

Australian Fossil Mammal Sites (Riversleigh / Naracoorte)

1. World Heritage Property Data

1.1 - Name of World Heritage property


Australian Fossil Mammal Sites (Riversleigh / Naracoorte)

1.2 - World Heritage property details

1.3 - Geographic information table

Name	Coordinates	Property (ha)	Buffer zone (ha)	Total (ha)	Inscription year
	0 / 0	?	?	?	
	0 / 0	?	?	?	
	0 / 0	?	?	?	
	0 / 0	?	?	?	
Riversleigh	-19.033 / 138.633	10029	0	10029	1994
Naracoorte (Hynam-Caves Rd)	-37.03 / 140.797	18	0	18	1994
Naracoorte (Alexandra Cave, Bat Cave and Blanche Cave)	-37.035 / 140.796	21.2	0	21.2	1994
Naracoorte (Robert-Leitch Dr)	-37.044 / 140.801	3.3	0	3.3	1994
Naracoorte (Caves-Edwards Rd)	-37.046 / 140.804	3.5	0	3.5	1994
Naracoorte (Victoria Fossil Cave)	-37.063 / 140.811	241	0	241	1994
Naracoorte (Robertson Cave)	-37.095 / 140.835	10	0	10	1994
Total (ha)		10326	0	10326	

1.4 - Map(s)

Title	Date	Link to source
Riversleigh: boundary of the nominated property	1993	
Naracoorte: boundary of the nominated property	1993	
Fossil Mammal Sites (Riversleigh / Naracoorte) - Map of inscribed property	2015	
Fossil Mammal Sites (Riversleigh / Naracoorte) - Map of inscribed property	2015	

1.5 - Web and Social Media data of the property (if applicable)

- [The Official Site for Australian Travel and Tourism Australia](#)
- [Naracoorte Caves National Park \(South Australia Parks and Wildlife\)](#)
- [Natural site datasheet from WCMC](#)
- [Riversleigh \(Queensland Parks and Wildlife Service\)](#)
- [Australian Fossil Mammal Sites \(Department of Sustainability, Environment, Water, Population and Communities\)](#)

Comment

- Delete this link (no link to Naracoorte or Riversleigh or the Australian Fossil Mammal Sites)
- Replace this link with <https://www.naracoortecaves.sa.gov.au/Home>
- Delete this link
- Replace this link with <https://parks.des.qld.gov.au/parks/boodjamulla-riversleigh/about>
- Correct link

2. Other Conventions/Programmes under which the World Heritage property is protected (if applicable)

2.1 - Records indicate that your World Heritage property (in whole or in part) is designated and/or protected under the Conventions/programmes shown in the prefilled table below. Please check and amend as necessary.

		The World Heritage property (in whole or in part) <u>is</u> designated and/or protected under this convention/programme	The World Heritage property (in whole or in part) <u>is not</u> designated and/or protected under this convention/programme
2.1.1	International Register of Cultural Property under Special Protection (1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict)		

2.1.2	List of Cultural Property under Enhanced Protection (Second Protocol to the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict)		✕
2.1.3	The List of Wetlands of International Importance (The Ramsar List) (Convention on Wetlands of International Importance (Ramsar Convention))		✕
2.1.4	World Network of Biosphere Reserves Man and the Biosphere (MAB) Programme		✕
2.1.5	Global Geoparks Network UNESCO Global Geoparks		✕

2.2 - Please provide comments on 2.1 if necessary

2.3 - Do your national authorities intend to request the granting of Enhanced Protection (if relevant) under the Second Protocol to the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict for the World Heritage property in the next three years?

No

2.4 - Do your national authorities intend to designate whole or part of the World Heritage property for inclusion in the List of Wetlands of International Importance (The Ramsar List), if relevant, in the next three years?

No

2.5 - Do your national authorities intend to designate whole or part of the World Heritage property as a Man and Biosphere Reserve (if relevant) in the next three years?

No

2.6 - Do your national authorities intend to apply for whole or part of World Heritage property to be designated as a UNESCO Global Geopark (if relevant) in the next three years?

No

2.7 - Please indicate the level of cooperation at property level between designations under different Conventions/Programmes

2.7.1	1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict	
2.7.1	There is no contact with the Focal Point(s) of this designation/programme.	✕
2.7.2	The World Heritage Site Manager occasionally communicates with the Focal Point(s) of this designation/programme.	
2.7.3	The World Heritage Site Manager regularly communicates with the Focal Point(s) of this designation/programme.	
2.7.4	The World Heritage Site Manager also manages this designation/programme.	
2.7.2	Second Protocol to the 1954 Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict	
2.7.1	There is no contact with the Focal Point(s) of this designation/programme.	✕
2.7.2	The World Heritage Site Manager occasionally communicates with the Focal Point(s) of this designation/programme.	
2.7.3	The World Heritage Site Manager regularly communicates with the Focal Point(s) of this designation/programme.	
2.7.4	The World Heritage Site Manager also manages this designation/programme.	
2.7.3	Convention on Wetlands of International Importance (Ramsar Convention)	
2.7.1	There is no contact with the Focal Point(s) of this designation/programme.	✕
2.7.2	The World Heritage Site Manager occasionally communicates with the Focal Point(s) of this designation/programme.	
2.7.3	The World Heritage Site Manager regularly communicates with the Focal Point(s) of this designation/programme.	
2.7.4	The World Heritage Site Manager also manages this designation/programme.	
2.7.4	Man and the Biosphere (MAB) Programme	
2.7.1	There is no contact with the Focal Point(s) of this designation/programme.	✕
2.7.2	The World Heritage Site Manager occasionally communicates with the Focal Point(s) of this designation/programme.	
2.7.3	The World Heritage Site Manager regularly communicates with the Focal Point(s) of this designation/programme.	
2.7.4	The World Heritage Site Manager also manages this designation/programme.	
2.7.5	UNESCO Global Geoparks	

2.7.1	There is no contact with the Focal Point(s) of this designation/programme.	✕
2.7.2	The World Heritage Site Manager occasionally communicates with the Focal Point(s) of this designation/programme.	
2.7.3	The World Heritage Site Manager regularly communicates with the Focal Point(s) of this designation/programme.	
2.7.4	The World Heritage Site Manager also manages this designation/programme.	

2.8 - Please add any further comments on cooperation with the other designation(s)/programme(s)

2.9 - Are you aware of any elements associated with the World Heritage property that have been inscribed on the Representative List of the Intangible Cultural Heritage?

No

2.10 - Please list any elements associated with the World Heritage property inscribed under the Convention for the Safeguarding of the Intangible Cultural Heritage of which you are aware

2.11 - Are you aware of any documentary heritage listed under the Memory of the World Programme associated with the World Heritage property?

No

2.12 - Please list any documentary heritage associated with the World Heritage property listed under the Memory of the World Programme of which you are aware.

3. Statement of Outstanding Universal Value

3.1 - Statement of Outstanding Universal Value for the property as adopted by the World Heritage Committee

Statement of Outstanding Universal Value

Brief synthesis

Australia is regarded as the most biologically distinctive continent in the world, an outcome of its almost total isolation for 35 million years following separation from Antarctica. Only two of its seven orders of singularly distinctive marsupial mammals have ever been recorded elsewhere. Two of the world's most important fossil sites, Riversleigh and Naracoorte, located in the north and south of Australia respectively, provide a superb fossil record of the evolution of this exceptional mammal fauna. This serial property provides outstanding, and in many cases unique, examples of mammal assemblages during the last 30 million years.

The older fossils occur at Riversleigh, which boasts an outstanding collection from the Oligocene to Miocene, some 10-30 million years ago. The more recent story then moves to Naracoorte, where one of the richest deposits of vertebrate fossils from the glacial periods of the mid-Pleistocene to the current day (from 530,000 years ago to the present) is conserved. This globally significant fossil record provides a picture of the key stages of evolution of Australia's mammals, illustrating their response to climate change and to human impacts.

Criterion (viii): These fossil deposits are outstanding examples representing major stages of earth's history, including the record of life. Riversleigh provides exceptional, and in many cases unique, mammal assemblages from the Oligocene to Miocene, spanning from 10-30 million years ago. These assemblages document changes in habitat from humid, lowland rainforest to dry eucalypt forests and woodlands, and provide the first fossil record for many distinctive groups of living mammals such as the marsupial moles and feather-tailed possums. The assemblages recovered from the caves at Naracoorte Victoria Fossil Cave preserve an outstanding record of more recent terrestrial vertebrate life. These open a window into a significant period of earth's history from the mid-Pleistocene to present (530,000 years ago to today), a period characterised by great climatic changes.

Criterion (ix): Both sites provide complementary evidence of key stages in the evolution of the fauna of one of the world's most isolated continents. The history of mammal lineages in modern Australia can be traced through these fossil deposits and, as a consequence, there is a better understanding of the conservation status of living mammals and their communities.

At Riversleigh the mammal fossil assemblages indicate changes in habitat from humid lowland rainforest to dry eucalypt forests and woodlands from the Oligocene to the Miocene, and indicate the rainforest origins for the majority of mammal groups that today occupy arid Australia. The vertebrate species present at Naracoorte provide a key clue to understanding their responses to climate change, and include superbly preserved examples of the Australian ice age megafauna (giant, now extinct mammals, birds and reptiles), such as the enigmatic extinct marsupial lion (*Thylacoleo carnifex*). This site also hosts essentially modern species including marsupials such as the Tasmanian devil (*Sarcophilus harrisii*), Tasmanian tiger (*Thylacinus cynocephalus*), wallabies and possums; placental mammals including mice and bats; and snakes, lizards, frogs and turtles. The Naracoorte assemblages span the probable time of arrival of humans to Australia and thus are of additional value in helping unravel the complex relationships between humans and their environment. They highlight the impacts of both climatic change and humans on Australia's mammals, including its now vanished megafauna.

Integrity

In Riversleigh, an area of very active mining exploration, not all of the deposit is contained within the property although the representativeness of the site, located within the Boodjamulla (Lawn Hill) National Park, is judged adequate. In Naracoorte, the whole of the deposit of the Victoria Fossil Cave is included within the property. While the surficial boundaries of the Naracoorte Caves National Park do not match those of its underground cave deposits, the entrances to the caves are protected, which is the critical factor. Since the World Heritage inscription, the boundaries of the National Park have been expanded and cover most known caves within the park. Additional land has been purchased and added to the park providing greater security. Researchers have expanded the knowledge of Naracoorte's caves in addition to Victoria Fossil Cave, including the timeframe of the fossil records.

A major issue for the integrity of fossil sites is the physical removal of fossils. Because palaeontology is an extractive science, the determination of a site's scientific value involves the removal of specimens from their depositional context to laboratories for study. The extent to which the resource is affected by paleontological excavation in Riversleigh was less than 1% at the time of inscription.

