Australian Archaeological Association

Annual Conference – Programme and Abstracts

Batemans Bay – 9-13 December 2010

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Edited by Sally K. May, Meg Travers and Megan Berry

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CONTENTS

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The AAA ANU Organising Committee wishes to express its sincere gratitude to the following companies and organisations that have provided sponsorship for the 2010 National Conference. Sponsorship monies are earmarked towards students who are presenting papers; attendance by Traditional Owners; travel and accommodation of keynote speakers; entertainment at the Annual Dinner and AAA photo competition prizes.

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ACKNOWLEDGEMENT OF TRADITIONAL OWNERS

The Conference Organisers would like to acknowledge the Walbunja people as the Traditional Owners of the land on which we are meeting. We would like to express our appreciation to the representatives of this community for their participation and their welcome to delegates during the opening of the conference.

VOLUNTEERS

The AAA Conference Organising Committee would like to thank the following volunteers who donated their time and enthusiasm to making this conference a success:

Volunteer Coordinators: Meg Travers and Megan Berry

Ceridwen Boel
Emily Chan
Samantha Cooling
Emily Dann
Jessica Eldridge
Melissa Hetherington
Jessie Jacob
Rhiannon Smith
Felice Unalmis
Daryl Wesley

INTRODUCTION

Welcome to the Australian Archaeological Association conference for 2010. The Australian National University is pleased to be able to welcome you to Batemans Bay for this 5-day event. With over 300 delegates, over 120 papers on a unifying theme, and a beautiful beachside setting AAA 2010 is sure to be a diverse and memorable experience for all.
Our conference theme this year is 'Challenges for archaeology in understanding cultural and natural landscapes'. While landscape approaches are not new to archaeology, the ability for researchers to understand site variability and human dynamics at the landscape level has never been greater. Technological advances in geospatial mapping and digital storage have assisted in this new endeavour. There is also increasing attention in most regional syntheses to archaeological change at different scales of space and time - so that the human dynamics which are inferred are plausible and not an artefact of sampling or resolution.

The term 'landscape' has also become shorthand for inscribed and modified cultural landscapes - which may reflect bundles of values embedded in, for example, studies of heritage, rock art graphics and managed land systems. AAA 2010 aims to garner these different nodes of interest - ranging geographically from circumscribed islands in seascapes to vast 'blue-sky' transects of the interior; from monuments to modified landscapes; from forager to agricultural societies; and from the heritage of the individual to the community.

We would like to thank all of the conference sponsors for their generosity. Your contributions have ensured the attendance of Indigenous participants from around Australia, subsidised the costs of students who are presenting papers and underwritten other essential activities of a large and complex conference - which the AAAs have truly become. We sincerely thank you for your commitment to making this an inclusive and diverse conference.

With these thoughts in mind we hope you have an engaging and enjoyable experience over the next 5 days and come away with an enhanced understanding of the current state of archaeology in Australia and beyond.

Venue

All conference sessions, meetings and events will be held at the Coachhouse Marina Resort, 49 Beach Road, Batemans Bay, New South Wales.

All sessions on Friday, Saturday and Monday will be held in the *Bay Pavillion Marquee*. On Sunday sessions will be held in the *Bay Pavillion Marquee*, *Corrigan's Conference Room*, and the *Clyde River Conference Room*.

Conference posters and photographs will be displayed in the *Sea Breeze Room*.

Please see the map on page 22 for room location details.

No ATM facilities are available at the Coachhouse Marina Resort.

Conference Registration

The conference registration desk will be located at *The Breakout Room*.

Volunteers

ANU volunteers will be wearing green 'volunteer' t-shirts and will be assisting throughout the conference. If you need help with something please seek them out.

Accommodation

Conference attendees are encouraged to book accommodation at the conference venue: Coachhouse Marina Resort. Full details on the different types of accommodation can be found on the resort webpage.

To find out more about the accommodation options or for assistance with accommodation during the conference please contact:

Tess Clark
Conference Coordinator
Coachhouse Marina Resort
49 Beach Road, Batemans Bay
P: 02 4472 4392
E: marketing@coachhouse.com.au,
W:
http://www.coachhouse.com.au/batemansbay/resort/

Swimming Pool

The Coachhouse Marina Resort has a pool available for use during the conference. Please be aware that no glass may be taken into the pool area. Delegates are also asked to keep the noise to a minimum later in the evening.

Getting There

There are numerous transport options:

Driving: Batemans Bay is a two hour drive east from Canberra on the Kings Highway and about four hours south from Sydney on the Princes Highway. There is plenty of secure parking at the conference venue, Coachhouse Marina Resort. There is also a map on the venue website: http://www.coachhouse.com.au/batemansbay/resort/location/

Car Pooling: If you are looking for a lift or driving and would like to share costs, email car@anu.edu.au and we will put you in touch with each other.

Flights: There is an airport at Moruya about 20 minutes south of Batemans Bay that is serviced by Rex Airlines from Sydney and Melbourne (via Merimbula): http://www.eurobodalla.com.au/flights.html The next closest airport is Canberra which has services from all major cities through Qantas, Virgin Blue and Tiger.

Car hire is available from Canberra Airport: http://www.canberraairport.com.au/

Coaches: Murrays travel only once a day from Canberra. Book early! http://www.murrays.com.au/

From Melbourne and Sydney by Premier: http://www.premierms.com.au/newhome/home.asp

From Sydney by Priors: http://www.eurobodalla.com.au/documents/PriorsScenicExpress2010.pdf
For more information visit the Eurobodalla Visitors Centre website: http://www.eurobodalla.com.au/busescoaches.html

Rail: There is a rail/coach service with City Rail from Sydney to Nowra (Bomaderry Station): http://www.cityrail.info/ and Premiers Coach (twice a day, see above) to Batemans Bay.

V-Line offers a rail/coach service from Melbourne: http://www.vline.com.au/index.aspx?sid=0

If you are staying at the Coachhouse Marina Resort and would like to be picked up from Batemans Bay bus stop please let the Coachhouse know when you are booking your accommodation.

Getting Around

Taxi services: 4472 8555

Local buses: http://www.eurobodalla.com.au/busescoaches.html. A timetable is available at reception.

Everything you will need to know about travelling to, from and around Batemans Bay can also be accessed from Bay Info: http://www.bayinfo.com.au/localdirectory/transportandsecurity.html

Catering

Morning tea, lunch and afternoon tea will be held in the *Rockwall Brasserie*. Vegetarian and vegan meals will be provided for those delegates who requested them when registering.

Conference delegates have two on-site choices for dinner on Friday, Saturday and Sunday night:

1. The *Sea Breeze Bar* will be serving pizzas at a cost of $15 from 5-9pm. Payment is by **CASH ONLY**.
2. A buffet dinner will be offered at the *Rockwall Brasserie* for a set price of $20 from 6-8pm. Further details will be available at the venue. Payment is by **CASH ONLY**.

Delegates staying at the Coachhouse Marina Resort have self-catering facilities in their apartments. BBQs can also be found throughout the grounds of the resort.

Getting a Drink

The *Sea Breeze Bar* will be open each day from 12.30pm for conference delegates to purchase drinks.

Guests staying at the Coachhouse Marina Resort may bring in and consume alcohol in their apartments. The conference venues, however, are licensed premises and alcohol must be purchased from the bars in these areas.

Name Tags

Delegates must wear their conference name tags at all times to indicate payment for access to sessions, conference events, meals and refreshments.

Computers and the Internet

No computers are available on-site for use by conference delegates. For those delegates wanting to access the Internet via their own laptop computers free wireless is available throughout the resort. If you have any problems accessing the Internet please contact a volunteer for assistance. For delegates without their own computer there are several Internet cafes in Batemans Bay.

Please do not harass the Coachhouse Marina Resort staff for computer access during the conference.

Smokers

Several areas have been designated for smoking at the Coachhouse Marina Resort. Please see the map for further information or contact a conference volunteer for directions.

Message Board/Lost and Found

The conference message board will be located in *The Breakout Room*. Lost and found will be located with the conference registration desk.

First Aid

Please contact a conference volunteer for assistance with First Aid.

Information for Paper Presenters

To assist with the smooth running of the conference, presenters must bring their MS PowerPoint presentations on a memory stick to the room in which they are presenting at the **beginning of the break immediately prior to their session**. Presenters in the first session of each day must bring their presentation to the room at least 20 minutes prior to commencement of the session. A volunteer (green shirts) will be present to load your presentation on to the computer. Personal laptops cannot be used for presentations.

Presentations should be in the 2003 version of MS PowerPoint. For presenters who have developed their presentations using MAC please test your file on a PC prior to the day of your presentation to ensure it is compatible.

Information for Poster Presenters

- Posters should be delivered to the conference registration desk upon arrival.
- If you will be arriving late for the conference you can mail your poster to:
  Mirani Litster or Christian Reepmeyer
  Archaeology and Natural History,
  College of Asia and the Pacific,
  HC Coombs Building (BLD 9), The Australian National University,
  ACT 0200, Australia.
  Please ensure you allow enough time for it to arrive by 5 December 2010.
- Posters will be considered a 'student poster' if the student is primary author of the poster.
- Posters will be displayed in the *Sea Breeze Room* as soon as possible after their delivery and for the duration of the conference.
- Posters must be no larger than A0 (841 mm X 1189 mm).

- All posters will be mounted using blu-tack or double sided tape (provided by the conference organisers)
- The formal poster session will take place on 12 December in the *Sea Breeze Room*. Presenters are requested to attend and stand by their posters to answer any questions.
- A judging panel will decide the Best Poster and Best Student Poster and poster prizes will be awarded at the conference dinner.
- Posters should be collected from the registration desk before the close of the conference on Monday 13 December. Posters not collected ***will not*** be mailed back to presenters and will be destroyed

SOCIAL EVENTS AND TOURS

Thursday 9 December

Welcome Barbeque

There will be a complimentary welcome barbeque starting at 7.00 pm near the *Sea Breeze Room*. All conference delegates are invited to attend this function. Food will be provided free of charge. Soft drinks, beer and wine will be available for purchase.

Friday 10 December

Launch of the Australian Indigenous Archaeologists Association (AIAA)

At 5.00 pm come and join us in the *Bay Pavillion Marquee*, for the launch of the Australian Indigenous Archaeologists Association. Free of charge for conference delegates.

Film Night

A short selection of films will be introduced by Professor Peter Hiscock. The films begin at 6.00 pm in the *Corrigan's Room*. Free of charge for conference delegates.

Sunday 12 December

Poster Session, Photography Competition and Local Wine Tasting

From 5.00 pm conference delegates are invited to attend the annual poster session to be held in the *Sea Breeze Room*. During this session the photography prizes will also be awarded. Local wines will be available for tasting and purchasing throughout the evening. Free of charge for conference delegates.

Monday 13 December

Conference Dinner

The conference dinner will be held in the *Bay Pavillion Marquee*. The annual AAA awards will be presented during the evening. The cost for the dinner is $50, and this includes a three course meal, live entertainment, and a full bar available for purchasing drinks. Places are limited to 240 and will most likely be sold out before the conference begins**.** The dinner begins at 7.00 pm with last drinks to be called at midnight.

