



THE JOURNAL FOR IRRIGATION PROFESSIONALS

# IRRIGATION AUSTRALIA

**Certification  
and Professional  
Development  
Feature**

## **Irrigation Australia 2014 Conference and Trade Show** 2 – 6 June 2014

Gold Coast Convention Centre

### **Irrigation Technology: Rural**

The lowdown  
on placing soil  
moisture probes

#### **IN THIS ISSUE:**

PRE-SEASON MICRO IRRIGATION SYSTEM CHECK AND TUNE UP

NORTHERN IRRIGATION: DREAM OR NIGHTMARE?

THE BIRTH OF CERTIFICATION

MOVING SURFACE IRRIGATION INTO THE 21ST CENTURY

RETAIL SECTOR SUPPORTS TRAINING

WWW.IRRIGATION.ORG.AU

SPRING 2013 • VOLUME 29 NO 03

ISSN 0818-9447  
PP 100002571

THE OFFICIAL JOURNAL OF IRRIGATION AUSTRALIA LIMITED

# Mini MAIT Monitoring and Control Field Radios

*Mini MAIT Radios are an extremely cost-effective solution for irrigation monitoring and/or control.*

*They are an ideal option where cabled systems are impractical.*



*A wireless mini MAIT site controlling a single valve and reading a soil moisture probe.*

*Mini MAIT Radios are suitable for agriculture, horticulture and other water-related industries.*



Mini MAIT Radios:

- are wireless
- have wide functionality
- are flexible
- can be used for pump control and automation
- can control one 12VDC latching solenoid and two sensors or multi-depth capacitance moisture probes
- can also be used as a stand-alone, field data-logger option (easily upgraded for wireless network integration)
- easily integrate with your existing MAIT systems
- are simple to upgrade
- ...and are very cost effective

They are the perfect solution for:

- applications involving single valves
- where trenching is hazardous, costly or not practical
- easily and very affordably adding monitoring sites to existing MAIT systems

*Contact Mait industries for more information*

**sales@mait.com.au**

**1300 739 920**

**www.mait.com.au**

**Irrigation-Management Solutions for  
Agriculture, Turf and the Environment**



**MAIT**  
industries



# CONTENTS

## FEATURES

### CERTIFICATION AND PROFESSIONAL DEVELOPMENT FEATURE

IAL commitment to professional development	14
Irrigation resellers hold keys to irrigation info	14
WA hits the training sweet spot	15
The birth of certification	16
Potential for improved certification of professionals in the irrigation industry	17
Meter Validators and Installers course sets benchmark	18
Practice makes perfect for TAFE students	20

### FEATURES

Moving surface irrigation into the 21st Century	28
Legal feature: Irrigation in the Gulf Country 'Food Bowl'	31
IrrisAT – from space to the hose pipe	32
Farmers support banking water for future droughts	33

## REGULAR ITEMS

Chairman's Report	2
CEO's Message	3
Irrigation Technology: Urban	4
Irrigation Technology: Rural	6
Around Industry	8
Research	12
IAL News	22
The Big Issue	30
Raising Standards	34
Contractors Corner	35
Smart Approved Watermark	36
State Roundup	37
ICID Insights	38
Business Feature	40
New Products & Services	42



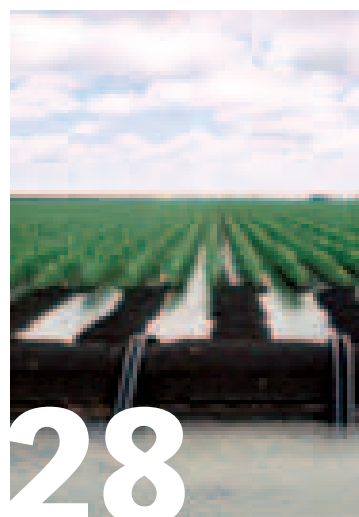
### ON THE FRONT COVER

Where you install soil moisture probes in a paddock or irrigation site is a critical consideration that will ultimately influence your ability to successfully use and implement the data collected and manage your irrigation schedule. The Irrigation Technology: Rural feature (p 6) outlines the variables you should consider to get best results. (Photo shows Steve Brauer installing a probe). Photo by Diane Brauer.



### Horticulture Australia

*The production of this publication has been funded by HAL using voluntary contributions from Irrigation Australia Ltd and matched funds from the Australian Government.*





# WELCOME



## CHAIRMAN'S REPORT

### GRIFFITH CONFERENCE

Whenever I drive across the vast plains of western NSW and into Griffith I am struck by how much irrigation development has changed the landscape. What great vision there must have been a century ago to turn those plains into such a rich and diverse agricultural region. And what a great setting for what was such a successful regional conference in May.

Feedback on the conference, exhibition, tours and events has all been positive. In these tough times it was good to see more than 200 people come together from every sector of the industry. It was also great to talk to members and hear their thoughts on IAL. Thank you to all those who came from near and far to attend, present papers and share their knowledge.

Credit must also go to those behind the scenes doing the organising and making sure things went smoothly, especially after the late move from Perth to Griffith. I do sincerely thank conference chair Iva Quarisa from NSW Department of Primary Industries and members of the organising the committee (Ian Atkinson from Nature Foundation SA, Monica Armanini from Murrumbidgee Irrigation, Austin Evans from Coleambally Irrigation, Karen Hutchinson from Murrumbidgee Irrigation, Andrew Kelly from Get Connected Consulting and Karen Simpson from PHL Surveyors) for all their hard work. I can't forget the tremendous job done by Ange Wakeman and Roslyn Penning from Sauce Communications. We could not have run the conference without their great work.

The fact that more than 200 people travelled long distances and fitted this into their busy schedules emphasises just how important these events are to the industry. Running a conference comes at a considerable cost and IAL could not do this and keep the fees affordable to as many members as possible without support. I would like to thank our conference funding partners and sponsors for their generous support and for showing a real

commitment to the irrigation industry. Their support is truly valued and I ask that should you have the opportunity please support them.

Our funding partners were Horticulture Australia and the Cooperative Research Centre for Irrigation Futures. Our sponsors were Comdain Infrastructure, Grundfos Pumps, Rubicon Water, AWMA Water Control Solutions, Pentair Environmental Systems, Outpost Central, Xylem Analytics Australia, Greenworks Lining Solutions, Solco Solar Products, Batescrew Pumps and Valves, Riverina Water Engineering, Groundwater Imaging and Coleambally Irrigation.

### BIG ISSUES FOR THE INDUSTRY

It was not possible for me to attend all the conference sessions because of the concurrent nature of the streams but the three big industry issues that I took away from the conference were northern irrigation development, the end of the investment boom and the demise of irrigation R&D. On pages 30 and 31 of this edition of the journal, we feature two articles providing different perspectives on the big issue of northern development.

The end of the investment boom is another big issue for the industry. In response to the millennium drought the irrigation industry, mainly in the Murray-Darling Basin, has received over \$10 billion of public funds for irrigation infrastructure and the buyback of water entitlements. We have geared up in a big way to deliver this and the question beginning to be asked is what will happen when the money runs out in a few years' time.

This could be the irrigation industry equivalent to the end of the mining boom. What will the impact be on the different sectors of the industry? What should the industry be doing now to prepare for when the money does run out? Other hard questions we need to be prepared to answer centre on quantifying benefits and outcomes.

For reasons that are unclear, governments have been cutting funding and running down irrigation research and development in this country. Despite

investing billions of dollars in water and governments talking about ambitious food production targets, there is now no nationally coordinated research program focused on irrigation.

The government has spent billions of dollars on returning water to the environment, yet there is no one in this country investing in R&D to determine how to get the best ecological outcomes from this water. This is going to have major long-term implications. If Australia is going to greatly expand its food production then irrigation will have a role to play and it will need new technologies and clever applications of new thinking. This will require a significant and sustained increase in research and development, particularly as gains from R&D can take up to two to three decades to be widely adopted by industry and achieve the full benefits.

The industry is calling for an end to the current disconnect and for governments to show a real commitment to a nationally coordinated research and development program focused on irrigation.

Individuals can only do so much. By coming together we can do so much more. I encourage you to get behind IAL on these issues. As an industry we do not want future generations to say "What were you thinking? Didn't you care?"

**Ian Moorhouse**  
IAL Chairman



# IRRIGATION AUSTRALIA

## CEO MESSAGE

Since I started as IAL's CEO at the end of April, I have been asked by several members what differences I find between IAL and the other, larger industry associations I have worked for.

IAL is a small national association that relies on a core professional team combined with a broad group of active volunteer members to fulfil its many roles. In larger associations, the number of staff is much greater and the role of members is often marginalised, with a significant proportion of the membership becoming disengaged.

IAL is different and it is in the engagement and enthusiasm of the members that this most clearly shows. I have been amazed by the number of telephone calls and letters from our members offering to share their experiences or to help in any way that they can. At the Griffith conference, the number of members offering to work with IAL was overwhelming.

IAL has a volunteer board and a number of regional committees and special interest groups (SIGs) which are powered by eager members. It is refreshing and energising to be a part of this enthusiasm and I encourage each of you to link in to one of our regions or committees, and to feel free to speak to me about ways we can make IAL even more relevant to the needs of our members.

### GRIFFITH CONFERENCE

The Griffith Conference was an eye-opener for me. I wasn't sure what to expect, but there was a real buzz evident during each session and throughout the event. Comments from the more than 200 delegates during the conference were overwhelmingly positive and this was reinforced by the survey feedback, with one delegate declaring Griffith the best conference they had attended in 20 years. The organising committee should be proud of their efforts and IAL will build on the success of Griffith as we plan for our next conference on the Gold Coast in June 2014.

I thoroughly enjoyed meeting our member delegates, presenters, sponsors and exhibitors and learning more about our industry from everyone. Thank you for taking the time to make me feel welcome and for sharing your experiences with me.

In a first for IAL, we have recorded the keynote speakers from the first morning of the conference and these sessions are accessible for viewing on the IAL website, [www.irrigation.org.au](http://www.irrigation.org.au).

### FEEDBACK FROM MEMBERS

As part of my induction program, I have been speaking to members from across the irrigation industry. IAL members come from a diverse field, but there are some issues that are consistently raised across the spectrum of size, function, and geography.

Members expect IAL to be the voice of the industry, to lead the debate on critical issues, and to show leadership. You are also telling me that IAL needs to better communicate the good work it does behind the scenes.

Members also want their association to play a stronger advocacy role in the market. Advocacy entails IAL developing a consistent fact-based market position on critical industry issues and communicating this position to various decision makers and other stakeholders.

More than one of our larger members have told me they understand this may result in IAL taking a position that is different to theirs on certain issues, but that leadership is not always about taking the easy path and they want IAL to show this leadership.

The IAL board is creating a platform of critical issues and IAL's position on each, and this will form the basis of IAL's advocacy activities. Members will hear more about this in coming months. IAL will also be working on better ways of communicating our value and our activities to our members, to industry, and to wider groups of stakeholders.

One of the editorial features in this journal is certification and professional development. IAL constantly promotes the need for increased industry professionalism. Along with our ongoing commitment to develop a framework of industry standards, IAL offers industry-specific training and development courses and a comprehensive certification program tailored for the needs of the irrigation industry. This feature provides a good overview of the importance of certification and professional development in our industry and details IAL's activities in delivering these services to our members and others in the industry.

**Duane Findley**  
CEO

### IAL OFFICE

PO Box 863, Mascot NSW 1460  
P (02) 8335 4000 F (02) 8335 4099  
[www.irrigation.org.au](http://www.irrigation.org.au)  
CEO: Duane Findley

### PUBLISHER

**CommStrat**

[www.commstrat.com.au](http://www.commstrat.com.au)  
Level 8, 574 St Kilda Road  
Melbourne VIC 3004  
PO Box 6137, St Kilda Rd Central 8008  
T (03) 8534 5000 F (03) 9530 8911

### EDITORIAL

Editor: ANNE CURREY

### DESIGN & PRODUCTION

Art Director: Annette Epifanidis

### ADVERTISING

National Sales Manager: Brian Rault  
E [brian.rault@halledit.com.au](mailto:brian.rault@halledit.com.au)  
T (03) 8534 5014

### ADVERTISING

Advertising in this journal is managed by CommStrat on behalf of Irrigation Australia Limited. Irrigation Australia Limited takes no responsibility for the technical accuracy of article content. All contact with businesses and organisations about advertising is made by CommStrat sales staff, who must identify themselves and the fact that they work for CommStrat on behalf of the IAL. No special consideration will be given to any advertisers as far as editorial content or front cover material is concerned. Decisions about editorial content and the front cover are the prerogative of the editor and the National Board of the IAL. Advertising enquiries should be directed to the National Sales Manager.



## PRE-SEASON MICRO IRRIGATION SYSTEM CHECK AND TUNE UP

The success of any garden is determined by the initial planning and plant selection. A hit-and-miss approach tends to have similar results but a carefully planned garden will have a far greater level of success. A plan that includes a soil analysis, soil preparation and improvement, and considers plant selection and grouping, suitability to climate and location will have a huge bearing on plant presentation, if not survival.

A key factor for any successful planting is the application of water. Water applications as diverse as flooding to drip systems all require planning, proper installation and a maintenance program. The efficiency of drip, spray or sprinkler systems will be a direct result of matching plant requirements and soil water retention with the correct application of water.

Understanding plant water requirements in all seasons and applying water to that requirement is as simple as it sounds.

Assuming a pre installation design has matched plant types to suitable watering types e.g. sprinklers for lawns, sprays for ground covers and drip for trees and ornamentals, this is a simple check list you can provide your home gardener clients to help them maintain a healthy watering system.

### Control system – start and stop of the watering system

- Check the tap, gate valve or mechanical timer. Is it functional?
- Battery operated controllers require a new battery every season and check the time is current. A

quick manual operation will confirm the timer is still healthy and functioning correctly.

- For 240/24VAC controllers, confirm the fuse is operational, power is on, rain switch is off and % button is at required seasonal adjustment. Replace the backup battery and check time and date are current. Ensure all wiring connections are secure at controller site and at valve locations. Check that all start times, day selection and watering programs are seasonally correct and in line with any relevant water restrictions
- Check that any isolation or manual valves are open and master solenoid valves are operational. Check that all manual bleed components on solenoid valves are closed or secure.
- Do a manual start operation of the auto control system to check the timer and subsequent valves are operational and then search for leaks, checking that all fittings are secure and all clamps on fittings are secure.

### Sprinklers, sprays and drippers

- Check all sprinkler, spray and drippers, spikes or riser pipes are connected and not leaking.
- Check that all air release valves, pressure regulators or back flow valves are functional and not sticking opposite to the operational open or closed position.
- Check every dripper, spray or sprinkler on each lateral line. Blocked drippers, broken sprinklers and damaged sprays will have a disastrous effect on water efficiency.

### Filters

The filter is the heart of any irrigation system. One of the best maintenance procedures for any watering system is to dismantle the filtration system and do a complete maintenance and cleaning service. Following filter maintenance, flush all lateral ends of all irrigation sections to allow any accumulated materials to be flushed away. Remember to re-secure the end flush valves or fittings!

### Wasted water

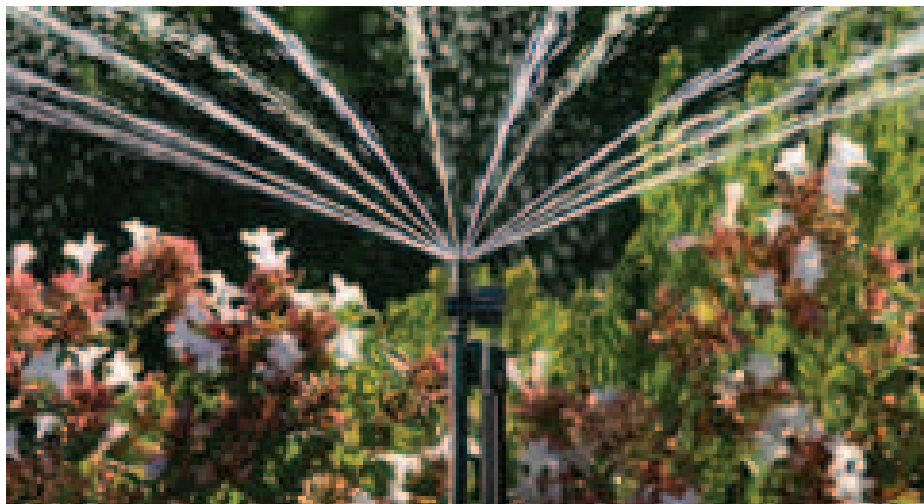
Installing a pressure regulator is an option for systems that waste water as a result of sprays or sprinkler misting and blowing away with the wind or that constantly suffer fitting failures or pipe bursts. These inexpensive fittings, which ensure a pre requisite pressure is maintained, provide an instant solution.

For irrigation systems that have been extended or added to over the years you might consider an upgrade or revamp. Pressure compensating emitters, which apply a predetermined flow at each emitter, have become the home gardener saviour. The pressure compensating action ensures even water application from each emitter from beginning to end of each lateral line including uphill and downhill so there is no need to adjust each emitter when the system is turned on to irrigate.

If your client is looking at an irrigation upgrade, or indeed a new system, then a first step is to ensure the garden is divided in to irrigation stations with plants grouped into species with similar watering requirements.

With the use of auto timers or controllers, the sprinkler watering of lawns should be segregated from drip systems on trees and spray emitters on other plants. Programming watering times within restriction times and before sunrise and after sunset will reduce evaporation and maximise soil penetration. Deep root water application encourages root development and helps plants self protect against the hotter days. Watering times should only allow wetting of soil to plant root depth; beyond that is just wasted water.

With these simple guidelines you will be prepared with the answers when your customers ask you if they should be checking their garden irrigation systems before turning them on for the next season.



Before garden irrigation systems get fired up for the warmer weather it is good practice to do a system check and tune up to make sure they will operate efficiently.

ALAN WHITE, ANTELCO, ADELAIDE



## ***"Its because we do that we know how"***

Comdain Infrastructure is a leading national infrastructure construction and maintenance services business specialising in the WATER, IRRIGATION and GAS sectors.

We place importance on professional excellence and best practice in all aspects of our Irrigation sector work, most particularly on safety and the environment.

Our irrigation capabilities include:

- Program Planning & Management - Off-farm, On-farm and consultation.
- Design - Concept, detailed and delivery methodology
- Construction - Pipelines, channels, facilities infrastructure, weirs and dams
- Maintenance - Civil, mechanical and electrical
- Control & Monitor - Metering, SCADA and telemetry



Intelligent Doers, Dependable Delivery

[comdaininfrastructure.com.au](http://comdaininfrastructure.com.au)

Current & Recent projects:

- **Goulburn-Murray Water Connections Project (VIC)**  
**Main Contractor (TransCom Connect JV):**  
Responsible for the delivery of Stage 2, which commenced Jan 2013, of the \$2 billion program of irrigation modernisation works (formally NVIRP) including the planning, design, scheduling and the procurement of services in the Goulburn-Murray Irrigation District, over a 5 year period.
- **Murray Irrigation Limited (NSW)**  
**– PIIOP Early Works 2013:**  
Irrigation construction works under the Water for the Future program and Private Irrigation Infrastructure Operators Program (PIIOP). Works include: 8 x large FlumeGates; 27 Offtakes; 86 metered outlets and 21 x pipe outlets.
- **Goulburn-Murray Water (VIC)**  
**– Hattah Lakes Environmental Flows Project:**  
Construction of seven 750mm pump columns, a 2100mm RCP, 900mm PE branch pipeline, large regulating structures, penstock gates and levee banks.
- **State Water Corporation (NSW)**  
**– NSW Metering Managing Contractor:**  
Planning, design and installation of over 1250 river and groundwater extraction meters.



## SOIL MOISTURE PROBES – WHERE DO YOU PLACE THEM?

After you have chosen what type of soil moisture monitoring device you are going to use, it's important to consider how and where you are going to use your new equipment. Where you place sensors is a critical consideration that will ultimately influence your ability to successfully use and implement the data collected and manage your irrigation schedule.

There are a number of variables you need to think about before you install any sensor. These are all important factors that will affect the value of the data being collected, and the usefulness of the data as an irrigation management tool. What you are reading on the gauge or are observing on your computer screen should be representative of the conditions in the field. If they are not, the data being collected will be of little value and provide misleading feedback for irrigation management decisions.

A first step is a preliminary investigation in the field to determine the most appropriate and representative sites to install your monitoring equipment. A little time invested at this stage will have a major bearing on the value of the data and your return on investment.

### How many sites are to be installed?

If you are installing manual gauges, the first variable that you need to consider, which may be based on your budget and available labour, is how many sites you want to record. If your budget or available labour is not a limiting factor, you may decide to measure in each management unit. A management unit could be defined as an irrigation block in an orchard or vineyard, an irrigation bay in a dairy or a paddock in a cropping enterprise.