In Naracoorte, although paleontological excavations at the site affect a higher proportion of the total fossil deposits compared to the extensive deposits at Riversleigh, less than 1% of the resource is affected by excavation and many sites remain undisturbed.

In order to retain the integrity of the original site as much as possible, as a matter of policy, collections should not be too widely dispersed. Conditions are applied, supported by legislation, to record the location and regulate the removal of fossil material from both Riversleigh and Naracoorte. The paleontological work is important for the identification, presentation and transmission of the World Heritage values of the property to future generations.

Protection and management requirements

The Riversleigh site is contained within Boodjamulla (Lawn Hill) National Park. Owing to the rugged limestone terrain, visitor access and on-site presentation are restricted to one location. In 1992, the nominated area was acquired for National Park purposes and grazing on the property has ceased. The Riversleigh site is protected by the strong provisions of Queensland's Nature Conservation Act 1992, and it is managed as a discrete component of the larger national park. Management is guided by the Riversleigh Management Strategy (2002), and a management plan for the whole national park is presently being developed. A Riversleigh Community and Scientific Advisory Committee has been established, with representation from the scientific community, Queensland Museum, tourism, Waanyi traditional owners, and local, Queensland and Australian governments. In addition, a Waanyi Advisory Committee provides advice on Indigenous issues.

Naracoorte Caves National Park has a management plan. There are some factors relating to the previous use of the site which have impacted on a minority of its caves, including the partial modification of some parts of caves to facilitate visitor access (a small proportion of Naracoorte National Park's caves are open to the public), and the mining of guano in one cave in the 19th century. However access to the main fossil beds is carefully controlled and they remain in an undisturbed condition. Visitor access is controlled to protect the scientific, conservation and aesthetic values of the caves.

All World Heritage properties in Australia are 'matters of national environmental significance' protected and managed under national legislation, the Environment Protection and Biodiversity Conservation Act 1999. This Act is the statutory instrument for implementing Australia's obligations under a number of multilateral environmental agreements including the World Heritage Convention. By law, any action that has, will have or is likely to have a significant impact on the World Heritage values of a World Heritage property must be referred to the responsible Minister for consideration. Substantial penalties apply for taking such an action without approval. Once a heritage place is listed, the Act provides for the preparation of management plans which set out the significant heritage aspects of the place and how the values of the site will be managed.

Importantly, this Act also aims to protect matters of national environmental significance, such as World Heritage properties, from impacts even if they originate outside the property or if the values of the property are mobile (as in fauna). It thus forms an additional layer of protection designed to protect values of World Heritage properties from external impacts.

The Australian Fossil Mammal Site was also listed under the EPBC Act as a place inscribed on the National Heritage List in 2007.

Fossil excavation is regulated under relevant State legislation in addition to the EPBC Act and is restricted to very small areas. Other potential impacts on natural condition of both sites such as those associated with visitor access, other research activities and management actions are guided by the relevant management arrangement.

Comment

The Statement of Outstanding Universal Value requires an update. Some sections in the synthesis are incorrect (in how they connect to the criterion, integrity, and the protection and management requirements). The Australian Fossil Mammal Sites management, executive officers and Chairs of associated Advisory Committees for both Riversleigh and Naracoorte sites, wish to undertake the process to update the Statement with the World Heritage Committee, in due course and not part of this Periodic Rep

3.2 - Please list the key attributes of Outstanding Universal Value of your property and give an assessment of their condition. As a guideline, it is suggested to focus on approximately five key attributes (no more than 15 overall).

	Brief identification of attribute	Preserved	Compromised	Seriously compromised	Lost
3.2.1	Criteria 8. Extensive deposits of vertebrate fossils.	✗			
3.2.2	Criteria 9. Evidence of evolutionary change.	✗			
3.2.3					
3.2.4					
3.2.5					
3.2.6					
3.2.7					
3.2.8					
3.2.9					
3.2.10					
3.2.11					
3.2.12					
3.2.13					
3.2.14					
3.2.15					

3.3 - Comments, conclusions and/or recommendations related to Statement of Outstanding Universal Value

Update to the Statement of Outstanding Universal Value is required.

4. Factors Affecting the Property

4.1. Buildings and Development

4.1.1 - Housing

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	<input checked="" type="checkbox"/> Not relevant
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4.1.2 - Commercial development

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	<input checked="" type="checkbox"/> Not relevant
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4.1.3 - Industrial areas

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	<input checked="" type="checkbox"/> Not relevant
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4.1.4 - Major visitor accommodation and associated infrastructure

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	<input checked="" type="checkbox"/> Not relevant
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4.1.5 - Interpretative and visitation facilities

Previous answer Cycle 2 (29/07/2011):

- Relevant, Positive, Negative, Current, Potential, Inside, Outside

<input checked="" type="checkbox"/> Relevant				Not relevant			
	Impact		Origin		Trend of impact		
Impact	Current	Potential	Inside	Outside	Decreasing	Stable	Increasing
Positive <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Negative							

4.1.6 - Please comment as necessary on how the factors selected as relevant in 4.1 are affecting the property either negatively or positively

4.1.5 Visitor facilities are good at both Riversleigh and Naracoorte. Riversleigh -currently undergoing an upgrade to site facilities and interpretation (2020). An interpretive Fossil Centre in nearby Mount Isa has recently undergone a full refurbishment (2020). Naracoorte -an interpretive walking trail and playground have been constructed, and new interpretation installed in Wonambi Visitor Centre.

4.2. Transportation Infrastructure

4.2.1 - Ground transport infrastructure

Previous answer Cycle 2 (29/07/2011):

- Relevant, Positive, Current, Inside, Outside

<input checked="" type="checkbox"/> Relevant				Not relevant			
	Impact		Origin		Trend of impact		
Impact	Current	Potential	Inside	Outside	Decreasing	Stable	Increasing
Positive <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Negative							

4.2.2 - Underground transport infrastructure

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	<input checked="" type="checkbox"/> Not relevant
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4.2.3 - Air transport infrastructure

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	<input checked="" type="checkbox"/> Not relevant
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4.2.4 - Marine transport infrastructure

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	<input checked="" type="checkbox"/> Not relevant
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4.2.5 - Effects arising from use of transportation infrastructure

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.2.6 - Please comment as necessary on how the factors selected as relevant in 4.2 are affecting the property either negatively or positively

4.2.1 Roads and carparks at both Riversleigh and Naracoorte provide positive visitor facilities. Riversleigh is currently undergoing a site upgrade that will improve visitor facilities including a new carpark.

4.3. Services Infrastructures

4.3.1 - Water infrastructure

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✕ Relevant	Not relevant
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	Impact		Origin		Trend of impact		
Impact	🔴 Current	🟡 Potential	🟢 Inside	🟢 Outside	📉 Decreasing	➡ Stable	📈 Increasing
🟢 Positive ✕	✕	✕	✕			➡	
🔴 Negative							

4.3.2 - Renewable energy facilities

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✕ Relevant	Not relevant
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	Impact		Origin		Trend of impact		
Impact	🔴 Current	🟡 Potential	🟢 Inside	🟢 Outside	📉 Decreasing	➡ Stable	📈 Increasing
🟢 Positive ✕	✕		✕			➡	
🔴 Negative							

4.3.3 - Non-renewable energy facilities

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.3.4 - Localised utilities

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✕ Relevant	Not relevant
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	Impact		Origin		Trend of impact		
Impact	🔴 Current	🟡 Potential	🟢 Inside	🟢 Outside	📉 Decreasing	➡ Stable	📈 Increasing
🟢 Positive ✕	✕	✕	✕			➡	
🔴 Negative							

4.3.5 - Major linear utilities

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✕ Relevant	Not relevant
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	Impact		Origin		Trend of impact		
Impact	🔴 Current	🟡 Potential	🟢 Inside	🟢 Outside	📉 Decreasing	➡ Stable	📈 Increasing
🟢 Positive ✕	✕		✕	✕		➡	
🔴 Negative							

4.3.6 - Please comment as necessary on how the factors selected as relevant in 4.3 are affecting the property either negatively or positively

4.3.1 Existing water facilities at both properties are essential for visitor services 4.3.2 Existing solar power at Naracoorte is positive clean energy for visitor services 4.3.4 Existing sewerage infrastructure at both properties is essential for visitor services. Both properties are undergoing minor improvement works. 4.3.5 Existing power supply at Naracoorte is advantageous to tourism operation and neighbouring properties.

4.4. Pollution

4.4.1 - Pollution of marine waters

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✗ Not relevant
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4.4.2 - Ground water pollution

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✗ Not relevant
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4.4.3 - Surface water pollution

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✗ Not relevant
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4.4.4 - Air pollution

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✗ Not relevant
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4.4.5 - Solid waste

Previous answer Cycle 2 (29/07/2011):

- Not relevant











Relevant	✗ Not relevant
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4.4.6 - Input of excess energy

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✗ Relevant	Not relevant
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	Impact		Origin		Trend of impact		
Impact	 Current	 Potential	 Inside	 Outside	 Decreasing	 Stable	 Increasing
 Positive							
 Negative ✗	✗	✗	✗				

4.4.7 - Please comment as necessary on how the factors selected as relevant in 4.4 are affecting the property either negatively or positively

4.4.6 Naracoorte- a recent upgrade of lighting systems in some caves has enhanced micro biotic growth that degrades fossils and speleothems (most likely light intensity and light-spectrum related). Works to mitigate the effects, and research to reverse the impacts, are being implemented.

4.5. Biological resource use/modification

4.5.1 - Fishing/collecting aquatic resources

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✗ Not relevant
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4.5.2 - Aquaculture

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✗ Not relevant
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4.5.3 - Land conversion

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.5.4 - Livestock farming/Grazing of domesticated animals

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.5.5 - Crop production

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.5.6 - Commercial wild plant collection

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.5.7 - Subsistence wild plant collection

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.5.8 - Commercial hunting

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.5.9 - Subsistence hunting

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.5.10 - Forestry/Wood production

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.5.11 - Please comment as necessary on how the factors selected as relevant in 4.5 are affecting the property either negatively or positively

NA

4.6. Physical resource extraction

4.6.1 - Mining

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.6.2 - Quarrying

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.6.3 - Oil and gas

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.6.4 - Water (extraction)

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.6.5 - Please comment as necessary on how the factors selected as relevant in 4.6 are affecting the property either negatively or positively

NA

4.7. Local conditions affecting physical fabric

4.7.1 - Wind

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.7.2 - Relative humidity

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.7.3 - Temperature

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.7.4 - Radiation/Light

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.7.5 - Dust

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.7.6 - Water (rain/water table)

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.7.7 - Pests

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.7.8 - Micro-organisms

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✕ Relevant	Not relevant
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	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔨 Potential	📍 Inside	🌿 Outside	↘ Decreasing	→ Stable	↗ Increasing
🟢 Positive ✕	✕	✕	✕		↘		
🔴 Negative ✕	✕	✕	✕				↗

4.7.9 - Please comment as necessary on how the factors selected as relevant in 4.7 are affecting the property either negatively or positively

4.7.8 Naracoorte only -bacteria, fungi and diatoms are proliferating in some caves as a result of tourist lighting. Positive -some species of organisms are natural biological controls agents for others. Negative -some species of organisms release chemicals that are detrimental to calcite and fossil bone.

