# FROM MITIGATION TO SUSTAINABILITY: GOING BEYOND REACTIVE APPROACHES

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# FROM MITIGATION TO SUSTAINABILITY

- Evolution of environmental instruments
- Beginning with project level environmental impact assessment
- Developments of audits of project operations, SoE reporting and strategic environmental assessments
- Progressing to regional sustainability strategies
- Shift from reactive assessments to proactive strategies
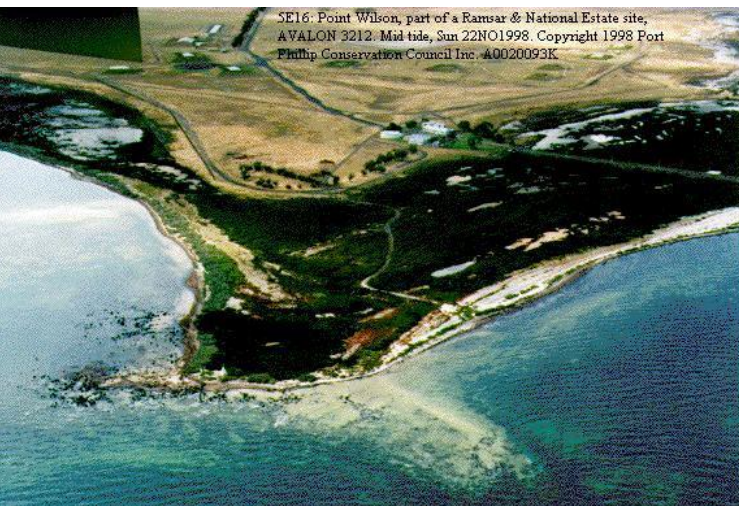- Implications for environmental professionals and the profession

# PASSAGE OF NEPA IN USA (1969)

- Creation of a new environmental instrument

  - environmental impact assessment

- Action-forcing mechanism on proponents

  - publicly disclose adverse effects that cannot be avoided should proposal be implemented

- EIA and Effects-Based Management spread internationally

  - Australian states and Commonwealth Environmental Protection Acts

  - New Zealand Resource Management Act

Botany plant


Point Wilson

SE16: Point Wilson, part of a Ramsar & National Estate site, AVALON 3212. Mid tide, Sun 22NO1998. Copyright 1998 Port Phillip Conservation Council Inc. A0020093K.

