



The Coorong Water Security Story

Tracey Strugnell

Coorong Tatiara Local Action Plan
Coorong & Tatiara District Councils



Coorong Water Security Advisory Group

The best land use for much of the Coorong Tatiara landscape is grazing perennial pastures

To advocate for livestock producers to access fit for purpose, dependable, and affordable water supply is critical in creating industry resilience

Livestock producers need to be in charge of their own destiny rather than beholden to a water utility



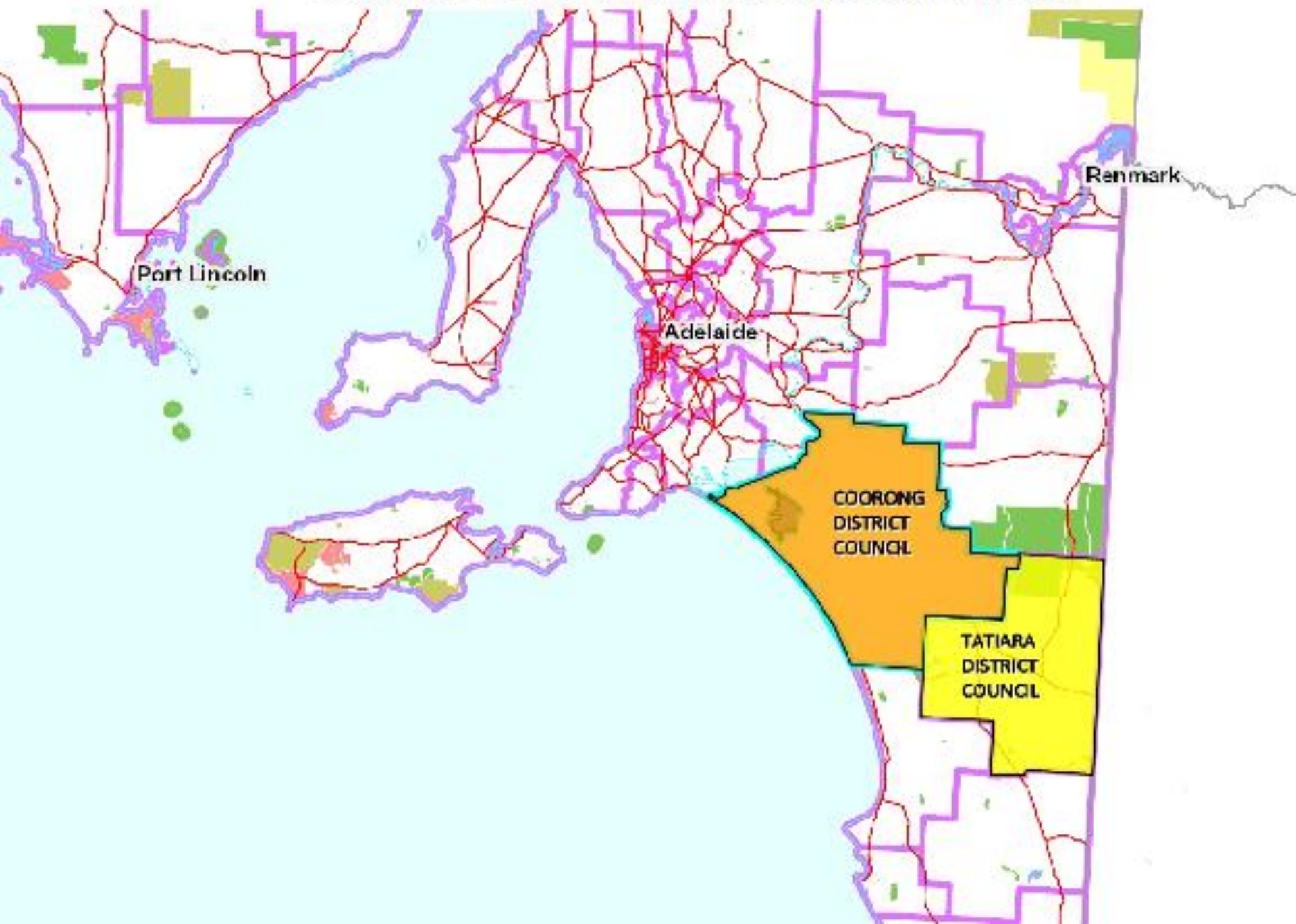
**Cost of
Water**

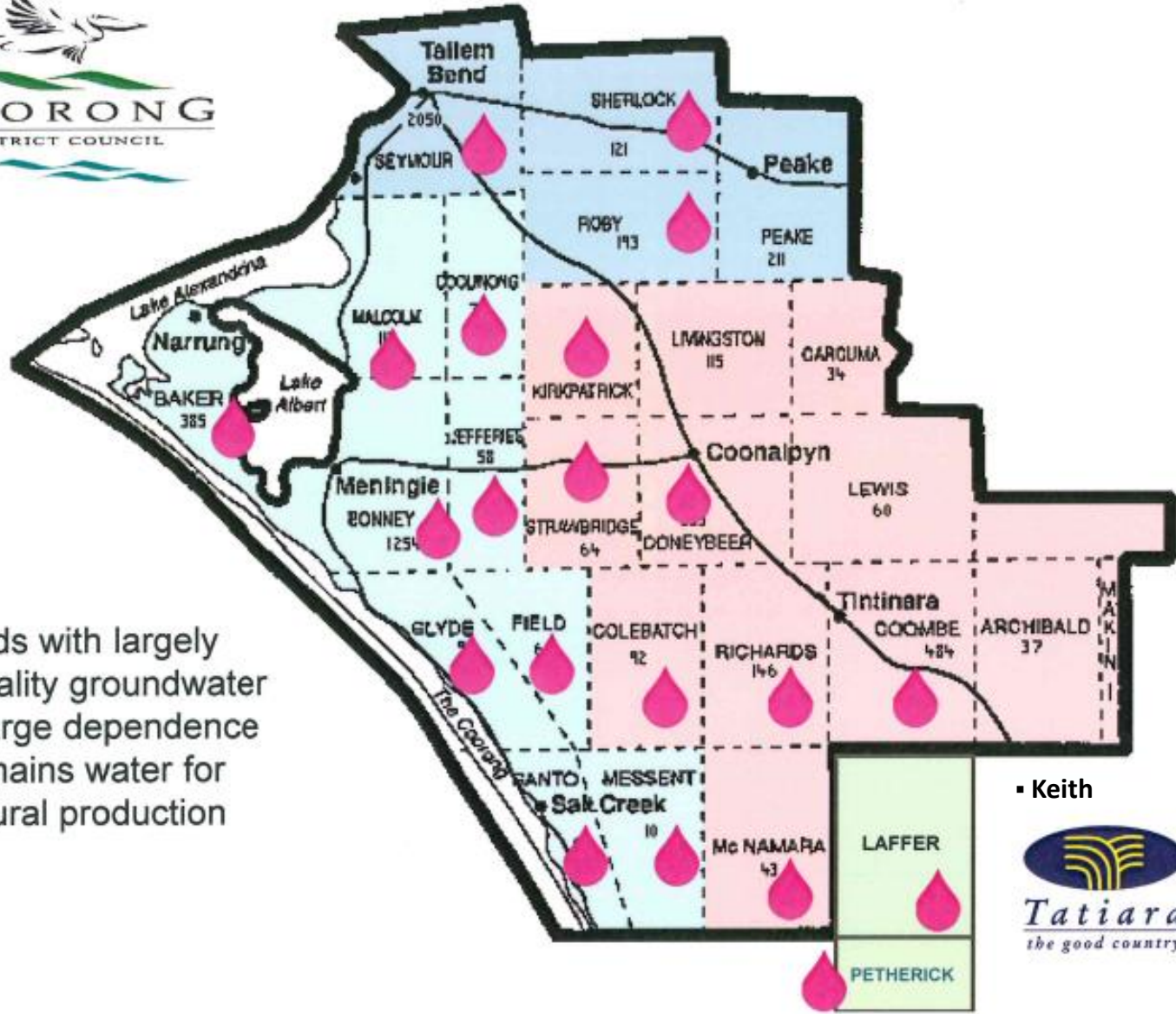


**Cattle to sheep
to cropping to
land
degradation**



COORONG & TATIARA COUNCIL DISTRICTS





Hundreds with largely poor quality groundwater and a large dependence on SA mains water for agricultural production

