

Proposal for establishing an environmental account for Bruny Island

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Why environmental accounting?

Bruny Island is well loved for its natural environment: the amazing diversity of unique wildlife and plants that thrive and survive whilst decimated elsewhere; the unspoiled scenery and stunning vistas; the wonderful opportunities for all sorts of recreational enjoyment; and the bounty of the land and waters that support farming, fishing and forest activities.

Visitors, businesses and those living on Bruny permanently all cherish the Island and trade on its nature. The recent (2018) Bruny Life¹ survey had 94% of respondents choosing "Protection of Bruny's natural environment is a top priority" as important or very important.

However, increasing activity and populations put pressure on the infrastructure, the habitats, the wildlife, the sights, and the productivity of the land and sea -topical examples being the iconic Neck bird colonies and proposed expansion of fin fish farms around Bruny's coastline. Questions arise about how to support the various layers of Island management to better manage increasing pressure.

While many plans cover the Island, including Natural Resource Management (NRM) plans, planning schemes, Destination Action Plans, Forestry, Parks, cats etc., all have limitations and only address a limited set of human activity and impacts. For example, there is only sporadic monitoring associated with some elements of these plans, and no integrated framework that allows us to measure how we are travelling overall and the sum of impacts.

After all, Bruny is a singular place, and all impacts add together. Furthermore, there is discussion about development of a strategic plan for Bruny in its entirety.

Thus, there is a need to keep an account of changes, and have this inform management of cherished assets, to help avoid and reduce impacts where and when they become evident.

How can we do this without costing the earth, and with assurance that what we start will be long-lived and useful?

Accounting

In 2013, the United Nations endorsed the *System of Environmental-Economic Accounting (SEEA)* to improve understanding of natural systems' contribution to economic and human wellbeing² and this was endorsed by the State, Territory and Commonwealth Governments of Australia. It provides an integrated framework to account for energy, tourism, carbon, biodiversity, forest, waste, agriculture and aquaculture which can be connected to social and economic indicators.

Under this umbrella, the eCond approach provides a well-tested foundation for environmental accounting. Pioneered by the Wentworth Group of Concerned Scientists and trialed with Natural Resource Management regions from across Australia³, it is consistent with international standards and guidelines. An eCond is an index of environmental condition, adaptable and scalable to any environmental asset/geography.

Just like the economic accounts that we hear on the news each week like the CPI (Cost Price Index), GDP (Gross Domestic Product) share prices and so on, the eCond account has the potential to inform

¹ <https://www.brunylife.com/get-informed> accessed 2/10/2018

² United Nations. 2014. System of Environmental-Economic Accounting 2012—Experimental Ecosystem Accounting. United Nations.

³ <http://wentworthgroup.org/programs/environmental-accounts/> accessed 13/11/2017

our day-to-day management: starting locally and, over the longer term, scaling up to national accounts.

It allows us to link measures to impacted assets, to link local passion for the environment to specific tasks that complement and build upon each other. It also allows us to link to existing and emerging social, cultural and economic measures of well-being and prosperity. Environmental accounting has the potential to contribute to truly informed decision making that supports a great quality of life for all while looking after the long-term future of the Island's natural environment.

Enabling

All activities need a driver and the Bruny Island Environment Network (BIEN), as a dedicated local community environmental group, can enable this. The Bruny Island Advisory Committee, set up to represent the broad Bruny community and in ongoing discussion about a Bruny strategic plan, may be the most appropriate general consultative body and build upon the excellent work carried out by Bruny Life. The University of Tasmania (Utas), NRM South, the Tasmanian Land Conservancy (TLC), Kingborough Council (Council) and the Department of Primary Industries, Water and Environment (DPIPWE) are natural partners.

This project can provide a trial basis for NRM South to implement environmental accounting across their region, as foreshadowed in a November 2016 ministerial decision⁴ to develop a common national approach to environmental accounts. It will build upon the [Regional Environmental Account Trial](#) completed in 2015, for which a [technical analysis](#) is also available.