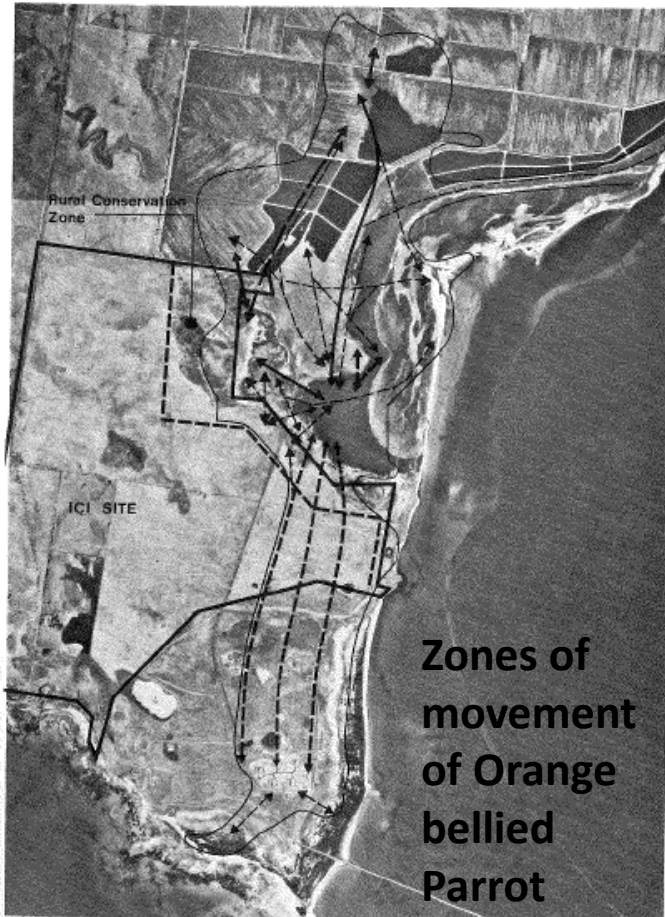# FIRST ENVIRONMENTAL EFFECTS STATEMENT IN VICTORIA

Rezoning land at Point Wilson for Petrochemical Plant

- ICI (now Orica) plant at Botany: encroachment of urban development
- Point Wilson (near Geelong): "ideal" site - never surrounded by urban development
- Prime wintering habitat of the Orange-bellied Parrot

ADULT ♂



Rural Conservation Zone

ICI SITE

**Zones of movement of Orange bellied Parrot**

# CREATION OF CONSERVATION RESERVE

- Critical habitats, flight paths and buffer zones determined as part of EES
- 300ha reserve is now the corner stone of Orange-bellied Parrot conservation programme
- Incredible value of timely environmental impact assessment

# EFFECTS-BASED LEGISLATION

- Emphasis of EIA on mitigation measures

- Legislation requirement

  - "avoiding, remedying or mitigating and adverse effects of activities on the environment"

  - "prevent, control and abate pollution and environmental harm"

- Created a new profession of environmental practitioners and a new professional association

# EXPANSION TO PROJECT OPERATIONS

- Operational requirements on projects

  - EIA approval requirements (Australia)

  - Pollution control licences (Australia)

  - Consent conditions (New Zealand)

