

Vale Professor Arthur McComb

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On 8 October 2017, we lost a great champion for Australia's aquatic environment with the passing of Professor Arthur McComb. Arthur was instrumental in the growth of aquatic ecosystem science and its management in Australia. The underlying theme of Arthur's research was to understand the fundamental processes that control plant biomass in aquatic systems and the place of primary producers in the functioning of whole ecosystems. His work is of considerable management significance, especially in relation to the effects of nutrients from catchments into receiving waters.

Emeritus Professor Arthur McComb, Murdoch University, was a very senior and well regarded Australian environmental scientist. Arthur had a long and distinguished career in the field, contributing to marine, estuarine and freshwater science at a high level of scholarship and productivity. He also epitomised the role of 'a gentleman and a scholar'. His polite and unaggressive style, combined with a gentle wit, endeared him to his

colleagues, students, and all who interacted with him. He also consistently applied his considerable scientific expertise to the practical application of improving environmental management. He was passionate in wanting to improve the state of environmental management, based on rational, logical and well founded biological principles. His research approach also provided the essential modelling capability to set management targets for nutrient reduction at whole ecosystem scale, in which WA has become a world leader in aquatic systems management.

Arthur McComb was born in Melbourne, on 9 December 1936, and graduated with both a BSc and MSc from the University of Melbourne in 1959. He undertook his PhD at the University of Cambridge, graduating in 1962. He then embarked on an academic life, first at the University of Western Australia (1963–88) and then as Professor at Murdoch University (1989–96) (Fig. 1).



Fig. 1. Arthur as a young man in 1958 with plants grown to determine the effects of the hormone, Gibberellic acid. Photograph by Arthur McComb; enhanced for publication by David McComb.

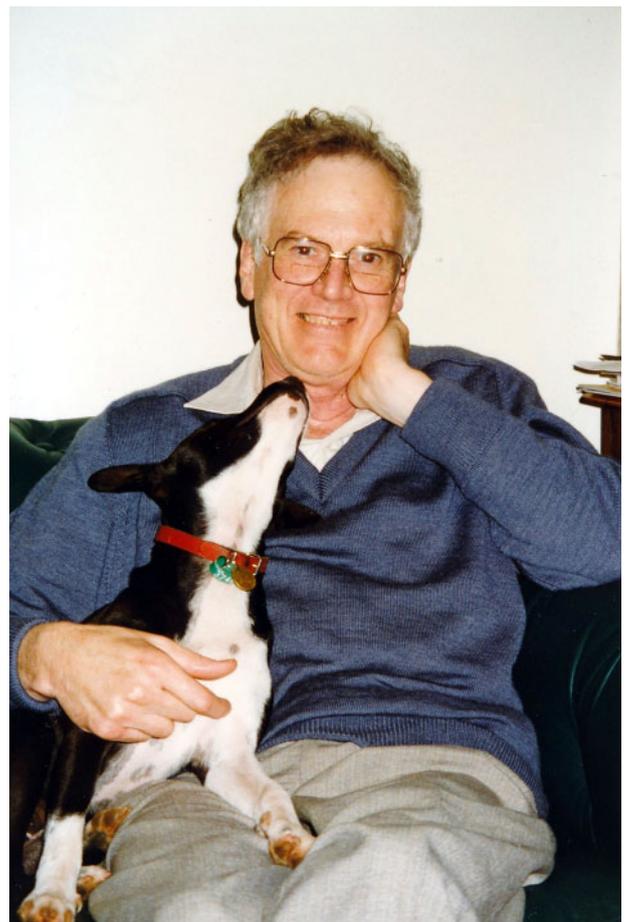


Fig. 2. Arthur relaxing with his adoring dog in 1995. Photograph by David McComb.

At the Botany Department UWA, Arthur met Jennifer Chessell, whom he married in 1966. Their son, David, was born in Perth in 1974 and daughter Christine was born in 1976. In 2015, they were delighted when David and his wife Jennie produced a grandson, Nils. A succession of family dogs, Arthur's interests in gardening, carpentry and nursing a 1935 Rolls Royce he brought back from England, rounded out a busy existence (Fig. 2). With a strong background in experimental plant physiology, Arthur was an expert on the control of plant growth in aquatic systems. Most of Arthur's research was concerned with the control of plant growth, at first with emphasis on plant physiological work in the laboratory, and later with plants in the environment, broadening to ecosystem function. Arthur was founding co-director of the Centre for Water Research with Professor Jørg Imberger (1982–88).

