

Remote Water Monitoring and Management

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meatup
FORUM

 **mla**
MEAT & LIVESTOCK AUSTRALIA

Connectivity *IS* the next agricultural revolution





**It's happening
whether you
like it or not!!**

**Which one are
you?**

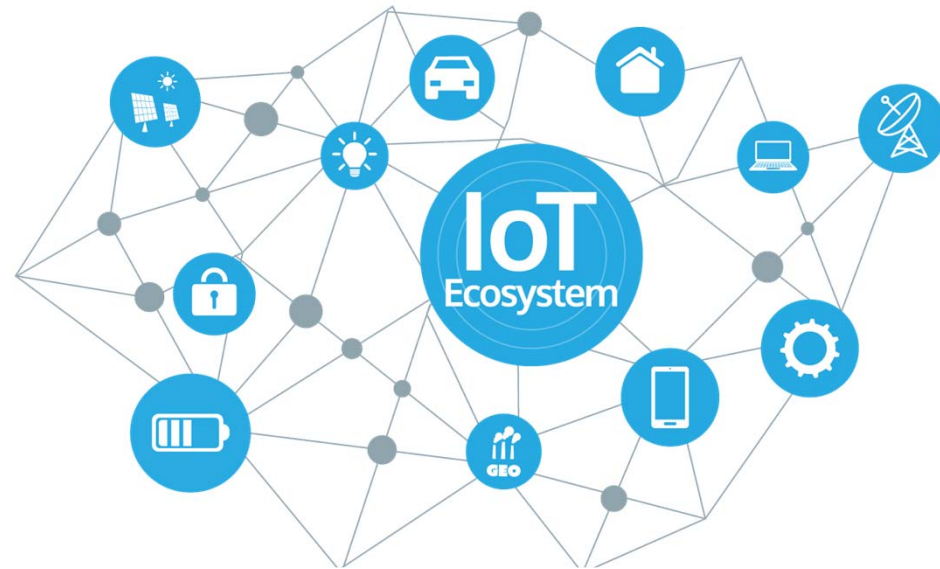
IOT – WTH?
Internet of Things -
What the Heck???

Internet of Things

- Take it at it's most basic meaning
- **“Things** that are connected to the **Internet”**
- This is not new!!
- The **types of sensors** being connected is what we hope will be new & the platform being used
- It's a **concept** more than an literal description

IOT

Concept of connectivity



What has changed & what hasn't?

