


# INQUIRY INTO CLIMATE CHANGE AND ENVIRONMENTAL IMPACTS ON COASTAL COMMUNITIES

## SUBMISSION FROM THE TASMANIAN GOVERNMENT

June 2008

Submission No:	93
Date Received:	01 July 2008
Secretary:	

### OVERVIEW

The Tasmanian Government, through the Tasmanian Parks and Wildlife Service (PWS), is the responsible land manager for almost 40 per cent of Tasmania's terrestrial area and 50 per cent of the State's coastline. Included within this estate are almost all of Tasmania's western and southern coastlines, of which a substantial portion is within the Tasmanian Wilderness World Heritage Area. Significant lengths of Tasmania's eastern and northern coastline are also within the PWS estate. Approximately three per cent of the State's marine waters are classified as marine protected areas.

As noted in Chris Sharples' report 'Indicative Mapping of Tasmanian Coastal Vulnerability to Climate Change and Sea Level Rise: Explanatory Report' ('the Sharples Report'), climate change will affect a variety of climate associated processes relating to coastal areas. Increased frequencies of coastal storms may occur, in turn affecting coastal flooding, storm wave erosion and a number of other hazards. Sea level rise will increase the frequency of sea inundation and magnitude of coastal erosion.

An existing 240 km<sup>2</sup> of coastal Tasmania that is at risk from storm surge inundation could increase by a third with an 88 cm sea level rise this century (the maximum Intergovernmental Panel on Climate Change scenario for the end of the century). According to the Sharples Report, nearly a third of Tasmania's coastline is sandy shore that is significantly vulnerable to erosion and retreat from repeated storm surge erosion and sea level rise. Further, 84 per cent of the Tasmanian coastline was identified as being either potentially vulnerable to a range of coastal geomorphic hazards or as having minimal vulnerability to such hazards.

### COMMENTS ON THE TERMS OF REFERENCE

**Existing policies and programs related to coastal zone management, taking in the catchment coast ocean continuum**

#### Natural Resource Management:

The *Natural Resource Management Act 2002* identifies Natural Resource Management (NRM) regions as including adjacent State Waters, thus spanning the catchment-coast-ocean continuum. NRM regional committees, their strategic plans and investment plans embody the principle of integration across the continuum. The three NRM Regions in the State (Cradle Coast, Northern and Southern) have invested in a number of initiatives that have provided better knowledge and understanding of processes influencing the coastal zone. These projects have developed monitoring, data management systems and management tools to support better planning and management decisions in estuarine, coastal and marine areas.

A Marine Environment Research Strategy, managed by the Tasmanian Aquaculture and Fisheries Institute, identifies annual research priorities in estuarine and marine areas through a broad research advisory group including State and Local Governments, marine industry, NRM regional committees, community, research and conservation interests.

#### Integrated Regional Programs:

A number of ongoing programs address complex integrated management issues within sub regions and across the continuum. Examples include the:

- Derwent Estuary Program;
- Tamar Estuary and Esk Rivers Program;
- George Town Catchment Management Plan;
- South East Coastal Management Strategy; and
- Georges Bay Integrated Project.

PWS has Reserve Management Plans that cover 70 per cent of the reserve estate. A General Management Plan is being prepared to cover the remaining 30 per cent. These Management Plans cover a wide range of management issues, including coastal issues.

Work is currently underway to extend the assessment of shoreline vulnerability to other, non-sandy, vulnerable shorelines in Tasmania. Two further significant programs are:

- *Climate Futures for Tasmania*. This is a collaborative project which is being delivered by the Antarctic Climate and Ecosystems Cooperative Research Centre. Its outputs will inform diverse stakeholders about likely impacts of climate change on conditions that are important for their decision making and operations. It will produce fine scale (~10-15 km resolution) climate projections for Tasmania under a range of accepted greenhouse gas emission scenarios. Outputs from the project will be tailored to produce information stipulated by stakeholders to be most important to their activities. Analyses will be focussed in three main areas of climate futures: water status in catchments and reservoirs; normal, average climate conditions; and extreme events, including high winds, flooding, and coastal inundation; and
- *Coastal Vulnerability and Risk Management Study*. Following release of the Sharples Report the Tasmanian Government undertook the 'Climate Change and Coastal Risk Management' project to build on Sharples' findings. The project's outputs strengthen the message that storm surge and sea level rise pose a major risk to built infrastructure and natural values and assets in low lying coastal areas.