PRE-CONFERENCE WORKSHOP

Ground-Penetrating Radar in Archaeology

December 7 - 9, 2010

Coachhouse Marina Resort, Batemans Bay, NSW

Professor Lawrence Conyers, Department of Anthropology, University of Denver, Colorado, USA and Author, *Ground-Penetrating Radar for Archaeology*

This 3-day intensive pre-conference workshop covers the theory, methods and pitfalls of ground-penetrating radar for archaeological site survey, documentation, and exploration:

Day 1: GPR Theory and Method Lecture and Discussion

On day 1 we will spend the whole day talking about GPR theory and methods. Dr Conyers will give numerous examples of GPR surveys that have been done all over the world, showing how to interpret the data, how to successfully map buried sites, and most importantly, the pitfalls we all will fall into in these types of surveys. Toward the end of the class you will be given a data set of GPR data from an historic site in South Australia and you will interpret the data, mapping the foundations and other features from two-dimensional profiles.

Day 2: Hands-On Field Collection of Data

We will spend Day 2 outside collecting data using a GPR. A number of different configurations will be used as well as different antenna frequencies. Each of you will then have your own data set to process and interpret. Weather can vary widely during that time of year, so please be prepared.

Day 3: Analysis of Data on Your Computer

Day 3 will be spent in the classroom. You will process your own data set from the previous day's collection using software Dr Conyers will provide for your computer. You will first make 2-D profiles and interpret them, but then move into three-dimensional mapping and amplitude analyses. By the end of the day you will have print-outs of the buried features in 3-D.

For information on costs and registration please visit:

http://arts.anu.edu.au/AandA/archaeology/aaaconference/aaagpr.asp.

Contact: Dr Jack Fenner (jack.fenner@anu.edu.au).

POST-CONFERENCE TOUR

Murramarang Aboriginal Place, Kioloa, NSW,

Tuesday 14 December

We are planning a field visit to the Murramarang Aboriginal Area located at Kioloa on the south coast of NSW. Murramarang Aboriginal Area (MAA) is a protected Aboriginal midden that covers approximately 60 hectares on the NSW south coast between Ulladulla and Batemans Bay. It has been claimed that it is the largest known midden on the NSW coast.

In March 2007 Department of Environment and Climate Change NSW (DECC) staff and the local Aboriginal community undertook a refurbishment of the MAA interpretive walking track by replacing outdated signs, managing vegetation and improving access for visitors. It is an excellent example of how co-operation between indigenous and non-indigenous people can provide good management outcomes for Aboriginal cultural heritage places. Five years of negotiation between DECC and a number of Aboriginal stakeholder groups resulted in the production of new interpretive signs for placement along the walking track. The dune revegetation program instituted by Dr Sue Feary in the 1980s had proved so successful that information described in some signs could no longer be related to physical objects at the sign location because those objects had been completely obscured by the new vegetation. To resolve this signs were re-worded or re-located and some vegetation was cut back to improve the visibility of interpreted features of the site.

The project also involved archaeological excavations at the old and new sign locations to ensure that no significant Aboriginal objects, particularly Aboriginal ancestral remains, were disturbed during removal and installation of signs. These were the first excavations conducted at Murramarang since the 1970s. Some of the newly installed signs endeavour to articulate Murramarang's place within the coastal landscape and show connections between Murramarang Point and other significant elements of the spiritual landscape of the NSW south coast such as Didthul (Pigeon House Mountain) and Gulaga (Mount Dromedary), both of which can be seen from Murramarang.

This tour will be led by Les Simon (Walbunja Traditional Owner), Philip Boot (Aboriginal Heritage Regulation Unit, Department of Environment, Climate Change and Water, NSW) and Jackie Taylor (Department of Environment, Climate Change and Water, NSW).

AWARDS

The following awards will be presented during the Conference Dinner, Monday 13 December:

Rhys Jones Medal for Outstanding Contribution to Australian Archaeology

The *Rhys Jones Medal* is the highest award offered by the Australian Archaeological Association. It was established in honour of Rhys Jones (1941-2001) to mark his enormous contribution to the development and promotion of archaeology in Australia. The Medal is presented annually to an individual who has made an outstanding and sustained contribution to the field.

Life Membership for Outstanding Contribution to the Australian Archaeological Association

This award was established to recognise significant and sustained contribution to the objectives and purposes of the Australian Archaeological Association Inc.

The Bruce Veitch Award for Excellence in Indigenous Engagement

This Award has been created in recognition of Bruce Veitch's contribution to the discipline. It will be awarded annually to any individual or group who has undertaken an archaeological or cultural heritage project which has produced a significant outcome for Indigenous interests. The applicant will have actively engaged with the Indigenous community in producing a successful outcome.

The John Mulvaney Book Award

The *John Mulvaney Book Award* was established in honour of John Mulvaney and his contribution and commitment to Australian archaeology over a lifetime of professional service. It was created to acknowledge the significant contribution of individual or co-authored publications to Australian archaeology, either as general knowledge or as specialist publications.

The Laila Haglund AACAI Prize for Consulting Archaeology $500

The Australian Association of Consulting Archaeologists Incorporated is the major body for the accreditation and promotion of consultants who work in the allied sub-disciplines of Indigenous, historic, industrial and maritime archaeology throughout Australia. It actively seeks to maintain and further develop high standards of consultancy performance. Towards this end it has contributed a

prize of $500 for the best contribution on consultancy archaeology to the Australian Archaeological Association Annual Conference.

The University of Waikato Radiocarbon Dating Prize

The University of Waikato Radiocarbon Dating Prize is awarded to the best conference presentation(s) that use 14C data in an interpretative manner. The prize is two standard radiometric dates.

Annual Conference Best Paper Prizes

- Best Overall Paper Prize $500
- Best Student Paper Prize $500

Note: If the Best Overall Paper Prize is a student, the Best Student Paper Prize will be awarded to the second place student paper.

Annual Conference Best Poster Prizes

- Best Overall Poster Prize $500
- Best Overall Student Poster Prize $500
- Runner-Up Student Poster Prize $250

Note: If the Best Overall Poster Prize is a student, the Best Student Poster Prize will be awarded to the second place student poster and the third place will move up the order.

PHOTOGRAPHY COMPETITION

The AAA Photo competition is an annual event that encourages excellence in archaeological photographic technique as well as the use of images to communicate the essence of our discipline to a wider audience. Researchers, students, traditional owners and professional archaeologists are all encouraged to be involved. Entry is open to all conference delegates and/or current members of the Australian Archaeological Association. Entries are separated into four different categories:

Category A: Archaeological Site Images

Category B: Archaeological Fieldwork or Laboratory Work in Progress

Category C: Artefact Images

Category D: 'Just for Fun'

Each category is judged separately. Best photograph in categories A, B and C will be awarded $50. The best entry in Category D 'Just for Fun' will receive a bottle of wine. The entry judged to be the best overall photograph from categories A, B and C will win a prize of $100. Prizes will be awarded on Sunday evening in the Sea Breeze Room.

MEETINGS

AACAI Annual General Meeting

Saturday 11 December

When: 6.00 pm – 8.00 pm

Venue: *Bay Pavillion Marquee*, Coach House Marina Resort

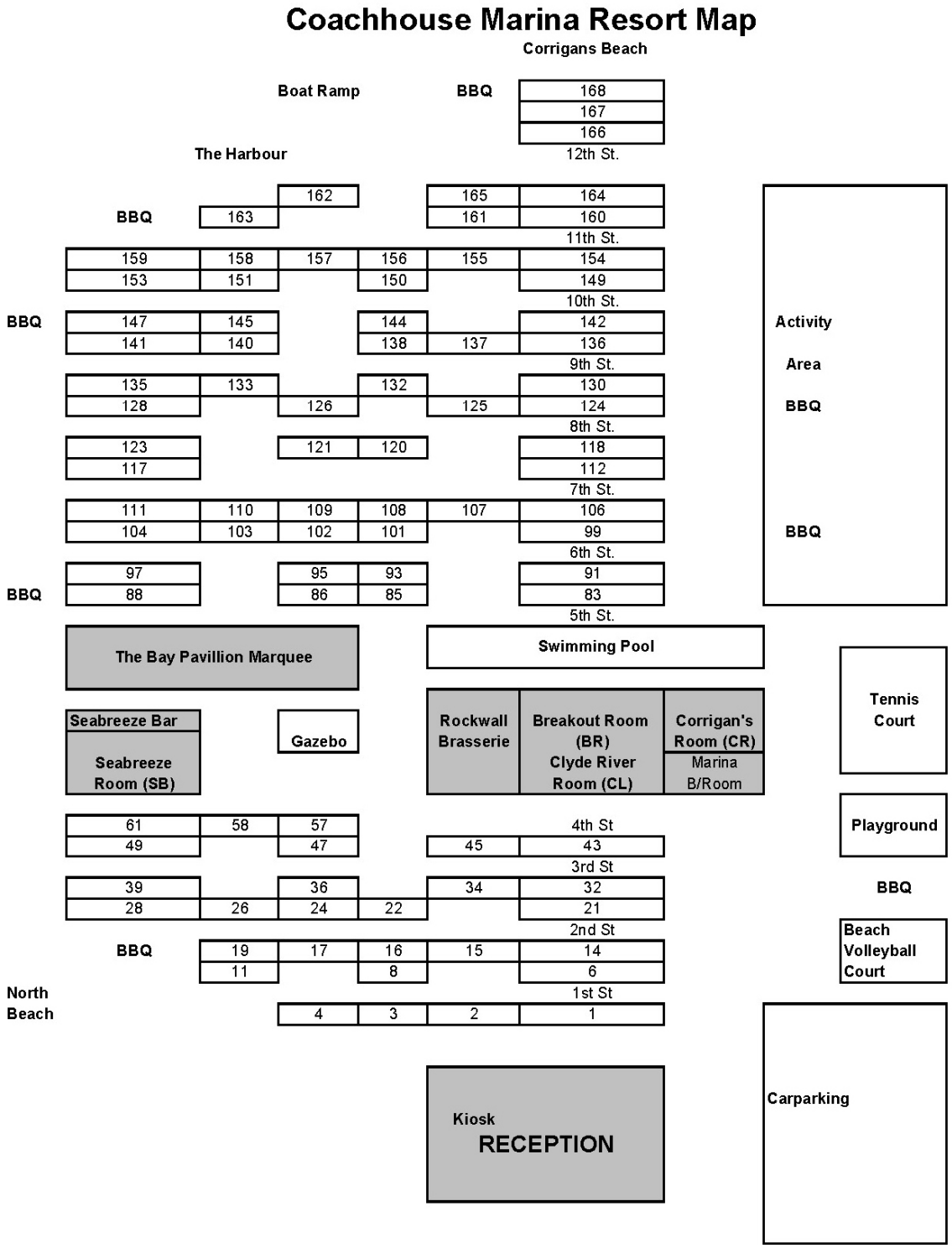
AAA Annual General Meeting

Monday 13 December

When: 3.30 pm – 5.00 pm

Venue: *Corrigan's Room*, Coach House Marina Resort

RESORT MAP


Coachhouse Marina Resort Map
Corrigans Beach
Boat Ramp
BBQ
168
167
166
The Harbour
12th St.
162
165
164
BBQ
163
161
160
11th St.
159
158
157
156
155
154
153
151
150
149
10th St.
BBQ
147
145
144
142
141
140
138
137
136
Activity
Area
9th St.
135
133
132
130
128
126
125
124
BBQ
8th St.
123
121
120
118
117
112
7th St.
111
110
109
108
107
106
104
103
102
101
99
BBQ
6th St.
97
95
93
91
BBQ
88
86
85
83
5th St.
The Bay Pavillion Marquee
Swimming Pool
Tennis Court
Seabreeze Bar
Seabreeze Room (SB)
Gazebo
Rockwall Brasserie
Breakout Room (BR) Clyde River Room (CL)
Corrigan's Room (CR)
Marina B/Room
61
58
57
4th St
Playground
49
47
45
43
3rd St
39
36
34
32
BBQ
28
26
24
22
21
2nd St
Beach Volleyball Court
BBQ
19
17
16
15
14
11
8
6
North Beach
1st St
4
3
2
1
Carparking
Kiosk
RECEPTION

