EIANZ Annual Conference
29–30 October 2015, Pan Pacific Hotel, 207 Adelaide Terrace, Perth, WA

Challenging the status quo

Excellence in environmental practice

Keynote Address: Challenging the status quo of EIA practice - promoting the benefits of strategic and sustainability oriented thinking

Angus Morrison-Saunders

30 October 2015

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- Extraordinary Professor in Environmental Sciences and Management, North West University, South Africa
- Associate editor *Environmental Impact Assessment Review* journal

Murdoch UNIVERSITY

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

Main points of focus…

- considering the foundational objectives for EIA
- re-visioning EIA (challenging the status quo)
- demonstrating benefits of EIA

Context for this presentation…

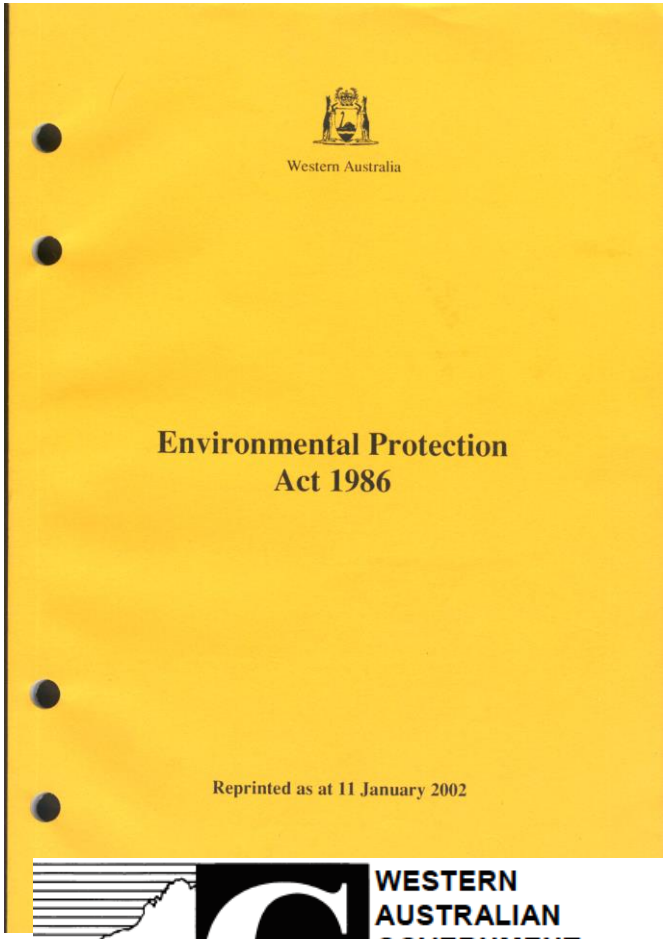
EIA process in WA is my example

- *(home advantage?)*

but hopefully the main points are relevant to all EIA practitioners

- *(so please extrapolate the ideas to your own EIA circumstances)*

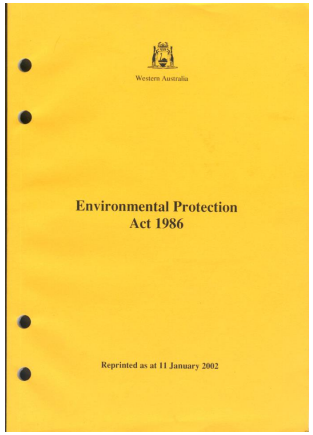
EIA in WA – *EPAct* 1986



- establishes Environmental Protection Authority (EPA)
- EIA is a key function of EPA
- legal aspects of EIA in Act
- process details in 2012 *EIA Administrative Procedures*

Long title of the *EPAct* 1986

…for the prevention, control and abatement of pollution and environmental harm, for the **conservation, preservation, protection, enhancement** and management of the environment …



A thought experiment…

Long title of the *EPAct* 1986

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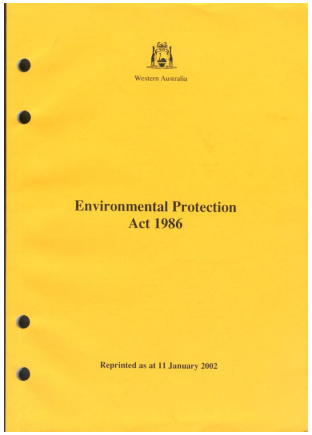

You have been asked to design an EIA process to deliver this goal (starting with a blank slate).

