Watery Sauces Oldies and Boldies

Newsletter No 111 **August 2026**

NEWSLETTER OF THE WATER RESOURCES RETIREES ASSOCIATION

Annual General Meeting

Thursday 23 April was a busy day for some members of WRRA at the Sunwater offices in Fortitude Valley. In order to limit the number of excursions in close proximity, the Committee had chosen to conduct two events on the same day at the same venue.

The first of these was a presentation by Sunwater staff on the Cooranga and Barlil Weir projects. There is a quite detailed summary of the presentation on pages 4 and 5 of this newsletter.

This was followed by the Annual General Meeting, held in the same meeting room. There were 11 members present with one other member joining the conversation remotely.

President Chris Robson opened the meeting with a memorial for five members of the Association and a further six former colleagues who had passed away.

In his President's Report, he outlined the mix of social, technical, industry forums and site visits conducted in the preceding year. These events included mid year and end of year luncheons, lawn bowls, a golf day, three technical presentations and a site visit to the Sunwater Rocklea Technical Centre. Regional members events were also held in Toowoomba and Yeppoon with financial support from the Association. The Association ran two Planning Forums on the Association's future. direction, one in June 2025 and a second one in February 2026. The Association also contributed to events that were hosted by other agencies, including the National Water Week forum at Sunwater.

Notice had been given to members of proposed amendments to the Constitution and, following discussion, these were adopted unanimously. They involve minor changes to wording in the objects, redefinition of classes of members, the power to appoint patrons. An increase in membership fees was also agreed. This measure had become necessary because of increased operating costs.

There were brief interim reports on the results of the member preference survey which will be further consolidated. (see page 2) The meeting noted that a draft Management Plan had been prepared and will be finalised.

Elections for a Management Committee resulted in no change (see back page if you need a reminder).

Following the meeting, attendees repaired to the nearby Jubilee Hotel for lunch.

Footnote: The amendments to the Constitution have been accepted by the Department of Justice.

From the Editor's Chair

I wonder what Umpire David Shepherd would have made of Newsletter 111.

We were all pretty much floored by the news that the former CEO of Sunwater Glenn Stockton had resigned and were extremely sorry to know that he had gone. He was a most obliging and generous Patron. and very pleasant company. Without his and Sunwater's benevolence WRRA would find it extremely difficult to operate. We wish him well in his future endeavours.

The Association will now be making overtures to other potential Patrons including his successor.

Until next time, au reservoir.

Ian Pullar, Editor

Resignation of WRRA Patron

On 11 May 2026 Glenn Stockton announced his resignation, to take immediate effect, as Chief Executive Officer of Sunwater after almost six years with the organisation

The Chairman of the Sunwater Board, Mr Jeff Seeney, thanked Mr Stockton for his contribution and confirmed a formal recruitment process to appoint Sunwater's next Chief Executive Officer would begin immediately.

The interim CEO, during a six month recruitment process, is Mr David Hourigan, who took over the role on 8 June. Mr Hourigan is an experienced public sector leader who previously served as Deputy Director-General of the Queensland Department of the Premier and Cabinet and interim CEO of the Olympic Games Independent Infrastructure and Coordination Authority.

Terry Loos has sent me some fascinating scientific facts which I am again sharing (at bottoms of pages).

Member Survey 2026

Summary of Survey Responses

All 186 members with email addresses were invited by the Secretary on 2 April 2026 to complete an online survey with questions seeking their preferences regarding events and their location, our communication channels, mentoring, and historical information.

There were 41 responses, the majority from members located in Southeast Queensland with only seven coming from outside SEQ. While it would have been better to have more responses from members outside SEQ, overall the level of response was pleasing and it has provided a good set of information to help the Management Committee plan for future activities.

The Newsletter is the most popular offering by the Association. The responses indicated almost everyone reads the newsletter following publication, and the whole edition. Well done our editor Ian Pullar.

Also, there is a strong indication that people look at the website for details of events and other issues, and for new items. Thank you, webmaster Jon Henry. There was some interest in creating a WRRA App.

While a few responses indicated a preference for the Association to change its name to encourage a broader membership base, most responses indicated there was no appetite for changing the name of the Association.

The responses indicated the order of popularity of events is (in descending order):

- Regular casual get-togethers (eg pub-style lunches at a readily accessible venue)
- Technical presentations on water projects
- Technical inspections of one day or less
- Non-technical presentations on current issues and Member life stories
- Visits/Inspections of community and or historical interest for one day or less
- Regional get-togethers

The interest in non-technical presentations is worth addressing, in addition to technical presentations. One quarter of respondents voted for non-technical presentations ahead of technical presentations. Half of the respondents voted for technical ahead of non-technical.

Interestingly whilst the SEQ responses indicated people were open to travelling to other centres, the regional members were less keen, although this is from a small sample of non SEQ members.

Seventeen of the 41 responses provided at least one suggestion for an event. The suggestions offered covered all four aspects – technical presentations, social events, tours and site inspections of one day or less. The suggestions for single day or shorter site inspections have a strong bias to Seqwater operations and assets. This is not surprising given 34 of the 41 responses were from SEQ members and Seqwater is responsible for water assets in SEQ.

The suggestions for social events are diverse and generally relatively easy to organise and likely to be of general interest to all members. The diverse list of suggestions can be used as a source for event planning over the next two to three years by the Association.

Some 40% of responses advocated providing some form of mentoring to aspiring people in the water industry, with a wide range of mentoring topics offered ranging from infrastructure design and construction, water planning, management and policy, and work/life management. A number of members are now participating in a AWWA sponsored national mentoring program.

The questions asking if members held relevant water historical documents to share with the Association and if they would welcome a future survey on preserving and sharing such history indicated some 30% of responses did have historical information to share and 80% agreed there should be a more targeted future survey.

Actions in Response to Survey

The Management Committee main responses to the survey are;

- The Association's name will not change.
- We have implemented casual quarterly lunches for SEQ and visiting country members – currently this will be at the Indooroopilly hotel.
- We will continue to support and promote all regional get-togethers, such as those at Yeppoon, Toowoomba and Bundaberg.
- We plan all presentation events to have the option for members to participate via video conferencing.
- We have established a good relationship with Seqwater, with one inspection of North Pine Dam and water treatment plant held on 4 August, (see page 7 for a report), information for the Newsletter, and planning another event early in 2027.
- Half-day visit and presentations at Qld Institute of Medical Research Berghofer.

The Committee was pleased with this first effort at on online survey and appreciated the work of our webmaster to quickly construct the survey in a readily accessible form. It has encouraged us to develop another, more targeted, survey covering our communications and historical information (as indicated above). While members read the newsletter (and some make very complimentary remarks) we have no further information regarding preference about content and no advancement on willingness of members to contribute. Similarly, we did not seek (and so did not receive) any commentary on the website contents, style or accessibility.

If you have two legs you have more than the average.

Lunch at the Indooroopilly Tavern

on 19 June attracted only nine starters, but we are assured they all had a good time with lots of happiness and chattiness.

From left; Richard Steindl, Terry Loos, Trevor Sleep, Gary Corbett, Don Gardiner, Doug Flanders, Bill Huxley, Bill Eastgate and Ross Kapitzke.