CONFERENCE SCHEDULE

	Thursday 9 December	Friday 10 December	Saturday 11 December	Sunday 12 December			Monday 13 December
8.00am		Registration Opens	Registration Opens				
8.30am		Welcome to Country					
9.00am		**Session 6:** Seascapes and Islands	**Session 5:** Visual Landscapes: the role of rock art in mediating social relations through time and space	**Session 16:** Monumental Landscapes **(CL)**	**Session 13:** Integrated Approaches to Palaeoecological and Archaeological Research **(CO)**	**Session 1:** Rethinking Cultural Heritage in the Asia-Pacific	**Session 8:** A Man on the Rim: Alan Thorne and our understanding of the early peopling of Australasia and East Asia
10.30am		Morning Tea					
11.00am		**Session 4:** Shifting Archaeology at the Shore face: 21st century challenges for investigating, interpreting and managing coastal archaeological sites	**Session 3:** Linear Landscapes: transects through space and time	**Session 17:** Practice and Outcomes: recent developments in cultural heritage management and archaeology of the Hunter Valley, NSW **(CL)**	**Session 13:** Integrated Approaches to Palaeoecological and Archaeological Research **(CO)**	**Session 1:** Rethinking Cultural Heritage in the Asia-Pacific	Morning Tea
11.30am							**Keynote Address:** 'Between the Caves' by Professor Meg Conkey
12.30pm		Lunch					
1.30pm		**Session 7:** Flying the Flags: Australian collaborative research overseas	**Session 15:** The Australian Association of Consulting Archaeology session	**Session 9:** Wastelands: subversive spaces and landscapes of contemporary life **(CO)**	**Session 12:** Current Research in Papua New Guinea	**Session 11:** Education and Archaeology **(CL)**	
2.00pm	Registration Opens **(BR)**						The Lake Mungo Project (working title): A work-in-progress screening and discussion with filmmakers **(CO)**
3.00pm		Afternoon Tea					
3.30pm		**Session 14:** Australian Cultural and Natural Landscapes: an Indigenous affair	**Session 10:** Materiality and Narrative: constructing stories of people and place from objects	**Session 2:** Earthen Mounds in Australia **(CO)**	**Session 12:** Current Research in Papua New Guinea	**Session 11:** Education and Archaeology **(CL)**	**AGM:** Australian Archaeological Association **(CO)**
5.00pm		**Launch:** Australian Indigenous Archaeologists Association	**Keynote Address:** 'Geophysics for Landscape Archaeology' by Professor Lawrence Conyers	Poster Session, Photography Competition, Local Wine Tasting **(SB)**			
6.00pm		Film Night **(CO)**	**AGM:** Australian Association of Consulting Archaeologists **(CO)**				
7.00pm	Welcome BBQ **(SB)**						Conference Dinner

* All events/sessions are in the **Bay Pavilion Marquee** unless otherwise indicated with the following codes: **BR=Breakout Room; CO=Corrigan's Room; CL=Clyde River Room; SB=Sea Breeze Room.**

KEYNOTE LECTURES AND DOCUMENTARY

The Cave Man Mystique and an Archaeological Rebuttal: Fieldwork in the French Pyrénées and archaeologies of landscapes

Margaret W. Conkey

Class of 1960 Professor of Anthropology, University of California, Berkeley, USA

The global master narrative for human ancestors has long included a "caveman" characterization, even for parts of the world where there is little or no cave archaeology. While any thoughtful archaeologist would admit that far from everything that we know about the deep human past has come from the cave excavations, the caveman myth—and its associated mystique—that seems to live on and is a pervasive gestalt. Associated with the caveman narrative are proscriptions and rationalizations of contemporary behaviors especially for males in western societies. While this talk will not dwell on these often deeply problematic implications for human behavior and some of the evolutionary models that underwrite it, I do take this narrative as a cultural construct into which archaeology can intervene. Thus, for the past 17 years, we have been carrying out a landscape archaeology project in the foothills of the Central French Pyrenees, "Between the Caves", which has been oriented to documenting that indeed those ancestral populations moved about and left their traces across the landscape. Additionally, this project is considered to be starkly marginal to the core research concerns of both the past and the present, and it is worth exploring our project not just as an intervention into caveman and other gendered narratives about the past, but as an attempt at a "marginal practice" within archaeology despite the recent popularity of landscape archaeology. Thus, this talk will present some of the results of our survey and open air site excavation with implications, on the one hand, for challenging the caveman myth and, on the other hand, for what a locally-defined marginal practice can offer to other archaeological projects in the 21stcentury.

Monday 13th December, 11.30-12.30 pm

Geophysics for Landscape Archaeology

Lawrence Conyers

Professor, Dept of Anthropology, University of Denver, Colorado, USA

Placing humans on ancient landscapes and understanding their use and integration with the environment and cultural change over time can be accomplished in novel and important ways with geophysics building on methods using standard archaeological data. When sites are buried or artefacts and other features are otherwise invisible, the relationships between archaeological site data and the natural setting is often difficult to determine in any other way. Magnetic and resistivity methods are capable of not only a discovery of sites over large areas, but also determining their functions and age. These methods can produce important maps of considerable areas, but are somewhat limited by their inability to map in three-dimensions. In contrast, ground-penetrating radar (GPR) has the ability to place archaeological sites in three dimensions, delineating not only cultural features, but also associated stratigraphy and often ancient landscapes. It is somewhat more limited in the amount of area that can be analysed than other methods, which is more than made up for by detailed analysis in three-dimensional space. Sites where magnetics, resistivity and GPR were used in this way are discussed in Germany, Syria, England, Jordan and the USA. Results of GPR analysis of a deeply buried rockshelter in Queensland, Australia are also discussed where an Aboriginal site is placed within a complex depositional basin, both within the drip line of the shelter, and in the open area in front of the site.

Saturday 11th December, 5.00-6.00 pm

DOCUMENTARY - THE LAKE MUNGO PROJECT (working title)

A Work in Progress screening and discussion with filmmakers Professor Ann McGrath (the ANU Australian Centre for Indigenous History) and Andrew Pike (Ronin Films).

This film will document the history of the last 40 years in the Willandra Lakes area of south-west New South Wales. Our film will focus on the interface between the interests of the scientists on one hand, and, on the other, the interests of the Indigenous communities who identify with the land and with the human remains revealed at the site. This interface has often been deeply troubled and contentious, but gradually joint management and mutual respect have emerged. It is a story of an extraordinary Indigenous heritage and the progressive empowerment of the traditional land-owners of the area. It is also a story of mutual transformation – the relationships between the scientist and traditional owners have led to strong bonds and friendships, with the scientists' approaches impacted by Aboriginal knowledge, and the Aboriginal people gaining knowledge of their ancestors from scientists.

The excerpts to be shown will focus primarily on interviews with archaeologists and historians including Alan Thorne, Isabel McBryde, John Mulvaney, Wilfred Shawcross, Jack Golson, Jeanette Hope and Sharon Sullivan.

Monday 13th December, 2.00-3.00 pm

CONFERENCE OVERVIEW

FRIDAY 10 DECEMBER

The Bay Pavillion Marquee

8.30 – 9.00 am

Official Opening of the 2010 AAA Conference

Welcome to Walbunja Country

9.00 – 10.30 am

Session 6: Seascapes and Islands

Mirani Litster and Duncan Wright

Juru Spirituality and Ceremony: Preliminary results of excavations associated with salt flat stone arrangements at Mine Island, central Queensland coast

Bryce Barker, Lara Lamb, Gudjuda Aboriginal Reference Group

From Little Things: Research arising from investigation of the Little Bay Midden, NSW.

Oliver Brown and Laura Farquharson

A Scattered Landscape

Melissa Hetherington

Insular Ideas: The Archaeology of Isolation in the Wellesley Islands?

Daniel Rosendahl, Sean Ulm, Geraldine Jacobsen, and Paul Memmott

The Early Human Occupation of the Maldives

Mirani Litster

Initial Radiocarbon Dates and Otolith Analysis from Investigations into Ngarrindjeri Life Ways in the Lower Murray, South Australia

Christopher Wilson

11.00 – 12.30 pm

Session 4: Shifting Archaeology at the Shoreface: 21st Century challenges for investigating, interpreting and managing coastal archaeological sites

Tony Barham and Marjorie Sullivan

Monitoring and Management of Cultural Heritage Places at the Shoreface

Mike Rowland, Sean Ulm and Meredith Roe

Archaeological Records as Guides to Managing Coastal Retreat in Response to Rising Sea Levels: opportunities to forecast shorefaces of the future by hindcasting those of the past

Tony Barham

Aboriginal Heritage and Potential Sea Level Rise: modelling the impact and perspectives on management

Jessica Currie

Macassan and Mound Sites' Imminent demise? Towards addressing the threats of climate change to heritage values of the Northern Territory coast

Patricia Bourke

Equivocal Shell Deposits - tests and constraints to interpretation

Marjorie Sullivan, Philip Hughes and Tony Barham

Natural vs. Cultural: morphometric and morphological investigations into the origin of Anadara granosa dominated shell deposits in Port Hedland, W.A.

Pat Faulkner

What is there to Lose? The archaeological record on NSW's south coast

Sue Feary and Jackie Taylor

1.30 – 3.00 pm

Session 7: Flying the Flags: Australian collaborative research overseas

Tim Denham and Matthew Spriggs

Seven Thousand Years of Death and Burial at Caleta Vitor, Northern Chile

Bianca Petruzzelli, Michael Westaway, Chris Carter, Mathew Cupper, Amy Roberts, Donald Pate, David Lambert, Calogero Santoro and Jaime Swift

The ANU-Vanuatu National Museum Collaborative Project in Vanuatu: archaeological research and public profile

Matthew Spriggs and Stuart Bedford

The Australian Cyprus Expedition – grand plans and mixed results

Judith Powell

World Heritage in Papua New Guinea: The Kuk experience

Tim Denham

Geomorphology, Palaeontology and Archaeology of the Walanae Basin, Southwest Sulawesi, Indonesia

Fachroel Aziz, Adam Brumm, Gert van den Bergh, Iwan Kurniawan, Mike Morwood and Ruly Setiawan

3.30 – 5.00 pm

Session 14: Australian Cultural and Natural Landscapes: an Indigenous affair

Dave Johnston and Mark Dugay-Grist - panel discussion

5.00 – 6.00 pm

The Launch of Australian Indigenous Archaeologists Association (AIAA)

6.00 pm

Film Night - Corrigan's Room

SATURDAY 11 DECEMBER

The Bay Pavillion Marquee

9.00 – 10.30 am

Session 5: Visual Landscapes: the role of rock art in mediating social relations through time and space

Jo McDonald, Meg Conkey & Sally K. May

Painted relationships: the production of distinctive anthropomorphic figures in the rock art of northwest central Queensland and their role in the negotiation of social interaction
June Ross

Facing Change: style and connection in "archaic faces" across Australia
Ken Mulvaney

Advanced portable systems for non-invasive in-situ characterisation of Australian rock-art
Claudio Tuniz