- Expansion of role of environmental professionals

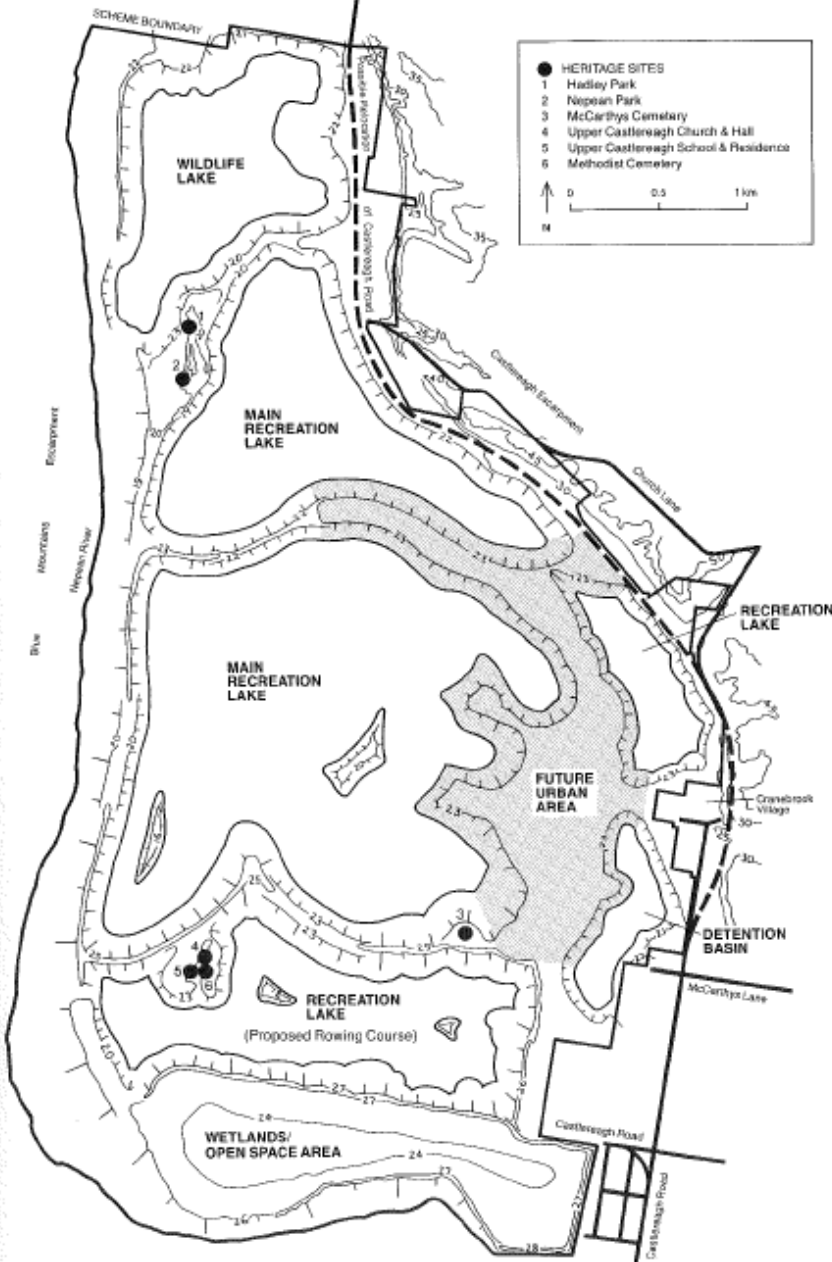  - environmental managers

  - environmental auditors

Figure 6.1
GROUPING OF
SITES

# PROJECTS WITHIN THEIR REGIONAL CONTEXT

## EIA on Site Selection

- Second Sydney Airport (1985)
- Comparison of 10 alternative sites after examination of 80 km radius around Sydney (plus Goulburn)
- Multi-criteria analysis with preferred site dependent on weighting of criteria
- Two alternatives assessed (Badgerys Creek and Wilton) to facilitate political decision

**Lake layout as endpoint of quarry rehabilitation**



# PROJECTS WITHIN THEIR REGIONAL CONTEXT

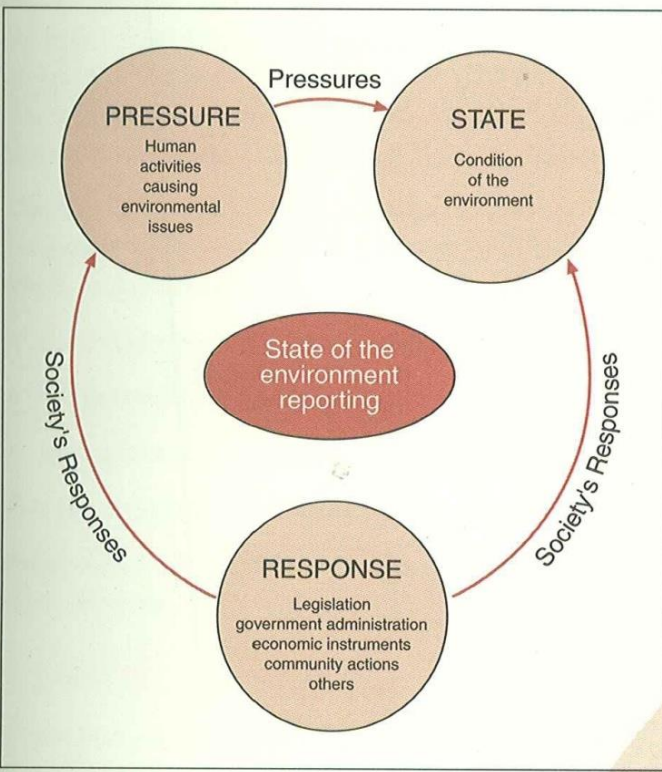EIA on Rehabilitation on Industry Closure

- Penrith Lakes Scheme (1986)
- Coordination of extraction and rehabilitation of multiple quarrying operations for sand and gravel
- Rehabilitation to create regional water-oriented recreation resource in former quarry areas

# ELIMINATION OF ADVERSE EFFECTS NOT REQUIRED

- Legislation requirements

    - prevent "significant adverse effects on the environment"

    - address "material environmental harm"

    - ensure adverse effects "are no more than minor"

- Cumulative outcome

    - adverse effects are approved

    - cumulative outcome is ongoing degradation of the environment

- Limits set under Environmental Policies

    - effects-based legislation allows for extraction or discharge up to the limit

# STATE OF ENVIRONMENT REPORTS

- Equivalent to Environmental Audits at the region, state or national level
- Based on "***Pressure-State-Response***" model:

