

CREATING AND THEN ABOLISHING BODIES OF SCIENTIFIC KNOWLEDGE, EXPERTISE AND ANALYTICAL CAPABILITY: AN AUSTRALIAN POLITICAL MALAISE

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Australian governments have a long and inglorious record of establishing valuable, valued and successful science-based initiatives that address issues of major continuing importance, only to later abolish them. The results are loss of focus, loss of group knowledge, loss of expertise, loss of analytical capability, wasted effort and resources, wasted expenditure – and most of all, wasted opportunity and wasted priceless time.

There are so many instances of this highly destructive political behaviour over so many years, committed by governments of both major political persuasions at both national and state level, that it should be recognised as an ingrained political behaviour and a basic endemic flaw in the Australian political system – a flaw that urgently needs correction, if Australia is to achieve a peaceful, sustainable future.

This paper presents a necessarily incomplete account of nine science-based bodies that met premature and unnecessary deaths at the hands of politicians – the Commission for the Future (CFF), the Resource Assessment Commission (RAC), Land & Water Australia (LWA), Queensland’s Regional Open Space System (ROSS), the National Land and Water Resources Audit (NLWRA), the Sustainable Rivers Audit (SRA), the Native Fish Strategy (NFS), the National Water Commission (NWC) and the Climate Commission (CC). It describes some of their successes and some of the deleterious consequences of their abolition, the political reasons for their axing and the rationales used to justify the executions.

The paper calls for academic study of (and insider perspectives on) these and other valuable science-based initiatives killed off by Australian state and federal governments, so that the worth of these endeavours is recognised and remembered by the scientific community and by society at large. It concludes with a discussion of how this destructive political silencing of scientists might perhaps be reduced in frequency and significance.

Keywords: loss of scientific expertise, political interference in science, abolition of scientific, Land & Water Australia

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DEFINITIONS

In this paper, ‘government’ is defined as ‘the *political* entities of direction and control exercised over the actions of the members of a nation, state or local community’, and the public sector is defined as ‘the commissions, authorities, agencies, statutory corporations, strategies, audits, departments, systems, programs and units responsible for the management and administration of the affairs of a government’. Any political ‘ignorance’ refers only to any politician’s lack of knowledge of science and the scientific method of problem-solving, not a lack of broader intellectual competence. In this paper, ‘science’ is the cluster of scientific disciplines appropriate to natural resource management (NRM), including strategic planning and the dynamics of complex systems. The science-based initiatives described in this paper are public sector initiatives.

SCIENCE, POLITICS AND THE NEED TO REMEMBER

“Science, then is fundamental but only has full effect when it is public, and when those responsible to interpret what science tells us are prepared to speak truth to power” (Perry, in Science Media Exchange, 2019).

The scientific community has a societal responsibility to chronicle the life and death of public sector science-based platforms that spoke truth to power – and were possibly abolished *because* they spoke truth to power. In Santayana’s memorable words, “Those who cannot remember the past are condemned to repeat it” (1905, p. 284).

The Political Sidelining and Silencing of Science

The Australian political class has ill-served the nation and prejudiced the nation’s future by its increasing

exclusion of scientists, scientific advice and even scientific evidence from governmental decision-making.

Governments are often confronted with ‘inconvenient’ truths in the advice tendered by scientists in public sector agencies. Some governments accept these truths and deal as best they can with the consequences of these truths. However, all too many governments have regarded some scientific truths (and sometimes even the scientific method of impartial rational discourse, itself) to be unacceptably at odds with the ideological mindset of the ruling political party or coalition of parties. This is particularly so, when scientific advice is seen as an obstacle to a particular economic project or influential development interest. All too many governments regard a truly independent scientific voice as an unacceptable impediment to ‘business-as-usual’ – that is, to the favouring of powerful business interests and to the centralisation of the governmental decision-making process within the political establishment. These governments then set out to silence the scientific messengers.

These governments (of both major political persuasions) employ a number of highly effective methods to ‘noble’ the voices of scientific caution in public sector entities:

1. Impose an economic, planning or development philosophy that is largely antipathetic to impartial, long-term, science-based decision-making.
2. Appoint ‘their man’ to head the offending organisation, so that he or she can enforce compliance, silence the recalcitrant scientists, restructure the roles of offending scientists to roles ‘more attuned to government priorities’, or simply ignore their advice.
3. Downsize the offending organisation, outsource functions to compliant private bodies and consultants, and/or reduce budgets so that the scientific work can no longer be effectively carried out.
4. Abolish the offending organisation.

This paper deals with the ultimate weapon – abolition.

A Roll-call of the Dead

Australian governments have a long and inglorious record of establishing valuable, valued and successful science-based initiatives that address issues of major continuing importance, only to later abolish them. There are so many instances of this highly destructive political behaviour over so many years, committed by governments of both major political persuasions, that it should be recognised as ingrained political

behaviour. This basic endemic flaw in the Australian political system urgently needs correction, if Australia is to achieve a peaceful, sustainable future. Too often, the political party that created the scientific initiative has also been the political party that abolished it – all it has taken is a change in leadership. Table 1 provides a far-from-exhaustive list of valuable, valued and successful science-based initiatives ignobly axed by governments.

The Silent Deaths of Science-based Initiatives

Media outlets rarely report on the worth or the accomplishments of science-based initiatives when those initiatives are contributing to the nation’s good, or mourn them when those initiatives are shut down. There are many dispiriting reasons for this silence. The Murdoch media empire is openly small-government, anti-environment and anti-science; the moderate press has undergone savage cutbacks to journalist numbers with resulting loss of specialist journalistic expertise; the ratings-driven commercial television networks pursue trivialities and artificially generated controversies; the public is largely ignorant of (and uninterested in) complex and arcane scientific endeavours; the public is also uncaring if some ‘self-serving scientists’ and ‘lazy, over-paid bureaucrats’ get the sack.

Knowledge is a form of infrastructure, an input into other bodies’ activities and, by its nature, is rarely on public display. Of all the entries in the Table 1 list, only the Climate Commission did not go quietly (because of the controversial political circumstances of its abolition and the very public stand taken by its chief commissioner).

This media silence feeds, deepens and perpetuates the ability of politicians to abolish science-based initiatives. It is responsible for a lack of public appreciation for the worth of science-based initiatives – and a lack of public awareness of the deaths (and the costs of those deaths) when those initiatives are abolished. Consequently, governments expect that they can abolish science-based initiatives without suffering any adverse electoral consequences. This knowledge breeds a political culture that regards the work of scientists as of little political and societal significance, and the advice of scientists as of little account in governmental decision-making.

Speaking for the Dead: the Role of Scientists

There are few insightful peer-reviewed papers on the achievements of science-based initiatives, or on the societal costs resulting from the deaths of those

initiatives. In the roll-call of the dead of Table 1, only the Resource Assessment Commission appears to have received detailed academic analysis of its work and of the politics of its establishment and abolition.

One reason for this academic silence is that most scientists in the relevant fields are public servants. Public servants are reluctant to be seen as self-promoting when the initiatives are operational, too busy to work up media programs and, in any case, banned from entering public policy debates. However, other scientists and academics do have the freedom to publish. Of those, insiders to or beneficiaries of these initiatives should be particularly encouraged to publish the histories of these initiatives. Each history would describe the highs and lows, the achievements, the costs to the nation resulting from the abolition – and the politics responsible for the abolition. It ought to be possible to write such histories in a dispassionate, analytical manner without defaming individuals. While these histories remain unwritten, this past will not be remembered and this nation will be condemned to the endless repetition of the same mistakes.

However, it is not only the scientists and politicians who need to remember this past and learn the correct lessons from it – the wider Australian society needs to do so, as well.

