

State of the Environment Reporting: Towards best practice in Western Australia

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Preamble

This discussion paper considers how State of the Environment (SoE) reporting might be best developed in Western Australia (WA). The process, an integral component of responsible planning, investigates the condition of the environment, analyses the pressures that impact on the environment, and evaluates government and public responses to environmental risks. Grounded in the principles of ecologically sustainable development, it provides sound and credible data for environmental decision-makers and accessible information for the general public. Its continuing significance is well-summarised in a 1994 Australian government discussion paper:

State of the environment reporting is one of the most powerful tools for informing the public about their environment. It describes the effects of human activities on the condition of the environment and the implications of this for human health and economic well-being. It also provides an opportunity to actively, directly and accountably monitor the performance of government policies against actual environmental outcomes. In this way, it can in effect act as a report card on the condition of the environment and natural resource stocks.¹

Western Australia was among the earliest of the Australian states and territories to embark on SoE reporting. Its first publication appeared in 1992, and its second and third reports followed in 1998 and 2007 respectively. Once a leader in the field, WA now lags well behind the rest of Australia in this respect. In contrast to all other jurisdictions except the Northern Territory, it has no legislative requirement for regular SoE reporting and there has been no evident activity since its last (excellent) report was published in 2007. As well as failing our local environment, this policy shortfall means WA is unable to make a significant contribution to the development of a comprehensive national program. By the same token, the Commonwealth lacks in-depth knowledge of the state of WA's environment. In making this point, we stress that the Environmental Protection Authority's (EPA's) annual reports, while valuable, cannot substitute for SoE reports as they lack the necessary depth and breadth in reporting, and generally do not assess trends over time.

How to revive SoE reporting in WA and ensure that it follows best practice? Any response to this question demands a careful consideration of international, national and sub-national trends; the particular circumstances of WA; and a thoughtful exploration of the character of effective SoE reporting: that is, reporting able to carry conviction across its multiple audiences. Accordingly, this paper outlines:

- A. The national and international context of SoE reporting;
- B. The state of WA's environment;
- C. The need for legislative change in WA; and
- D. The attributes and challenges of effective SoE reporting.

In essence, we argue that SoE reporting is a whole-of-government responsibility which, as a matter of public accountability, requires full legislative support and proper resourcing. We also propose that previous experience raises important questions concerning the qualities of best practice in SoE reporting, matters that warrant the ongoing attention of all those concerned with the environmental futures of this state.

The national and international context of SoE reporting

Australia has environmental reporting obligations under a range of international covenants and agreements. These include its obligations to the OECD; the UN Convention on Biological Diversity; the UN Environment Programme; the UN Commission on Sustainable Development; and the Paris Agreement. Of these, it is its membership of the OECD that has had, and continues to have, the most direct implications for the framing and production of SoE reports. This influence has persisted over close to four decades. In 1979, the OECD resolved that its member countries should develop national SoE reports. Subsequent to that, the Australian House of Representatives Standing Committee on Environment and Conservation recommended in 1981 that environmental reports be prepared at regular intervals. A preliminary national review (1986) analysed the condition of land, water, air, native plants and animals with specific reference to the 1984 National Conservation Strategy for Australia. A follow-up report covered issues not canvassed in the initial review. The first Commonwealth SoE report was published in 1996. Subsequent national SoE reports were completed at five-yearly intervals in 2001, 2006, 2011 and 2016.

Within Australia, the National Strategy for Ecologically Sustainable Development (1992) commits all jurisdictions to the principles of regular SoE reporting. The states' responsibilities are reinforced by the Intergovernmental Agreement on the Environment (1992), where article 2.3.4 affirms that 'the States have an interest and responsibility to participate in the development of national environmental policies and standards'.² With the exception of the Northern Territory, all jurisdictions have produced SoE reports, with the first group appearing in the early 1990s. In all these cases except WA, the regular production of SoE reports has been mandated under environmental law. Table One provides an overview of the current situation, detailing the authorising Act, the responsible agency and the required time-frame for reporting in each jurisdiction.

Jurisdiction	Authorising Act	Whose responsibility	Frequency of reporting
Commonwealth	<i>Environment Protection and Biodiversity Conservation Act 1999.</i>	Minister for the Environment	Every five years. Last report 2016.
New South Wales	<i>Protection of the Environment Administration Act 1991.</i>	The Environment Protection Authority	Every three years. Last report 2015.
Tasmania	<i>State Policies and Projects Act 1993.</i>	Tasmanian Planning Commission	Every five years. Last report 2009.
Australian Capital Territory	<i>Commissioner for Sustainability and the Environment Act 1993.</i>	The Commissioner for Sustainability and the Environment	Every four years. Last report 2015.
Queensland	<i>Environmental Protection Act 1994 and the Coastal Protection and Management Act 1995.</i>	Department of Environment and Heritage Protection	Every four years. Last report 2015.
South Australia	<i>Environment Protection Act 1993.</i>	The Environment Protection Authority	At least every five years. Last report 2013.
Victoria	<i>Commissioner for Environmental Sustainability Act 2003.</i>	The Commissioner for Environmental Sustainability	Every five years. Last report 2013.
Western Australia	No legislative requirement	The Environmental Protection Authority	Unspecified. The last report was published in 2007.