• Keith



Tailem Bend to Keith Pipeline



- 143 km long & feeds 800 km of branch mains
- Was the last of the major pipelines completed at the end of the 1960's
- Services an area of approximately 751,919 hectares including the Narrung Peninsula, and extends into the Tatiara & Kingston District Councils
- Opened up this country to agricultural production



Annual mains water bills for livestock producers are now regularly over \$100,000

An undetected mains water leak can easily cost over \$10,000

This is a dryland agriculture issue

Mains water is far too expensive to irrigate with

Groundwater is either absent or hyper-saline and not an option for livestock use



Water for livestock production vs irrigation

7 megalitres per hectare per year is required to irrigate lucerne under a centre pivot



It would cost over \$20,000 / ha to irrigate with mains water to produce 1 ha of irrigated lucerne



Water Consumption

Average cattle unit
water consumption
per day = 100 litres

Dry ewe water
consumption per
day = 10L

This 22,000 litre tank holds enough water
for 1 cow for a year. (60 l / day)

@ 2008 prices = \$21.34 / year / cow

@ 2017 prices = \$73.26 / year / cow

@ 2017 prices = \$121.54 / year / cow & calf
unit



SA Water Price Increases

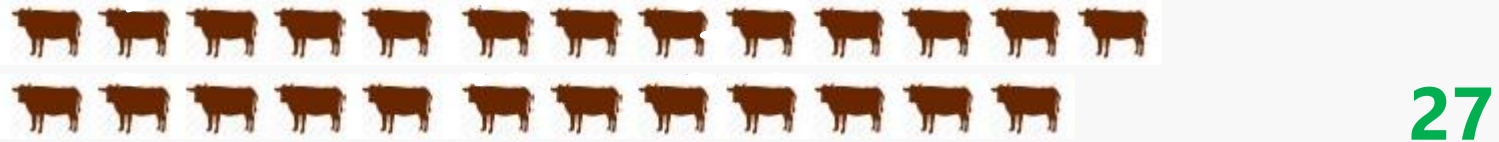
- 2005/06 \$1.06 /kl
- 2008 /09 \$1.16 /kl
- 2012/13 \$2.42 k/L
- 2013/14 \$2.26 k/L
- 2016/17 \$3.33 k/L
- 2018/19 \$3.37 k/L
- 2019/20 \$3.016 k/l
- 2020/21 \$2.714 k/l
- 2021/22 \$2.80 k/l

