

## Obituary for Dr James Craig Galletly



24 August 1927 – 5 June 2020

### One of Australia's Great Water Champions

Born in Warwick on 24 August 1927 just before the Great Depression, Jim (James Craig) Galletly's early life was one of disruption and substantial poverty for his parents Janet and Stewart, and for Jim and his four older siblings Neil, Stewart, Jean and Naomi. Stewart Galletly, a trained UK metal draughtsman and model maker who helped lay the keel of the Titanic, and art and physics teacher Janet McKelvie from Undulla Station west of Tara, met when Stewart was posted to the Miles area as a Presbyterian Bush Brother. Marrying in 1915 the day before the Gallipoli landing, Jim's parents struggled for survival despite their skills and education, beginning their family life on a property at Culgara near Undulla at the time prickly pear was rendering thousands of hectares of country unproductive. They moved for work to Warwick, Glen Innes, and then on to Woodridge – firstly living in a 'bag palace' with bark roof, bag walls and a dirt floor, and then in a more substantial pise dwelling built from materials on site by Stewart Galletly, which featured in the *Queensland Agricultural Journal*, 1 August 1937.

To supplement their income they milked a few cows, with Jim delivering cream to the Kingston factory on his bike.

Eventually, with a small inheritance and the slow return of national prosperity, the family purchased a dairy farm at Mount Larcom, milking 40 Jersey and AIS cows to supply cream to Port Curtis Dairy. Jim enjoyed working and living on the dairy farm, noting the healthy year-round flow and perch numbers in the creek he crossed on his way to school every day. With his early schooling interrupted several times by family moves and attending country schools with limited grades, Jim finally completed Grades 4 to 7 at the one-teacher Machine Creek School outside Mt Larcom. In 1942 at the age of 15, Jim was one of a select few Queensland school students to pass the Scholarship exam, enabling him to attend Queensland Agricultural High School and College at Gatton from 1943 to 1946.

This was the start of a lifelong association with the college. Conditions were basic in 1943, with the main college buildings being used as a US

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Army base hospital, but Jim excelled. Dux of his class each year, he was good at sports – boxing and cross-country – and enjoyed the large practical component of college courses. Jim recalled planting 10 acres of opium poppies to supply the hospital with medicinal heroin. In 1946, as one of only two students to win open scholarships to The University of Queensland, Jim unsurprisingly chose agriculture, completing his degree in 1950.

Jim's Bachelor of Agricultural Science led to work as a soil conservationist with the Queensland Department of Agriculture and Stock in 1951, based at Pittsworth. He found soil conservation work with farmers thoroughly satisfying, laying out and supervising construction of more than 150 km of contour bank erosion-protection systems – some of Queensland's earliest. It was in Pittsworth that he met and married Lenor Whittaker in 1954. Jim rarely talked to colleagues about his personal life, but in later life described his time in Pittsworth as “wonderful days”.

Jim moved back to Queensland Agricultural College (QAC) at Gatton as Lecturer in Agronomy in 1955, expecting to specialise in soil conservation. Unfortunately, staff deaths and losses saw Jim, the ‘willing horse’, taking on a huge range of subjects in a new three-year diploma course. Over his first 10 years, these subjects included Meteorology, Economic Geography, Soils, Surveying, Botany, Crop Agronomy, Tropical Agriculture, Rural Economics, Principles of Agronomy, and History of Agriculture, plus filling in for Plant Pathology and Chemistry. In addition to Soil and Water Conservation (Field Engineering), he also taught sections of the UQ agriculture course. Despite this course load, in 1968 he completed an external masters degree focused on soil–plant water relations. With the college's long boundary with Lockyer Creek, Jim also became very aware of its continuous healthy flow for 365 days of the year and its deep swimming holes.

A visit to the UK and Israel in 1972 – particularly a six-week Volcani Institute irrigation course and travel from Israel's north to the Negev in the south – left a deep impression on Jim. Large-scale trickle irrigation was being developed, and Israel was ‘making the desert bloom’ with more efficient irrigation, based on national consensus that water was a valuable community asset, to be rationed and

distributed equitably across irrigable soils. It was a vision Jim carried with him to the end of his life. His arguments were dismissed in some quarters as utopian, but few doubted that what he said was based on good science and generous, genuine belief.

Jim built one of the earliest rainfall simulators in Queensland, based on designs seen in Israel. Several of these units were widely used to demonstrate the soil-protection effects of crop residue and were a valuable contribution to Queensland soil-conservation extension efforts in the 1970s and 1980s. At that time, Jim gained great satisfaction from running specialist fourth-year subjects on Soil and Water Conservation for QAC degree courses, maintaining contact with students for years after their graduation. From the mid-1970s most Queensland Department of Primary Industries soil conservation field services staff had undertaken Jim's courses at Gatton.