We are delighted to have been informed through Trevor Tuesley that there is a Friday Water Group in **Bundaberg** that meets quarterly for a casual get-together lunch. They will meet on 14 August, 12 noon, at the Brothers Sports Club, 130 Takalvan Street, Bundaberg. The next get-together will be on 13 November.
The contact person is Toni Garrett - email address garrotte65@hotmail.com

Contact Details

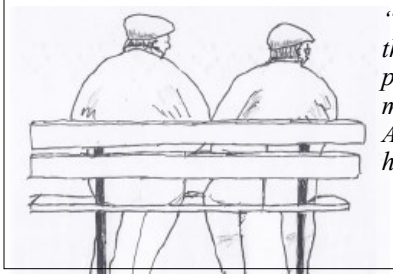
In order to ensure that our membership list is up to date, WRRA committee members are in the process of contacting Association members to confirm that the contact details we have are the current ones. (That sounds a it ironic, doesn't it?– if the contact details are all incorrect, no contact will be possible!)

WRRA welcomes as a new member **Gary Hargraves**. Among various postings, Gary worked in the hydrology group and in the dam safety team. As a new recruit, Gary joined other members at the Rocklea model laboratory (report on page .)

Coming up

- Golf day, Friday 21August at Keperra Golf Club. Further details will be provided by the Secretary.
- Toowoomba Oldies function scheduled for 26 August will be held in the Community Meeting Rooms at the City Library Level 3, 155 Herries St (cnr Victoria & Herries Sts). Between 3 pm and 4:30 PM There will be a presentation on ***Coal Seam Gas and the Central Condamine Alluvium (A Good News Story)*** with speakers: Steve Goudie (Arrow Energy), Gerhard Schoning (Office of Groundwater Impact Assessment) and Adrian McKay (Dep't of Local Government, Water and Volunteers).

  The talk will be followed by ***BEVERAGES & BANTER*** at the Burke & Wills Hotel – 554 Ruthven St. Everyone is welcome.
- South Burnett Tour, 3 – 6 September. Five couples have registered and booked accommodation. Others are welcome to join. More details on the website.
- National Water Week event with industry partner - 19-25 October. Still in the planning stage.
- October. Annual CQ Get-Together at Yeppoon. Date and venue to be advised.
- 23 October, Lunch at Indooroopilly Hotel
- Possible visit to QIMR Berghofer Medical Research Institute at Herston (see page 2)
- November/December End of year lunch, at a venue to be determined. Any suggestions?



"Back in our day they always appointed the best man for the job. As long as it was his turn."

Sadly, we record the passing of **Lindsay May** (Supervising Draftsman [IWSC/WRC etc]. Lindsay died in June from a suspected heart attack while camping in northern NSW. A Celebration of Life for friends/workmates was held for him on Sunday 26 July at the Mt Gravatt East Football Club. His widow Vicki is also a former employee of Water Resources.

One million seconds is about two weeks. One billion seconds is about 32 years.

Proposed Cooranga and Barlil Weirs

Notes by Terry Loos

Presentation to WRRA by Sunwater 23 April 2026.

Eleven WRRA members in person and two online attended a presentation at the Sunwater offices in Brisbane by Sunwater staff who are investigating, on behalf of the Queensland Government, proposals to construct two weirs (Cooranga and Barlil) in the Burnett River catchment to improve regional water security and support agricultural growth.

Both weir proposals were identified in the Queensland Government's Bundaberg and Burnett Regional Water Assessment completed in 2023.

A copy of the PowerPoint presentation is available on the WRRA website

Upon election in 2024, the Premier sent Charter Letters to Ministers. "The Charter Letter for the Minister for Local Government and Water has a focus on delivering generational water infrastructure across Queensland that will secure supply and foster economic growth, as well as addressing future water requirements for further population growth. A priority under the key portfolio deliverables of the Charter Letter is to progress the Government's ***Watertight Water Security Plan*** which included several water-related projects including the Barlil Weir Project (BWP) on Barambah Creek, northwest of Murgon to secure (store) 1,500ML of water and the Cooranga Weir Project (CWP) on the Boyne River south of Mundubbera to secure (store) 2,500ML of water. The weirs are intended to improve regional water security and support agricultural growth in the Burnett region".

"Construction of both weirs is intended to commence by March 2027, with practical completion expected by August 2028, weather and construction conditions permitting. Sunwater Limited is responsible for delivery of the proposed weirs and the 2025-26 State Budget provides $29.7 million for Sunwater to progress planning and design work. Sunwater needs to undertake a range of studies to support the assessment and planning of both projects".

Other projects under the State's Watertight Water Security Plan include the: Paradise Dam improvements; Toowoomba to Warwick pipeline; Fitzroy to Gladstone Pipeline; Borumba Pumped Hydro.

The Cooranga Weir Proposal

The major dam on the Boyne River system, Boondooma Dam, near Proston, was built in 1982 just downstream of the Boyne's confluence with the Stuart River. As part of the Boyne River and Tarong Water Supply Scheme, it provides industrial water for cooling at Tarong Power station about 95 km to the south near Yarraman. Also, irrigation water from Boondooma Dam is released to supplement natural flow in the lower Boyne River. Boondooma Dam does not have a fishway.

The supply to Tarong Power Station takes priority. During the last drought irrigation supplies were cut to zero and lots of citrus trees died. It was noted that Tarong Power Station is scheduled to be closed down by 2032. No details of what will happen with water entitlements under this scenario are currently known. It could happen that 30,000 to 40 000 ML/a of high priority water will become available.

At a site on the Boyne River approximately 60 km downstream of Boondooma Dam, Sunwater is investigating a proposal to construct a five rowed sheet pile weir to be called Cooranga. The weir will have a sloping rather than a stepped downstream face to reduce fish mortality. Beyond this site the Boyne River flows downstream to the Burnett River and enters at a point just upstream of Mundubbera.

The weir would have a storage capacity of 2500 ML and a medium priority allocation yield of around 1500 ML/a. The bankfull flow at the site is about 5,300 cumecs with a I in 50 AEP. A 1:35 scale 3D physical model of the weir is being constructed at the Rocklea Hydraulics Lab and is expected to be up and going in June, 2026. An inspection can be arranged (see page 6).

Sunwater's studies have found several species of native fish in the river including lungfish and white-throated snapping turtles. Given that these are Matters of National Environmental Significance (MNES) the project will have to be assessed and approved under the Commonwealth's EPBC Act. It is not known if this would require a full-blown EIS process – which could take several years – or if the Commonwealth will accredit a scaled-back EIS, which could perhaps be completed by 2028.

It was suggested that the costs of a full-scale assessment and approvals process could be greater than the cost of the weir construction. The capital costs of the weir would be paid by the State and operating and maintenance costs by the irrigators.

Venus is the only planet that rotates clockwise.

DPI Fisheries has asked that Cooranga weir have a fishway. All the dam and weir storages on the Burnett River downstream of the Boyne confluence have fishways of some design. It is understood that there is no published holistic regional fish passage strategy for the Burnett River system, however, it is noted that without fish passage Cooranga Weir would cut off around 60 km of the Boyne River. It is reported that DPI Fisheries research on fishways already operating on the Burnett River show up to 20 different species regularly use them, including lungfish, yellowbelly, mullet, bass and bream. It is understood that the State is amending the Fisheries Act to ensure regional/catchment based fish passage strategies are developed.

Sunwater is test designing an automatic/hydraulically operated gated fish lock (in preference to a fish ladder).