  *- human activities exert **pressures** on the environment*

  *- pressures alter the **state**, or condition, of the environment*

  *- **responses** undertaken to reduce pressures or improve environment*

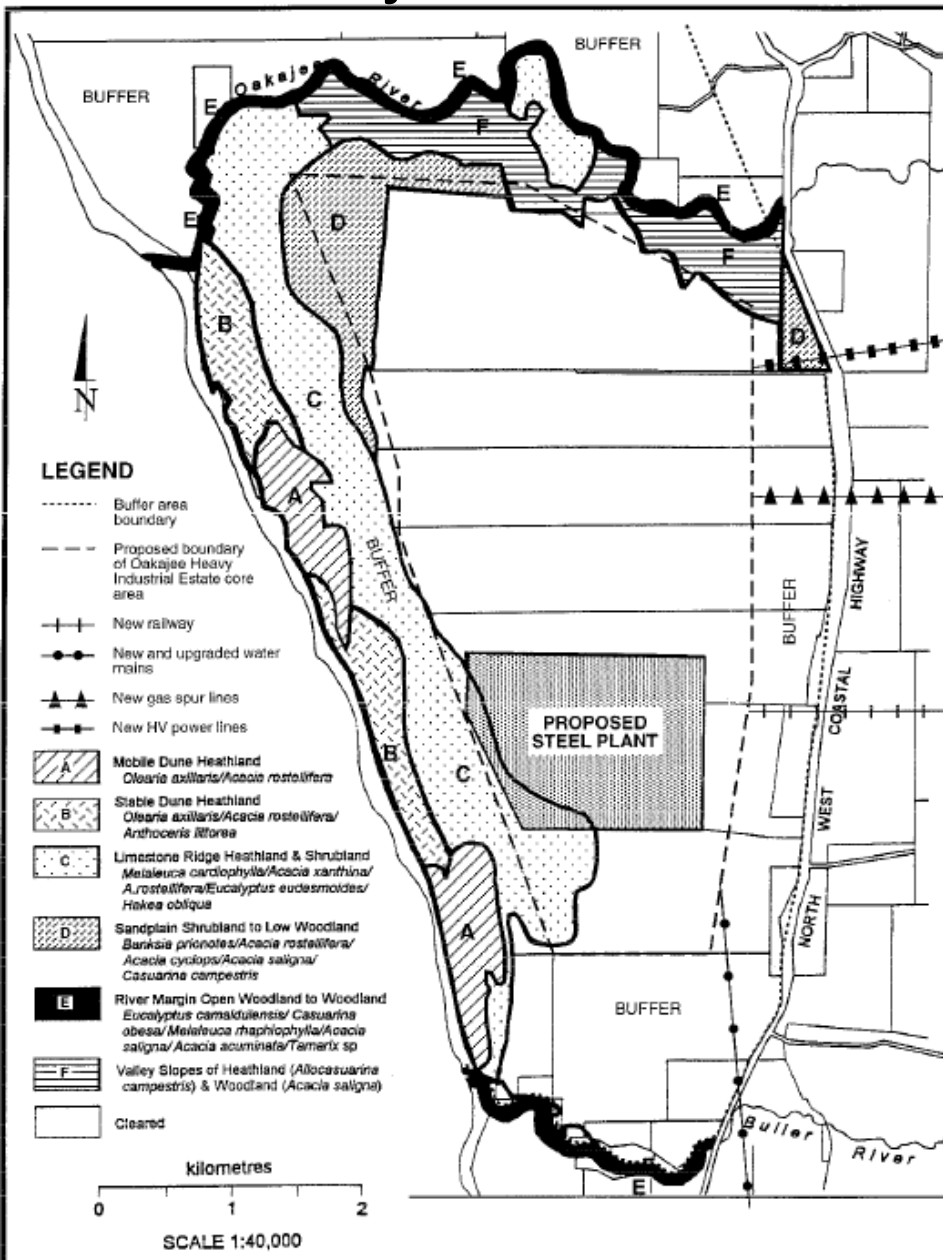- Demonstrated ongoing deterioration of the state of the environment