4.8. Social/Cultural uses of heritage

4.8.1 - Ritual/Spiritual/Religious and associative uses

Previous answer Cycle 2 (29/07/2011):

- Relevant, Positive, Negative, Current, Potential, Inside, Outside

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔨 Potential	📍 Inside	📍 Outside	↘ Decreasing	→ Stable	↗ Increasing
➕ Positive ✕	✕	✕	✕	✕			↗
➖ Negative							

4.8.2 - Society's valuing of heritage

Previous answer Cycle 2 (29/07/2011):

- Relevant, Positive, Negative, Current, Potential, Inside, Outside

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔨 Potential	📍 Inside	📍 Outside	↘ Decreasing	→ Stable	↗ Increasing
➕ Positive ✕	✕	✕	✕	✕			↗
➖ Negative							

4.8.3 - Indigenous hunting, gathering and collecting

Previous answer Cycle 2 (29/07/2011):

- Relevant, Positive, Current, Potential, Inside, Outside

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔨 Potential	📍 Inside	📍 Outside	↘ Decreasing	→ Stable	↗ Increasing
➕ Positive ✕	✕	✕	✕	✕		→	
➖ Negative							

4.8.4 - Changes in traditional ways of life and knowledge system

Previous answer Cycle 2 (29/07/2011):

- Relevant, Negative, Current, Potential, Inside, Outside

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔨 Potential	📍 Inside	📍 Outside	↘ Decreasing	→ Stable	↗ Increasing
➕ Positive ✕		✕	✕	✕		→	
➖ Negative ✕							

4.8.5 - Identity, social cohesion, changes in local population and community

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔨 Potential	📍 Inside	📍 Outside	↘ Decreasing	→ Stable	↗ Increasing
➕ Positive ✕	✕		✕	✕		→	
➖ Negative							

4.8.6 - Impacts of tourism/Visitation/Recreation

Previous answer Cycle 2 (29/07/2011):

- Relevant, Positive, Current, Potential, Inside, Outside

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔥 Potential	📍 Inside	📍 Outside	↘ Decreasing	→ Stable	↗ Increasing
➕ Positive ✕	✕		✕	✕			↗
➖ Negative							

4.8.7 - Please comment as necessary on how the factors selected as relevant in 4.8 are affecting the property either negatively or positively

Waanyi responses (C.Albert) 4.8.1 Riversleigh-Co-stewardship with First Nations Peoples for park management is increasing 4.8.2 Both sites-Cultural heritage value expected to increase with improved interpretation 4.8.3 Management acknowledges ILUA at Riversleigh 4.8.4 Potential to improve Traditional knowledge and practices at Riversleigh (C.Albert) 4.8.5 Both sites-increases in collaboration with local community and local government 4.8.6 Both sites-positive impacts of tourism

4.9. Other human activities

4.9.1 - Illegal activities

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔥 Potential	📍 Inside	📍 Outside	↘ Decreasing	→ Stable	↗ Increasing
➕ Positive							
➖ Negative ✕		✕	✕	✕	↘		

4.9.2 - Deliberate destruction of heritage

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.9.3 - Military training

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.9.4 - War

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.9.5 - Terrorism

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.9.6 - Civil unrest

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.9.7 - Please comment as necessary on how the factors selected as relevant in 4.9 are affecting the property either negatively or positively

4.9.1 Riversleigh -small-scale disturbance through visitor theft of fossils or illegal trade of fossils has been alleged, but the extent is minor and there is no evidence of systemic or ongoing issues. Naracoorte -attempted break-ins (into caves) have occurred after visitor hours. Park management at both sites continues monitoring to ensure that these activities do not occur.

4.10. Climate change and severe weather events

4.10.1 - Storms

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.10.2 - Flooding

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✕ Relevant	Not relevant						
	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔊 Potential	📍 Inside	🌐 Outside	↘ Decreasing	→ Stable	↗ Increasing
🟢 Positive							
🔴 Negative ✕		✕	✕	✕		→	

4.10.3 - Drought

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✕ Relevant	Not relevant						
	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔊 Potential	📍 Inside	🌐 Outside	↘ Decreasing	→ Stable	↗ Increasing
🟢 Positive							
🔴 Negative ✕		✕	✕	✕			↗

4.10.4 - Desertification

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.10.5 - Changes to oceanic waters

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.10.6 - Temperature change

Previous answer Cycle 2 (29/07/2011):

- Not relevant

✕ Relevant	Not relevant						
	Impact		Origin		Trend of impact		
Impact	🔥 Current	🔊 Potential	📍 Inside	🌐 Outside	↘ Decreasing	→ Stable	↗ Increasing
🟢 Positive							
🔴 Negative ✕		✕	✕	✕			↗

4.10.7 - Other climate change impacts

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.10.8 - Please comment as necessary on how the factors selected as relevant in 4.10 are affecting the property either negatively or positively

4.10.2 Riversleigh- potential increase in flooding events in surrounding regional areas may limit access and reduce visitation. Naracoorte- Cave flooding causes reworking of fossil sediments and loss of time series 4.10.3 Naracoorte- Speleogenesis and cave microclimate potentially affected 4.10.6 Riversleigh- temperature increases, higher frequency of hot days and longer heatwaves may affect visitation and the OUV 'Transmission of Values' but changes to climate will not impact fossil integrity

4.11. Sudden ecological or geological events

4.11.1 - Volcanic eruption

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.11.2 - Earthquake

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.11.3 - Tsunami/Tidal wave

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.11.4 - Avalanche/Landslide

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant







4.11.5 - Erosion and siltation/Deposition

Previous answer Cycle 2 (29/07/2011):

- Relevant, Positive, Negative, Current, Potential, Inside

✕ Relevant

Not relevant

	Impact		Origin		Trend of impact		
Impact	 Current	 Potential	 Inside	 Outside	 Decreasing	 Stable	 Increasing
 Positive ✕	✕	✕	✕	✕			
 Negative							











4.11.6 - Fire (wildfire)

Previous answer Cycle 2 (29/07/2011):

- Relevant, Negative, Current, Potential, Inside, Outside

✕ Relevant

Not relevant

	Impact		Origin		Trend of impact		
Impact	 Current	 Potential	 Inside	 Outside	 Decreasing	 Stable	 Increasing
 Positive							
 Negative ✕	✕	✕	✕	✕			

4.11.7 - Please comment as necessary on how the factors selected as relevant in 4.11 are affecting the property either negatively or positively

4.11.5 Naracoorte- silt deposition in caves continues to enhance palaeontological exploration. 4.11.6 Naracoorte- increasing fire intensity and frequency impacts on OUV 'Transmission of Values'.

4.12. Invasive/alien species or hyper-abundant species

4.12.1 - Translocated species

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.12.2 - Invasive/Alien terrestrial species

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant

✕ Not relevant

4.12.3 - Invasive/Alien freshwater species

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.12.4 - Invasive/Alien marine species

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.12.5 - Hyper-abundant species

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
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4.12.6 - Modified genetic material

Previous answer Cycle 2 (29/07/2011):

- Not relevant

Relevant	✕ Not relevant
----------	----------------

4.12.7 - Please comment as necessary on how the factors selected as relevant in 4.12 are affecting the property either negatively or positively

NA

4.13. Management and institutional factors

4.13.1 - Management system/Management plan

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔴 Current	🟡 Potential	🟢 Inside	🟢 Outside	📉 Decreasing	➡ Stable	📈 Increasing
➡ Positive ✕	✕	✕	✕			➡	
🔴 Negative							

4.13.2 - Legal framework

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔴 Current	🟡 Potential	🟢 Inside	🟢 Outside	📉 Decreasing	➡ Stable	📈 Increasing
➡ Positive ✕	✕	✕	✕	✕		➡	
🔴 Negative							

4.13.3 - Governance

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔴 Current	🟡 Potential	🟢 Inside	🟢 Outside	📉 Decreasing	➡ Stable	📈 Increasing
➡ Positive ✕	✕		✕			➡	
🔴 Negative							

4.13.4 - Management activities

Previous answer Cycle 2 (29/07/2011):

- Relevant, Positive, Current, Potential, Inside

✕ Relevant			Not relevant				
	Impact		Origin		Trend of impact		
Impact	🔴 Current	🟡 Potential	🟢 Inside	🟢 Outside	📉 Decreasing	➡ Stable	📈 Increasing

Positive							
Negative							

4.13.5 - Financial resources

Relevant				Not relevant			
	Impact		Origin		Trend of impact		
Impact	Current	Potential	Inside	Outside	Decreasing	Stable	Increasing
Positive							
Negative							

4.13.6 - Human resources

Relevant				Not relevant			
	Impact		Origin		Trend of impact		
Impact	Current	Potential	Inside	Outside	Decreasing	Stable	Increasing
Positive							
Negative							

4.13.7 - Low impact research/monitoring activities

Previous answer Cycle 2 (29/07/2011):

- Relevant, Positive, Negative, Current, Potential, Inside, Outside

Relevant				Not relevant			
	Impact		Origin		Trend of impact		
Impact	Current	Potential	Inside	Outside	Decreasing	Stable	Increasing
Positive							
Negative							

4.13.8 - High impact research/monitoring activities

Previous answer Cycle 2 (29/07/2011):

- Relevant, Positive, Negative, Current, Potential, Inside, Outside

Relevant				Not relevant			
	Impact		Origin		Trend of impact		
Impact	Current	Potential	Inside	Outside	Decreasing	Stable	Increasing
Positive							
Negative							

4.13.9 - Please comment as necessary on how the factors selected as relevant in 4.13 are affecting the property either negatively or positively

4.13.1 & 4.13.4 Both properties have existing Management Plans that meet planning and management accountability and manage threats to OUV. Each requires periodic review. 4.13.7 & 4.13.8 Riversleigh- Knowledge gained from research, and more effective physical and digital access to specimens is required to meet World Heritage goals in relation to interpretation of global significance. New field-based research requires external funds in what is a challenging and competitive research environment.

4.14. Other factor(s)

4.14.1 - Other factor(s)

4.15. Factors Summary Table

4.15.1 - Factors Summary Table

Name	Impact			Origin		Trend
4.1 Buildings and Development						
4.1.5 Interpretative and visitation facilities						
4.2 Transportation Infrastructure						

4.2.1 Ground transport infrastructure						
4.3 Services Infrastructures						
4.3.1 Water infrastructure						
4.3.2 Renewable energy facilities						
4.3.4 Localised utilities						
4.3.5 Major linear utilities						
4.4 Pollution						
4.4.6 Input of excess energy						
4.7 Local conditions affecting physical fabric						
4.7.8 Micro-organisms						
4.8 Social/Cultural uses of heritage						
4.8.1 Ritual/Spiritual/Religious and associative uses						
4.8.2 Society's valuing of heritage						
4.8.3 Indigenous hunting, gathering and collecting						
4.8.4 Changes in traditional ways of life and knowledge system						
4.8.5 Identity, social cohesion, changes in local population and community						
4.8.6 Impacts of tourism/Visitation/Recreation						
4.9 Other human activities						
4.9.1 Illegal activities						
4.10 Climate change and severe weather events						
4.10.2 Flooding						
4.10.3 Drought						
4.10.6 Temperature change						
4.11 Sudden ecological or geological events						
4.11.5 Erosion and siltation/Deposition						

4.11.6 Fire (wildfire)						
4.13 Management and institutional factors						
4.13.1 Management system/Management plan						
4.13.2 Legal framework						
4.13.3 Governance						
4.13.4 Management activities						
4.13.5 Financial resources						
4.13.6 Human resources						
4.13.7 Low impact research/monitoring activities						
4.13.8 High impact research/monitoring activities						
Legend	Current	Potential	Negative	Positive	Inside	Outside

4.16. Assessment of current and potential positive and negative factors






4.16.1 - Assessment of current and potential negative and positive factors

4.1 Buildings and Development

Name		Impact			Origin		Trend
4.1.5 Interpretative and visitation facilities							
Spatial scale - Area affected by the factor							
	Restricted						
✕	Localised						
	Extensive						
	Widespread						
Temporal scale - Occurence of the impact							
	One off or rare						
	Intermittent or sporadic						
	Frequent						
✕	On-going						
Impact - Impact on the attributes							
	Insignificant						
	Minor						
✕	Significant						
	Major						

Management response - Capacity of management to respond	
	High capacity
✕	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
	Static
✕	Increasing

4.2 Transportation Infrastructure

Name	Impact	Origin	Trend
4.2.1 Ground transport infrastructure	  	 	

Spatial scale - Area affected by the factor	
	Restricted
	Localised
✕	Extensive
	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
	Frequent
✕	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
✕	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
✕	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
	Static
✕	Increasing






4.3 Services Infrastructures

Name	Impact	Origin	Trend
4.3.1 Water infrastructure	  		

Spatial scale - Area affected by the factor											
	Restricted										
✕	Localised										
	Extensive										
	Widespread										
Temporal scale - Occurence of the impact											
	One off or rare										
	Intermittent or sporadic										
	Frequent										
✕	On-going										
Impact - Impact on the attributes											
	Insignificant										
✕	Minor										
	Significant										
	Major										
Management response - Capacity of management to respond											
	High capacity										
✕	Medium capacity										
	Low capacity										
	No capacity and / or resources										
Trend - Developement over the last 6 years											
	Decreasing										
✕	Static										
	Increasing										
Name						Impact			Origin		Trend
4.3.2 Renewable energy facilities											

Spatial scale - Area affected by the factor											
✕	Restricted										
	Localised										
	Extensive										
	Widespread										
Temporal scale - Occurence of the impact											
	One off or rare										
	Intermittent or sporadic										
	Frequent										
✕	On-going										
Impact - Impact on the attributes											
	Insignificant										
✕	Minor										

	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
✕	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing






Name	Impact	Origin	Trend
4.3.4 Localised utilities	  		

Spatial scale - Area affected by the factor	
✕	Restricted
	Localised
	Extensive
	Widespread

Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
	Frequent
✕	On-going

Impact - Impact on the attributes	
	Insignificant
✕	Minor
	Significant
	Major

Management response - Capacity of management to respond	
	High capacity
✕	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing

Name	Impact	Origin	Trend
4.3.5 Major linear utilities	 	 	

Spatial scale - Area affected by the factor							
<input checked="" type="checkbox"/>	Restricted						
<input type="checkbox"/>	Localised						
<input type="checkbox"/>	Extensive						
<input type="checkbox"/>	Widespread						
Temporal scale - Occurrence of the impact							
<input type="checkbox"/>	One off or rare						
<input type="checkbox"/>	Intermittent or sporadic						
<input type="checkbox"/>	Frequent						
<input checked="" type="checkbox"/>	On-going						
Impact - Impact on the attributes							
<input type="checkbox"/>	Insignificant						
<input type="checkbox"/>	Minor						
<input checked="" type="checkbox"/>	Significant						
<input type="checkbox"/>	Major						
Management response - Capacity of management to respond							
<input type="checkbox"/>	High capacity						
<input checked="" type="checkbox"/>	Medium capacity						
<input type="checkbox"/>	Low capacity						
<input type="checkbox"/>	No capacity and / or resources						
Trend - Development over the last 6 years							
<input type="checkbox"/>	Decreasing						
<input checked="" type="checkbox"/>	Static						
<input type="checkbox"/>	Increasing						

4.4 Pollution

Name	Impact			Origin		Trend
4.4.6 Input of excess energy						
						
Spatial scale - Area affected by the factor						
<input checked="" type="checkbox"/>	Restricted					
<input type="checkbox"/>	Localised					
<input type="checkbox"/>	Extensive					
<input type="checkbox"/>	Widespread					
Temporal scale - Occurrence of the impact						
<input type="checkbox"/>	One off or rare					
<input type="checkbox"/>	Intermittent or sporadic					
<input checked="" type="checkbox"/>	Frequent					
<input type="checkbox"/>	On-going					
Impact - Impact on the attributes						






	Insignificant
	Minor
✕	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
	Medium capacity
✕	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
	Static
✕	Increasing

4.7 Local conditions affecting physical fabric





Name	Impact			Origin		Trend
4.7.8 Micro-organisms						


Spatial scale - Area affected by the factor	
✕	Restricted
	Localised
	Extensive
	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
✕	Intermittent or sporadic
	Frequent
	On-going
Impact - Impact on the attributes	
	Insignificant
✕	Minor
	Significant
	Major
Management response - Capacity of management to respond	
✕	High capacity
	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
	Static
✕	Increasing

4.8 Social/Cultural uses of heritage

Name	Impact			Origin	Trend
4.8.1 Ritual/Spiritual/Religious and associative uses					

Spatial scale - Area affected by the factor	
	Restricted
	Localised
	Extensive
	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
	Frequent
	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
	Static
	Increasing







Name	Impact			Origin	Trend
4.8.2 Society's valuing of heritage					

Spatial scale - Area affected by the factor	
	Restricted
	Localised
	Extensive
	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
	Frequent






✕	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
✕	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
✕	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
	Static
✕	Increasing

Name	Impact			Origin	Trend
4.8.3 Indigenous hunting, gathering and collecting					

Spatial scale - Area affected by the factor	
	Restricted
✕	Localised
	Extensive
	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
	Frequent
✕	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
✕	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
	Medium capacity
✕	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
	Static
✕	Increasing






Name	Impact	Origin	Trend
4.8.4 Changes in traditional ways of life and knowledge system	 	 	
			

Spatial scale - Area affected by the factor	
	Restricted
	Localised
	Extensive
✕	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
✕	Intermittent or sporadic
	Frequent
	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
✕	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
	Medium capacity
✕	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing

Name	Impact	Origin	Trend
4.8.5 Identity, social cohesion, changes in local population and community	 	 	

Spatial scale - Area affected by the factor	
	Restricted
✕	Localised
	Extensive
	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
✕	Frequent
	On-going

Impact - Impact on the attributes	
	Insignificant
	Minor
✕	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
	Medium capacity
✕	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing

Name	Impact			Origin		Trend
4.8.6 Impacts of tourism/Visitation/Recreation						

Spatial scale - Area affected by the factor	
	Restricted
✕	Localised
	Extensive
	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
✕	Frequent
	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
✕	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
✕	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
	Static
✕	Increasing







4.9 Other human activities

Name		Impact			Origin		Trend
4.9.1 Illegal activities							
Spatial scale - Area affected by the factor							
<input checked="" type="checkbox"/>	Restricted						
<input type="checkbox"/>	Localised						
<input type="checkbox"/>	Extensive						
<input type="checkbox"/>	Widespread						
Temporal scale - Occurrence of the impact							
<input checked="" type="checkbox"/>	One off or rare						
<input type="checkbox"/>	Intermittent or sporadic						
<input type="checkbox"/>	Frequent						
<input type="checkbox"/>	On-going						
Impact - Impact on the attributes							
<input checked="" type="checkbox"/>	Insignificant						
<input type="checkbox"/>	Minor						
<input type="checkbox"/>	Significant						
<input type="checkbox"/>	Major						
Management response - Capacity of management to respond							
<input type="checkbox"/>	High capacity						
<input checked="" type="checkbox"/>	Medium capacity						
<input type="checkbox"/>	Low capacity						
<input type="checkbox"/>	No capacity and / or resources						
Trend - Development over the last 6 years							
<input type="checkbox"/>	Decreasing						
<input checked="" type="checkbox"/>	Static						
<input type="checkbox"/>	Increasing						

4.10 Climate change and severe weather events




Name		Impact			Origin		Trend
4.10.2 Flooding							
Spatial scale - Area affected by the factor							
<input checked="" type="checkbox"/>	Restricted						
<input type="checkbox"/>	Localised						
<input type="checkbox"/>	Extensive						
<input type="checkbox"/>	Widespread						
Temporal scale - Occurrence of the impact							
<input type="checkbox"/>	One off or rare						

✕	Intermittent or sporadic
	Frequent
	On-going
Impact - Impact on the attributes	
	Insignificant
✕	Minor
	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
	Medium capacity
✕	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing

Name	Impact			Origin		Trend
4.10.3 Drought						
						

Spatial scale - Area affected by the factor	
✕	Restricted
	Localised
	Extensive
	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
✕	Intermittent or sporadic
	Frequent
	On-going
Impact - Impact on the attributes	
	Insignificant
✕	Minor
	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
	Medium capacity
	Low capacity
✕	No capacity and / or resources
Trend - Development over the last 6 years	

	Decreasing
✕	Static
	Increasing

Name	Impact	Origin	Trend
4.10.6 Temperature change			
			

Spatial scale - Area affected by the factor

	Restricted
	Localised
	Extensive
✕	Widespread

Temporal scale - Occurrence of the impact

	One off or rare
✕	Intermittent or sporadic
	Frequent
	On-going

Impact - Impact on the attributes

	Insignificant
✕	Minor
	Significant
	Major




Management response - Capacity of management to respond

	High capacity
	Medium capacity
	Low capacity
✕	No capacity and / or resources

Trend - Development over the last 6 years

	Decreasing
	Static
✕	Increasing

4.11 Sudden ecological or geological events






Name	Impact	Origin	Trend
4.11.5 Erosion and siltation/Deposition			

Spatial scale - Area affected by the factor

	Restricted
✕	Localised
	Extensive
	Widespread

Temporal scale - Occurrence of the impact






	One off or rare
	Intermittent or sporadic
✕	Frequent
	On-going
Impact - Impact on the attributes	
	Insignificant
✕	Minor
	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
	Medium capacity
✕	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing

Name	Impact			Origin		Trend
4.11.6 Fire (wildfire)						
						

Spatial scale - Area affected by the factor	
	Restricted
✕	Localised
	Extensive
	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
✕	Intermittent or sporadic
	Frequent
	On-going
Impact - Impact on the attributes	
	Insignificant
✕	Minor
	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
✕	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	

	Decreasing
	Static
✕	Increasing

4.13 Management and institutional factors

Name	Impact	Origin	Trend
4.13.1 Management system/Management plan	  		

Spatial scale - Area affected by the factor

	Restricted
	Localised
	Extensive
✕	Widespread

Temporal scale - Occurrence of the impact

	One off or rare
	Intermittent or sporadic
	Frequent
✕	On-going

Impact - Impact on the attributes






	Insignificant
	Minor
	Significant
✕	Major

Management response - Capacity of management to respond

	High capacity
✕	Medium capacity
	Low capacity
	No capacity and / or resources

Trend - Development over the last 6 years

	Decreasing
✕	Static
	Increasing

Name	Impact	Origin	Trend
4.13.2 Legal framework	  	 	

Spatial scale - Area affected by the factor

	Restricted
✕	Localised
	Extensive
	Widespread





Temporal scale - Occurrence of the impact

	One off or rare
	Intermittent or sporadic
	Frequent
X	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
X	Significant
	Major
Management response - Capacity of management to respond	
X	High capacity
	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
	Static
X	Increasing

Name	Impact			Origin		Trend
4.13.3 Governance						

Spatial scale - Area affected by the factor	
	Restricted
	Localised
	Extensive
X	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
	Frequent
X	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
	Significant
X	Major
Management response - Capacity of management to respond	
X	High capacity
	Medium capacity
	Low capacity
	No capacity and / or resources

Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing

Name	Impact			Origin		Trend
4.13.4 Management activities						






Spatial scale - Area affected by the factor	
	Restricted
	Localised
	Extensive
✕	Widespread

Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
	Frequent
✕	On-going

Impact - Impact on the attributes	
	Insignificant
	Minor
	Significant
✕	Major

Management response - Capacity of management to respond	
✕	High capacity
	Medium capacity
	Low capacity
	No capacity and / or resources






Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing

Name	Impact			Origin		Trend
4.13.5 Financial resources						

Spatial scale - Area affected by the factor	
	Restricted
✕	Localised
	Extensive
	Widespread




Temporal scale - Occurrence of the impact	
---	--

	One off or rare
	Intermittent or sporadic
	Frequent
✕	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
✕	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
✕	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing

Name	Impact			Origin		Trend
4.13.6 Human resources						

Spatial scale - Area affected by the factor	
	Restricted
✕	Localised
	Extensive
	Widespread
Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
	Frequent
✕	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
✕	Significant
	Major
Management response - Capacity of management to respond	
	High capacity
✕	Medium capacity
	Low capacity
	No capacity and / or resources

Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing

Name	Impact			Origin		Trend
4.13.7 Low impact research/monitoring activities						





Spatial scale - Area affected by the factor	
	Restricted
✕	Localised
	Extensive
	Widespread

Temporal scale - Occurrence of the impact	
	One off or rare
	Intermittent or sporadic
✕	Frequent
	On-going

Impact - Impact on the attributes	
	Insignificant
	Minor
	Significant
✕	Major

Management response - Capacity of management to respond	
✕	High capacity
	Medium capacity
	Low capacity
	No capacity and / or resources

Trend - Development over the last 6 years	
	Decreasing
✕	Static
	Increasing

Name	Impact			Origin		Trend
4.13.8 High impact research/monitoring activities						

Spatial scale - Area affected by the factor	
✕	Restricted
	Localised
	Extensive
	Widespread

Temporal scale - Occurrence of the impact	
---	--

	One off or rare
	Intermittent or sporadic
X	Frequent
	On-going
Impact - Impact on the attributes	
	Insignificant
	Minor
	Significant
X	Major
Management response - Capacity of management to respond	
X	High capacity
	Medium capacity
	Low capacity
	No capacity and / or resources
Trend - Development over the last 6 years	
	Decreasing
X	Static
	Increasing

4.17. Serial inscriptions (national or transnational)

4.17.1 - If your property is a serial inscription (national or transnational) please identify which components of the property are impacted by each factor

Each property (Riversleigh and Naracoorte) has some differing and some similar factors. This is identified throughout section '4. Factors Affecting the Property'.

4.18. Prediction of the state of conservation at next cycle of Periodic Reporting.

4.18.1 - Please predict what the state of conservation of each attribute will be approximately 6 years from now (at the time of the next cycle of Periodic Reporting)

	Attribute	Preserved	Compromised	Seriously compromised	Lost
4.18.1.1	Criteria 8. Extensive deposits of vertebrate fossils	X			
4.18.1.2	Criteria 9. Evidence of evolutionary change.	X			
4.18.1.3					
4.18.1.4					
4.18.1.5					

5. Protection and Management of the Property

5.1. Boundaries and Buffer Zones

5.1.1 - Are the boundaries of the World Heritage property adequate to maintain the property's Outstanding Universal Value?

The boundaries **do not limit the ability to maintain** the property's Outstanding Universal Value but they **could be improved**

5.1.2 - Are the boundaries of the World Heritage property known and recognised?

The boundaries **are known** by the management authority **but are not known** by local communities/landowners

5.1.3 - Are the buffer zone(s) of the World Heritage property adequate to maintain the property's Outstanding Universal Value?

The property has **no buffer zone** and **does not need one**

5.1.4 - Are the boundaries of the buffer zones known and recognised?

The property has **no known and recognised** buffer zone

5.1.5 - Comments, conclusions and/or recommendations related to boundaries and buffer zones of the World Heritage property

5.1.1.3 Riversleigh-the only easily accessible site at Riversleigh, is D Site. The remainder of the 10 000ha property requires access through neighbouring property (i.e. access for research and management is controlled by neighbouring property owners). A formal access agreement, or acquisition of this area needs to be considered. 5.1.2 Naracoorte- the boundaries are adequately known by management authorities and local communities.

5.2. Protective Measures

5.2.1 - Protective designation (legal, regulatory, contractual, planning, institutional and/or traditional).

Legal protective measures:

- The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is the Australian Government legislation for the protection of the World Heritage values of its World Heritage Properties. Riversleigh is also protected by Nature Conservation Act 1992 (Queensland) Naracoorte is also protected by the National Parks and Wildlife Act 1972 (South Australia).
- The Australian Government legislation relevant to activities within the Australian Fossil Mammal Sites is the *Australian Heritage Commission Act 1975* and the *Native Title Act 1993*.
- The *Australian Heritage Commission Act* of 1975 prohibits Ministers or Australian Government Departments from taking an action that adversely affects a place in the Register of the National Estate unless satisfied that there is no prudent and feasible alternative to taking the action. Before undertaking an action that might affect, to a significant extent, a place in the Register of the National Estate, a Minister or Australian Government Department must inform the Australian Heritage Commission and give the Commission an opportunity to provide advice or comment on the action. The Act has been effective in promoting heritage in the community through promotion of the Register of the National Estate and has contributed to promoting the heritage status of the fossil fields.

Source: Periodic Reporting Cycle 1; Periodic Reporting Cycle 2

Comment

World Heritage properties in Australia are 'matters of national environmental significance' protected and managed under national legislation, the Environment Protection and Biodiversity Conservation Act 1999. Any action that has, will, or is likely to have a significant impact on the World Heritage values of a property must be referred to the Commonwealth Environment Minister for assessment and approval under the Act. The property is also protected under relevant state legalisation.

5.2.2 - Please list any legislation and other measures (regulatory -including spatial planning- contractual, institutional or traditional) not included in 5.2.1 and indicate the category

1993 / Heritage Places Act 1993 (South Australia) / 2003 /

Aboriginal Cultural Heritage Act 2003 (Queensland) / 1994 / Environmental Protection Act 1994 (Queensland) /

2016 / Planning Act 2016 (Queensland) /

2011 / Waanyi People Boodjamulla National Park Indigenous Land Use Agreement (Area Agreement) 2011 /

5.2.3 - Is the legal framework (i.e. legislation and/or regulation including spatial planning) adequate for maintaining the Outstanding Universal Value including conditions of Integrity and/or Authenticity of the property?

The **legal framework** for maintaining of the Outstanding Universal Value including conditions of Authenticity and/or Integrity of the World Heritage property provides an **adequate basis for effective management and protection**

5.2.4 - Is the legal framework (i.e. legislation and/or regulation) adequate in the buffer zone for maintaining the Outstanding Universal Value including conditions of Integrity and/or Authenticity of the property?

The property has **no buffer zone**

5.2.5 - Is the legal framework (i.e. legislation and/or regulation) in the broader setting of the World Heritage property adequate for maintaining the Outstanding Universal Value including conditions of Integrity and/or Authenticity of the property?

The **legal framework** for the broader setting of the World Heritage property provides an **adequate basis for** effective management and protection of the property, contributing to the maintenance of its Outstanding Universal Value including conditions of Authenticity and/or Integrity

5.2.6 - Can the legal framework (i.e. legislation and/or regulation) be enforced?

There is **adequate capacity/resources** to enforce legislation and/or regulation in the World Heritage property

5.2.7 - Please provide a short summary of how the legislation, including spatial planning and other regulation, works in practice

Existing legislation and regulatory framework is adequate at both properties (i.e. it informs management practices and infrastructure developments and provides for compliance action and follow-up).

5.2.8 - Comments, conclusions and/or recommendations about the information related to the measures taken to protect the World Heritage property

Riversleigh-Vehicular access is via a neighbouring pastoral lease. While currently adequate for the protection of values, the lack of dedicated legal vehicular access to the property is not adequate for security of long-term public and researcher access and presentation of the values.

5.3. Management System/Management Plan

5.3.1 - Please check the box which most closely match the character of the governance and management system of the property

Public management system at provincial/regional level

If 'Other', please specify

5.3.2 - Management System: Please indicate which of the various management tools listed below are used to help protect the property.

A statutory Management Plan or zoning plan for the property.

Other forms of statutory or non-statutory plans (e.g. strategic plans)

Governance mechanisms that foster and respect traditional practices, knowledge and uses of the property

Agreed 'Memorandums of Understanding' between different managing institutions, groups or others, including documents agreed with local communities for management

Mechanisms to promote equal participation among and within groups, including different levels of authority, local communities, indigenous people, women and men, and other specific groups

An annual work plan or business plan
Other (please specify below)
Internal Visitor Plans exist for both properties

5.3.3 - Please give a brief description of the management system currently in place at your property

The legal framework is provided by Australian, Queensland and South Australian government legislation detailed in Strategic and operational management of each site is provided by branches within Queensland and South Australian government departments. 5.3.2.12 Property-specific business plans help guide the priorities of the World Heritage Units

5.3.4 - Management Documents

Comment

5.3.2.1 Both sites have Management Plans – Riversleigh Management Plan 2002, Boodjamulla Management Statement 2011, Boodjamulla Values Based Management Framework Naracoorte Caves Management Plan and Riversleigh Strategic Management Plan (current/requires update) 5.3.2.2 An Indigenous Land Use Agreement exists over Boodjamulla National Park, which includes Riversleigh 5.3.2.3 Both properties have MOU with key partners/stakeholders 5.3.2.4 Both sites have Advisory Committees and Terms of Reference

5.3.5 - Has any use been made of the 2011 Recommendation on the Historic Urban Landscape in developing policies and best practices for the protection of this property?

No use has been made of the 2011 Recommendation on the Historic Urban Landscape

5.3.6 - If the Historic Urban Landscape Recommendation has been used at this property, please describe briefly what has been done.

5.3.7 - Has any use been made of the Policy Document on the Impacts of Climate Change on World Heritage Properties at the property?

Some use has been made of the World Heritage Policy for Climate Change

5.3.8 - If the Climate Change policy has been used, please briefly describe what has been done along with any research on the impacts of Climate Change on the property:

Development of Climate Change Vulnerability and Adaptation Planning in collaboration with The Australian Government and the CSIRO (Commonwealth Scientific and Industrial Research Organisation). Used for both properties.

5.3.9 - Has any use been made of the Strategy for Reducing Risks from Disasters at World Heritage Properties at the property ?

No use has been made of the Strategy for Reducing Risks from Disasters at World Heritage Properties

5.3.10 - If the Strategy for Reducing Risks from Disasters at World Heritage Properties has been used, please briefly describe what has been done

5.3.11 - Rate the coordination between the various levels of administration (i.e. national/federal; regional/provincial/state; local/municipal etc.) involved in the management of the World Heritage property

There is **adequate coordination** between all bodies/levels involved in the management of the property

5.3.12 - Is the management system/plan adequate to maintain the property's Outstanding Universal Value?

The management system/plan is **fully adequate** to maintain the property's Outstanding Universal Value

5.3.13 - Is the management system being implemented?

The management system is being **fully implemented and monitored**

5.3.14 - Is there an annual work/action plan and is it being implemented?

An annual work/action plan **exists and many of its activities are being implemented**

5.3.15 - Does the management system include formal mechanisms and procedures that ensure participation and contribution of the following groups, living within or near the World Heritage property and/or buffer zone in management decisions that maintain the Outstanding Universal Value of the property?

		Not applicable	No mechanisms for participation	Some participation	Direct participation	Transformative participation in all relevant decision processes
5.3.15.1	Local communities				✗	
5.3.15.2	Local authorities				✗	
5.3.15.3	Landowners in the property and the buffer zone				✗	
5.3.15.4	Indigenous peoples				✗	
5.3.15.5	Women				✗	
5.3.15.6	Other specific groups				✗	
	If you selected, 'Other specific groups' please specify	State authorities, tourism bodies				

5.3.16 - Please rate the cooperation/relationship between the World Heritage property managers/coordinators/staff and the following groups

		Not applicable	Non-existent	Poor	Fair	Good
5.3.16.1	Local communities					✗
5.3.16.2	Local/Municipal authorities					✗
5.3.16.3	Indigenous peoples					✗
5.3.16.4	Landowners					✗
5.3.16.5	Women					✗
5.3.16.6	Youth/Children					✗
5.3.16.7	Researchers					✗
5.3.16.8	Local Visitors/Tourists					✗
5.3.16.9	National/International tourists					✗
5.3.16.10	Tourism Industry					✗
5.3.16.11	Local businesses and industries					✗
5.3.16.12	NGOs					✗
5.3.16.13	Other specific groups					
	If you selected 'Other specific groups', please specify					

5.3.17 - Please rate the extent to which the management system of your property contributes towards achieving the objectives of the World Heritage Committee's Policy for the Integration of a Sustainable Development Perspective into the Processes of the *World Heritage Convention*

		Not applicable	No contribution	Limited	Significant	Full achievement
5.3.17.1	The management system of the property contributes to gender equality					✗
5.3.17.2	The management system of the property provides ecosystem services/benefits to the local community (e.g. fresh air, water, food, medicinal plants)				✗	
5.3.17.3	The management system of the property contributes to social inclusion and equity, improving opportunities for all, irrespective of age, sex, disability, ethnicity, origin, religion or economic or other status				✗	
5.3.17.4	The management system of the property integrates a human rights-based approach					✗
5.3.17.5	The management system of the property contributes to fostering inclusive local economic development, and to enhancing livelihood				✗	
5.3.17.6	The management system of the property contributes to conflict prevention, including respect for cultural diversity within and around the World Heritage property					✗

5.3.18 - Please provide further details on the ratings of the management system given in the table above

5.3.19 - Comments, conclusions and/or recommendations related to the management system/plan

6. Financial and Human Resources

6.1. Funding

6.1.1 - If your funding sources do not exactly fit those shown, put the relevant amounts against the funding type that most closely represents your situation, and use the comment box below to provide more details.

		Project costs	Running costs
6.1.1.1	Multilateral funding (GEF, World Bank, etc.)	0 %	0 %
6.1.1.2	Bilateral international funding	0 %	0 %
6.1.1.3	World Heritage Fund (International Assistance)	0 %	0 %
6.1.1.4	Contribution from other conventions and programmes	0 %	0 %
6.1.1.5	International donations (NGOs, foundations, etc.)	0 %	0 %
6.1.1.6	Governmental (national/federal)	0 %	0 %
6.1.1.7	Governmental (regional/provincial/state)	0 %	0 %

6.1.1.8	Governmental (local/municipal)	0 %	0 %
6.1.1.9	In-country donations (NGOs, foundations, etc.)	0 %	0 %
6.1.1.10	Individual visitor charges (e.g. entry, toilets, parking, camping fees, etc.)	0 %	0 %
6.1.1.11	Commercial activities (e.g. merchandising and catering, filming permit, concessions, etc.)	0 %	0 %
6.1.1.12	Other	0 %	0 %
		Total 0 %	Total 0 %

6.1.2 - Please comment here on any other aspects of funding sources not covered in the table above

Australia cannot provide the requested data for 6.1, as funding is spread across a large number of different programs and priorities which may have multiple benefits for particular properties. That is, it is not possible to disaggregate the funding component attributed to each property. Funding comes from the State Government, Commonwealth Government and competitive grant rounds (most significantly from the Australian Research Council).

6.1.3 - Is the current budget sufficient to manage the World Heritage property effectively?

The available **budget is acceptable** but **could be further improved** to fully meet the management needs

6.1.4 - Are the existing sources of funding secure and likely to remain so?

The existing sources of funding are **not secure**

6.1.5 - Comments, conclusion, and/or recommendations related to finance and infrastructure

6.1.3.3 Riversleigh-Costs for research through current funding sources could be improved. Additional funding is required to (a) maintain site/specimen registers to records fossils and sites (b) meet conservation and storage requirements for extracted (ex situ) collections. 6.1.4.1 Naracoorte- funding is likely to continue but is not guaranteed into the long-term future (Annual budget dependent).Riversleigh-lack of committed ongoing funding means these activities are not ensured going forward.

6.1.6 - Estimate the distribution of men and women involved in the management, conservation, interpretation of the World Heritage properties and the extent to which they are drawn from local communities.

		From local communities %	From elsewhere %
6.1.6.1	Men	50 %	50 %
6.1.6.2	Women	50 %	50 %
		Total 100 %	Total 100 %

6.1.7 - Are available human resources adequate to manage the World Heritage property?

Human resources **partly meet** the management needs of the World Heritage property

6.1.8 - Considering the management needs of the World Heritage property, please rate the availability of professionals in the following disciplines

Conservation	Fair
Environmental sustainability	Fair
Community participation and inclusion	Fair
Risk preparedness	Fair
Capacity development and education	Fair
Administration	Good
Research and monitoring	Good
Awareness raising and public information/communication	Good
Marketing and promotion	Good
Interpretation	Fair
Visitor management/tourism	Good
Enforcement (custodians, police)	Fair

6.1.9 - Please rate the availability of training opportunities for the management of the World Heritage property in the following disciplines

Conservation	Fair
Environmental sustainability	Fair
Community participation and inclusion	Fair
Risk preparedness	Fair
Capacity development and education	Fair

Administration	Fair
Research and monitoring	Fair
Awareness raising and public information/communication	Fair
Marketing and promotion	Fair
Interpretation	Fair
Visitor management/tourism	Fair
Enforcement (custodians, police)	Fair

6.1.10 - Has any use been made of the World Heritage Strategy for Capacity Building at the property?

No use has been made of the World Heritage Strategy for Capacity Building

6.1.11 - If the World Heritage Strategy for Capacity Building has been used, please briefly describe what has been done.

NA

6.1.12 - Are there site-specific capacity building plans or programmes that develop local expertise and that contribute to the transfer of skills for the conservation and management of the World Heritage property?

A site-based capacity building plan or programme is in place and fully implemented; **all technical skills are being transferred** to those managing the property locally

6.1.13 - Comments, conclusions and/or recommendations related to human resources, expertise and training

6.1.12.4 Site-based programs are developed and are implemented at each property. Riversleigh- 3 year business plan, Strategic management plan, Terms of Reference (TOR), Committee and Executive Officer guidelines. Naracoorte- TOR

7. Scientific Studies and Research Projects

7.1 - Is there adequate knowledge (scientific or traditional) about the values and attributes of the World Heritage property to support planning, management and decision-making to ensure that Outstanding Universal Value is maintained?

Knowledge about the values and attributes of the World Heritage property is **adequate**

7.2 - Is there a planned programme of research at the property which is directed towards management needs and/or improving understanding of Outstanding Universal Value?

There is a **comprehensive, integrated programme** of research, which is relevant to management needs and/or improving understanding of Outstanding Universal Value

7.3 - Are results from research programmes publicly available and disseminated?

Research results **are shared** widely **with active outreach** to local communities and national and international audiences

7.4 - Comments, conclusions and/or recommendations related to scientific studies and research projects

7.1 Riversleigh-cultural understanding could be enhanced, scientific knowledge could be better-promoted and online access to specimen data could be improved.

7.3.4 Research relating to palaeontological and geological attributes is active at both sites, but financial resources could be improved. Although the AFMS is not listed for cultural values, both properties have Native Title determinations and cultural values should be considered as significantly contributing to the existing (natural) OUV

8. Education, Information and Awareness Building

8.1 - Please rate the awareness and understanding of the existence and justification for inscription of the World Heritage property amongst the following groups

Local communities	Good
Local/municipal authorities	Good
Indigenous peoples	Good
Landowners	Good
Women	Good
Youth/children	Good
Researchers	Good
Local visitors	Good
National/international tourists	Good
Tourism industry	Good
Local businesses and industries	Good
NGOs	Good

Other specific groups	Not applicable
If you selected 'Other specific groups', please describe	

8.2 - Does the property have a heritage education programme(s) for children and/or youth, that can contribute to a better understanding of heritage, promote diversity and foster intercultural dialogue?

There is a planned education and awareness programme for children and/or youth **but it only partly meets the needs**

8.3 - Who are the target audiences for education and awareness programmes at your property?

Local communities
Local/municipal authorities
Indigenous peoples
Landowners
Women
Youth/children
Researchers
Local Visitors
National/international tourists
Tourism industry
Local businesses and industries

8.4 - Please rate the adequacy of the following visitor facilities and services at the World Heritage property for education, information, interpretation and awareness building

Visitor centre	Good
Site museum	Not needed
Information booths	Fair
Guided tours	Good
Trails/routes	Good
Printed information materials	Good
Online (website, social media, etc.)	Fair
Transportation facilities	Not needed
Other	Not needed
If 'Other' is selected, please specify	

8.5 - Comments, conclusions and/or recommendations related to education, information and awareness building

8.2.4 Naracoorte- Planned education needs greater structure and content to promote intercultural dialogue and understanding.

9. Visitor Management

9.1 - Please provide estimated annual visitor numbers (including national and international visitors) since the last Periodic Report

70 000 / 81 000 / 78 600 / 70 600 / 69 000 /
--

9.2 - What information sources are used to collect visitor statistics?

Entry tickets and registries
Visitor surveys
Other
Visitor counter at Riversleigh

9.3 - What is the average length stay of a visitor to the World Heritage property?

One to three hours

9.4 - Please provide the source of information

9.3 Length of stay is Anecdotal and/or observed

9.5 - What is the approximate average daily visitor expenditure? (Please provide an estimated monetary figure in USD)

21 / 27 / 100 / 0 / 20 / 1 /

9.6 - Please provide the source of information

9.5 Expenditure estimates are provided for Riversleigh, as data is not gathered (camping, driving and food). 9.6 Naracoorte - There are no fees to enter the World Heritage Area at Naracoorte but there are charges to enter the caves where fossils lay. These are reflected in recreation fees in this report.

9.7 - Does the management system/plan for the World Heritage property include a strategy with an action plan to manage visitors, tourism activity and its derived economic, socio-cultural and environmental impacts?

There is a planned and **effective strategy** to manage visitors, tourism activity and its derived impacts on the World Heritage property

9.8 - Please provide any comments relating to the answer provided above in question 9.7

Naracoorte has a Visitor Strategy. A management system for visitors exists through the Boodjamulla National Park Visitor Strategy, but does not specifically address Riversleigh (Riversleigh sits within Boodjamulla).

9.9 - Is visitor use effectively managed to maintain the Outstanding Universal Value of the property?

Visitor use of the World Heritage property is **effectively managed and does not impact its Outstanding Universal Value**

9.10 - Is the effectiveness of tourism management regularly monitored?

Yes, using a different system

If a different system, please specify

On-ground monitoring at both sites.

9.11 - How does the tourism industry cooperate with the site management to improve visitor experiences and maintain the Outstanding Universal Value of the World Heritage property?

There is **good cooperation** between those responsible for the World Heritage property and the tourism industry **to present the Outstanding Universal Value and increase appreciation**

9.12 - How well is the information on the Outstanding Universal Value of the property presented and interpreted?

The Outstanding Universal Value of the property **is adequately presented and interpreted**

9.13 - At how many locations is the World Heritage emblem displayed at the property?

In **many locations**, but **not easily visible** to visitors

9.14 - How does visitor/tourism revenue (e.g. entry charges, permits) contribute to the management of the World Heritage property?

Fees are collected, and make **some contribution** to the management of the World Heritage property

9.15 - Are there locally driven sustainable tourism initiatives?

Yes

If 'Yes', please specify

Private Commercial operator undertakes tours into the Riversleigh site.

9.16 - Are the benefits of tourism shared with local communities?

No

If 'Yes', please specify

9.17 - Comments, conclusions and/or recommendations related to visitation/tourism/public use of the World Heritage property

9.14.1 Riversleigh - No fees are collected to visit the site. Naracoorte - tourism revenue contributes to the sites on-going management.

10. Monitoring

10.1 - Is there a monitoring programme at the property directed towards management needs and/or towards improving the understanding of the Outstanding Universal Value?

There is **considerable monitoring** but it is not directed towards management needs and/or improving the understanding of Outstanding Universal Value

10.2 - Is necessary information available in order to define key indicators for measuring the state of conservation and are they used in monitoring how the Outstanding Universal Value of the property is being maintained?

Information on the values of the World Heritage property is **adequate** and **key indicators have been defined but monitoring of the status of indicators could be improved**

10.3 - Are key indicators defined and in place for the following principal aspects of the property?

	Extend of indicators	Not applicable	No indicators	Indicators have been defined but are not yet in use	Indicators are in place and in use since the last Periodic Reporting cycle
10.3.1	State of conservation				×
10.3.2	Effectiveness of the management system				×
10.3.3	Character of governance	×			
10.3.4	Appropriate synergy with other conservation designations	×			

10.3.5	Contribution to sustainable development	✕			
10.3.6	Capacity development		✕		

10.4 - Please provide information on relevant key indicators adopted at the property

10.5 - Please rate the level of involvement in monitoring of the following groups:

World Heritage managers/coordinators and staff	Fair
Local/municipal authorities	Not applicable
Local communities	Not applicable
Indigenous peoples	Poor
Landowners	Not applicable
Women	Good
Researchers	Good
Tourism industry	Poor
Local businesses and industry	Not applicable
NGOs	Poor
Other specific groups	Poor
If you selected 'Other specific groups', please specify	National conservation committees

10.6 - Has the State Party implemented relevant recommendations arising from the World Heritage Committee?

No relevant Committee recommendations to implement

10.7 - Please provide comments relevant to the implementation of recommendations from the World Heritage Committee.

10.8 - Comments, conclusions and/or recommendations related to Monitoring

Naracoorte -visual monitoring of sites occurs on daily tours. Riversleigh -regular visual monitoring occurs (through annual health checks). Due to size and harsh nature of the site, informal monitoring is undertaken through service visits and management inspections.

11. Identification of Priority Management Needs

11.1 - Identification of Priority Management Needs

5.1	Boundaries and Buffer Zones	
5.1.2	The boundaries of the World Heritage property are known by the management authority but are not known by local communities/landowners	
5.1.3	The property has no buffer zone	
5.1.4	The property has no known and recognised buffer zone	
5.2	Protective Measures	
5.2.4	The property has no buffer zone	✕
5.3	Management System/Management Plan	
5.3.5	No use has been made of the Historic Urban Landscape Recommendation to develop policies and best practices for the protection of the property	
5.3.7	Some use has been made of the Policy Document on the Impacts of Climate Change on World Heritage Properties at the property	
5.3.9	No use has been made of the Strategy for Reducing Risks from Disasters at World Heritage Properties at the property	✕
6.1	Funding	
6.1.3	The available budget is acceptable but could be further improved to fully meet the management needs of the World Heritage property	
6.1.4	Existing sources of funding are not secure	
6.1.7	Human resources partly meet the management needs of the World Heritage property	✕
6.1.10	No use has been made of the World Heritage Strategy for Capacity Development at the World Heritage property	✕
8	Education, Information and Awareness Building	
8.2	There is a planned education and awareness programme for children and/or youth but it only partly meets the needs	✕
10	Monitoring	

10.1	There is considerable monitoring at the World Heritage property but it is not directed towards management needs and/or improving understanding of Outstanding Universal Value	
10.2	Information on the values of the World Heritage property is adequate and key indicators have been defined but monitoring of the status of indicators could be improved	✕

Please select 4 more issues.

☒ Please save this question to reflect changes

12. Summary and Conclusions

12.1. Summary - Factors affecting the Property

12.1.1 - Summary - Factors affecting the Property

4.4	Pollution						
4.4.6	Input of excess energy	Naracoorte- Criteria 8 and 9 (not relevant for Riversleigh)	Naracoorte- extensive research into issue and solutions (not relevant for Riversleigh)	Naracoorte- monitoring is current as part of a research project. Unknown if better or worse. (not relevant for Riversleigh)	Naracoorte- results of research and implementation of mitigation strategies are expected in 12 months. (not relevant for Riversleigh)	Naracoorte- Collaborative research and monitoring by SA Department of Environment and Water and University of Adelaide.	NA
4.7	Local conditions affecting physical fabric						
4.7.8	Micro-organisms	Naracoorte- Criteria 8 and 9 (not relevant for Riversleigh)	Naracoorte- extensive research into issue and solutions (not relevant for Riversleigh)	Naracoorte- monitoring is current as part of a research project. Unknown if better or worse. (not relevant for Riversleigh)	Naracoorte- results of research and implementation of mitigation strategies are expected in 12 months. (not relevant for Riversleigh)	Naracoorte- Collaborative research and monitoring by SA Department of Environment and Water and University of Adelaide.	NA
4.9	Other human activities						
4.9.1	Illegal activities	Criteria 8 and 9, both sites	Park management at both sites continues to undertake monitoring to ensure these activities do not occur, and if they do, do not impact on the OUV	Monitoring is current	Monitoring is ongoing	SA and QLD Environment departments	At both sites, small-scale disturbance through visitor theft of fossils or illegal trade of fossils has been alleged, but this has not been officially documented.
4.10	Climate change and severe weather events						
4.10.2	Flooding	Criteria 8 and 9, both sites	Riversleigh - action is impracticable for flooding events in surrounding regional areas. Naracoorte - redesign of cave entrances to redirect water flow.	Riversleigh - Monitoring of seasonal and large-scale weather events and impacts on visitation and access. Naracoorte - Daily observations	Riversleigh - ongoing Naracoorte - 5 years	SA and QLD Environment Departments	Riversleigh- potential increase in flooding events in surrounding regional areas may decrease visitation and access. Naracoorte- Cave flooding causes reworking of fossil sediments and loss of time series
4.10.3	Drought	Naracoorte- Criteria 8 (not relevant for Riversleigh)	No action as yet as it is a potential future impact (not relevant for Riversleigh)	Naracoorte- monitoring for temperature and humidity is already underway. (not relevant for Riversleigh)	Ongoing (Not relevant for Riversleigh)	SA Environment Department and University of Adelaide	NA
4.10.6	Temperature change	Criteria 8 and 9, both sites	Riversleigh - action is impracticable for temperature change	Riversleigh -Monitoring of changes in temperature and impacts on visitation and access.	Riversleigh - ongoing	QLD Environment Department	Riversleigh- increases in temperature, a higher frequency of hot days and longer duration of heatwaves may affect visitation and the OUV 'Transmission of Values'
4.11	Sudden ecological or geological events						

4.11.6	Fire (wildfire)	Naracoorte - Criteria 8 and 9 (not relevant for Riversleigh)	Naracoorte - Fuel reduction activities are undertaken to reduce potential large-scale fire events (not relevant for Riversleigh)	Naracoorte - Monitoring of seasonal and large-scale weather events and impacts on visitation and access. (not relevant for Riversleigh)	Naracoorte - ongoing (not relevant for Riversleigh)	SA Environment Department	NA
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Summary - Factors affecting the Property **completed**

12.2. Summary - Management Needs

12.2.1 - Summary - Management Needs

5.2	Protective Measures				
		Actions	Timeframe	Lead agency (and others involved)	More info / comment
5.2.4	The property has no buffer zone	Identify the relevance and priority of a buffer zone for each property	6 years	QLD and SA Government	For both sites a buffer zone has not been a consideration, to date, due to the resilience of the fossils. Riversleigh is surrounded by National park on 3 sides.

5.3	Management System/Management Plan				
5.3.9	No use has been made of the Strategy for Reducing Risks from Disasters at World Heritage Properties at the property	Explore the vulnerability and potential risks for both properties involving other expert scientific authorities and agencies.	6 years	QLD and SA Government	Disasters are not considered a high risk at either property at this stage.

6.1	Funding				
6.1.7	Human resources partly meet the management needs of the World Heritage property	Naracoorte - investigate opportunities to increase personnel onsite to oversee and implement projects that enhance attributes of OUV	6 years	SA Government	Naracoorte - Human resources to oversee implementation of projects could be more adequate.
6.1.10	No use has been made of the World Heritage Strategy for Capacity Development at the World Heritage property	Investigate the potential relevance for capacity development at both sites using the Strategy.	6 years	QLD and SA governments	Local processes have been seen as sufficient

8	Education, Information and Awareness Building				
8.2	There is a planned education and awareness programme for children and/or youth but it only partly meets the needs	Naracoorte - Investigate option of enhancing personnel to review existing program needs for greater structure, content and relevance.	6 years	SA government	Naracoorte -The planned education programme only partly meets needs Riversleigh - education is adequate through existing products (kids posters, stickers, fossil kits and sporadic event presentations - Mount Isa and Gulf Festivals) and guided tours

10	Monitoring				
10.2	Information on the values of the World Heritage property is adequate and key indicators have been defined but monitoring of	Naracoorte - Investigate partnership opportunities for funding and research to increase monitoring efforts.		SA Government	

	the status of indicators could be improved				
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Summary - Management Needs completed

12.3. Conclusions on the State of Conservation of the Property

12.3.1 - Following the analysis undertaken for this report, what is the current state of Authenticity of the World Heritage property?

The Authenticity of the World Heritage property **has been preserved**

12.3.2 - Following the analysis undertaken for this report, what is the current state of Integrity of the World Heritage property?

The Integrity of the World Heritage property is **intact**

12.3.3 - Following the analysis undertaken for this report, what is the current state of the World Heritage property's Outstanding Universal Value?

The World Heritage property's Outstanding Universal Value has been **maintained**.

12.3.4 - What is the current state of the property's other values?

Other important cultural and/or natural values and the state of conservation of the World Heritage property are **intact**

12.3.5 - Comments, conclusions and/or recommendations related to the state of conservation of the property.

13. Impact of World Heritage Status

13.1 - Please rate the impacts of World Heritage status of the property in relation to the following areas

Conservation	Very positive
Research and monitoring	Very positive
Management effectiveness	Very positive
Quality of life for local communities and indigenous peoples	Positive
Recognition	Very positive
Education	Positive
Infrastructure development	Positive
Funding for the property	Positive
International cooperation	Not applicable
Political support for conservation	No impact
Legal/Policy framework	Positive
Advocacy	Positive
Institutional coordination	Very positive
Security	Positive
Gender equality	Very positive
Provision of ecosystem services/ benefits to local communities	Positive
Social inclusion and equity, and improvement of opportunities for all, irrespective of age, sex, disability, ethnicity, origin, religion, or economic or other status	Positive
Fostering inclusive local economic development and enhancing livelihood	Very positive
Contributing to conflict prevention, including respect for cultural diversity within and around heritage properties	Positive
Other	Not applicable
If 'Other', please specify	

13.2 - Comments, conclusions and/or recommendations related to World Heritage status and its impacts

14. Good Practice in the Implementation of the World Heritage Convention

14.1 - Example of good practice in World Heritage protection, identification, conservation or management at the property level

Riversleigh- The record of fossil vertebrate discoveries is internationally significant, producing hundreds of research papers documenting changing faunas that reflect environmental changes. Further, the Site Marker project located and marked over 200 individual sites to protect, identify and conserve Riversleigh's OUV.

Naracoorte -strong research partnerships have led to increased opportunities for detection of novel conservation issues and promoted the formulation of

comprehensive mitigation strategies and monitoring programs. Continual engagement with researchers by the SA Department for Environment and Water has enabled the detection of the proliferation of cryptic biofilms in caves that have not been documented anywhere else in the world. Collaborative research to understand the organisms and the conditions that promote their proliferation begun swiftly. Development plans for audio-visual and lighting infrastructure were changed immediately and plans are underway to introduce permanent monitoring programs. The biofilm detection and research has also been integrated into educational events and is being used to enhance OUV transmission opportunities.

14.2 - Define which topics are covered by this example of best practice at the property level

Sustainable Development
Synergies
State of Conservation
Management
Governance
Capacity Building

15. Assessment of the Periodic Reporting Exercise

15.1. Relevance of Periodic Reporting

15.1.1 - Has the Periodic Reporting process improved the understanding of the following?

The <i>World Heritage Convention</i>
The concept of Outstanding Universal Value
The property's Outstanding Universal Value
The concept of Integrity and/or Authenticity
The property's Integrity and/or Authenticity
Management effectiveness to maintain the Outstanding Universal Value
Monitoring and reporting

15.1.2 - Please rate the follow-up to conclusions and recommendations from previous Periodic Reporting exercise by the following entities

State Party	No follow-up
Site Managers	No follow-up
UNESCO World Heritage Centre	No follow-up
Advisory Bodies (ICOMOS, IUCN, ICCROM)	No follow-up

15.2. Use of Data

15.2.1 - How do the authorities in charge of the property plan to use the data recorded from this cycle of Periodic Reporting?

Revision of priorities/strategies/policies for the protection, management and conservation of heritage
Update of management plans
Awareness raising

15.2.2 - Comments on use of data from the Cycle of Periodic Reporting

15.3. Timing and resources

15.3.1 - Entities involved in the filling out of this online questionnaire (tick as many boxes as applicable)

Governmental institutions responsible for cultural and natural heritage
Site Manager/Coordinator World Heritage property staff
Indigenous people
Other specific groups
Representatives from the Riversleigh and Naracoorte World Heritage Advisory Committees
External experts

15.3.2 - Has a gender balanced contribution and participation been considered in the filling out of this questionnaire?

Gender balance **is explicitly considered and effectively implemented** in the process.

15.3.3 - Were you given adequate time (i.e. roughly ten months) to gather necessary information and to fill in this questionnaire?

Yes

15.3.4 - Please estimate the time (working hours) needed to complete this questionnaire

15.3.5 - Did you mobilise any additional resources to fill out this questionnaire?

	Additional resources	No	Yes
15.3.5.1	Human resources		×
15.3.5.2	Financial resources for organizing consultation meetings/ training	×	

15.4. Format and content of the Periodic Report**15.4.1 - How accessible was the information required to complete this questionnaire?**

Not all required information was accessible.

15.4.2 - Was the questionnaire easy to use and clear to understand?

		Very Difficult	Difficult	Easy	Very easy
15.4.2.1	Ease of use of questionnaire			×	
15.4.2.2	Clarity of questions			×	

15.4.3 - Please provide suggestions for improvement of the Periodic Reporting questionnaire

* Some sections require better definitions *Include space to input data for two separate sites Riversleigh and Naracoorte, as some questions required completely different answers but only one option to complete *Two sites needed two site managers to gain access to the report but only one email address had access. The OUV should refer both to in-situ and ex situ (extracted) material and include ongoing collection, storage, conservation and recording function.

15.5. Training and Guidance**15.5.1 - Please rate the level of support in terms of training and guidance from the following entities in completing this questionnaire**

UNESCO World Heritage Centre	Not applicable
UNESCO (other sectors/field offices)	Not applicable
UNESCO National Commission	Not applicable
ICOMOS International	Not applicable
IUCN International	Not applicable
ICCROM international/regional	Not applicable
ICOMOS national/regional	Not applicable
IUCN national/regional	Not applicable

15.5.2 - Please rate the level of support for completing the Periodic Reporting questionnaire from the following entities

UNESCO World Heritage Centre	Fair
State Party Representative (national Focal Point)	Fair
UNESCO other sectors (e.g. field office)	Not applicable
National Commission for UNESCO	Not applicable
ICOMOS International	Not applicable
ICCROM International/regional	Not applicable
ICOMOS national/regional	Not applicable
IUCN national/regional	Not applicable
IUCN International	Not applicable

15.5.3 - Were the online training resources prepared by the World Heritage Centre regarding Periodic Reporting adequate for you to complete this questionnaire?

Yes

15.5.4 - If you found that the online training resources were not adequate, what changes would you like to see implemented?**15.6. Actions that will require formal consideration by the World Heritage Committee****15.6.1 - Summary of actions that will require formal consideration by the World Heritage Committee**

- Statement of Outstanding Universal Value for the property as adopted by the World Heritage Committee**

Reason for update: The Statement of Outstanding Universal Value requires an update. Some sections in the synthesis are incorrect (in how they connect to the criterion, integrity, and the protection and management requirements). The Australian Fossil Mammal Sites management, executive officers and

Chairs of associated Advisory Committees for both Riversleigh and Naracoorte sites, wish to undertake the process to update the Statement with the World Heritage Committee, in due course and not part of this Periodic Rep

Changes to these items will need to go through the proper processes.

15.7. Comments, conclusions and/or recommendations related to the Assessment of the Periodic Reporting Exercise

15.7.1 - Comments, conclusions and/or recommendations related to the Assessment of the Periodic Reporting Exercise

Property managers encountered some complexities in completing one Periodic Report for two very different sections (in two different States, different fossil assemblages and ages, different tourism operation and locations). It would have been helpful to have two different login details available for the two different site managers.

15.7.2 - Thank you for having filled in all the questions. Please contact your National Focal Point for validation.