In line with international practice, Australian SoE reports typically group their considerations under broad environmental categories (commonly called ‘themes’) such as air, land, water, forest, wildlife and biodiversity. In some instances, notably South Australia and New South Wales, the human pressures on the environment—energy consumption, water use and transport, for example—form part of this initial classification. In others, these factors are dealt with under the different environmental themes as relevant. Climate change is recognised across the reports whether as an anthropogenic pressure on the environment or an environmental theme in its own right. As illustrated in Table Two below, there are distinct variations in the breadth/specificity of the environmental themes covered in the reports: compare, for example, the Commonwealth’s reasonably broad classifications with New South Wales’ relatively specific ones. In part, these differences relate to the scope of the legislation mandating the production of the reports; in part, to the historical, political and environmental circumstances particular to each jurisdiction.

Jurisdiction	Last report	Environmental themes
Commonwealth	2016	Atmosphere; inland water; land; marine environment; Antarctic environment; biodiversity; heritage; built environment; coasts.
South Australia	2016	Air quality; climate change; ozone depletion; River Murray; rivers, streams and wetlands; water use; water quality.
New South Wales	2015	A. <u>Drivers</u> : population; economics; energy consumption; transport; greenhouse gases; urban water; waste and recycling; B. <u>Resources</u> : air quality; contaminated sites; soil condition; sustainable land management; threatened species; native vegetation; protected areas and conservation; invasive species; water resources; river health; wetlands; groundwater; coastal, estuarine and marine ecosystems.
Queensland	2015	Biodiversity; heritage; pollution; climate.
Australian Capital Territory	2015	Atmosphere; biodiversity; land; water; heritage; interactions between the environment, people and communities.
Victoria	2013	Air quality; biodiversity; coastal waters; inland waters and streams; land; climate change. ⁶
Tasmania	2009	Air, water, natural values, people and places.
Western Australia	2007	Atmosphere; land; inland waters; biodiversity; marine; human settlement; heritage.

As noted, WA’s failure to produce a report over the last decade means it fails to make a national contribution to SoE reporting, and, conversely, that the Commonwealth lacks in-depth knowledge of the state of WA’s environment. Our case for the national and sub-national imperatives of SoE reporting is further underwritten by the prevailing condition of our environment, which calls out for regular review, investigation and analysis.

The state of the environment in WA

As observed in the 2007 SoE report, West Australians have amongst the heaviest ecological footprints in the world, with the capacity to manage the environmental impacts of its settlements ‘constrained by many small communities scattered over a vast area’.³ Nationally, the state has eight of Australia’s 15 biodiversity hotspots; globally, the South West region is recognised as one of the world’s 36 biodiversity hotspots. According to the Auditor General’s meta-analysis of the Audit II material collected by the Department of Biodiversity, Conservation and Attractions (DBCA):

- The top 5 threats to flora are cropping/horticulture, roads and rail, weeds, invasive herbivores and fire.
- The top 5 fauna threats are fire, competition from invasive animals, recreational disturbance, invasive predators and mining.
- The top 5 threatened ecological community threats are mining, pastoralism, water abstraction, weeds and climate change.⁴

Taken as key examples, the environmental threats variously confronting the South West region, the Swan Coastal Plain and the Kimberley region illustrate much of what is at issue in our degraded environment elsewhere. The South West region suffers the effects of widespread modification of the environment since European settlement, including deforestation, agricultural clearing, and bauxite mining. Many of the problems affecting the Swan Coastal Plain can be attributed to population pressure and the use of land for industry, agriculture and mining. According to the 2007 SoE report, only 17% of its remaining wetlands now have high conservation value, with ‘wetland vegetation ... lost or degraded at the rate of about two football ovals per day’.⁵ The unique environment of the Kimberley region is under threat from decades of mismanagement, over-grazing by cattle, the introduction of weeds and feral animals, and the continuing risks of large-scale industrial development.

The pressures over the entirety of WA’s environment are entrenched and severe. Their extent is documented in WA’s 2007 SoE report, which evaluates and ranks the environmental threats confronting the state. In its Priority One ranking, the report includes climate change; population pressure; energy consumption; greenhouse gas emissions; introduced animals and plant species; phytophthora dieback; and land and water salination. These factors would almost certainly be reproduced in any current assessment of the state of the environment in WA. So too would many of the issues receiving a Priority Two ranking in the report, most particularly, changed fire regimes, loss and degradation of wetlands, and degradation of Aboriginal settlements.⁶ The information is vital, for, as Professor Ian Lowe, chair of Australia’s first national SoE report, observes, ‘as any management expert will tell you, you can’t properly manage what you don’t measure’.⁷

But more than measurement is at issue, for SoE reporting almost invariably confronts competing claims and interests. In WA, the long history of environmental protest testifies to the overlapping of ecological, cultural and commercial claims: as illustrated, for example, in the struggle over old-growth forests in the South West; oil and gas drilling at Noonkanbah and Ningaloo; Woodside’s proposal for a gas hub at James Price Point; and, most recently, the potential destruction of the Beelihar wetlands by a major road project. SoE reporting cannot resolve the deep value conflicts involved. It can, however, identify what is at issue and reveal how any particular resolution might impact on the environmental futures of our state. In this, as in multiple other respects, it is a vital feature of responsible and responsive environmental planning. The question, then, is how to ensure its future in this resource-rich, biodiverse and environmentally-challenged state.