Alternatively, you may base your decision on having a limited number of sensors, where you consider specific locations where you are having problems with irrigation management or you are growing higher value crops that will generate a greater return on investment in the equipment as a result of improved irrigation management decisions.

You may also be able to spread the equipment over areas of similar soils and crops so you establish some key reference monitoring sites where the data you are collecting can be applied to other similar management units. Rather than spreading a limited resource over a large area or number of sites, it is far better to concentrate on key management areas and apply the appropriate resources so you can collect enough data to improve your understanding and, ultimately, your irrigation management practices. Not only will you be achieving your desired outcome, but you will be in a much better position to use the data from additional sites installed at a later date with the knowledge and experience you have already gained.

### Where to install?

Once you have decided which management units your soil moisture monitoring equipment will be installed into, the next factor to consider is the location in the management unit.

Bearing in mind that a soil moisture sensor is only measuring a micro point in the area, it is important that you choose a location that is representative. The most important parameter is the soil type in the area. A soil map, which describes the soil types within the zone, is the best starting point to choose a location for the equipment. If a soil map is not available, you will need to use your local knowledge to identify a point in the area where you believe the soil type represents the average.

There will obviously be a range of soil types in the management zone, however, installing multiple monitoring sites will be of little value as the ability of your irrigation system to water each and every soil variation is unlikely. You may decide to install one site in the average soil type and use this to schedule and manage irrigation events. And you could install another site where soil conditions are very different so you can track soil moisture conditions and possibly refine irrigation practices if this zone is getting noticeably drier or wetter.

The bottom line is that you do not want to compromise the ideal soil moisture levels in the most representative soil in the management unit to accommodate a soil that may only represent a small proportion of the area. It is best to maintain optimum moisture levels for the most average soil because this is where greatest returns are achieved.

Once you are collecting and analysing the data from the site, regular site inspections are essential to ensure that the information you are observing from your moisture sensors reflects conditions in the field. If the data from the sensors is showing optimum moisture levels, but some areas of the management zone appear overly wet and or dry, there may be a need to fine tune the management levels of your monitoring site to balance moisture levels across the area. A soil auger is a valuable management tool for spot checking in the field.

It is also important to track the data from your moisture sensors and compare it with ongoing management practices. For instance, if you are irrigating and the data is showing that moisture levels are falling, rather than irrigating more, you need to check the site to make sure that the irrigation infrastructure near the monitoring site is operational and that the site is representative of the area, e.g. that there is no excessive weed or crop growth that is repelling irrigation water from the site.

Alternatively, if the probe is reading wet while there have been no irrigation or rain events, you will need to check the monitoring site to make sure there are no broken pipes, sprinklers or drip tube or ponding of water in a low spot around it.

### Crop and plant factors

When locating moisture sensors another important factor is to ensure that the crop where you are considering installing the site is representative of the rest of the management area. If the plants are noticeably larger, more vigorous, smaller, displaying signs of disease or sparse in coverage, then do not install a sensor there. Look for a site that reflects the average crop condition. After installation, if you notice that plants near the sensor have declined in health or have died, relocate the monitoring equipment.

Moisture monitoring equipment will have a relatively small sphere of influence so it is important to ensure that sensors are installed in the active root system of the plant. This applies to the location of sensors in relation to the plant as well as the depth of the sensors. They need to be located so they can measure within the root zone and monitor plant water use as well as moisture below the roots and drainage. Positioning monitoring equipment outside of the active root zone will result in the data indicating very little water use and will increase the risk of under watering. This variable is of particular relevance to perennial horticulture.





Where you locate sensors is a crucial decision as this will influence the data you collect and how useful it will be for irrigation management.

### Irrigation system

To measure the effectiveness of the irrigation events as a way of assisting with irrigation management decisions, the irrigation system into which the monitoring equipment is to be installed needs to be considered. It is important that the sensors are being representatively wetted by the water delivery system.

For **micro sprays**, locate the sensor in the wetting area of the sprinkler, ensuring that the wetting pattern of the sprinkler is not throwing over the sensor, or the sensor is installed outside of the wetting zone.

With **drip systems**, make sure the sensor is located to allow for some lateral spread of water to wet a larger volume of soil. If the sensor is installed directly under a dripper, the potential wetting volume will be reduced as moisture levels will be easily maintained. Too far away from the emitter, over watering may result as irrigation times are increased to push water out to the sensor, causing excess vertical drainage. Soil types will also have bearing on the distance away from emitters the sensors should be installed. Heavier soils allow more lateral spread meaning that sensors can be positioned further away from the dripper; on lighter soils, sensors need to be closer to the dripper as there is less lateral spread of water.

For larger **spray systems**, such as solid set, laterals or pivots, it is advisable to conduct a basic irrigation uniformity test before installing sensors so you can calculate the uniformity and average precipitation rate of the irrigation system. The aim is to ensure that the sensors are being installed in an area of average application. Data will be unrepresentative from sensors installed on the edge or outside of the wetting zone. This is also likely to result in over watering. After installation, it is also a good idea to occasionally place some catch cans near and around the area where the sensor is located to check application rates and evaluate effectiveness of the irrigation events.

A final factor to consider with lateral, pivot and broad acre irrigation systems is to make sure that sensors are not installed in or near wheel tracks of the machinery. Apart from potential damage to the equipment, the data will be unrepresentative as a result of the effect of compaction.

Not taking the above factors into consideration will have significant bearing on the effectiveness and usefulness of monitoring equipment, and will most likely result in over- or under-watering of crops.

### Where as important as what

Soil moisture monitoring equipment is an important tool that provides valuable information for developing and managing irrigation activities. The correct selection of the most appropriate technology to suit individual requirements is an important starting point, however, the technology is only the means by which the information is collected and, with some systems, presented.

The real value of the technology is the information that is collected and how well it is interpreted and applied. The ultimate usefulness and success of the information collected, however, depends not only on how well the equipment is installed, but where it is installed. Site selection that doesn't take account of the management area, soil type, crop and irrigation system can seriously compromise the representativeness of the data from the site you are monitoring and lead to incorrect irrigation management decisions.

**Note.** The principles outlined in this article also apply to urban irrigation e.g. golf courses.

### Information

Adrian Orloff, Observant

M: 0438 393 002 E: [adrian@observant.com.au](mailto:adrian@observant.com.au)

ADRIAN ORLOFF, TECHNICAL SERVICES  
COORDINATOR, OBSERVANT

## New Holland Irrigation Power Units

- **Complete turn-key solution**
- **Proven name, common components**
- **Fuel efficient power**
- **PTO and non-PTO models**
- **Best value for money**

Choose the ideal unit for you ...

- |        |               |            |
|--------|---------------|------------|
| • S85  | 74kW (99hp)   | 4 cylinder |
| • S110 | 93kW (125hp)  | 4 cylinder |
| • S170 | 129kW (173hp) | 6 cylinder |
| • S240 | 175kW (235hp) | 6 cylinder |
- (Horsepower rated at 2200rpm)



For more information about New Holland irrigation power units, see your local New Holland dealer today or visit [www.newholland.com](http://www.newholland.com)





# AROUND INDUSTRY

## NUBIAN ANNOUNCES STRATEGIC PARTNERSHIP WITH NIROSOFT

Nubian Water Systems and Israel-based Nirosoft have announced a partnership that will enable them to provide complete end-to-end water solutions in Australia

Nubian said the partnership is part of its strategy to build a facility-centric, end-to-end water solutions company in Australia that will drive water balance and reduce Australia's water footprint.

According to Barry Porter, Nubian Water Systems CEO, the two companies can provide total water solutions, taking water from its source, optimising its value through recycling, and seeing it through to its environmentally sustainable discharge.

Nirosoft provides membrane-based water treatment solutions and specialises in the design, manufacture and operation of advanced water treatment systems.

The two companies said that their partnership between strengthens economic ties between Israel and Australia.

## BILL CHRISTIE RETURNS TO RENMARK TO JOIN TORO AUSTRALIA

In May, William (Bill) Christie joined Toro Australia as Territory Manager – Irrigation for Sunraysia, the Riverland and the South East of SA.



Bill, who has over 35 years of experience in the irrigation industry, will be responsible for helping customers develop tailored and effective irrigation solutions and servicing Toro's existing dealers with all their agricultural requirements. He will be based in Renmark.

In 1987, he established his own company which specialised in product design, supply and installation of primarily drip irrigation systems. Since then, he has held several senior manager positions for various irrigation and piping companies in regional Australia.

Toro Australia Managing Director Tim Emery said he was delighted to welcome Bill to the Toro Australia team.

Bill said he was thrilled to join Toro Australia and return to his home-town of Renmark.

## PROWATER NATIONWIDE MAKES A BIG SPLASH AT MS CHARITY SWIM

Ruralco's ProWater Nationwide group were proud supporters of the Ruralco Reefers team at this year's non-stop 24-hour MS Mega Swim at Sydney Olympic Park Aquatic Centre on 22-23 June.

The Ruralco Reefers team finished third on the fundraising table raising an impressive \$20,840.40.

Not only did ProWater Nationwide supply the team's swim towels, it was also strongly represented in the pool by a number of representatives from the specialist water and irrigation group.

Among those churning up laps for the team were Ruralco's Tim Doolan, National Manager, Water & Environment and Nicole Kavanagh, Marketing Brand Manager Crop Protection, Water & Environment and Sean Callaghan, Regional Sales Manager NSW/TAS with Philmac, one of the founding suppliers to the ProWater Nationwide group. Both Tim and Sean are also directors with IAL.

Joining them were Bryn Rees (Taralga Rural) and Brett Rout (AgriWest), both members of ProWater Nationwide and CRT. Bryn put in a huge effort raising \$4,000 to finish fourth highest individual fundraiser while Brett was fifth highest individual fundraiser with \$3210.

Ben Wilson won the Youth Award for the second consecutive year and raised \$2771.

The MS Mega Swim raises funds for MS Australia's Go for Gold Scholarship Program. Scholarships are awarded to people living with MS and presented in a number of categories including employment, education, travel, the arts, sport and music. Over 500 scholarships have been awarded to people across Australia to help them fulfil their dreams and goals.

MS is the most common disease of the central nervous system affecting over 23,000 Australians.

The average diagnosis of MS is 30 years old and the disease affects three times as many women as men.

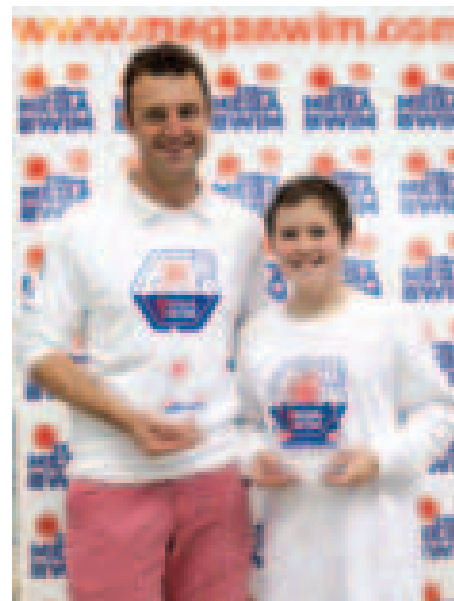
Tim Doolan has been a driving force behind the Ruralco Reefers participation in this event over the past four years.

"This year's swim was fantastic and we were very proud to be the third highest fundraising team out of the 40 teams who entered."

"We received tremendous support from family, friends and business colleagues and it was great to improve on last year's effort with the team clocking up 78.5 km in the pool," said Tim.

"Everyone contributed in their own way to make a difference and help the team succeed in this challenging event."

"I'd really like to thank everyone involved, from the teams and supporters, to all those who donated to this very worthwhile cause."



Tim Doolan (left) and Ben Wilson at the presentation ceremony.



Members of the Ruralco Reefers team with some of their supporters.

# Membership INFORMATION



## OUR MEMBERS

IAL's extensive membership comes from the entire Irrigation Value Chain such as irrigators to water providers and water user groups, water supply authorities, consultants, designers, installers, contractors, manufacturers, suppliers, retailers, local, state and federal government departments and service industry companies.

## BENEFITS - "It pays to belong"

### REPRESENTATION

- IAL is the national body that represents the irrigation industry
- IAL is able to represent members' interests, both collectively and individually, where they are consistent with IAL policy, the Strategic Plan and Code of Conduct
- Representation at Local, State and Federal level
- Introductions and facilitation of business contacts and opportunities both within Australia and overseas
- Use of IAL Logo on company material
- Individuals, end users, water user groups, water supply authorities, consultants, designers, installers and contractors, manufacturers, suppliers, retailers, local, state and federal government departments and service industry companies with an interest in the irrigation industry are eligible to join

### TRAINING AND CERTIFICATION

- Member rates for all certification programs including the internationally recognised Certified Irrigation Designer program.
- Member rates and preferential enrolment in IAL run or endorsed training events and programs
- Employees of member companies are entitled to member rates for all services
- Assistance with staff training and access to training incentives at State and Federal level

## MISSION

IAL will lead the development of a professional irrigation industry embracing best practice to underpin healthy, sustainable urban and rural communities and lifestyles.

## VISION

"As the respected peak national organisation representing the Australian irrigation industry, Irrigation Australia will add value to members by:

- Bringing together, in fellowship and a united voice, all members of the irrigation industry;
- Actively fostering a viable and sustainable irrigation industry to support community interests, needs and activities; and
- Being the prime source and provider of irrigation related knowledge for Australian stakeholders".

## TRADE OPPORTUNITIES

- Members (other than Category A members) receive a free listing on IAL's online Products and Services directory
- Discounted advertising rates in *Irrigation Australia*
- Preferential opportunity for feature articles and information in *Irrigation Australia* and *Backwash*
- Discounted rates and preferential positioning for exhibition stands at 'Irrigation Australia', the biennial exhibition of IAL and the largest irrigation related event in the southern hemisphere
- Discounted rates at IAL's Annual Conference
- Early notification of industry event and government initiatives

## ACCESS TO INFORMATION

- As an IAL member you receive information, support and news, can attend seminars and conferences at reduced rates and have access to our certification programs and other professional development opportunities
- Free subscription to *Irrigation Australia*, the quarterly journal of IAL and the most authoritative irrigation related journal in Australia (value \$88)
- Free subscription to *Backwash*, the monthly e-newsletter with the latest in industry news and opportunities
- Access to the network of industry contacts and information held by IAL membership, the most comprehensive irrigation network in Australia
- Access to overseas irrigation networks through ICID and our affiliation with Irrigation Associations around the world

Please visit [www.irrigation.org.au](http://www.irrigation.org.au) or phone 02 8335 4000 for further information.





# AROUND INDUSTRY

## TORO TURF GUARD WINS AWARD

In May, the Toro Turf Guard® Wireless Soil Monitoring System won the Minister's Award for Water and Climate Change Leadership at the 2013 Smart Water Awards Ceremony held in Adelaide. SA Minister The Hon. Ian Hunter MLC - Minister for Water and the River Murray, presented the award to Toro Australia at the ceremony.

Turf Guard helps golf courses and sports field managers improve their turf, soil and water efficiency. It is an affordable device that gives access to improved decision making in an industry that is highly focused on turf health and subsequently water use and application.

David Richardson, Product Manager Irrigation at Toro Australia, said the company was extremely pleased to have won the award.

"The Turf Guard system uses revolutionary technology that lets a turf manager know what's going on beneath the surface of a course, so timely and informed adjustments can be made.

"In addition to great water-saving benefits, it can also provide soil temperature and salinity information to help prevent and fight damaging turf diseases, pests, salinity problems and other stresses," he said.

Turf Guard uses an integrated network of wireless, underground sensors that can be installed anywhere on a golf course or sports field without disrupting play.



The Toro Turf Guard® Wireless Soil Monitoring System won the Minister's Award for Water & Climate Change Leadership at the 2013 Smart Water Awards Ceremony held in Adelaide on Friday 31 May 2013. South Australian Minister The Hon. Ian Hunter MLC - Minister for Water and the River Murray, presented the award to Toro Australia.

## NETAFIM WINS INTERNATIONAL WATER AWARD

Netafim, the world's largest irrigation company, has been named the 2013 Stockholm Industry Water Award laureate. The commendation will be presented at a World Water Week ceremony in Stockholm, Sweden, on September 3.

The prestigious award recognises Netafim's innovative approaches to sustainable water management and development of new technologies in agricultural irrigation that help mitigate world hunger.

The laureate is granted by the Stockholm International Water Institute in collaboration with the Royal Swedish Academy of Engineering Sciences and the World Business Council for Sustainable Development.

"We are truly honoured to receive the 2013 Stockholm Industry Water Award," said Netafim President and CEO Igal Aisenberg. "This award is testimony to our efforts and inspires us to continue to help reduce water usage and to make the world a better, more sustainable place".

## BE PART OF THE IRRIGATION INDUSTRY – JOIN IAL NOW



## IRRIGATION AUSTRALIA

As an IAL member you receive information, support and news, can attend seminars and conferences at reduced rates and have access to our certification programs and other professional development opportunities.

Individuals, end users, water user groups, water supply authorities, consultants, designers, installers and contractors, suppliers, local, state and federal government departments, and service industry companies with an interest in the irrigation industry are eligible to join.

For membership categories, go to IAL website: <http://www.iri.org.au/index.cfm?/membership/categories-and-subscriptions>

I/We wish to make application to join Irrigation Australia Limited.

**CATEGORY OF MEMBERSHIP** \_\_\_\_\_ (Please select appropriate category)

Name \_\_\_\_\_

Company/Organisation \_\_\_\_\_

GST Registered YES ☐ NO ☐

Address \_\_\_\_\_

State \_\_\_\_\_ Postcode \_\_\_\_\_ ABN \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ Contact Person \_\_\_\_\_

Mobile Phone \_\_\_\_\_ Email \_\_\_\_\_

Website \_\_\_\_\_

NOTE: Please read membership categories carefully. Applicants are expected to choose a category honourably and accurately. If in doubt, please contact our office (02) 8335 4000. Student Membership is available to full time students only. Course name and contact details (phone/email) for course supervisor must be attached to application.

I/We agree to be bound by the memorandum and articles of association of IAL

Signed \_\_\_\_\_ Date \_\_\_\_\_

### METHOD OF PAYMENT

☐ Our cheque for \$\_\_\_\_\_ is enclosed OR ☐ Charge our credit card with the amount of \$\_\_\_\_\_

☐ MasterCard ☐ Visa ☐ American Express ☐ Diners

Card Number \_\_\_\_\_ Expiry \_\_\_\_\_

Card Holder \_\_\_\_\_ Signature \_\_\_\_\_

Date \_\_\_\_\_

**Direct Debit:** Irrigation Australia Ltd BSB: 032 276 A/C: 10-2725

Please mail or fax application with payment or payment advice to: IAL, PO Box 863, Mascot NSW 1460 Fax: (02) 8335 4099



## ABB CONTRIBUTES TO RECONCILIATION

In May, ABB celebrated the launch of its inaugural Reconciliation Action Plan (RAP) to advance meaningful opportunities for Aboriginal and Torres Strait Islander people.

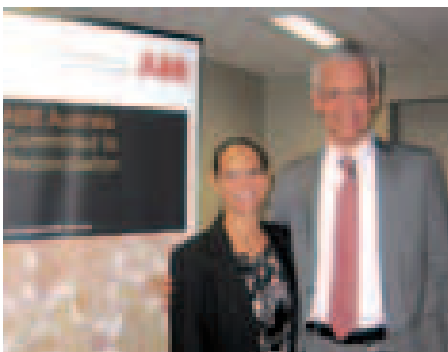
ABB Australia's RAP not only formalises the company's approach to reconciliation, it maps practical steps towards achieving greater awareness and inclusiveness across the organisation.

The RAP 2013 – 2015 will help ABB's drive over the next three years towards establishing effective training and employment programs to enable Aboriginal and Torres Strait Islander Australians to access and retain jobs across all its business divisions. In addition, the plan considers how ABB in Australia can provide more opportunities and effective outcomes for Aboriginal and Torres Strait Islander customers and supply partners.

ABB will also focus on educating its workforce on the rich history and culture of Aboriginal and Torres Strait Islander peoples through cultural training

sessions and believes this will play a fundamental role in ABB's contribution to reconciliation.

"Being a truly global company, spanning some 100 countries, ABB is built on a culture of acceptance, inclusiveness and respect of all peoples," said Axel Kuhr, Country Manager, ABB in Australia. "By implementing a Reconciliation Action Plan, we demonstrate our commitment to providing sustainable working opportunities and better engagement with Aboriginal and Torres Strait Islander communities across Australia."



"It is not only the right thing to do for the growth and success of our business, it is the right thing to do for the growth and prosperity of all Australians," added Axel.

