

Assessing the Ecosystem Services provided by South East Queensland's Coastal Assets

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South East Queensland (SEQ) is Australia's fastest growing region with the fastest growing centres occurring along the eastern coastal corridor (Draft SEQ Regional Plan 2009 – 2031). One of the fundamental challenges to achieving sustainable development in SEQ is how to accommodate the population growth and associated development pressures without degrading the region's capacity to support the SEQ community (environmentally, economically, socially and culturally).

'Ecosystem services' is the term given to the goods and services provided by natural (and semi-natural) ecosystems that benefit, sustain and support the well-being of people (Millennium Ecosystem Assessment (MA) 2005). They include provisioning services such as water for consumption, genetic and ornamental resources; regulating services such as maintaining a habitable climate and buffering against extremes (e.g. wind, waves, storms etc) and; cultural services such as sense of place, iconic species, inspiration, therapeutic landscapes and recreational opportunities. Ecosystem services are derived from the complex interactions between the components and processes that occur within an ecosystem (ecosystem functions). It is the diversity of the components (*i.e.* biodiversity) and interactive processes within and between all ecosystems that produce the extensive range of essential services required for humans to survive.

Ecosystem services are to a large extent unrecognised and therefore are not adequately valued in industrial economies. Globally, studies have shown the monetary value of ecosystem services is of the same order as Gross World Product and that ecosystem services provide fundamentally important inputs to the economy (Costanza et al 1997). The areas that provide ecosystem services in SEQ can be considered as vital 'green infrastructure' for the region. If the services are lost, their replacements, if possible, can be prohibitively expensive. A healthy economy is not sustainable in the absence of these services, many of which are free and shared widely by the community.

Research conducted by the United Nations, World Bank and the World Resource Institute has also demonstrated that human well-being is inextricably linked to the provision of ecosystem services (MA 2005; United Nations 2006; World Bank 2004 and World Resource Institute 2007). The SEQ Region is endowed with many natural coastal assets that are the source of its ecosystem services and therefore it's liveability and economic prosperity (Draft Natural Resource Management Plan 2009-2031). The natural resources of SEQ's coastal areas and marine waters are vital to the way of life of many residents and are the basis for a valuable international and domestic tourism industries and commercial and recreational fishing industries (Draft Natural Resource Management Plan 2009-2031).

Failing to understand or adequately value the significance of ecosystem services to the SEQ community and its economy can result in serious adverse impacts on the sustainability of the region. The concept of ecosystem services can potentially be applied in a number of policy, planning and management contexts for example: education, incentives, payment for the provision of services, climate change mitigation strategies, corporate sustainability reporting, statutory or strategic planning and regulation.

The SEQ Ecosystem Services Project aims to identify, measure and value ecosystem services so as to incorporate them into decision making and natural resource management in SEQ. In order to achieve this, the focus of the Project has been to develop an agreed framework for ecosystem services namely; the SEQ Ecosystem Services Framework. The SEQ Ecosystem Services Framework will provide the tools to enable government, industry, business, researchers, non-government organisations and land managers to apply the concept of ecosystem services in their management and planning practices.

The development of the Framework represents the commitment and intellectual input from over 140 individuals from a wide range of disciplines and organisations. The SEQ Framework consists of descriptions and definitions of four main components: Ecosystem Reporting Categories, Ecosystem Functions, Ecosystem Services and Human Well-being; a semi-quantitative description of the relationships between these in the form of matrices; and a series of maps identifying spatially where ecosystem services are being provided in SEQ.

The coastal zone and marine ecosystems assessed in the Framework include deep water ecosystems (depth >50m), open water ecosystems (depth < 50m), coral reefs, seagrass, beaches, dunes, rocky shores and mangrove ecosystems. Results of the Framework identify coastal zone ecosystems as one of the top 5 ecosystems to provide ecosystem services in SEQ and particularly important for the provision of 'cultural services'.

The maintenance of ecosystem services in SEQ is vital for sustainable development and the well-being of its residents. An assessment of the ecosystem services in SEQ will enable decision makers to manage ecosystems to maintain or enhance the current level of ecosystem services and, where relevant, to calculate losses in services resulting from development activities and suggest appropriate actions to ameliorate such losses. This presentation will provide an overview of the SEQ Ecosystem Services Framework and discuss the results from its development in the context of the ecosystem services derived from coastal assets in SEQ.

References

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