

**PALAEONTOLOGICAL GEOHERITAGE IN  
AUSTRALIA: IS THE PALEOPARK CONCEPT  
THE SOLUTION TO COMBINING  
PRESERVATION AND EDUCATION?**

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- Views expressed in this presentation are those of the author, and do not necessarily represent the views of his employer or of any level of government in Australia
- The concepts presented here relating to the IPA PaleoPark initiative have not yet been tested in an Australian context

# PROTECTION OF PALAEOONTOLOGICAL HERITAGE IN AUSTRALIA

*The current situation*

- Is there a need for protection?
- Commonwealth, State & Territory legislation
- Palaeontological reserves & geological monuments

# PROTECTION OF PALAEOONTOLOGICAL HERITAGE IN AUSTRALIA

- Is there a need for protection?



*Stegosaurus* footprint  
stolen in 2002

Gantheaume Point, Broome, WA Photo credit: Joan Henley

# PROTECTION OF PALAEOONTOLOGICAL HERITAGE IN AUSTRALIA

- Is there a need for protection?



a



b

Damage at the Buick State Geoheritage Reserve in the Pilbara craton of WA, probably the oldest fossil evidence of life on Earth, showing a) removal of blocks of sandstone beneath stromatolite mat, and b) removal of a large piece of stratiform stromatolite mat (from Grey et al, 2010: GSWA Record 2010/13).

# PROTECTION OF PALAEOONTOLOGICAL HERITAGE IN AUSTRALIA

- Is there a need for protection?

Fossil-bearing slabs stolen mid-1980s from Ediacara fossil reserve, Flinders Ranges



Specimens of fossil fish and leaves from Talbragar Fossil Fish Beds reserve still appear on internet sites for sale from dealers

# EXAMPLES OF ADEQUATE PROTECTION

- Dinosaur Stampede National Monument, Qld

Lark Quarry Conservation Park and Dinosaur Trackways are jointly managed by Winton Shire Council and Queensland Parks and Wildlife Service



- Canowindra & Merriganowry Fish Beds

Canowindra protected by reburial of site after excavation;  
Merriganowry site on private land, enclosed by fence

# PROTECTION OF PALAEOONTOLOGICAL HERITAGE IN AUSTRALIA

- Commonwealth, State & Territory legislation

*Commonwealth Protection of Movable Cultural Heritage Act 1986  
and associated Regulations 1987*

controls on export of fossil specimens, sculptures  
or other objects made from fossiliferous material,  
and any fossil that is opalised



# PROTECTION OF PALAEOONTOLOGICAL HERITAGE IN AUSTRALIA

- Commonwealth, State & Territory legislation

*NSW National Parks and Wildlife Act 1974, & Regulations 2009*

*SA Wilderness Protection Act 1992, & Regulations 2006*

*SA National Parks and Wildlife Act 1972, & Regulations 2001*

*SA Heritage Places Act 1993*

*WA Conservation and Land Management Regulations 2002*

*WA Land Administration Act 1997*

*TAS Mineral Resources Development (Fossicking Areas) Order 1996*

*TAS Mineral Resources Development (Fossil Sites) Order 2003, 2004*

*QLD Fossicking Act 1994*

*NT Heritage Conservation Act 2008; Mining Act 2009*

# THE SITUATION IN SOUTH AUSTRALIA

- In SA, fossils are owned by the Crown under the *Mining Act 1971*
- Fossils are considered a public resource, so the government has a responsibility to protect them
- At present, there are no legislative or other measures that stipulate specific requirements for fossil protection.
- SA Government has set up a Working Group to examine options for conservation of fossils and fossil sites

# PROTECTION OF PALAEOONTOLOGICAL HERITAGE IN AUSTRALIA

- Palaeontological reserves & geological monuments



NSW: Fennel Bay Fossil Forest (gazetted 1904)  
Hattons Corner, Yass (Nature Reserve)  
Talbragar Fossil Fish Beds (Crown Lands Reserve)

ACT: Lower Molonglo Geological Site (ACT Heritage Act 2004)

# PROTECTION OF PALAEOONTOLOGICAL HERITAGE IN AUSTRALIA

- Palaeontological reserves & geological monuments



VIC: Yea Fossil Flora Site (National Heritage Register)

QLD: Riversleigh (World Heritage – Quaternary vertebrates)  
Dinosaur Stampede National Monument, Lark Quarry

TAS: Lune River Site (outside Fossicking area)  
Christmas Hills Site

# PROTECTION OF PALAEOONTOLOGICAL HERITAGE IN AUSTRALIA

- Palaeontological reserves & geological monuments

WA: Hamelin Pool, Shark Bay Stromatolite Site (World Heritage)  
6 recently-designated State Geoheritage Reserves protecting  
“early life” sites in the Pilbara region (Grey et al. 2010)