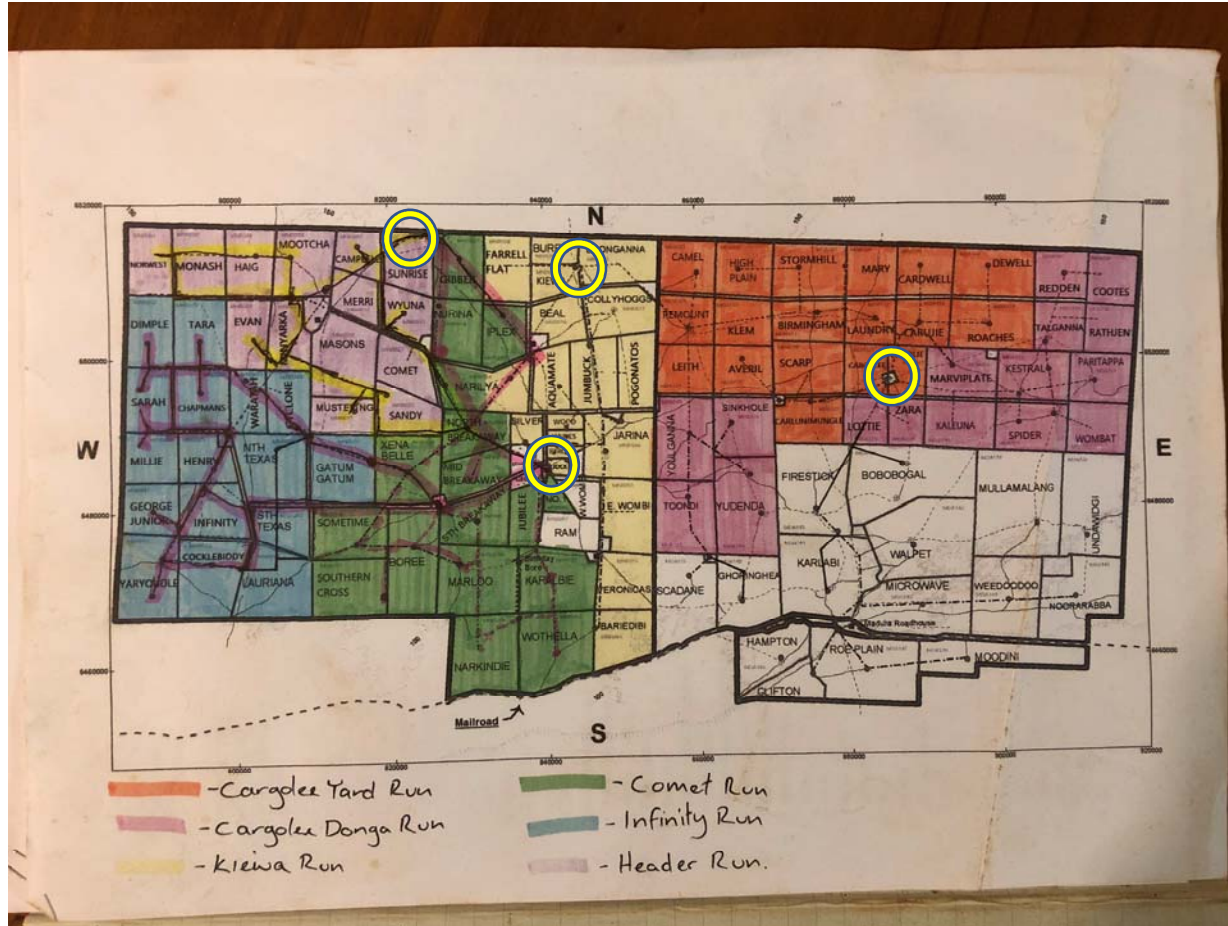
- Generally we are still measuring things the same as we have for decades
- The way we consume the data has changed
 - Txt, email, internet, phones & tablets
 - ~~Videos, Cassettes, Floppy discs, Fax, Home phone~~
- The way we connect to the data has changed
 - Radio → CDMA → Next G → CatM1
- The way the **devices** connect is the next big change
 - The intention is for the cost per device to fall dramatically

Connectivity options

- LoRA WAN
 - (*Long Range Wide Area Network*)
- Cat M1
 - (Category M1 – Similar to 4G – 700Mhz band)
- Low orbit satellite
 - Eg Fleet, Myriota
- Taggle
- Sigfox

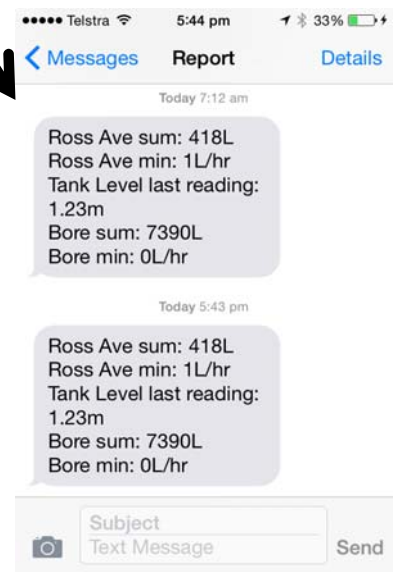
What are the
opportunities?