The plan sets actionable priorities in the areas of relationships, respect, opportunities and reporting, as follows:

- build strong relationships with Aboriginal and Torres Strait Islanders peoples, communities and businesses
- cultivate a deeper understanding and respect for Aboriginal and Torres Strait Islander culture, history and contemporary issues
- increase Aboriginal and Torres Strait Islanders' participation through employment and procurement opportunities

ABB's operations in Australia include manufacturing facilities in Brisbane, Perth, Sydney, Darwin and Melbourne and service centres around the country. It has more than 2000 employees at fourteen sites nationally; of those, approximately 27 are Aboriginal and Torres Strait Islander Australians.

## Field proven irrigation power

John Deere irrigation engines know their way around a field. With more than 80 years of proven performance under our belt, you can depend on a John Deere for uninterrupted performance, legendary durability and unbeatable fuel economy. For an engine that's not afraid of a hard days work, backed by dealer network committed to keeping you up and running, make your next engine a John Deere.

**Talk to your local dealer today.**



**JOHN DEERE**

[JohnDeere.com.au](http://JohnDeere.com.au)



# RESEARCH

## PASTEURISATION TRIAL TO PRODUCE RECYCLED WATER

New research to demonstrate the effectiveness of pasteurisation for disinfecting recycled water has been initiated by the Australian Water Recycling Centre of Excellence.

Pasteurisation, a long-established process used worldwide to disinfect and treat milk, involves the rapid heating and cooling of food, usually liquid, for a short period of time. The project, to be conducted at Melbourne's Western Treatment Plant, will use the same process to treat recycled water to a very high standard. It is expected that the water produced will be suitable for crop irrigation, livestock and industrial use.

The project will test the effectiveness of the pasteurisation for the Australian water industry and its potential to reduce energy and operational costs compared to conventional water disinfection

processes. It will involve an efficient heat exchange system that can capture and re-use waste heat.

If successful, the project will demonstrate that pasteurisation can reduce treatment costs and energy requirements, and simplify the recycled water disinfection process, under rigorous conditions required by Australian Departments' of Health.

Pasteurisation is a standard process in the food industry, and the technology is robust and mature. Its application to wastewater treatment has recently been made viable by the use of modern heat recovery technology.

"By utilising waste heat from burning biogas (a waste bi-product of water treatment) or from engines generating electricity on site to run the water treatment plant, pasteurisation disinfection

technology may prove cost effective compared to purchasing electricity from the grid and using conventional disinfection treatments such as membrane filtration, ultraviolet light and chlorine," explained research leader Dr Peter Sanciolo.

Pasteurisation for recycled water has been successfully trialled in California at the Santa Rosa's Laguna and the Ventura Wastewater Treatment Plants. Both US project partners, Pasteurization Technology Group and Carollo, worked on the pilot plant and this will bring technical expertise to the Australian trial.

The project will be led by a team from Victoria University with support by the Australian Water Quality Centre, Melbourne Water, WJP Solutions and two US-based companies, Pasteurization Technology Group and Carollo Engineers.

## YOUNG SCIENTIST WINS NATIONAL AWARD WITH GROUNDWATER SALINITY STUDY

Declan Fahey, a Tasmanian high school student, has been presented with the Australian Stockholm Junior Water Prize by the Australian Water Association for his research into the viability of food production in regions prone to groundwater salinity.

Declan will represent Australia at the International Stockholm Junior Water Prize, the most prestigious youth award for a water-related science project, in Sweden in September this year.

The year 11 student from Hellyer College in Burnie, Tasmania, was selected from an impressive group of budding young scientists from Australia, inspired to develop innovative solutions to real water problems.

Declan's paper presentation on Facing the Reality of Groundwater Salinity impressed the judges with the development of modelling that inferred potato production may not be viable in Tasmanian soils affected by groundwater salinity – an important study with the ever-increasing concerns surrounding water and food scarcity, particularly in the current climate of change.

Based on the results of Declan's investigation, it is recommended that a study into the levels of salt in soils should be conducted before cropping to determine the possibility of plant growth and,



if soils are heavily saline, it may be necessary to adopt desalination strategies like leaching or artificial drainage.

Declan hopes to pursue a career in environmental or health science at University and says of the competition "it just goes to show that science can take you anywhere".

The Australian Stockholm Junior Water Prize is an annual water science competition for high

school students aged 15-20 and is sponsored by Xylem. The Prize inspires our next generation to cultivate new-age projects aimed at improving the quality of life through improvement of water quality, water resources management, water protection, and water and wastewater treatment. Entries for the 2013 Australian Stockholm Junior Water Prize have just opened – go to [www.awa.asn.au/asjwp](http://www.awa.asn.au/asjwp) for more information.

# LET'S ENJOY A NEW LEVEL OF EFFICIENCY & FLEXIBILITY WITH HYDROVAR PUMP CONTROL.



See how Lowara can solve your water challenges.

Visit [www.lowara.com.au](http://www.lowara.com.au)

Lowara and Goulds Water Technology Master Distributors

Victoria & Tasmania  
Brown Brothers Engineers  
(03)9793.9999

Western Australia  
Advanced Pump Technologies  
(08)6143.1000

Queensland  
Brown Brothers Engineers  
(07)3200.6488

Papua New Guinea  
Fimali Limited  
+67(5)852.3658

Sth Australia & Northern Territory  
WBS Pumps  
(08)8344.9927

New South Wales  
Brown Brothers Engineers  
(02)9671.3666

New Zealand  
Brown Brothers Engineers  
+64(3)365.0279

**xylem**  
Let's Solve Water

## IAL commitment to professional development

IAL is justifiably proud of its role in developing a more professional irrigation industry through its commitment to providing training opportunities linked to national competencies, running events such as our highly regarded Irrigation Australia conferences and trade shows and administering our own certification program.

The huge advances we have made have been in large part the result of the efforts of our members volunteering their time for a goal they have been committed to, and to our staff members administering our professional development program and working to develop new training suited to the needs of our members.

The Certification Program is the fundamental plank in the IAL's professional development activities. After many years we have a program that covers almost all sectors of the industry. With our eight certifications the IAL is working towards a future for irrigation in Australia where all irrigation systems are:

- developed by certified irrigation designers
- installed by certified irrigation contractors or installers
- run by certified irrigation operators or managers, with
- product advice from certified irrigation retailers and agronomists and
- newly installed meters for non-urban water supply are by certified meter validators.

Certification is an industry-owned and managed recognition scheme. Recognition of skills and experience of personnel is essential if we as an industry are to be part of the solution of sustainable water use, rather than part of the problem of water shortage.

By becoming a certified irrigation professional, you'll be helping to lift the skills, knowledge and standards of the whole industry – which in turn will help the irrigation industry control its own future and become more sustainable. There are

personal benefits too – as a certified irrigation professional you'll gain recognition for your skills and better prospects for your future career.

In this feature we look at the breadth of training in the industry. It provides a perspective on just how far we have come as an association and an industry in our commitment to demonstrate our professionalism and standards.

**Note.** Certification for meter validators is slightly different to the other certifications. IAL is contracted by the Australian Government Department of Sustainability, Environment, Water, Population and Communities (DSEWPoC) to develop a cost-effective, national, industry-based certification scheme to accredit meter installers, maintainers, and/or inspectors or validators for meters for non-urban water supply.

We offer courses where people can gain the competencies required to obtain the certification.

## Irrigation resellers hold keys to irrigation info

A recent selective survey of horticultural industries by IAL confirmed what a lot of industry members have known for some time. That is that staff at the local irrigation shop are an important – if not the most important – source of technical information for irrigators and consultants and advisors who service them.

According to IAL CEO Duane Findley, being identified as one of the first ports of call for irrigators and industry professionals looking for information about equipment, design and systems is good news for the irrigation industry and the retail sector.

"The more innovative business owners understand that providing reliable and up-to-date information is an effective way of establishing a marketing edge.

"And it underlines the importance that the retail sector needs to place on maintaining the skills and knowledge of staff by having a professional development strategy in place," he said.

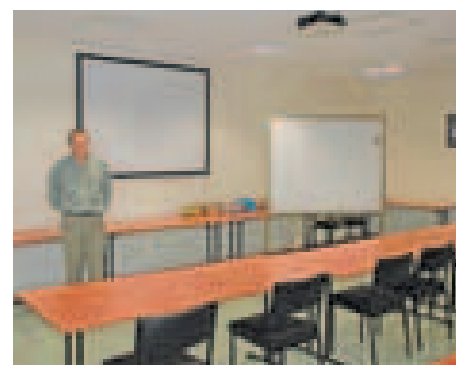
Michael Phillips, Business Development Manager at Irrigation Tasmania's head office in Somerset west of Launceston, understands the importance of ensuring that staff are well trained and that their knowledge is current.

Irrigation Tasmania, which is part of the Irrigear Group, was established in 1995 and since then has grown to be one of the biggest irrigation resellers in Tasmania. The core business for its five branches is agriculture and horticulture, although one of the things he has noticed in the last few years is that the mining and industrial sectors are fast catching up. With five mines on the west coast the demand for pumps and dewatering equipment has grown, and there has been increasing demand for design and installation of irrigation systems from domestic customers and managers of public open space.

Along with the number of upgrades to agricultural irrigation systems as farms consolidate and owners look to put in bigger equipment and pipes, this extra work has placed demands on the company to ensure

that staff can deal professionally and competently with the requirements of different jobs.

One way the company has done this is to invest in training and training facilities. Irrigation Tasmania has a purpose built training room and, according to Michael, the company finds it more cost effective and they get better results by bringing trainers to the staff rather than paying staff to travel off-site.



Michael Phillips shows off Irrigation Tasmania's dedicated staff training room.



# DEVELOPMENT FEATURE

The company put all of its field service staff through their Irrigation Certificate 3 qualification four years ago and five staff either have a CID qualification or are working towards it.

"We think the CID is important because it is a way of enhancing and recognising skills and is independent confirmation that we have been doing the right thing," Michael explained. "And we believe it has benefits as far as insurance and raising our credibility."

Peter Abramowski from Bega Agricultural Services on the NSW south coast is also a great believer in the importance of having a skilled workforce. His company, a member of the ProWater buying group, employs eight staff who have a real diversity of qualifications, skills and interests.

The company supplies a broad range of agricultural services from pumps, soil testing, agronomy and water and irrigation management. And there is a workshop that specialises in repairs and maintenance.

Peter believes this is an important aspect of his business. He is very aware that it is a very competitive market, especially now that people are able to shop online, as well as in local outlets.



Peter Abramowski from Bega Agricultural Services says that training is a critical part of his business.

"Shopping with us is a choice so I like to think we can add value by having the right products and being able to give good advice," he explained.

"We believe in being able to service and give advice on all the products we sell, and it's important that are our staff have expertise in all these areas," he said.

With changes to technology and regulations, keeping technical knowledge current is much more important now than it has been in the past.

Peter has a CID, Certificate 3 in Irrigation, and has completed the Meter Validators Course. He is also committed to ensuring that his staff are providing the best advice possible so, for example, they have completed courses with pump companies and one of his staff will be participating in the next IAL Irrigation Essentials School.

"Training is a critical part of our business and I'm very supportive of IAL's assistance with finding training that is relevant to our needs," he said.

Duane Findley said that companies like Irrigation Tasmania and Bega Agricultural Services have recognised that having highly skilled staff isn't a cost rather it is an investment and makes good business sense. Employing these highly skilled and accredited staff for irrigation work also provides a sense of comfort and security to clients.

"This is one of the reasons that IAL has invested in our certification program as well as developing technical and other training to support our members," he said.

ANNE CURREY, IRRIGATION AUSTRALIA

## WA hits the training sweet spot

In the last few years the WA Regional Committee has invested much energy in developing a dynamic training program designed to meet the professional development needs of the state's irrigation industry.

IAL Board member, Colin Campbell, who has helped to build the capacity of the regional committee to be a leader in irrigation training, explained that the involvement of Tracy Martin, WA's industry development officer, was crucial in this process.

"Tracy has been a contact point for information about professional development and she has played a key role in organising training activities," he said.

Tracy is supported by an IAL training subcommittee which has membership from industry, government and the training sectors and is chaired by Neil Marriott from Challenger Institute of Technology. This strong partnership between key players means that there is a process for identifying and agreeing on training priorities. Colin said that one result of this is an active training culture which is supported by all.

"An example is the WaterWise Golf program, which was an initiative of the Golf Course

Superintendents Association of WA and developed in conjunction with IAL and the Department of Water," he explained. "The program has three levels – bronze, silver and gold – which requires a commitment to training and demonstration of irrigation water management competency at different levels."

Rather than reinvent wheels, an important part of the program has been incorporating training that is already available so, for example, bronze level is based on completion of the IAL Irrigation Efficiency Course.

"The Department of Water also supports and promotes the program, which is an important driver for industry involvement," Colin added.

Of course, it isn't much good having training activities if they don't suit the needs of industry. To ensure that this wasn't an issue, Tracy Martin and Neil Marriott have consulted with stakeholders in WA to identify priority training and professional development needs. As a part of this process the Introduction to Irrigation and Irrigation Hydraulics workshops were developed. In a testament to their relevance, these workshops are now presented Australia wide.



A strong partnership between IAL, agencies and the training sector in WA has paved the way for an active and responsive training culture.

Colin said that the region is always careful to promote certification as a part of its training activities as this is crucial to maintaining standards and promoting the professionalism of the industry.

The region isn't resting on its laurels either. According to Colin, the next step is to develop short courses that are not necessarily competency based rather meet the needs of particular stakeholders, e.g. pump selection.

"This is all part of ensuring that our training program remains relevant to meeting the needs of our members," he said.

## The birth of certification

Professional development has always been a priority focus for IAL (and before that IAA and ANCID). The certification program is something IAL is justifiably proud of, but how many of us know how it began? We spoke to Chris Thompson, a long-time member of IAL to get the background.

**IA. You were on the board of the IAA when it decided to take on the IA CID program. What was the motivation for doing this?**

**Chris.** At the time I was the education and training chairman and we had become increasingly frustrated with the moving goal posts that were the Australian education and training system. Whenever we thought we had a direction, policy would change, so Jeremy Cape, the late Lance Gladigau and I decided we needed to embrace the US system to at least get a starting point. A letter was written and sent to the IA in the US after a late night, post-board meeting, fact finding session in the back streets of Sydney. I believe this was one of the more important letters that IAA ever generated.

**IA. What was the process for developing the program for Australia and who was involved?**

**Chris.** I am testing my memory here as I have attended far too many late night sessions at IAA/IAL conferences, so if my recollections are correct, I can blame the IAA and then IAL. Essentially, the discussions went on for some time, and I believe Jeremy Cape drove many of these as I stood down from the board for work reasons around this time.

These discussions resulted in a team from the US attending the conference in Adelaide in the mid-90s. This involved a workshop afterwards in Tanunda for two days to look at the actual examination process and the metrication activities. A number of us were quite passionate at this workshop in regard to the technical information in the exams. As a result of the workshop, the US delegation of Kate Noram and Brian Vinchesi proposed that a Certification Board be established and that the chairman of that board take a position on the US Board of Governors. This was a significant acceptance from the US of the progress Australia had made. I was very lucky in that the US suggested I take this role, I think partially because I had already completed two CIDs and enjoyed an



Working to get certification embedded in quality management culture is the next step for IAL's certification program, according to Chris Thompson, who was among association members who worked to introduce CID to Australia in the 1990s. In this article he provides some of the history.

after meeting party! It might have been to do with being a bit mouthy as well.

**IA. How much resistance or support was there from the membership?**

**Chris.** There was quite a bit of resistance in pockets, for two reasons. The main one was that the US system was held in such high regard, particularly in the golf and turf fraternities, that there was a belief we were wasting our time as they would not engage with us in anyway. The second group were those that felt we needed to just concentrate on getting an Australian system up.

**IA. What has been the biggest achievement for the certification program to date, given that we now have certifications for a variety of professionals in the industry?**

**Chris.** I'm not sure I am the right person to answer this, but I know that in my engagement with the industry now, the general certification process always surfaces as the industry standard.

There is absolutely no doubt in my mind that the CID process itself lifted the standard of design in irrigation generally, and provided a broader platform for bright young industry professionals to develop and hang their shingle out. Previously to this, you needed 20 years' experience and/or to have done the Southern Cross course to be seen as knowing anything about design.

**IA. How useful is it to have a certification (personally and for clients)?**

**Chris.** I think it's vital for all participants and stakeholders. I think that as we move forward with the era of harmonised OHS laws, "safety in design" and the associated QMS that will come from these it will be even more vital

**IA. If you were still involved in certification what would you be doing next?**

**Chris.** An interesting question. I think that I would be working hard to get certification recognised by the various QMS auditors and system providers to ensure it's embedded in quality management culture. I say this as someone who has avoided QMS like the plague but now accepts it the way of the future.

I would also say that we need to make sure that the things we do as an association are always driven by passion and fun. The leaps in direction that IAA took at that time were always achieved by the group that had the passion and enjoyed being together. The culture of the groups is everything. We were very lucky in those days. I have no doubt that the wine sales achieved from the likes of Jeremy Cape, Kerry Scanlan, Jim Purcell, John Cornish, Don Marriot, Scott MacLean, me *et al* contributed significantly to the development of the wine industry!

---

"THE LEAPS IN direction that IAA took at that time were always achieved by the group that had the passion and enjoyed being together. The culture of the groups is everything."

---

## Potential for Improved Certification of Professionals in the Irrigation Industry

The goal of IAL is to work towards a future for irrigation in Australia where all irrigation systems are:

- developed by certified irrigation designers
- installed by certified irrigation contractors or installers
- run by certified irrigation operators or managers
- supported by product advice from certified irrigation retailers and agronomists.

The Certification Board was established to help the IAL achieve this goal by providing governance and a quality assurance process for its certification programs.

The current Certification Board was created nearly three years ago, and since then there has been one change in board members as per the terms of reference which stipulate a two-year tenure for its members. The board is made up of passionate individuals, all certified irrigation professionals, who volunteer to help the IAL to achieve its goals and objectives. Administrative support is provided by IAL.

The current board is made up of seven members representing most states and most certifications, including certified irrigation designers, a certified irrigation agronomist and a certified irrigation contractor.

### WHAT THE BOARD DOES

The objectives of the Certification Board are to facilitate the certification of all irrigation professionals to improve standards, improve professionalism and maintain quality. In addition, it has a role in maintaining quality and accountability through the code of conduct by ensuring standards are maintained and by driving efficient, practical designs and installations by all professionals. To achieve this successfully we will need standards and processes in place against which performance can be assessed and monitored.

Achievements to date include a revised code of conduct and a dispute resolution process. The code of conduct, which addressed ethics and conduct as irrigation industry professionals, was revitalised to make it more robust and up to date. The next step was to put together a dispute resolution process, which provides a client or end user with a pathway to follow to resolve a dispute for below par or substandard work carried out by a certified irrigation professional or where they have breached the code of conduct. This could be in relation to the design or installation or both of their irrigation system. It is important to remember in the absence of

our own IAL standards the Certification Board will follow industry or manufacturer's standards or codes as well as industry best practice for governance.

You can download the code of conduct and the dispute resolution process and documentation from the IAL's website, [www.irrigation.org.au](http://www.irrigation.org.au) (go to the Certification tab).

### WHAT'S NEXT

The next tasks for the Certification Board are to look at industry standard documentation, irrigation system auditors and a revised CID exam and process. It is the role of the standards working committee, with the help and support of the Certification Board, to define these industry standards for irrigation. For the Certification Board to govern quality and accountability the industry requires clearly documented standards to be used as the benchmark for reference.

The irrigation system auditor's role is also on the current agenda; to define auditors and divide them into the different irrigation specialities that all require a different level of expertise and knowledge. Once the framework for auditors is defined, then we can address the competencies required. The current Certified Irrigation Designer process which has served us well until now is being reviewed. We will eventually revitalise the exams and bring them up to date with Australian standards and terminology. However, this will require a great deal of time and resources.

We are also looking into the option of doing a Diploma in Irrigation Design, which could be substituted for the exam process. Further to this, we are looking into continuing professional development points and the option of being able to do online study and complete questionnaires to achieve points towards this.

If you are a grower, dealer, designer, consultant, supplier, local government or council, you will all benefit from recommending and using a certified irrigation professional and you can be confident that IAL is striving to achieve the level of service and the standards that are expected nationally.

### ABOUT THE AUTHOR

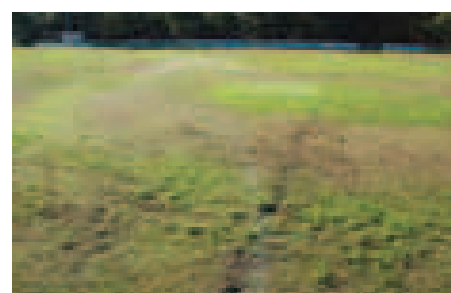
Gennaro has been designing irrigation systems within Australia and New Zealand for the past

15 years and is part of the MWH global network operating as an irrigation water resources consultant. He joined the Certification Board when it was established nearly three years ago as a board member and is now chairman. His qualifications include Bachelor of Technology in Mechanical Engineering, Diploma in Irrigation and certified irrigation designer (agricultural drip micro, sprinkler and landscape turf commercial).



