Asset extent and condition accounts for the Mitchell River catchment, Queensland, Australia

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Photo: Arthur Beau Palmer, courtesy Mitchell River Watershed Management Group Inc.





National Environmental Science Programme

Acknowledge Traditional Custodians



Mitchell River catchment 71,331 km² <5,000 population





Photo: Arthur Beau Palmer, courtesy Mitchell River Watershed Management Group Inc.



Photo: Arthur Beau Palmer, courtesy Mitchell River Watershed Management Group Inc.

Mitchell River above Koolatah Crossing: dry season The river can be 2 km wide in flood here.



Photo: Arthur Beau Palmer, courtesy Mitchell River Watershed Management Group Inc.





Photo: Arthur Beau Palmer, courtesy Mitchell River Watershed Management Group Inc.



Photo: Michele Burford



Photo: Michele Burford

Ecosystem extent account: terrestrial ecosystems

Piomo	T1								
Bioffie	Tropical-subtropical forests								
	T1.1	T1.2	T1.3						
Ecosystem Functional Group	Tropical-subtropical lowland rainforests	Tropical-subtropical dry forests and scrubs	Tropical-subtropical montane rainforests						
Pre-clearing extent (ha) 4,814		6,200,520	50,060						
2017 extent (ha)	3,963	6,113,758	46,491						

Biome	Т3						
biolitie	Shrublands & shrubby woodlands						
	T3.1	T3.2					
Ecosystem Functional Group	Seasonally dry tropical shrublands	Seasonally dry temperate heaths and					
		shrublands					
Pre-clearing extent (ha)	249,373	49,338					
2017 extent (ha)	249,291	49,279					

Piomo	Τ4						
Bioffie	Savannas and grasslands						
	T4.2	T4.3					
Ecosystem Functional Group	Pyric tussock savannas	Hummock savannas					
Pre-clearing extent (ha)	473,018	27,566					
2017 extent (ha)	469,439	27,552					

Piomo	T7
ыотте	Intensive land-use systems
	T7.1, T7.2, T7.3, T7.4
Ecosystem Functional Group	Annual croplands, sown pastures and
	fields, plantations, and urban ecosystems
Pre-clearing extent (ha)	0
2017 extent (ha)	92,031

Ecosystem extent account: aquatic ecosystems

Piomo	TF1							
ыотте		Palustrine wetlands						
	TF1.2	TF1.2 TF1.4						
Ecosystem Functional Group	Subtropical-temperate	Seasonal floodplain marshes	Episodic arid floodplains					
	forested wetlands							
Pre-clearing extent (ha)	125,456	45,186	29,997					
2017 extent (ha)	124,272	44,494	29,996					

Biome	MFT1 Brackish tidal					
	MFT1.2	MFT1.3				
Ecosystem Functional Group	Intertidal forests and	Coastal saltmarshes				
	shrublands					
Pre-clearing extent (ha)	11,682	43,146				
2017 extent (ha)	11,682	43,146				

Riomo	MT2	F1			
воше	Supralittoral coastal systems	Rivers and streams			
	MT2.1	F1.1, F1.2, F1.4, F1.5			
Ecosystem Functional Group	Coastal shrublands and	Upland streams and lowland			
	grasslands	rivers			
Pre-clearing extent (ha)	14,946	5,790			
2017 extent (ha)	14,946	10,585			



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	fields, plantations, and urban ecosystems				
Pre-clearing extent (ha)	0				
2017 extent (ha)	92,031				

Ecosystem condition account: IUCN T1 (Tropical-subtropical forests)

		on sub-class Variable/Indicator	Biome T1 Tropical-subtropical forests												
			F	T1 1 T1											
Condition class	Condition sub-class		Functional Group	Tropical-subtropical lowland rainforests				Tropical-subtropical dry forests and scrubs				Tropical-subtropical montane rainforests			
			Unit	Reference level	Year 2014	Year 2017	Year 2018	Reference level	Year 2014	Year 2017	Year 2018	Reference level	Year 2014	Year 2017	Year 2018
		Perennial rivers and streams	%												
		Intensive use	%	2.5 (1999)			2.5	0.028 (1999)			0.034	0.22 (1999)			0.22
Abiotic	Physical state	Production from dryland agriculture and plantations	%	0 (1999)			0	0.005 (1999)			0.005	0 (1999)			0.65
ADIOLIC		Conservation	%	35 (1999)			47.5	2.68 (1999)			13.79	20.65 (1999)			80.86
		Production from relatively natural environments	%	30 (1999)			20	96.17 (1999)			85.06	79.13 (1999)			18.71
	Chemical state											•			
		Lowland rainforest of subtropical Australia (Critically endangered)	%	100 (pre- clearing)		65.12						100 (pre- clearing)		58.44	
	Composition [#]	Broad leaf tea-tree (Melaleuca viridiflora) woodlands (Endangered)	%					100 (pre- clearing)		99.77					
		Community of native species dependent on natural discharge from the Great Artesian Basin (Endagered)	%												
Biotic		Subtropical and temperate coastal saltmarsh (Vulnerable)	%												
		Natural grasslands (Endangered)	%												
	Structure	Total foliage cover	%	61.47 (2013)	60.55			28.62 (2013)	28.16			60.35 (2013)	59.73		
	Function	Total Pasture Biomass	kg DM/ha	2767.2 (1999)	2857.66	2738.44	2767.2	103783.6 (1999)	4680642	4295571	5409698	10025.37 (1999)	25941.8	22084.27	33965.14
	Function	Total Pasture Growth	kg DM/ha	2566.58 (1999)	2509.64	2423.9	2504.9	4787549.08 (1999)	4285780	4025191	4306174	28774.09 (1999)	24870.3	21580.9	21933.26
Landscape	Landscape diversity	Area covered by most common broad vegetation group	%					76.99 (pre- clearing)		67					
	Spatial distribution														

