



# Scoping Ecosystem Accounts for the Great Barrier Reef



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# This session....



- Introduce the area
- Previous studies
- Our experiences so far
- Lessons learned
- Possibilities for the future



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# Great Barrier Reef region



- 5 NRM (Natural Resource Management) regions
- 1 Marine Park
- World Heritage listed
- Economic activity







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# Of interest to many



- Local and International area of interest
- Coral
- Sea grass
- Dugong
- Indigenous communities
- Industry





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# Previous and ongoing work



- Land Management: Fitzroy and Livingstone Shires
- GBR Land Account (experimental)
- CTP work
- NRM ecosystem accounts? Wentworth?
- Land to reef process (Brodie)

NRM Region	Total suspended solids ktonnes/yr	Total nitrogen tonnes/yr	Total phosphorus tonnes/yr	PS11 herbicide kg/yr
Cape York	2 388	2 998	1 516	na
Wet Tropics	1 360	4 400	2 037	10 054
Burdekin	4 738	2 446	2 555	4 911
Mackay-Whitsundays	1 542	912	2 172	10 019
Fitzroy	4 109	1 672	4 142	2 269
Mary Burnnett	3 076	1 463	3 092	990
<b>Total Great Barrier Reef region</b>	<b>17 213</b>	<b>13 891</b>	<b>15 514</b>	<b>28 243</b>

Source: Brodie, J., Waterhouse, J., Lewis, S., Bainbridge, Z., and Johnson, J. 2010. Current loads of priority pollutants discharged from Great Barrier Reef catchments to the Great Barrier Reef. Australian Centre for Tropical Freshwater Research (ACTFR) report number 09/02.

## Land Management Practices, by NRM region - 2008-09

	Wet Tropics	Burdekin	Mackay Whitsunday	Fitzroy	Burnett Mary	Total Great E
<b>Number</b>						
Number of holdings	2 802.0	1 704.0	1 938.0	4 328.0	6 332.0	17 004.0
Holdings growing sugar cane	1 527.0	39.0	1 321.0	..	747.0	4 634.0
Holdings growing vegetables, fruit, berries or nuts (culture)	547.0	192.0	32.0	106.0	793.0	1 670.0
Holdings that prepared (sprayed, cultivated or had) land for broadacre crops and/or cotton between 1 July 2008 and 30 June 2009	78.0	105.0	45.0	1 126.0	954.0	2 308.0
Holdings keeping beef cattle	1 150.0	660.0	1 031.0	4 135.0	5 257.0	12 233.0
<b>Percent</b>						
Holdings undertaking soil testing for nutrients	34.9	21.8	36.7	6.5	12.5	23.1
Holdings applying fertiliser	68.7	46.2	70.1	10.7	34.5	50.0
Holdings using chemicals	77.3	72.4	81.6	50.1	57.8	73.9
Holdings actively controlling stock access to riparian areas	^15.9	^20.8	^19.4	^22.3	^21.4	^20.1
Holdings ensuring at least 40% ground cover remained on blocks at the end of the 2008 dry season	^43.6	^37.1	^43.1	^51.4	^39.4	^43.9
Holdings irrigating between 1 July 2008 and 30 June 2009	23.7	49.3	48.4	8.2	25.3	35.8
Holdings reusing tail water	^2.3	27.5	31.2	^34.3	^14.3	^16.9
Large holdings using zero till planters	4.0	20.9	*4.2	..	*8.6	^10.1
Small holdings using zero till planters	^3.0	^7.8	..	^17.2	^5.2	^7.9
Large holdings using zero till land preparation	**6.7	^51.3	*2.7	^26.0	^11.1	^15.6
Holdings able to provide an estimate of the percentage of their ground cover at the end of the 2008 dry season	77.0	72.5	72.5	77.3	69.8	74.4
Holdings with ground cover greater than 70%	68.0	31.8	^41.1	^34.8	42.3	^39.6