SA: Lake Callabonna *Diprotodon* Site (gazetted 1901)  
Ediacara Fossil Site (gazetted 1954)  
Big Gully, Emu Bay (Kangaroo Island) Cambrian Lagerstätten  
Stuart & Poole Creeks Tertiary Flora Sites  
Naracoorte Caves (World Heritage – Quaternary vertebrates)

# PALEOPARKS

- An initiative of the International Paleontological Association (IPA) (<http://ipa.geo.ku.edu/index3.html>)
- Designed to protect endangered sites from looting or destruction by development, and also to provide educational, research, and recreational activities
- Often restricted to an individual site
- Also provide protection for “living fossils”, such as California Redwood forests, and stromatolites

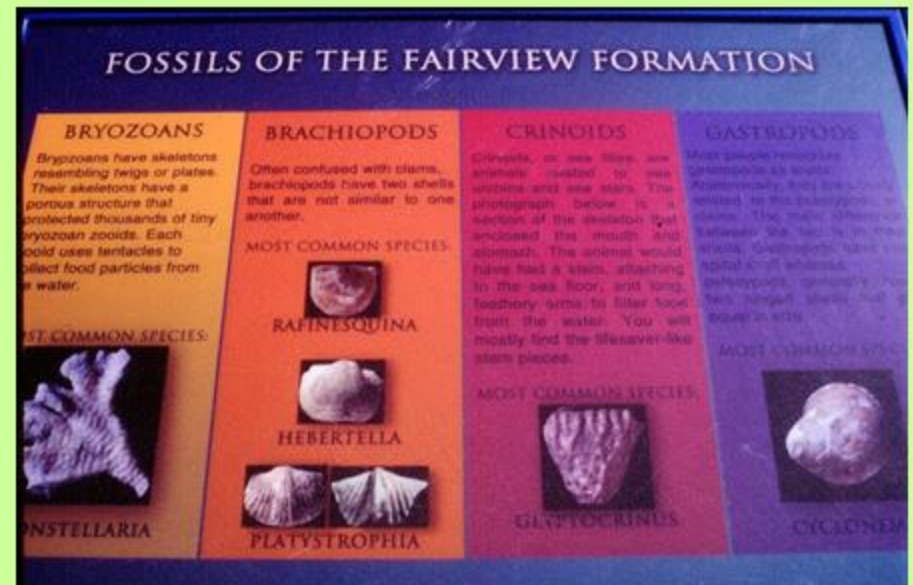
# Aims of the PaleoParks initiative

- **IDENTIFICATION & DOCUMENTATION:** IPA seeks to identify various paleontological field resources and tabulate their scientific, historic and tourism values
  - IPA is establishing a global catalogue of protected and endangered PaleoParks*
  - Criteria for recognition of PaleoParks need to be established*
  - Nominations will be assessed by a committee of IPA and local palaeontologists*
- **NOTIFICATION:** For unprotected sites, jurisdictions and stakeholders must be informed that scientists have identified scientific and/or educational values
- **PROTECTION & CONSERVATION:** IPA will support PaleoPark activities and goals with expert advice and action to protect and conserve significant sites at an appropriate private, local, state, national, or international level
  - Such sites may already be protected, or may be endangered or threatened*
  - IPA will identify and respond to problems at endangered sites, with appropriate expert opinion and advice to local authorities*

# A PaleoPark where fossil collecting is permitted



Trammel Fossil Park,  
Sharonville, Ohio





# PaleoParks: Pros & Cons

- Level of protection afforded to sites?  
varies according to local circumstances – IPA is not responsible for policing – amenable to multiuse ie research/preservation/education  
*but provides no guarantee of better protection than currently is the case*
- Applicability to Crown Land and private freehold?  
Can be adapted to all situations and all scales
- Who decides criteria for recognition?  
Local palaeontologists + IPA advice – criteria are relatively flexible
- Benefits of recognition as a PaleoPark?  
Conferring sense of global and national authority, transcending state/territory lines – could assist geotourism
- Does the PaleoPark Initiative support a large bureaucracy?  
Coordinated globally by one palaeontologist, reliant on the local palaeontological community for advice

# PaleoParks: Australian candidates

- **Australian Dinosaur Trail, NW Qld:** Richmond (Kronosaurus Korner) – Winton (Lark Quarry & Age of Dinosaurs Museum) – Hughenden (Flinders Discovery Centre)
- **Age of Fishes Museum**, Canowindra
- All of the Palaeontological Reserves & Geological Monuments previously mentioned
- Many (if not all) of the palaeontological sites currently listed on Federal & State/Territory heritage registers
- Even quarries can be potential PaleoParks (example: Somersby)

# CONCLUSIONS

- PaleoPark concept is worth investigating to assess whether its flexible approach to preservation and education is applicable to Australian situation
- Could be useful in the geotourism context
- Need to support IPA initiative by responding to call for inclusion of suitable Australian sites (particularly those regarded as endangered) in PaleoParks database