# STRATEGIC ENVIRONMENTAL ASSESSMENT

- Bring environmental considerations earlier into the development decision process

- Effects of policies, plans and programmes

- In Australasia, first introduced in WA (1995)

- SEAs for industrial estates

  - identify issues in advance of proposals

  - baseline studies and investigation of potential issues

  - identify sensitive areas to be avoided, buffer zones, infrastructure corridors

# Geraldton steel plant proposal sited in Oakajee Estate



# OAKAJEE ESTATE SEA

- Definition of sensitive environments
- Buffer zones from adjacent land uses
- Hydrogeological investigations on liquid waste disposal in karstic limestone
- Infrastructure corridors
- Siting of proposals to avoid environmental issues

# NATURE OF ENVIRONMENTAL ASSESSMENTS

- Reaction to the consequences of development

- Ongoing degradation of the environment

- Need for proactive approach to environmental restoration

- Concept of sustainable development

# WESTERN AUSTRALIAN SUSTAINABILITY STRATEGY

- Sustainability framework of 11 principles, 6 visions, and 6 government goals for action
- Action Plan for government agencies to contribute to sustainability
- Regional sustainability strategies for regional councils and local government
- Designed as a proactive document driven by Premier & Cabinet
- With resignation of Premier implementation of strategy lost momentum

# CWMS: COLLABORATION AT REGIONAL SCALE

- Strategy overseen by a multi-stakeholder group under the auspices of the Canterbury Mayoral Forum

- Strategic framework developed: based on stakeholder and community engagement

- Implementation programmes developed through region and zone committees

- Developed under LGA with statutory backing through Land & Water Plan (RMA)

- Shift from addressing water availability through storage on alpine rivers to targets for ten community priority issues related to water
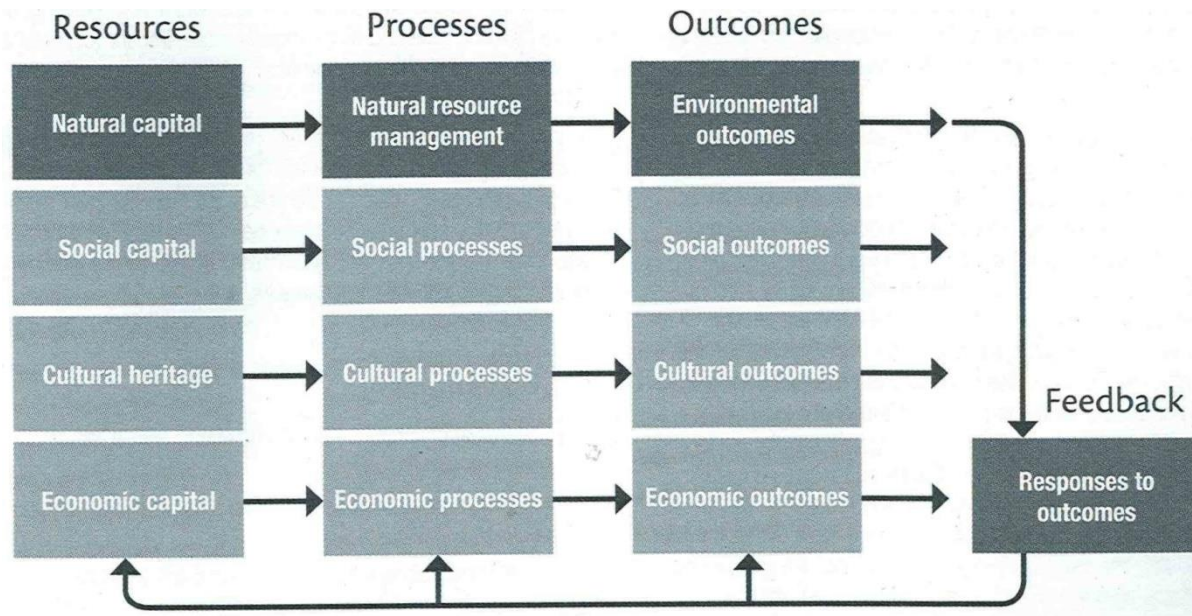
# SUSTAINABILITY APPRAISAL OF STRATEGIES