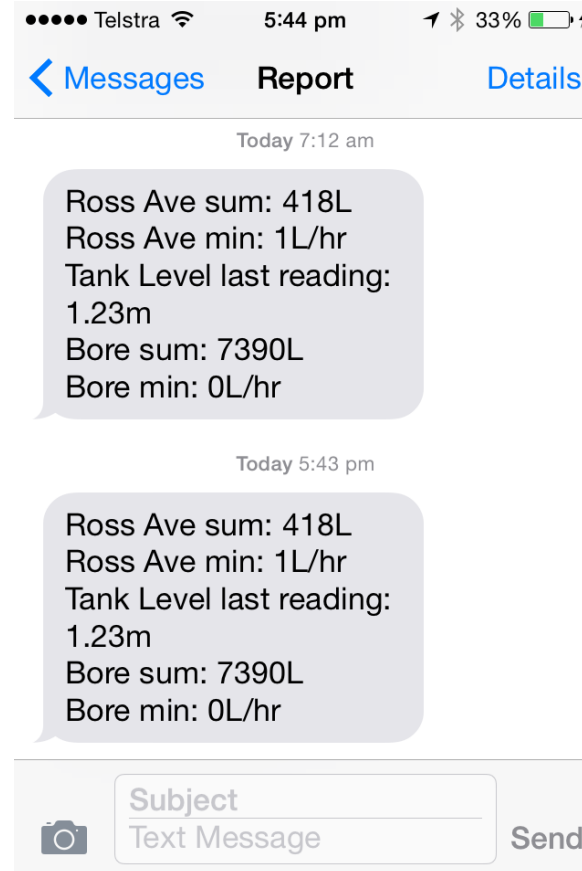


Connectivity is the next evolution





Daily Text Message



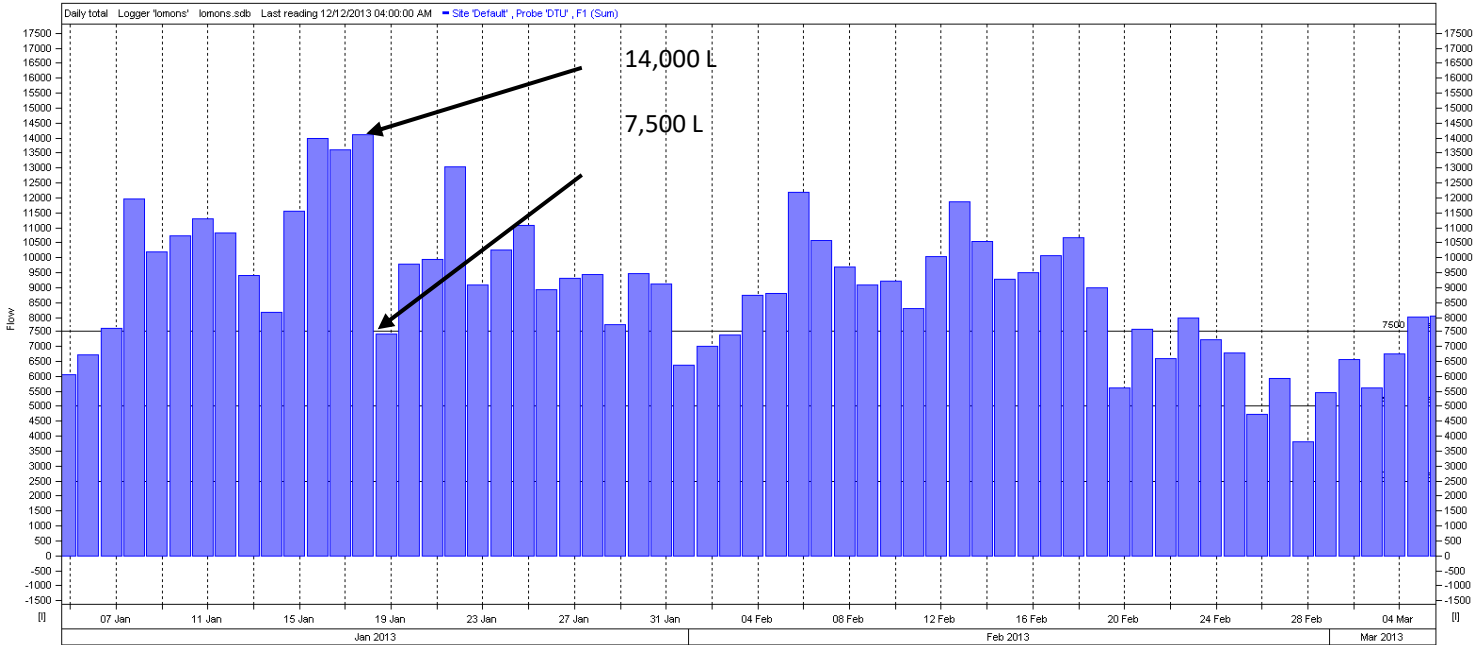
Why not cameras?