Drawing in the land – shifting relationships between people and land in the Upper Nepean River, of the Sydney Basin
Julie Dibden

What Bird is That? A painting of Genyornis newtoni from Western Arnhem Land
R. G. Gunn and R. L. Whear

From Altamira to Australia: Aggregation and dispersal as an explanatory framework for stylistic complexity in the Western Desert
Jo McDonald and Peter Veth

11.00 – 12.30 pm

Session 3: Linear Landscapes: transects through space and time

Peter Veth and Sharon Sullivan

The Central Australia Archaeology Project: The linear landscape of the Overland Telegraph line

Judy Birmingham and Andrew Wilson

Linear landscapes as Cultural Heritage: case study of the Canning Stock Route

Diana James and Sandy Blair

Across the Line: Strategic planning for development west from the Hunter Valley

Phillip Purcell

Iconic Victorian Path Pre-Captain Cook

Roark Muhlen-Schulte

The Significances of the Thai-Burma Railway

Joan Beaumont

1.30 – 3.00 pm

SESSION 15: The Australian Association of Consulting Archaeology session

Convenors: Mick Morrison and Oliver Brown

Augering Well

Rebecca Parkes and Timothy Maloney

Predicting the Pilbara: Towards a Predictive Model of Archaeological Site Location

Annabelle Davis, Andrew Sneddon, Sean Ulm, Jonathan Corcoran, and Yan Liu

The Archaeology of the Australian Capital Territory: A Strategic Region for Understanding Cultural and Natural Landscapes in South Eastern Australia over the Last 20,000 Years

Peter Dowling and Sally Brockwell

Reverse survey strategies and significance assessment in western New South Wales, Australia

T. Bryant, Trish Fanning and Simon Holdaway

Mapping Anthropogenic Fill with GPR: A new approach to burial detection

Paul Bladon, Dave Guilfoyle, Alice Beale and Ian Moffat

Dumbing-Down. The push towards prescription and what this means for the future direction of archaeological consulting.

Alyssa Gilchrist, Paul Irish, Sharon Lane and Jim Wheeler

3.30 – 5.00 pm

Session 10: Materiality and Narrative: constructing stories of people and place from objects.

Steve Brown

'Fishbone'

Sarah Colley

'A Story of Hafts and Shafts'

Harry Allen

"The kangaroo teeth seem to have holes drilled in them….."

Sue Feary

'A cake of spinifex resin'

Heidi Pitman

'Scientific analyses and the narration of social context in rock art production'

Jillian Huntley

‘The Manly ground-edged stone hatchet’

Val Attenbrow and Peter Grave

‘The Salt Pan Creek Nulla Nulla: An archaeology of land rights?’

Paul Irish

‘Man with hat and pipe—inscribing convict identities in time and place’

Tracey Ireland

‘Marooned! The old people, a dolphin and a model canoe’

Annie Clarke

‘The materiality of plainware pottery in Polynesia’

Tom Sapienza

‘Shalimar and Sukarno: the archaeology of a perfume’

Denis Byrne

‘Enter Sandman’

Ursula Frederick

5.00 – 6.00 pm

Keynote Speaker Professor Lawrence Conyers

Geophysics for Landscape Archaeology

6.00 – 7.00 pm

AGM - Australian Association of Consulting Archaeologists Incorporated - Corrigan’s Room

SUNDAY 12 DECEMBER

The Bay Pavillion Marquee

***Please note that there are three consecutive sessions today**

9.00 – 10.30 am and 11.00 – 12.30 pm

Session 1: Rethinking Cultural Heritage in the Asia-Pacific

Sue O'Connor and Denis Byrne

What is heritage studies and where should it go?

Laurajane Smith

The Cultural Landscape – the ontology of a concept and why it matters

Lesley Head

But why does it take so long?' International agendas, local livelihoods and regionalism in the protection of heritage in the Pacific Islands

Anita Smith

Indigenous Management of World Heritage in the Pacific: The Case of Chief Roi Mata's Domain, Vanuatu

Meredith Wilson and Chris Ballard

Selecting Archaeological Sites for the UNESCO World Heritage List: a case study of recent work in the Rock Islands/Southern Lagoon area, Palau

Christian Reepmeyer and Geoffrey Clark

Cape Bojeador Lighthouse: Beacon for heritage conservation in the Philippines

Eliza Valtos

Changing Perspective on the Relation between Local People, Heritage, and Landscape: A lesson to/from Borobudur

Daud Aris Tanudirjo

Heritage as a Public Good? A case study from the World Heritage-listed Komodo National Park, Eastern Indonesia
Sandra Pannell

Seeking Identity through Cultural Heritage in Timor-Leste: Archaeology, oral traditions and colonial architecture
Nuno Vasco Oliveira

Cultural Heritage and its Performative Modalities: Imagining the Nino Konis National Park in East Timor
Andrew McWilliam

The WCPA's Natural Sacred Sites Taskforce: a critique of conservation biology's view of popular religion
Denis Byrne

Indigenous Heritage in Southern Laos
Anna Karlström

Experiences from the Northern Territory in Participatory Monitoring and Evaluation of Jointly Managed Protected Areas and Cultural Heritage
Natasha Stacey and Arturo Izurieta

Githabul Cultural Heritage – cultural strength in SE Australia, and a plan for the future
Doug Williams and Nick McClean

Landscape Archaeology and Community Ownership as the Mechanism for Establishing a Protected Area across the Yoolberup Wetland Complex: A model for integrating natural and cultural heritage management in Australia
David Guilfoyle, Harley Coyne, Vernice Gillies and Cat Morgan

1.30 – 3.00 pm and 3.30 – 5.00 pm

Session 12: Current Research in Papua New Guinea

Anne Ford

Part 1

Linking the Landscape with Lithics: Investigating settlement patterns and subsistence economy in the Ivane Valley, Papua New Guinea

Anne Ford

Starch Residue Analysis of Stone Artefacts from the Ivane Valley, PNG

Judith Field, Anne Ford, Glenn Summerhayes, Matthew Leavesley and Herman Mandui

Diversity in Lithic Procurement Strategies on New Britain, Papua New Guinea

Jim Specht

Lithics and Land Use: a critical assessment of long-term research in the Willaumez Peninsula, Papua New Guinea

Robin Torrence

Holocene Skin Working Tools in Melanesia: tattooing and scarification?

Nina Kononenko

Part 2

Palaeoecological perspectives on the antiquity of Sago (Metroxylon sagu Rottb.) cultivation in Papua New Guinea

Simon Haberle, Jan Finn, Matthew Prebble, and Geoff Hope

The antiquity of village occupation in the Kikori River Delta, Gulf Province, Papua New Guinea and implications for the historical emergence of regional polities

Bryce Barker, Lara Lamb, Bruno David, Kenneth Koraki and Alois Kuaso

Size Matters: An archaeological investigation of the bivalve Batissa violacea assemblage from Emo (Gulf Province, Papua New Guinea) – implications for understanding occupational trends and regional resource use
Eddie Thangavelu, Bryce Barker, Bruno David, Jean-Michel Geneste, Lara Lamb and Robert Skelly

Oral History and Archaeology at Epemeavo and Kea Kea (Gulf Province), Papua New Guinea: Preliminary results from a new series of excavations
Robert Skelly

Prehistoric Migration at Nebira, South Coast of Papua New Guinea: New insights into trade and social complexity using isotope and trace element analyses
Ben Shaw

9.00 – 10.30 am and 11.00 – 12.30 pm

Corrigan's Room

Session 13: Integrated Approaches to Paleoecological and Archaeological Research
Simon Haberle and Janelle Stevenson

The Golden State down under: North American fire palaeoecology research and its applicability in an Australian context
Tom Sapienza

Late Quaternary Fire Regimes of Australasia
Scott Mooney, Sandy Harrison, Patrick Bartlein, Anne-Laure Daniau, Janelle Stevenson

The Origin and Temporal Development of an Ancient Cultural Landscape
Michael-Shawn Fletcher

Reconstructing Aboriginal Management Practices - an Ecological Approach
Beth Gott

People and Megafauna at South Walker Creek, Central Highlands, Queensland
Scott Hocknull, Stacey Budby, Emma Oliver and Michael Westaway

Searching for the Lapita Cultural Complex on North Queensland's Coral Coast
Matthew Felgate, Simon Haberle, Jim Specht, Carol Lentfer, William R. Dickinson, Peter Sheppard, Wal Ambrose, Fiona R. Cameron, and Hans Bader

Middens and more……palaeoenvironmental analysis of the Site 17 midden on Lizard Island, north-east Queensland
Carol Lentfer, Jim Specht, Robynne Mills and Matthew Felgate

A multi-proxy record of Late Holocene palaeoenvironmental change and human impact on the environment in Western Flores, Indonesia
Emma St Pierre, Jian-xin Zhao, Ken Aplin, Russell Drysdale, Sue Golding, Michael Griffiths and Quan Hua

The north-eastern Mekong River Delta since the Mid-Holocene: Palaeoecological history and implications for prehistoric settlements
Ulrike Proske, Till J.J. Hanebuth, Hermann Behling, Nguyen Van Lap, Ta Thi Kim Oanh and Bui Phat Diem

Molluscs as Ecological Indicator in Palaeoanthropological Contexts
Stephen Munro

Archaeological tests of palaeoecological models of central Africa demography during the Pleistocene
Jessica C. Thompson, Menno Welling, and Alex Mackay

Discerning use-related micro-residues on archaeological tools
Geeske H.J. Langejans

1.30 – 3.00 pm

Session 9: Wastelands: Subversive spaces and landscapes of contemporary life

Robert Maxwell, Annie Clarke and Ursula Frederick

Telco Takeovers: An archaeology of 'elevated' spaces in East Timor

Sue O'Connor, Sandra Pannell and Sally Brockwell

From the Backyard to Beyond: investigating the cultural significance of amateur satellites

Hannah Young

Wasteland and Wonderland: Bikini Atoll - from atomic bomb testing ground to world heritage cultural landscape

Steve Brown

Prypiat as Pompeii – crisis and abandonment in the Chernobyl Exclusion Zone

Robert Maxwell

Battlefield or Gallery? A comparative analysis of contemporary mark-making in Sydney

Andrew Crisp

The Archaeology of Destruction: Removal of the Sydney Tram Network

Peter Howard

3.30 – 5.00 pm

Session 2: Earthen Mounds in Australia

Colin Pardoe and Sally Brockwell

Earth mounds and the Significance of Site Formation Processes

Daryl Wesley

Profile of a 1350 year-old (600 AD) Aboriginal Earth Oven at Hope Inlet, near Darwin

Philippe Puig and Patricia Bourke

Earthen Mounds and Climate Change in Northern Australia

Sally Brockwell

Preliminary Results of Investigations of Earthen Mounds at Weipa, Western Cape York Peninsula

Michael Morrison and Justin Shiner

Earthen Mounds in South Eastern Australia: distribution, residential patterning, soul food and string

Colin Pardoe

Constructing Cultural Landscapes on the Hay Plain: heat retainer cooking and earth mounds

Sarah Martin

Mounds and Burials

Judith Littleton

When is a Mound not a Mound?

