



Australian Government



Geological and Bioregional Assessment Program

Fact sheet 26

Using natural capital accounting to track changes to ecosystem extent and condition

Ecosystem accounting is a coherent and integrated approach to the assessment of the environment through the measurement of ecosystems and quantifying the flows of ecosystem good and services from ecosystems into economic and other human activity.

The GBA Program compiled 'opening accounts' or baseline ecosystem extent and condition accounts, a subset of full ecosystem accounts, for the Beetaloo and Cooper GBA regions. Ecosystem extent and condition accounts aim to collate data in a format that enables integration of environmental data with social and economic data, should that happen into the future. The ecosystem extent and condition accounts follow the principles outlined in the United Nations' [System of Environmental and Economic Accounting](#) for Ecosystem Accounts. The presentation of ecosystem data with the standardised ecosystem accounting framework provides a basis for ongoing assessment of environmental change at a regional scale as the industry develops and aims to support ecologically sustainable development and decision-making by:

- integrating both long-term and short-term decision-making processes, particularly with respect to economic, environmental, social and equity considerations
- ensuring that impacts of development on the environment are monitored and measured to decrease uncertainty associated with decision making
- promoting the principle of intergenerational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations
- ensuring that conservation of biological diversity and ecological integrity is a fundamental consideration in decision making
- promoting improved valuation, pricing and incentive mechanisms.

The ecosystem extent and condition accounts developed for the GBA Program include data on:

- current extent of major ecosystems in each region
- trends in climate by ecosystem type
- industry and non-industry development disturbance metrics by ecosystem type,
- historical data on the extent and frequency of burning by ecosystem, type
- trends in actual evapotranspiration by ecosystem type
- vegetation condition estimated using the Compere framework by ecosystem type
- biodiversity persistence by ecosystem type
- threatened species accounts – changes in number of species and status of species listed under the EPBC Act in each region since 2000 (Table 1).

The accounts show that ecosystems are relatively intact in both regions. Despite over 50 years of conventional oil and gas industry activity in the Cooper GBA region, the disturbance footprint is relatively small, representing less than 0.01% of the region. The disturbance footprint in the Beetaloo GBA region is even smaller. There has been considerable seismic exploration in both regions, which is consistent with their development potential.

Table 1 Excerpt of the EPBC listed threatened species accounts from the Cooper GBA region

	Conservation dependent species	Vulnerable	Endangered	Critically endangered	Extinct in the wild	Extinct	Total
Opening stock (2015)	0	13	6	3	0	0	22
Additions							
From lower threat categories	-	0	0	0	0	0	0
From higher threat categories	0	1	0	0	0	-	1
Rediscoveries of extinct species	0	0	0	0	0	-	0
New additions to list	0	2	0	1	0	0	3
Total additions	0	3	0	1	0	0	4
Reductions							
To lower threat categories	-	0	1	0	0	0	1
To higher threat categories	0	0	0	0	0	-	0
Delisting's	0	0	0	0	0	0	0
Total reductions	0	0	1	0	0	0	1
Closing stock 2020	0	16	5	4	0	0	25

The GBA Program

The \$35.4 million Geological and Bioregional Assessment (GBA) Program is assessing the potential impacts of shale and tight gas development on water and the environment to inform regulatory frameworks and appropriate management approaches. The geological and environmental knowledge, data and tools produced by the GBA Program will assist governments, industry, land users and the community by informing decision-making and enabling the coordinated management of potential impacts.

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Find out more

Datasets that support this work are available at data.gov.au:

- Geological and Bioregional Assessment Program (2021) [Ecosystem accounts](#). [Spreadsheet].

More information is available at bioregionalassessments.gov.au/gba.