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Ecosystem Services and the Great Barrier Reef

Abstract:

The Great Barrier Reef (the Reef) and the Great Barrier Reef catchment (the catchment), although generally managed separately, are intrinsically linked through a range of landscape scale ecological processes that maintain the health and resilience of both – collectively forming the Great Barrier Reef ecosystem (Reef ecosystem). Over time changes have occurred (and continue to occur) in the Reef ecosystem that are now affecting the health and resilience of the receiving environments in the Reef. The effects of these changes can be seen in the *Outlook for the Great Barrier Reef (2014)*, *Informing the Outlook for the Great Barrier Reef (2012)* and the *Great Barrier Reef Region Strategic Assessment (2014)*.

Traditional protection has usually focused on either single species, regionally based on species richness or on land unsuitable for development. Traditional protection mechanisms generally do not consider the supporting components and processes that, to varying degrees support the target species or habitats. Thus there is a greater need for conserving fundamental ecological processes. Similarly, a contextual understanding of broader landscape scale ecological processes is needed, as preserving single habitats without understanding broader scale interrelationships is unlikely to succeed. Collectively, the ecosystem components and processes define the ecosystem integrity, which drives the resilience and resistance and the capacity of the catchment to provide ecosystem services for mankind.

There is an emerging recognition that protection of natural ecosystems is insufficient to protect the Reef against increasing human pressures and future climate instability.³ The ideal outcome is to optimise ecosystem services through landscape design that enhances the capacity of the components to provide ecosystem services through optimisation of ecological processes. Improvement in the capacity of the Great Barrier Reef catchment and Great Barrier Reefs' capacity to provide essential environmental processes (and subsequently ecosystem services) is needed to ensure the Great Barrier Reef continues to improve the Outstanding Universal Values for which it was inscribed as a world heritage property. The focus of this presentation is to outline the concepts of ecosystem services, components and ecological processes and to present methods developed by the Great Barrier Reef Marine Park Authority for applying these within a whole of catchment management framework.