The need for legislative change

WA’s recent history demonstrates that SoE reporting—always vulnerable to political and budgetary pressures—can lapse or fall into abeyance when not required by law. Establishing a firm statutory basis for the production of reports is thus the first and necessary step for all future developments in this state. To this end, Section 16 of the *Environmental Protection Act 1986* (the EP Act) should be amended to require the EPA to undertake regular SoE reporting. As it now stands, Section 16—which deals with the functions of the EPA—states among other provisions that the Authority should ‘promote environmental awareness within the community and encourage understanding by the

community of the environment’ (ss. g), and ‘provide advice on environmental matters to members of the public’ (ss. i). These clauses *could imply* but do not *require* SoE reporting and Section 16 should be amended accordingly.

As part of this amendment, a regular timeframe for reporting would need to be established. The Commonwealth, Tasmania, South Australia and Victoria each require reports to be produced on a five-yearly basis; the Australian Capital Territory and Queensland every four years, and New South Wales every three. At the very least, therefore, WA should produce a SoE report every five years. Particularly if the data collection requirements of WA’s ecological, geographical, social and economic profiles are thought to merit a five-year term, consideration should be given to interim progress reviews to keep the condition of the environment under continued scrutiny and contribute to the final report. We re-emphasise the evident resource implications: SoE reporting is a publicly-accountable and labour-intensive exercise, and the EPA needs the resources to undertake a task that is in the long term economic as well as environmental interests of this state.

Legislative change is also needed to ensure that governments and their agencies respond to SoE reports. History is again indicative. WA’s first two SoE reports (1992 and 1998) were undertaken by state governments before the task was passed to the EPA in 2003. In response to the 1998 report, the government developed an Environmental Action Plan, outlining over 180 specific actions to be implemented by government agencies. In 2005, the EPA asked these organisations to review their progress in implementing the prescribed actions. Just under half of these actions remained incomplete, were of an ongoing nature, or had not been initiated.⁸ On this basis, the EPA developed an ‘action agenda’ to improve the quality of environmental data collection and undertake regular progress reviews of environmental issues. It also urged government, industry and the public to respond to its forthcoming 2007 SoE report.⁹ Prophetically, that report emphasised that ‘priorities for the environment often appear to shift in relation to media attention ... (producing) ... inefficient and ineffective allocation of resources and reduced environmental outcomes in the long term’.¹⁰ With an eye to the future, it stated that:

We need to ensure that the State of the Environment Report is an ongoing publication, and that an environmental action plan is developed that clearly influences policy decisions and priorities for budget expenditure on the environment.¹¹

As earlier noted, there was no government response to the 2007 report and no environmental action plan was prepared on its basis. To address this situation, and promote a whole of government response to SoE reporting, further legislative reform is required. Two models are proposed here: a minimalist version and a more substantial alternative. The minimalist version, which would involve an extension of the EP Act, would require government departments and agencies to prepare and lodge with the EPA their specific Environmental Action Plans (EAPs) and report upon their progress in implementing these plans. The second alternative is based upon Division 2 of Part 5 of the WA *Financial Management Act 2006* and could be achieved either through amendments to the EP Act or a special purpose Act. Compared with the first alternative, it would impose more detailed requirements on the reporting responsibilities of government agencies. Its principal provisions would:

- i. Define key performance indicators (KPIs) for the nominated agencies;
- ii. Require the preparation of environmental statements by the agencies;
- iii. Establish a reporting process to the Auditor General and Minister for Environment; to be followed by:
- iv. Tabling of the statement in Parliament.¹²

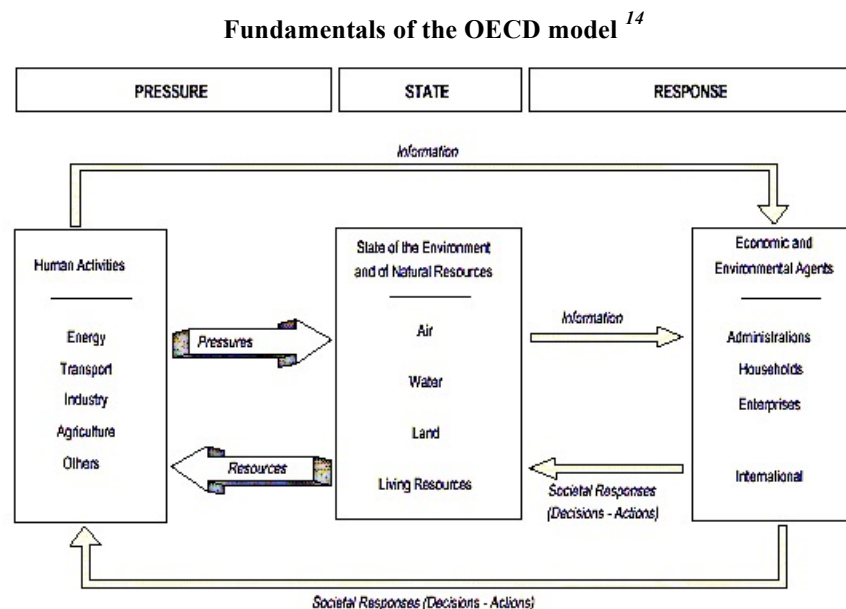
While law can secure mandatory SoE reporting, it cannot formulate its pathways or guarantee its success. The next part of the paper therefore considers the attributes and challenges of effective SoE

reporting: by which we mean reporting that is *consequential*, *coherent* and *compelling*—factors that are further explained below. This involves a different set of considerations from those detailed so far, away from legal and environmental issues, and towards normative and evaluative considerations. In following this line of inquiry, our intention is to highlight the critical issues with a view to opening up debate and promoting best-practice reporting in WA. We start with the conceptual foundations of SoE reporting, and then consider each of our three key attributes.