Flow data is the
game changer



Typical Daily Use Pattern



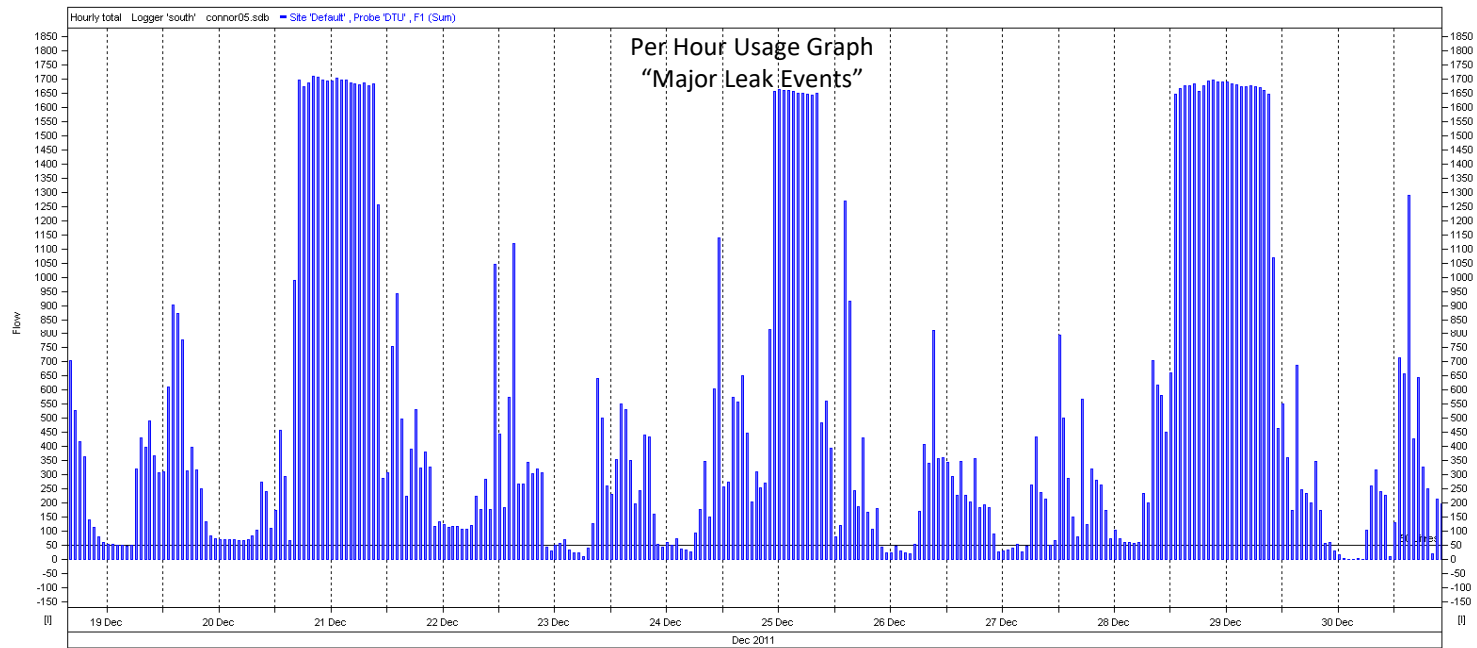
Generated by IriMAX™ Sentek Pty Ltd