Philip Boot

Earth Mounds in Southwestern Victoria: 20 years on

Elizabeth Williams

9.00 – 10.30 am

The Clyde Room

Session 16: Monumental Landscapes

Gail Higginbottom

Monumental Tether: The Nabataean transition from trade to agriculture

Douglas Comer

Puma on the Rock: monuments, felines, origins and identity among the inkas
Ian Farrington

Unravelling Notions of Communal Memory and Connection
Gail Higginbottom

Wiradjuri and Yuin Sacred Landscapes – Archaeological theory and its application to understanding natural landscape hierophanies
Tom Knight and Philip Boot

Monumentality in Micronesia: The landscapes of a Pacific blind-spot
Katherine Seikel

Dwelling among the Monuments
Philip Tonner

'Like a large chessboard': shaping the Roman monumental landscapes, the case-study of Aquileia
Arianna Traviglia

11.00 – 12.30 pm

Session 17: Practice and Outcomes: recent developments in CHM and archaeology of the Hunter Valley NSW
Dave Cameron, Luke Godwin and Richard Fullagar

"All of our sites are of high significance" – A consideration of significance assessments; Reflections form recent work in the Upper Hunter Valley and a possible way forward (?)
Mary-Jean Sutton, Barry Anderson and Jillian Huntley

Conserving Country and Culture - The Rio Tinto - Coal & Allied Aboriginal Cultural Heritage Conservation Areas Initiative
David Cameron, Dan Gillespie and Luke Godwin

A systematic regional overview of accumulated impacts, conservation status, and potential survey priority in the Hunter Valley using the ASDST
Mal Ridges

Landscape History in the Hunter Valley, NSW: Why there is a multitude of Holocene archaeological sites but so few Pleistocene sites
Philip Hughes

Dating Aboriginal sites in the Warkworth Sands
Richard Fullagar, Michael Slack, Tim Cohen, Gerald Nanson, Bert Roberts and Zenobia Jacobs

1.30 – 3.00 pm and 3.30 – 5.00 pm

Session 11: Education and Archaeology
Wendy Beck, Sean Ulm and Lynley Wallis

Part 1: Disciplinary 'Standards' in Higher Education
Profiling Australian Archaeology: Results from the Australian Archaeology in Profile 2010 Survey
Sean Ulm, Cameo Dalley, Geraldine Mate and Stephen Nichols

Archaeology Education 'Standards' in Australia and the United Kingdom
Wendy Beck and Anthony Sinclair

Implementing Archaeology Benchmarks at the University of Queensland
Andrew Fairbairn and Clair Hughes

Education and Training in the Cultural Heritage Sector: systemic issues and their implications for archaeological heritage management
Amy Guthrie, Tracy Ireland, Donald Horne, Richard Mackay and Anita Smith

A Recent Graduate's View of American Archaeology Education
Elizabeth Hartnell

MONDAY 13 DECEMBER

The Bay Pavillion Marquee

9.00 – 11.00 am

Session 8: A Man on the Rim: Alan Thorne and our understanding of the early Peopling of Australasia and East Asia

Darren Curnoe and Paul S.C. Taçon

A Man on the Rim: a brief introduction and outline

Paul S.C. Taçon

Alan Thorne's Legacy and the University of Sydney

Denise Donlon

The Alan Thorne Cast Collection of World Wide Human Variation

Colin Pardoe

What Came out of the Groves and Thorne Show? The role of dialectics in palaeoanthropology

Colin P. Groves

The Toba Super-eruption and the Third Way between Multi-regional Evolution and Out of Africa

David Bulbeck

Core and Periphery: lithic core technology and modern human expansion out of Africa to Australia

Chris Clarkson

Upper Pleistocene Human Evolution in Southeast Asia: recent research at Maludong locality, Yunnan Province, Southwest China

Darren Curnoe, Ji Xueping, Bai Kanning, Andy I.R. Herries, Bao Zhende, David Fink, Luo Qiaoying, John Hellstrom, Su Bing, Paul S.C. Taçon and Zhu Yunsheng

The Homo Erectus Question: A widespread polymorphic species or exclusively a South East Asia (Java) species?
Debbie Argue

Through Sunda to Sahul: which way Down Under?
Michael Westaway and Colin P. Groves

11.30 – 12.30 pm

Keynote Speaker Professor Margaret W. Conkey
The Cave Man Mystique and an Archaeological Rebuttal: Fieldwork in the French Pyrénées and Archaeologies of Landscapes

2.00 – 3.00 pm

Corrigan's Room

Film - The Lake Mungo Project (working title)

3.30 – 5.00 pm

Corrigan's Room

AGM - Australian Archaeological Association

SESSION AND PAPER ABSTRACTS

Session 1: Rethinking Cultural Heritage in the Asia-Pacific

Session convenors: Sue O'Connor and Denis Byrne

Format: 10 minute papers

Session Abstract: While considerable research and on-ground project work focuses on the interface between Indigenous/local people and nature conservation in Protected Areas in the Asia-Pacific region, the interface between such people and the cultural heritage of protected areas has not received this attention. This partly reflects a tendency by nature conservationists to construct protected area landscapes as wilderness, a mindset that inevitably leads to the physical imprint of local culture, both past and present, on the landscape being downplayed. To this extent, cultural values of protected areas are eclipsed discursively by natural values. This session aims to bring together information on the current mechanisms in place in the region to conserve the cultural heritage values in protected areas that are associated with local people living in and/or around protected areas. It will provide an overview of the extent to which local communities have been engaged in assessing the significance of this heritage and conserving it, and the extent to which protected area management regimes have variously allowed, facilitated or obstructed continuing cultural engagement with heritage places and landscapes, and the problems agencies have with protecting and managing cultural heritage places within protected areas. To this end, this session consists of papers and a panel discussion to be presented by speakers involved with protected areas and cultural heritage management from the Asia-Pacific region.

Papers:

1. What is heritage studies and where should it go?

Laurajane Smith (Australian National University)

In this paper, I will examine the nature of heritage studies and identify its potential and limitations. Although scholars talk about heritage studies, and they talk about critical heritage studies, to many people it is entirely unclear what heritage studies is. Heritage studies is a term that has been more widely used in Europe than either the US or Australia, but I believe that there is a great deal that Australian work can offer to making concrete what an integrated sense of heritage studies can be.

In illustrating this paper, I will draw on work from the UK and Australia, look at the idea of the authorised heritage discourse, and map how both this discourse came about and the political work it does in confining heritage practices and the way we think and write about heritage. I will also offer a way of rethinking heritage, in opposition to this discourse, that redefines heritage not as a 'thing', 'place' or intangible event, but rather as a cultural and political process of meaning re/creation and negotiation.

2. The Cultural Landscape – the ontology of a concept and why it matters

Lesley Head (University of Wollongong)

This paper takes as its departure point the apparent paradox that the cultural landscape concept has become stronger as a cultural heritage management tool (particularly in Australasia), just at the time it has been subject to sustained critique (particularly in the North Atlantic) in its home discipline of geography. In Australia, geographers Sue Jackson and Jessica Weir have identified the contradictions inherent in indigenous people having to utilise a modernist (i.e. separationist) framing of 'culture' to argue for flows of water that they understand as being embodied in intimate relationships of mutuality that mix together human bodies with rivers, kidneys with lakes.

Does this represent just a lag between the whims of academic fashion and the slower moving apparatus of policy? Are there distinct geographical differences in usefulness of the concept? Or is there something genuinely ontological going on? Cultural landscape is a profoundly ambiguous term, including in its linguistic construction, and much of its work has been oppositional. It puts people and culture into landscapes that had been considered empty and natural. It facilitates a broader context for sites and buildings that have been

considered in isolation. Yet it does so in ways that are inherently dichotomous. Does this matter?

I discuss a range of views about whether the concept has outlived its usefulness, drawing on examples from the global north and south.

3. 'But why does it take so long?' International agendas, local livelihoods and regionalism in the protection of heritage in the Pacific Islands

Anita Smith (La Trobe University)

Continuing customary land tenure and resource use pattern the landscapes and seascapes of the Pacific Islands and the rights of customary land owners are enshrined in the Constitutions of many Pacific Island states. Although the vast majority of resources for heritage conservation in the Pacific are directed towards protecting 'natural' heritage, in the region's many protected areas 'natural' values are managed by customary owners under traditional systems governance, that is, through a cultural lens. The implications of this for the protection of the region's cultural heritage and implementation of heritage conservation programs under international Conventions and Agreements, non-government organisations and aid programs are discussed. Specific reference is made to projects in the Solomon Islands.

4. Indigenous Management of World Heritage in the Pacific: The Case of Chief Roi Mata's Domain, Vanuatu

Meredith Wilson (Stepwise) and Chris Ballard (Australian National University)

World Heritage sites in the Pacific are dominated by natural or prehistoric sites, rather than sites of more direct or substantial cultural significance to local Indigenous communities. In large part, this reflects the reluctance of state parties to either acknowledge or cede management control to Indigenous communities. The considerable challenges confronting Indigenous communities that exercise a degree of control over World Heritage sites are addressed through the case study of Chief Roi Mata's Domain, in Vanuatu – a cultural landscape in which the landowning community plays a central role in the management and economic activities associated with the site.

5. Selecting Archaeological Sites for the UNESCO World Heritage List: a case study of recent work in the Rock Islands/Southern Lagoon area, Palau

Christian Reepmeyer and Geoffrey Clark (Australian National University)

This paper reports on the selection process of archaeological sites and criteria for the inscription of the Rock Islands/Southern Lagoon in the Republic of Palau (Western Micronesia) as a mixed cultural/natural property on the UNESCO World Heritage list. An archaeological team from the Australian National University assisted the Bureau of Arts and Culture of Koror State to assess prehistoric stonework villages, rock art and burial sites in the Rock Islands in 2010. Palaeoenvironmental and archaeological data, including continuing oral traditions resulted in the decision to nominate the property under cultural criteria III and V as outlined in the World Heritage operational guidelines. The Rock Islands provide an opportunity to combine historical knowledge in oral traditions with scientific data about human-environment interactions in the past. Oral histories recount the migration of people from the Rock Islands to other parts of the archipelago and the final abandonment of the Rock Islands in the 17th century. Island abandonment and the formation of a relict landscape appears to have been a consequence of climatic change associated with declining precipitation during the 'Little Ice Age', population growth, warfare and the over-harvesting of marine resources.

6. Cape Bojeador Lighthouse: Beacon for heritage conservation in the Philippines

Eliza Valtos (University of the Philippines)

The Cape Bojeador Lighthouse in Burgos, Ilocos Norte in the Northern Philippines stands as a testament to the Ilokano's commitment to preserve and protect its rich cultural heritage. Recently declared a National Cultural Treasure, the Cape Bojeador Lighthouse is one of only 4 sites that have been awarded the title in the country. The success of conservation efforts of the tallest lighthouse in the Philippines is merely a culmination of decades-worth of conservation efforts in the region in general. Through the years a number of factors have slowly moulded the heritage conservation landscape of Ilocos Norte in particular, setting in place the current mechanisms that allow people working in cultural heritage management in Ilocos Norte some measure of success. This paper will present the factors and mechanisms

that have paved the way for the declaration of the Cape Bojeador Lighthouse as a National Cultural Treasure of the Philippines.

7. Changing Perspective on the Relation between Local People, Heritage, and Landscape: A lesson to/from Borobudur

Daud Aris Tanudirjo (Universitas Gadjah Mada, Indonesia)

Borobudur Temple Compound in Central Java is one of the World Heritage Cultural sites in Indonesia. Built in the 9th Century, this complex of three stone temples arguably became the greatest Buddhist monument in the world. The monuments became ruins only a few centuries after the centre of the Old Javanese Kingdom shifted from Central Java to East Java around the mid 10th Century. Although the local population who live around the temple compound had been converted to Islam, they still maintained their traditional ties with the monuments. They made offerings and performed traditional ceremonies and festivals in the temple complex.