The attributes and challenges of effective SoE reporting

The foundations of SoE reporting

In the early 1990s, the OECD proposed a ‘pressure-state-response’ (PSR) model of SoE reporting, whereby ‘pressures’ relate to the human-induced threats to the environment; ‘state’ to the condition of the environment; and ‘response’ to the actions taken to counteract the threats. The ‘pressures’ are both direct and indirect; the ‘state’ of the environment incorporates categories such as air/atmosphere, water, land/soil, wild life and biodiversity; and the ‘responses’ include those of governments, corporations and the general public at sub-national, national and international levels.¹³ As illustrated in the diagram below, each of these elements influences all others in an interactive sequence, and all, according to OECD, must be taken into account in SoE reporting.



The European Environment Agency (EEA) extended the OECD formula to incorporate (a) the driving forces behind the environmental pressures and (b) the impacts of the environmental condition on the wellbeing of society.¹⁵ This extension is known as the DPSIR model, whereby:

- *Driving Forces* (commonly known as ‘Drivers’) refer to the social, economic and institutional changes that directly and indirectly trigger pressures on the environment;
- *Pressures* (or threats) denote the anthropogenic factors affecting the state of the environment;
- *State* (or condition) represents the quality of the environment and the functioning of important environmental processes;
- *Impacts* concern the ways in which the environmental risks and trends affect the well-being and functioning of society; and
- *Responses* refer to initiatives that have been made, or should be made, to address pressures on the environment and to improve or maintain its condition. Responses can in turn influence trends in the Driving Forces, Pressures, State and Impacts.¹⁶

Under the PSR/DPSIR models, SoE reporting is a purpose-driven, scientifically-based, ethically-charged endeavour. Hence, both in its undertaking and completion, it influences how the state of the environment comes to be understood. This, in its turn, shapes governmental decision-making and the nature of public responses. In a fundamental sense, then, SoE reporting can be held to account for its own practices, and this by numerous stakeholders. These include: governmental bodies; scientific and environmental associations; Indigenous communities; agricultural, industrial and commercial interests; and ultimately the environment itself. In order to carry conviction across these multiple audiences, SoE reporting needs to be:

- *Consequential*: that is, deal with matters of significance, and, moreover, establish *why* the selected issues are significant; and
- *Coherent*: that is, develop and maintain a clearly-articulated frame of reference pertinent to the purposes of SoE reporting;
- *Compelling*: that is, speak in a fashion that engages and sustains the hearts and minds of its varied audiences.

An important irony is at work here: on the one hand, the multiple and far-reaching nature of the PSR/DPSIR approach calls out these attributes; on the other, the compound character of the models makes their realisation the more difficult. In the following discussion, we touch on the pertinent issues in each case, paying particular attention to WA's 2007 SoE report as the foundation for future developments in this state.

SoE reporting as consequential

From the outset, SoE reporting must select the environmental issues subject to review and argue for their significance. This is made the more necessary, and the more difficult, by the extensive reach of the PSR/DPSIR models. In ecological terms, the state of the environment involves both pattern/ (structure) and process (function). Pattern/structure refers to the components of the environment, and process/function to how these components behave in specific conditions: thus, for example, the seeding behaviour of certain plant species following successive fires. As well as dealing with this interactive relationship, SoE reporting should (in theory) assess the interactions between drivers, pressures, conditions, impacts and responses. A wealth of data needs to be collected, key indicators tracked and environmental trends assessed over time.

Evidently, only certain issues can be explored in the depth and detail required by the PSR/DPSIR approach. On what criteria should they be chosen? Should the selection, for example, focus on threatened ecological communities and rare and endangered fauna and flora? Alternatively, or perhaps in addition, might it concentrate on those environmental resources thought to have the most substantial implications for human wellbeing? Or might an avowedly pragmatic stance be adopted, focusing on those issues most directly amenable to measurement and management, and thus most likely to produce observable results in societal and organisational terms? In terms of standard risk analysis, the selection also needs to weigh the *likelihood* of an environmental event occurring against the *severity* of its impact should it occur. These and many other issues overlap and combine in the formative stages of SoE reporting; the challenge lies in making the reasoning behind them clear and persuasive.

Certain commonly-shared considerations influence these choices. Chief among these is the fact that SoE reporting is a public enterprise, undertaken with the (part) intention of assessing and influencing government policy. Accordingly, it is bound to give a certain prominence to societal impacts; by the same token, it is expected to consult community groups and environmental experts in establishing its priorities. WA's 2007 SoE report illustrates what is at stake. In its introduction, it explains that:

The 2007 SoE Report does not consider all of the many environmental issues facing WA ... rather, it focuses on the major environmental issues, so as to draw attention to them and help set the State's environmental policy agenda for the next five years.¹⁷

Having 'reviewed community input from a discussion paper and advice from technical experts', the report decided on five priority rankings.¹⁸ These were based on the following criteria:

The extent of the impact across WA; the reversibility of the impact; the rate at which (the issue) is worsening; the impact on the environment, society and the economy; and the potential consequences for future generations.¹⁹