.. indicates that the estimate has a relative standard error of 10% to less than 25% and should be used with caution

\* indicates that the estimate has a relative standard error of 25% to 50% and should be used with caution

\*\* indicates that the estimate has a relative standard error greater than 50% and is considered too unreliable for general use

.. indicates that the estimate is not applicable



# Stakeholder identification



- Identify and Align with Act of Parliament
- Identify who is responsible for enforcing Act
- Where can we fit in?
- Require support and utilization to continue work







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# GBR Marine Park Act 1975



The main object of this Act is to provide for the long term protection and conservation of the environment, biodiversity and heritage values of the Great Barrier Reef Region.

(2) The other objects of this Act are to do the following, so far as is consistent with the main object:

(a) allow ecologically sustainable use of the Great Barrier Reef Region for purposes including the following:

(i) public enjoyment and appreciation;

(ii) public education about and understanding of the Region;

(iii) recreational, economic and cultural activities;

(iv) research in relation to the natural, social, economic and cultural systems and value of the Great Barrier Reef Region;







# Marine data abundance



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- One off studies with specific interest (thematic and/or spatial)
- Qualitative data
- Collection methodologies
- Marine/terrestrial contrast
- Retain focus – repeatability, timeseries





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# Ecosystem or Central Framework Account?



- Rapid Assessment tool
- Policy questions
- Distribution of benefits and residuals
- Multi-faceted data needs





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# Services and Assets – How far can we go?



- Ecosystem assets, physical measures, extent and condition
- Ecosystem services, physical measures
- Valuation?
- 2014, 1 year after SEEA EEA publication



# Small area economic and social information



- Industry value add as benefits – NRM level at best?
- Process of accessing data – BIT and BAS
- Census data – Regional Profiles incl. employment, income, etc.
- Ag survey





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# • National Regional Profile

	→ Region					
	South Mackay					
	→ Frequency	Annual				
		2007	2008	2009	2010	2011
		▲ ▼	▲ ▼	▲ ▼	▲ ▼	▲ ▼
→ Data Item						
<b>ECONOMY</b>						
NUMBER OF BUSINESSES - at 30 June		..	..	..	..	..
BUSINESS ENTRIES - year ended 30 June		..	..	..	..	..
BUSINESS EXITS - year ended 30 June		..	..	..	..	..
NUMBER OF BUSINESSES BY INDUSTRY - at 30 June		..	..	..	..	..
LABOUR FORCE STATISTICS - 2011 Census		..	..	..	..	..
YOUTH (15-19 years) ENGAGEMENT IN WORK/STUDY - 2011 Census		..	..	..	..	..
TAXATION STATISTICS - year ended 30 June		..	..	..	..	..
SELECTED GOVERNMENT PENSIONS & ALLOWANCES - at 30 June		..	..	..	..	..
ESTIMATES OF PERSONAL INCOME - year ended 30 June		..	..	..	..	..
WAGE AND SALARY EARNERS BY SEX - year ended 30 June		..	..	..	..	..
WAGE AND SALARY EARNERS BY AGE AND SEX - year ended 30 June		..	..	..	..	..
WAGE AND SALARY EARNERS BY AGE - year ended 30 June		..	..	..	..	..
WAGE AND SALARY EARNERS BY OCCUPATION - year ended 30 June		..	..	..	..	..
WAGE AND SALARY EARNERS BY OCCUPATION - at 30 June		..	..	..	..	..



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# Multi-disciplinary nature



- Scoping – managers, ecosystem accountants, economists
- Physical data – ecosystem accountants, connections to research network
- Services data – Scientists, economists, ecosystem accountants

# Next Steps

- Second round of stakeholder consultation
- Develop structure of end product
- Documentation
- Utilisation





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# Summary



- The GBR is an important asset for Australia and the world
- A lot of work done already
- Application of framework to test EEA
- Second and third accounts, utilisation





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# Questions?





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