GOVERNMENTS, SCIENTISTS, THE PUBLIC SECTOR AND THE PUBLIC INTEREST

“The primary function of governments is to protect the public interest” (Edwards, 1998).

The pursuit of science needs to serve the long-term interests of society. To effectively do so, scientists and scientific institutions need to continuously communicate the critical societal worth of science-based initiatives to a public that is largely unaware of that worth. Indeed, scientists and scientific institutions have an inherent *obligation* to communicate the societal worth of the work done by those initiatives to the society that financially supports those initiatives. Two notable quotations emphasise the point.

“Vast sums of government dollars go to fund academic and government research. Even if the government chooses to ignore the results of that research, scientists have a responsibility—what Jane Lubchenco, former president of the American Association for the Advancement of Science, called a social contract—to communicate the lessons of their research to the public. A majority of scientists, including me, have also been educated at public institutions. The public whose dollars pay for educational institutions and government granting agencies have a right to expect some public good from action based on scientific findings. They [the public] cannot benefit if scientists do not speak up and use their knowledge to inform and influence the policy process” (Karr, 2006).

“Communicating with the public is an important duty for an academic. If the task of researchers is, as one analyst observed, ‘to seek the truth and make it known’, making your findings known is essential” (Lowe, 2018).

TABLE 1. Gravestones – a sample of the birth and death of science-based initiatives, 1985–2015

Science-based initiative	Creator	Destroyer	Born	Died
Commission for the Future (CFF)	Hawke Labor government	Howard LNP government	1985	1998
Resource Assessment Commission (RAC)	Hawke Labor government	Keating Labor government	1989	1993
Land & Water Australia (LWA)	Hawke Labor government	Rudd Labor government	1990	2009
Regional Open Space System (ROSS)	Goss Queensland Labor government	Newman Queensland LNP government	1994	2012
National Land and Water Resources Audit (NLWRA)	Howard LNP government	Rudd Labor government	1997	2008
Sustainable Rivers Audit (SRA)	MDB Ministerial Council*	Baird NSW LNP government [†]	2000	2012
Native Fish Strategy (NFS)	MDB Ministerial Council*	Baird NSW LNP government [†]	2003	2012
National Water Commission (NWC)	Howard LNP government	Abbott LNP government	2004	2014
Climate Commission (CC)	Gillard Labor government	Abbott LNP government	2011	2013

*The Murray-Darling Basin (MDB) Ministerial Council comprises Ministers from the Queensland, New South Wales, ACT, Victorian, South Australian and Australian governments.

[†] “State governments in September quietly canned funding for the popular Native Fish Strategy, following a NSW government cut in its contribution to the Murray-Darling Basin Authority – the body overseeing the river – by \$20 million” (Arup, 2012b).

Note: LNP is an acronym for the Liberal Party–National Party coalition.

Scientists working in the public sector have a fundamental responsibility to serve the public interest to the best of their abilities. In the Australian Public Service (APS), there is an implicit recognition of this fundamental responsibility. Section 10 (APS Values) of the *Public Service Act 1999* states that one of the values of the APS is ‘Committed to service’, where the APS “works collaboratively to achieve the best results for the Australian community and the Government” (Federal Register of Legislation, n.d.). In Queensland, the recognition is explicit. Section 7 (Promoting the public good) of the *Public Sector Ethics Act 1994* requires public service agencies, public sector entities and public officials to “accept and value their duty to be responsive to both the requirements of government and to the public interest” (Queensland Parliament, 2014).

However, there seem to be no formal guidelines on what this responsibility entails. Edwards (2011) postulated six axioms as a foundation for a standard of public interest. Two axioms were biophysical (“There is only one planet available to support human life” and “Economic growth in a finite world is unsustainable”). Two were sociological (“The common good has both individual and social dimensions” and “Humans exhibit both a private persona, a motivation towards self-fulfilment; and a public persona, a motivation to participate in public affairs and to advance the common good”). Two were public policy (“Governments exist to advance society’s well-being” and “International UN treaties are normative [i.e., determine norms or standards]”). He asserted that when even one of these axioms was conceded, the public interest would have to embrace policies that gave effect to it. The author uncovered no evidence that any official body in Australia has adopted this schema or anything comparable.

THE POLITICS OF CONFLICTING DEVELOPMENT PHILOSOPHIES

Neoliberalism versus Ecologically Sustainable Development

“In spite of modifications under hybrid approaches, neoliberalism still tests achievement of sustainability goals, due to privileging industry and shifting risk and costs to future generations, through inadequate regulation, neglect of public consultation, lack of transparency, and weak impact assessment” (Baldwin et al., 2019).

Australian politics has been dogged for decades by the conflict between two competing and antagonistic

philosophies that can underpin the development and management of natural resources:

1. Neoliberalism
[which can be defined as the “belief in sustained economic growth mediated by free markets as the most efficient means to achieve human progress. In a neoliberal planning system, the emphasis is placed on economic activity, growth and employment, and other values are regarded as secondary considerations” (McFarland, 2011)].
2. Ecologically sustainable development (ESD)
[which can be defined as “using, conserving and enhancing the community’s resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased” (Australian Government, 1992)].

Neoliberalism regards environmental considerations as a barrier to and a limitation upon economic development. ESD regards environmental considerations as paramount to achieving a sustainable, high quality-of-life.

Shifting Political Attitudes

“Land-use planning systems in Australia are currently dominated by a neoliberal approach in which the focus is primarily on administrative efficiency and economic growth” (McFarland, 2011).

The supposedly left-wing Australian Labor Party (ALP) has long had a right-wing focus on supporting industries in the resources sector. This has been partly due to the influence of the forestry and mining unions – now part of the Construction, Forestry, Maritime, Mining and Energy Union (CFMMEU). Under former Treasurer then Prime Minister, Paul Keating (1983–1996), the ALP became nakedly neoliberal. “Keating’s agenda revolved more around his interest in matters to do with economic restructuring ... In the face of a deliberate move to reassert Labor’s interest in more overtly materialistic policy matters, there occurred an inevitable decline in the degree of access environmental interests had to the institutionalised policy-making process” (Economou, 1996). “While Bob Hawke had taken a strong personal interest in the environment, Keating, rejecting most things championed by Hawke, treated environmental issues with a dismissiveness bordering on contempt” (Hamilton, 2001, p. 34).

The always-pro-business Liberal Party was not always anti-environment. “The last decade of the

Howard government has obliterated the memory of progressive Liberal Party policies on the environment and climate change during the late 1980s. [In 1990], under shadow environment minister Chris Puplick, the [Liberal Party–National Party] Coalition had progressive environmental policies on a number of issues ... ‘We were at one with [Labor] on CFC [chlorofluorocarbon] control and CFC emissions. We were ahead of them on the Antarctic ... We were ahead of them on whaling issues – that was a legacy of Fraser’s long involvement’. Importantly, he claims that the Coalition was ahead of the Labor Party on global warming issues by the 1990 election” (Staples, 2009).

In present federal and state politics, both Coalition and Labor governments pursue planning, development control and ecosystem management systems that regard economic development as the dominant consideration. Science deals mainly with the complexities of the natural world and the universe, not artificial, necessarily simplistic, human-centric economic constructs. A large body of science thus seeks to understand the complex interplay of complex natural systems and the essential role they play in making human life possible. This science seeks to chronicle the damage to those systems by human activities, better manage those systems and improve the health of those systems. This scientific work is essential to ESD, but the precautionary policies that should flow from it are an impediment to unrestrained economic development. Neoliberal views dominate in the present political, corporate and media climate (Barnes, Humphrys & Pusey, 2018; Quiggin, 2018; Manne, 2013), despite the electoral unpopularity of the term. As a consequence, cautionary scientific messages are often ‘inconvenient’ and their scientific messengers unwelcome.