What would you propose?

What is the best way to do EIA?

Before attempting to answer this question, let's consider current practice…

[WA specifics follow, but ultimately similar to nature of EIA worldwide]

EIA in WA – *Key environmental factors*

44. Report by Authority

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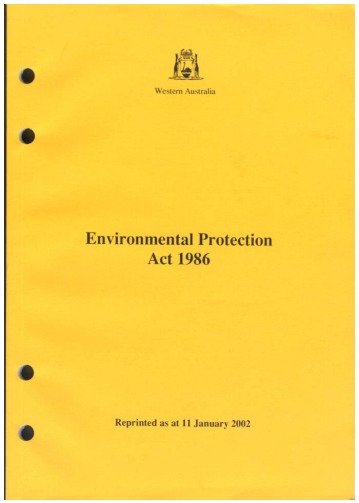


(2) The assessment report must set out –

(a) ***what the Authority considers to be the key environmental factors*** identified in the course of the assessment; ...

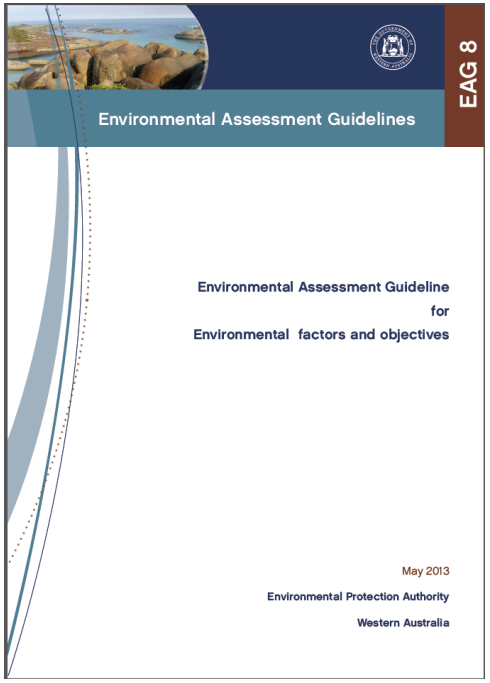
(*EPAct* s44)

EIA in WA – Environmental factors and objectives (i)

Environmental Factor = part of the environment that may be impacted by an aspect of the proposal

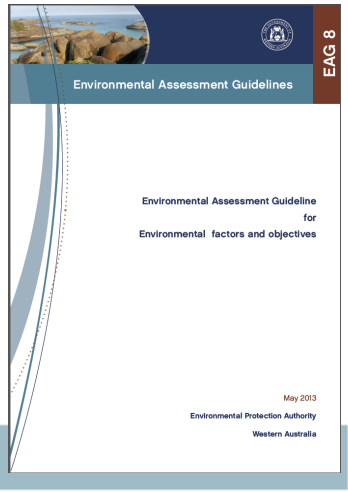
- 15 environmental factors (five themes)
- 2 integrating factors

Note: environmental factors are mainly **biophysical** only



EPA (June 2013): *Environmental Assessment Guideline for Environmental Factors and Objectives*, EAG8, EPA (p5)

EIA in WA – Environmental factors and objectives (ii)



Theme	Factor	Objective
Sea	Benthic Communities and Habitat	To maintain the structure, function, diversity, distribution and viability of benthic communities and habitats at local and regional scales.
	Coastal Processes	To maintain the morphology of the subtidal, intertidal and supratidal zones and the local geophysical processes that shape them.
	Marine Environmental Quality	To maintain the quality of water, sediment and biota so that the environmental values, both ecological and social, are protected.
	Marine Fauna	To maintain the diversity, geographic distribution and viability of fauna at the species and population levels.
Land	Flora and Vegetation	To maintain representation, diversity, viability and ecological function at the species, population and community level.
	Landforms	To maintain the variety, integrity, ecological functions and environmental values of landforms and soils.
	Subterranean Fauna	To maintain representation, diversity, viability and ecological function at the species, population and assemblage level.
	Terrestrial Environmental Quality	To maintain the quality of land and soils so that the environment values, both ecological and social, are protected.
	Terrestrial Fauna	To maintain representation, diversity, viability and ecological function at the species, population and assemblage level.
Water	Hydrological Processes	To maintain the hydrological regimes of groundwater and surface water so that existing and potential uses, including ecosystem maintenance, are protected.
	Inland Waters Environmental Quality	To maintain the quality of groundwater and surface water, sediment and biota so that the environmental values, both ecological and social, are protected.
Air	Air Quality	To maintain air quality for the protection of the environment and human health and amenity.
People	Amenity	To ensure that impacts to amenity are reduced as low as reasonably practicable.
	Heritage	To ensure that historical and cultural associations are not adversely affected.
	Human Health	To ensure that human health is not adversely affected.
Integrating Factors	Offsets	To counterbalance any significant residual environmental impacts or uncertainty through the application of offsets.
	Rehabilitation and Closure	To ensure that premises are closed, decommissioned and rehabilitated in an ecologically sustainable manner, consistent with agreed outcomes and land uses, and without unacceptable liability to the State.