#### CERTIFICATION BOARD MEMBERS

Gennaro Vellotti (Chairman), MWH Global, Adelaide SA  
Ben Chapman, Water Equipment Technology, Brisbane QLD  
Colin Campbell, CJ Campbell Consulting, Perth WA  
Peter Brueck, Water Wise Consulting, Bangor NSW  
Ken Cross, Hydroplan Pty Ltd, Sydney NSW  
David McKechnie, Irrigation Agronomist, Trading as David McKechnie, Sydney NSW  
Stephen Pryor, DPIWE Launceston TAS



With more certified designers and installers and adherence to the IAL code of conduct, we will see less of the poor practice illustrated in these photos.

GENNARO VELLOTTI, WATER RESOURCE  
DESIGN MANAGER, MWH AUSTRALIA AND IAL  
CERTIFICATION BOARD CHAIRMAN

## Meter Validators and Installers course sets benchmark

Greg Stevens, Rubicon Water's Manager Project Delivery and Support, is largely responsible for overseeing the delivery of Australian-based projects and coordinating in-field support to its customers. He has a team of eleven office-based staff comprising engineers, technical officers and administrators and fifteen field-based staff.

Since it was introduced, Rubicon Water has sent staff members to complete IAL's Meter Validators and Installers course, including Greg himself who participated in the course earlier this year to better understand the work requirements of his field staff. *Irrigation Australia* talked with Greg about the reasons why the course is on Rubicon Water's training program and the advantages for staff who complete it.

### IA: Is this the first time you have had staff attend the training course?

**Greg:** Rubicon has had a number of staff attend the course over recent years and, as a result of putting in place our plans for the future, we enrolled many of our new field staff in the most recent course. Having trained staff means that we're able to be responsive to our customers work requirements. As well, by having multi-skilled field staff we are able to grow our field resources rapidly if required by our customers, particularly those involved in accelerated irrigation modernisation projects throughout NSW and northern Victoria.

### IA: What is Rubicon's role as far as metering in the water sector is concerned?

**Greg:** Rubicon is a leading innovator and supplier of flow measurement devices and open channel automated control technology throughout the world and also provides value-adding associated services as part of its control solutions. We're now able to provide our customers with "turn-key" solutions involving design, supply, install, commissioning and maintenance services to improve water management.

### IA: What are your reasons for having staff attend the course?

**Greg:** This course is identified in our professional development matrix to ensure we have a benchmark level of knowledge in key areas across our business (i.e. field services). Rubicon staff are also required to attend the course as part of fulfilling our contractual requirements with some of its customers.

### IA: Is the fact that the course provides a certification that is linked to competencies important to Rubicon?

**Greg:** Professional development is considered by our staff as a vital part of personal job satisfaction. Rubicon works with each individual to develop a specific plan which includes a diverse range of opportunities, be that certified courses such as this or others such as on new products and services. Because many of the locations we work are remote, staff competency is critical to ensuring we provide quality, reliable in-field support to our customers.

### IA: How important is it to have certified staff, generally?

**Greg:** In addition to our technology, having certified staff is a key differentiator between us and our competitors and improves our position to be awarded work from existing and new customers.

## ABOUT THE METER VALIDATORS AND INSTALLERS COURSE

IAL runs this two-day course at locations around Australia based on demand. It is targeted at people responsible for installing and/or validating water meters in a rural environment against the Australian Standards. Since 2010 the course has been run

fourteen times and a total of 174 people have completed it.

The course covers two out of six units required for certification as a meter installer and validator. Units delivered at the course are:

- NWP302A: Install meters for non-potable, non-urban water supplies
- NWP304A: Maintain meters for non-potable, non-urban water supplies

To apply for IAL certification, participants will need to demonstrate competency in the remaining four units by providing statements of attainment or equivalent skills and knowledge.

The remaining four units are:

- NWP201B: Follow defined OHS procedures and regulatory requirements
- NWP202B: Apply environmental and licensing procedures
- NWP226B: Prepare and restore worksite
- NWP234B: Locate, identify and protect utility services.

For information about certification and registering for the course, go to the IAL website [www.irrigation.org.au](http://www.irrigation.org.au) or contact Jodie Porter, phone 02 8335 4000, email [Jodie.porter@irrigation.org.au](mailto:Jodie.porter@irrigation.org.au).

## METER INSTALLERS COURSE A STEP ON THE ROAD TO A NEW PROFESSION

Sharon Law recently started working with Rubicon as a casual field technical assistant. Just after she took up her position she completed the Meter Validators and Installers Course, which is a precondition to achieving IAL certification and to realising her ambition of becoming a permanent field technician.

Sharon found the course valuable, not only because it is a precondition for her chosen profession, but also because of the breadth of information it covered.

"The course covered the new Australian Standard AS4747 about meter validation, and clearly identified the requirements I need to be aware of and the standards that must be met when validating any non-urban meter in future.

"It also gave me a broader knowledge of types of meters currently on the market as I had only been aware of the ones we have been using at Rubicon," she explained.

The course also covers the technical information needed to interpret user manuals, eg. DN calculations each side of the meter and ideal working conditions to promote maximum efficiency.

*Irrigation Australia* asked Sharon how she thought the course could be improved. After some thought

she suggested that for people who learn by doing, as she does, running it at a facility that allowed for practical tasks could be valuable.

"I know a field trip was planned for the course but bad weather meant it had to be cancelled," she added.

Notwithstanding this, Sharon is positive about the course and what she has learned.

"Obtaining the certification will contribute to giving me the skills and knowledge I require for my position and, hopefully, offer me more job security in the future," she said.



Sharon Law sees the value of the Meter Validators and Installers course in helping her realise her ambition of becoming a permanent field technician.



# Pivot Control & Monitoring Solutions

Developed by **Irrisys** - Specialists in Water Management and Industrial Automation Solutions.

With over 200 installations nationwide in the last 4 years the energy efficient Remote Pressure Control Solutions bring all your farm assets into one system. This innovative and mature technology promotes:

**Energy Savings**

**Water Savings**

**Labour and Traffic reductions on site**

No matter what your irrigation needs **Irrisys** allows you to automate and control all aspects of irrigation pumping and monitoring offering you unequalled irrigation support.



Contact **Damien Butler**  
0419 384 624  
[www.irisys.com.au](http://www.irisys.com.au)  
[damien@irisys.com.au](mailto:damien@irisys.com.au)

 **Irrisys**  
Irrigation made *easy*

## Practice makes perfect for TAFE students

Encouraging certification and professional development to improve professionalism in the irrigation industry has long been a key focus of the association. As well as running its own certification program, IAL supports and encourages industry members to complete certificate level courses as a way of demonstrating that they are qualified and have the skills to complete tasks in relevant areas.

North Coast TAFE has been running the Certificate 3 in Sports Turf Management course at its campus in Wollongbar near Lismore for about ten years. In these days of online and distance learning, it is one of a handful of campuses around Australia that runs the course on-site. It includes two compulsory units that are relevant to irrigation: AHCIRG302A, Install irrigation systems and AHCWRK313A, Implement and monitor environmentally sustainable work practices.

I spoke with Greg Holihan, Head Teacher Horticulture Trades, about the course and a recent practical project to install a lawn tennis court and irrigation on the campus.

According to Greg, the main demand for the course is from companies with apprentices, e.g. golf and bowling clubs, from south-east Queensland south to Coffs Harbour.

"Most of our students are apprentices, although there are a few individuals putting themselves through as they want to find employment in this area," Greg explained.

One of the activities included each year is a practical project where the skills taught in the course are brought together so that students experience a real world situation. In 2012 it was building the lawn tennis court; before that it was building a par 3 golf hole.

Greg said that, under his guidance, the students are responsible for aspects of the project from design and construct to installing the irrigation and landscaping.

"The tennis court wasn't a straight-forward project, mainly because of the modified soil profile we were dealing with," he explained.

This meant that there was a lot of planning and earthworks to establish the base for the tennis court and laying the turf.

Preparation included excavating down to 400 mm and then building the base using gravel, coarse river sand (filter layer), the original red krasnozom soil from the site and a fine sand suited to the purpose brought in from Beaudesert.

After this preparation, couch grass was laid down and then the area was ready for the irrigation system to be installed.

The students researched sprinklers available and, based on the site and water requirements of the turf, decided that six Toro DT3S Series sports turf sprinklers, which retail for about \$500 each, would be ideal.

"I approached Toro about supplying the sprinklers, and they generously agreed to donate them to the TAFE," Greg said. "As well, they have committed to supplying an automatic controller and rain sensor next year, when we upgrade the system from a manual to an automatic one."

"The sprinklers will provide the students with working knowledge of the latest technology in irrigation. Using them, we were able to finish constructing our tennis court, which has provided the students with tremendous experience."



Simon Winzar wires up the solenoid valve in readiness for automation.

### IAL CERTIFICATION

**Certified Irrigation Installer.** The two compulsory irrigation units in this course would contribute to achieving an IAL irrigation installer certification. As well as showing that they had successfully completed these units, applicants would also need three other units from the following units, e.g.

- AHCIRG303A Measure irrigation delivery performance
- AHCIRG306A Troubleshoot irrigation systems
- A soils unit at level 2 or above
- AHCIRG315A Interpret irrigation plans and drawings
- AHCREQ301A Install and terminate extra low voltage wiring systems

**Certified Irrigation operator.** An individual who has completed:

- AHCIRG302A Operate irrigation systems
- AHCIRG301A Implement a maintenance program for an irrigation system
- AHCIRG306A Troubleshoot irrigation systems
- AHCWRK313A Implement and monitor environmentally sustainable work practices

Would also have the four of the five units needed for Certified Operator. Other units they could do to get Operator are:

- AHCIRG303A Measure irrigation delivery performance
- AHCIRG308A Monitor soils under irrigation
- AHCREQ301A Install and terminate extra low voltage wiring systems

To find out more about the IAL's certification program, go to the Certification page on the IAL website, [www.irrigation.org.au](http://www.irrigation.org.au)



Students becoming acquainted with the tools necessary to spread the gravel used as a base for the tennis court.

# DEVELOPMENT FEATURE

Chris Ashwood, Territory Manager for Toro Irrigation, said the company was happy to supply the sprinklers, as it was very important to stay up to date with the latest technologies used in turf irrigation management.

"We were happy to help out as we are sure being involved in such a practical project will benefit all the students," Chris explained.

And according to Greg, staying up to date with the latest irrigation technology is very important. He believes a much higher level of skill is demanded of sports turf managers now, and the Certificate 3 course has been designed to provide a good grounding so that students are capable when they graduate.

"Anyone involved in sports turf management today has to have a high level of skill in a variety of areas, from hydraulics and operation through to automation. Courses like this one help to ensure the professionalism of graduates, to the benefit of the irrigation industry," he said.

ANNE CURREY, IRRIGATION AUSTRALIA



Students check out the performance of one of the sprinklers installed on the tennis court.



- Soil Moisture Monitoring
- Weather Monitoring
- Accurate Water Data
- Leak Detection
- Disease Management
- Water Quality Monitoring

**ADCON**  
TELEMETRY  
Smart Wireless Solutions

ADCON is a leader in monitoring for irrigated and dryland agriculture. Our soil moisture monitoring systems are helping farmers save water, maximise yield, control quality and improve yield forecasts. Our automatic weather stations don't just capture current weather conditions, they can calculate growing season rainfall, ET, degree days, heat hours and chill hours and, to top it off, run a variety of plant disease models (downy, powdery, botrytis) to give you early indication of likely problems. We can help you build a system that gives you real time access to your readings from anywhere. You can run the software yourself, or have your data hosted on our servers and then access from any web connected PC. For flexibility you can view the data where and when you need it on a PC, smart phone or tablet. Our Next G and Radio telemetry units are compact, making them unobtrusive, easy to install and less likely to be damaged by machinery. Aqualab Scientific provides local service and support including an extensive dealer network across Australia and New Zealand.



## BIG PLANS FOR IAL IN 2013-14

Recently appointed CEO Duane Findley has hit the ground running and he and the board are planning a big year for 2013 – 14. Key objectives for the year ahead include:

- expanding the website and adding value to your membership by developing a members-only section
- developing an IAL policy position of areas of critical concern to our members, and “owning” those issues
- creating new special interest groups (SIGs) to advance specific industry needs
- progressing towards the introduction of irrigation industry standards, developed by the industry, for the industry
- reinvigorating IAL’s successful certification program
- developing a comprehensive training calendar that meets the professional development needs of our members groups
- improving communication with our members about what IAL does

- planning and delivering a world-class conference and trade exhibition on the Gold Coast in June 2014.

A significant portion of our operating funding comes member fees. While we have an ambitious program for the next twelve months, IAL has limited its membership fees increase for 2013-14 to the CPI, or 2.5%. This small increase will allow IAL to continue the good work it conducts for its members, and for the irrigation industry.

In the last year IAL has:

- launched a number of SIGs and regional groups
- operated boards and committees for certification and professional development
- represented the interests of their members at state and commonwealth government levels
- run a highly successful regional conference at Griffith attended by more than 200 delegates
- provided specialised training programs across the country, in urban and regional areas
- launched its new website
- employed a new CEO, Duane Findley, to drive the aims of IAL and to improve the member experience.



## MEMBERSHIP – HAVE YOU RENEWED YOURS?

Membership renewal notices were sent out to members in June. These notices included entry into a competition for existing members who renew before 30 August 2013. Have you renewed yours yet?

Being a member of IAL enables you to have a voice in your irrigation industry, ensures that your industry remains strong in its representations to state and commonwealth governments; and provides a range of networking, member-discounted rates on a variety of products and services, and professional development opportunities.



2-6 JUNE **CONFERENCE** 2014  
**EXHIBITION**

GOLD COAST CONVENTION AND EXHIBITION CENTRE

## EXHIBITION AND SPONSORSHIP OPPORTUNITIES NOW AVAILABLE.

Please contact Andy Orr to receive a copy of the prospectus [aorr@etf.com.au](mailto:aorr@etf.com.au) or call +61 2 9556 8753.

## WATER FOR LIFE, A FUTURE FOR ALL

Australia’s only all-encompassing trade exhibition & conference dedicated to the irrigation industry; the largest event for the Asia Pacific Region.



## OBITUARY PETER MAISEY

28 DECEMBER 1938 – 22 MAY 2013

Peter David Maisey was a well-known and highly respected engineer who worked with some of the most prominent companies in the Australian pump industry after he arrived from the UK January 1969. Throughout his long career working with companies such as Ornel, Warman, Hills & Willis, Hoxton and Everflow, he played a significant role in shaping water transfer in Australia, especially in agriculture. Peter was also a supporter of IAA from its establishment in 1984, and then IAL.

Peter was unique in a diverse industry – he had a sophisticated engineering knowledge combined with a wide and invaluable practical knowledge from experience in the field. He would often comment, "In theory this will be the case but once you add these factors in the field, this could be the outcome".

Ralph Waldo Emerson once said that "A great man is always willing to be little", and this pretty well sums up Peter, a most humble man. He would never boast about what he had achieved nor would he belittle others, even when engaged to sort out a catastrophic disaster of an installation done by someone else.

While some people initially found Peter's manner a little different, once you got to know him, it was perfectly clear why his speech was a little slow at times. Like everything Peter did, every word and sentence was perfectly calculated and cross checked before delivery. I doubt anyone who knew him could come up with a time that Peter was quick to claim something that turned out to be incorrect, or said something that he would later regret. Taking a little more time and ensuring that everything was correct the first time was just the way Peter worked in all facets of his life.

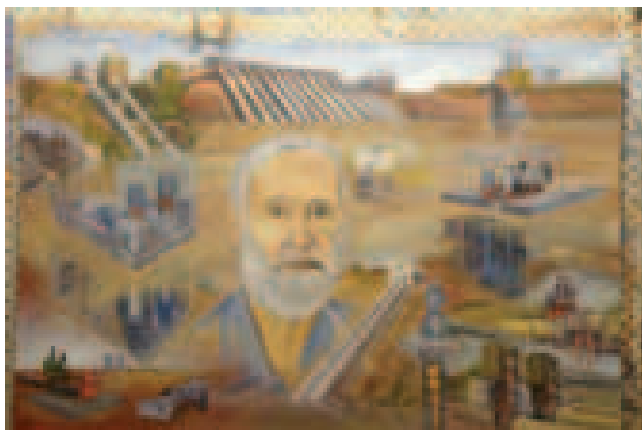
He was an incredible perfectionist in all that he did and we all quickly learnt that compromise had never entered into Peter's dictionary. The Captain as he was affectionately named by his family (short for "Captain Control") was always in charge.

An example of Peter's calculated control is from long-time client and friend, Colin Barnes. Colin had a client who was after an axial flow pump to deliver 190 ML/day for a particular installation. Peter put forward his usual detailed proposal quoting the pump would produce 189 ML/day at the required duty. In discussion, not questioning, Colin mentioned he may just put it in his proposal to the client at 190 ML/day as requested, only to get an immediately reply from Peter "Did you not read my proposal Colin? The pump at the suggested duty will produce 189 ML/day not 190 ML."

Peter Maisey was the man with the answers. Not only could he find an answer to a perplexing question but the answers were always honest, delivered with authority and, without fail, turned out to be correct.

Never have we met a man more honourable, compassionate, knowledgeable and kind hearted. We admire the level of respect that Peter gave, but more importantly, the level respect that Peter had achieved. Anyone who had dealings with him always remarked on his knowledge and his integrity.

"Your reputation and integrity are everything. Follow through on what you say you're going to do. Your credibility can only be built over time, and it is built from the history of your words and actions." Another quote that perfectly sums up Peter's legacy and level of professionalism, rarely seen today.



This painting was commissioned for the family by Fluid Engineering and Painted by Peter's long-time colleague and friend Greg Brennan of Narromine. Greg was a well-known pump installation installer and was an overseer on a large number of the large installations throughout western NSW that Peter was involved in, as depicted in the painting.

Fluid Engineering, the company and the Ornel "Floodlifter" range of axial flow pumps Peter built up to resurrect the high quality pump manufacturing industry in Australia, is growing from strength to strength. Both John Sillis and I are humbled that we were chosen by Peter to continue on with his legacy of producing the highest quality pumping equipment based on best practice engineering principles and highest quality materials.

An ever appropriate parting Maiseyism is, "It may be a little early but it's never too late for a Tooheys Old".

**Note.** This is an edited version of the eulogy delivered at Peter's Funeral by Bryce Yates from Fluid Engineering, Griffith.



**HYDROVAR,  
the modern  
variable speed  
pump drive  
is taking  
pumping  
to a new level  
of flexibility and  
efficiency.**

Call us to discuss your applications:

Melbourne 03 9793 9999

Sydney 02 9671 3666

Brisbane 07 3200 6488



Email: [info@brownbros.com.au](mailto:info@brownbros.com.au)

Web: [www.brownbros.com.au](http://www.brownbros.com.au)

**DELIVERING PUMPING SOLUTIONS**



## YOUR IAL BOARD MEMBERS

### Ian Moorhouse (Chairman)

TATURA VIC 3616  
P: 03 5824 1866  
M: 0409 438 323  
E: [ianm56@iinet.net.au](mailto:ianm56@iinet.net.au)

### Anne-Maree Boland

RMCG  
CAMBERWELL VIC 3124  
P: 03 9882 2670  
M: 0427 679 042  
E: [anne-mareeb@rmcg.com.au](mailto:anne-mareeb@rmcg.com.au)

### Sean Callaghan

Philmac  
WETHERILL PARK NSW 2164  
P: 1800 755 899  
M: 0418 841 069  
E: [seanc@philmac.com.au](mailto:seanc@philmac.com.au)

### Colin Campbell

PO Box 284  
Bull Creek LPO  
BULL CREEK WA 6149  
P: 08 9310 8252  
M: 0447 772 913  
E: [cjcmail@ozemail.com.au](mailto:cjcmail@ozemail.com.au)

### Vern Costelow

PARKDALE VIC 3195  
P: 0417 356 694  
E: [vcostelow@bigpond.com](mailto:vcostelow@bigpond.com)

### Simon Cowland-Cooper

LABRADOR QLD 4215  
P: 07 5591 5353  
M: 0415 733 431  
E: [scassoc@bigpond.net.au](mailto:scassoc@bigpond.net.au)

### Tim Doolan

Ruralco Holdings Ltd  
Sydney NSW 2000  
P: 02 9225 2902  
M: 0418 969 591  
E: [tdoolan@ruralco.com.au](mailto:tdoolan@ruralco.com.au)

### Peter Hayes

GLEN OSMOND SA 5064  
P: 08 8379 0115  
M: 0418 942 700  
E: [grapwine@senet.com.au](mailto:grapwine@senet.com.au)

### Karen Murday

Kedron QLD 4031  
M: 0414 607 716  
E: [Blindmice1@primus.com.au](mailto:Blindmice1@primus.com.au)

### Peter Smith

Department of Primary Industries NSW  
CALALA NSW 2340  
P: 02 6763 1262  
M: 0411 128 437  
E: [peter.smith@dpi.nsw.gov.au](mailto:peter.smith@dpi.nsw.gov.au)

## UP CLOSE

Duane Findley took up his new role as IAL CEO in April. *Irrigation Australia* got up close with Duane to find out more about him.