Cornish Pastoral Mains Water Costs

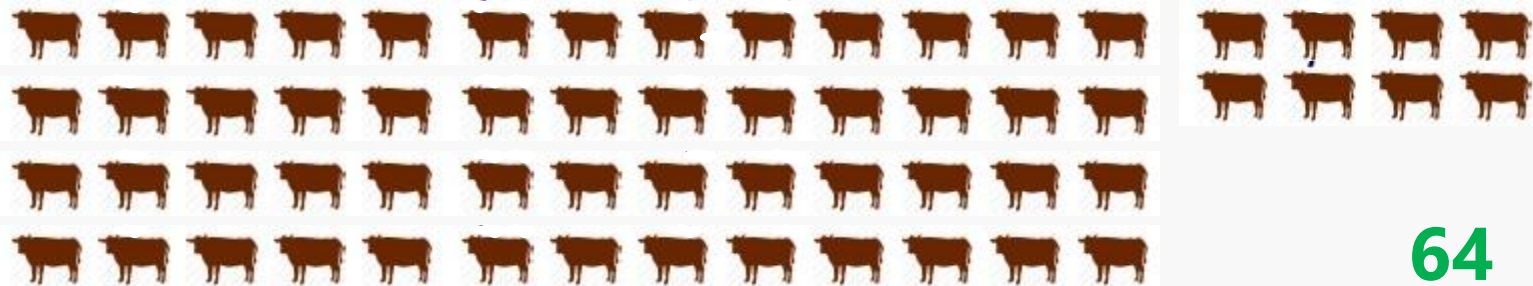
2005/2006 was approx \$21,000



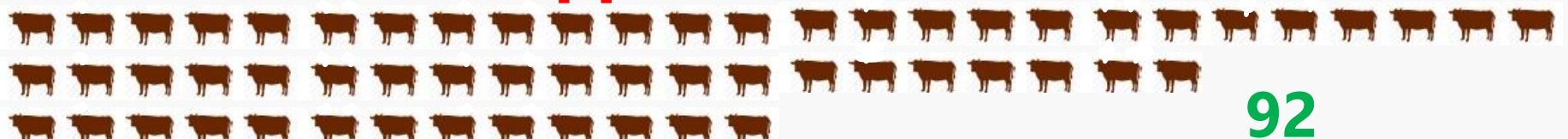
2008/2009 was approx \$41,000



2011/2012 was approx \$97,000



2014/2015 was approx \$139,000

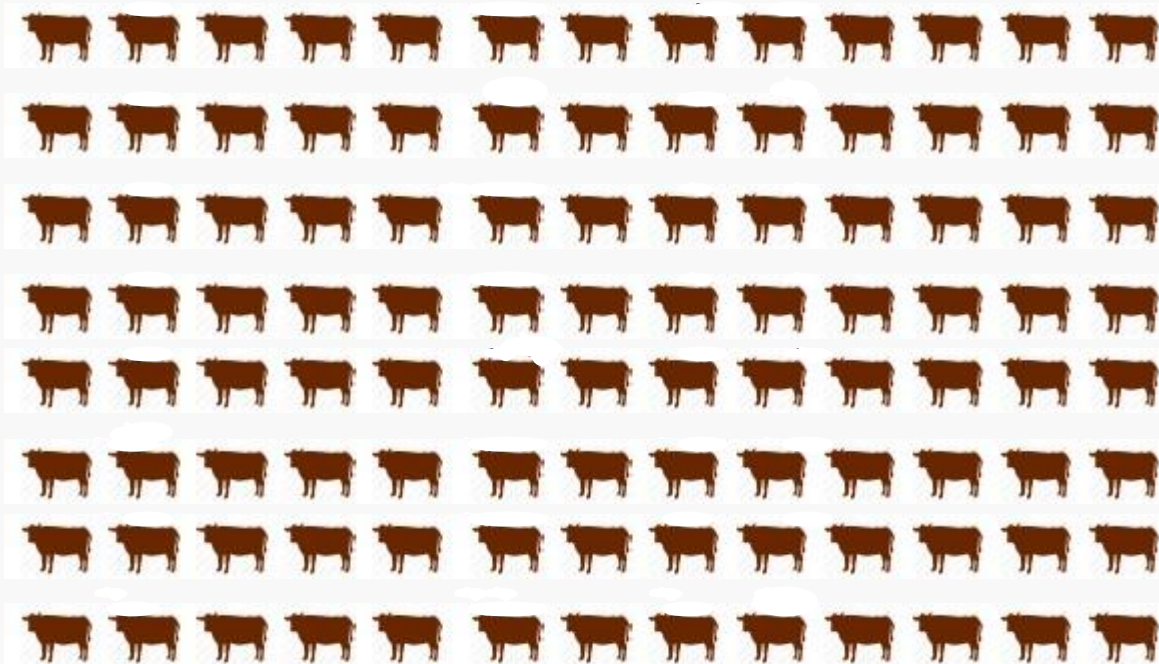


Based on a 280 kg beast @ \$5.38 Eastern Young Cattle Indicator carcass weight = \$1506 10th of October 2017

Cornish Pastoral Mains Water Costs

2017/2018 was approx \$148,280

106



Eased on a 280 kg beast @ \$5.38 Eastern Young Cattle Indicator
carcass weight = \$1506 10th of October 2017

Background Work Done



Championing Water Security Technology



Coorong District Council added 3 new photos — with Julianne Hein.