These principles are evidently weighted in favour of societal impact. However, the focus of the 2007 report goes well beyond immediate political strategy. It situates its account of environmental pressures in the context of climate change, population growth and consumption, thus prioritising the seriousness of phenomena over their amenability to direct government action. Further, by incorporating 'reversibility of impact' and 'rate of loss' in its considerations, the report gives an independent weighting to the erosion of environmental resources, thereby emphasising the intrinsic importance of preserving biodiversity. This is in accord with Section 4a of the EP Act, where 'the conservation of biological diversity and ecological integrity' is nominated as a 'fundamental consideration' of the Act, alongside intergenerational equity, the precautionary principle, valuation and waste minimisation.²⁰ Hence there is an *intrinsic* as well as a *practical* quality to the notion of environmental significance as articulated in the 2007 SoE report—or, to put it in philosophical terms, a combination of deontological (ecocentric) and utilitarian (anthropocentric) principles. We suggest that this issue, and its articulation in SoE reporting, warrant further systematic consideration.

The challenge of coherence

To be effective, SoE reports must have a clear narrative flow, with their analyses leading to coherent and composite conclusions. This is made the more difficult by the multiple requirements of the PSR/DPSIR models and the sheer volume of scientific information needed for the production of reports. In essence, SoE reports have two distinct conceptual frameworks at their disposal. The first involves structuring the report according to the main elements of the PSR/DPSIR models (or some modification thereof); the second gives priority to a report's designated environmental themes. In the first case, the components of the PSR/DPSIR approach are assessed *across* the various environmental themes: thus, for example, a report could assess how particular pressures impact on air, land, sea, water, biodiversity and heritage. Under the second approach, a given environmental theme (for example, biodiversity) is explained with reference to the interactive dynamics of the PSR/DPSIR models as a whole.

These differences are more than a matter of organisational convenience, for they affect how a report is read and its data interpreted. Under the first approach, we stand to gain a better understanding of the factors contributing to the state of the environment; under the second, we should achieve a clearer grasp of the condition of the environment as it now stands. The majority of Australian jurisdictions give precedence to the second approach, although there is some overlapping between the conceptual categories and, on occasion, confusion between them (the New South Wales 2015 SoE report, for example, is organised according to 'drivers' and 'resources', with many of the items considered in either category appearing misplaced or questionable). Irrespective of the major line of emphasis, the particular use made of the PSR/DPSIR models is critical as it influences our understandings of the forces bearing on the state of the environment. The Commonwealth's 2016 report and WA's 2007 report illustrate the points at issue.

In its entirety, the Commonwealth's report, *Australia State of the Environment 2016*, encompasses both approaches. Its *Overview Report*, a large, stand-alone document, exemplifies the PSR/DPSIR-

based format. In a significant adaptation of the DPSIR framework, the authors explain that the report's conceptual framework is 'based on the DPSIR model', but also includes 'discussion of effectiveness of management, emerging risks and environmental resilience'.²¹ In line with this, the *Overview* has six main sections—pressures; state and trends; effectiveness of management; resilience; emerging risks; and outlook—each of which offers its own particular lens through which to review the varying conditions of the Australian environment. Nine thematic reports accompany the *Overview*, all of which exemplify the second approach. These are respectively devoted to: atmosphere; inland water; land; marine environment; Antarctic environment; biodiversity; heritage; built environment; and coasts. In each case, the framework established in the *Overview* is used to explain the state of the environment: thus, for example, marine environment is assessed in relation to pressures, management, resilience and emerging risks, and its 'outlook' predicted accordingly.

By its own account, *Australia State of the Environment 2016* is the most extensive review of the Australian environment yet undertaken.²² There is, however, a limiting factor. This relates to the report's compression of the broad DPSIR notion of 'responses' into the narrower theme of 'effectiveness of management'. This detracts from the possibility that the current situation may demand radically new solutions. This limitation is partially offset by the report's concluding comments on 'outlook', which state that:

In general, the outlook for Australia's environment depends on our ability to effectively address the complex mix of drivers, pressures and risks discussed in this report. This mix can be addressed through: leadership; effective engagement of the community and private sector; continued improvements in data and understanding; further development and use of adaptive management tools and approaches; decoupling of the economy from environmental harm; and mitigation of, and adaptation to, climate change.²³

WA's 2007 SoE report provides a particularly lucid example of the thematic approach. It has seven main sections (atmosphere; land; inland waters; biodiversity; marine; human settlement; and heritage). Particular environmental issues (problems) are reported under each theme, and environmental indicators offer a summary measure of the trends in the environment and the environmental issues confronting each area. The main elements of PSR/DPSIR approach knit these sections together, giving the report its underlying conceptual coherence. The authors explain that:

A modified version of the (PSR) model is used: condition-pressure-response-implication. This assists in environmental policy planning while retaining the benefits of an internationally agreed framework for environmental reporting.²⁴

In actuality, the report adapts all the main features of the DPSIR model. It has an introductory chapter on 'fundamental pressures', where it deals with population growth, technological consumption and climate change; it defines implications as 'the social, environmental and economic consequences of the issue'; and it treats responses as 'the current major community and government actions ... that have been implemented to address the issue'.²⁵ Arguably, its conceptual stretch is the more comprehensive and its tone the more urgent than that characterising the Commonwealth report. In relation to the future prospects of the environment, the WA report contends that:

While our understanding of the environment and responsibility toward it has improved over time, and we have made significant progress in dealing with some environmental issues, the need to do more is now urgent. The health, prosperity and sense of place of this and future generations depend on our ability to stabilise and even reverse major environmental problems. In some instances, we have proved that this is possible, and as a society we have the resources and capacity to retain a healthy environment into the future.²⁶

We endorse the 2007 report's sense of urgency and its broad but centred rendering of the PSR/DPSIR approach, and urge that these qualities are reproduced in all future developments in WA SoE reporting. On this basis, we turn to our final set of considerations: the 'voice'—tone, style,

emphasis—of SoE reporting, particularly when advocating for broad political and societal action to preserve the environment.