The lock would be 9m high. Key to the operation of the fish lock would be that sufficient tailwater is maintained. Claude Wharton weir on the Burnett at Gayndah has a fish lock fishway – however it has tailwater difficulties. Silting is a concern. The fishlock works on the same principle as the boat locks used on major rivers, which lift or lower water levels to enable boats to continue their journey. On a similar basis, this fishway has a lock chamber where water levels are raised and lowered so fish can continue their up or downstream journeys. Downstream fish are attracted to the lock by the release of some flow into the tailwater. The operation of the lock gates will be undertaken automatically and inflow velocities will be designed to be slow. The gates will also operate at a slow rate. Several fish in the Burnett system have been electronically tagged and sensors will be able to detect when these fish have entered the lock. The fish lock will be designed to operate in flood flows up to 1 in 5 AEP in order that silting of the fish lock does not become a problem.

Sunwater has found that while lungfish is a resilient species the lungfish that are isolated in river pools don't thrive and don't breed. They need ribbon weed and shallow water. So, the passage of lungfish of up to 1m long would be a key requirement at Cooranga Weir. In addition to constructing a fishway Sunwater is looking into offset possibilities include creating downstream fish habitat and fish hatcheries.

Weir overflow energy dissipation is a key design consideration however any baffles positioned downstream to dissipate energy will have to be designed so as not to damage fish being washed downstream in the overflow.

Geotechnical investigations are planned and underway, building on earlier work of some years ago, for confirmation of cobble horizons, bedrock depth, and continuous penetration resistance, supporting sheet pile design and construction planning. Sheet pile row 1 is designated priority 1 due to its critical role in seepage cut-off.

The Barlil Weir Proposal

The major dam on the Barambah-Barker creeks system is the **Bjelke-Petersen Dam** (Lake Barambah) located 10 km east of Wondai near Cherbourg. It was constructed in the period 1984-88 and is operated by Sunwater. The reservoir feeds the Barker Barambah Scheme, that diverts water from the dam for farming around Redgate, Murgon and Mondure

The proposed Barlil Weir on Barambah Creek will be at a site approximately 10 km downstream of Murgon Weir and 10 km upstream of Silverleaf Weir. The weir will store 1500 ML of water, with 750ML/a medium priority allocation yield to improve the reliability of existing water allocations in the Barker-Barambah Water Supply Scheme (WSS).

The weir will flood out at a 1:3 AEP flow of about 150 cumecs. A 2D physical model of the weir is being constructed for testing at the Rocklea Hydraulics Lab. Barlil Weir will be a 5m high, four row steel sheet pile structure covered with reinforced concrete slabs and a sloped downstream spillway. There is no provision for fish passage in either Murgon Weir or Silverleaf Weir, however, Sunwater is designing for fish passage through Barlil Weir via a fish lock and control gates.

Barlil Weir has a historic Commonwealth approval from 2001 and this is valid to 2032. They have done some ecological surveys and confirmed the presence of the white-throated snapping turtle, but no lungfish.

There are Indigenous Cultural Heritage values at both proposed weir sites. Scarred trees have been identified. Sunwater is working closely with the Traditional Owners on these matters.

Initial geotechnical investigations were undertaken at the site in 1999-2000 and further investigations were completed in 2025, with more planned for this year.

WRRA President Chris Robson thanked Rachael Thompson for organising the very interesting presentation and the seven technical staff from Sunwater who were in attendance to deliver the information and answer questions from WRRA members.

Photos by Rachael Thompson

Over half of all your bones are in your hands and feet.

A Model Excursion

Once again, WRRA members were invited to visit the laboratory at the Rocklea Workshops to view the model for the proposed Cooranga Weir on the Boyne River. On Thursday 16 July ten of us arrived and were welcomed by Peter Lewis, the manager of the models laboratory, and ushered into a meeting room where, after a morning cuppa, Tom Reed, who is the principal designer for the weir, gave us an illustrated talk on the features of the design. This was followed by a presentation by Carlos Gonzalos on the construction and operation of the model.

Then on to seeing the real thing, with the opportunity to see the model in action, performing in a range of flow regimes from the 1 in 1 frequency to the 1 in 50 event (bank full flow).

Peter Lewis

Carlos Gonzalos

Carlos explaining the model

Tom Reed

During this inspection we were aware of the tantalising aroma from a barbecue just outside. Back in the open air, we watched as chef Thanh finalised the cooking of a generous quantity of burgers, sausages and steak to which we helped ourselves along with coleslaw and potato salad. Fortunately, we were assisted in the eating by a number of Sunwater employees.

A thoroughly enjoyable and illuminating visit with our very generous hosts. Just a pity there were so embarrassingly few Oldies there.to enjoy it.

Lunch: Thanh at the head of the table

Answer to Brain Teaser (page 14)

There are100 shoes in the establishment.

Answers to Terry's Trivia (page 15)

1. (iv) Hobart. 2. (i) George. 3. (ii) 1986. 4. (iv) Machiavelli 5. (iv) Brian McKenzie. 6. (iv) Plato. 7. (iv) Arthur Calwell. 8. (v) ossicones. 9. Minus 40° F. 10. (iv) that is.

There are more microbes in a teaspoon of healthy soil than there are people on earth.

WRRA Visits North Pine Dam

It was a terrific sunny, balmy Brisbane winter's day on 4 August when fifteen retirees met at the Petrie train station at 9.30am to be ferried on a Seqwater organised minibus to inspect the North Pine Dam strengthening work and the operation of the North Pine water treatment plant (WTP).

The visit commenced at the WTP with our Seqwater host showing us a map of all the major components of the Water Grid: sources, treatment plants, the distribution grid, and gave us a brief explanation of its overall operation.

The complexity and extent of the urban water grid is impressive, able to supply the bulk water to all of SEQ using a network of 12 major dams, weirs, over 600km of pipelines, a desalination plant, three wastewater recycling plants, and water treatment plants, to the five local water service providers.

We learnt that water from North Pine Dam and its WTP provides water supply to the northern Brisbane and the Moreton Bay City Council areas. The plant can treat up to 250 ML/d, and through the grid water can be pumped north to the Landers Shute WTP on the Sunshine Coast via the Northern Interconnector pipeline.

We also learnt that the Tugun desalination plant, in operation since 2009, is operated at full capacity only when the total Grid storage capacity falls under 60%. It is operated three times a fortnight with a minimum of 5 ML/d to keep the reverse osmosis membranes functional, which has ensured the original membranes are still in operation, 17 years after the plant commenced operation. The Purified Recycled Water (PRW) plants (Luggage Point; Gibson Island and Bundamba) have never delivered water to Wivenhoe. The Luggage Point PRW plant currently operates at 6 ML/d and delivers water to certain industries and to Swanbank Power station. If the grid total storage falls below 40% the PRW supply option may be activated.

North Pine Dam's raw water quality is variable and typical of a subtropical catchment. It experiences turbidity and microbial pathogen risks from catchment runoff and rural land use, whilst iron and manganese are currently not a problem. Seqwater can undertake artificial destratification of the lake to help with raw water quality management. The intake tower has ten intake levels for flexibility in choosing the best quality level water.

We were led through the operation of the North Pine WTP by one of the plant operators, explaining how raw water is collected from the intake tower in the dam wall, through a suction tunnel pipeline. The raw water pumping station then lifts the water to the inlets of the treatment plant. The water treatment process involves coagulation, flocculation, sedimentation, filtration and disinfection. The operator showed us how the five water filters of anthracite and sand are cleaned every 48 hours using air scourers and a water backwash.

North Pine Dam is a 45 m tall mass-concrete gravity dam with earth-fill embankments. It was constructed in 1976 and is located 5 km upstream from Petrie on the North Pine River. Its full storage is 214 300 ML, which corresponds to a full supply level of EL 39.6 m AHD.