The ruins had attracted the attention of many European governments since early 19th Century which led to the first efforts to restore the monument from 1907 – 1911. Such partial restoration failed to save the monuments. In the 1950's Borobudur was declared an endangered monument. The Indonesian Government, in collaboration with UNESCO then decided to carry out more comprehensive restoration which was executed between 1973–1983. To conserve the monuments, especially Borobudur, a protected area of about 90 hectare was established. The local population who lived close to the monument were resettled and since then they have had no free access to the monument. Meanwhile, the government founded a state-owned enterprise to manage the compound - Borobudur Tourism Park. The local population feel that they were separated from their heritage and they continue to struggle for their right to use the monument as before. This has become a source of conflict in the management of the heritage.

Being unable to use Borobudur, the local population continue to practice their traditional ceremonies and hold art festivals outside the protected area. As a result, they now identify not only with Borobudur, but also with the wider landscape surrounding Borobudur. In this way they have extended their cultural landscape. Occasionally, they hold Seven Mountains Festival in which communities from the Seven Mountain areas gather and perform their traditional dances.

Recently, there is also a growing awareness within the government that the policy to exclude the local population in the management of Borobudur Temple Compound was contra-productive. It is impossible to conserve the monuments without considering the natural setting or landscape as well as the local population as their traditional guardian. This perspective has been attempted to be implemented in the new management plan of the Borobudur Temple Compound which is not focused on the monument alone, but also the environment (landscape) and the local population.

My paper attempts to show that the establishment of a protected area is not always an effective means to conserve heritage. It may also have a higher social cost. Conservation policy should always consider the relationship between the local population, the heritage, and landscape.

8. Heritage as a Public Good? A case study from the World Heritage-listed Komodo National Park, Eastern Indonesia

Sandra Pannell (James Cook University)

The 1972 World Heritage Convention is commonly seen as a global response to local impacts upon natural and cultural heritage. With its emphasis upon universal values and a common humanity, the adoption of the Convention by the member states of UNESCO elevated the status of heritage to that of a global public good. In the thirty or so years of its operation, it is apparent that the World Heritage listing of many 'natural' and 'cultural' properties poses new challenges and threats to those societies living in or near these protected areas. With an ethnographic focus upon Komodo National Park in eastern Indonesia, I explore local responses to the imposition of this global protection and management regime.

9. Seeking Identity through Cultural Heritage in Timor-Leste: Archaeology, oral traditions and colonial architecture

Nuno Vasco Oliveira (State Secretariat of Culture, Timor-Leste)

The oldest dates for early human occupation in Timor-Leste, provided by the archaeology in the easternmost part of the country, are well accepted by Fataluko speaking communities there, as they confirm oral accounts by this ethnolinguistic group who see themselves as

being the first to have settled in the island. Government staff within culture departments who also hold relevant positions within the traditional hierarchical system, often mix these roles and jeopardize the official Government management system. After more than 450 years of Portuguese colonial rule, which left unique architectural marks in the form of forts, houses, churches and many other buildings, the newborn country decided to reintroduce Portuguese as one of its co-official languages – yet Portuguese colonial architecture, a unique and distinctive heritage feature within the region, is rapidly being replaced by more modern and uncharacteristic type of buildings.

In this presentation I will discuss a new legal framework for the protection of cultural heritage, in the making, as well as the potentials and challenges of using different manifestations of cultural heritage to help building a sense of national identity and pride in Timor-Leste.

10. Cultural Heritage and its Performative Modalities: Imagining the Nino Konis National Park in East Timor

Andrew McWilliam (Australian National University)

The establishment in 2008 of the Nino Konis Santana National Park, the first National Park of the newly independent nation East Timor, commemorates the memory of one of its heroic resistance leaders. The park is designed as an IUCN Category 5 conservation zone which permits multi-purpose use of the landscape including patterns of agriculture and forest utilization by locally communities. But its creation was primarily motivated by the high value bio-diversity and extensive stands of dense tropical lowland forest that blanket much of the eastern extremities of Timor Island. Ironically much of the forested area is composed of a highly enculturated mosaic of aged fallowed forest of former swidden gardens and settlement sites. Its very existence as a contemporary canopy forest is to a significant degree the result of a reluctant disengagement among local Fataluku communities in response to external pressures applied by successive colonial governments, especially in the form of coercive resettlement policies and restrictive security arrangements. While the effect has been an unsettling one that depopulated extensive portions of the landscape it has not erased the rich cultural, economic and spiritual connections that bind local communities to ancestral domains. This paper explores the idea of cultural heritage in terms of what I would call competing performative modalities of connection and significance; in this case between

the everyday place making projects of resident customary communities and the state making projects of institutional governance. Until now there has been little common ground for connection.

11. The WCPA's Natural Sacred Sites Taskforce: a critique of conservation biology's view of popular religion

Denis Byrne (Department of Environment, Conservation and Water, NSW)

On the face of it, it would seem that the recent enthusiasm for 'natural sacred sites' among conservation biologists in the IUCN can only be a good thing for cultural heritage. But with its focus on conservation outcomes, the 'natural sacred sites' discourse tends to domesticate popular religious practice, protestantising it as reverence for nature rather than as pragmatic interaction between local people and emplaced spirits. The focus of this paper will be on Thailand and will look at the history of the modern state's relationship with forests and popular religion. The paper argues that popular religion, with its emphasis on the agency of spirits and inspirited sites and the potential for negotiating with them, prefigures the possibility of a Latourean 'democratic' future of more equitable relations between human and non-human actors.

12. Indigenous Heritage in Southern Laos

Anna Karlström (University of Uppsala, Sweden)

In this paper I will present my forthcoming postdoctoral research project, which deals with questions of indigeneity in relation to archaeology and heritage management. The aim is to analyse the concept of indigeneity, considering how it is defined and used in Southeast Asian heritage management in general, and to explore its implications in Laos in particular. The focus is on last year's mining activities in Sepon in southeastern Laos, which have revealed not only rich copper deposits but also remains from ancient mining activities, older than 2000 years. This in turn has been adopted by the nation state of Laos as an important part of Lao national heritage. However, the Sepon area is inhabited primarily by ethnic minority groups that in some respects are considered the indigenous population of Laos, but in other respects are oppressed and discriminated by the nation state of Laos. Therefore, this specific area and the events that occur when a rich heritage site is discovered (or created) serve as

an interesting case to study how indigenous groups and the nation state respectively define and use indigeneity in relation to prehistory/history and heritage for different purposes.

13. Experiences from the Northern Territory in Participatory Monitoring and Evaluation of Jointly Managed Protected Areas and Cultural Heritage

Natasha Stacey and Arturo Izurieta (Charles Darwin University)

Over the last two decades, monitoring and evaluation of management effectiveness of protected areas has been increasingly applied at sites around the world. However, to date, research on and application of protected area management evaluation has not been considered for those areas with joint management (JM) arrangements. This is particularly the case in Australia where JM ventures have been in place for around 30 years. In the Northern Territory (NT), JM arrangements are set out in legislation and provide a framework for joint actions by Traditional Owners and the NT Government Parks Service towards conservation of biodiversity and recognition of cultural practices on Aboriginal land in 27 parks and reserves.

In this paper we describe and present results on a collaboration between the NT Parks Service, Traditional Owners and the Northern and Central Land Councils to build a participatory monitoring and evaluation (PME) framework for assessing progress towards JM at four parks. Through a participatory action research approach we facilitated workshops and meetings to produce and apply indicators to monitor and evaluate joint management. A series of assessments were then undertaken to assess the status of indicators and establish a baseline for each park. The results from the first round of PME activities have demonstrated similarities across parks in indicators identified by partners to assess joint management. We discuss indicators identified to measure effectiveness of cultural heritage management and share some lessons from the project.

14. Githabul Cultural Heritage – cultural strength in SE Australia, and a plan for the future

Doug Williams (Githabul elder) and Nick McClean (Australian National University)

This paper presents the results of a project assessing and mapping cultural heritage with Githabul people in NE NSW. A collaboration between Githabul Working on Country (a

Traditional Owner run land management organisation in Kyogle) and the Australian National University, this project collected pre-existing published material on Githabul history, cultural sites and practices, and undertook use and occupancy mapping as a basis for planning future management strategies for Indigenous heritage places and values in Githabul country.

15. Landscape Archaeology and Community Ownership as the Mechanism for Establishing a Protected Area across the Yoolberup Wetland Complex: A model for integrating natural and cultural heritage management in Australia

David Guilfoyle (Applied Archaeology Australia), Harley Coyne (Department of Indigenous Affairs, WA), Vernice Gillies (Albany Heritage Reference Group Aboriginal Corporation) and Cat Morgan (University of Leicester)

In this project, a local community group directed a process of engagement and consultation focused on the management of a heritage complex associated with a wetland system known as Yoolberup. This led to the formalization of the community group into an incorporated body, functioning as a heritage reference council, and resulted in a successful land acquisition proposal of a block of land adjacent to the wetland, and the development of a larger protected area. From here the group became the “lead agent” in the development and implementation of a management plan to conserve and/or restore the natural and cultural heritage landscape. This has involved detailed archaeological investigations, a series of training programmes involving the local community members, the integration of a number of other government and NRM programmes, development of a legal framework for the protection of traditional knowledge and community ownership, and a number of direct conservation outcomes. This process, described in this paper as a methodological framework in placing cultural heritage values - and methods of their assessment and management - as the prime agent in the development of protected areas, has also facilitated the expansion of the activities of the community group and directed other heritage management programmes in other areas with similar results. This presentation includes a short DVD documentary on the project.

Session 2: Earthen Mounds in Australia

Convenors: Colin Pardoe and Sally Brockwell

Format: 10 minute papers and panel discussion

Session Abstract: Archaeological interpretations of hunter-gatherers often included nomadism in descriptions of the nature of their territorial organisation. The origins of such models were drawn almost exclusively from societies in the Arctic, Kalahari and Centralia – deserts all.

Our understanding of the nature and distribution of populations has progressed considerably since those days. In this session we propose to gather together present understanding of one main feature of residential and territorial organisation in the archaeological record: the earthen mound. We aim to bring the audience up to date on research over several decades, describing current knowledge of basic questions: antiquity, distribution across the landscape (both regional and local), structure and function[s]. In this way, we also hope to point out the astounding lack of knowledge of this most important feature in the archaeological record.

For example, the largest constructed residential site in Australia is an earthen mound on the Hay Plain in southwestern NSW and there are fewer than 60 dates for earthen mounds in Australia.

Regional studies in Australian archaeology are fairly common, being found in publications, monographs, theses and reports. Focus on a single site type is less common and there have been only a few investigations into earthen mounds. In northern Australia most studies have focused on shell mounds and coastal and estuarine exploitation, even though earthen

mounds are a common residential site type on the coastal plains. One of the aims of this session is to redress this imbalance.

Papers:

1. Earth mounds and the Significance of Site Formation Processes

Daryl Wesley (Australian National University)

Earth mounds are an enigma in north Australia if the normal rules of site formation processes and taphonomy are to be applied to a site in the wet-dry tropics. Tropical monsoons, prevailing climate conditions, and poor acidic soils weigh heavily against the likelihood of organic materials surviving to build up in an open site environment. A review of excavated rockshelters, sites that are relatively protected from the environment, in Kakadu reveals the marked absence of organic content in many sites that do not contain shell middens, with the exception of Nourlangie Rock. This paper discusses earth mound phenomena focussing on earth mounds from the Reynolds River region, Northern Territory. Earth mounds have contributed significantly to the international discourse on many archaeological societies. Site formation processes are critical to interpreting the significance of earth mounds in the archaeological record, especially when the significance is likely to have major implications for understanding social complexity and resource use.