EPA (June 2013): *Environmental Assessment Guideline for Environmental Factors and Objectives*, EAG8, EPA (pp3-4)

EIA in WA – the mitigation hierarchy

Mitigation in an environmental context, means a sequence of proposed actions designed to help ***manage adverse environmental impacts***, and which includes (in order of preference) –

1. ***avoidance*** – avoiding the adverse environmental impact altogether;
2. ***minimisation*** – limiting the degree or magnitude of the adverse impact;
3. ***rectification*** – repairing, rehabilitating or restoring the impacted site as soon as possible;
4. ***reduction*** – gradually eliminating the adverse impact over time by preservation and maintenance operations during the life of the action; and

Environmental offset means an action or actions undertaken to counterbalance adverse environmental impacts from implementation of a proposal. The action(s) are taken after all reasonable mitigation measures have been applied and a significant environmental risk or impact remains.

EIA Admin Proc 2012, s2

EIA in WA – Environmental factors and objectives (iii)

EPA objectives for environmental factors … means the ***desired goal for each environmental factor***, which, ***if met***, will indicate that the ***proposal is environmentally acceptable***.

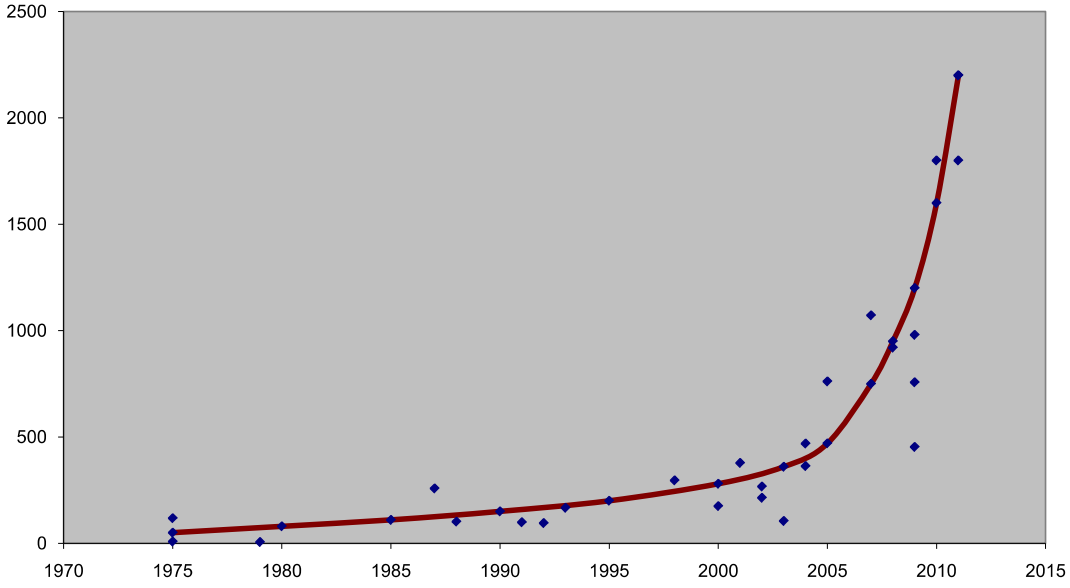
EIA Admin Proc 2012, s2

So how does EIA look with this approach?