Endangered vegetation communities as listed in the Australian Government's Environment Protection and Biodiversity (EPBC) Act 1999





Ecosystem condition account: IUCN T4 (Savannas and grasslands)

	Condition class	Condition sub-class	Variable/Indicator	Biome				Т4					
				-	Savannas and grasslands								
				Ecosystem	T4.2			T4.3					
				Functional	Ру	ric tussocl	k savannas		Hummock savannas				
				Unit				Reference Veer Veer					
					Reference	Year	Year	Year	Reference	Year	Year	Year	
	Abiotic	Physical state	Peronnial rivers and streams	0/	level	2014	2017	2018	level	2014	2017	2018	
				70	0			0	0			0	
			Intensive use	%	(1999)			Ŭ	(1999)			Ŭ	
			Production from dryland agriculture	,,,	0			0.06	0			1.09	
			and plantations	%	(1999)				(1999)				
			Conservation		19.85			38.36	6.16			10.87	
				%	(1999)				(1999)				
			Production from relatively natural		74.53			56.04	90.22			85.51	
			environments	%	(1999)				(1999)				
		Chemical state											
		Composition [#]	Lowland rainforest of subtropical	%									
			Australia (Critically endangered)										
	Biotic		Broad leaf tea-tree (Melaleuca	%									
			viridiflora) woodlands (Endangered)										
				<u> </u>									
			Community of native species	%									
			from the Groat Artesian Basin										
			(Endagered)										
			Subtronical and temperate coastal	%									
			saltmarsh (Vulnerable)	70									
			Natural grasslands (Endangered)	%	100		95.13						
					(pre-								
					clearing)								
		_											
		Structure	Total foliage cover	%	18.81	22.27			17.55	21.45			
		Function	Tabal Daabaa Diawaaa		(2013)	275 466	240500.0	402000 4	(2013)	24265	20640.2	22220 70	
			lotal Pasture Biomass	kg Divi/na	10616.77	375466	348500.9	403980.4	4645.95	21265	20619.2	23229.76	
			Total Pasture Growth	kg DM/ba	3/2211 10	320013	322946	325474.2	18038 5/	17607 /	183/11	16844 51	
				Kg Divi/IIa	(1999)	525515	522540	525474.2	(1999)	17007.4	10541	10044.31	
		Landscape diversity	Area covered by most common	%	80.76		81		(1999)				
			broad vegetation group		(pre-								
	Landscape				clearing)								
		Spatial distribution											



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				Ecosystem	T4.2			T4.3					
				Functional	Ру	ric tussocl	k savannas		Hummock savannas				
				Unit				Reference Veer Veer					
					Reference	Year	Year	Year	Reference	Year	Year	Year	
	Abiotic	Physical state	Peronnial rivers and streams	0/	level	2014	2017	2018	level	2014	2017	2018	
				70	0			0	0			0	
			Intensive use	%	(1999)			Ŭ	(1999)			Ŭ	
			Production from dryland agriculture	,,,	0			0.06	0			1.09	
			and plantations	%	(1999)				(1999)				
			Conservation		19.85			38.36	6.16			10.87	
				%	(1999)				(1999)				
			Production from relatively natural		74.53			56.04	90.22			85.51	
			environments	%	(1999)				(1999)				
		Chemical state											
		Composition [#]	Lowland rainforest of subtropical	%									
			Australia (Critically endangered)										
	Biotic		Broad leaf tea-tree (Melaleuca	%									
			viridiflora) woodlands (Endangered)										
				<u> </u>									
			Community of native species	%									
			from the Groat Artesian Basin										
			(Endagered)										
			Subtronical and temperate coastal	%									
			saltmarsh (Vulnerable)	70									
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			broad vegetation group		(pre-								
	Landscape				clearing)								
		Spatial distribution											

Moving forward

Further work still to be completed on the extent and condition accounts for the Mitchell catchment

Additional indicators of condition are required

- particularly for aquatic asset types
- several options for extent of aquatic assets; challenging in highly seasonal environment
- condition of aquatic assets: challenging to establish reference levels

Further work on supply and use accounts in biophysical and monetary terms

Thank you for listening. Questions & suggestions most welcome



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Title