2. Profile of a 1350 year-old (600 AD) Aboriginal Earth Oven at Hope Inlet, near Darwin

Philippe Puig (Energy Resources of Australia Ltd) and Patricia Bourke (Heritage Branch, Department of Natural Resources, Environment, the Arts and Sport, NT)

Clusters of conical coastal/estuarine earth mounds occur on the Hope Inlet coastal plains, 25km north-east of Darwin. Excavation of one of these earth mounds revealed a stratigraphic profile showing a hearth-like lens of fragmented and burnt mollusc shell, mammal, reptile, bird and fish bone, crab, macropod teeth remains, laterite stones, charcoal, termite material and stone artefacts. Late 19th century ethnographic accounts (Basedow 1907:27) describe kangaroo being cooked in earth ovens in a manner consistent with these archaeological remains. Analysis and dating of shell and charcoal from this mound suggests use as an earth oven around 1,350 years ago (600 AD), at a time when earth

mounds proliferated in this region, along the margins of newly formed freshwater wetlands (Brockwell 2006).

3. Earthen Mounds and Climate Change in Northern Australia

Sally Brockwell (Australian National University)

Recent research into shell isotopes from the Top End demonstrates variation in temperature and rainfall, indicative of an increasing trend to aridity from 2,000 to 500 cal BP. Observed changes in Aboriginal mollusc exploitation during this period reflect broader coastal environmental transformations associated with late Holocene climatic variability. It has been proposed that some populations may have relocated from a less productive coast line to recently emerged resource rich sub-coastal wetlands. This paper tests this hypothesis by examining evidence from the Adelaide River earth mounds, located adjacent to freshwater floodplains some 50km inland from the present day coast.

4. Preliminary Results of Investigations of Earthen Mounds at Weipa, Western Cape York Peninsula

Michael Morrison (Flinders University) and Justin Shiner (Rio Tinto-Alcan)

Recent ongoing research and cultural heritage management activities near Weipa on western Cape York Peninsula have identified numerous low earthen mounds. These bear strong similarities in appearance to published descriptions of anthropogenic mounds from coastal Arnhem Land, in the Northern Territory. They are frequently associated with low density surface deposits of stone artefacts and marine shell, and are found on narrow, seasonally waterlogged alluvial plains near tidal creeks. They have also been identified on a post-contact mission site in association with surface deposits of historic material and remains of built structures. This paper presents preliminary results of excavations and radiocarbon dating of some of these mounds and considers whether they were formed by people, or alternatively represent natural processes of accumulation, including formation by the scrub hen, Megapodius reinwardt.

5. Earthen Mounds in Southeastern Australia: distribution, residential patterning, soul food and string

Colin Pardoe (Colin Pardoe Bio-Anthropology & Archaeology)

Earthen mounds are found across the Murray – Darling Basin in southeastern Australia. In most cases they occur adjacent to wetlands and result principally from continuing use of earth ovens for cooking.

While many foods would have been cooked in such ovens, there is one staple, or 'soul' food, that defines many of these cultures. Cumbungi [bulrush, Typha spp.] contributed not only a major carbohydrate staple to the diet of groups resident in wetland areas; it also contributed fibre in large quantities for string, the major technological item of these groups. While some archaeologists in this region have tended to concentrate on the durable stone items [such as grinding implements, axes and hammers], string provided the hunting and fishing nets, bags, and bindings necessary to make a living in these ecological zones.

It is difficult to infer settlement patterning from the distribution of mounds, given our lack of chronological detail in the development and use of earthen mounds. It is the case, however, that these mounds indicate fairly large numbers of people residing for long periods of the year at one location. Such residential patterns indicative of considerable numbers and density should be seen as more typical of populations in Australia than the more nomadic ones living in arid regions.

6. Constructing Cultural Landscapes on the Hay Plain: heat retainer cooking and earth mounds

Sarah Martin

Large areas of the Murray Riverine Plain can be described as inscribed, constructed or even monumental cultural landscapes, characterised by mounded cultural deposits, regionally known as 'earth mounds', 'oven mounds' or just 'mounds'. The field description, excavation and analysis of such mounds located in widely separated areas suggests that the contents of mounds are partially derived from the use of heat retainer ovens or similar features that utilized baked clay, termite mound or stone heat retainers to cook food (Berryman & Frankel 1984, Coutts et al. 1979, Klaver 1998, Martin 1996a, 2006, 2010, Williams 1988). Excavations of two very large mounds on the Hay Plain, Ravensworth 3 and Tchelery 1, indicate that they

were relatively rapidly built up over 300-600 years by concentrated and repetitive activities involving heat retainer cooking. The Pleistocene technology of cooking in heat retainer ovens transformed during the mid Holocene into new and specific patterns of distribution and use of place. This paper provides details of mound chronology, contents, and economic and social functions, and concludes by proposing a fundamental explanatory model for the tightly bounded spatial and temporal patterns of mounds in Australia.

7. Mounds and Burials

Judith Littleton (University of Auckland)

Burials and mounds are clearly associated in some parts of Australia (for example in parts of the Murray-Murrumbidgee plain), but not in others. Ethnohistoric and archaeological evidence for mounds as burial places is reviewed and a series of questions addressed: are burials within mounds evidence of a distinct preference for this sort of location; is the number, density and distribution of burials patterned within and between regions; and what is the sequence of occupation and burial? The association of mounds and burials as coincidence or a distinctive and highly patterned facet of burial practices in some parts of Australia is considered.

8. When is a Mound not a Mound?

Philip Boot (Aboriginal Heritage Regulation Unit, Department of Environment, Climate Change and Water, NSW)

Problems have occurred with the unilateral and arbitrary re-classification of all NSW coastal shell middens as ‘earth mounds with shell’ on the Department of Environment, Climate Change & Water NSW (DECCW) Aboriginal Heritage Information Management System (AHIMS) which is the NSW ‘Aboriginal site register’. This paper is a cautionary tale for those who wish to obtain information from the AHIMS database. Although mounded middens do occur on the NSW coast, they are particularly rare south of Wollongong and very few if any recorded mounded middens could be described as earth mounds. Data on earth mounds and possible solutions to the problem will be discussed.

9. Earth Mounds in Southwestern Victoria: 20 years on

Elizabeth Williams (Commonwealth Department of Sustainability, Environment, Water, Population and Communities)

Liz will give a short summary of her extensive research into earth mounds in south-western Victoria undertaken in the 1980s. She will summarize the issues and debates involved in the study of earthern mounds in Australia.

Session 3: Linear Landscapes: transects through space and time

Convenors: Peter Veth and Sharon Sullivan

Format: 15 minute papers

Session Abstract: The Silk Road, Kokoda Trail and Canning Stock Route all have iconic status - for a range of imagined and actual events and historic associations. They provide unique windows into cross-cultural exchanges, trade relations and deep histories of connection. Questions concerning identity, information exchange, territoriality, mobility and resourcing can all be addressed by these archaeologically-primed transects of vast landscapes. This session will feature Indigenous, contact and historic linear landscapes and the sites, places and entrepots which populate them. Papers will feature new methodologies and opportunities for inferring past human behaviours between different social, cultural and language groups.

Papers:

1. The Central Australia Archaeology Project: The linear landscape of the Overland Telegraph line

Judy Birmingham and Andrew Wilson (University of Sydney)

Within little more than a decade of the first European incursions into Central Australia the completion of the Overland Telegraph line in 1872 formed a 3000 km long transcontinental transect from Port Augusta to Darwin. The 10 permanently staffed repeater stations at intervals along the line and track beside it became the conduit for interactions between Europeans and Indigenous peoples. The Central Australia Archaeology Project (CAAP) set out

to investigate the realities and potential of surviving archaeological evidence to elucidate these processes of cultural interaction.

Using examples from several significant sites this paper explores both methodological and theoretical aspects of analysing the archaeological evidence recovered from telegraph stations, police posts, missions, mines and pastoral stations characterised by surface scatters of abandoned material of both European and Indigenous origin.

Extensive site mapping and GIS-based spatial analysis of features, structures and quantified artefact scatters enabled us to identify archaeological signatures of interaction processes. The analyses presented here move beyond the concept of European-Indigenous shared landscapes and shared histories towards the more multifaceted realities of cultural interaction revealed in the archaeology of this complex linear landscape.

2. Linear landscapes as Cultural Heritage: case study of the Canning Stock Route

Diana James and Sandy Blair (Australian National University)

In 2005, the World Heritage Committee added a new category under which properties can be listed on the World Heritage List for Outstanding Universal Value – that of 'cultural routes'. This concept builds on the idea of routes as linear cultural landscapes, but of a very dynamic and significant type, often reflecting high levels of population movement, encounters, cultural exchanges and cross-fertilisation taking place across big spans of both space and time. Applied to the Canning Stock Route, it is a useful tool for understanding the richly-layered natural and cultural values of this expansive and ancient linear landscape of the Western Desert. Our presentation draws on the ARC linkage project, Canning Stock Route Rock Art and Jukurrpa: cultural heritage and environmental management, and work undertaken, in some cases over many decades, by ANU researchers and Western Desert custodians.

3. Across the Line: Strategic planning for development west from the Hunter Valley

Phillip Purcell (Environment Protection and Regulation Group, North West Branch, Department of Environment, Climate Change and Water, NSW)

Whilst technological advancement in GIS and its application has increased our ability to view spatial information across vast landscapes, has it increased our interpretative capabilities? Archaeology is now immersed in a world dominated by technological advancements in gathering and displaying spatial data. Efforts to interpret archaeological spatial patterning for revealing how landscapes were used and perceived by hunter-gatherer societies appear somewhat dormant by comparison. How can the notion of the 'linear landscape' be applied to landscapes that reveal Aboriginal prehistoric landuse and movement including the historic catalysts that shifted landscape occupation and movement? Archaeological interpretations of human interaction with landscapes require an evocative approach that captures the imaginations of a 'conditioned' public about hunter-gatherer societies and their past use of their lands. An approach that envisions attachment at the linear and landscape levels has benefits for establishing group status, identity and optimal landscape protection regimes. Here I report on an Aboriginal cultural heritage assessment of forested landscapes within the Brigalow Belt South Bioregion. I have trialled and tested multi-disciplinary methods, including advanced GIS tools, and engaged in extensive community engagement. This, I will argue, has improved our ability to identify and interpret cultural landscapes in ways that better inform the public of heritage values with resulting benefits to regulatory decision making.

4. Iconic Victorian Path Pre-Captain Cook

Roark Muhlen-Schulte (R Muhlen-Schulte – Consulting)

Recent archaeological work between Dinner Plain and Mount Hotham has identified a string of Aboriginal archaeological sites along the ridge (The Great Dividing Range) connecting these locations. Carbon dating conducted for two of these places has verified that Aboriginal people habituated this section of ridge to within 10 years of the first arrival of Europeans here. It also places Aboriginal people in this same area 500 years before the arrival of Captain Cook in Australia. Is there more to Aboriginal presence in the Australian and Victorian Alps than simply Bogong Moths?