Gathering and/or publicising knowledge about environmental matters – landscape, waters, climate – risks attracting political enmity. Every science-based initiative listed in Table 1 dealt with these matters. The only organisation in the list with multiple areas of interest was the CFF – see Table 2. However, the CFF attracted hostility from both Coalition and Labor Party politicians, because it chose the ‘greenhouse effect’ (now known as the innocuous-sounding ‘climate change’) as its primary focus (McKinlay, n.d.; Lowe, 1989, pp. 5–7). The birth and death of these initiatives can thus often be traced to the ebbs and flows of the political struggles between the acolytes of neoliberalism and ESD – respectively the right-wing economic ‘dries’ and the left-wing environmental and social ‘wets’.

THE MECHANICS OF THE POLITICAL ABOLITION OF SCIENCE-BASED INITIATIVES *Reasons for Abolition: the Reality Behind the Spin*

There are four major reasons for the political abolition of science-based initiatives in the public sector – see Table 3:

1. Ideology

In the list of nine science-based initiatives killed off by governments, two raised public awareness of major ‘environment versus development’ issues (CFF, CC), three were explicitly involved in the ideological battleground of NRM (RAC, ROSS, NWC), two were tasked with supplying the resource datasets for NRM (NLWRA, SRA), and the other two supported NRM (LWA, NFS) – see Table 2. Pro-economic-development, anti-environment politicians and political parties have invented their own doublespeak for removing environmental restrictions and checks on the activities on the property, construction and mining industries – ‘cutting green tape’. This includes cutting the science-based initiatives responsible for the environmental checks.

2. Ignorance of the value of science and/or disrespect for science and scientists

Johnston (2016) observed that “in federal parliament, only 20 politicians have training in a discipline related to science, technology, engineering, maths or medicine (STEMM). That’s just 7 per cent of MPs (11 out of 150) and 12 per cent of senators (eight out of 76). That’s far lower than the proportion of Australians graduating with degrees in STEMM which, although declining, is still a reasonably healthy 33 per cent”. She mounts a compelling case for improving government decision-making by electing scientists to leadership roles within Australian political establishments. However, it is not essential that politicians hold science degrees for them to make good policy decisions on science-related issues. What is essential is that government ministers have trusted advisers to accurately and clearly explain the implications of the science that is relevant to the issues on which ministerial judgments need to be made. It is also essential that all politicians acquire at least a basic understanding of the role of science in society and the power of the scientific method – and not be dogmatically anti-science in their mindsets. However, neither of these needs is recognised in the Australian political system

and no political mechanisms exist to satisfy these needs. With very few politicians trained in STEMM disciplines and no mechanisms in place to encourage politicians to gain even an educated layman's understanding of the value of science, many – perhaps most – politicians remain ignorant of the true value of science-based initiatives [Reason 2a]. Consequently, they may also be unsympathetic or even antipathetic to the very concept of science [Reason 2b]. The problem is probably exacerbated, because politicians would understandably view scientists in the public sector as little more than technicians. In the Queensland

public service (and doubtlessly in other public services), scientists rarely hold decision-making authority, because they need to transfer from a professional pay scale to an administrative one if they are to become managers, and managers are the feeders for promotion to executive rank. Ignorance of the value and rigour of science and antipathy towards science and scientists contribute to a political disdain for impartial scientific advice – which is then ignored, dismissed, not sought, or silenced. However, because these are usually internal mindsets, the extent of their role is not capable of evidential proof.

TABLE 2. Principal function, aim or goal to be achieved by the abolished science-based initiatives

Body	Principal function, aim or goal to be achieved by the initiative
CFF	Initiate a continuous public information process to 'demystify' science and raise public awareness of the social and economic impacts of technological change, addressing in particular concerns about the effect of such change on employment (National Archives of Australia, n.d.b).
RAC	Resolve competing claims for the use of resources (Federal Register of Legislation, 2004).
LWA	Act as a research investor (to achieve the <i>sustainable</i> management and use of Australia's natural resources) and as a leading research broker, organising collaborative research and development programs (Land & Water Australia, 2009a).
ROSS	<i>Regional Frame</i> – provide a frame to urban development, defining the limits of the metropolis. <i>Recreation</i> – provide opportunities for both passive and active recreation. <i>Conservation</i> – protect the natural environment. <i>Landscape</i> – contribute to the scenic quality of the landscape and the liveability of South East Queensland. <i>Economic Potential</i> – provide opportunity for sustainable commercial activity (Edwards, 2019a).
NLWRA	Provide nationwide assessments of Australia's land, vegetation and water resources now and in the future: collate and assess data on natural resource issues to provide information in forms suitable for decision makers, recommend monitoring and assessment systems for Australia's natural resources, design and implement an Australian Atlas to display data collated during the Audit to form a basis upon which a range of natural resource related datasets could be displayed within a distributed network Australia-wide (NLWRA Advisory Council, 1999).
SRA	Provide a continuing, systematic assessment of the health of river ecosystems across the Murray-Darling Basin (MDB), to provide ecological data to support major and rapidly evolving investments in river management (Davies et al., 2010).
NFS	Rehabilitate native fish communities in the Murray-Darling Basin back to 60 per cent of their estimated pre-European settlement levels, after 50 years of implementation (Murray-Darling Basin Ministerial Council, 2003).
NWC	Provide independent assurance of the Council of Australian Governments (COAG) national water reform agenda, promote the objectives agreed by all governments in Australia under the 2004 Intergovernmental Agreement on a National Water Initiative (NWI), assess the implementation of water reforms by all jurisdictions, provide strategic guidance and information, and provide independent advice and reports. The NWC was also required to audit the effectiveness of the implementation of the Murray-Darling Basin Plan and associated water resource plans and assess performance against reform commitments in water management partnership agreements under the Murray-Darling Basin Agreement 2008 (National Water Commission, 2015).
CC	Provide all Australians with an independent and reliable source of information about the science of climate change, the international action being taken to reduce greenhouse gas emissions, and the economics of a carbon price (National Library of Australia, 2012a).

3. Political perceptions of expendability

Decades of neoliberal privatisation of front-line scientific service provision to the public – such as to rural landholders – have reduced science-based work in the public service to mainly back-room knowledge-gathering operations. Associate professor Ruth Nettle from the Faculty of Science at the University of Melbourne estimated that “Nationally there has been about a 38–40 percent drop in government funded extension positions since 2009–2013”. Dr Nettle said it was the third wave of cuts since the 1980s (Australian Broadcasting Corporation, 2015). With much-reduced staffing levels, and now with little contact with the public they serve, the remaining scientists (with their knowledge and expertise) linger, largely unnoticed and largely unappreciated by the public and the media. This near-invisibility means that governments know that they can casually abolish these science-based operations and not suffer any significant electoral backlash, even when the work is critical for good governmental decision-making. Consequently, whenever a government budget ‘razor gang’ is seeking budget cuts that will not hurt the chances of the government’s re-election, science-based initiatives are regarded as easily ‘expendable’. No government in Australia’s history appears to have suffered an electoral backlash as a result of any such abolition. However, because no politician would ever confess to holding such a belief, the extent of its role is not capable of evidential proof.

4. Hoarding or rearranging power within the political establishment

Science is a diffuse method of gaining knowledge. Within the scientific and technological community, world views often differ – a mining engineer will have a mindset very different from that of an ecologist. However, the processes of science are essential to gaining an ever-greater human and societal understanding of complex socio-environmental-economic realities. Science that is allied to public consultation and participation – a common thread in the casualty list of Table 2 – is an innately democratising process, antipathetic to a political culture of secretive machinations. Public sector agencies that are truly independent of governments can be bothersome to

governments. Support for the establishment of the agency may be enthusiastic, but the support base narrow. Once established, the government may become uncomfortable with the lack of political control over the agency, and when the chief proponent moves or is moved to other responsibilities, abolition becomes a convenient option. The rise and fall of the CFF exemplifies this phenomenon – see Table 3. Independent statutory authorities are particularly bothersome to governments, because they often prove to be unamenable to political control and can’t be easily ignored. A frustrated government may then seek to permanently silence the troublesome voice.