Arthur published more than 160 papers and book chapters, many of them concerned with eutrophication in nearshore systems, estuaries and wetlands. Thirty-five students completed PhDs under his supervision, four of whom hold chairs, two of them at European universities. His former students are spread throughout Australian science in universities, state government departments and consulting firms, confirming his influence on the understanding and management of marine, estuarine and freshwater systems. Arthur wrote or edited 9 books and 168 journal papers, including work on seagrasses, Australian wetlands, and eutrophic shallow estuaries and lagoons. He was active and chaired many scientific societies, including the Australasian Society for Aquatic Botany (ASPAB), the Australian Society for Limnology (ASL), the Australian Marine Sciences Association (AMSA), and the Royal Society of Western Australia (RSAWA).

The underlying theme of Arthur's research was to understand the fundamental processes which control plant biomass in aquatic systems, and while this had a strong physiological basis – for example the control of plant production by light and nutrients – it broadened to understanding the place of primary producers in the functioning of whole ecosystems. It recognised that all aquatic systems, from freshwater to marine, share many features which are important in ecosystem function and management. His work has been of considerable management significance, especially in relation to the accession of nutrients from catchments and their effects in receiving waters. Examples include the Blackwood River Estuary in south-western Australia, Cockburn Sound, a marine embayment to the south of Perth, and the Peel-Harvey Estuarine System. He became a guiding light in developing and evaluating the \$10 million research program of Cockburn Cement Limited in their Environmental Management Plan for shellsand dredging on Success Bank south of Perth. These systems are vulnerable to management decisions affecting their catchments, including point sources of nutrients such as industry and diffuse sources such as agriculture. This concept led Arthur to become involved more generally in the management and conservation of these systems. Studies on the

management of other estuaries in Western Australia followed. Arthur then became involved in advisory committees (including the scientific advisory committee of the Port Philip Bay Study in Victoria), and meetings about algal blooms in the Murray–Darling Basin, and with other government agencies.

In 1989 Arthur was appointed Professor of Environmental Science at Murdoch University, and went on to grow Environmental Science at Murdoch, cementing his role as a champion for environmental issues. He felt very much at home with Murdoch's ethos and at both UWA and Murdoch he was a constant contributor to the efficient functioning of a modern university and certainly never shirked yet another committee, or the chance to promote issues he felt important.

In Western Australia, Arthur's abilities to effectively chair committees as well as his scientific expertise were recognised by successive state governments. Arthur served as Chair of the National Parks and Nature Conservation Authority, and of the Lands and Forest Commission. Federally, he was a member of the Life Sciences Panel of the Cooperative Research Centres Committee.

Arthur was elected to the Australian Academy of Science in 1996, was awarded the Hilary Jolly Award, Australian Society for Limnology, 1991, the Kelvin Medal of the Royal Society of Western Australia in 1997, the Prime Minister's Centennial Medal for environmental science in 2001, the Australian Marine Science Association Silver Jubilee Award in 2002, and a DSc from Murdoch University in 2007. He was a Fellow of the UK Institute of Biology.

After his retirement in 1996, he continued to contribute to research at Murdoch through his appointment as Senior Scholar in Residence in Environmental Science, including heading the Centre for Organic Waste Management.

Professor Arthur McComb had a seminal influence on a generation of researchers. His gentle, unassuming manner combined with his effectiveness and incisive thinking resulted in major shifts in our understanding of aquatic ecosystems.

Arthur McComb was always a generous collaborator and provided unlimited opportunities for his post-doctoral fellows and postgraduate students. He was always willing to let someone 'give it a go'. I think he was fascinated to see where even the wildest idea would lead. Arthur said that the satisfaction he gained from seeing the results of his ecological research being applied, and the interaction with the community meant more to him than the kudos of a paper in a leading journal.

Arthur's legacy will live on through his writings and his students, and in our continued ability to manage the environments he cared so much about.

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