European pastoralists arrived in the Victorian Alps in the early 1840's, one of the first pastoralists, Angus McMillan with help from Aboriginal people made the journey to Omeo from the Monaro district about this time. A few years (1851) later Larnie, an Aboriginal man led stockmen Jim Brown and Johnny Wells (employed by the Gray family) from the Mitta

Mitta Valley to Cobungra (now known as Cobungra Station). From around this time pastoralists were crossing the Victorian Alps / the Great Divide over Mount Hotham with some regularity.

Other examples of European connection with the Victorian Alps, especially around Mount Hotham includes; the establishment of a hospice at Mt Saint Bernard in 1863, by Mother (Sarah) Morrell. Harry Power (aka Henry Johnson), an associate of Ned Kelly was active in the NE Victoria at this time, he and Ned likely crossed the Great Divide by the same tracks as the pastoralists during this period (1863-1864), which were also later followed by gold miners. These rough tracks over the Victorian Alps were made into a formal road in the 1890's under the guidance of Henry Morgan. What was surprising was that Europeans were able to pioneer a viable route over this section of the Great Dividing Range so early without the use of maps, aerial photography or satellite imagery. The proposition as to how it was done is simple; existing Aboriginal paths and/or those identified by Aboriginal people were followed, enabling Europeans to develop a route which not only led them directly over the Victorian Alps, but on a route which was the easiest.

5. The Significances of the Thai-Burma Railway

Joan Beaumont (Australian National University)

Since the Second World War the Thai-Burma railway has acquired a prominent place in the cultural memory and commemorative practices of those countries whose men and women became prisoners of the Japanese in 1942-45. In the past fifteen years Australians in particular have sought to claim iconic locations on the railway, such as Hellfire Pass (Konyu) cutting, as sites of Australian memory. However, this imposition of Australian commemorative practices and rituals on the Thai landscape is inherently fragile, given the different significance and meaning of the railway's history and its route to Australians and Thais. This paper will explore these differing meanings, the tensions between them and whether it is possible to identify shared transnational memory of the railway.

Session 4: Shifting Archaeology at the Shoreface: 21st Century challenges for investigating, interpreting and managing coastal archaeological sites

Convenors: Tony Barham and Marjorie Sullivan

Format: 10 minute papers

Session Abstract: In the wake of the Copenhagen Climate Change meeting, debate continues over impacts of expected global sea level rise this century. In Australia the planning responses for sea level rise, and likely infrastructure and landform impacts lack a consensus. What is certain is that resources, issues and political priorities will shift considerably in the coastal zone in the next decades, as interactions between coastal processes, landforms, built infrastructure, and cultural heritage management grab media attention as predicted sea level rise becomes a measurable reality for local communities. This practical problem, of how to confront expected climate-driven change at the shoreface comes at a time when academic interpretations and modelling of coastal archaeology and geomorphology remain theoretically diverse, and often inconsistent. Debate continues on issues which the public might think should be simple - such as differentiating natural from cultural shell accumulations in coastal landscapes or identifying tsunami evidence. Are shell middens proxy recorders of past climate shifts? Given the engineering realities of managing coastal retreat how will archaeological heritage fare? In Europe, significant resources have re-cast archaeological landscapes as part of continuing patterns of coastal inundation and regression, with Doggerland and Seahenge conceptually part of public archaeology. In Australia such perspectives are embryonic.

Papers:

1. Monitoring and Management of Cultural Heritage Places at the Shoreface

Mike Rowland, Meredith Roe (Department of Environment and Resource Management, QLD) and Sean Ulm (University of Queensland)

Anthropogenic global warming has now dominated academic and media discourses for over two decades. Some speak of catastrophe, others are more cautious, while some deny that any change is likely at all. We accept that climates will change as they have done in the past and that humans are having an impact on rates of change. We also emphasize however that a multitude of other factors will impact on the environment, especially those relating to population growth and related development and that these factors will have significant impacts on cultural heritage places.

Currently in Australia we do not have robust site monitoring systems that might identify the causes and directions of change in the coastal zone. We outline some approaches to monitoring that might prove productive. They range from a localised but inexpensive combination of anecdotal observations coupled with geoindicators to more centralised and coordinated Digital Elevation Models.

We argue that there have been very few long-term studies of cultural heritage management and monitoring in coastal areas and suggest that there is a need to establish a national clearing house for such studies similar to the National Clearinghouse for Archaeological Site Stabilisation based at the University of Mississippi.

2. Archaeological Records as Guides to Managing Coastal Retreat in Response to Rising Sea Levels: opportunities to forecast shorefaces of the future by hindcasting those of the past

Tony Barham (Australian National University)

Much research effort, public discussion and political activity is engaged in seeking to manage the rise in sea levels predicted for this century as a consequence of global warming. While the relative significance of eustatic rise, storm frequencies, storm magnitudes, tides, and sediment flux are likewise debated as key determinants of coastal erosion under a warming climate, there is a broad consensus that coastal erosion through shoreface retreat is underway, and will typify global coastlines during sea level rise.

Coastal erosion is in turn viewed as a threat to archaeological resources located in the coastal zone, an environment where archaeological stratigraphy is often already heavily impacted by settlement, industry and infrastructure developments. Spatially predictive GIS models of future erosion, some focused on Cultural Resource Vulnerability Indices, and often developed from 2-dimensional geomorpholgical models such as Bruun's law, are often invoked to suggest the ways in which sediment storage, both in dunes, beaches and subtidal areas will respond to coastal retreat driven by sea level rise.

This paper examines ways in which the lateral and vertical architectures of stratigraphy preserving archaeological sites may provide valuable guides to improving engineering models of likely coastal geomorphic responses to future erosion. The argument is explored that forecasting future coastal change at local embayment scales may benefit from improved hindcasting of the three-dimensional "landscapes" in which archaeological sites preserve. In particular, improved models of where and why coastal archaeological sites preserved in the mid- to late Holocene may provide valuable input data for mapping target zones for sustainable (and cost-effective) engineering protection and infrastructure/settlement relocation under policies of managed coastal retreat.

3. Aboriginal Heritage and Potential Sea Level Rise: modelling the impact and perspectives on management

Jessica Currie (Macquarie University)

Aboriginal heritage along the shoreface is particularly vulnerable to coastal processes. In the face of climate change, projections for rising sea levels, increased storm intensity, larger storm surges and changes to wind patterns are expected to result in coastal inundation and increasing erosion. Using Willoughby City Council, Sydney, as a case study, with a particular emphasis on the Middle Harbour foreshore, a 2007 third year Macquarie University group project used a Geographic Information System (GIS) to model the potential impact on coastal Aboriginal heritage. By basing the study on the mean high water mark and after updating the results to reflect the federal government's latest sea level projection of 1.1 meters by 2100, it was found that 30 sites are facing inundation by 2100 and an additional 26 sites will be within 1 metre of the projected rise and at risk of impact from king tides. As expected, the majority of sites under threat are middens, however, due to the steep topography some low lying rock shelters may also be threatened, including some with art

and deposits. Opportunities for managing these impacts are limited and in many cases intervention may not be culturally appropriate. This paper outlines the study above, together with research from my Honours thesis, and presents a variety of perspectives from members of Aboriginal communities, academics, archaeologists and land managers. It is concluded that any management actions will need to be considered on a case by case basis in partnership with the relevant Aboriginal communities.

4. Macassan and Mound Sites' Imminent demise? Towards addressing the threats of climate change to heritage values of the Northern Territory coast

Patricia Bourke (Heritage Branch, Department of Natural Resources, Environment, the Arts and Sport, NT)

As a legacy of centuries old contact between Arnhem Landers and South-East Asians, the remains of Macassan trepang processing places (a site type unique to northern Australia) represent a significant part of the Northern Territory's cultural heritage. So too the high significance of the Hope Inlet Archaeological Sites group, which represent a cultural shell mound building period 2500 to 500 years ago, has been recognised by its listing as a Declared Heritage Place on the NT Heritage Register. This paper reviews the threats of climate change to these types of valued heritage sites on the Northern Territory coast.

5. Equivocal Shell Deposits - tests and constraints to interpretation

Marjorie Sullivan, Philip Hughes (Huonbrook Environment & Heritage Pty Ltd and Australian National University) and Tony Barham (Australian National University)

A consulting task in the Port Hedland area of Western Australia, that involved the re-evaluation and salvage excavation of 23 cockle (Anadara granosa) shell deposits that had been recorded as shell middens, provided an opportunity to use geoarchaeological methods to test the origin and significance of the deposits. These 23 locations are typical of the extensive shell deposits that characterise the salt marshes and sand hummocks of the Abydos Plain, a flat coastal plain that covers an area of about 2,000 km2 between the mouths of the De Grey and the Fortescue Rivers. The salvage program evolved into a research project, with strong support from BHP Billiton Iron Ore.

The program involved close inspection of the sections of trenches through the deposits, an evaluation of the sedimentary structures excavated, collection of shell samples, assessing the state of preservation of the excavated shell, measuring the shells and undertaking a size distribution analysis (see paper by Pat Faulkner in this session), and dating about 100 individual shells using an AMS radiocarbon technique. Extensive excavation revealed that most of the deposits were chenier ridges, or were reworked by waves, but the question remained of whether any or all of the shells had been deposited directly from natural shell beds, or from shell middens. The shell dates indicated unexpected levels of variation within some shell clusters, and this calls into question the techniques that are used commonly to distinguish between natural shell beds and middens. In situations of severe disturbance or bioturbation shell populations may not be from a single source and may not represent contemporary deposits. This complicates further the methods that distinguish between natural shell beds, shell middens and reworked middens.

6. Natural vs. Cultural: morphometric and morphological investigations into the origin of Anadara granosa dominated shell deposits in Port Hedland, W.A.

Pat Faulkner (University of Queensland)

This paper explores the potential anthropogenic or natural origin of A. granosa shell deposits in the Port Hedland region of Western Australia via analysis of the shell assemblages. The primary focus here is on the size and age structures within the deposits. This requires an understanding of the biological and ecological characteristics of A. granosa, particularly emphasising patterns of growth, mortality and size frequencies. A review of commercial data, available natural population data and unambiguous cultural deposits provides a framework for assessing size frequencies. In this way an understanding of natural and cultural size frequency distributions can then be applied to ambiguous shell deposits as a means of potentially differentiating between natural and cultural formation processes. In this way, an additional line of evidence for the Port Hedland shell deposits can be provided in conjunction with geomorphic data as a means of assessing their origin.

7. What is there to Lose? The archaeological record on NSW's south coast

Sue Feary and Jackie Taylor (Department of Environment, Climate Change and Water, NSW)

A long history of archaeological research on the NSW south coast has produced rich information on a 20,000 year old relationship between human beings and the environment. Over the last half century, the emphasis on archaeological investigation has changed, from early excavations addressing fundamental questions such as antiquity, to site survey and salvage excavation of contemporary archaeological practice, driven by statutory requirements.

State and federal legislation identifies and constructs the archaeological record primarily in terms of its heritage value. Whether or not an archaeological site is protected from development is determined through bureaucratic processes, which include significance assessment. Traditionally, this assessment has focused on scientific significance but the increasing participation of Aboriginal people in cultural heritage management has drawn the archaeological record into political discourse on rights and social justice for Aboriginal Australians. Significance assessment of an archaeological site or landscape is now a complex pluralistic process, sometimes used by local Aboriginal communities to achieve goals beyond those of heritage protection.

A combination of increased development on the south coast and an apparent diminution of research interest by tertiary institutions has produced a situation where the main source of information on Aboriginal south coast history is coming from small-scale, quickly executed investigation driven by legislation requirements, with piecemeal and not always well formulated research questions. