Geological Society of Australia Inc

Natural Resource Management Ministerial Council : Review of the National Biodiversity Conservation Strategy http://www.environment.gov.au/biodiversity/strategy/review.html

The Geological Society of Australia agrees that reversing the decline of Australia's loss of biodiversity must begin with immediate action, and long term planning. The National Biodiversity Conservation Strategy outlines the activities that must begin immediately, and those that are needed to affect longer-term change with a minimum 10-year outlook.

However, the Geological Society of Australia submits that under the Convention for Biological Diversity, for which Australia is a signatory, and is the basis of the Draft National Biodiversity Strategy [viz., "the ecosystem approach is a strategy for the integrated management of land, water and living resources…." and therefore, where "Ecosystem" means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit". (Article 2 of the Convention)], a number Principles, are not being met in the Draft Strategy: namely, Principles 5, 6, 11, and 12 as follows:

Principle 5: Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority target of the ecosystem approach. Ecosystem functioning and resilience depends on a dynamic relationship within species, among species and between species and their abiotic environment, as well as the physical and chemical interactions within the environment. The conservation and, where appropriate, restoration of these interactions and processes is of greater significance for the long-term maintenance of biological diversity than simply protection of species.

Principle 6: Ecosystem must be managed within the limits of their functioning. In considering the likelihood or ease of attaining the management objectives, attention should be given to the environmental conditions that limit natural productivity, ecosystem structure, functioning and diversity. The limits to ecosystem functioning may be affected to different degrees by temporary, unpredictable, or artificially maintained conditions and, accordingly, management should be appropriately cautious.

Principle 11: The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices. Information from all sources is critical to arriving at effective ecosystem management strategies. A much better knowledge of ecosystem functions and the impact of human use is desirable. All relevant information from any concerned area should be shared with all stakeholders and actors, taking into account, inter alia, any decision to be taken under Article 8(j) of the Convention on Biological Diversity. Assumptions behind proposed management decisions should be made explicit and checked against available knowledge and views of stakeholders.

Principle 12: The ecosystem approach should involve all relevant sectors of society and scientific disciplines. Most problems of biological-diversity management are complex, with many interactions, side-effects and implications, and therefore should involve the necessary expertise and stakeholders at the local, national, regional and international level, as appropriate.

The Geological Society of Australia submits that the Strategy needs to acknowledge that:

1. in an Ecosystem approach to managing environmental systems, a holistic approach is required using "all relevant ….scientific disciplines", i.e., an approach that investigates both the biotic and abiotic (such as geology, hydrologic and geomorphic processes) factors that underpin biodiversity must be understood for the strategy to be successful,
2. there needs to be suitably qualified personnel, trained in Earth Science Systems, as land managers, i.e., education and training is required.

Using the Ecosystem Approach, recognition of geodiversity in any region is important in that geodiversity, in its variety of landscapes, lithology, sediments, soils, and hydrological and hydrogeological settings, underpins biodiversity. Linking geodiversity and biodiversity stresses the relationship of biodiversity to Earth systems, and emphasises the importance of geodiversity to

understanding biodiversity. The reason for this is that biotic systems, and especially vegetation, are strongly linked to habitats, and variable landforms, soils, and hydrogeological processes result in variable habitats and variable vegetation. Where fauna are linked to vegetation types, or to soil types, then diversity in vegetation and landscape/soils can result in faunal diversity. It is the “diversity of plant assemblages” that most clearly mirrors geodiversity, and in a region of rich geodiversity there will be a corresponding rich development of plant assemblages. This is as true for the marine environment as it is for biodiversity on land.

Yours sincerely, Peter Cawood President, Geological Society of Australia References Convention on Biological Diversity http://www.cbd.int/ecosystem/ Brocx M & Semeniuk V 2007 Geoheritage and geoconservation – history, definition, scope and scale. Journal of the Royal Society of Western Australia 90: 53-87. Brocx, M 2008 Geoheritage: from global perspectives to local principles for conservation and planning. Western Australian Museum. Semeniuk V, Semeniuk C A, Tauss C, Unno J & Brocx M 2009 Walpole and Nornalup Inlets: landforms, stratigraphy, evolution, hydrology, water quality, and biota. Western Australian Museum