Recalculations of extreme weather events and probable maximum rainfall have substantially increased the estimated Probable Maximum Flood (PMF) inflows compared to when the dam was built in 1976. Additionally, because of increased housing development downstream of the dam its assessed Potential Loss of Life measure (PLL) has increased. In light of these dam safety re-assessments the dam is being strengthened.

The dam is being operated at a temporary reduced capacity level (about 54%) during the structural strengthening work which began in mid-2025 and is scheduled to finish by early 2027. It features specialised anchoring to lock the dam wall into the bedrock. The project comprises:

- Installing 54 large-scale vertical post-tensioned anchors from the dam crest into the foundation rock.
- Anchor lengths ranging from 39 to 102 m will use almost 246 km of high-tensile steel strand.
- The project will add approximately 75,000 tonnes of downward stabilising weight to the structure.
- It will bring the structure closer to modern design and regulatory safety standards ahead of planned future upgrades to the dam.

The contractor began precision drilling through the dam wall in November 2025. Work commenced with the non-overflow part of the dam wall. It will get more difficult when they come to the spillway – which will have ten anchors. The contractor recently did a similar project at Keepit Dam in NSW.

We were driven to McGavin View Park picnic area overlooking the dam and lake where the Seqwater dam strengthening presentation was undertaken. It was poignant to be at this location because this is where in December 2013 the Allen family held a 60th birthday BBQ party for our late colleague Peter – the former dam safety regulator. In his role Peter would most likely have been aware of the need to upgrade as this was the outcome of investigations that commenced after the 2011 flood event. Vale Peter.

The Seqwater bus took us back to Petrie where most enjoyed lunch at the Petrie Hotel before heading home. We all thanked our Seqwater host Leonie and agreed it was a very interesting and informative visit and look forward to more of these types of visits.

The human eye can differentiate around 10M colours.

Irrigation in Cambodia

A snapshot from my time as an irrigation consultant, 2013 -2018

Doug Flanders

Cambodia has an enviable irrigation heritage. The Khmer Empire (9^{th}–15^{th} centuries) is famous not only for its temples but also for creating what archaeologists call an *"hydraulic city"* as its capital, Angkor. By harnessing the seasonal shifts from monsoon floods to dry season droughts, this massive water control and irrigation development enabled the empire to flourish.

The West Baray system is one of the many projects the Khmer empire built around Angkor. Constructed in the 11^{th} century near Siem Reap, the West Baray system, comprises gravity diversion works from the Siem Reap River, a rectangular off-stream storage and irrigation canals. The 8 m high off-stream storage embankment covers an 8 km by 2.1 km area, holds some 55,000 ML and commands some 13.000 ha.

After the end of the Khmer empire, it fell into disrepair but was restored by the French who ruled Cambodia from 1863 to 1953. If you visit Siem Reap to see the temples, be sure to visit the unbelievable West Baray off -stream storage and irrigation system.

Under the Khmer Rouge's regime (1975–1979), Cambodians suffered extreme brutality. Pol Pot's rule was characterised by radical social engineering, genocide and the death of an estimated 1.5 to 2 million people – roughly one-quarter of the country's population. In seeking to transform Cambodia into an agrarian, classless socialist utopia, Pol Pot destroyed all foreign and modern influences.

Upon seizing power, the Khmer Rouge army forced the entire population of Phnom Penh and other cities into the countryside. People were forced to work from dawn to dusk in collective agricultural / irrigation communes, with very little food, leading to mass starvation, disease and thousands of deaths.

The regime targeted intellectuals, professionals, monks, and ethnic minorities (such as Cham Muslims, Vietnamese, and Chinese) for execution. The Khmer Rouge abolished money, private property, schools, and religion. Professional engineers either escaped or were forced into labour. All records of the existing irrigation schemes were destroyed.

The regime started an extensive program of irrigation development based on manual construction of irrigation works. More than 2000 schemes were constructed but the usefulness and quality of most of these works was so bad that little more than ripples on the earth's surface exists today.

The regime periodically conducted skirmishes into Vietnam ending in a big invasion in December 1978 precipitating the Vietnamese army to retaliate and defeat the Pol Pot regime in 1979. The United Nations took over administration of Cambodia in February 1992, conducted elections and handed over to Cambodian rule in September 1993.

In more recent times, development partners such as the Asian Development Bank (ADB) have assisted in redesigning and constructing some of the better Pol Pot schemes as well as implementing some new small to medium scale schemes. Additionally, the Chinese government has provided loans to Cambodia and constructed new, large-scale, schemes. The Chinese schemes generally lack quality and mostly fail to provide lasting benefits.

In January 2013, 34 years after the end of the Pol Pot era, I joined the Egis team implementing the **WATER RESOURCES MANAGEMENT SECTOR DEVELOPMENT PROGRAM, CAMBODIA (CDTA 7610-CAM)** as irrigation specialist. ADB contracted the program delivery to the French consulting company, Egis. The program aimed to strengthen all aspects of water sector development and management under the responsibility of the Cambodian Ministry of Water Resources and Meteorology (MoWRAM). My team leaders, incidentally, were from Qld; initially Ian Fox (ex WRC) and secondly Ian Wood (ex DERM).

My assignment focused on strengthening the Ministry's:

- Irrigation Department's capacity to manage irrigation schemes and carry out O&M.
- Farmer Water User Community (FWUC) Department's capacity to re-establish and support each irrigation scheme's FWUC.

Cambodia has adopted a Participatory Irrigation Management (PIM) policy. Under PIM the government provides, operates and maintains the headworks and main canals and the farmers, through their elected FWUC, coordinate with the Provincial Irrigation Department and provide and operate the distribution system to each farm.

The main challenges faced by the Irrigation and FWUC departments, were:

- Absolutely zero funds were being allocated by Treasury for O&M of irrigation schemes. Schemes were constructed under capital works funding but quickly lost functionality due to no annual O&M. Some schemes had been rehabilitated but again had fallen into disrepair.
- Although some schemes established a FWUC during the construction phase, most FWUCs had ceased functioning due to lack of headworks and / or canal maintenance.

Of the approx. 11 Billion people who have ever lived, over half have died of malaria.

Irrigation in Cambodia *(continued)*

The head of MOWRAM's Irrigation Department advised that he had never received any funds for O&M of irrigation schemes. I set about assisting the Irrigation Department to establish a working relationship with Treasury. This led to the development of a procedure for preparation of an annual O&M budget submission for schemes which were still in operational condition.

A set of criteria for objectively assessing scheme condition and effectiveness was developed and agreed. Schemes with less than 60% operational effectiveness remaining would be rehabilitated under capital work funding before becoming eligible for O&M funding. Schemes that were assigned an O&M budget would be allocated a FWUC Department budget to re-establish their FWUC and train elected farmers to carry out the duties of the FWUC.

Provincial workshops and National stakeholder seminars provided input to set up modern irrigation scheme management and O&M arrangements.

The government's responsibilities for scheme management, O&M and farmer responsibilities were collated and finalised in two key documents; a *"Policy and Implementation Manual for Operations and Maintenance of Irrigation Schemes"* and a *"Policy and Implementation Guideline for Sustainable Farmer Water User Communities (FWUC)"*. Finally, the MOWRAM Minister endorsed these two documents.

I also undertook a follow-on project to review and update the FWUC Guideline in 2018.