Speaking to the people/s: SoE reporting as compelling

The first Australian SoE report (1996) concluded that no single government or sector was responsible for the environmental problems it had identified, but rather that these problems were the result of population pressures, lifestyle, consumption patterns and our technological choices. All subsequent reports have reinforced this fundamental point and invoked a whole of government/whole of society response. As Mario Molina once observed, ‘scientists may depict the problems that will affect the environment based on available evidence, but their solution is not the responsibility of scientists but of society as a whole’.²⁷

It follows that if SoE reporting is to help preserve the environment, it must appeal to the convictions and commitments of its varied audiences. This needs to reach well beyond sectorial interests and alliances; resounding, rather, to the commonly shared, although culturally mediated, experiences of ‘being in place’ and ‘place identify’.²⁸ The DPSIR approach is helpful in this respect as it reminds us that the human world is embedded in the wider environment. Speaking to this point, the New Zealand Ministry for the Environment contends that the approach is ‘able to reveal how the state of the environment influences other spheres of life ... public health, ecological integrity, the economy, *te ao Māori*, and culture and recreation’. Hence:

We hope that by using this approach we can better understand the environment as an interconnected and dynamic system which influences, and is influenced by, many aspects of the human world.²⁹

The aspirational tone of this statement affirms the importance of the human/environment bond—and by implication, the importance of the ‘other than human world’. At issue, is how SoE reporting, with its characteristically systematic and analytical bent, might best speak to the significance of a bond that is pre-eminently subjective and experiential. As David Whish-Wilson recalls of the Beeliar protestors:

The ‘environment’ ... is not some abstract principle but a place where generations of community members such as myself have walked with our children, and marvelled at the area’s ancient paperbarks, banksia, tuart and marri—the rare sedges and rushes.³⁰

SoE reports have the potential to evoke the experiential and spiritual through their photographic imagery: shots of the beautiful and the desecrated, the natural and the downtrodden, able to strike a deep chord in the public imagination. In the future, consideration might also be given to including case studies of communities directly affected by environmental loss and degradation, or, alternatively, those benefiting from environmental protection. This would bring a greater variety of voices into play, extending the current reach of SoE reporting by interleaving scientific analyses with experiential accounts.

In making this suggestion, we take note of the fact that, in the main, Australian SoE reports signally fail to acknowledge the practices, skills and knowledge of the Aboriginal people. The Commonwealth’s 2016 SoE report recognises that ‘Indigenous Australians have a unique relationship with, and responsibility for, caring for Country’, and contends that this role is recognised under the EPBC Act and the Biodiversity Conservation Strategy 2010-2030, but says little else.³¹ In contrast, a report prepared for the International Union for Conservation of Nature (IUCN) stresses that:

National and international organizations should ... recognise the skills and knowledge that local and indigenous communities have in managing the resources and areas associated with sacred natural sites. Furthermore, effective action in support of the preservation and effective management of sacred natural sites will have a large impact on enhancing biodiversity conservation, as well as on the long-term vitality of the cultures that have cared for them.³²

To promote better practice, the IUCN report develops six principles respectively based on: recognition; integration; inclusion and collaboration; improved knowledge; protection; and respect.³³ Its associated set of guidelines offers practical advice for environmental planners and decision-makers. We suggest that under the EPA's enabling legislation the definition of the term 'environment', and hence the scope of the Act, clearly includes the social, cultural and spiritual matters considered here.[†] On that understanding, the EPA might wish to inquire whether these principles and guidelines should be better recognised in statutory and/or non-statutory policy, and develop its own set of guidelines accordingly.

Such an initiative would help to promote the participation of Indigenous communities in SoE reporting and environmental policy more generally. But there is also the distinct, if parallel, issue of just how the insights of the land's traditional owners *might come to infuse SoE reporting*. Ambelin Kwaymullina, an Indigenous lawyer from the Bailgu and Njamal people of the Pilbara region, speaks in a very different register from that adopted in SoE reports, when she reflects that:

The destruction of a species creates not just an absence in the ecosystem, but a hole in the spirit where once another shape of life breathed, flew, danced, lived. When one shape changes their relationship to the others, the world is changed both without and within. Destroy enough of life outside ourselves, and life is destroyed inside us all.