Posted by Tracey Strugnell
Yesterday at 10:30 AM

The Coorong Tatiara LAP celebrated some real water security innovators in our district yesterday. Thanks to the landholders who opened up their properties, and to all who attended this targeted event. Inbox me for further information. (Tracey)



7 events
400 people in attendance
minimal advertising

Workshops and Field Days

Water Security Tours - March 2020 - *save water, save \$*

Friday 6th March - Coomandook
8.00am - 1.00pm
Friday 13th March - Policemans
Point 8.00am - 2.30pm

Please register by 3rd of March:
text on 0427 750 050 or
E: tstrugnell@coorong.sa.gov.au

Meeting at: Coomandook - Uniting Church Hall - Dukas Hwy
Policemans Point - Jacks Point Pelican Observatory - Princes Hwy

Lunch & morning tea provided

WHAT YOU WILL SEE?

- Airborne Logic - Drone mounted thermal camera technology for pipe leak detection
- BushLinx Controller Leak Detection and Water Shut Off Technology
- Alpha Group Leak Detection Technology & tank water level sensors
- Automated water blending technology, mixing ground & mains water
- Automated weather stations
- Lined Catchment / Water Harvesting (Policemans Point only)



This project is supported by the South East Natural Resources Management Board, through funding from the Australian Government's National Landcare Program



Water Security Tech Tour - Friday 26th March 2021

10.30am — 3.15pm
Save water - Save \$

Registrations essential by Monday 22nd March:
Text: 0427 750 050 or
E: tstrugnell@coorong.sa.gov.au

Meeting at: Kondoric Windmill Yards
Woods Well Road (west end)

Woods Well

Lunch & refreshments provided

WHAT YOU WILL SEE & HEAR?

- Visiting Three Lined Catchments - planning, building, lining & design alternatives
- Alpha Group water tech update; leak detection, tank water level sensors, flow meters, & more
- Solar Water Pumps Australia - will not burn out if the pump runs dry



This project is supported by the Limestone Coast Landscape Board, through funding from the Australian Government's National Landcare Program



Web Site and Fact Sheets

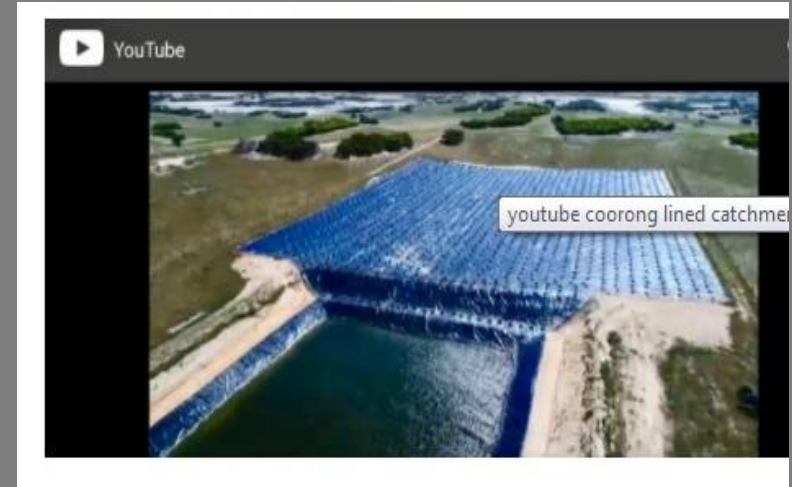
<https://www.coorong.sa.gov.au/council-services> Coorong Tatiara Local Action Plan



Fact Sheets include:

- Water Harvesting and Lined Catchments Planning Requirements for Piping Water and Water Harvesting & Lined Catchments
- Farm Water Infrastructure Tax Benefits & Rebates
- Farm Water Supply Pipelines
- Desalination for Livestock water supplies
- Best Practice to achieve a leak free service from on-farm pipelines & water reticulation systems
- Calculating Livestock Water Supply Needs
- Tanks & Roof Runoff

Water Catchment Drone Footage

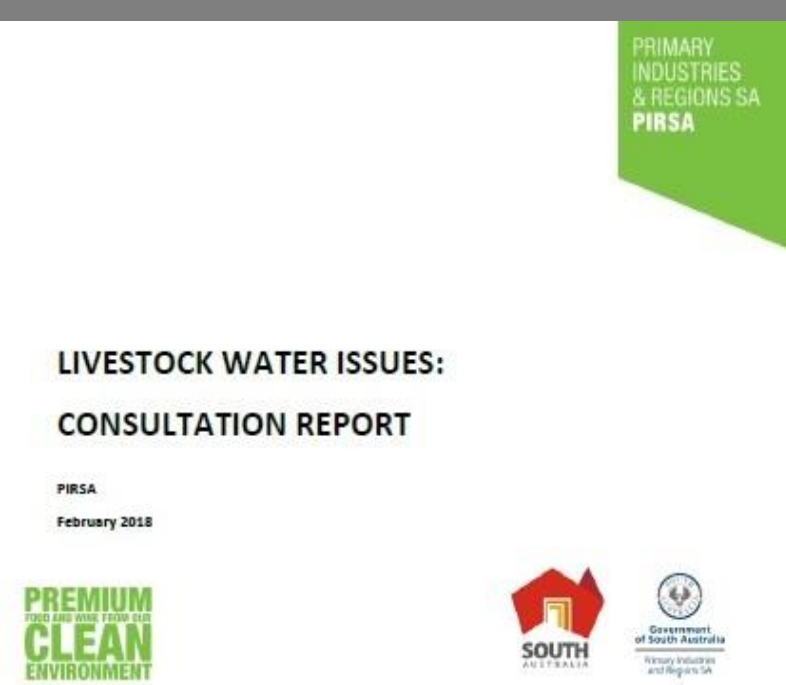


Technical Notes covering;

- Bushline Controller Leak Detection & Water Shut Off
- Leak Detection & Flow Meter Technology
- Drone Mounted Leak Finding Thermal Imaging
- Automatic Shandyng / Water Blending

Livestock Water Surveys

- Water Security Forum participant survey 2012 & 3 tour surveys
- Water Security Technology Survey 2015
- Coorong Water Transportation Scheme - Expression of Interest 2017
- On Farm Water Security Alternatives Survey 2017
- PIRSA Livestock Water Survey 2017



Interest in On Farm Water Security alternatives (non SA Water)

Landholders interested in installing lined catchments	30
Potential investment in lined catchments	\$3.9m- \$7.5m
Landholders interested in installing desalination	29
Potential investment in desalination	\$3.7m
Landholders interested in private pipeline projects	30
Potential investment in private pipeline projects	\$2.4m- \$16.3m
Landholders interested in leak detection units	70
Potential investment in leak detection units	\$105,000 - \$210,000

Third Party Access to SA Water Infrastructure

A Coorong Water Transportation Scheme



Moonee Hills Station
Cornish Graziers
Inghams SA
Garrison Cattle Feeders

Evolved from the 'Coorong Water Talks Forum' 2015

Third Party Access to SA Water Infrastructure

- Third Party Access is a Liberals SA policy
- This was attempted in 2017 through the extensive Coorong Water Transportation Scheme project
- Modelled on the Clare Peak Water Transportation Scheme
- This project was encouraged by SA Water
- Project funding came from Regions SA, Coorong District Council, Regional Development Australia, and four local livestock producers

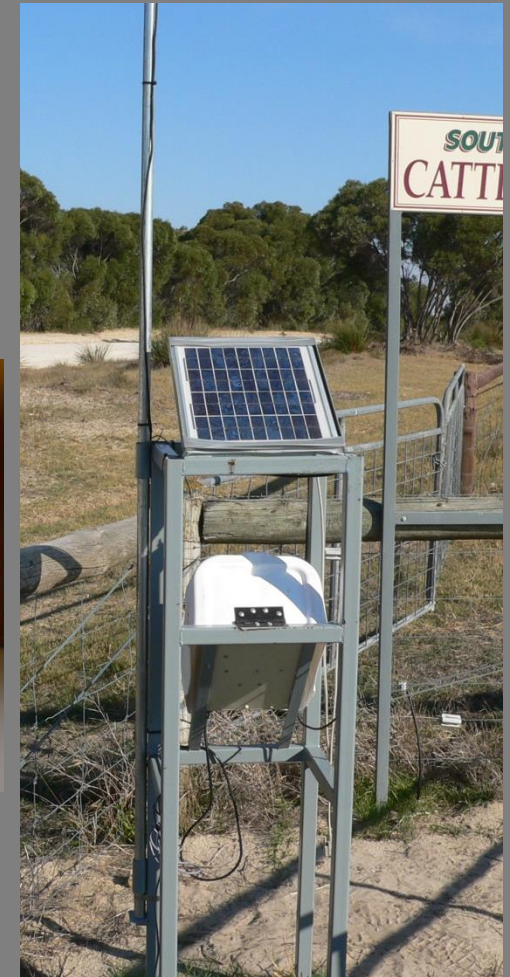
The Water Security Options



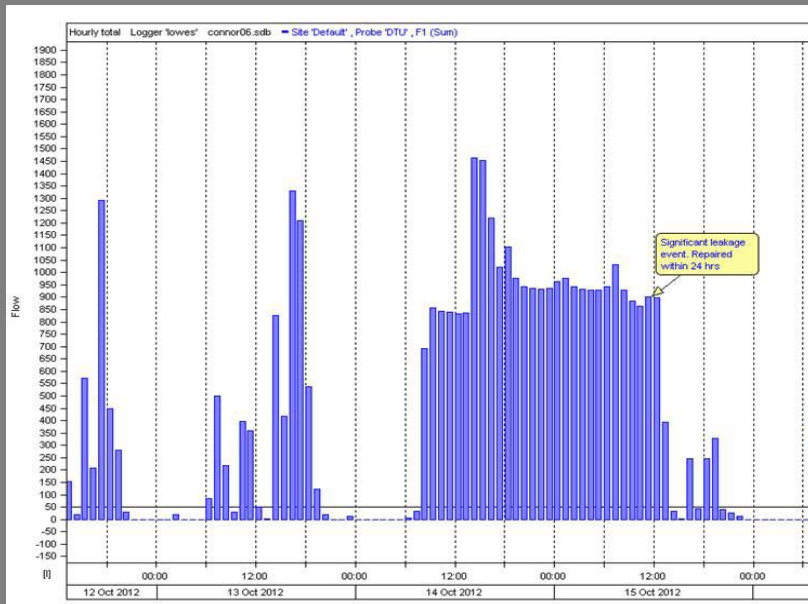
- **Leak Detection Units**
- **Leak finding**
- **Reducing On-farm Pipeline Pressure**
- **Piping water from off farm sources**
- **Upgrade On-farm Water Pipes & Infrastructure**
- **Desalinating Groundwater**
- **Shandyng Water – Mains, Bores, Lined Catchments, Lake & River**
- **Lined Catchments**
- **Telemetry**

Mains Water Leak Detection Project

- Water leaks on farm can cost in excess of \$10,000 are common
- More than 20% of mains water is lost through on farm leaks and overflowing tanks and troughs



