

ACWS – Celebration Speech, April 28 2008

Thank you Paul for those kind words.

Tonight is a special event for those of us who have a direct connection with the Adelaide Coastal Waters Study. We have come together to celebrate the completion of what I believe is another landmark environmental study for Australia. The ACWS can rightfully assume a place of pride and significance next to other similar major environmental studies such as the Port Phillip Bay Environmental Study, the Brisbane River and Moreton Bay Study, the Perth Coastal Waters Study, and the North West Shelf Joint Environmental Management Study.

As with these other studies, the ACWS was a product of long-held and increasing concerns with our management of the coastal environment. Just as in other parts of Australia, the Adelaide coastal marine environment was used as a convenient disposal site for urban runoff, treated wastewater, sewage sludge, industrial effluent, and stormwater discharge. We coined the term 'assimilative capacity' to justify our actions – incorrectly thinking that even though finite, oceans were so vast and expansive that they could happily deal with both continuous and episodic 'assaults' from our land-based activities. How wrong we were. That 5,200ha of seagrass has been lost off Adelaide's metropolitan coastline since the 1940s is clear evidence of this flawed thinking. The results of the ACWS reinforce the general observations that have emerged from the other studies I just mentioned – namely, that our environment is resilient, but it is also fragile. There are complex and subtle interactions involving feedback loops, hysteresis effects, severe non-linearities, and other relationships that we know little or nothing about. It took a right-wing former U.S. secretary of defence to clumsily articulate our

state of ignorance in the context of the war on terror. But Donald Rumsfeld could equally have been talking about environmental decision-making when, in a Defence Department Briefing on February 12, 2002 he declared that:

“as we know, there are ‘known knowns’; there are things we know we know. We also know there are ‘known unknowns’; that is to say we know there are some things we do not know. But there are also ‘unknown unknowns’ — the ones we don't know we don't know”

Prior to the commencement of the ACWS there were a number of *known, knowns*: we knew that water quality was degraded, seagrasses were disappearing, and that sediments were moving. There were also *known, unknowns*: we knew that elevated nutrients were implicated in these processes, but we didn't understand the mechanism. And now, as we celebrate the completion of this phase of investigation, what remains are the *unknown, unknowns*.

My involvement in the ACWS dates back to 1996, around the time the highly controversial *Multi-Function Polis*, or MFP concept was literally ‘on the ropes’. While not wishing to revisit the debate over what Denis Gaskin called “an international embarrassment”¹, one of the key stumbling blocks for the MFP was the environmental impact associated with the proposed development on the 1,840 hectare Gillman/Dry Creek site. This area was a low lying; former salt marsh located behind levee banks and was part of a major stormwater retention basin for metropolitan Adelaide. Interestingly, the important nutrient-stripping ecosystem service performed by these habitats has largely been lost along Adelaide's metropolitan coastline. These natural systems have been replaced by engineered structures such as pipes and concrete-lined drains and rivers that are highly efficient in terms of transportation, but

¹ (Denis Gaskin, former chief executive of the joint Japanese–Australian committee)

incredibly inefficient at removing harmful pollutants. As it turns out, it is the continuous input of nutrient rich wastewater coupled with the episodic deluges of highly turbid, highly coloured stormwater that have resulted in so much degradation off Adelaide's metropolitan coast.

Almost exactly a year after the MFP had been laid to rest, CSIRO's Division of Marine Research held a workshop at SARDI's Aquatic Sciences laboratories at West Beach, on September 15, 1997 to flesh out the environmental issues for Adelaide's metropolitan coastal waters. The Workshop Findings Report which was released mid-October of the same year identified the scope and framework for a \$4m/4 year environmental study – and so the Adelaide Coastal Waters Study was born. To the early architects of that framework: the then Executive Director of the EPA, Rob Thomas; Graham Harris (Director of the Port Phillip Bay Environmental Study); Bill Dennison, Botany Department, University of Queensland and Director of the Brisbane River and Moreton Bay Wastewater Management Study; Des Lord of DA Lord & Associates and Director of the Perth Coastal Waters Study; and Alan Butler at CSIRO Marine Research – may I say a very big thank you for making the initial task of scoping the current ACWS so much easier than it would otherwise have been.