- Bottom line higher than "Business as Usual": current situation based on the RMA is not sustainable

- Environment-led option scores well on environmental criteria but below economic bottom line

- Storage-led option scores well on economic criteria but below environmental bottom line

- Efficiency-led option scores above the bottom line on nearly all criteria

# OUTCOMES OF SUSTAINABILITY APPRAISAL

- Only possible to achieve sustainable development by considering existing uses of water as well as new uses and projects

- Most economically viable source of additional water was from efficiency gains from existing users rather than storage

- Environmental requirements best met by improved land use practices of existing and new users

- No capacity for further development unless cumulative effects of existing use reduced

- Need for parallel development of environmental restoration with water development

# IMPLEMENTATION OF CWMS

- Formulation of implementation programmes through collaborative community-based approach
  - ten zone committees of community members and runanga representatives
  - regional committee of multiple stakeholders and zone committee chairs
- Proactive implementation of ten target areas
  - e.g. Immediate Steps Biodiversity
  - community identified projects consistent with Regional Biodiversity Strategy

Feedback

**REGIONAL REPORTING IN SUSTAINABILITY FRAMEWORK**

Resources/Processes/Outcomes/Response Model
- Resources provide basis for processes both productive and pressures on environment
- Outcomes can be productive as well as negative impacts
- Responses are initiatives based on outcomes observed

Canterbury Reporting
- Regional Environment Report
- Community Outcomes Report

# EVOLUTION OF ENVIRONMENTAL INSTRUMENTS

| | DEVELOPMENT ACTIVITIES | OPERATIONAL ACTIVITIES | |
|---|---|---|---|
| **REACTION TO PROJECT** | **EIA in Project Design** | **Environmental Management and Audit in Project Operations** | **MITIGATION** ↓ **SUSTAINABILITY** |
| **PROJECT IN REGIONAL CONTEXT** | **EIA in Site Selection** | **Environmental Rehabilitation** | |
| **REACTION TO DEVELOPMENT STRATEGY** | **SEA of Development Scenarios** | **State of Environment Reporting (PSR model)** | |
| **PROACTIVE SUSTAINABILITY STRATEGY** | **Regional Sustainability Strategy** | **Resources, Processes, Outcomes, Response Model** | |

# IMPLICATIONS FOR ENVIRONMENTAL PROFESSIONALS

- Sustainability instruments require greater integration requirements with other disciplines and community

- Shift from independent assessment to interdependent decision making

- Active engagement in decision making with proponents and opponents of different approaches to development

- Potential for creative solutions but also compromises

- Safeguard of "independence" in EIA and audits no longer available

# DEVELOPMENTS IN DEMOCRACY

- Monitory Democracy

  - independent scrutiny of government decision making

  - EIA/environmental audit approach

- Deliberative Democracy

  - authentic representation and inclusive processes that influence outcomes

  - sustainability approach based on collaboration

# KEY ELEMENTS OF DELIBERATIVE DEMOCRACY

- Public space for free-ranging and wide-ranging communication

- Empowered space for connecting the public discussions to institutions empowered to make decisions

- Transmission of the public discussions to the decision making institution

- Accounting of the institutions to the public deliberations

- Organisation design of the system to facilitate deliberation

- Degree to which these elements determine the content of collective decisions

# CONCLUSIONS

- Evolution of key environmental instruments from project EIA to regional sustainability strategies

- Effects-based legislation is powerful in mitigating adverse effects but insufficient when sustainability limits have been reached

- Need for proactive regional strategies to address sustainability limits rather than reactive assessments

- Changed role for environmental professional from independent assessor to interdependent decision maker

- Need for safeguards of deliberative democracy: authentic representation and inclusive processes that influence outcomes