### IA. How long have you been working in association management?

**Duane.** I worked for a large state-based association for seven years in a variety of roles and in a national role in one of the largest Australian associations for three years. I also worked in a senior role with one of the "big 4" professional services firms for four years, which has a lot of elements in common with the associations market.

### IA. Now that you have been in the job for a couple of months, what are the key differences in leading IAL compared to your other roles?

**Duane.** The other associations I have worked in have been large, with up to 40,000 members and 300-plus staff. In these larger associations, staff tend to become distant from the membership base and operate remotely from the needs of the members. Members who wanted to contribute found they had limited opportunities to do so, with the association hiring professional staff to fulfil these roles. This led to members believing their voices were not being heard and they were being kept "on the outer" of their own association.

IAL is a small association with limited professional resources and funding. This means for IAL to deliver against its charter, we have to engage members and leverage their enthusiasm, skills and knowledge to get things done. It also means that on a day-to-day basis, my team and I interact with members much more closely and we can move on member concerns and ideas quickly without needing to turn a huge ship around. IAL's reliance on member volunteers and our small staff also means I need to be selective in prioritising projects and, from a personal perspective, I have needed to adjust from leading a large staff team in a hierarchical and directive environment, to negotiating and debating with our volunteers to deliver results for the industry.

I have been pleasantly surprised at how passionate the members of IAL are, how much they want to help the industry succeed, and how willing they are to volunteer their time to help. There is still a strong spirit

of community in the industry that is energising. A large part of my role will be to provide opportunities for our members to share their expertise, and to help channel this enthusiasm and expertise into beneficial outcomes for the industry.

### IA. How are you finding familiarising yourself with irrigation industry and policy?

**Duane.** I've told everyone I've spoken to that while I know associations, I don't know the irrigation industry but I am willing to learn. I've been overwhelmed with the response from members willing to share their considerable knowledge and experience with me. I've already travelled to Brisbane to meet the regional committee and the Gold Coast conference team, been to the Griffith conference and am booked to visit Cairns, Canberra and WA.

On my first few days in the job, I was given a handover by the IAL Board Chair, went through the financials and read through the files in the office. I spoke to each staff member to understand their roles and how they contributed to the success of IAL. I also met with the previous CEO and GM to learn from their experiences.

I am following an induction program that involves meeting with or talking to SIGs and regions, and other members and industry stakeholders. The Griffith conference was an excellent opportunity for me to meet a lot of members and to hear from them and several members have been surprised to get a telephone call from me to introduce myself.

I have read widely on policy issues and spoken to Government representatives and policy experts, and I have written a response on behalf of IAL to the Regulatory Impact Statement on the Introduction of Water Market Intermediaries, using the expertise of our members to draft our response. This paper can be found on our website, [www.irrigation.org.au](http://www.irrigation.org.au).

### IA. What do you see as the priority issues for the IAL to deal with in the next 12 months, internally and externally?

**Duane.** The members I have spoken to tell me that IAL needs to communicate with them better. Over the past year or so, IAL has been doing some interesting work in policy development and in other areas, but we have not been telling our members about it. IAL needs to improve on this and we will be over the next 12 months.

Members also tell me that they want IAL to take a leading position on critical industry issues, to “stand for something” and be the “voice of the industry”. Even if they might not agree with our stance, members tell me that as long as IAL’s position can be backed by evidence and is in the best interests of the industry, they will be supportive.

To this end, the IAL Board is developing a policy platform on critical industry issues and the position IAL should be taking on these, along with a designated “go-to” expert for comment on the issue.

Our members value the work done by our volunteer IAL Board, panels, SIGs and regional committees. These groups allow members to give back to and to improve the professionalism of the industry. IAL needs to support these groups and create new ones where the market dictates a need.

Our industry values the work done by IAL in the training, certification and standards development and wants to see this role expanded and developed. At the same time, IAL needs to understand the needs of its

broad range of members and to develop products and services that satisfy their particular needs.

Everyone I’ve spoken to enjoys the IAL conferences and exhibitions and sees them as a core deliverable from IAL. After receiving feedback that Adelaide 2012 conference missed the mark, the lessons learned were incorporated in to the planning for Griffith in 2013.

Feedback from Griffith was overwhelmingly positive and demonstrates IAL’s ability to listen and change. Those lessons are being taken forward into the planning for Irrigation Australia 2014 Conference and Trade Show.

Finally, IAL’s tradition sources of external funding are changing and IAL needs to adapt to this changing landscape, to secure our financial future.

#### IA. Dog or cat?

**Duane.** I have both and love both, but my wife is the “dog person” and I am the “cat person” of the house.

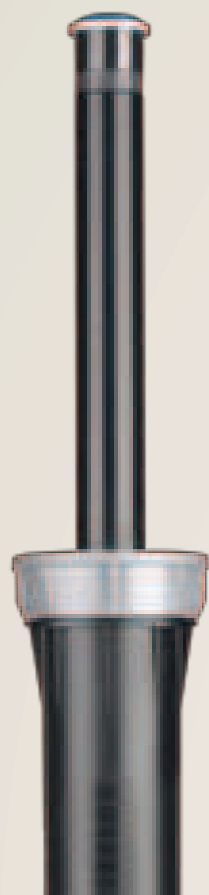
Something about their haughty arrogance and their expectation that they are the centre of the universe appeals to me. But my closest and oldest pet is a cockatoo named Archie that my mother gave me some 25 years ago.

He has seen our kids grow up and is certainly one of the family. Visitors to our house are often shocked to hear a large dog barking just inside the front door, only to find it is Archie doing the barking.

#### IA. Best book you’ve read this year.

**Duane.** My reading material is eye-glazingly boring to most people. I’ve recently re-read the classic Japanese novel on the life Miyamoto Musashi, one of Japan’s greatest swordsmen from the 1500s, and I am half-way through a book on the history of the 30-year war (1618-1648) in central Europe.

Both are excellent books, but the Musashi one is far easier reading.



# PRO-SPRAY® BUILT TO LAST

**PRESSURE REGULATED MODELS**  
provide water savings up to **50%**

## CHECK VALVE

+ CO-MOLDED WIPER SEAL  
= NO LEAKS, NO SWEAT

## PRS40 & MP ROTATOR

  
a better way to water

**PRO-SPRAY:** WHERE INNOVATION MEETS CONSERVATION

#### HR Products

National Free Call: +1 800 HUNTER  
Toll Free Fax: +1 800-651-680  
[www.hrproducts.com.au](http://www.hrproducts.com.au)  
[hrrsales@hrproducts.com.au](mailto:hrrsales@hrproducts.com.au)

#### Nelson Australia

Tel Call: +1 300-856-386  
Fax: +1 300-856-369  
[www.nelsonirrigation.com.au](http://www.nelsonirrigation.com.au)  
[info@nelsonirrigation.com.au](mailto:info@nelsonirrigation.com.au)

#### Hunter Industries, Inc.

8 Parade West, Kent Town, S. Australia  
Tel: 08-8363-3599 Fax: 08-8363-3687  
Call today for your free Hunter Products Catalog: +1 800-811-370





## IRRIGATION AUSTRALIA 2013 GRIFFITH REGIONAL CONFERENCE ROUNDUP

Irrigation Australia's 2013 Regional Conference was a hugely successful event in Griffith NSW, based on the theme of *Sharing Irrigation Knowledge for Better Outcomes*.

The event attracted 200 delegates from around the country to the Murrumbidgee Irrigation Area (MIA) from the 28 – 30 May. The MIA's irrigation scheme is more than 100 years old and the MIA is a major food producing region for Australia.

A comprehensive conference program of sessions, workshops and field tours provided an ideal opportunity for delegates to learn more about a wide cross-section of irrigation practices and development. More than 60 speakers presented papers on urban and rural irrigation and water policy topics.

"We were very pleased with this year's Regional Conference in Griffith and the number of people who took the opportunity to learn about the latest developments in the industry and focus on what's in store during the next twelve months," said IAL Chairman Ian Moorhouse.

"It was a fantastic opportunity for people to share their knowledge and experience and to network with colleagues and experts from around the country. Three quarters of the attendees rated the

conference as very good or excellent. We definitely met our purpose of sharing irrigation knowledge for better outcomes, and have provided an important overview of the future trends in water supply and irrigation," Ian added.

Many of delegates took the opportunity to learn about the MIA and the nearby Coleambally Irrigation Area (CIA), by attending field tours of the Griffith and Coleambally regions. The groups visited agribusinesses such as Walnuts Australia and the Southern Cotton Gin; and checked out new channel control structures in the CIA. They were able to see first-hand how the industry is raising the professionalism of irrigation and continually developing more efficient and innovative practices.

Our funding partner, Horticulture Australia, along with our Gold Sponsors, Comdain Infrastructure and Grundfos, were among a number of sponsors who helped make this important conference possible and we thank them for their support.

Following the success of the 2013 Regional Conference, IAL is now preparing for the 2014 National Biennial Trade Expo and Conference event, to be held on the Gold Coast from 2 – 6 of June 2014.



IAL Board Chairman Ian Moorhouse welcomed delegates to two days of sharing irrigation knowledge for better outcomes.



Jeremy Barr (right) from SKM Consultants gets the lowdown on products from Lazar Jeremic, Xylem Analytics.



More than 200 delegates attended conference sessions and workshops, participated in conference field tours and used lunch times to catch up with colleagues and old friends.

### High calibre speakers impress delegates

A raft of high calibre speakers impressed delegates including international keynote speaker Dr Brent Clothier from the New Zealand Institute for Plant and Food Research.

His session, titled "Reducing the Water Footprint of Irrigated Agriculture", looked at ways the irrigation industry needs to keep up with consumer trends, including the demand for food products which use less water and requiring industries to highlight their sustainability efforts.

Brent pointed to the fact that 17% of irrigation land is responsible for helping to produce 40% of the world's food and fibre – figures which he believes should be more widely promoted to help improve the image of irrigated agriculture.



Other guest speakers included NSW Office of Water Commissioner, David Harriss, who focused on the implementation of the Murray-Darling Basin Plan; and John Foster, Director Southern Basin Delivery in the Commonwealth Environmental Water Office, who spoke about environmental irrigation.

### Exhibition shows off latest in irrigation innovation

An exhibition of state-of-the-art water management technologies and irrigation solutions brought some of the world's leading irrigation equipment suppliers and innovators to the MIA during the conference.

Exhibiting companies ranged from Australian irrigation experts specialising in web monitoring

services; and design, engineering and construction of irrigation systems, to pump suppliers and water management companies with operations the world over.

Our thanks go to all of our sponsors who were part of the Exhibition at Griffith.

**Funding partners:** Horticulture Australia and CRCIF

**Conference sponsors:** Gold: Comdain and Grundfos; Silver: AWMA Water Control Solutions, Batescrew Pumps and Valves, GreenWorks Lining Solutions, Outpost Central, Pentair, Riverina Water Engineering, Rubicon, Solco Solar Products, Xylem; Bronze: Groundwater Imaging; Local: Coleambally Irrigation



Danielle Ewington from Murray Irrigation was interested in checking the specs on solar pumps with Denis Neidhart (left) and Andrew Seaton from Solco Solar.



Christopher George (left) from Batescrew Pumps catches up with Tim Vandenberg from Olam Orchards, Mildura. Olam Orchards installed pumps in 2001 and 2007.



James Riddel (left) from Outpost Central and Neale Whitard from Living Breathing Design take a break from trade enquiries.

# IRRIGEAR STORES



## WORKING FOR YOU

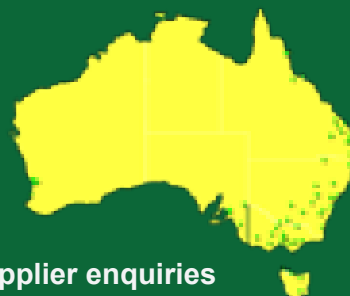
**Grow your business and join Australia's largest group of independently owned irrigation stores.**

- > National coverage
- > Technical knowledge and expertise
- > Strong relationships with preferred suppliers
- > Local community support initiatives

For all your pumping and irrigation requirements, call your local Irrigear Store. (Local call costs apply).

# 1300 IRRIGEAR

Call 1800 IRRIGEAR for membership and supplier enquiries



# www.irrigear.com.au

IRRIGEAR STORES LTD  
Unit 60 / 1140 Nepean Highway Mornington VIC 3931 Ph:  
03 5976 1588 E: [irrigear@irrigear.com.au](mailto:irrigear@irrigear.com.au)

Domestic | Commercial  
Agricultural | Industrial



# SURFACE IRRIGATION SIG

## MOVING SURFACE IRRIGATION INTO THE 21ST CENTURY

The Best Practice Surface Irrigation (BPSI) SIG was formed in late 2012 to foster collaboration, information sharing and cooperation between IAL members interested in surface irrigation and technical and management opportunities to improve the productivity and sustainability of these systems. The group now has 44 members and ran a session at the Griffith conference in May 2013. Sam North summarises key points and suggestions from the session for follow up.

The session comprised six short presentations from a range of speakers (farmers, researchers, irrigation designers, extension) across a range of industries from the three major surface irrigation areas of south-east Australia (northern Victoria, southern NSW, northern NSW). This was followed by discussion among the approximately 50 attendees who attended the session.

### How do we move our surface irrigation systems out of the 19th Century and into the 21st ?

Each of the speakers was asked to address the question of moving into the 21st century using the example of the designing and building cars. The context was that in the car industry, different sectors don't design and build the different bits in isolation and then hand them to the purchaser and expect them to put it all together. But this is what we do in the irrigation industry, particularly with surface irrigation.

The question then is how we organise ourselves to promote innovation and the adoption of new technology that is appropriately priced, reduces labour requirement, has low (or no) energy requirement, increases crop/pasture productivity and helps optimise water use? How the speakers tackled this question is summarised below.

#### Dallas Stott, Stott Farming. Modernising on-farm surface irrigation in the MIA: a farmer's perspective

The cost of "new" systems is the major factor restricting uptake. The key elements that influence decision making are:

- the need to retain enough equity in the business (i.e. low capital cost)
- having continued cash flow during installation (i.e. farming during construction)
- productivity gains (better yields) or cost savings (labour) need to be sufficient to justify the new system.

Impediments to the adoption of new technology and improved layouts are: the design and cost of new structures and the low number of young people wanting to or able to get into farming, which is related to increasing farm size and the cost of capital tied up in irrigation development.

With respect to new technology, Dallas is thinking ahead and trying to develop his irrigation layouts to make future use of irrigation automation and robotics/driverless machinery operations. He also uses his smart phone and sees many uses and advantages in this technology.

#### Phil Price, Price Merrett Consulting. Modernising on-farm surface irrigation in the dairy industry: a designer's perspective

Phil identified issues to do with engaging contractors (i.e. installers of these systems) to make sure standards are high. As an example poor practice he



A key element identified for irrigators in deciding whether to develop a new surface irrigation system is establishing that productivity gains (better yields) or cost savings (labour) are sufficient to justify the investment.

instanced the use of under-spec pipe in recently installed pipe and riser systems.

He also identified a lack of an evidence base for good design. For example, fast watering has been advocated strongly by industry, yet the evidence from studies (DPI Vic and NSW DPI) shows that it is not universally applicable to all soil types and that improved drainage is just as important. As well, there is a shift away from gravity to pumped systems which have large energy requirements.

#### Lance Pendergast, DAFF Qld. Modernising on-farm surface irrigation in the cotton industry: a researcher's perspective

From a research perspective, there is a lag between the development of technologies by scientists and their take up (if any) by farmers, e.g. automation in furrows allows smaller, more frequent irrigations and the use of dynamic deficits has been shown to improve water productivity, yet this technology has not been adopted by farmers. The problem is not only to generate ideas, but also to translate ideas into practice. This may be a problem because the developers of ideas (researchers) are not the adopters/users.

#### Rod Smith, University of Southern Queensland (Automation and real time optimisation: Managing time to cut-off) and Peter Moller, Rubicon (Essential elements of precision surface irrigation)

These two presentations showed a great example of how research can be incorporated into the development of new technologies to reduce labour requirement and improve water productivity (more yield, appropriate timing and amount of water) through the application of automated and adaptive irrigation control.

### Terry Batey, VIC DPI. Better ways to share ideas: modernising how we communicate

The way we access information, collaborate and engage in the design of research, policy, products and delivery of services is changing. While the basic principles of collaboration have not changed, technology and culture have, with digital technology better allowing individuals with common interests to come together. There are also multiple benefits to integrating digital technologies into irrigation RD&E systems

On a web platform, content is king. We need to match content generation to the technology used to disseminate it. To modernise communication and enhance collaboration we need to consider:

- more openly sharing information
- bridging silos
- spending more time connected to the 'social network'
- establishing collaboration platforms
- establishing IAL as the 'single window' for accessing authoritative and reliable irrigation RD&E.

### What next?

Everyone at the session agreed that there was a need to further improve surface irrigation systems in Australia. To consider HOW we might improve Australia's surface irrigation systems, participants were asked two questions.

**How do we best collect the best ideas?** How do we best translate those ideas into practice?

#### How do we best collect better ideas?

Farmers in the room were asked where they got their ideas. Responses included:

- ideas are born from frustration over some problem/issue
- solutions come from networks and discussions with others, including research, extension, travel to other regions, other farmers, looking over the fence and from designers and engineers.

Farmers noted that they were time poor and that finding information on the web and using social networking takes time. Suggestions for how to make it easier for farmers/operators to access networks centred on making better use of existing information, e.g. through a web portal, tours and IAL conferences.

It was agreed that we should use available online resources to tweak, add to, modify or "bury" ideas. IAL SIGs were felt to be the best vehicle to drive a process, or at least to make a start. The low uptake of ideas was considered to be due in large part to inappropriate understanding of the "user's" problem by the idea "developer". Problem discussion within a SIG on-line forum should result in better understanding.

There was broad consensus that problems need to be better defined and that this should include an objective analysis of the value in fixing the problem, e.g. the number of people affected, value of industry.

It was suggested that the BPSI SIG use a Blog to "collect" problems and potential solutions, e.g. someone puts up a problem and seeks input from the SIG network. Solutions may be forthcoming from the group if there is an answer. If not, then discussion on the Blog will allow for problem definition and quantification.

**How do we best translate ideas into practice?** Farmers preferred "seat of the pants" decision making and emphasised that:

- any change has to be value for money for it to be taken up and that it needs to be either clearly more profitable and/or better in other ways (e.g. improvements in lifestyle, less labour issues)

- any new idea must fit in with existing management (farming/cropping/marketing) systems.

Participants felt that a lot of ideas have been around for a long time (30+ years for some irrigation design principles) so the challenge is in implementation and understanding what drives and obstructs adoption so ideas are more relevant to the problems facing irrigators.

It was considered that the ANCID workshops and projects helped drive change and there was a need to revisit/reinstate this function in IAL.

The group considered the main unresolved question was "How do we take ideas to implementation and develop commercial solutions?" To do this effectively, we need the right stakeholders.

A proposal from BSIG SIG will be put to the IAL Board about how the group might proceed in the future.

### Information

You can download full papers and the Powerpoint presentations from the IAL website at <http://irrigation.org.au/publications-resources/2013-conference-papers>

For further information about the SIG, contact Sam North, email [samuel.north@dpi.nsw.gov.au](mailto:samuel.north@dpi.nsw.gov.au) or Debbie Atkins, email [Debbie.atkins@irrigation.org.au](mailto:Debbie.atkins@irrigation.org.au)

SAM NORTH, HYDROLOGIST, NSW DPI DENILIQUIN

**CASE IH IRRIGATION POWER UNITS**  
**THE POWER TO DELIVER**

- Same DNA as Case IH tractors and combines
- Package solution
- Fuel efficient power
- Aftersales support provided by nation-wide Case IH dealer network

**Four models available (with and without PTO)**

P85	74kW (99hp)	4 cyl
P110	93kW (125hp)	4 cyl
P170	129kW (173hp)	6 cyl
P240	175kW (235hp)	6 cyl

Horsepower rated at 2200rpm

Case IH offers a complete turnkey solution for your irrigation engine needs.