Country is the beginning, the middle, and the end. It is from country that life is born; to country that life goes when it dies; and from country that it is born anew. That is why there is a view that nothing, not even a species, is ever really gone. ... But there will come a point when the pattern cannot be made anew. ... Damage enough of country, unbalance the relationship of life to all other life enough, and the pattern that is creation will twist, warp, fall apart.³⁴

Kwaymullina's insights, which turn science into poetry, would lend a whole new depth and significance to SoE reporting. Just how they—and the wisdom and experience of the land's traditional owners more generally—might be included in all future SoE reports requires a long and thoughtful conversation. As a preliminary contribution to this discussion, we suggest that every WA SoE report should start with an Acknowledgment of Country, such as that currently contained in the Commonwealth 2006 SoE report:

The authors acknowledge the Traditional Owners of Country throughout Australia, and their continuing connection to land, sea and community; and pay respect to them and their cultures, and to their Elders both past and present.³⁵

We would like to see such an Acknowledgment followed by a significant Welcome to Country, which could be referred to throughout the report, through imagery as well as the written word. This would establish, at the outset, that we are not the owners of the land; rather that the land owns us, and that we must move as respectfully and carefully through it as we possibly can.

Summary

There is an urgency to the matters considered in this paper. As Lowe reflects, for as long as we continue to follow a 'business as usual' approach, we will experience:

[†] The EP Act (Section 3, ss. 1) defines the environment as 'living things, their physical, biological and social surroundings, and interactions between all of these'. In elaboration, it states that the 'social surroundings of man (sic) 'are his 'aesthetic, cultural, economic and social surroundings to the extent that those surroundings directly affect or are affected by his physical or biological surroundings' (Section 3, ss. 2). (Government of Western Australia, Department of the Premier and Cabinet, *Environmental Protection Act 1986*, op cit).

Worsening traffic snarls in poorly connected, sprawling cities; population pressures along our much-loved coastline; degradation of productive rural land; major declines in native wildlife; the growing global challenge of rising greenhouse gas emissions; and major gaps in our knowledge and monitoring across many areas.³⁶

The observation speaks directly to the state of the environment in WA. Across the state's various regions, we witness the loss or degradation of natural vegetation, wetlands, rivers, marine environments and Aboriginal settlements. The failure to develop SoE reporting over the last decade means that the state's environmental conditions are not effectively monitored; by the same token, the Commonwealth lacks in-depth knowledge of the particular issues confronting WA. We cannot properly protect an environment that we do not monitor and measure. As noted, it is an irony that we are in this situation in 2017 when the foundations for best-practice SoE reporting were established in WA's 2007 SoE report.

The case for legislatively mandated, regular, high quality SoE reporting in WA is strong. In building our case for legislative reform, we have stressed that WA has reporting responsibilities under the Intergovernmental Agreement on the Environment (1992) and the National Strategy for Ecologically Sustainable Development (1992). We have also intimated that the revival of SoE reporting cannot be left to the EPA alone, since history so clearly establishes that the process is subject to budgetary and political pressures. We therefore ask the WA Government to:

- i. Amend Section 16 of the EP Act to endow the EPA with the responsibility for regular SoE reporting *and resource it accordingly*. If the data collection requirements of WA's ecological, geographical, social and economic profiles are thought to merit a five-year term, consideration should be given to ongoing stocktaking to keep the condition of the environment under review and contribute to the final report.
- ii. Consider further legislative change to ensure a broad governmental response to SoE reporting. To this end, we have proposed a minimalist model and a more substantial alternative. The minimalist model would entail amendments to the EP Act requiring other departments and agencies to prepare and lodge with the EPA their specific Environmental Action Plans (EAPs) and report upon their progress toward the implementation of these plans. The second alternative is based upon Division 2 of Part 5 of the *WA Financial Management Act 2006* (FM Act), and could be achieved either through amendments to the EP Act itself or a special purpose Act. Its principal provisions would:
 - o Define key performance indicators for the nominated agencies;
 - o Require the preparation of annual environmental statements by the agencies;
 - o Establish a reporting process to the Auditor General and Minister for Environment; to be followed by:
 - o Tabling of the statement in Parliament.

In reviewing the issues confronting consequential, coherent and compelling SoE reporting, we have noted the challenges posed by the compound nature of the PSR/DPSIR models, together with the weight of technical data required to substantiate any particular case. On this matter, we have suggested that:

- i. In terms of significance/consequentiality, it would be fruitful to give further systematic consideration to the selection of the environmental issues subject to review, most particularly as regards the balance between intrinsic and utilitarian principles.
- ii. The conceptual framework of a report—that is, whether it takes environmental themes or some version of the PSR/DPSIR framework as its primary point of reference—influences how its data is read and interpreted. Our preference lies with the thematic approach since we believe it offers the clearer focus on the state of the environment at a given point in time.

- iii. SoE reporting cannot rely on scientific data alone, but, consistent with the definition of the environment under the EP Act, must also convey a sense of the social, cultural and spiritual significance of the environment. Possible contributions to this effect include photographic imagery, case studies, and a substantial Welcome to Country.
- iv. The knowledge and skills of Indigenous communities should be actively sought in the development of SoE reports and EAPs, with direct reference to the principles and guidelines of the IUCN report cited above.

In making these proposals, we do not suggest that SoE reporting is a magic bullet; rather, we see it as a key component of our collective efforts to safeguard the environment. Its multiple challenges only add to the importance of the task, inviting serious and imaginative consideration from all those concerned with the development and outcomes of state and national environmental policies. We endorse the EPA's observation that it is 'our collective responsibility to look after our environment, and our collective and individual behaviours will determine how well we do this', and invite all interested parties to give close consideration to developing state-of-the-art reporting in WA.³⁷

¹ Australian Government, 1994, *State of the Environment Reporting: Framework for Australia*. Available at <http://www.environment.gov.au/node/23079>. Last viewed on September 12, 2017.

