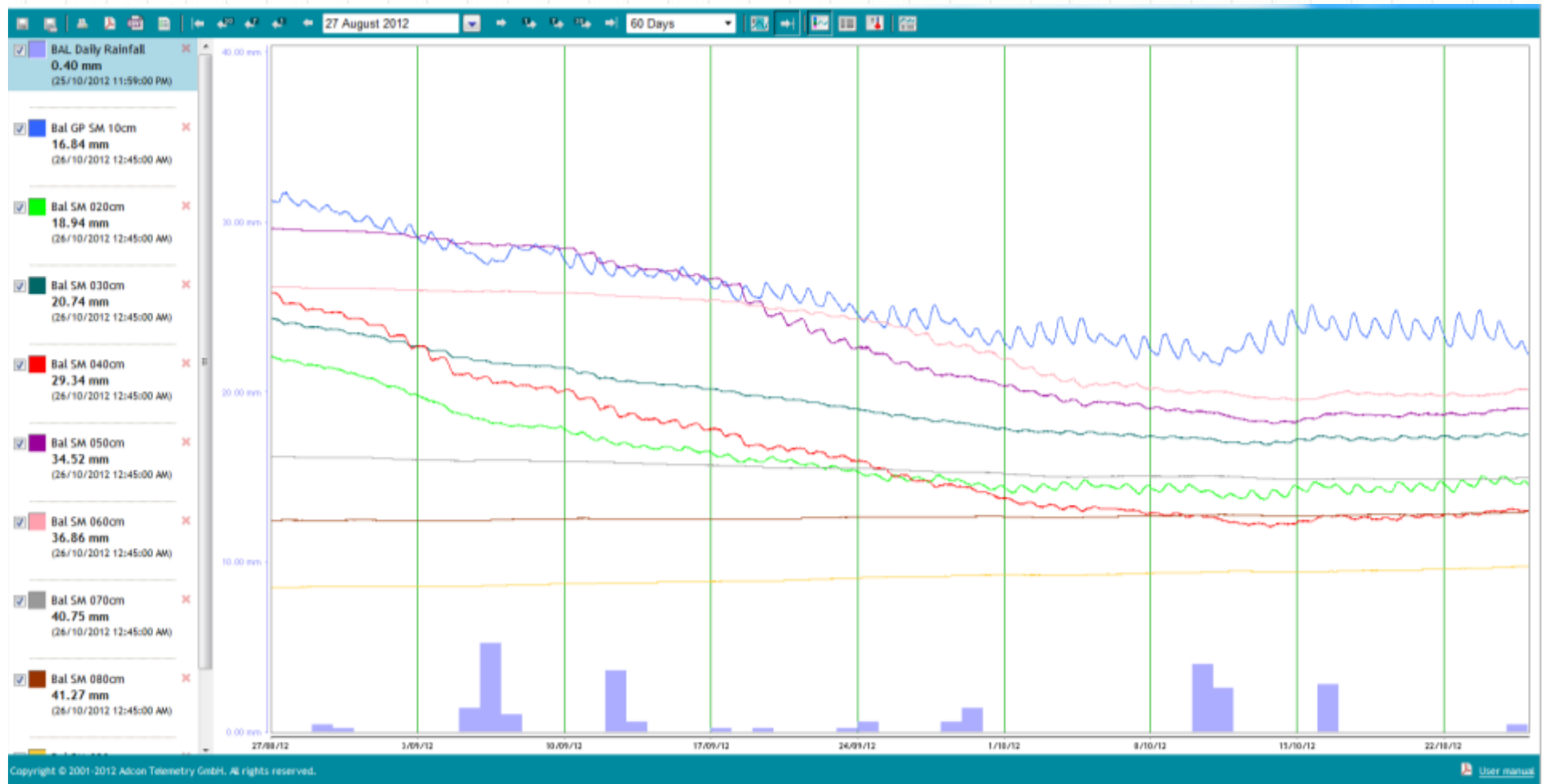
2010-12



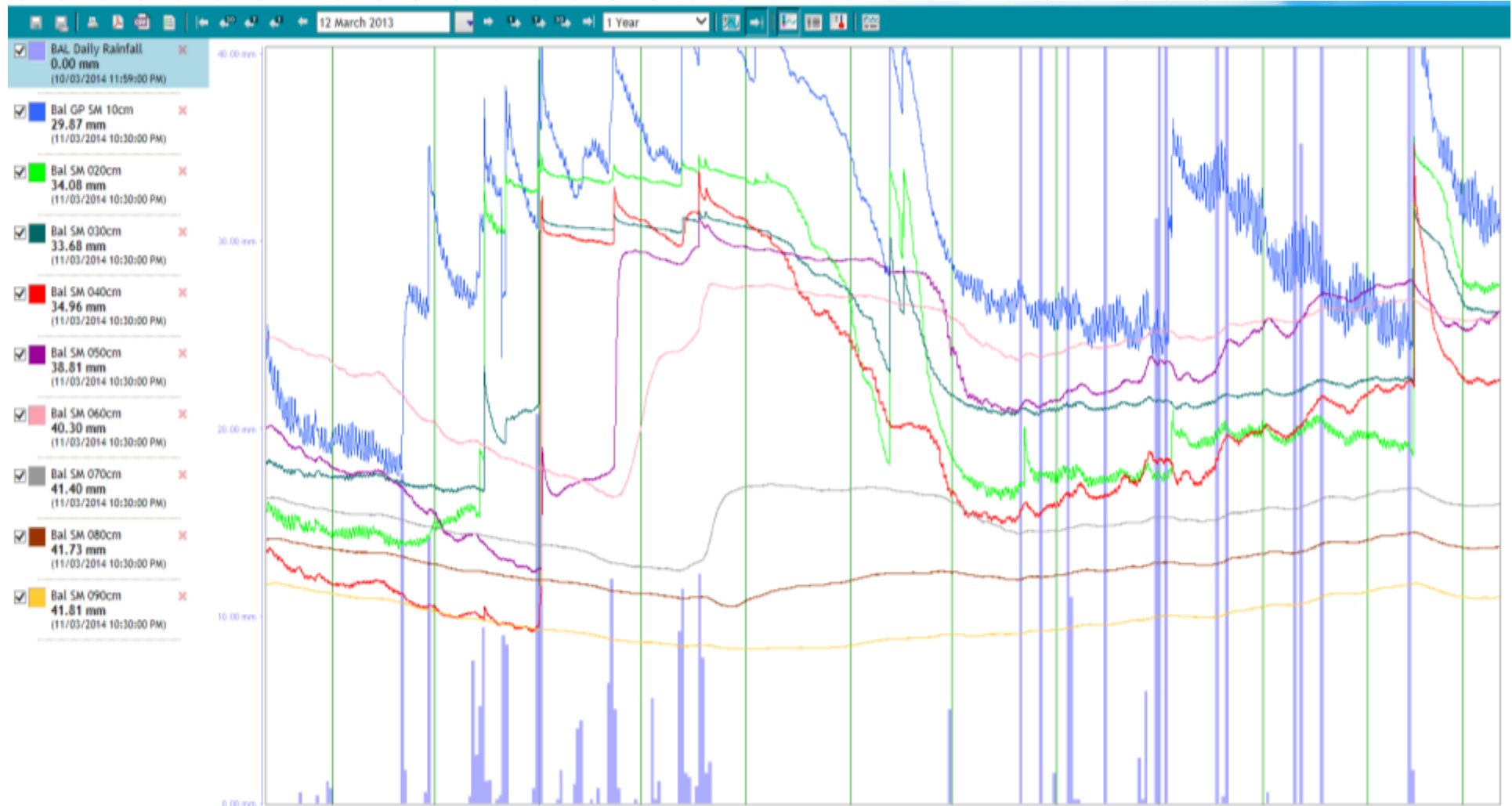
PAW March 2011 to March 2014



Separate Graph



Separate Graph 2013





Decision Support

- Post emergent nitrogen applications
- Grain marketing
- Validate/challenge “gut feel”
- Crop planning
- Business planning
- Track water use efficiency



WATER USE EFFICIENCY

Richmond Park Holdings	2003	2004	2005	2006	2007	2008	2009	2010	2011	Ave
Growing Season Rainfall (Apr-Oct)	309	243	321	155	252	173	302	321	196	199
Annual Rainfall (mm)	417	320	402	274	315	257	346	556	341	297
Water Use (Income/100mm/ha)	\$167	\$92	\$141	\$142	\$183	\$187	\$231	\$175	\$170	\$ 165

The future

- Hopefully have data feed directly into Yield Prophet
- Keep learning from the data we and others are collecting
- Probably use additional probes on other soil types
- Excited about where this technology could take us

Pasture management

- How much available moisture you have
- Where is it in the profile and are the plants accessing it
- How many weeks pasture growth do you have left with the available moisture
- Can you finish stock or should you sell some
- Water infiltration
- Could different pasture species make better use of the available water
- Are there soil constraints limiting pasture growth and reducing WUE
- Is there potential for water logging and pasture pugging
- Fertilizer decisions, top dress or not?
- Stocking rates

Does water = profit

- Only if you are converting the water into good pasture growth for stock grazing or hay production.
- Not if you are losing water to runoff, evaporation or not utilising the complete moisture profile.

Take Home Message

- Working in a group is a great place to start
- Learn how to read and understand what the data is showing
- Soils vary considerably in how they react to moisture so understand your patch and know what your limitations are
- Benchmark your Water Use Efficiency
- Moisture probes can tell you a lot about what is happening underground, not just how many mm are left in the soil



ACKNOWLEDGEMENTS

- Rural Directions Team
- SANTFA
- Aqualab
- Organizations who have helped fund the project



QUESTIONS?



**THANK YOU FOR THE
INVITATION TO SPEAK**