These reasons interact to create a political culture that makes it easy to denigrate, sideline and silence the voice of scientists in governmental decision-making.

Rationales for Abolition: Justifying the Unjustifiable

Governments that abolish these science-based initiatives usually feel the need to furnish a public explanation, however specious or spurious, to justify their actions. Government-appointed heads of now-compromised public service departments are sometimes required to furnish an explanation, when they axe their own scientific units. One or more of the following rationales are used by governments to justify the abolition of science-based initiatives – see Table 3.

Rationale 0: No justification is offered.

Rationale 0 has scenarios instead of sub-rationales (there can be no sub-rationale for a non-explanation). However, the scenarios can be instructive – Scenario 0a (progressive strangulation) is always a sign of political malice. Scenario 0b (sudden dramatic funding cuts) usually indicates political malice, but sometimes may be the result of mere government incompetence.

Scenario a: The initiative is progressively so starved of funds, so denuded of staff, so restricted in its fiat, so marginalised by the government that it can no longer function properly. The government then quietly shuts it down, with its clientele so reduced that few people care that a valuable knowledge, planning or management resource has just been destroyed (the CFF, the ROSS – see Table 3).

Scenario b: The initiative is operating normally, when the government unexpectedly so steeply slashes or even ends funding that the initiative can no longer function, and ceases operation. This can arise when the government wants to rid itself of an obstructive science-based

initiative and hopes that if it says nothing at all, nobody will notice (the RAC, the SRA, the NFS – see Table 3). However, it can also come about merely because the government fails to recognise the value of the initiative and sees its demise as nothing of any note (the NLWRA – see Table 3).

Rationale 1: The initiative is no longer necessary, because its work is now done, the purpose has been fulfilled.

This justification is especially favoured, because the decision is made to appear a cause for public approbation, rather than a cause for public condemnation.

Rationale 2: The work has been transferred to other instrumentalities.

Sub-rationale a [This will increase efficiency of service delivery] is particularly popular with governments, because it portrays them as nobly trying to gain more value from the taxpayer funds spent on a public service that the public ‘knows’ is inefficient. It is not explained how the transfer of functions would improve efficiency.

Sub-rationale b [The initiative is redundant] is the ‘nothing to see here’ defence. It portrays the abolition as mere harmless bureaucratic reshuffling or manoeuvring, with no effect on future outcomes. Governments invariably mention only the functions that have been transferred, thereby insinuating – but not stating – that all functions have been transferred, when in reality major programs have been quietly discontinued. LWA exemplifies this consequence – see Table 4. This scattering of the functions to the four winds effectively destroys the focus of the initiative and reduces the effectiveness of the now potentially uncoordinated effort, while the government escapes censure for the destruction. The NWC exemplifies this consequence – see Table 4.

Rationale 3: It is a budget-saving measure, and the savings made are better spent elsewhere.

This rationale portrays the government as sound economic managers, diligently gaining the greatest benefit from taxpayer dollars. However, this rationale is often transparently false, because the announced budget savings are either trivial (see the CC in Table 3) or illusory (see LWA in Table 4).

Rationale 4: Belittle the worth of the initiative.

Openly belittling the initiative being abolished is rare, because it looks – and is – nasty. However, it does happen. Inserting words like ‘nowadays’ is important, because it justifies not having abolished the body

earlier. Additionally, if the same ruling party created the initiative in the first place, the implication of ‘nowadays’ is that it was a fine and noble initiative, when it was first established.

Interestingly, even when it is made obvious to everybody that an initiative has been abolished for ideological reasons, the axing is never justified on those grounds. An example of this is the Abbott Coalition government’s abolition of the Climate Commission. The Abbott Coalition Government (2013–2015) was elected on an “Axe the [Carbon] Tax” platform of reversing action to combat climate change. It was sworn into office on 18 September 2013. Later that day, as its first act in office, the government abolished the Climate Commission (Talberg, Hui & Loynes, 2016). Yet, the axing was publicly justified solely on streamlining processes, avoiding service duplication and saving money, even though the savings quoted were manifestly miniscule – see Table 3.

Political niceties thus seem to need to be observed when announcing the executions, but this makes it much harder to gain a precise understanding of this destructive political phenomenon.

Epitaphs: Lives Well Lived and the Consequences of Abolition

All of the science-based initiatives listed in Table 1 made valuable contributions to society. Their premature deaths at the hands of governments have had lasting, adverse consequences for the societies they once served – see Table 4.

There are always significant (sometimes major and long-lasting) costs to a state or the nation, when its governing parties abolish important, successful initiatives. The public sector suffers loss of group knowledge, loss of expertise and loss of analytical capability. Often, the associated strategic data-capture operations are terminated and ultimately abolition becomes a shameful waste of public funds and irreplaceable scientific group memory. Key datasets steadily degrade in quality as they are no longer updated. Painstakingly captured data may be dumped. Access to archived data may become increasingly difficult, as systems are no longer actively maintained. The mere existence of the archived data may be largely forgotten. There are other significant and undervalued societal costs to be paid. For example, the abrupt political severing of cooperative ventures with clients and stakeholders leads to a loss of multiplier-effect opportunities and

breeds considerable ill-will – see LWA, the NLWRA and the NWC in Table 4 for illustrations of the costs to societal harmony.

A public sector shorn of such capabilities can no longer contribute as it should to government decision-making. The end-result will inevitably be misdirected governmental priorities and flawed governmental decisions. When scientific advice – almost always cautious, given scientists’ natural reliance on demonstrable evidence – is discarded, there is the risk of widespread and often permanent environmental damage

and inadequate management of increasingly stressed ecosystems. Society in general will suffer as problems unnecessarily persist, because opportunities have been lost and resources and funding wasted. The problems themselves become less amenable to solution, because of the loss of focus in addressing them – and the loss of skilled personnel to address them.

However, the cruellest cost is wasted time – priceless, irrecoverable time – where genuine progress to a better future for the state or the nation is erased as if it had never existed.

TABLE 3. Probable reasons for (and rationales used to justify) the abolition of the science-based initiatives

Body	Reasons and rationales for the abolition of the initiative
CFF	<p>Reasons: 1, 2a, 2b, 4.</p> <p>“It was not supported by Jones’ [Labor] government colleagues or by Coalition politicians. I still remember the hostility [Reasons 1 and 2b] and ignorance [Reason 2a] of some elected members when I appeared before the Senate Estimates Committee to defend the CFF’s meagre budget. It was not surprising that the CFF’s public funding was discontinued, when Jones was no longer the responsible minister” (Lowe, 2016, p. 87).</p> <p>“At the time [the 1980s], the problem wasn’t denial. The climate change conspiracy theorists were yet to emerge. Nor was it a question of party-line hostilities—they, too, would emerge much later. Indeed, more concern was shown for the issue [the greenhouse effect] on the conservative side. The problem was just that it was early days for anxiety. What the Commission for the Future was shouting about belonged to ... the future [Reason 2a]” (McKinlay, n.d.).</p> <p>“The CFF was designed to be at arm’s length from government and free to encourage discussion without political or bureaucratic constraint [Reason 4]” (National Archives of Australia, n.d.a).</p> <p>Rationale 0a [“It limped along for a few years with limited resources from the private sector, before finally being wound up” (Lowe, 2016, p. 87)].</p>
RAC	<p>Reasons: 1, 2a, 4.</p> <p>“A number of matters associated with the Kakadu Inquiry contributed significantly to a decline in support for the RAC in some parts of the Commonwealth government, including disappointment that the RAC did not recommend a specific course of action, and, in some circles, that it did not recommend that mining go ahead ... concern was expressed in some quarters that it gave detailed attention to cultural issues affecting indigenous people [Reason 1]” (Stewart & McColl, 1994).</p> <p>“Politicians and bureaucrats were unhappy about the transparency of the political process. Given the preference for hiding behind the cloak of expert advice, the government surprised few when it decided in the 1993–1994 Budget round to abolish the RAC. The Commission’s crime was to use a rational and visible process, thus exposing the nature of the decision to the public gaze [Reason 4]” (Lowe, cited in Stewart & McColl, 1994).</p> <p>“Hawke’s departure from the leadership brought this period of extraordinary federal institutional interest in the environment to an end, and the RAC suffered as a result ... Without Richardson, the government failed to realise the utility of the RAC as a place to shunt seemingly intractable disputes between noisy interest groups. Without Hawke, the RAC’s place in the general scheme of reforming policy-making along consensual lines was no longer recognised [Reasons 1 and 2a]” (Economou, 1996).</p> <p>Rationale 0b [“the government gave no public explanation of its decision not to provide further references to the RAC” (Stewart and McColl, 1994) and “... as part of the cost-cutting exercise by the Keating government, the commission’s fate was sealed by a small announcement in the budget paper that it would cease to exist in the new financial year. Amidst the controversy surrounding the budget’s problems in the Senate, the death of the RAC was hardly noticed” (Economou 1996)].</p>