#### **The environmental impacts of coastal population growth and mechanisms to promote sustainable use of coastal resources**

The Tasmanian Government has identified a number of noticeable impacts including:

- increased use of the coastal zones for recreation which can lead to a need or demand for improved facilities (boat ramps, amenities etc) or access (parking, defined access);
- inappropriate or illegal recreation (eg the use of four-wheel drives, All Terrain Vehicles and similar off-road vehicles); and
- boundary 'creep' such as coastal property owners extending their gardens into public reserve or modifying the vegetation to improve their views or reduce the perceived fire risk.

The Tasmanian Government has an integrated management approach that includes working with various community groups, neighbouring landowners and relevant local authorities to manage coastal areas.

There is currently no specific project or program to determine the exact nature of coastal population growth in Tasmania. However the Tasmanian Demographic Change Advisory Council (DCAC), formed in October 2006, provides advice on addressing demographic change issues such as the ageing of the population, a decrease in the size of the workforce, skill shortages and the geographic spread of the Tasmanian population. DCAC may have the capacity to identify coastal population trends in Tasmania.

The Tasmanian *State Coastal Policy 1996* ('the State Coastal Policy') is binding on all spheres of government and must be implemented through local government planning schemes and other statutory plans. It provides a blueprint for sustainable development in the coastal zone and provides an integrating mechanism for addressing the spectrum of coastal values and uses. It also provides statutory guidance on residential, commercial and industrial development in the coastal zone. The State Coastal Policy is applicable to one kilometre inland from high water mark.

With Regional NRM investment, Tasmania's coastline and its natural values have been mapped for the coastal strip from high water mark to 100 metres inland. The coastal values that have been spatially mapped include flora, fauna and geomorphology. Land managers and planners have been trained to use this data in their day to day decision making on the coast. In a linked project for the Southern Region, foreshore values have been identified and mapped.

Comprehensive regional strategic planning is being explored for the Cradle Coast Region in the north west of the State. This initiative will assist with the development of integrated regional approaches to land use planning.

Rising sea levels as a result of climate change are likely to have significant impacts on Aboriginal heritage and sacred sites which are often located in coastal areas. Stone arrangements, pits, pathways, shell middens and walls are frequently found in coastal areas or beside estuaries. Rock shelters, caves and engravings may also be threatened by rising sea levels. Coastal erosion may reduce access to Aboriginal heritage sites.

Transport infrastructure typically has a long life span and is costly to replace and upgrade. Understanding the impacts of climate change is therefore important for long term planning and management. Other impacts on transport infrastructure that may compound the issue are associated with population and development pressures from the trend of Tasmanians moving from remote, rural inland areas to urban and coastal settlements.

Some of the most significant effects of climate change on transport infrastructure will result from sea level rise, potentially resulting in inundation of low-lying coastal areas and infrastructure as well as shoreline erosion or prograding (growing). The trend for road infrastructure has been to locate key access roads along the coast, with spurs leading back into the suburbs. This trend may need to be reversed, possibly with roads resituated to safer areas to manage the impacts of climate change.

## **The impact of climate change on coastal areas and strategies to deal with climate change adaptation, particularly in response to projected sea level rise**

The Government is developing a framework for addressing climate change in Tasmania as well as an Agency-wide Climate Change Strategy and Action Plan, which will address coastal management. Together, these strategies will establish a broad framework for the State to take action to encourage adaptation to inevitable climate change across the State. These initiatives will be supported by those aimed more specifically at adaptation and policy settings with respect to activity in coastal zones.

The Government recently reviewed the State Coastal Policy. A product of the review was the development of an implementation guide and a set of model planning scheme standards to serve as guidance tools to assist councils to incorporate climate change and sea level rise considerations in their strategic and statutory planning. The Government is currently considering the revised State Coastal Policy.