² Australian Government, 1992, *Intergovernmental Agreement on the Environment*. Available from <http://www.environment.gov.au/about-us/esd/publications/intergovernmental-agreement>. Last viewed September 12, 2017.

³ Ibid, cited under 'key findings', np.

⁴ Western Australian Auditor General's Report, *Rich and Rare: Conservation of Threatened Species Follow-up Audit*, September 2016. Available at https://audit.wa.gov.au/wp-content/uploads/2017/09/report2017_16-RichRare.pdf. Last viewed September 12, 2017.

⁵ The Environmental Protection Authority, WA, *State of the Environment Report 2007*, p. 78 and p. 79.

⁶ Australian Government, *Australia State of the Environment, 2016, Overview*, pp. 59-60. Available from <https://soe.environment.gov.au>. Last viewed November 3, 2017.

⁷ Lowe, I, 2017, 'The state of Australia: our environment', *The Conversation*, May 7, 2017. Available from <https://theconversation.com/the-state-of-australia-our-environment-26035>. Last viewed September 12, 2017.

⁸ The Environmental Protection Authority, WA, *State of the Environment Report 2007*, p. xii. Available from <http://www.epa.wa.gov.au/state-environment-report-2007>. Last viewed September 12, 2017.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

¹² Government of Western Australia, Department of the Premier and Cabinet, *Financial Management Act 2006*. Available from https://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrtitle_333_homepage.html. Last viewed November 2017.

¹³ OECD, 2003, *OECD Environmental Indicators, Development, Measurement and Use*. Available from <https://www.oecd.org/env/indicators-modelling-outlooks/24993546.pdf>. Last viewed September 12, 2017.

¹⁴ Ibid.

¹⁵ European Environment Agency, *The DPSIR Framework*. Available from <https://www.eea.europa.eu/publications/92-9167-059-6-sum/page002.html>. Last viewed September 12, 2017.

¹⁶ Eijolt, *Mapping Environmental Justice*. Available from <http://www.eijolt.org/2013/02/dpsir/>. Last viewed September 12, 2017.

¹⁷ The Environmental Protection Authority, WA, *State of the Environment Report 2007*, p. iii.

¹⁸ Ibid, p. ix.

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- ¹⁹ Ibid, p. viii.
- ²⁰ Government of Western Australia, Department of the Premier and Cabinet, *Environmental Protection Act 1986*. Available from https://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrtitle_304_homepage.html. Last viewed October, 2017.
- ²¹ Australian Government, *Australia State of the Environment Overview 2016*, p. vii. Available from <https://soe.environment.gov.au/frameworks/outlook>. Last viewed November 3, 2017.
- ²² Ibid.
- ²³ Australian Government, *State of the Environment, 2016*, 'Outlook'. Available from <https://soe.environment.gov.au/frameworks/outlook>. Last viewed November 3, 2017.
- ²⁴ The Environmental Protection Authority, WA, *State of the Environment Report 2007*, p. xiii.
- ²⁵ Ibid, p. xiv.
- ²⁶ Ibid, p. xii.
- ²⁷ Vision Learning, 2015, *Mario Molina: Atmospheric Chemistry to Change Global Policy*. Available from <https://www.visionlearning.com/en/library/Inside-Science/58/Mario-Molina/211>. Last viewed September 12, 2017.
- ²⁸ For an overview of the issues, see De Young, R. (2013), 'Environmental Psychology Overview', in *Green Organizations: Driving Change with I-O Psychology*, ed. Ann H. Huffman & Stephanie Klein, pp.17-33. Available from https://www.researchgate.net/publication/259286195_Environmental_Psychology_Overview. Last viewed October 31, 2017.
- ²⁹ New Zealand Ministry for the Environment, *Environment Aotearoa 2015*, October 2015
- ³⁰ Whish-Wilson, D, 2017, 'The Perth Freight Link: stranger than fiction', *The Monthly*, March 2017. Available from <https://www.themonthly.com.au/issue/2017/march/1488421058/david-whish-wilson/perth-freight-link-stranger-fiction>. Last viewed August 2017.
- ³¹ Australian Government, *Australia State of the Environment Overview 2016*, pp. 59-60.
- ³² Wild, R. and C. McLeod (eds.) 2008, *Sacred Natural Sites, Guidelines for Protected Area Managers*, Task Force on the Cultural and Spiritual values of Protected Areas in collaboration with UNESCO's Man and Biosphere Programme, World Commission on Protected Areas Best Practice Protected Area Guidelines Series No. 16, p. ix. Available from https://cmsdata.iucn.org/downloads/pa_guidelines_016_sacred_natural_sites.pdf. Last viewed November 10, 2017.
- ³³ Ibid, Part 4, pp. 21-27.
- ³⁴ Kwaymullina, A, 2005, 'Seeing the Light: Aboriginal Law, Learning and Sustainable Living in Country', *Indigenous Law Bulletin* 27. Available from <http://classic.austlii.edu.au/au/journals/IndigLawB/2005/27.html>. Last viewed October 12, 2017.
- ³⁵ Australian Government, *Australia State of the Environment, 2016, Overview*, np. Available from <https://soe.environment.gov.au>. Last viewed November 3, 2017.
- ³⁶ Lowe, I, 2017, 'The state of Australia: our environment', *The Conversation*, May 7, 2017.
- ³⁷ The Environmental Protection Authority, WA, *State of the Environment Report 2007*, p. xii.