Currently, in Cambodia, there are some 2500 schemes identified but only 170 are fully operative and have an O&M budget. Operating schemes serve some 490,000 ha of supplementary irrigation for wet season crops and full irrigation for some 110,000 ha of dry season crops (mainly rice including *Sunrice's* contract farming operations). Many schemes now have an effective FWUC. Additional schemes are being rehabilitated each year.

An interesting side project I undertook was to design a permanent sprinkler irrigation system for the Australian charity, *"Cows for Cambodia" (CFC)*. CFC have now established irrigated pasture farm near Siem Reap. The charity owns a herd of cows and bulls. The cows are pregnancy tested and then loaned to poor families. The family keeps the calf and is guided in its care. The cow then returns to the charity to repeat the cycle with another poor family.

The charity runs very popular tours to Cambodia with the profit providing a source of funds to operate the charity. The charity also operates schools, builds houses for homeless families and conducts *"rice runs"* which provide a poor family with a large sack of rice. Please have a look at the charity's website https://www.cowsforcambodia.com/ and social media site https://www.facebook.com/cowsforcambodia# . You will see from these sites that recovery from the Pol Pot era is ongoing and poverty is still everywhere.

After all the suffering endured by the population in the Pol Pot era, the Cambodian people rewarded me with an opportunity of a lifetime and wonderful friendliness. The life of the people is improving gradually but there is a long and challenging road ahead.

Tonle Sap river scene between Phnom Penh and Tongle Sap

Irrigation contractor's pump set-up for a group scheme serving 1000 ha. Near Siem Reip

Tonle Sap river dragon boats at Phnom Penh

The GW of China can *not* be distinguished from space but the 26 000 ha. of greenhouses in Almeira, Southern Spain can .

A Fascinating History

This story was forwarded to me by Webmaster Jon Henry for possible publication, which I am only too happy to do, particularly as I had the pleasure of working under the leadership of the gentleman in question for ten years – E**d**.

Oleg Vitte, known to his friends as Alec, was born in 1923 in Harbin, in Manchuria in northern China, where his father Richard Vitte (born 1868, a 'Baltic German' of Latvia, then part of the Russian empire) was an administrator with the Russian Railways. Richard began his career with the newly opened Trans-Caspian line based at Tashkent, and then transferred to the Trans-Siberian line which was still under construction. Harbin was founded in 1898 by the Russian Tzarist government to build a shortcut rail line between Chita in Siberia across to Vladivostok on the far east coast of Russia, known as the Chinese Eastern Railway. In 1923, the Russian Revolution and subsequent Civil War reached the far east coast and Vladivostok, where the defending White Army was finally defeated by the Soviet Red Army.

In 1924 an agreement was signed that only Soviet and Chinese citizens could be employed by the CER, meaning railroad employees had three choices – accept Soviet citizenship, apply for Chinese citizenship or emigrate. Richard chose the last – his eldest son by his first marriage had been executed by the Red Army, and Richard, himself, had been kidnapped and ransomed by Chinese bandits, with continuing threats against his youngest son, so life in Harbin was becoming fraught with danger. In late 1925, Richard and his second wife Nadezhda (a Ukrainian born c.1887), sons Vladimir (16) and Oleg (2), and Richard's cousin Alexander Vitte and his family, caught a fishing boat to Japan, and then a Japanese cargo vessel, the *Mishi Na Maru* down to Australia, taking only the luggage they could carry. They were interviewed (in French) and processed at Thursday Island and sent on to Brisbane.

None of the family could speak English which meant employment opportunities were few. Initially supported by the Russian community in Brisbane, the beginning of the Great Depression just four years after arrival was disastrous for the family. Son, Vladimir took a train up to Tully in northern QLD to find work in the cane fields as a cutter. He informed Richard that the cane cutters needed a cook in their barracks, so Richard, now 62 years of age, left the family in Brisbane and went up to Tully, taking his wife's recipes with him. Just two years later, Richard's wife died unexpectedly, leaving 8 year-old Oleg alone, bewildered and grief-stricken. Richard came down by train, buried his wife, collected Oleg and took him up to live with them in the cane-cutters' barracks, a tin shed divided into 5 small bedrooms, (2m x 3m) with corrugated iron dividing walls, holding just two bunks, no furniture, and an added mattress on the floor for Oleg There were no bathroom facilities or running water, only the creek and an outside 'dirt dunny'; there was no electricity, and their single window shutter was propped open with a stick; and the cane cutting gang shared a communal kitchen/dining room at the end of the hut – not an ideal home for a young child, living with a bunch of often-drunken and rowdy Russian cane-cutters. On one occasion, Vladimir accidentally shot himself, very close to his heart, supposedly when shooting rats in the kitchen (Vladimir was an excellent shot, winning awards at the Tully Rifle Club) – this only a month after a similar accident with another barrack's occupant. Each day, Oleg had to walk several miles into Tully to attend the primary school there.

They spent the next three years living in the barracks, until Richard was granted citizenship and a pension, and moved into a small house in Tully. Oleg, a bright student, was granted a scholarship to Thornburgh College in Charters Towers to complete his education. He graduated with honours, and had just joined the public service when he enlisted for naval service in WWII in November 1941, aged 18, for which he needed his father's approval.

His elder brother Vladimir enlisted in the Royal Airforce and served as a Warrant Officer, flying transport planes such as DC3's in Africa and over Europe.

Tragically, Oleg's beloved 'uncle' and godfather Alexander Vitte and his wife Nina chose to return to China in 1936, living in Shanghai when the Japanese invaded. They were placed in an internment camp north of Shanghai, Alexander dying of starvation within two months. Nina was transferred to another camp in a warehouse opposite The Bund in Shanghai, and survived the war despite constant allied bombing of their camp, and harsh living conditions, only to accidentally drown in the Whangpoo River on being released when the American Fleet sailed into Shanghai Harbour. The family received the official Cablegrams from the Department of External Affairs, marked SECRET, explaining her unfortunate death.

After enlistment, Oleg firstly trained on the auxiliary minesweeper *HMAS Kianga* in Brisbane, then transferred to the newly commissioned corvette *HMAS Gympie* which was deployed as an anti-submarine patrol ship

Olympus Mons on Mars is the highest mountain in the solar system (21.9km).

A Fascinating History *(continued)*

There were a few memorable moments during his service: being involved in the search for a Japanese submarine detected off the southern Queensland coast; searching, detecting and destroying mines reported in the sea channels; escorting and protecting large international convoys through the Coral Sea and Solomon Sea. On one occasion, several larger ships ran aground on a reef, and the escort corvettes had to patrol around them to protect them from any lurking subs until they were re-floated on a high tide. On another occasion, several corvettes were practising depth charging in the Solomon Sea, when a shoal of stunned red emperor fish floated to the surface. Several boats were lowered to collect them, which provided them with delicious fresh fish meals; Then there was the ultimate embarrassment of blowing off part of the stern of the ship during depth charge practice when the depth charge became stuck in the launcher, which required their return to Brisbane for repairs. Oleg recalled one incident when he got lost in a sea of war ships as far as the eye could see in the harbour at Manus Island New Guinea, when Oleg was ordered to take a sick crewman by motor launch to a hospital ship. By the time the seaman was treated and well enough to return, it was dark and they couldn't find their way back. Luckily, one of their fellow crewmembers recognised the problem and signalled the ship's position with the signal light.

Several months before the end of the war, Oleg was transferred to *HMAS Penguin*, a RAN base located at Balmoral on the lower north shore of Sydney, to train for radar operations which was interrupted when peace was declared.