Body	Reasons and rationales for the abolition of the initiative
LWA	<p>Reason: 2a.</p> <p>This appears to be a result of the Rudd Labor government’s continual shifts in priorities, in response to external pressures. “Rudd’s government was elected in 2007 with an ambitious program for change, [but] these ambitions were thwarted by a range of factors, not the least ... managing his massive agenda which constantly elevated issues to ‘first order priority’” (Aulich & Evans, 2010).</p> <p>In a Senate estimates hearing in May 2009 (during the Global Financial Crisis of 2007–2009) on being asked the question “Why are we axing such a central research organisation?”, the Superannuation and Corporate Law minister replied that natural resource management was now a mainstream issue for government and the community, but “We’re doing as much as we can afford to ... and in times of economic contraction you have to make some hard decisions” (Anon., 2009).</p> <p>Alexandra and Campbell (2013) viewed the Rudd Labor government’s axing of LWA as a ‘strategic blunder’, not an ideological act.</p> <p>Rationales 2b and 3 [“The 2009 federal budget papers implied that LWA had become redundant, because ‘a number of tertiary, public and private sector bodies have been established in the natural resource management research and development field’ since its formation in 1990 [Rationale 2b]” and “The 2009 federal budget announced the disbandment of LWA, with associated savings of \$45.9 million over four years [Rationale 3]” (Robins & Kanowski, 2011)].</p>
ROSS	<p>Reasons: 1, 2a, 4.</p> <p>In 1995, probably 2a and 4 (tensions between planners and scientists within separate departments of the public service). In 2012, probably 1.</p> <p>Rationale 0a [No public scholarly explanation of the reasons for the demise of the ROSS is known. The initiative was announced by the Premier on 28–29 May 1994 as confined to public land (19% of SEQ) and private land purchased or covenanted by agreement (another 6%). It came into operation on 1 July 1994 but ran into difficulties within its first 12 months after maps were published showing some 50% of SEQ, including large tracts of land covered by landscape-type zones as included within the ROSS. The pivotal issue was land tenure rather than science. Hostility from rural landholders caused the secretariat to be shuffled from one department to another and its budget for land acquisition and park development to be appropriated by others. Reconstituted as the Regional Landscape Strategy, it continued until abolished in 2012 along with the regional planning unit, a victim of the Newman government’s general hostility towards environmental protection and ‘green tape’. The Minister for Planning at the time was on record as asserting that the purpose of planning was to facilitate economic development (Edwards, 2019a)].</p>
NLWRA	<p>Reason: 2a.</p> <p>Additionally, Creighton (2018) saw bureaucratic jealousies as a contributing factor: “As for the demise of Audit 1 – well the agencies that were supposed to build policy off our evidence felt we had too much control.”</p> <p>Rationale 0b [The end of the NLWRA came as a line in the 2009 budget. However, even though the tasks assigned to the NLWRA were ongoing, its funding never was].</p>
SRA	<p>Reason: 2a.</p> <p>Rationales 0b and 3 [The NSW government appears not to have provided any specific explanation as to why it suddenly and savagely reduced its contribution to jointly funded river operations and natural resource management programs administered by the MDBA. However, successive NSW Coalition governments make no secret of their continuing hostility to what they see as outside interference in their management of ‘their’ river system. The Murray-Darling Basin Authority (2013) stated: “After the NSW state government cut its funding, the Basin governments made the decision to cut the Native Fish Strategy and the Sustainable Rivers Audit, and delayed maintenance programs.” However, the other governments made no public criticism of the actions of the NSW government and made no attempt to take up the slack].</p> <p>Rationales 2b and 4 [Later, in 2016, the MDBA used other justifications: “Since the end of the SRA, the MDBA has established a monitoring program to gather information about the environmental impact of the Basin Plan at the Basin scale [Rationale 2b]” and “Basin state and territory governments decided to cease funding the SRA program as it did not align with the monitoring of ecological health required under the Basin Plan – The SRA monitored ecological health compared to a pre-European benchmark. It was also not linked to specific water management actions like the Basin Plan [Rationale 4]” (Murray-Darling Basin Royal Commission, 2019)].</p>

Body	Reasons and rationales for the abolition of the initiative
NFS	Reason: 2a. Rationale: 0b and 3 [see the SRA rationale for details].
NWC	<p>Reason: 4 (an independent statutory authority being too independent is the most probable reason, because of the multiple sometimes conflicting rationales and the political resort to denigration [Rationale 4]).</p> <p>Rationales 1, 2b, 4 [“Liberal Senator Simon Birmingham said the purpose of the commission had been fulfilled [Rationale 1] and its roles would be taken over [sic] the Productivity Commission [Rationale 2b], saving the budget \$20.9 million over four years [Rationale 3]. Much of the savings will be absorbed by an aid agency to help other nations improve their water management. ‘Nowadays it’s nothing more than a government-funded commentary organisation’ [Rationale 4], Senator Birmingham told Fairfax Media. The Productivity Commission will provide ‘more robust, more independent, more fearless criticism than the NWC has shown the likelihood to do to date’ [more of Rationale 4]” (Hannam, 2014)].</p> <p>Rationales 2a and 3: Liberal Senator Mitchell Fifield (2014) said, “Given both the substantial progress already made in water reform [Rationale 2a] and the current fiscal environment [Rationale 3], there is no longer adequate justification for a stand-alone agency to monitor Australia’s progress on water reform. In line with reform priorities to improve efficiencies across the Australian Government and to improve the budgetary outlook, the NWC will cease its functions following the release of its assessment of national water reform in October this year.”</p>
CC	<p>Reasons: 1, 4.</p> <p>The Abbott LNP government (2013–2015) abolished the Climate Commission as part of its campaign to reverse government action on mitigating anthropogenic climate change. Talberg, Hui and Loynes (2016) list the abolition of the Climate Commission, followed by repeated failed attempts to abolish the Clean Energy Finance Corporation, the Climate Change Authority and the Australian Renewable Energy Authority, the abolition of the Emissions Trading Scheme and the reduction of the 2020 Renewable Energy Target (RET) [Reason 1].</p> <p>The Climate Commission was an independent expert body – its deliberations, reports and public engagements were not subject to Ministerial direction [Reason 4] (National Library of Australia, 2012b).</p> <p>Rationales 2a and 3 [“Mr Hunt [the Environment Minister] confirmed that he had dissolved the commission. ‘As part of the Coalition’s plans to streamline government processes and avoid duplication of services, the commission’s function to provide independent advice and analysis on climate change will be continued by the Department of the Environment [Rationale 2a]’, he said ... ‘This decision will save the budget \$580,000 in 2013–14 and an annual funding of up to \$1.6 million in future years [Rationale 3]’” (Arup, 2013)].</p>

Note: Reason 3 (the perceived political-electoral expendability of science-based public sector initiatives) may well be a factor in all of the abolitions of Table 1, but was never cited as a factor.