Usage can double or halve over night
Averages are not a good enough indicator

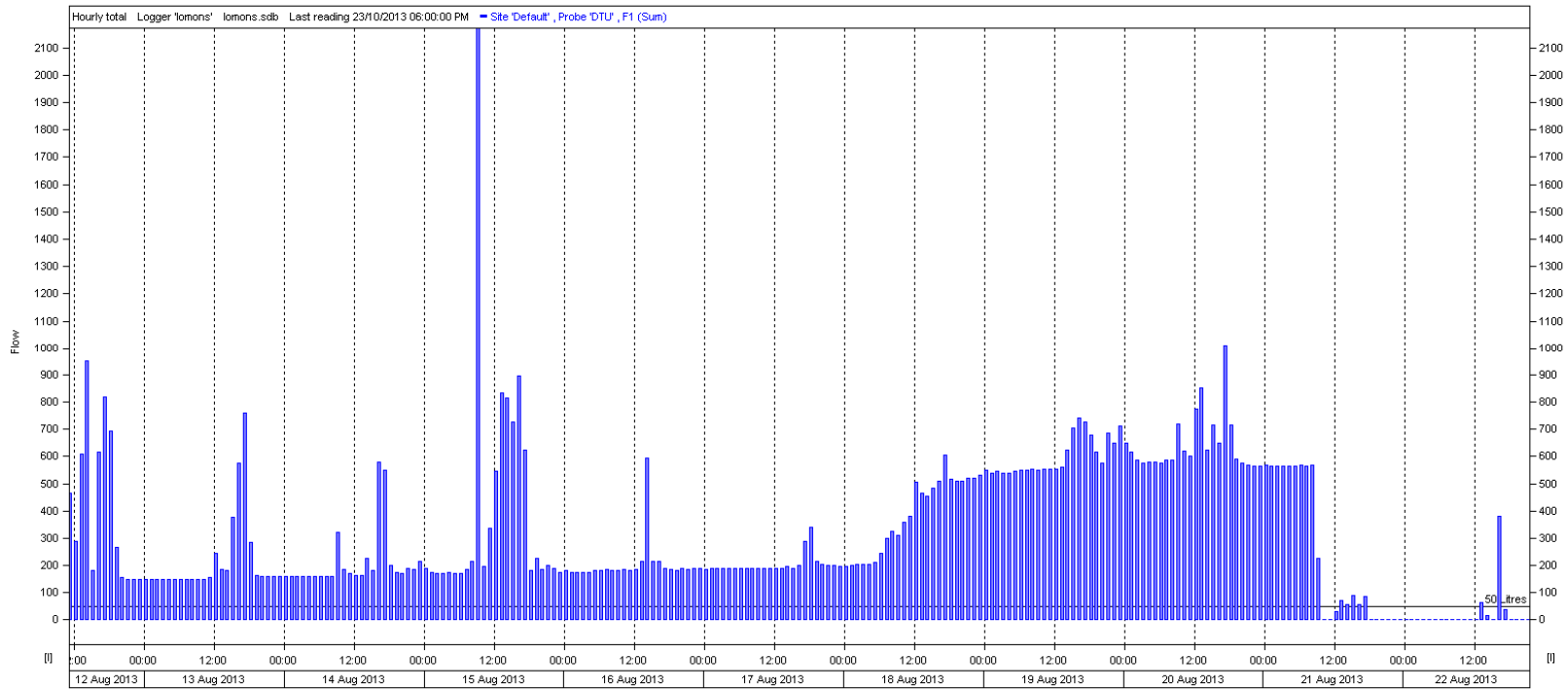


Per Hour Usage Graph "Major Leak Events"