He was discharged in March 1945 and enrolled in the University of Queensland studying civil engineering. After graduation, Oleg was employed as Shire Engineer based in Longreach for several years. In 1955, he took employment with the Brunei Government as a civil engineer for five years, constructing the new airport and roads and bridges, and enjoying life as an expat, invited to numerous celebrations and cocktail parties by the Sultan of Brunei at the Palace, including a dinner for the visiting Duke of Edinburgh. He returned to Australia when his young daughter was ready to begin her schooling, and was appointed by the Queensland Government as an engineer in SW QLD based in Charleville for several years, in charge of underground water, and drilling bores, for cattle and sheep stations, and town water supply including the bore at Birdsville. He then transferred to Brisbane in 1966 where he was later promoted to Chief Engineer and head of the department of Underground Water in the Irrigation and Water Supply Commission, retiring in 1983.

Oleg suffered a further tragedy when he lost his beloved wife Pat, in a car accident in 1991. He continued to live a very long life, enjoying his gardening and watching football, remaining close to his daughter. He died in 2022 aged 99 years.

For a man who had a very turbulent and tragedy filled life, he made an important and productive contribution to his new country and led an honest and honourable life.

Virtual WW2 Honour Roll

IWSC old-boys Gary Corbett and Phil Sternes have launched an exciting venture and are seeking input from fellow 'baby-boomer' old boys.

The IWSC-centric initiative is a two-pronged approach to recording the contributions of former Commission officers to the Australian armed services during World War II.

- The first task is to complete a Virtual WW2 Honour Roll (Draft 1 shown in part adjacent) honoring all those IWSC officers who served, whether or not those officers were working for IWSC at the outbreak of WW2.

(Draft 1 – 22 July 2026)

IRRIGATION and WATER SUPPLY COMMISSION

VIRTUAL WW2 HONOUR ROLL

Name	Enlistment			Most Senior Position held within IWSC
	ARMY	RAAF	RAN	
Baturo, W	Polish Army in Exile			Senior Hydrographer
Bellion, W		1941		Supervising Draftsman, Groundwater Branch
Boon, K	1941			Water Officer, Theodore
Brannelly, W		1941		IWSC Secretary
Carmichael, K	1942			Chief Engineer, Rivers and Streams Branch
Chettle, G			1945	Senior Draftsman, Mareeba
Dean, M	1940			Boring Inspector
Granat, S	Polish Army in Exile			Hydrographer
Haigh, F (MBE)	1941			IWSC Commissioner
Hannam, H	1942			Engineer in Charge, Mareeba Dimbulah Irrig Area
Johnson, G	1940			Officer in Charge, Stores and Supply Branch
Learmonth, F	1943			IWSC Commissioner
Llewellyn, C		1941		Snr Clerk Expenditure, Snr Works Acct Fairbairn
McCall, S	British Army			Senior Engineer IWSC
Payne, A	1941			Senior Clerk, Administration Branch
Pearce, G				IWSC Deputy Commissioner
Plint, H				Boring Supervisor, Groundwater Branch
Prosser, J		1942		Works Supervisor, Construction Branch
Rees, G	Royal Navy			Construction Supervisor, Mechanical Branch
Robinson, S		1941		Supervising Draftsman, Irrigation Branch
Rutledge, V	1941			Wages Clerk, Admin Branch
Schmidt, V	1940			IWSC Engineer (later Chief Engr of Local Govt Dept)
Seabrook, A	Royal Air Force			Hydrographic Assistant
Skillington, F		?		?

A horse running around a racecourse on a path 5m out from the rail runs 5x 2pi units (16m – about 6 lengths) further than a horse on the rail.

Virtual WW2 Honour Roll

- The second task is to compile a Document supporting the Roll, containing as much information as can be gathered on each of our WW2 old-boys from any number of sources, one being old-boys who may have photos, paperwork, stories etc sitting in a bottom drawer somewhere since the IWSC days.

The idea for this IWSC-centric initiative was inspired by the recent discovery by Webmaster Jon Henry on a Virtual War Memorial website, of the involvement of old-boy Alec Vitte through his service in the Royal Australian Navy (see pages 10 and 11)

No such similar 'organic' life stories were able to be located for any of the other IWSC old-boys, so the idea to do something similar was hatched. However, the initiative will only achieve an optimal outcome through the support of 'younger' old-boys sharing what they may know of (or have on) these 'older' old-boys.

Should you wish to read further about this initiative or find out what has been 'discovered' to date, just click on the history section of our website. IWSC Virtual WW2 Honour Roll

Or better still, should you seek to be involved because you have something you consider could add value either through additions of names to the Roll and/or supply of material for inclusion within the scope proposed for the Supporting Document, the editors can be contacted by e-mail as follows:

- Phil Sternes: phillipsternes@gmail.com
- Gary Corbett:gcorbett00@gmail.com

Farm Advisory Service Early Days

Randall Cox

In March, Randall Cox delivered a eulogy to Ian Boyce at his funeral which included the story of Ian's early career in Farm Advisory and which I thought was well worth publishing (a slightly edited version) in its own right – **Ed**.

This afternoon I want to give you some insight into Ian's early working life because those were formative years not just for him, but for water supply development in Queensland. At that time, water resources, both groundwater and surface water, were still largely undeveloped. Most landholders had little technical knowledge about groundwater, and the private sector offered very little support. Today, if a farmer wants a bore, there are likely to be several local companies ready to advise on drilling, materials, pumps, bore design and costs. But back then, the expertise lived inside the Irrigation and Water Supply Commission. The Commission had its early roots in developing town and stock-route watering supplies, and a long and proud history of developing deep bores in the Great Artesian Basin. The Commission then moved into a phase of constructing large dams and major irrigation projects. Yet while the big infrastructure projects were under way, many small farmers and graziers were left to fend for themselves. They borrowed money to build small farm dams that were often poorly designed and prone to failure. When it came to groundwater, they sometimes drilled bores in the wrong place, installed pumps without understanding whether the bore could be relied on in drought, drilled too close to the coast and eventually pumped salt water, or avoided drilling altogether because they were not aware that good groundwater prospects existed on their properties.

Change came in the form of the Queensland Government's Farm Advisory Service, which included the 'Groundwater Advisory Service', which was where Ian commenced his career. As early as 1958, when Ian and I were little boys in shorts, the member for Barambah, one Joh Bejelke-Peterson had been pushing for such a service. He said in parliament that Farm Advisory Services, including a Groundwater Advisory Service would help many more people than large expensive dam-based schemes that benefited only a few. Enabling legislation was introduced. And so, the Commission, as the state's major repository of technical knowledge about water, began training technically able people, to take knowledge out onto the farms – to advise graziers and farmers on groundwater supply development and help them qualify for low-cost loans through the Agricultural Bank.

But working with farmers required more than technical knowledge, particularly around a mysterious topic like underground water. There were myths and fables to be overcome and trust to be built. Groundwater advisory staff knew that in a pub it might better to not talk about politics and religion – but it was definitely better to not talk about 'water divining'. Farmers were taking real financial risks to construct bores and they needed confidence in the advice they received if they were to move on from old ways, and confidence was not possible without trust. All of the groundwater advisors had the advantage of not being 'shiny bums' from the city – the advisors were out on the farm, walking the paddocks, becoming known and trusted faces.

As the private sector developed its own expertise and new businesses emerged, the need for government-provided advisory services naturally declined. The Groundwater Advisory Service gradually contracted and eventually ceased operating. That's a natural progression in a free enterprise system of government – the Service had fulfilled its purpose well for the period it was most needed. Ian and the other advisors progressively moved into related roles in water resource management, where the relationships they built during those early years proved invaluable in their later careers. They played a significant role in the development of agriculture in Queensland.