TABLE 4. Epitaphs – achievements in life and the consequences of premature deaths

Body	Achievements and the consequences of premature death
CFF	<p>The CFF did what it was tasked to do – raise public awareness of issues affecting the future (see Table 2).</p> <p>In 1987, the CFF and the CSIRO conducted a major scientific conference (<i>Greenhouse '87</i>) that addressed how specific scenarios of climatic change in Australia would impact on Australian farming, water supplies, ecosystems, coastal development, public health, etc. In 1988, the CFF conducted <i>Greenhouse '88</i> – a media event to focus on responses to the greenhouse effect. “From the day I landed in Sydney, it was nonstop media, government, or public events. It looked like a political campaign. A dozen interviews in one day, plus flights from Melbourne to Canberra (to brief the national Parliament), to Sydney (to do a press conference), and back to Melbourne (to talk to water planners) were all crammed into 24 hours! This was typical of the pace for five days before the national broadcast. After that, I had to fly to Perth to participate in still more meetings, press conferences and public discussions ... The <i>Greenhouse '88</i> week was to be composed of dozens of 10-minute interviews by radio and television stations and reporters from localities all over Australia” (Schneider, 1989, p. 240).</p> <p>“The awareness of the greenhouse issue is probably greater amongst the general public in Australia than in any other country in the world. This is partly because the last two years [1987–1988] have seen meetings devoted to the topic of the greenhouse effect” (Henderson-Sellers & Blong, 1989, p. 155). Unfortunately, “the public” didn’t include the politicians. “We published documents, convened conferences, imported experts, held meetings in town halls across Australia. There was a dramatic response from scientists and public alike but a negligible reaction from our politicians” (McKinlay, n.d.).</p>

Body	Achievements and the consequences of premature death
CFF (cont.)	<p>“That was the aim of the CFF: to remind Australians that there is a wide range of possible futures and stimulate discussion of what country we would like to be in the twenty-first century” (Lowe, 2016, p. 88). In the present Australia of fake news, the 24-hour news cycle and the 30-second political sound bite, there is now no political and societal discussion of what this country should aspire to become and no vision for its future.</p>
RAC	<p>“... the RAC stands as an important development in the history of environmental policy creation at the national level. With its emphasis on comprehensive processes involving fulsome investigation of land-use debates, ‘independent’ analysis of data and information, and multilateral interest-group and public participation, the processes of land-use policy formulation in the RAC period stand in contrast to an earlier period in which decisions were made on an ad hoc basis usually as the result of a reactive campaign conducted by environmentalists aggrieved by the failure of old processes to take environmental considerations into account” (Economou, 1992).</p> <p>“The decision not to continue the RAC on an on-going basis means that there is no longer a body concerned directly with the development of methods and expertise for analysing major resource issues. While there was considerable movement of staff in and out of the RAC secretariat, particularly in exchanges between government agencies, the accumulated expertise of the RAC in dealing with resource issues constituted a valuable public asset which has now been dissipated. In addition, the lack of opportunities for personnel from government agencies and elsewhere to participate in the work of an independent and objective body such as the RAC in examining major resource issues represents a considerable loss” (Stewart & McColl, 1994).</p> <p>“In one of those perennial ironies of administrative politics, the very government that could have benefited from having a statutory authority like the RAC towards whom it could, in the immediate term, push developers, environmentalists and others in a bid to come up with a consensual outcome on what should be done about logging in Australia’s native forests, was the same government that killed off just such a body” (Economou, 1996).</p> <p>“The demise of the RAC represented a demise in the idea of ‘better policy-making’ as based on careful, proactive, inclusive decision-making” (Economou, 1996).</p>
LWA	<p>This completely publicly funded statutory rural research and development corporation listed 15 significant achievements, including the AUSRIVAS system for measuring river health, developing the model for collaboration of states and other agencies to address the major landscape challenge of dryland salinity, leading multi-partner programs (to manage climate variability and Australia’s northern rivers, improve irrigation systems, and develop Australia’s national Climate Change Research Strategy for Primary Industries), working closely with the cotton industry to eliminate pesticide contamination of waterways and working with the wool, meat and grains industries to develop more-sustainable mixed farming systems (Land & Water Australia, 2009b).</p> <p>A conservative independent study in 2006 by consultants Agrtrans found that LWA had delivered \$4.80 in direct economic benefits for each government dollar invested, equating to an internal rate of return (IRR) exceeding 24% (Robins & Kanowski, 2011).</p> <p>The abolition of LWA in 2009 caused the cancellation of a large number of contracts with university-based and other researchers across Australia and the closing-down of many partly completed research projects (Land & Water Australia, 2009c).</p> <p>The 2009 budget terminated almost all research within the Rural Research and Development Corporation system that was not matched by industry levy contributions.</p> <p>LWA was the peak body supporting research designed to inform and strengthen the regional NRM model through programs such as the Social and Institutional Research Program (SIRP) and Knowledge for Regional NRM. These programs did not have equivalents (or replacements) elsewhere in the Australian R&D arena (Robins & Kanowski, 2011).</p>
ROSS	<p>No public scholarly evaluation for the early days is known. Unpublished departmental documents indicate that in the first 12 months (to May 1995) the program achieved the following:</p> <p><i>Planning:</i> regional open space attributes mapped and given to local governments; six specific locality reports; consultants’ reports obtained on implementation through statutory planning and tenure, landscape of Tamborine Mountain, Bicentennial National Trail and wader roosting sites.</p>