Leak Detection Units



Finding Leaks Can Be Difficult



Leak Finding Equipment

Sonic
listening
devices



Drone mounted thermal
imaging camera



Reduce On-farm Pipeline Pressure



Piping Projects



**Piping water from Lake Albert or from a bore with fit
for purpose water Can be 15kms +**

Upgrade on farm water pipes



Be careful not to damage the pipe

Use good quality fittings



Use heavy duty pipe

- Green line 800kpa
- Blue line 1250kpa

Desalinating Groundwater



Considerations

Power - solar, mains or generators
Can be expensive

Reagent and membrane
replacement costs

Effluent disposal

Possible EPA approval

Water quality, eg salinity,
contaminates etc

Effluent disposal basin

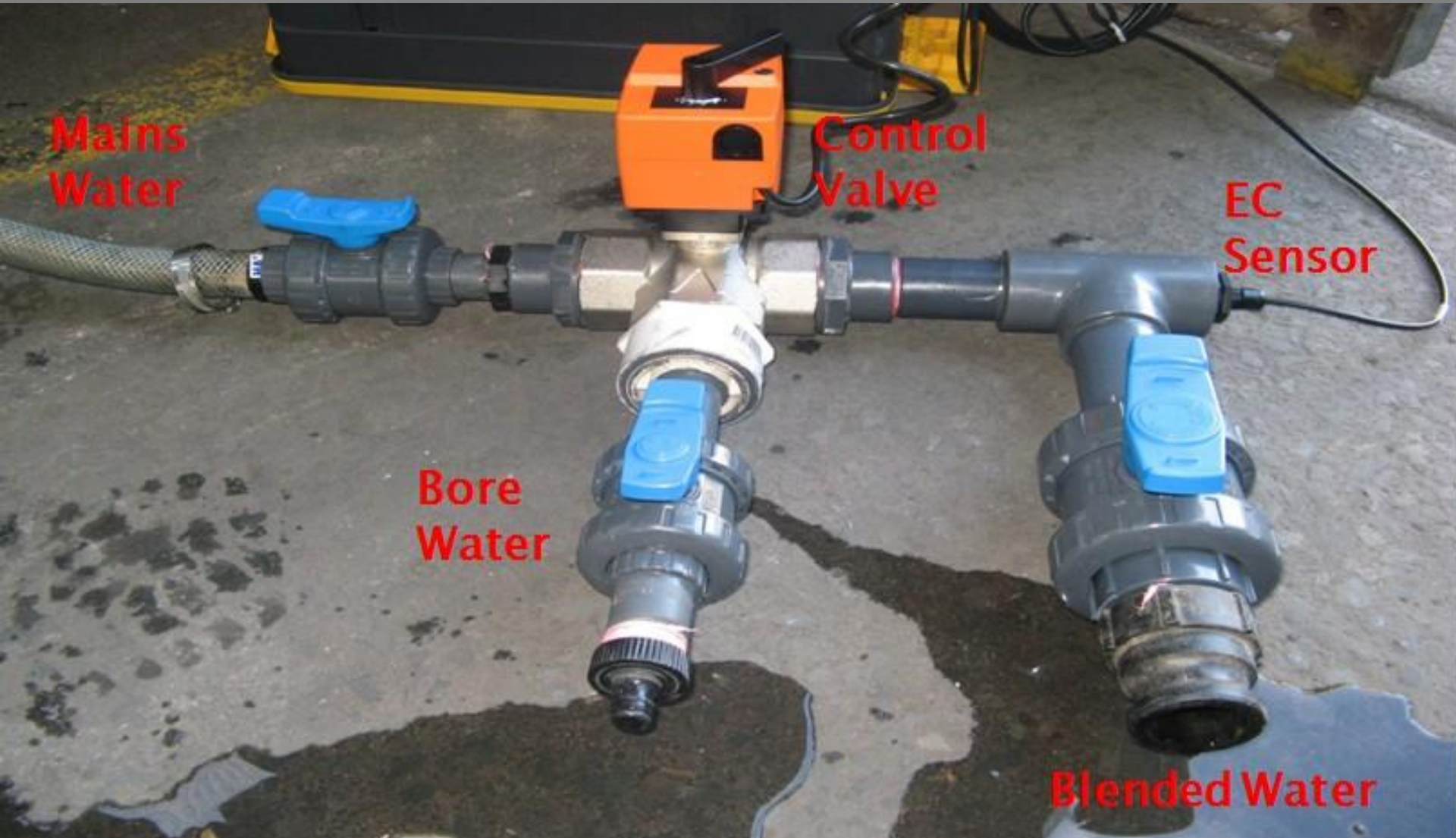


Shandying Water

Stock do not need distilled water or rain water so there is a potential to mix desalinated water, bore water, mains water and lined catchment water.

It just needs to be fit for purpose.

Shandyng Mains and Bore Water



Shandyng Desalinated Water



Shandyng desalinated water with bore water and rain water from large shed



Shandying Water From a Lined Catchment



Water pumped from the lined catchment dam

Brackish bore water

- Water shandied to 2,000 mg/l.
- System is alarmed.
- Note the telemetry on the top of the tanks.

Lined Catchments