Jim was awarded the first QAC internally funded research grant to undertake a three-year investigation of irrigation water use on college properties. By then, overuse of Lockyer Valley aquifers was becoming obvious, and many irrigation farmers were running dry with dire financial consequences. In response, Jim designed some of the first flood-harvesting systems, with ring tanks and cheap, high-capacity, low-head centrifugal pumps providing an alternative irrigation water supply. Many hundreds of these structures now make a major contribution to the productivity of the Darling Downs and Lockyer Valley. Much of this work was done in association with the Lockyer Water Management Association and Crowley Vale Water Board, of which Jim was a founding member.

Jim was active in the Australian Institute of Agricultural Science and Technology, and was its Queensland President in the 1980s. In the 1990s he ran his own small farm at Crowley Vale, growing small crops and lucerne, and delivering produce to customers in his old Holden Ute which was known locally as the “Grey Ghost”. Always the innovator, Jim was an original paddock-to-plate small-scale farmer.

For nearly 75 years, Jim Galletly was associated with the Gatton region, the college and its more recent incarnation as a University of Queensland campus. His tireless community service included being District Commissioner for Scouts and

Treasurer of the Churchill Memorial Trust. He worked with the Lockyer District High School committee to fund a grand piano for the hall; led the push to start Meals on Wheels in Gatton; raised funds for the Gatton Senior Citizens Centre; and sang in the Choral Society. He was a member of the Gatton Shire cultural group; the Post-Polio support group; and a life member of the Leukaemia Foundation of Queensland. Several of these activities occurred as part of his involvement with Apex where he was Secretary and President, and then as a member of its 'Walking Stick Club'. Lenor was Jim's constant companion and committed supporter, working together with him in community service clubs and activities throughout their 64-year marriage. Opposite each other on Galletly Road at UQ Gatton are Lake Galletly and Lake Lenor, acknowledging the couple's contributions to the campus.

Jim's persistence over many years resulted in the Lake Apex Park wildlife and recreational area, a major community asset for Gatton. Social justice issues were always important to Jim, who was a long-term member of the Australian Labor Party. In later life he was active in the QAC Past Students Association and became a Freemason.

However, Jim's essential interests were always soil and water. Having observed the Lockyer Creek since 1943, and the irrigation water supply failures of the 1970s–1980s, he felt sure there was a problem with the publicly accepted account of the Lockyer Valley aquifer recharge system. He made this the topic of his PhD thesis, undertaken after retirement and completed at the age of 80, as one of the most senior UQ PhD graduates.

Jim's 2007 thesis on baseflow analysed many

years' creek flow and rainfall data to demonstrate the existence of large and previously unrecognised upland basalt aquifers, and their role in maintaining baseflow. He also identified the link between baseflow and alluvial aquifer recharge, and the likely mechanism of baseflow failure and aquifer exhaustion in the 1970s–1980s.

Jim's important PhD findings in the Lockyer Valley potentially provide answers to other catchments in eastern Australia, including those of the Murray-Darling Basin, which are also facing serious problems. Many have headwaters in volcanic uplands, with springs and waterfalls providing baseflow to catchment creek headwaters. And perhaps, as in the Lockyer Valley, they play a vital role in maintaining downstream aquifers.

Jim was a tireless writer to editors, water boards, authorities and commissions of inquiry, urging action on Australia's emerging water crisis, repeatedly emphasising the simple principles:

- Understand your catchment and basin; then they can be managed sustainably.
- To be sustainable, the volume of water extracted from any basin must not exceed the volume available to replenish it. If more water is taken, the system will keep failing.
- Streams and groundwater are intricately linked within a basin, but groundwater extraction is rarely measured or metered in Australia. You can't manage what you don't measure.
- Water planning, allocation and use in every Australian catchment and basin must be based on sound scientific knowledge and principles, and accurate field studies and measurement, rather than simulation modelling.



Lake Galletly, University of Queensland, Gatton.

Jim died in Toowoomba on 5 June 2020, supported by his three children – Tony, Kay and Sue and their families. His long and productive life had touched many people and communities. A humble, genuine, serious-minded but practical man, inexhaustible and doggedly focused on the task, Jim's was a life of service – doing the thoughtful, right,

fair and generous thing for his family, students, employers, community and the environment. One of Australia's greatest water champions, he will be remembered as someone unafraid to speak his mind, thoughtful, enquiring, idealistic, hard-working, and deeply concerned for both his local and broader communities.

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### Publications

- Galletly, J. C. (2007). *Baseflow in the Lockyer Creek* [PhD thesis, School of Land, Crop and Food Sciences and School of Natural and Rural Systems Management]. University of Queensland, Gatton, Australia. [https://espace.library.uq.edu.au/view/UQ:151944/n32570308\\_phd\\_totalthesis](https://espace.library.uq.edu.au/view/UQ:151944/n32570308_phd_totalthesis)
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