Body	Achievements and the consequences of premature death
ROSS (cont.)	<p><i>Land acquisition:</i> 100 properties evaluated for purchase, 7 approved, 4 purchased, \$4m fully committed.</p> <p><i>Development and maintenance:</i> park development projects funded at six reserves, mainly via local governments.</p> <p><i>Information:</i> a five-year, \$7m program to supply base mapping and other land information for South East Queensland (SEQ) for all purposes was launched. This was suspended in 1996 when the incoming Borbidge Coalition government reviewed all procurement contracts (Edwards, 2019a).</p> <p>This was just the first year. From 2004–2012, the achievements included:</p> <ul style="list-style-type: none"> • Queensland Greenspace Strategy • SEQ Greenspace Network Plan • SEQ State of Region Report • Strategic Cropping Land Strategy • SEQ Active Trails Strategy • Brisbane Valley Rail Trail Plan and 96 km of trail open • Maroochy River Trail Plan and works completed • Boonah to Ipswich Trail Plan and 49 km of trail open • Kingaroy to Theebine Trail (Business Plan & Feasibility Study) and key rail assets secured • Queensland Outdoor Recreation Strategic Framework and demand studies • SEQ Scenic Amenity methodology, Planning Guidelines & mapping • SEQ Rural Futures Strategy and Rural Precinct Planning Guidelines • Sustainable Poultry Strategy • Water Sensitive Urban Design Planning Guideline • North East Gold Coast land use and infrastructure strategy • Landscape heritage discussion papers • Rural and Greenspace Policy Forum and working groups • Regional Landscape Forums (5) • SEQ Regional Plan: policy development/review, notably Regional Landscape Planning Framework. (Landscape Planning Team, 2012).
NLWRA	<p>“I reconvened the original Audit team, including Commonwealth officers, to see how we could build on the first report for a second review, Audit II. We were keen to further quantify assessments where possible, add other components such as soil biota, and to start a process to more empirically assess trend, but there was no Commonwealth support for a comprehensive follow up. This burnt considerable jurisdictional goodwill across the States and Territories. Similarly, Col Creighton’s push for a separate national resource monitoring and assessment body to be permanently established was never acted upon. The National Land and Water Resources Audit program, and then Land & Water Australia, a successful body providing natural resource management advice to rural Australia, were closed down by the Department of Agriculture, Fisheries and Forests. Subsequently, the Australian National Reserve System Program was closed down. The waste in setting up and then closing these successful Commonwealth programs was staggering” (Sattler, 2014).</p> <p>“The NLWRA Terrestrial Biodiversity Assessment (TBA) was a very successful exercise in describing the condition and trend of a number of biodiversity elements across species and ecosystems for each bioregion, in identifying threatening processes, and biodiversity conservation opportunities and priorities for management. Fourteen case studies were also completed across the range of ‘Landscape Health’ scenarios to provide detailed insight into the specific mix of management responses required.</p> <p>“This experience informed the Humane Society International (HSI) submission for a new approach in regional planning. Despite significant goodwill by all States and Territories at the time to further expand on the Audit’s work, (it is estimated that the States and Territories contributed an additional \$2m on top of the \$1m allocated by the Federal government for the TBA), the Federal government of the day did not show leadership in this regard or accept HSI’s submissions for a new cost effective approach to regional planning upon which to further roll out the Natural Heritage Trust program and its subsequent incarnations. Today little legacy exists of what was one of Australia’s most expensive environment initiatives at that time” (Sattler, 2018).</p>
SRA	<p>The Commonwealth Government’s 2016 State of the Environment Report stated: “The Sustainable Rivers Audit is the most comprehensive Basin-wide river health assessment available [in 2016]”, but lamented “however, the most recent report covers 2008–10, so is not relevant to condition assessment after 2011” (Argent, 2017, p. 46).</p>

Body	Achievements and the consequences of premature death
SRA (cont.)	<p>“The main reason for a lack of proper monitoring of the environmental condition of the Basin is a lack of adequate government funding. The discontinuation of the Sustainable Rivers Audit was undesirable and inappropriate” (Walker, 2019, p. 65).</p> <p>Witnesses at hearings of the Murray-Darling Basin Royal Commission “lamented the discontinuation of one of the Basin’s most successful condition monitoring programs, the Sustainable Rivers Audit (SRA) ... Dr Celine Steinfeld of the Wentworth Group of Concerned Scientists (Wentworth Group) submitted that, ‘without the ability to track the condition of the Basin it is not possible to understand the ecological changes at a valley and Basin scale’. In Associate Professor Jamie Pittock’s view, no program of commensurate independence and scientific rigour has replaced the SRA, and its absence represents a ‘major failing’. Similarly, Mr Peter Cosier stated: ‘Managing the health of the Murray-Darling Basin rivers without the Sustainable Rivers Audit would be like trying to manage the Australian economy without the national accounts. It’s just not possible’. In a similar vein, Dr Anne Jensen observed that the SRA’s discontinuation has prevented a thorough assessment of whether the Basin Plan requirement that there be no further decline in respect of prescribed environmental targets is being met” (Walker, 2019, p. 568).</p>
NFS	<p>The NFS was large-scale (the 1 million km² of the basin), focused on rehabilitation, not just managing the status quo, took a threat-abatement approach, considered both native fish and alien species, included all native fishes (not just angling species), was developed as a long-term approach given the scale of the problem, undertook significant public engagement and incorporated an independent review of progress (Koehn, Lintermans & Copeland, 2014).</p> <p>Many (often multifaceted) projects were completed over the 10 years of the NFS, including 5 projects on ‘Rehabilitating Fish Habitat’, 3 on ‘Protecting Fish Habitat’, 14 on ‘Managing Riverine Structures’, 7 on ‘Controlling Alien Species’, 10 on ‘Protecting Threatened Native Fish Species’ and 3 on ‘Managing Fish Translocation and Stocking’ (Anon., 2014).</p> <p>Koehn, Copeland & Stamation (2014) concluded: “While goals of the NFS remain, cessation of funding for the NFS programme after just 10 years appears short-sighted, particularly considering the plight of the fish and the NFS’s achievements, and this has again left MDB fish populations in a vulnerable state. The lessons learnt from the NFS have, however, only reinforced the importance of the need for coordinated, basin-wide long-term solutions to fish recovery.”</p>
NWC	<p>In a submission to the Inquiry into the National Water Commission (Abolition) Bill 2014, the chair of the NWC asserted: “The NWC has been unique in Australian water governance in its capacity to deliver a national interest perspective (as distinct from individual state, industry or Commonwealth perspectives), to provide independent, expert and credible advice, and to collaborate with partners in government, industry and academia to develop new ways to better manage water resources ... Despite its small size, the NWC’s collaborative and consultative partnership approach to its roles and functions, underpinned by its structure as an expert and independent body with a dedicated remit, ensured that it built up a strong basis of expertise ... the expertise of the office dispersed rapidly following the announcement earlier this year of the Government’s intention to abolish the agency. All subject matter specialists within the Commission (excluding corporate functions) have already left, or will be leaving shortly... a concern is that the splitting of the NWC’s various roles [on its abolition] will inevitably lose the synergistic advantages of integration ... Strengths of the NWC have been that it reports to all Australian governments and to COAG, its Commissioners were nominated by all states and territories as well as the Commonwealth for their specific expertise, and it provided a skills-based national perspective not driven by shorter term interests” (Parliament of Australia, 2014).</p> <p>The National Irrigators’ Council fully supported the government’s abolition of the NWC. The National Farmers Federation (NFF) labelled the abolition as ‘disappointing’. The South Australian government worried that the abolition risked “a loss of leadership knowledge and expertise as well as less effective support for, and scrutiny of water reform efforts”. The Australian Conservation Foundation (ACF) labelled the abolition as “a short-sighted and backward step”, that “would likely result in another wave of conflicts over water due to the absence of what all sides regard as a well-respected expert independent body”. The Water Services Association of Australia (WSAA) opposed the abolition on the grounds that it “removes national water leadership, fearless advice and independent custodianship of the NWI [National Water Initiative]” (Parliament of Australia, 2014).</p>

Body	Achievements and the consequences of premature death
CC	<p>In its two-year life, the commission produced 27 public reports on topics that included the effects of climate change in Australia, global action being taken to reduce greenhouse gas emissions and the potential of renewable energy (Arup, 2013). It also held dozens of public meetings around the country to explain climate science, and no other body existed to serve that role (Hannam, 2013).</p> <p>The chief climate commissioner at the time, Professor Tim Flannery, defended the Commission's role: "We've stayed out of the politics and stuck to the facts ... As a result, we've developed a reputation as a reliable apolitical source of facts on all aspects of climate change ... <i>I believe that Australians have a right to know – a right to authoritative, independent and accurate information on climate change ...</i> As global action on climate change deepens, propaganda aimed at misinforming the public about climate change, and so blunting any action, increases" (Arup, 2013).</p> <p>Professor Flannery said that he was not aware of any organisation that can do the same job – not even the CSIRO or universities: "The Bureau of Meteorology puts out advice and information on weather events, but doesn't cover the economics or international action happening around climate change ... There are various other groups that may or may not be able to do some of it, but having an independent strong authority that's committed to just telling the facts as they are – we're the group that was doing that ... You need a well-informed public in order to make the right sort of decisions" (Griffiths, 2013).</p>

REFORMING THE SYSTEM

The Need for an Informed and Socially-committed Public

"Politicians and policy-makers are unlikely to take the greenhouse effect seriously until their constituents do" (Henderson-Sellers and Blong, 1989, p. 155).