As noted in response to the first Term of Reference, a Climate Change and Coastal Risk Assessment and Management Planning Framework is being implemented. The first phase includes the Sharples Report outlining the vulnerability of the Tasmanian coastline to the impacts of climate change and sea level rise. Beyond this, the second component is to identify significant infrastructure and assets in climate change and sea level rise hazard probability zones. The third component is to assist councils with limited resources to respond comprehensively to climate change and sea level rise. This includes:

- identification of good practice risk management principles for assets at different levels of risk;
- broad principles for planning and management of those risks;
- information sheets, plans and tools to assist authorities to treat and mitigate risks for relevant asset types; and
- pro-forma risk management plans for major asset types (land and built infrastructure).

The Clarence City Council is also undertaking a project to assess sea level rise risks in low lying parts of the municipal area, and to identify options for land use planning and management. The project has received funding through the Australian Greenhouse Office and also the Tasmanian Risk Mitigation Programme.

### **Mechanisms to promote sustainable coastal communities**

The Government is working with councils on regional land use planning initiatives for the three regions of the State. This process includes the development of regional land use strategies and the preparation of model planning schemes that will ensure consistency in format and policy for a region as a whole. Through the development of a regional land use strategy and consistent council planning schemes the issues associated with climate change and coastal impacts can be more effectively identified and managed.

The regional land use strategies will provide an appropriate spatial scale for the implementation of climate change adaptation and settlement planning required by the State Coastal Policy. A sub-regional settlement strategy is being considered for the East Coast of Tasmania, where the majority of coastal settlement and sea change pressures are evident.

The Government actively supports community volunteer groups working on the protection of coastal reserves, the marine environment and National Parks. This support is directed through the Department of Environment, Parks, Heritage and the Arts (PWS's Wildcare program and the Coastal and Marine Branch) to incorporated Coastcare Associations in the north and south of the State, which act as umbrella organisations for numerous Coastcare groups in their regions. The Department also closely liaises with NRM community facilitators across the State.

There are a number of residential settlements within or adjacent to Tasmanian PWS managed parks and reserves (ie. shack settlements throughout the coastal areas) that could be considered as 'communities'. The management of these reserves, and therefore those communities contained within the reserves, is governed by the relevant Reserve Management Plan.

### **Governance and institutional arrangements for the coastal zone**

The Tasmanian planning system is based on the sustainable development objectives set out in the various pieces of legislation governing the Resource Management and Planning System.

Council planning schemes are approved by the Resource Planning and Development Commission (RPDC) under the *Land Use Planning and Approvals Act 1993*. New planning schemes must be in accordance with the State Coastal Policy and planning decisions within the statutory coastal zone must be consistent with planning scheme provisions and the State Coastal Policy.

A State Coastal Advisory Committee oversaw implementation of the State Coastal Policy in its initial years. Advice on individual issues is now provided to councils and other stakeholders by relevant government departments.

The Tasmanian Government is currently developing a suite of standard schedules for use in planning schemes throughout the State. The standards contained within these schedules will cover various climate change related matters, including the incorporation of Water Sensitive Urban Design principles, energy efficiency, and water conservation and recycling measures. Coastal specific issues are also addressed through model schedules on flooding and erosion. These schedules will be subject to wide consultation and agency consideration prior to seeking to formalise them through the State's Common Key Elements Template for Planning Schemes ('the Template').

The Template, which was introduced in December 2003 by Planning Directive No.1: Format and Structure of Planning Schemes (PDI), provides a common structure and format for planning schemes. The PDI requires all new planning schemes to be prepared in accordance with this Template, which will facilitate consistency between planning schemes in the State. Under this Template there is a common selection of land zones, including the Environmental Management Zone (EMZ). The EMZ provides for a greater level of consideration to be given to environmental management and conservation values in the proposed land use and development within this zone. Councils can designate coastal land identified as being at risk from climate change related hazard to this particular zone.

The Tasmanian PWS manages the coastline within its estate under the requirements of the *National Parks and Reserves Management Act 2002*.

Statutory bodies with responsibilities for integrated coastal zone management include the:

- RPDC;
- Land Use and Planning Appeals Tribunal;
- Board of Environmental Management and Pollution Control;
- Marine Farming Planning Review Panel; and
- Marine and Safety Authority.

The *State Policy on Water Quality Management 1997* prescribes environmental protection measures taking into account the catchment-coast-ocean continuum.