Generated by iiriMAX™ Sentek Pty Ltd

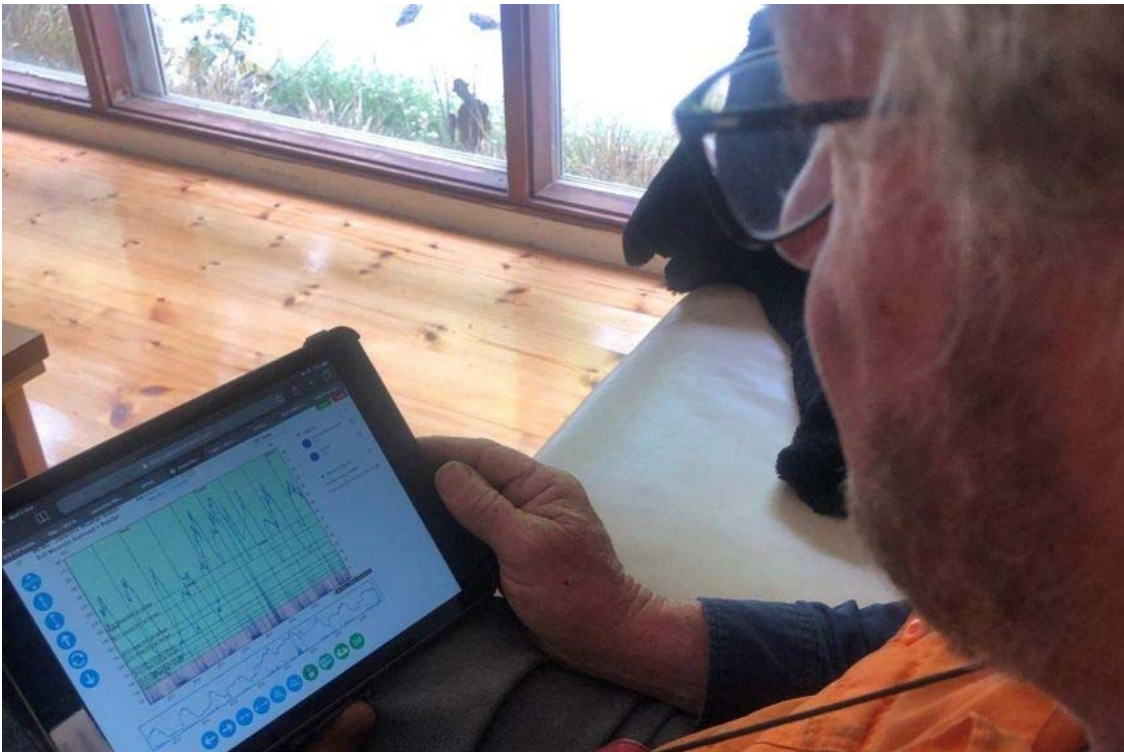
Per Hour Usage Graph "Slow Leak"