"Levels of [public] trust in government and politicians in Australia are at their lowest levels since times series data has been available" (Stoker, Evans and Halupka, 2018, p. 9).

A well-informed public, committed to addressing major social issues, can force politicians to reform their ways by threatening their political survival at election time. That public does not currently exist. However, this is now the time, when public trust in the political system is at an all-time low and likely to plummet further, to begin to forge that well-informed and socially committed public – a public that will recognise poor political performance and behaviour and demand better of their politicians.

The Involvement of Scientists in Society and in Societal Reform

Scientists who are (or should be) involved in land-use strategic planning, natural resource management, natural asset research and societal awareness-raising shouldn't be supine victims of political machinations. They have a responsibility to work to serve the long-term interests of the society that educated them and allowed them to be scientists – which includes the long-term health of the biosphere that supports that society.

The scientific community also has an important role to play in the creation of a well-informed, socially

committed public and a better future for the nation. It needs to create a compelling, scientifically rigorous argument and body of evidence to present to the public – and vigorously, continuously prosecute that argument in the public arena. However, the scientific community is highly diversified and is largely unorganised. Currently, it is not highly influential in major issues confronting the nation and is largely separated from the general community it serves. This state of affairs needs to change.

The Path of Reform

The path of reform has two components pursuing separate but related goals:

1. Maximise the societal benefits of science (the goal directly relevant to this paper).
 - a. Create an authoritative body of academic work – a scientific history – on the valuable science-based public sector initiatives that have been debilitated or destroyed by the actions of governments.
 - b. Greatly increase the quality and extent of interaction between the scientific community (in academia, in the public sector, in the private sector) and the public.
 - c. Greatly increase public and media respect for the knowledge, the expertise and the societal contributions of science and scientists.
 - d. Return science and scientists to positions of credibility, respect and influence in governmental decision-making.

2. Create a well-informed and socially committed society that will place a high value on societal fairness, the overall public good and a healthy, biologically diverse natural environment – and so elect governments that will mirror the world view of that society.

The Path of Reform: Maximising the Societal Benefits of Science

This component of the path of reform can be envisaged as follows:

1. Create the body of evidence for national reform and for reform in each state.
[Create a peer-reviewed, multi-paper history of the creation and later political debilitation or abolition of valued and valuable state and national science-based initiatives, the political imposition of philosophies antipathetic to impartial multi-disciplinary scientific deliberation and the political exclusion of scientific voices from policy deliberations. Where possible, these papers would be written by (or largely based on the experiences of) those who were there at the time.]
2. Create the 'Case for Reform' in each state and the nation.
[Create a suite of peer-reviewed papers that categorise and integrate the papers of Step 1 to illustrate both the long history of this destructive political behaviour and the cumulative damage that it has done to each state and the nation. The Case for Reform needs to vividly convey both the critical importance and the urgency of the need for reform. To this end, each component of the Case for Reform would address a major relevant area or issue of concern. Such issues include the following: political attacks on renewable energy and the science of climate change; the political mismanagement of major specific ecosystems such as the Murray-Darling Basin; the political dismantling of scientific efforts to create the knowledge bases needed for good natural resource management; the effective political exclusion of public sector scientists from political forums, such as politically arranged business dinners. The Case for Reform would then define the commonality of causes between the individual components and propose solutions.]
3. Create scientific voices on the demonstrable value of science (particularly the science of

understanding and managing natural assets) and the scientific method.

[Professional scientific organisations and academic institutions, nationally or within each state (or individuals within these organisations and institutions) need to progressively cooperate to espouse the value of science and scientific advice to the politicians, media and public. For example, The Royal Society of Queensland should seek the cooperation of its sister state organisations, the Royal Societies of Australia, the Queensland Academy of Arts and Sciences, the Australian Academy of Science and any other relevant umbrella scientific bodies in this endeavour (Marlow, 2014).]

4. Progressively increase the number of science-based, policy-oriented symposia, forums and conferences that embrace and value the participation and involvement of community-based interests, to both build support for science-based policy-making in the community and directly benefit communities by the direct dissemination of valuable scientific advice and concepts.
5. Progressively increase two-way mutually beneficial interactions between scientists and the public in fields as diverse as regional policy-making, land-use determinations, land management practices, surface and ground water monitoring, ecosystem management and the empowerment of local communities in the rehabilitation of mine sites.
6. Promote the Case for Reform (specifically for a respected scientific voice in governmental decision-making) in each state and the nation (in an apolitical way) with the political class.
7. Promote the Case for Reform in each state and the nation (in an apolitical way) with the general public, by employing a wide range of media outlets (writing articles, supplying information, and so on).

This work will also further progress in the second component of the 'Path of Reform'.

Immediate Priorities, Multiple Fronts

The political abolition of valuable science-based initiatives is but one aspect of a wider malaise – the destructive misuse of Australia's scientific capabilities and the consequent prejudicing of Australia's future. There are multiple fronts that require immediate attention by

concerned scientists and academics, as the following list illustrates.

1. Organise, coordinate, create alliances, influence, seek reform.

The Path of Reform proposed in this paper is both noble and necessary, but it is a lengthy process – and this nation needs immediate reform in this area. There are valuable lessons to be learned, even from this preliminary and limited analysis. These lessons need to be communicated to the scientists (particularly public sector scientists working in policy fields), the politicians and society in general (particularly political and societal reformers).

If the scientists and society don't speak, the politicians can't listen. Some scientific professional organisations (particularly those in the natural sciences and strategic planning) need to take on this issue as a cause. In particular, the various state Royal Societies and their new collective body, the Royal Societies of Australia (RSA) should urgently pursue this issue. There is probably no issue more fundamental to any local Royal Society than the political sidelining and silencing of scientific voices. To its credit, The Royal Society of Queensland (publisher of this journal) has taken a public stand (Edwards, 2019b). The state Societies could exhort their members who were insiders to the abolition of valuable national science-based initiatives to write the histories of the fallen. As proclaimed upholders of scientific traditions, the RSA and the state Societies, along with the Australian Academy of Science, are in a better position than nearly any other body in Australia to understand the need to return science and scientists to their former respected positions in society and in the workings of government.

2. Gather the evidence on the politically slain. Create an authoritative, detailed scientific history (preferably written by witnesses to the events) of the valuable science-based initiatives that have been destroyed by the actions of governments. If this is not done, their contributions to the nation will not be remembered, or their histories will be written by their enemies. If this is not done,

governments will persist in this destructive behaviour. If this is done, these initiatives will again serve their country, by serving as guideposts towards a better future.

3. Gather the evidence on the politically wounded. Create an authoritative, detailed scientific history (preferably written by witnesses to the events) of political interference in and distortion of public sector science. Specific examples may include the political interference in and tainting of Australia's iconic Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the political creation of development-focused super-departments, such as the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) in Queensland. Some analyses/histories would be more broad-scale – such as the increasing political exclusion of scientists and scientific advice from governmental decision-making, and the politicisation of once largely independent public services.
4. Gather the evidence on the academically slain. Create an authoritative, detailed scientific history (preferably written by witnesses to the events) of the valuable science-based initiatives that have been destroyed by the actions of academic bodies. Academic gravestones may include Rangelands Australia and the funding/de-funding of various valuable Centres of Excellence and Cooperative Research Centres. This parallel need became apparent during the work on this paper, but is outside the scope of this paper.

IN MEMORIAM: HONOURING THE DEAD

We (meaning both the scientific community and society itself) particularly need to remember the dead, to chronicle their lives and deaths, to appreciate and honour their deeds, to mourn their passing, to give them respected places in Australian scientific history, to retain their knowledge, to learn from their experiences and to give their deaths value by no longer supinely and mutely allowing cavalier political executions of initiatives that have amply demonstrated their worth to society.

We owe them that.

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