It took another 2 years before tenders were called to manage the ACWS. In 1999, I accepted the position of manager of CSIRO's Environmental Projects Office after Graham Harris moved on to become Chief of CSIRO Land and Water. Together with Rob Molloy, we submitted our response to the ACWS EOI in February 1999. What ensued was a lengthy process of contract negotiations between CSIRO and SA Crown lawyers to sort out probity issues. I thank John Cugley for his perseverance and steady hand during this early period. In the end, concerns

about CSIRO monopolising the Study were unfounded as their Marine Division abandoned coastal ecology in favour of deep water R&D. The contract for Stage 1 was finally signed on February 15, 2001 and work on the ACWS officially commenced on Thursday 8 March 2001. David Ellis was appointed as the local ACWS coordinator on December 12, 2000. David is an extraordinarily talented project manager and the Study has benefited enormously from his skill, patience, and quiet determination to succeed at all cost. David, I could not have done this without you and I thank you most sincerely for the last 7 years of dedicated effort and for putting up with me during this time.

Once mobilised, progress was rapid. Within a short space of time we set up the Study office at Urrbrae, engaged with local research providers, established a scientific committee chaired by Graham Harris, interacted with the independent technical review group chaired by Des Lord, developed City 2 Sea – the Study newsletter, established a study web-site, set up an on-line document/data repository, participated in the Client's steering committee meetings chaired by Nicholas Newland and prepared the first of four years of fortnightly progress reports.

In 2002 Paul Vogel was appointed as the inaugural CEO and Chairman of the SA EPA. I knew Paul from his earlier days in WA where he worked as the Director of Environmental Policy in the Department of Premier and Cabinet and prior to that as Director of Environmental Systems for the then WA Department of Environmental Protection. I'm not sure if Paul knew that chairing the ACWS was part of his job description when he signed up to SA EPA job! Paul came on board just as we commenced Stage 2 (the research stage) of the ACWS in October

2002 and remained with the study to its completion late last year. Paul's professionalism, even-handedness, and pragmatism were invaluable assets for the study and helped ensure it remained focussed at all times.

John Cugley retired at the end of 2006 after having spent a good many of his latter working years managing the ACWS from the EPA side. Peter Pfennig stepped up to the plate and managed the remainder of the study with the same degree of professionalism, good will, honesty, and integrity that John Cugley had always demonstrated. To both John and Peter – thank you for all your help over the years.

Of course the Study would never have been able to deliver the quality research that it did without the commitment of many talented individuals who themselves spent a number of years working on specific ACWS tasks. In all, nine separate research organisations involving over 50 scientists, technicians, and assistants were involved in the study. The ACWS achieved similar outcomes to the Port Phillip Bay Environmental Study in about the same time, but on ¼ of the budget. Unlike the PPBES, this study was not funded by a large grant from a single stakeholder. It was both a blessing and a curse to have approximately 15 (?) stakeholders whose contributions ranged from over a million dollars to a few thousand dollars. I would like to thank SA Water not only for providing core funding for the ACWS but for having the courage to fund an investigation that highlighted the critical role of the wastewater treatment plants in unravelling the seagrass mystery. Our recommendations provide stretching targets not just for SA Water and Penrice soda but for the entire community – we are all part of the problem, we all need to be part of the solution.

In thanking all the individuals who participated in the Study I also wish to acknowledge the substantial in-kind contributions of the participating organisations – most notably the universities (Adelaide, Flinders, and UWA); SARDI; and the CSIRO. There are too many people to name and thank individually, but they are listed in the front of the Final report. There were many comings and goings over the years and sadly our research community recently lost two fine members in Jane Goolooly from CSIRO and Elisabeth Campbell from Adelaide University. To their colleagues, friends, and family we extend our deepest sympathies.

I have already commented on the long gestation period of the ACWS. It was a demanding infant and a predictably cantankerous adolescent whose mood swings were exaggerated by over-anxious parents, who wanted only the best for what they regarded as 'their baby'. To the researchers who struggled with my over-zealousness and constant pushing – my apologies. But as they say, there is no pearl without an irritant. Finally, to all the partners and friends of our ACWS team members – a very big thank you for your critical support role in this study. And to my own Jane – thank you for your unfailing love, companionship, and support. This one's for you. Thank you.

Prepared and delivered by Professor David Fox to mark the completion of the Adelaide Coastal Waters Study