The systems have evolved to suit current usage patterns

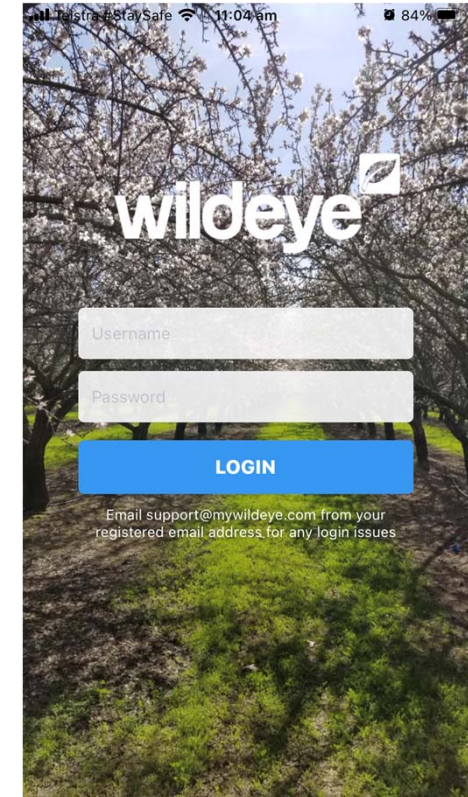
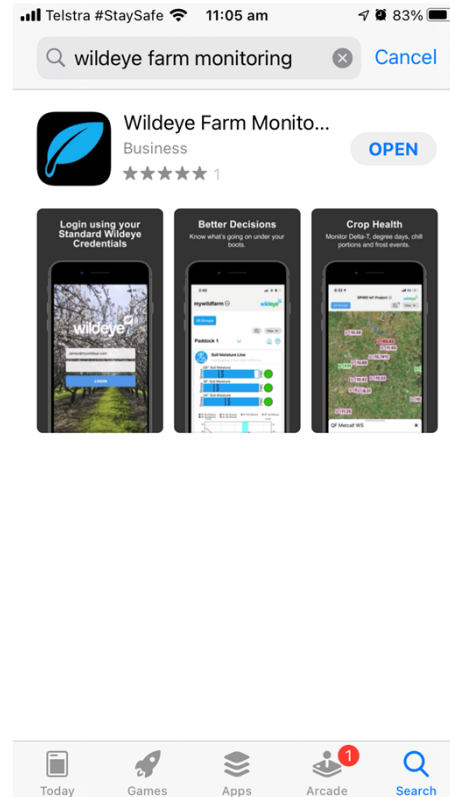


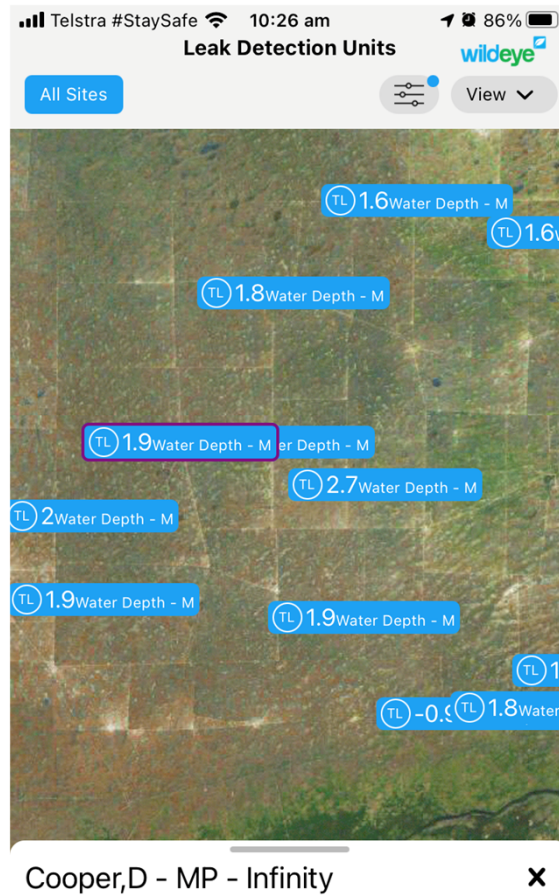
We consume data differently now



Network based approach to handle multiple databases

The screenshot displays the Wildeye web application interface. At the top, the navigation bar includes the Wildeye logo, menu items (Graphs, Map, Sites, Groups, Users, Export, SuperMap), and a user profile for 'EPARF - alphagroup Administrator'. A search bar on the left is set to 'All Groups' and displays the selected group 'Connor,B - Pivot 1/2'. Below this, there are three data panels: 'Pressure' with a line graph showing heading, pivot pressure, and travel distance; 'Pivot operation' with a line graph showing heading, heading stepped, and heading stop duration; and 'Distance Travelled' with a line graph showing distance and pressure. The main area is a satellite map of a coastal region with several blue weather data points indicating rainfall amounts (0 mm, 0.24 mm, 0.2 mm, 0 mm). A 'P' icon is also visible on the map. The bottom right corner features a map control panel with 'Map' and 'Satellite' options, and the MLA logo (MEAT & LIVESTOCK AUSTRALIA).