- EIA documents divided into topics for each env. factor
- Studies/discussion of individual impacts on each factor – mitigation to minimise impacts

[i.e. pretty typical EIA approach seen worldwide – reductionist, over time increasing types of impacts considered]

Growth in the size of an EIS



EIA documents in WA have got bigger over time

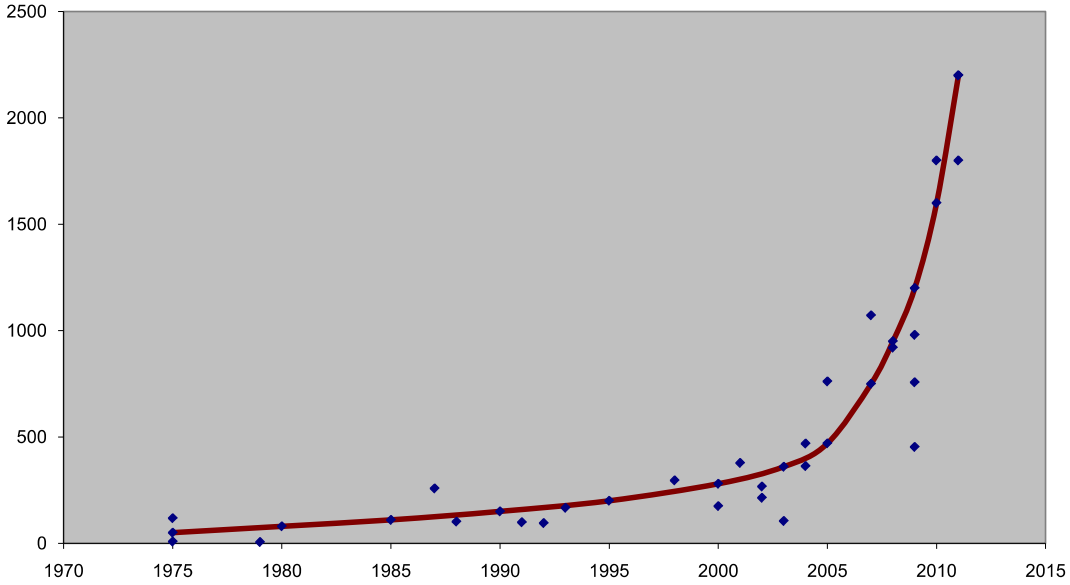
Environmental Protection Authority

ECA Forum

9 March 2012

Dr Paul Vogel
Chairman
Environmental Protection Authority

Growth in the size of an EIS



EIA documents in WA have got bigger over time

Imagine how big they would be if health & socio-economic impacts were also included…

Environmental Protection Authority

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EIA in WA – It is one of the best!

I am on the public record stating that the EIA system in WA is the best of its kind that I have seen.

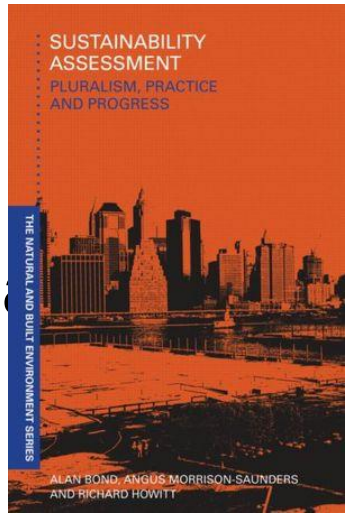
A Rolls Royce…

But is best current EIA practice enough?

State of the Environment Reporting indicates deteriorating environmental and social quality and wellbeing

STATE OF THE ENVIRONMENT REPORT Western Australia 2007

- trends are **"towards deeper unsustain**
  (Gibson 2013, p3)



Gibson, R (2013), Why sustainability assessment? In: A. Bond, A. Morrison-Saunders and R. Howitt, eds. *Sustainability assessment: pluralism, practice and progress*. Routlege, London, Chapter 1, pp3-17

SOER WA – Overview…

Theme	Status & trend	Comment
Fundamental Pressures	↓	Increasing pressures on the environment from WA's economic boom, consumption of natural resources, and climate change require new approaches to environmental management.
Atmosphere	–	Atmospheric pollution issues across WA are generally within guideline limits and appear to be under control. Some issues appear to be worsening.
Land	–	Many land problems in the South West are getting worse. There are fewer problems in other parts of WA.
Inland Waters	↓	Many waterways and wetlands in WA are degrading, especially in the South West. Better management and protection of inland waters is required.
Biodiversity	↓	There is insufficient knowledge about biodiversity in WA. Most biodiversity issues are serious and appear to be getting worse.
Marine	–	A few marine areas in WA have recognised problems. Improved knowledge of the marine environment is required.
Human Settlements	↓	Some WA settlements are growing at an unsustainable pace with increasing demand for … increasing waste generation …
Heritage	↓	Many heritage places in WA … management, protection an… are required.