Visit [www.caseih.com](http://www.caseih.com) for the details and address of your nearest Case IH dealer.

**CASE IH**



## NORTHERN IRRIGATION: DREAM OR NIGHTMARE?

Governments are talking about doubling food production by the middle of the century and some prominent business leaders and politicians are promoting grand visions of developing irrigation to turn northern Australia into the food bowl of Asia. Developing the north holds real possibilities and it is important that we have grand visions but there are a lot of hurdles that will have to be overcome first.

For a whole range of reasons irrigated crops have come and gone in the harsh topical north since the 1950s and Australia does not need ill-defined or uncosted plans to develop more irrigation in the north. The tough reality may well be that further development in the south where the people, industries and infrastructure are located could be wiser.

Populist northern proposals need to be subject to reality checks, careful assessment and informed public debate to make sure that the fundamentals do indeed stack up and it is clear who is carrying the risks. The irrigation industry must demand this from governments and proponents.

This article by David Adamson examines some of the issues against the background of the Coalition's recently released plan for northern development.

The romantic idea of developing northern Australia has once more been thrust into the light, this time by the Coalition's 2030 Plan for Developing Northern Australia. As I look at coverage of the plan I wonder, does the media have the memory of a pot-smoking goldfish?

The argument that we should develop northern Australia is based on rent seeking, opportunism, romanticism and an ability to ignore countless studies stating the national economic, social and environmental folly of such an exercise.

In such an extensive "nation building" exercise, the major beneficiaries are those who supply the inputs. They get paid by the public, take none of the risk and are no worse off if it fails. The other beneficiaries are those demanding special tax rates or concessions to build their personal wealth. Trickle down benefits do not materialise, yet continue to be a mantra to mislead. In this case, the vested interests may be desperate cattle farmers, caught short by the end of live exports. Or it may be a neat move by the mining industry to continue subsidisation of their infrastructure.

In 1965, Bruce Davidson released the *The Northern Myth*. This definitive study stated that not only was the land unsuitable for large scale intensive agricultural development but the economics simply didn't stand up when compared to the benefits of allocating the money in southern Australia.

In 2009, CSIRO's *Northern Australia Land and Water Science Review* not only supported these findings but again highlighted the reasons why the expenditure is reckless.

The soils are still poor. They easily erode. At best you could create a patchwork mosaic of cropping (assuming that those crops would at some point be washed away). A mosaic pattern like this in the vastness of the north would be incredibly expensive to subsidise; it would make subsidies for the car industry look sound.

Rainfall still occurs near the coast, where it is flat. This makes building dams a challenge. CSIRO's 2009 analysis did find that 600 GL of groundwater is available and could irrigate 40-60,000 ha. Let's put this into perspective: Cubbie Station alone has about 460 GL of water licences and about 96,000 ha of irrigated and dry land at its disposal.

Irrigation schemes still fail to provide positive economic returns on public capital investment. Politics and water are a dangerous mix. The heady vision of a Utopian agrarian system where irrigation channels transform the desert has proven irresistible throughout the world. Davidson's other classic work, *Australia Wet or Dry*, tracks the litany of failures in developing the Murray-Darling Basin. There, the constant over estimation of benefits and underestimation of costs has left a legacy that the public will continue to pay for.

In the north, Stage 2 of the Ord irrigation scheme has cost \$300 million and adds over 13,000 ha to irrigation. The entire stage 2 has been leased by the Chinese company Shanghai Zhongfu for the next 50 years. They initially proposed a \$700 m investment to develop a sugar industry. They now propose planting sorghum to produce ethanol: a sugar monoculture was likely to attract pests that would undermine profits. But changing the crop won't make a difference: planned profits from cotton in the 1960s quickly evaporated in rising costs from pesticides need to control an influx of pests. Sugar was no different and nor will sorghum be.

It would be nice to think that the hard lessons of previous failures in the Ord or lessons from other parts of Australia, for example the Goyder line in SA (where despite the biophysical limits for agricultural production being identified, risk takers strayed into zones that were not suitable for agriculture) could be ingrained into long term public consciousness.

As a country we have just allocated over \$10 billion to fix the mess created in the Murray-Darling Basin. Why would we want to create a similar mess in the north? The north is not suitable for intensive food production, it never has been, nor will it ever be. I simply go back to Bruce Davidson's fundamental question: why would we open the public purse and spend billions on low or negative returns when there better returns from the expenditure elsewhere?

### Acknowledgment

This article was originally republished at The Conversation, [www.theconversation.com](http://www.theconversation.com).

DAVID ADAMSON, SENIOR RESEARCH OFFICER IN NATURAL RESOURCES AT  
UNIVERSITY OF QUEENSLAND





# Irrigation in the Gulf Country 'Food Bowl': an overview of the issues

In recent years, a big issue in plans for developing regional and rural Australia has been increasing efforts to develop an irrigated "food bowl" in northern Queensland's Gulf Country, the vast expanse of wilderness and cattle country that lies to the north of Mount Isa and Hughenden and borders the Gulf of Carpentaria. In a major step, the Queensland Government announced in July 2012 that it would make available, through tender, unallocated water entitlements in two major catchments flowing into the Gulf.

The Queensland Government put up for tender, for local landholders only, 80,000 ML of water entitlements in the Flinders River catchment and 15,000 ML of entitlements in the Gilbert River catchment. The resulting 22 tender applications oversubscribed the entitlements on offer by more than three times. It was reported in May that six tenders were successful, paying a combined price of \$2.5 million for the licences.

With these recent developments, it is timely to take a broad look at the current regulatory framework, what is planned as part of the North Queensland Irrigated Agriculture Strategy, and what policy and legal issues are likely to be faced.

## WATER RESOURCE PLAN FOR THE GULF

The Flinders and Gilbert River catchments are regulated under the Water Resource (Gulf) Plan 2007 (Qld). The plan applies to surface water and groundwater water that is not connected to sub-artesian or artesian water of the Great Artesian Basin.

The Flinders River has an estimated annual flow of 3.8 million ML. The river flow is strongly cyclical: broadly eight months of "drought" and four months of "flood", with nearly 90% of that flow taking place between December and May. Before the recent allocation of water entitlement, water licences on the Flinders River accounted for a total of 33,000 ML of entitlements.

## NORTH QUEENSLAND IRRIGATED AGRICULTURE STRATEGY (NQIAS)

In 2012, the Australian and Queensland governments announced funding commitments of

\$10 million to the NQIAS over two years. By the end of this year, the NQIAS is to have:

- assessed surface water storage options in the Flinders and Gilbert River catchments and identified appropriate new irrigated agricultural techniques for northern Australia
- undertaken on farm demonstration projects and systems analysis
- studied the commercial feasibility of a meat processing plant in the region.

Released in 2012, the feasibility study found that locating an abattoir in the area, particularly around Cloncurry, would be commercially viable. This took into account sufficient cattle numbers and savings from reduced freight costs, as well as increased operating costs and existing processing capacity being adequate but located too far away.

The Flinders and Gilbert Agricultural Resource Assessment is still ongoing and being led by the CSIRO. The assessment is to determine what soil and water sources are available to agriculture, what irrigated agriculture product could be supported, and whether irrigated agriculture is economically viable and environmentally sustainable. The results are not expected until the end of 2013.

## KEY ISSUES FOR IRRIGATED AGRICULTURE IN THE GULF COUNTRY

The funding of irrigation infrastructure, in particular dams for surface water storage and piped schemes or channels for conveying irrigation water to farms off the river, will be critical to the economic sustainability of irrigated agriculture. Newspaper reports have indicated potential plans for a 20 km long water channel along a public stock route to service farms from the Flinders River.

While the Federal and Queensland governments have funded studies into the feasibility and viability of an abattoir and irrigated agriculture in the region, current indications are that the governments will not fund the construction or operation of necessary infrastructure. Before committing to a project, irrigation schemes require careful consideration be given upfront to whole-of-life financial modelling, corporate structuring, asset maintenance and renewal expenditure planning, and the impact of

financing on the eventual cost of water that irrigators must bear.

This issue was highlighted in the Queensland Government's Draft North West Queensland Regional Water Supply Strategy, which found that a number of proposals for dams, weirs, and piped or channel schemes had underestimated the true costs of construction. As a result, it was suggested that the increased cost of water per megalitre could render the schemes uneconomic or limit their viability to certain crops.

Allocation of water entitlements will be another key issue. There is some concern that the Queensland Government has not made available enough water entitlements, especially with the recent allocations primarily going to major agricultural companies like Australian Agricultural Company and Stanbroke Pastoral and not smaller operators. Queensland Natural Resources Minister Andrew Cripps is reported to be prepared to assign more water licences next year once the CSIRO has completed its river flow assessment report and confirmed that further allocations are environmentally sustainable. Over allocation could have significant impact on environmental sustainability, but under allocation could have significant impact on the economic viability of the irrigated agriculture in the region given the high costs of irrigation infrastructure construction and maintenance.

## PLANNING THE KEY TO SUCCESS

Development of an irrigated "food bowl" in the Gulf Country is consistent with Coalition policy with the development of northern Australia. Irrigators will watch developments with interest over the coming years. The success of irrigated agriculture in the Flinders and Gilbert River catchments will depend on the quality of the planning upfront to ensure viability and sustainability.

**Note:** This article is only intended to provide a summary of the subject matter covered. The article is not intended to be, nor should it be, relied upon as a substitute for legal or other professional advice.

JENNI MATTILA, MATTILA LAWYERS, SYDNEY

## IrriSAT – from space to the hose pipe

From a US satellite in space to a farm in Australia, data gathered about our planet is beamed right into the hands of farmers to help them make management decisions like how much irrigation water their crops need.

The latest satellite in NASA's 40 year legacy of observing the earth, Landsat 8, has been in a testing phase since it was launched in February 2013.

In recent years, these satellite observations have become available to the public free of charge. This has seen a massive boost in the use and application of satellite information across a range of scientific investigations in natural resource management, such as monitoring deforestation rates in the Amazon rainforest, and by people across the world.

The launch of Landsat 8 got many scientists excited but Dr John Hornbuckle from CSIRO says that a lot of people don't know how relevant this is to the real world of farm management, particularly irrigation management.

"In the last three weeks in June we were able to access the new Landsat 8 data to get our IrriSAT service up and running again," said John.

The IrriSAT system — first trialled in late 2008 and recently boosted by reliable Landsat 8 data — works with satellite remote sensing data and on-ground weather stations to deliver water management know-how to farmers and water managers for their specific location and crop.

"We use the satellite images and combine them with mathematical calculations to generate results on how much water the crops are using. These results are then combined with the latest weather information and farmers can decide how much irrigation water they need on their farms," John said.

A recent development in the IrriSAT project was IrriSATSMS where data from the IrriSAT



An ultrasonic water meter is used to measure irrigation water applied.

system was sent by SMS (text message) to farmers subscribed to the service. These SMSs were delivered every day to farmers and contained information on how much water their crops had used and how long they needed to run their irrigation systems each day.

The IrriSAT project is no longer sending out SMSs to farmers, rather it is moving to a new phase of work including training of consultants and farmers to access and use the freely-available Landsat images themselves via the internet and apply the model within their own businesses. This builds on a trial in the Border Rivers-Gwydir of a web-based interface for using the system.

"We have been running workshops to teach people how to use the remote sensing approaches to better manage their irrigations and also look at their irrigated crop performance across paddocks, farms and indeed whole irrigation areas," said John.

"People can download satellite images for free from the US Geological Service, run them through the models we've developed, and see how their

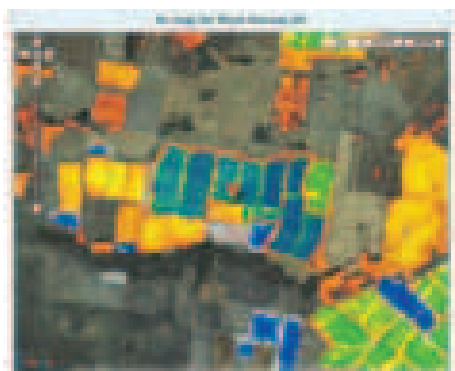
crops and irrigation systems are performing. All in the comfort of their own homes," he said.

IrriSAT technology is also being expanded to a much bigger scale with CSIRO and Murrumbidgee Irrigation Limited exploring how the system can be applied to understand how much irrigation water will be needed across the entire Murrumbidgee Irrigation Area. The aim is a system that works seven days in advance, able to forecast irrigation needs and therefore how much water should be released from large storage dams in the Snowy Mountains.

### INFORMATION

John is running workshops on how to use the IrriSAT technology, including one scheduled with IAL in Adelaide in November. To find out more about joining a workshop or express your interest in getting updates about the project, contact John at email [John.Hornbuckle@csiro.au](mailto:John.Hornbuckle@csiro.au).

CLAIRE HARRIS, CSIRO, SYDNEY



Projected crop water needs of irrigated crops determined by the IrriSAT technology.

# Farmers support banking water for future droughts

Australian farmers want excess water from large floods to be 'banked' in aquifers, for use in dry times.

A recent survey by researchers at the National Centre for Groundwater Research and Training (NCGRT) shows that farmers in the Namoi catchment area in the Murray Darling Basin (MDB) are mainly supportive of water banking – storing surplus water underground – from large floods.

Their positive response is a big step towards providing rural and agricultural communities with additional water without drawing more from the over-extracted rivers of the basin, according to Professor Allan Curtis of the NCGRT and Charles Sturt University. With scientists predicting less rainfall and runoff in the southern MDB over the next 60 years, the finding is significant as there is an urgent need to address the growing threat of water scarcity.

Water banking, also known as managed aquifer recharge (MAR), should be the next step in water management in the MDB, he said.

An advantage of storing water underground is that it is more efficient than saving it in the surface dams, because there is no evaporative loss. Every year, the evaporative loss from farm dams in the MDB alone amounts to more than 1000 GL, enough to supply Melbourne, Sydney and Adelaide for a year.

As more places around Australia turn to water banking for later industrial or recreational use, researchers at NCGRT are exploring the possibility of re-charging depleted aquifers in farming landscapes using excess water from large floods. The survey of 210 farmers in the Namoi region reveals that two-thirds support the concept.

According to Allan, the Namoi, one of Australia's prime agricultural regions, extracts the largest volume of groundwater for irrigation in the MDB.

"It's an ideal location for implementing water banking using excess flood water, as large floods occur regularly in the lower Namoi, and researchers predict that this will continue to happen in the future," he said.

The survey found that supporters of water banking are more business-like and more interested in fostering equal opportunities for all community members. They generally have larger areas for irrigation, buy water more often, own larger entitlements and spend more time on their land.



A recent survey in north-west NSW found that landholders supported banking excess water from floods in aquifers so it could be used in dry times.

Those who expressed concern or opposed the idea said they needed more information about the concept, or were worried about possible negative environmental impacts. They were less interested in production and profit if these outcomes negatively affected the health of the environment, and they were more likely to have had the property in the family for longer.

Issues for further study include how water banking fits with existing water sharing plans and allocations both locally and along the MDB, who pays for the infrastructure where there are private benefits, and how to secure rights to water which has been stored in aquifers.

The study "Managed aquifer recharge in farming landscapes using large floods: an opportunity to improve outcomes for the Murray-Darling Basin?" by A. Rawluk, A. Curtis, E. Sharp, B.F.J. Kelly, A.J. Jakeman, A. Ross, M. Arshad, R. Brodie, C.A. Pollino, D. Sinclair, B. Croke and M.E. Qureshi has been published in the Australasian Journal of Environmental Management. See: <http://bit.ly/14jBlhU>

## IRRIGATION AUSTRALIA

THE JOURNAL  
FOR IRRIGATION  
PROFESSIONALS

FOR ALL  
ADVERTISING  
ENQUIRIES  
CONTACT

**Brian Rault**  
on (03) 8534 5014 or  
[brian.rault@commstrat.com.au](mailto:brian.rault@commstrat.com.au)



# RAISING STANDARDS

## INDUSTRY STANDARDS: HAVE YOUR SAY

### Why standards

The Standards Working Group is developing a comprehensive set of irrigation standards and codes of practice. Although various guidelines have been produced over the years for very specific purposes, the IAL has recognised a strong need to collate and formalise these documents as 'Industry Accepted' to provide a level of consistency and professional standards across the industry.

In the absence of these standards, irrigation system design, installation, management and performance are highly variable. Irrigators are unable to specify appropriate design parameters for their systems, to compare and evaluate competing designs/quotes and to evaluate the quality of installation or the system's performance.

Equally, in the absence of accepted standards and codes of practice, irrigation professionals (designers, consultants and contractors) have minimal guidance in their work, are able to apply any parameters they desire and are therefore not ultimately accountable. The variability of irrigation

system design and installation reflects this problem, with many systems being sub-optimal as a result.

The ultimate goal is the development of a more professional irrigation industry, embracing best practice to underpin healthy, sustainable, urban and rural communities and lifestyles, through the use of codes of practice and standards

### The process

IAL has formed the Standards Working Group (SWG) which is made up of volunteers who represent a wide cross-section of the irrigation industry (see figure). This group meets at least once a month and has made much progress towards achieving our objectives.

The SWG has implemented several strategies to undertake this complex task. To help expedite the project, IAL and Irrigation New Zealand (INZ) have signed a memorandum of understanding to allow sharing and cooperation in the development of mutual outcomes, including standards and best practice guidelines.

INZ already have developed draft standards and guidelines and the SWG intends to use the framework as a basis for the Australian documents.

The SWG has recognised that there are two sectors of the industry, each requiring specific documentation that addresses their unique requirements.

The SWG will be producing standards and codes of practice for:

- Rural, defined as Irrigation for Livelihood
- Urban, defined as Irrigation for Lifestyle.

## TECHNICAL PANELS – YOUR HELP NEEDED

To ensure the final documents reflect the needs of the industry and are ultimately adopted by IAL members, the SWG is looking for technical input from the industry to develop the documents. To do this we will be forming two technical panels representing the rural and urban sectors.

Each panel will comprise a cross-section of industry specific professionals proportional to the various disciplines in the sector.

The main role of panel members will be to review of draft documents and existing industry documents and provide technical advice and feedback to both the SWG and the relevant Standards Document Coordinator as the documents are developed. Members will also be called on to provide general technical assistance.

Interested in being a part of this important task?

The IAL is calling for expressions of interest for those members who are interested in participating as a Technical Panel member. If you are involved in the irrigation industry and would like to contribute to important project contact the IAL Head Office for a nomination form (02) 8335 4000 or email Tony Kanaris, Chair of the Standards Working Group at [tony@broadwater.net.au](mailto:tony@broadwater.net.au)

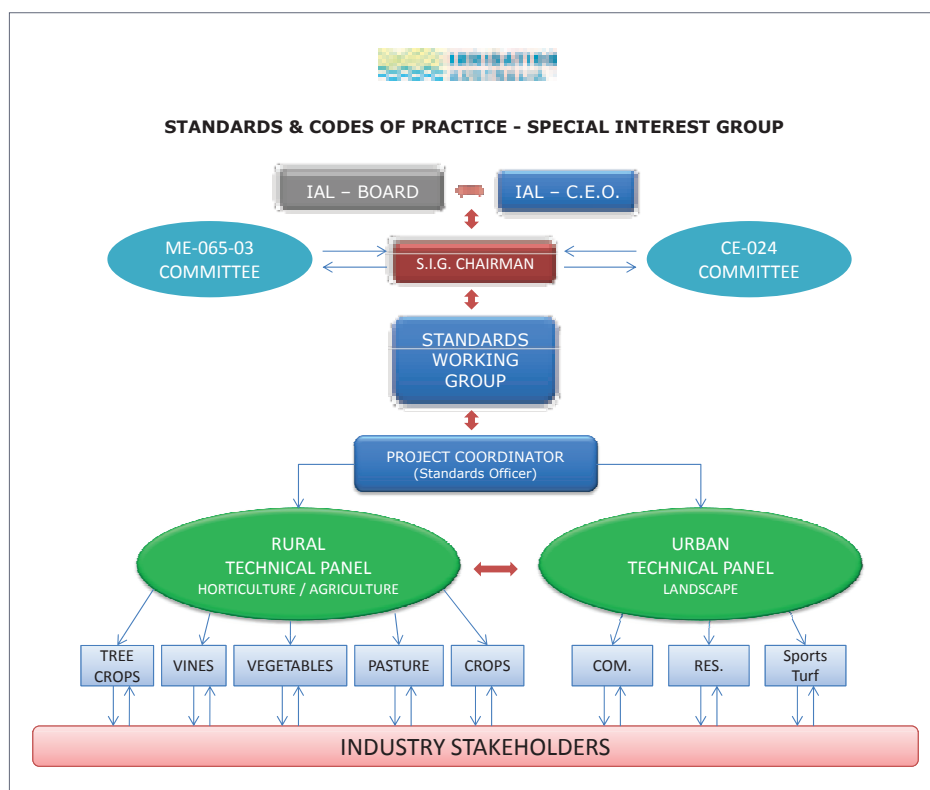


Figure. The structure of the Standards Working Group and relationship to the IAL Board.

