



5th Western Australian State

COASTAL CONFERENCE 2009

*Whose Coast Is It?
adapting for the future*

6A:
Coastal
Development and
Marine Impacts:
3.30–4.00pm
Thursday 8th
October 2009
Orion Room

Cockburn Coast—Sink or Swim Building resilience and the importance of natural systems

PRESENTER:

Miss Linda Metz

City of Cockburn (LGA)

CONTACT DETAILS:

Phone: +61 (8) 9411 3632

Email: lmetz@cockburn.wa.gov.au

Postal Address: PO Box 1215 Bibra Lake WA 6965

Introduction

There is no doubt that these are challenging times. 'Climate' and 'change' have always occupied the minds of practitioners of ecological restoration and natural areas managers. However we are now in an age when the combination of the two words climate and change has new and serious implications for the future. In particular coastal zones, the people who live there and the ecosystems which we find in these areas are likely to feel the full brunt of what are a range of threats, even if the full extent of the threats is difficult to determine.

Resilience is a concept not new to natural resource management; however the term is being used more commonly now in reference to responding to the threat of climate change and the unpredictable elements that will affect our world. Beatley 2009, suggests that resilience is characterised by *diversity* (biological, landscape, social and economic) and by *ecological variability*.

Increasingly it is recognized that natural areas provide a range of ecosystem services and natural capital that are integral to making positive adaptations to change.

Background

Climate change, by its diverse nature, will require a multi-pronged approach to management. This will include coastal planning policies, natural areas management and social resilience. The City of Cockburn has over 16 km of coastline which it manages and over 84,652 residents.

Many of these coastal areas contain natural vegetation which should form part of the approach to mitigating effects of climate change. These areas are also subject to planning pressures, development and human impact.

The City of Cockburn has a mandate to manage these at times conflicting pressures and will be required to develop strategies to best manage these areas into the future.

Performance Assessment

Holling (1973) describes resilience as 'the capacity of a system to absorb and utilize or even benefit from perturbations and changes that attain it and so persist without a qualitative change in the systems structure'.

Put simply a systems ability to jump back or rebound. The concept of 'Resilience' and what it means to us encompasses 3 key elements: Land use and built environment, Ecological resilience and Social resilience (Beatley, 2009).

Ecological resilience, or adaptive capacity, has several cornerstone qualities that include;

- Diversity.
- Ecological variability.
- Ecosystem services.
- Why protect natural areas?

These areas will be the basis for forming a part of a response to a changing world. Diversity and ecological variability are the processes by which change can and does occur. If one thinks of a monoculture and how susceptible that system is to disease, pests and reduced genetic fitness then it is easy to see the logic in increasing diversity within these systems wherever possible.

Ecosystem service strives to point out that there are measurable and immeasurable services that ecosystems provide to humans. Wetlands cycle water, soil cleans water and stores nutrients and plants grow and provide us with food, clothing and medicines. Ecosystems both terrestrial and marine are a critical part of our wellbeing and there is a need to relate this in economic terms so that ecosystems are given equal weight when developing and implementing plans both currently and in the future.

Past, Present Future—The Importance of Natural Areas.

Natural areas already provide a service to built environments and human communities. Dune systems are built to act as a buffer to strong winds and sand drift, or to act as effective barriers to storm surges etc.

This role is not likely to diminish over time, in fact it is widely regarded that as the impacts of climate change are become an increasingly pressing issue that the role of natural areas in mitigating impacts will only grow.

The City of Cockburn has been focussed on the task of restoring a diverse and functioning ecosystem for several years along many of its coastal locations. These areas are subject to change, however the change and any impacts that it may have occurred have largely been absorbed by the presence of natural areas.

Conclusion

Natural areas are a key component to building resilience to climate change. This includes developing a diverse and ecologically variable system that has the capacity to adapt to a host of as yet not fully predictable changes. For natural areas to assist us, good strategic planning and protection of natural areas along the coast is vital.

The City of Cockburn must continue to restore and protect coastal ecosystems and help facilitate the awareness of the importance of these natural areas not only from an ecological aspect but also acknowledging its impact on broader social and economic health.

References

Beatley, T. 2009 Planning for coastal resilience.

Holling, Crawford Stanley. 1973 'Resilience and stability of ecological systems'. *Annual review of Ecology and Systematics* 4:1–23