Legend:

Current status	Trend direction
Good	↑ Likely improvement
Average	– Steady
Of concern	↓ Likely deterioration

http://www.soe.wa.gov.au/report/overview.html

SOER no longer happens in WA – but EPA recently began reporting on key issues in annual reports

Environmental Protection Authority

annual report 2012—13

Further reading and references

(Banded iron formations)

Department of Environment and Conservation 2012, *Overview of conservation values and history of reserve proposals in the Mount Manning area* (unpublished report), DEC, Perth, WA.

Environmental Protection Authority 2007, *Advice on areas of the highest conservation value in the proposed extensions to Mount Manning Nature Reserve*, Bulletin 1256, EPA, Perth, WA.

Government of Western Australia 2007, *Strategic review of the conservation and resource values of the banded iron formation of the Yilgarn Craton*, Perth, WA.

Gibson, N, Meissner, R, Markey, AS and Thompson, WA 2012, *Patterns of plant diversity in ironstone ranges in arid south western Australia*, Journal of Arid Ecology 77:25-31.

Auditor General for Western Australia 2008, *Improving Resource Project Approvals*, Report 5, Perth, WA.

Industry Working Group 2009, *Review of Approval Processes in Western Australia*, Prepared for the Minister for Mines and Petroleum, Perth, WA.

Wilde, SA, Valley, JW, Peck, WH and Graham, CM 2001, *Evidence from detrital zircons for the existence of continental crust and oceans on the Earth 4.4 Gyr ago*. Nature 409: 175-178.

Key issue

Rehabilitation of disturbed landscapes

Many development proposals considered by the EPA require the clearing of native vegetation. In many instances, approval – such as for a mine – is granted subject to conditions requiring rehabilitation.

The challenge of rehabilitation in Western Australia is to recreate the conditions and reintroduce the species which have evolved to cope with specialised conditions, such as arid environments with skeletal soils. WA is unique and biodiverse, therefore rehabilitation involves considerable planning, effort and expense.

Adaptation is the foundation of rehabilitation. The variety of climates and soils in WA means that the same rehabilitation methods are not successful in all regions.

The increasing number of large-scale proposals in environmentally sensitive areas has led the EPA to review its current approach to assessing and conditioning rehabilitation in EIA. Rehabilitation is an important consideration for the EPA as it relates to a range of key environmental factors. The EPA's objective in recommending rehabilitation conditions is to return ecological function to a disturbed area however the lack of implementation of rehabilitation conditions and documented successful rehabilitation outcomes to-date are of major concern to the EPA.

In recent years, the EPA has consulted with experts to build a picture of rehabilitation success and failure using the Pilbara as a case study. Rehabilitation conditions have been recommended for approximately 76 per cent of all mining proposals in the Pilbara. In the past 20 years, this equals over 120,000 hectares (1,200 km^2) which will need to be rehabilitated in the future. However, it is estimated that perceived best-practice rehabilitation in the Pilbara often achieves a return of less than 15 per cent of the pre-mined biodiversity values (diversity and cover) and only 10 per cent of the seed required for rehabilitation programs is harvested annually. Currently, there is a lack of confidence that even the most common plant species can be restored in the Pilbara, potentially raising the prospect of significant residual impacts.

It has been estimated that perceived best-practice rehabilitation in the Pilbara often achieves a return of less than 15 per cent of the pre-mined biodiversity values.

Of particular concern to the EPA is the lack of successful rehabilitation of the common mulga and spinifex communities.

Continued investment in research and the development of technology with collaboration across industry, government and research organisations is necessary to improve rehabilitation outcomes across Western Australia. Landscape scale rehabilitation is an

A Rolls Royce might be a great car, but perhaps something else is needed…?

but perhaps something else is needed…?

Should we change the EIA legislation?