Grasshoppers have ears in their stomachs.

Sunwater Snippets

Julian Murphy
Julian is Media and Issues Lead

A major milestone for Clare's water future

Sunwater has delivered a significant upgrade with the completion of the new Clare Water Treatment Plant. This investment strengthens water security, supports community resilience and ensures safe, reliable drinking water for residents, schools and essential services well into the future.

Built alongside the existing facility while maintaining uninterrupted water supply, the new plant features advanced treatment processes, increased capacity, remote monitoring capabilities and an innovative on-site electro-chlorination system that enhances safety and efficiency.

A big thank you to project partners Protex Water and Jacobs, as well as the many local contractors and suppliers from the Burdekin and Townsville regions who helped bring this critical infrastructure project to life.

Water year off to a strong start

Significant wet season rainfall has resulted in a great start to the new water year across regional Queensland. Sunwater has confirmed all high priority allocations across the state will start at 100 per cent for the fifth consecutive year.

Only five of Sunwater's 22 water supply schemes will begin the 2026–27 water year with medium priority allocations below 100 per cent.

Inflows into Fairbairn Dam, near Emerald, have delivered welcome numbers for Central Highlands growers that rely on water from Queensland's second biggest dam.

Customers for the Nogoa Mackenzie scheme will start the year with a with a medium priority allocation of 50 per cent, after being at zero per cent 12 months ago.

Ben Anderson Barrage upgrade

Sunwater is undertaking critical upgrade work at Ben Anderson Barrage near Bundaberg to ensure the ongoing safe and reliable supply of water to irrigators.

The project involves replacing shutters and other metal components in the 60-year old structure.

These assets have been maintained previously but now require replacement or significant refurbishment works due to age and condition. The work requires lowering the water level of the barrage for safe access.

Sunwater adopted an innovative approach of using water-filled barriers, which meant the water level did not have to be reduced as much.

Channel lining season is officially underway

In the first week of the Burdekin Haughton scheme shutdown, the team delivered an impressive 380 metres of lining on the Dalbeg Main Channel – almost double the usual weekly target of 200 metres.

With that milestone achieved, crews were mobilised to Clare, where a further 180 metres was completed on the Clare Main Channel in a week.

Seqwater Activities

Kristen Smith
Community Engagement Team Leader, Seqwater

As part of a program of staged strengthening works, SRG Global Civil Pty Ltd began precision drilling through the North Pine Dam wall in November 2025 to commence installing 55 post-tensioned anchors to enhance the safety of the dam, ahead of its planned major upgrade.

The anchors range from 39 to 101 metres in length. Spanning from the dam crest into the foundation rock, the 91 strand anchors use almost 250 km of high-tensile steel strand, boosting structural integrity by providing around 75,000 tonnes of effective weight to the dam wall.

The staged strengthening work underway is supporting approximately 50 jobs on-site and is expected to continue into late 2026, weather and site conditions permitting.

Seqwater has also achieved a significant milestone in its Lake Macdonald Dam Improvement Project, completing construction of a temporary dam wall (an upstream cofferdam) and paving the way for the next critical phase of works.

Lake Macdonald Dam is located in the Noosa hinterland on the Sunshine Coast and is a key drinking water source for local communities.

The cofferdam marks the completion of Phase 1 of the upgrade, an essential step to ensure the dam meets modern engineering standards and continues to operate safely while supporting long-term water security for the region.

With the cofferdam now in place, and acting as a temporary dam wall, works will move into Phase 2 – the demolition of the existing spillway and embankment.

Demolition is set to begin soon and will last approximately 15 days. Once demolition is completed, construction of the new dam will begin.

The new design includes a split-level concrete spillway, a lower ogee crest at the original lake level, and an upper labyrinth spillway to safely manage higher flows.

The project will support more than 150 jobs throughout construction, with works expected to continue through to 2029, weather and conditions permitting.

Work is well underway on these projects and Seqwater is also progressing the next tranche of dam upgrades, with early works underway on the Somerset Dam Improvement Project and the Options Analysis progressing on the Wivenhoe Dam Improvement Project. These dam upgrades, combined with Seqwater's largest ever capital delivery program, is securing South East Queensland's water future for generations to come.

For more information, visit the Seqwater webpage.

There are over 1200 varieties of watermelon.

HEALTH *and beauty*

Food for Thought

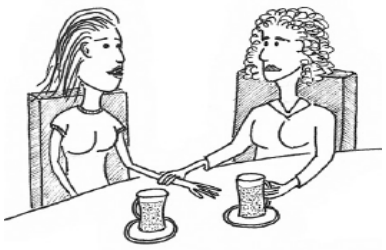
The Press regularly publish snippets of research which readers may, or may not, find helpful. The most useful thing I can do is pass them on for others to ponder. Caveat emptor – Ed.

According to a Brazilian study, people who get more of their daily energy consumption from ultraprocessed foods are more likely to have faster decline in brain function.

The study followed about 15,000 people for 6 to 10 years and found that those who ate the most ultraprocessed food showed a 28% faster cognitive decline and a 25% faster executive function decline compared with those who ate the least.

Research at a California University has come up with a cracking way of avoiding dementia. The scientists tracked 40,000 men and women over a 15 year period. This study suggests that people who eat an egg twice a week may have a lower risk of developing Alzheimer's disease than those who didn't. The benefits could be even greater for those who eat five a week.

It's good news for the Australians who eat on average 260 eggs each year. The researchers suggest the nutrients in eggs may help to protect the brain against dementia developing, although they stress that this not prove eggs protect – merely that there may be a link.



Your husband is the best person to tell your secrets to. . He's probably not listening.

Exercise those Brain Cells

Q: In a certain institution there are 100 inmates of whom some are one legged. All one legged inmates wear a shoe. 50% of the others have one shoe each. How many shoes are there in the establishment?

Answer on page 6 .

Anthony van Dyck 1599-1641
Margarita de Vos

That spinal surgeon is really concerned about whiplash

Green Light?

A UNSW Sydney Centre for Healthy Brain Ageing study followed more than 1000 older Australians for up to 12 years, researching causes of depression. The study concluded that living in neighbourhoods with greater tree canopy may help to protect older people. Those who lived on leafy areas had fewer depressive symptoms over time .

"Trees provide far more than shade and visual appeal," said the lead author from the university's psychiatry and mental health faculty.

"Neighbourhoods with more tree cover encourage people to spend time outdoors, be physically active and connect with their communities – all of which are important for maintaining good mental health as we age."

So perhaps *The Courier Mail* should be a little less scathing about "leafy green suburbs".

Green, the Colour of Envy

Way back in the 1990s, I was told that the then department had conducted an informal survey of staff in the Bundaberg region regarding their level of contentment with their conditions of employment, salary and work load. To a man, they all considered that all other classifications were better off.

Around the same time, my dealings with landholders brought me to clear understanding of the word "equity" – it means no other so-and-so getting something I'm not.

But, as George Orwell said in *Animal Farm,* "all animals are equal but some animals are more equal than others."

Approx 20% of all known mammals are bats.

The Vagaries of Language

In England, the Royal Mail delivers the post. In America, the Postal Service delivers the mail. And in Australia, nobody does much of either any more.

Need for Precision in Language

A woman asked her husband to get a litre of milk at the shop. "And if there are any avocadoes, get six." When he came home, she asked him why did he get six litres of milk. "There were avos,"he replied.