TONY KANARIS, CHAIR, STANDARDS WORKING GROUP





## UNDERSTANDING PUMP CURVES: NPSHR VS SUCTION LIFT AND SELF PRIMING CAPABILITY

### NPSHR vs suction lift

Showing Nett Positive Suction Head Required (NPSHR) on a pump's performance curve is the most accurate and universal method of showing the pump's suction capability because NPSHR is valid for any liquid, provided the liquid vapour pressure and density are known.

For cold water applications it is often considered more convenient to show the pump "suction lift" curve because this allows an evaluation of the pump's suction performance in a more tangible form (see Figure 1).

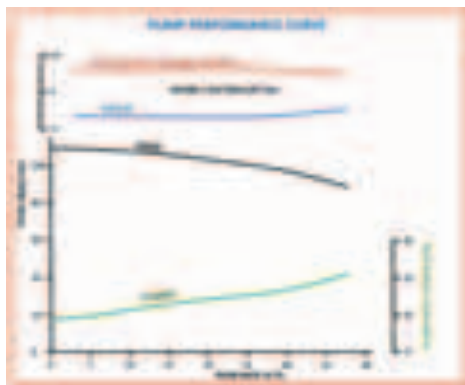


Figure 1. Typical pump performance curve

It is important to realise that a suction lift curve is only correct for the particular liquid shown and will have been calculated on the basis of an atmospheric system at sea level (101.3 kPa abs). Normally cold water at 15°C is assumed.

For Water at 15°C, suction lift can be calculated from the NPSHR curve as follows:

$$\text{Suction lift (m)} = 10.35 - \text{NPSHR}$$

It is also very important to understand that the suction lift values shown include all suction line losses, which must be added to the difference in static liquid levels when assessing a pumping installation (see Figure 2).

Using Figure 2 as an example, while the static lift (the difference between the liquid level and the pump centreline) is 2 m, when the liquid is flowing there will be friction losses in the suction piping - in this example a 0.4 m loss in the foot valve and a 0.3 m loss in the rest of the suction piping. As the pump will also have to overcome these losses, they must be added to the static lift to obtain the total suction lift.

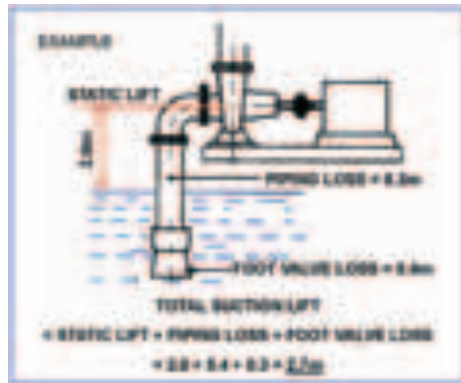


Figure 2. Example showing how to calculate total suction lift.

### Self-priming capability vs suction lift and NPSHR

Self-priming pumps will normally have their maximum priming lift capability detailed separately. As with suction lift values, this will have been calculated on the basis of an atmospheric system at sea level (101.3 kPa abs). Normally cold water at 15°C is assumed.

The priming lift is normally much better than the pump's suction lift capability in continuous operation. This is because the priming action is a short-term function designed to draw liquid into the suction piping and pump casing during start up or after loss of prime.

Care must be taken not to confuse the priming lift capability with the suction lift or NPSHR capability.

For continuous operation, the allowable suction lift (or NPSHR) remains the deciding factor for an acceptable pumping installation.

### Reduction of suction lift with altitude and water temperature

At altitudes above sea level, the atmospheric pressure decreases, reducing the surface pressure on the liquid and hence reducing the suction lift possible (see Table 1).

Similarly, an increase in temperature will increase the liquid vapour pressure and hence reduce the suction lift possible (see Table 2).

### About the author

Ron Astall is sales and contracts manager with United Pumps Australia and presenter of pump training activities with Strategic Achievement Pty Ltd, <http://www.strategicachievement.com.au/>

With altitude (International Standard Atmosphere)	
Altitude (m)	Reduction in suction lift (m)
0	0
250	0.30
500	0.60
750	0.89
1000	1.16
1250	1.44
1500	1.71
1750	1.97
2000	2.22
2250	2.47
2500	2.71
Source. PIA Australian Pipe Friction handbook.	

Table 1. Reduction in suction lift relative to atmospheric pressure.

With temperature (for water relative to 15°C)	
Temperature (°C)	Reduction in suction lift (m)
15o	0
20 o	0.06
30 o	0.22
40 o	0.52
50 o	0.98
55 o	1.32
60 o	1.73
65 o	2.23
70 o	2.85
75 o	3.6
80 o	4.51
Source. PIA Australian Pipe Friction handbook.	

Table 2. Reduction in suction lift relative to temperature.

### Acknowledgment

This article originally appeared in Pump Industry magazine. For a limited time, readers of Irrigation Australia can subscribe for free to Pump Industry magazine. Go to <http://www.pumpindustry.com.au/ia/> now to take up this offer and get more information on pumps

RON ASTALL, UNITED PUMPS AUSTRALIA

# SMART WATERMARK

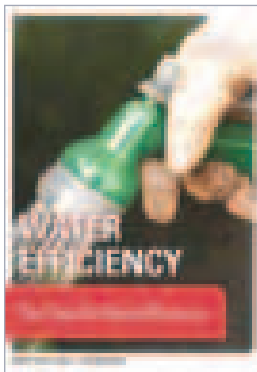
## THE CASE FOR WATER EFFICIENCY

Recent position papers from Australian Water Association and Water Services Association Australia highlight the importance of water efficiency in managing water across Australia.

A key issue identified is the difficulty of predicting future rainfall in a context of complex regional climate systems and wider climate change impacts; recently re-affirmed by CSIRO's 2012 research into weather patterns across Australia.

With additional pressure on water supply from population growth in Australia, the debate about water use must move from crisis management during drought to framing water efficiency within a wider sustainability context.

Water efficiency labelling is one of the most cost effective demand management tools and hence Smart WaterMark is a vital piece in the jigsaw of demand management options.

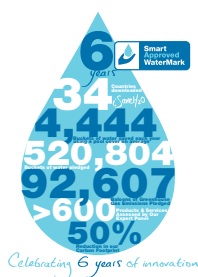


## LATEST NEWS

Australia's water conservation label Smart WaterMark continues to grow with the independent Technical Expert Panel assessing over 600 products and services over the past six years. Around half of the products assessed are certified as water efficient.

Irrigation and gardening continues to account for the greatest proportion of certified products. Technologies approved to date range from sprinklers and drip irrigation through to large-scale irrigation control systems.

Over the last year we had more applications for commercial products than for household products for the first time in the scheme's history. This reflects the scheme's expansion into the non-residential sector with a focus on commercial and industrial products in the nursery, irrigation and turf industries.

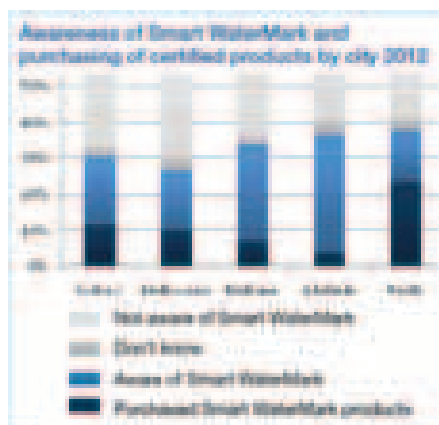


## CONSUMER AWARENESS

Awareness of Smart WaterMark remains high despite governments and water utilities in many jurisdictions scaling back rebates for efficient products and broader water efficiency programs. The results come from an annual Newspoll telephone omnibus survey backed up with a national online survey undertaken over the same period. This allows us to gauge awareness of the logo image in addition to the name Smart WaterMark.

Perth continues to be the city with the highest level of awareness and buying Smart WaterMark certified products remains highest Perth, reflecting the ongoing drought in the area and the use of Smart WaterMark certification to underpin the local WA WaterWise Approved program.

Householders who were aware of Smart WaterMark undertook more activities to save water around the home and garden than those who were not aware. Fifty-eight per cent of people who have bought Smart WaterMark products are undertaking five or more water saving activities; this drops to 47% of those people who are aware of the scheme but haven't bought certified products, and only 31% of people who hadn't heard of the label.



## HEARING YOUR VIEWS

It was good to see strong representation from the irrigation sector at our recent Stakeholder Forum at Green Expo Sydney. The forum is an opportunity for you to hear about the scheme's latest developments, ask questions and express your views about the future development of Smart WaterMark.



## PERIURBAN 2014

Smart WaterMark is proud to be involved in Periurban 2014 International Conference on Peri-urban Landscapes: Water, Food and Environmental Security, to be held in Sydney during July 2014.

The conference will be a significant activity of the WISER Network in 2014, and it is being organised in partnership with the Australian Water Association. Abstracts are invited under the following themes:

- peri-urban land use change impacts
- urban agriculture and food security
- water security and sustainability challenges
- socio-economic and cultural aspects
- legal, policy and institutional challenges
- coping with peri-urban land use changes.

For more information go to the conference website: [periurban14.org](http://periurban14.org)

## EXPERT PANEL MEETS IN OCTOBER



Do you have an irrigation product or service that uses water efficiently? The independent Technical Expert Panel reviews new applications for Smart WaterMark certification in October, and the closing date for submissions is 4 October.

For more information, including application forms and guidelines, visit [www.smartwatermark.info](http://www.smartwatermark.info) or call (02) 9223 3322.



## BASIN COMMUNITY COMMITTEE MEMBERS ANNOUNCED

In July 2013 the newly appointed regional community representatives of the Murray-Darling Basin Communities Committee took over their new roles. The new members will provide a community perspective to the Murray-Darling Basin Authority on Basin-related matters.

MDBA Chair Craig Knowles thanked the first community committee, which had played an important role while the Basin Plan was being developed. The new committee would focus on Basin Plan implementation.

"I'm looking forward to working with the new committee members. These are people who bring with them a wealth of local knowledge about water, irrigation and the environment and who I have no doubt will provide valuable ongoing input to the implementation activities," he said.

The eleven members are: Rory Treweek (chair), Lightning Ridge; Joan Burns, Mildura (former chair); Russell Pell, Wyuna; Paul Harvey, Adelaide; Joanne Pfeiffer, Murray Bridge; Karen Hutchinson, Hanwood; Grant Rigney, Meningie; Howard Jones, Dareton; Jason Wilson, Dubbo; Christopher Joseph, Dalby; and Anthony Martin, Merbein.

## NEW INTERNATIONAL WATER MANAGEMENT RESEARCH CENTRE LAUNCHED IN CHINA

Water efficiency, food security and environmental sustainability will be the focus of a new joint research centre between Australia and China, officially launched in June 2013.

The Australia-China Joint Research Centre for River Basin Management led by the University of Melbourne will provide both countries with a new capacity to address national priorities for water resources management. This includes water catchment management, water productivity, environmental and rural community sustainability as well as technical and research capacity in these areas.

Other Australian partners include the CSIRO, the Murray-Darling Basin Authority and the University of Western Sydney. In China, the Centre will be supported by ten partners, including the Chinese Academy of Sciences, the Ministry for Water Resources and Tsinghua University.

The research centre will act as a research incubator to address national priorities for water resources management, increase water productivity and hence food security and economic returns while protecting water ecosystems. It is one of six recently announced Joint Research Centres co-funded by both the Australian and Chinese governments as part of the Australia-China Science and Research Fund (ACSRF).

The centre builds on the work by the Australia-China Centre on Water Resources Research based at the University of Melbourne. Five flagship research programs will build on findings from major national programs in Australia and China, and new technologies for improving water efficiency and water quality will be showcased.

## NSW STATE WATER TAKES OUT NATIONAL AWARD

NSW State Water's water efficiency project the Computer Aided River Management (CARM) system has been recognised on a national level, winning the infrastructure and innovation division category in the Australian Water Association's National Awards.

CARM is designed to maximise the efficiency of the Murrumbidgee River system to benefit water users and the environment. Its combination of strategic

infrastructure upgrades and technology allows water supply to be matched with actual water demand far more accurately than ever before.

State Water and funding partner Water for Rivers are delivering the \$65 million project which will bring water savings and improved service to water users along the Murrumbidgee River system. The aim of the initiative is to make the Murrumbidgee one of the world's most efficient and best managed working river systems.



State Water CEO, Brett Tucker (middle) accepting the award with Tom Mollenkopf, Chief Executive of the Australian Water Association, and Lucia Cade, President of the Australian Water Association.

## IRRIGATION BUSINESS FOR SALE

Established in 1986 by present owners who now wish to retire. Located on the tropical far north coast of Queensland at Innisfail and Tully. Predominantly Agricultural Irrigation & Pumping systems (Bananas) with retail agencies for Brand name power products and swimming pool supplies. This is an opportunity for an enthusiastic operator to carry a well established business to the next level. Future prospects good with Government approvals for the biggest development in Qld at Ella Bay Innisfail. This business employs six permanent staff + the two principals. Option to purchase freehold premises is also offered. A comprehensive range of plant & equipment includes ute's poly welders trenchers and computers. Asking \$400k for plant, stock & goodwill.

Phone **Rob Webber** 0428 774 251

[www.thewatershed.com.au](http://www.thewatershed.com.au)



WILLEM VLOTMAN, CHAIRMAN IACID, VICE  
PRESIDENT HONORAIRE ICID

ICID is the National Committee of the ICID and as such is supposed to embrace the mission of the ICID, which aims at improving sustainable food production by promoting the latest insights in efficient irrigation, effective drainage and best practices of flood management. So what can we contribute from the Australian contingent?

## Annual IAL meeting to feed into the next ICID annual meeting

In the ICID insights article in the Winter edition of the journal I explained the functioning of ICID Work bodies. In this article I describe the next stage of knowledge dissemination; namely the one where interested Australian parties can present at the work body meetings Australian insights in irrigation drainage and flood control.

Our meeting at the Irrigation Australia Conference in May at Griffith was an excellent reflection of the achievements in the last year by our members. It was good to see that the Board is supporting the annual meeting as a major network event where we can share our experiences, and exchange ideas how to move forward in the Australian Irrigation Industry (in fact, at this stage, it is our only network event).

I attended sessions of three Special Interest Groups (SIG) of IAL. First was the Irrigation Water Suppliers SIG, where water trading, business and social implications of modernisation, rising energy prices highlighting the flip side of the trade-off between using less water but with more energy, and an Alliance model to implement Modernisation were presented.

Second was Workshop 2 of the IACID; the main purpose was to explain in more detail the expectations of the National Committee from IAL. There was an intensive discussion of what IAL should do as a national committee of the ICID. CEO Duane Findley and Chairman of the Board Ian Moorhouse attended and we will look forward to the follow-up actions.

Third, I attended the Centre Pivot and Lateral Move SIG, which discussed very practical suggestions on maintaining high performance of spray irrigation systems and how well systems were performing. This was done from three perspectives: MIA Rural Services, and the dairy and cotton industries. Most revealing was the state of performance of more than twenty 10-year-old systems in NSW. The bottom line was that they were not good and clearly action is needed by the industry if

Commonwealth investment in more water efficient water supply systems is to be sustainable.

So what are we bringing to the next ICID annual meeting in Mardin, Turkey? That will depend on who is going and what is already in the pipeline. Participants are expected to attend a range of work bodies, not only the ones where we already have representations, but others which might prove useful. Highlighting specific technical details such as were discussed in the Centre Pivot and Lateral Move SIG would be an excellent way of disseminating our information. At the first World Irrigation Forum (WIF) two papers from Australia scheduled (Vlotman and Ballard 2013, Ballard, Foreman and Green 2013) and via the Working Group on Drainage, I am facilitating production of a DVD with proceedings of all 11 International Drainage workshops for inclusion in the WIF conference bag.

## First WIF to feature an innovative program

The president of the ICID, Ghao Zhanyi, visited the 7th International Conference on Irrigation and Drainage of the USCID in April 2013 this year and provided the latest information on the WIF. President Zhanyi launched the idea of the WIF at the Adelaide 2012 conference where it was unanimously approved. Below is the description as presented in the USCID Newsletter (USCID 2013):

*"The First World Irrigation Forum promises to be a unique event with a variety of innovative presentation*

*formats, including "Have your Say" opportunities for Exhibitors, short cinema showings and training sessions, in addition to more traditional presentations, such as roundtable discussions and workshops. The Forum will be held September 29 – October 1, 2013, in Mardin, Turkey, in conjunction with the ICID 64th International Executive Committee Meeting. The World Irrigation Forum is organized by ICID in cooperation with the host Turkish National Committee on Irrigation and Drainage in partnership with several NGOs. More than 300 abstracts were received in response to the Call for Papers for the Forum."*

The forum theme is *Irrigation and Drainage in a Changing World; Challenges and Opportunities for Global Food Security*, and it has three sub themes to do with policy and science, financing infrastructure, and water management for sustainable food production. There will be two roundtable sessions, one on policy and financing, while the other on stakeholders; farmers, researchers, industry and youth.

Three international workshops will examine: water wisdom and sustainability, developing management strategies for coping with drought and water scarcity, and management of water, crops and soils under climate change. In addition, there will be an exhibition where exhibitors can make 45-minute presentations, showcasing innovative products, research and services.

For more information on the Forum, visit [www.icid.org/wif/](http://www.icid.org/wif/).

Table. Important dates for your diary

IMPORTANT DATES FOR YOUR DIARY		
29 September – 5 October 2013	Mardin, Turkey	<b>First World Irrigation Forum.</b> Contact is Mrs Serpil Koylu, Turkish National Committee, ICID (TUCID), email <a href="mailto:tucid@dsi.gov.tr">tucid@dsi.gov.tr</a> , <a href="mailto:serpil.koylu@dsi.gov.tr">serpil.koylu@dsi.gov.tr</a> , website <a href="http://www.worldirrigationforum.org">http://www.worldirrigationforum.org</a>
23 – 27 June 2014	St. Petersburg, Russia	<b>12th International Drainage Workshop.</b> Contact is Ms Irena G. Bondarik, Secretary General, National Committee of the Russian Federation on Irrigation and Drainage (RUCID), VNIIGIM, Moscow, Russia. Phone: +7 095 153 94 06, email: <a href="mailto:ibond@online.ru">ibond@online.ru</a> , <a href="mailto:rusiptrid@mail.ru">rusiptrid@mail.ru</a> .
14 to 20 September 2014	Gwangju Metropolitan City, South Korea	22nd International Congress on Irrigation and Drainage. Contact is Ir. Hun Sun Lee, Korean National Committee on Irrigation and Drainage (KCID), email <a href="mailto:kcidkr@gmail.com">kcidkr@gmail.com</a> , <a href="mailto:kcid@ekr.or.kr">kcid@ekr.or.kr</a> , website <a href="http://www.icid2014.org">http://www.icid2014.org</a>
October 2015	Montpellier, France	66th IEC Meeting, October 2015, Montpellier, France. Contact Secrétaire Général, Association Française pour l'Etude des Irrigations et du Drainage (AFEID) Montpellier France, phone +334 6704 6316, email <a href="mailto:afeid@cemagref.fr">afeid@cemagref.fr</a> , Website <a href="http://afeid.montpellier.cemagref.fr">http://afeid.montpellier.cemagref.fr</a>
2016	Chiang Mai, Thailand	67th IEC Meeting, 2016, Chiang Mai, Thailand. Contact is Secretary General, Thai National Committee on Irrigation and Drainage (THAICID), Deputy Director General of Royal Irrigation Department, Ministry of Agriculture and Cooperatives, Bangkok, Thailand, phone +662 243 6963, email <a href="mailto:thaicid123@gmail.com">thaicid123@gmail.com</a> , website <a href="http://www.rid.go.th/Thaicid">http://www.rid.go.th/Thaicid</a>
IEC – International Executive Council, annual ICID meeting ICID – International Commission on Irrigation and Drainage, New Delhi India		



Another new feature of the WIF is that conference presentations will be held first (29 September – 1 October 2013) and then the International Executive Council (IEC) meetings, including the pre-council meetings. This means the work body meetings (see IACID 2013) will be held from 1 -5 October 2013. This is an innovative approach as the pre-council meetings traditionally were held before the concurrent conference(s) and the IEC after. Typically, many work body members were kept busy during the concurrent conferences in preparation for the IEC meeting; now they can attend the WIF first!

### 12th International Drainage Workshop in 2014

An important event next year is the next International Drainage workshop organised under auspices of the Working Group on Drainage. The Russian National Committee's WG-DRG members are taking the lead in this. A call for papers and details of the program will be presented at the first WIF in Mardin.