Long title of the *EPAct* 1986

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EIA in WA – *Key environmental factors*

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(*EPAct* s44)

Changing legislation is difficult (and dangerous)

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Could we improve our approach to EIA in WA without changing legislation?

EIA in WA – *Key environmental factors*

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(*EPAct* s44)

Another thought experiment…

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Could 'env. factor' be defined differently by the EPA (i.e. to achieve better EIA)? [suggestions…?]

EIA in WA – *Key environmental factors*

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(*EPAct* s44)

Reinventing EIA – what might we do?

e.g. Best practice EIA might be:

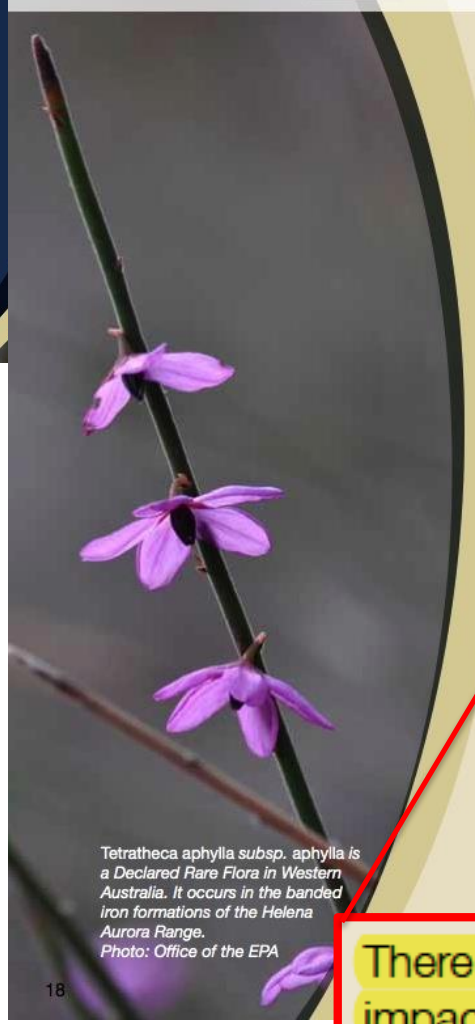
- ***holistic/sustainability oriented***
  - consider whole region/ecosystem (e.g. cumulative effects)
- ***systems based***
  - understand socio-ecological linkages, directions of change and how EIA could enhance socio-ecological system
- ***strategic in nature***
  - high level/proactive and focus on what matters most (divert resources to these)

+ usual best practice principles such as credible, rigorous, transparent, participative, adaptive etc.

Consideration of cumulative effects is starting to happen

Environmental Protection Authority

annual report 2012—13



Tetratheca aphylla *subsp.* aphylla *is a Declared Rare Flora in Western Australia. It occurs in the banded iron formations of the Helena Aurora Range.*
Photo: Office of the EPA

Western Australia's environmental challenge

Western Australia is home to a rich and diverse natural environment within a large geographical area.

By virtue of the State's size, geology, varied climate and relative isolation, there is a vast array of fauna and flora, some of which is found nowhere else in the world.

A growing population and the demand for our natural resources mean that pressure is mounting on our environment. Many of the developments in WA are on a massive scale and in areas that are unpopulated, therefore often out of sight to the general community.

As new resource markets are opening up, 'unconventional' gas and uranium are joining our more traditional mining sectors, such as iron ore. In addition to localised issues, global pressures such as the increasing demand for water, climate change and sea level rises, are also impacting on the Western Australia environment.

There is a growing need for increased focus on the cumulative impacts of human activities across the State. Whilst proposals referred to the EPA are assessed at an individual level, they are not seen in isolation.

The EPA applies a 'significance framework' to make decisions through the environmental impact assessment process, looking at key environmental factors which, together, comprise the Western Australian environment and set out the objectives to be achieved for each factor. Assessments are always undertaken with these objectives in mind.

There is a growing need for increased focus on the cumulative impacts of human activities across the State. Whilst proposals referred to the EPA are assessed at an individual level, they are not seen in isolation.