Most flexible platform
available measuring
multiple parameters

- Rain Gauge
- Tank Level sensor
- Pressure Gauge
- Inline salinity meter
- Soil moisture probe
- Weather station
- Wind meters
- And likely to be many more!!!

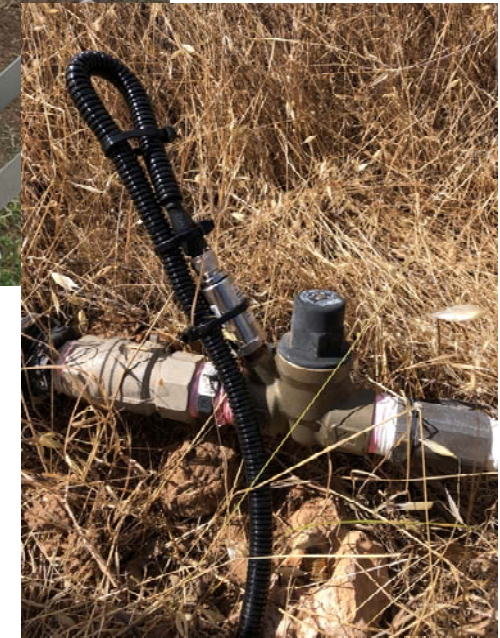
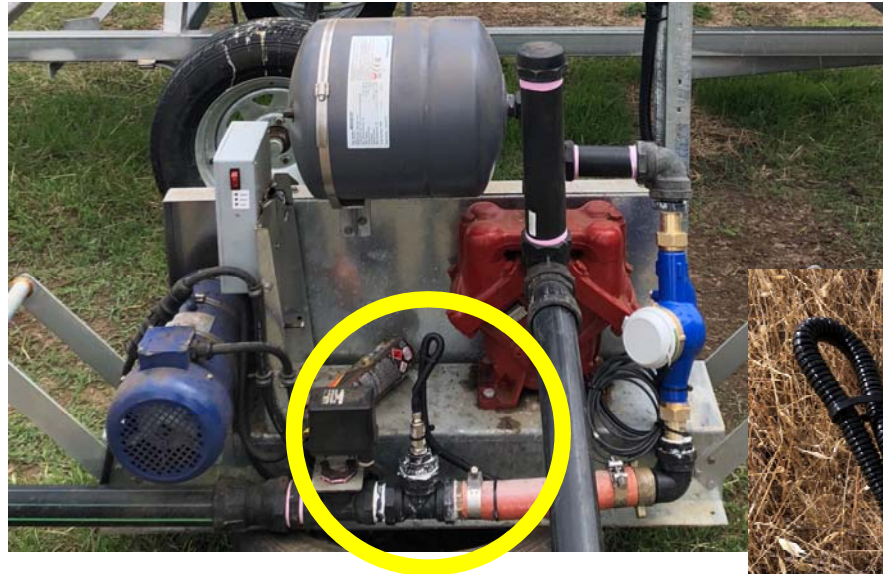
Rain Gauges



Tank Level Sensors



Electronic Pressure Gauge



Electronic Salinity Meter



Soil Moisture Probes



Weather Stations



Professional Installation



Take home messages

- Ensure your system is flexible and scalable
- You are not buying a product, you are buying time!
- There is a lot of information to be gained from flow data
- The quality of the alerts is the cornerstone of any product

Tools and resources

- PIRSA Red Meat and Wool Growth Program

https://pir.sa.gov.au/major_programs/growing_sa_livestock_industry/agtech-adoption-rebate

- On Farm Emergency Water Infrastructure Rebate Scheme

<https://www.agriculture.gov.au/water/national/on-farm-infrastructure-rebate>

Thankyou