### ICID's mission in action

One of the main actions of a President of the ICID is to promote ICID's mission and present observations, analyses and suggestions for improving water management worldwide. Key messages of ICID are reflected in President's Zhang's keynote speech at 7th International Conference on Irrigation and Drainage of the USCID. The title was "Water Management for Food Security and Multi-Purposes" and the full text is available on the ICID website. In his speech he identified the following solutions for improving agricultural water management:

- increasing water storage in support of irrigated agriculture
- promoting sustainable groundwater development
- promoting safe use of nonconventional waters in agriculture and aquaculture
- increasing water productivity in irrigated agriculture
- increasing sustainable productivity and lower costs of water management
- increasing rainfed land productivity
- supporting small-holder farmers
- developing regional visions.

He further identified the problems of aging irrigation infrastructure in many developing and least developed countries which lead to poor performance and low water use efficiency and water productivity in many irrigation schemes. There is a huge need to modernise and rehabilitate existing irrigation schemes. Many irrigation schemes not only supply water for irrigation, but also to other sectors for purposes including hydropower, domestic, industry, tourism service, fishery, ecological systems and flood protection. The multi-purpose nature of irrigation systems must be considered while planning modernisation of irrigation schemes. It is clear that these observations resonate well with what is on going in Australia.

Part of the multi-purpose use of rural water delivery systems is also the broader consideration of optimising the water-food-energy nexus. Vlotman and Ballard (2013) describe in this context other options to produce more crop per drop. ICID also starts reporting on this focus via their newsletters. Links to the news letters can be found on the IAL website, [www.irrigation.org.au](http://www.irrigation.org.au).

### References

- Ballard C, Garland N, and Foreman J. 2013. Management of Drought in the Southern Murray-Darling Basin, Australia, from 1996/97 to the present. First World Water Forum, 29 September - 3 October 2013, International Commission on Irrigation and Drainage (ICID), Mardin, Turkey.
- IACID 2013. Presentation on Irrigation Australia's Committee on Irrigation and Drainage, Special Interest Group (SIG), WORKSHOP 2. IAL 2013 Conference Proceedings, <http://irrigation.org.au/publications-resources/2013-conference-papers>.
- Gilbert, D. 2013. Presentation on Modernising Murrumbidgee Irrigation's delivery infrastructure after 100 years: the Lake Wyangan Modernisation Project, Murrumbidgee Irrigation. IAL 2013 Conference Proceedings, <http://irrigation.org.au/publications-resources/2013-conference-papers>.
- USCID 2013. First World Irrigation Forum to Feature Innovative Program. USCID Newsletter, Winter 2013, Issue No 113, p3. ([www.uscid.org](http://www.uscid.org)).
- Vlotman, W.F. and Ballard, C. 2013. Water, Food and Energy Supply Chains for a Green Economy. First World Water Forum, 29 September - 3 October 2013, International Commission on Irrigation and Drainage (ICID), Mardin, Turkey.



## Grow your business with the ProWater Group.

Representing 32 leading independent irrigation and water retail outlets Australia wide, our professional retailers and suppliers are growing their business by partnering together with the ProWater Nationwide team.

*"Philmac are proud to be making hard working, durable poly pipe fittings and valves right here in Australia for the harsh Australian conditions. Integral to our business is having rural water-focused merchants such as ProWater recommending our products, who not only understand the local conditions but are also able to incorporate our products into a complete solution."*

Jason Mitchell

General Manager Group Marketing, Philmac

**If you're looking to develop your business, talk to the ProWater Nationwide team on (02) 9225 2902 or email [info@prowater.com.au](mailto:info@prowater.com.au).**

XAVIER\_RHL32258\_0713



[www.prowater.com.au](http://www.prowater.com.au)

## Fraud: could it happen in your business?

Fraud is an ever increasing problem for companies and organisations of all sizes in Australia. According to the Certified Fraud Examiners recent survey in 2011, in the USA alone around US\$994 Billion was lost to fraudulent activity.

Fraud is a different form of commercial crime; the very nature of how it is carried out means that victims are unaware of the fraud unless it is uncovered during an audit, an investigation, or by a whistleblower, or it becomes so substantial that it begins to seriously damage the very wellbeing of the business. As business continues to move faster and payments and transactions move ever more onto computers and the internet, the scope for fraud grows ever larger.

Based upon this, how can you be sure that you and your company are not unwitting victims of fraud right now? One method to answer these questions and take steps to prevent fraud is to have an external expert conduct a forensic anti-fraud audit on your business or organisation.

Broadly speaking a forensic anti-fraud audit seeks to:

1. Identify the opportunities for fraud within your business.
2. Identify the controls and procedures which protect your business from fraud (and those that don't).
3. Verify financial transactions that are not adequately protected from fraud as being valid or suspect.
4. Fix, introduce and monitor controls to protect your business from ongoing fraud.

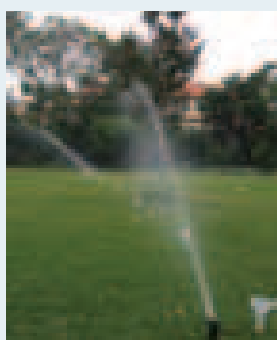


### TRANSACTIONAL FRAUD

There are many types of fraud, however, transactional fraud is the most common and probably the one most likely to happen in irrigation businesses. Other types of fraud include bribery and corruption, false reporting of expenses and deliberate under quoting in return for inducements.

Transactional fraud occurs where employees or managers responsible for making payments to employees (pay roll), suppliers, creditors or financial organisations make false or erroneous payments to themselves or entities they control. Transactional fraud provides the widest scope for dishonest employees to defraud the company or organisation.

A simple example is the use of double payments. The employee pays a legitimate supplier normally via EFT then makes another payment via cheque or merely adds their own bank details to the EFT registry of regular suppliers and conducts a transaction for the same amount to themselves.



## IRRIGATION AUDITING CATCH CANS

AVAILABLE FROM IAL

Download an order form  
from the IAL website  
[www.irrigation.org.au](http://www.irrigation.org.au)  
(go to the Bookshop tab under  
Publications)  
or contact IAL support office  
phone 02 8335 4000.

Measure the application rate  
and uniformity of all types of  
pressurised irrigation – from  
handheld hoses to a centre pivot  
with the auditing catch can.

Order your set now from IAL.  
Available in sets of ten. Price per set  
of ten catch cans is:

**\$55.00 (inc GST) for members**

**\$72.00 (inc GST) for non members**

The employee then enters this additional transaction as a further payment to the supplier and keeps the money for themselves. This results in the business becoming less profitable unless the fraud can be identified and halted.

Other dishonest employees create false or 'ghost' suppliers while they create false invoices for goods never supplied or services never provided. The dishonest employee then creates and approves illicit transactions to supposedly pay for these fictitious goods or services.

## UNCOVERING FRAUD WITH AN AUDIT

Areas which a fraud audit can take action include:

- confirming whether a supplier is genuine, verify address and business records (are the contact details the same as an employee?)
- through data mining with company and bank data, matching transactions to invoices to identify over payments or unjustified payments
- looking for double payments within a short time period
- examining pay roll lists and verifying them against data mined transaction data to determine ghost employees or overtime claimed but not worked.

## FRAUD AUDIT PURPOSES

A fraud audit review not only seeks to provide the comfort that fraudulent activity had not occurred but also can identify improvements and efficiencies for internal controls by providing an implementation plan and ongoing monitoring.

A fraud audit seeks to provide a company with a better understanding in the business of the need for improved fraud risk management processes and effective management of a potentially damaging incident in terms of financial loss and tarnished reputation.

## I'VE DISCOVERED A FRAUD IS OCCURRING, SO WHAT DO I DO?

If you discover a fraud, the first priority of a company is to identify the culprit and stop their activity. It is also important to quickly and efficiently determine how much they have stolen.

At this time it is essential to report the offence to the police and inform insurers. Often professional assistance will be required in carefully sifting all the transactions and identifying those that have been illegally made. Such investigations should be conducted by professionals that will be able to help you in presenting the results to the appropriate authorities and aid in any possible recovery of the missing funds.

How ever fast your business is growing or how large the company has become, remember that fraud can happen to anyone, including well run and respected businesses. It may be happening right now eating away at your profits and will only get worse until it is addressed.

## ABOUT THE AUTHOR

Stuart Snaith is a Certified Fraud Examiner with Regents Risk Advisory. For information contact him on phone 1300 915 380, email [Stuart@Regents.com.au](mailto:Stuart@Regents.com.au)



Setting the right course of action.  
That's intelligent



Set your course at  
[rainbird.com/ICS](http://rainbird.com/ICS)



**Rain Bird® Integrated Control (IC) System™ gives you flexibility for today and tomorrow.**

In a class of its own and masterfully engineered with rapid two-way communication, real time diagnostics and centralised control, the fully underground IC System puts you in command of individual rotors from your central control computer, tablet, radio and smart phone. The IC System helps save costs using significantly less wire and material, making it easy to install, expand and adapt as your course grows and evolves. With the Rain Bird IC System, you're setting a course of action. **Set your course at [rainbird.com/ICS](http://rainbird.com/ICS).**

**For a free course assessment Freecall 1800 424 044**



# NEW PRODUCTS & SERVICES

## TORO

### TORO WATERBIRD® VI MACADAMIA SPRINKLER

Toro has announced the release of Waterbird VI macadamia sprinkler, designed specifically for under tree irrigation of macadamia trees.

Geoff Allen, Toro's national accounts manager for irrigation said that the Toro Waterbird sprinkler was developed over 30 years ago to replace overhead sprinklers.

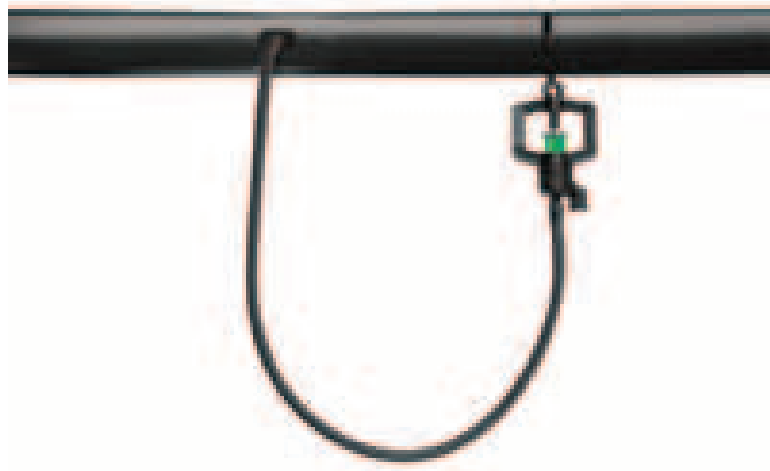
"Over time the design has evolved to meet the changing needs of horticultural growers. This new variety of the Waterbird has a snap lock hook to allow for easy suspension from poly tube with a cable tie, with the added bonus that this prevents dislodging by machinery during harvest and spraying," he explained.

One of the major keys to the Waterbird's success over the years has been the mini sprinkler's ability to reduce water consumption with no loss in efficiency.

The Waterbird frame has off-set aerofoil shaped wings (shaped like those on an aeroplane) that divert water around the frame to minimise dry spots when irrigating. An anti-insect/dust proof spinner retracts to protect the nozzle when it is not operating.

With a large droplet size and low angle of throw the mini sprinkler is less affected by wind and water distribution under the tree's foliage is maximised.

The Waterbird Macadamia sprinkler is available in three colour-coded flow rates (55, 76 and 99 L/hr) and suits cable ties to 5 mm in width. A limited throw



deflector for young trees is also available. The mini sprinkler is also suited to irrigation of other crops.

For more information contact Geoff Allen, phone 0419 869 016, email [geoff.allen@toro.com](mailto:geoff.allen@toro.com). The Waterbird is available from authorised Toro Irrigation dealers.

## NETAFIM

### WA COUNCILS OPT FOR NEW WATER METERING TECHNOLOGIES TO BETTER MEET STANDARDS

More councils in WA are tapping into new water metering technologies for park and garden irrigation to help better meet their standards requirements into the future. At the same time, they also are welcoming a range of other benefits with the systems, including simple operation, cost-effectiveness, new data features and labour savings.

One of the newest systems capturing increasing attention from major water providers in the utility industry is the 'Octave' ultrasonic bulk water meter.

In addition to its precise flow measurement accuracy that is ideal for strict water measurement reporting and standards, the Octave, available from Netafim, is simple to install and has a long, 10-year battery life expectancy.

The company says with its superior hydraulic performance and advanced alert, data and statistical features, the new ultrasonic water meter will take water management in Australia to a whole new level.

The City of Vincent in Perth has installed 48 Octave meters at bore pump locations for park irrigation, including at Leederville Oval. Chief Executive Officer John Giorgi said the City's move to install the latest technology water meters would assist it to meet required standards set with the WA Department of Water well into the future.

John said the new meters were a step up in accuracy for water flow measurement and simple to install, while they also were pre-calibrated, whereas previous meters required manual calibration.

"Fully calibrated meters will enable us to meet our required water standards for the longer term," he said.

There is no need for commissioning and configuration during installation. While the City of Vincent has conducted in-ground installations, the meters can just as easily be fitted into headworks. Installation only requires about 1 m of pipe.

Octave systems connect to any automated metering reading system and immediately show litres per second readings down to a very low range, as well as

the water flow direction. Different measurement readings can be selected and the meters also show the stored capacity at sites in kilolitres.

There is no cabling required with the Octave water meter and so no need to plug-in to a power supply.

Telemetry technology available with the system allows all data to be received and analysed at a remote location and provides alerts on any problems with the units, from incorrect installation and deliberate damage or alteration through to the slightest leaks or even water theft from lines or direct from the meter.



The City of Vincent in Perth has taken little time in installing 48 Octave meters at bore pump locations for park irrigation, including at Leederville Oval.



## NOVO

### NOVO™ CONVERTS ANY MULTI-WIRE CONTROLLER TO TWO-WIRE OPERATION

Novo, a compact two-wire converter from Underhill International, is designed to quickly transform any standard multi-wire controller to two-wire operation by using a "plug and play" feature.

Controllers such as Hunter®, Rain Bird®, Irritrol®, Toro® and other popular brands can be converted to total two-wire or hybrid two-wire/multi-wire systems when connected to Novo.

The new converter is a practical solution for irrigation installers who plan to use two-wire technology in a new installation or a system expansion because they can still use their favorite controller. Novo installs alongside the host controller and handles up to 32 two-wire stations.

The host multi-wire controller continues to run all scheduling programs and "talks" to the new two-wire valves and decoders via the Novo converter.

The device is especially useful in irrigation system expansions where it is more practical to add two-wire connections, rather than run new multi-wire to additional valves on large commercial sites, parks or sports fields. Two-wire is also useful on projects with new external devices, such as soil moisture sensors and hydrometers.



The compact converter features a backlit graphical display with easy, step-by-step LightTouch™ buttons and built-in electrical diagnostics/fault finding. Plastic wall mount cabinets and external transformers are also available.

It can handle up to a 63-zone system if the host controller has the station capacity by using Underhill senders. Two-wire installations require less labor and materials because the 24 VAC power and address signals are sent over the same pair of wires. Novo uses standard underground irrigation wire and it is not necessary to ground field decoders.

For more information contact Better Methods, the Underhill distributor in Caringbah, NSW, phone 02 9524 5366, website [www.bettermethods.com.au](http://www.bettermethods.com.au).



[www.sdsystems.com.au](http://www.sdsystems.com.au)

## A new generation of irrigation controller.

The intelligent two-wire DataCoil™ makes valve decoders obsolete.

World leading technology in two-wire irrigation.



### PC CENTRAL



SDS-Connect PC Software provides total control of up to 350 sites. Water meter readings, graphs, logs, weather-station integration & more.

### MOBILE APPS



SDS-LINK & SDS-GO Smartphone and Tablet apps give unparalleled remote access to your controllers over 4G, 3G & WiFi.

### MULTIWIRE



The SDS RelayCube™ converts the controller to multi-wire, or any combination of two-wire & multi-wire, for easy retrofits.

### DIY REPAIRS



Designed from the ground up for easy DIY repair. Modular plug-in design means you'll never be stuck waiting for repairs again.



# NEW PRODUCTS & SERVICES

## AQUALAB

### ADCON TELEMETRY RELEASES PRO 6.3

Adcon has just released a new, more powerful, informative and user-friendly version of Livedata along with three powerful new extensions. Livedata 2 is the new and easy way to check data from any mobile device, from laptops to iPads, iPhones to SmartPhones.

While Livedata1 focused on displaying raw data only, addVANTAGE Pro 6.3 goes far beyond that and puts all the focus on data delivery. From disease models to evapotranspiration, from extensive statistics with an intuitive user navigation, just about any data can be put into Livedata 2.

To make navigation quicker and easier stations can now be selected from a very fast list, rather than having to load a Google Map - an undertaking that can be painstakingly slow if you don't have a fast internet connection. The list in turn can be displayed in an instant.

### Sunshine duration

Many customers from non-agricultural applications have demanded the Sunshine duration (SD) feature. SD can either be measured with a special, dedicated sensor or it can be computed, using the output of a standard pyranometer. This means there are two ways of calculating SD: a very simply threshold method, and a much more complex formula, developed by Hinssen-Knapp, the output of which comes very close to the output of a dedicated SD sensor.



### New formula calculation extension

Computations between sensors can be very useful, e.g. to calculate the difference between two temperature sensors. This new extension allows computations with a large variety of formulas between up to nine sensors, from any node in the network.

### New universal downy mildew extension

Downy mildew is a ubiquitous fungus that affects dozens of crops, and depends basically on two main parameters for its development: temperature and water.

A group of international researchers has analysed dozens of fungus models to find common grounds - and has developed an algorithm that fits very well for some 50 crops. This extension is available as an optional product for your addVANTAGE Pro 6.3 license.

*For information contact Adam Merhab from Aqualab Scientific Pty Ltd, phone 02 9894 4511, email [adam@aqualab.com.au](mailto:adam@aqualab.com.au), website [www.aqualab.com.au](http://www.aqualab.com.au)*

## ADVERTISERS INDEX



AQUALAB	21
BROWN BROTHERS	23
CNH AUSTRALIA PTY LTD	7, 29
COMDAIN	5
FRANKLIN	OBC
HUNTER INDUSTRIES	25
IRRIGEAR	27
IRRISYS	19
JOHN DEERE	11
MAIT INDUSTRIES	IFC
PENTAIR	IBC
PROWATER	39
RAINBIRD	41
TECHNICAL IRRIGATION IMPORTS	43
WATERSHED IRRIGATION	37
XYLEM	13

## IN THE NEXT ISSUE

The Summer issue of **Irrigation Australia Journal** will feature:

### EDITORIAL

Water and energy: policy and practice  
Retail best practice

### ADVERTISING FEATURE

Annual Pumps Feature

Confirm your advertising presence now and ensure your message is seen by the entire Irrigation Australia Membership nationwide.

**Contact Brian Rault**  
on (03) 8534 5014 or  
[brian.rault@commstrat.com.au](mailto:brian.rault@commstrat.com.au)  
to receive advertising information.



THE JOURNAL FOR IRRIGATION PROFESSIONALS  
**IRRIGATION**  
**AUSTRALIA**

***Southern Cross***

# SBI-E PRESSURE BOOSTING SYSTEMS

Available in single, double or triple pump units, Southern Cross SBI-E variable speed automatic water pressure systems use the proven stainless steel SBI vertical multistage pump combined with IQ variable frequency drives and stainless steel suction and discharge manifolds. SBI-E units provide reliable and efficient pumping performance across a wide range of duties with flow rates up to 80m<sup>3</sup> per hour and heads up to 100 metres. SBI-E pressure boosting systems excel in golf course irrigation, vineyards, turf watering, horticulture and many other constant pressure applications.

For more than 140 years, Southern Cross has been providing reliable pumping solutions to industry and agriculture. The same performance and dependability which has become the hallmark of Southern Cross is now available from SBI-E Pressure Boosting Systems.

FOR FURTHER INFORMATION  
CALL PENTAIR SOUTHERN CROSS 131 PUMP  
OR VISIT [www.southerncross.pentair.com](http://www.southerncross.pentair.com)



# SubDrive Solar

## SOLAR PUMPING SYSTEM

- Livestock
- Tank Filling
- Homesteads
- Mining
- Vineyards
- Rivers, bores, creeks



The **SubDrive SolarPAK System** packs a punch in remote locations in need of water. Get a rugged, high-output system that tackles all the challenges of harsh environments. Discover the new power in solar pumping and get the quality you expect from the name you already trust.

You'll find everything you need with SubDrive Solar.

**1300 FRANKLIN**  
[franklin-electric.com.au](http://franklin-electric.com.au)



**Franklin Electric**

**PUMPS • MOTORS • DRIVES • CONTROLS**

GlobalLink™  
**OBSERVANT™**