Systems thinking in impact assessment is starting to happen…

13. A systems approach to sustainability assessment
William Grace and Jenny Pope

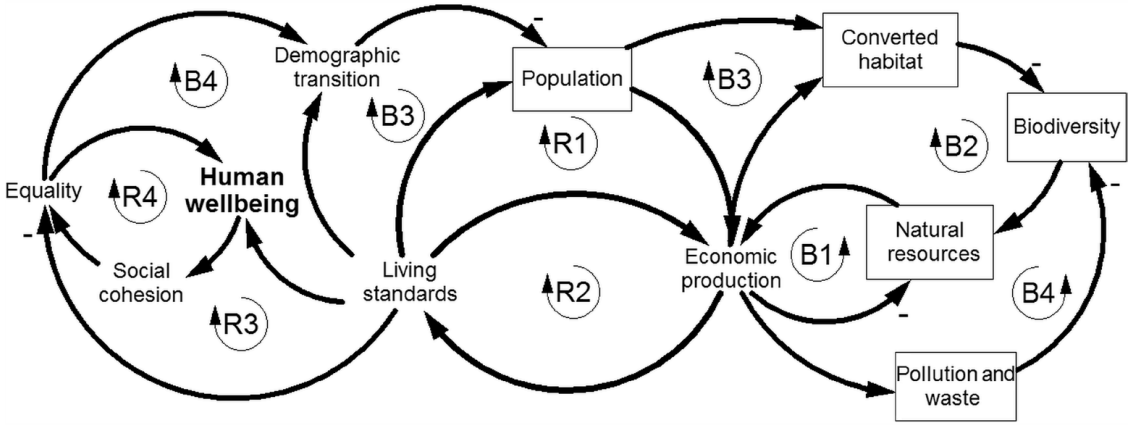


Figure 13.21 Influences on human wellbeing

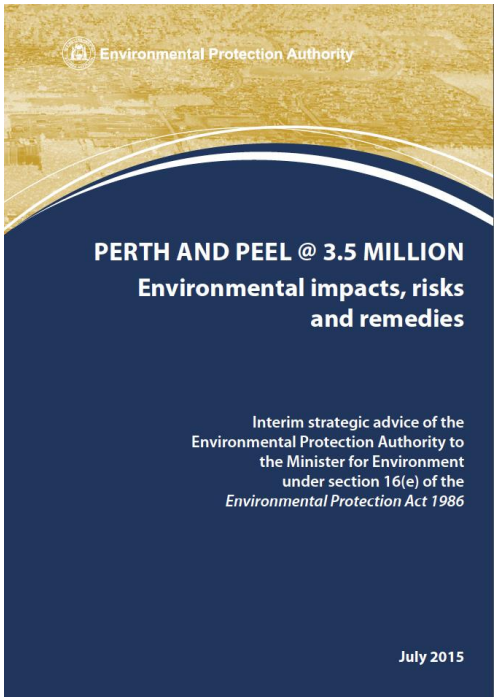
[session on systems and IA are planned for IAIA16]

EIA in WA – more strategic assessments?

Strategic consideration of the environment

Since its inception in 1971, the EPA has conducted environmental impact assessments of significant development proposals. In 1996, the EPA was also given responsibility to assess all planning schemes and scheme amendments.