How would it be implemented?

This proposal is not breaking new ground – merely ensuring that monitoring and reporting is well conceived and integrated. A key opportunity is to link with an emerging strategic plan for Bruny.

Well-established processes and techniques will be used to develop and build the eCond account.

The broad framework for the collaborative design of the accounts is based on the internationally adopted Open Standards for the Practice of Conservation⁵. Measurement techniques are based on current best practice (and currently available data), while the environmental account framework is based on the eCond approach. The framework for the integration of social and economic data draws on the System of Environmental-Economic Accounting⁶.

The broad process for building an environmental account is to:

1. Identify environmental assets (the things and places we cherish about Bruny)
2. Define their health indicators (what we think best represents their environmental condition)
3. Define the measurement techniques (how to measure their current condition)
4. Conduct the monitoring, or use already available data (observed score)
5. Work out what the measurements would be in an unimpacted state (reference score)
6. Process the results to develop the environmental account, expressed as an eCond
7. Have the results assessed for quality by an independent group of experts.

⁴ <http://wentworthgroup.org/programs/environmental-accounts/> accessed 13/11/2017

⁵ <http://cmp-openstandards.org/about-os/> accessed 13/11/2017

⁶ <https://seea.un.org/> accessed 25/2/2018

As an example, Table 1 shows this process (steps 1-4) for native vegetation.

Table 1 Example of monitoring methods for the environmental asset: Native vegetation

Key Ecological Asset	Indicator	Unit	Method
Extent of vegetation	% native vegetation	% area	TasVeg mapping
Structural complexity	Count of strata including trees, large shrubs, small shrubs, ground cover, LWD, litter, bryophyte, rocks, bare ground,	Number	Photo point (3 photos/site – landscapes, ground, canopy)
Canopy cover	% area	% area	Photo point
Diversity	Number of vegetation spp	Number	Photo point

Indicators for different assets are processed independently, and then indices (observed vs reference score) are created for each, allowing disparate assets to be measured in their natural scales, but subsequently combined into a single index: the eCond.

The next steps take the raw data from the field (or database) and deliver statistics for each environmental attribute then compares these statistics to what would be gained in an unimpacted state. This process dictates high level expertise in each field being measured.

A quality control step gives the results quality assurance with careful attention to governance structures, perhaps with an independent board.

A limited range of draft assets defined for Bruny are represented in Table 2.

Table 2 Likely assets to be included in the Bruny Island environmental accounts

<i>Asset class</i>	<i>Includes</i>
<i>Native vegetation</i>	Terrestrial habitats: biodiversity and carbon
<i>Habitat and animal species</i>	Common mammal species and selected species of concern
<i>Geomorphology</i>	Mobile geomorphic features: the Neck, selected beaches
<i>Marine habitat and species</i>	Water quality, rocky reef communities, kelp beds and commonly fished species
<i>Riparian</i>	Mainly wetlands and estuarine (including saltmarsh)
<i>Urban /built up</i>	Waste, energy TBD
<i>Agricultural land</i>	

Timeline and costs

The core team proposed is Daniel Sprod (terrestrial, processes – BIEN)), Christine Crawford (marine – UTas), Dr Richard Mount (spatial, SEEA – UTas), Chia-Chin Lin (human geography- UTas), with direction from Peter Cosier (processes – Wentworth). It is anticipated that help from specialists in the assets defined (NRM, DPIPWE, etc) will be co-opted to resolve such issues as the best indicators, methods for measurement and for defining reference scores.

Due to other commitments and extensive voluntary input, it is anticipated that there will need to be an extended timeline, although the work itself is not expected to be particularly time-consuming. A likely start would be late 2018 and the account finished by mid 2020.

Costs are estimated as \$50,000 over a number of years, with grant funds sought using seed money from a bequest to BIEN.