Language Confusion

We had a new volunteer at the Theatre recently. I asked the President if he knew where she came from. I heard him say, "Her father's had dementia." What he actually said was, "Her father's at the Men's Shed." I ordered my new hearing aids!

Proper Language

In the supermarket recently, Helen observed a small boy, probably around 6 years old, asking his mother, "Mummy, can I have a chocolate?" His mother responded, "Now just think about that. Do you mean 'can' or do you mean 'may'? A short pause of contemplation, and the boy said, "Mummy, may I have a chocolate?" "Good boy. You certainly may have a chocolate."

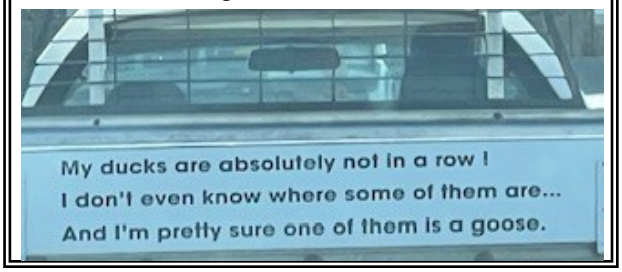
Language Definition

On the television, the scientist ventured, "The bird flu decimated fifty percent of the flock." By my calculation, one in ten of 50% is 5%, which means that 95% of the flock were unaffected – not nearly as serious as he was implying. That is almost certainly not the message he intended to convey, but that is really what he said.

This typifies the dilemma for dictionary makers. On the one hand, they need to define the meanings of words and on the other reflect the changes in meaning which are inevitable in a living language.

A Sign of the Times

On the back of an Ipswich ute:

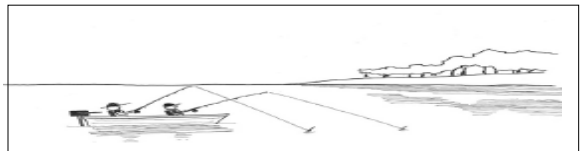


Terry's Trivia (from the June Indooroopilly luncheon.) - Answers on page 6)

1. Australia's second oldest city is?: (i) Bathurst; (ii) Ballarat; (iii) Brisbane; (iv) Hobart; (v) Melbourne.
2. Don Bradman's middle name was?:(i) George; (ii) Guthrie; (iii) Gerard; (iv) Gerald; (v) Geronimo.
3. The Fitzroy Lions merged with the Brisbane Bears in? (i) 1976; (ii) 1986; (iii) 1996; (iv) 2006.
4. Who was the first to argue that good government needed conflicting views?: (i) Socrates 400BC; (ii) Confucius 500BC; (iii) Descartes 1600; (iv) Machiavelli 1500; (v) Voltaire 1750;
5. Who was the NZ batsman who faced the underarm delivery? (i) Russell Crowe; (ii) Lance Cairns; (iii) Dayle Hadlee; (iv) Brian McKenzie; (v) Paul Bracewell; (vi) Teddy Tahu Rhodes.
6. Who said, *"It was a wise man who invented beer"?:* (i) Ernest Hemingway; (ii) Marcel Proust; (iii) Julius Caesar; (iv) Plato; (v) Fidel Castro; (vi) Henry VIII.
7. Who was the first Aust political leader to be supported by a Rupert Murdoch newspaper? (i) Robert Menzies; (ii) Harold Holt; (iii) John Gorton; (iv) Arthur Calwell; (v) Gough Whitlam.
8. Giraffes have two to five short knobs atop their heads and these are called: (i) knobs; (ii) pointers; (iii) horns; (iv) antlers; (v) ossicones.
9. In deepest Siberia when winter temperatures fall to minus 40°C. what is this in Fahrenheit?
10. The Latin *id est* means: (i) for example; (ii) in itself; (iii) and so forth; (iv) that is**;** (v) whatever will be will be.

A homophonic limerick

Law Lecturer
If asked, "Are your nerves feeling taut?"
this lecturer's bound to retort,
"Just as soon as I've taught
them the week's final tort,
I relax with a coffee and torte."



My wife used to drive me to drink.
You're lucky. I had to take a bus.

With 23 people in a room there's a 50% chance of two having the same birthday.

Book Club

In the late 1980s and early 1990s, Tom Fenwick guided us through Queensland's early water reforms. Historical perspectives on water development in the United States such as Marc Reisner's *The Cadillac Desert* explored western US water management, political corruption and environmental impacts, including the rivalry between the US Bureau of Reclamation and the US Army Corps of Engineers to deliver water projects.

Last year, while working on drought issues in regional NSW, I led a discussion with irrigators about adapting to changing water availability. One participant was David Farley, who later became One Nation's representative for Farrer in the recent by-election. He asked whether I had read *The Dreamt Land*. I now have.

The Dreamt Land: Chasing Water and Dust Across California, published in 2019, was written by journalist Mark Arax, the son of Armenian immigrant farmers in California. Drawing on his experience of the state's recurring shifts from drought to flood and back again, Arax combines historical accounts, reported conversations and interviews with members of powerful agricultural families to portray California's "hydro-illogical" cycle. Unsurprisingly, these decisions were highly political, balancing social, economic and environmental considerations.

The social and environmental consequences include the hardship faced by undocumented workers, primarily from Mexico; altered river flows; declining water quality in rivers and reticulation systems; groundwater depletion; severe land subsidence; and introduced fish species.

Arax suggests that economic empires often followed a common drought strategy: interpret government rules creatively amid limited enforcement, deplete groundwater to establish tree crops, then invoke the threat of losing crops that feed the nation to secure more infrastructure for storing and diverting surface water. This cycle increases the risk of economic, social and environmental collapse, a danger compounded by the many government agencies involved, always revolving around the same key question: Who gets to decide what to do with the land and the water in California, how and why?

Overarching those stories and the many long and detailed bits about legislation, the narrative sticks to the theme of the relationship of individuals and communities with the land – and also with one another. Among the more poignant take-aways are insights into the Mexicans of California, both historically and at present, and how that particular community is perceived and treated.

Following an in depth series of conversations with one of the irrigation empire kings, Arax concludes with a ten point plan to address the complex and interconnected suite of outstanding issues.

Read the book to see if you agree and how it may align with Queensland and Australian context. I reckon we have done a good job!

Graeme Milligan

A garden is a lovesome thing and a job for ever.

The Correspondent by Virginia Evans

Sybil van Antwerp is the correspondent – a retired 73 year old lawyer and prolific letter writer, whose letters come to reveal her character and the complexities of a life well lived.

One unexpected letter forces Sybil to confront aspects of her life that she has tried to keep silent and proves to be both confronting and cathartic, allowing her to accept her past.

Highly recommended..

Jean Yates

Office Bearers

President	Chris Robson	0402 822 828	chrisrobson52@gmail.com
Past Pres	Daryl Brigden	0418 710 697	darylbrigden@bigpond.com
Vice Pres	Greg Claydon	0417 009 385	greg.k.claydon@gmail.com
Secretary	Rob Ayre	0418 151 790	secretary@waterysauces.org.au
Treasurer	Tony Clarey	0412 701 626	treasurer@waterysauces.org.au
Executive	Phil James		luckyphil512@gmail.com
	Peter Butler		pbut6406@icloud.com
Editor	Ian Pullar	3281 4437	hpullar@bigpond.net.au
WebMaster	Jon Henry		webmaster@waterysauces.org.au

If I order a soft drink from the bar I always ask for a glass. Straws are for suckers.