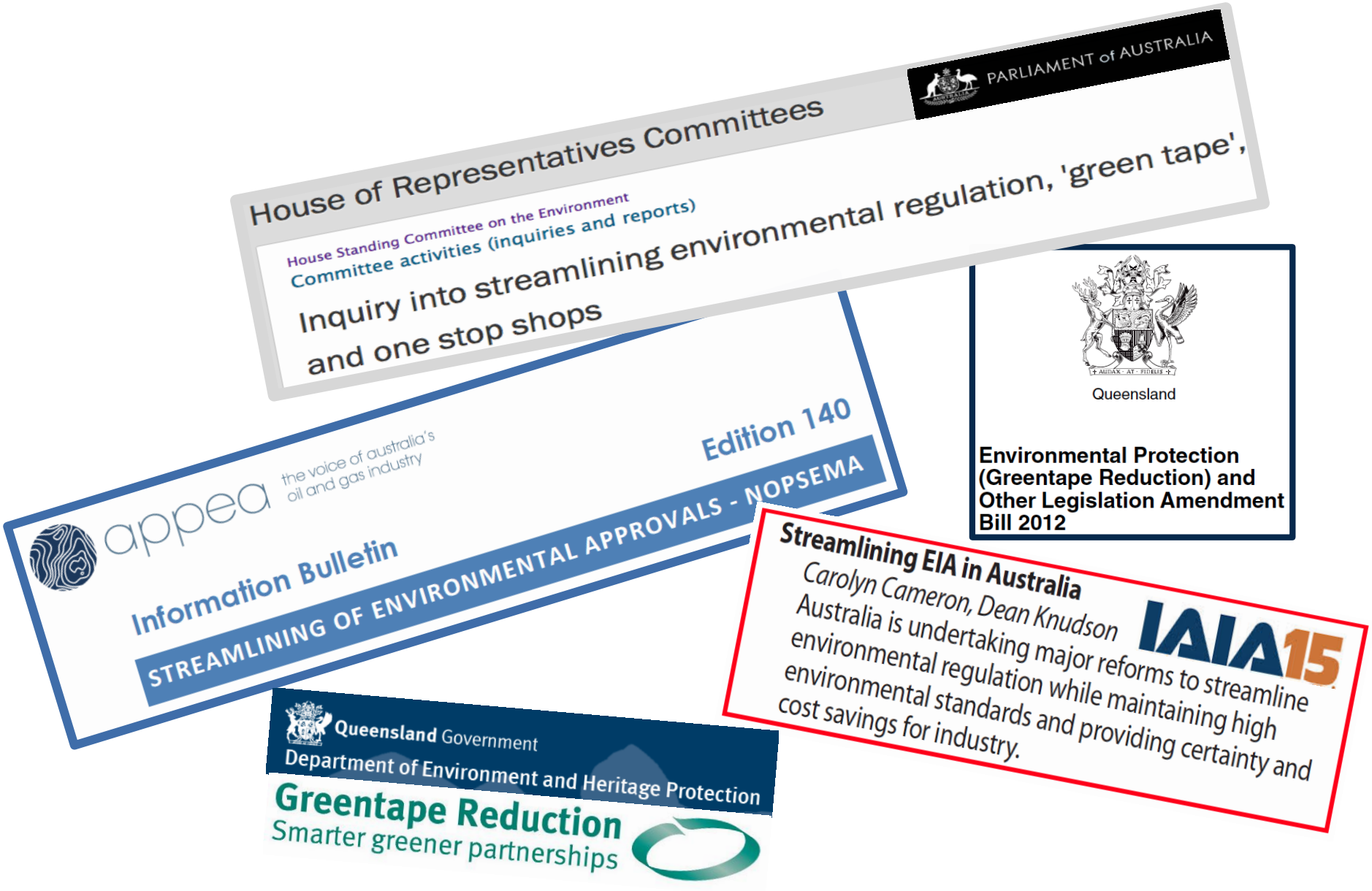
What the EPA has learned over that time is that case by case assessments are usually not the best way to achieve broader strategic environmental outcomes, particularly in areas where there is a range of cumulative environmental impacts, complex biodiversity and many competing land uses.



[EPA 2015, p4]

Executive summary

Meanwhile, are we under attack?



and internationally too…?

Canada

Jobs, Growth and Long-term Prosperity Act 2012

Sneller & Beter

Planning and Transport]

Faster & Better

[national plan for Infrastructure, Spatial

The Netherlands

Sneller en Beter Project: faster decision-making

USA

Federal Highway Administration

Every Day Counts

Innovation Initiative

En snabbare väg till färdig väg och järnväg

Transport Administration

A faster route to roads and railways

Sweden

South Africa

eiams

Environmental Impact Assessment & Management Strategy

Why do EIA?

Is it because:

- ***EIA is a legal requirement(?)***

Why do EIA?

Is it because:

- ~~*EIA is a legal requirement(?)*~~ X
- ***EIA enables sustainable development(?)*** ✓
  - i.e. benefits of EIA > costs of doing EIA

Can we demonstrate the benefits of EIA?

e.g. with the 'managing adverse impacts' approach that we use now?

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Can we demonstrate the benefits of EIA?

e.g. with the 'managing adverse impacts' approach that we use now?

> Long title of the *EPAct* 1986
>
> …for the prevention, control and abatement of pollution and environmental harm, for the **conservation, preservation, protection, enhancement** and management of the environment …

How about an EIA approach that was:

- **holistic/sustainability oriented?**
- **systems based?**
- **strategic in nature?**

*What might **we** do to challenge the status quo of EIA practice?*

Thank you!

I invite questions and open discussion …

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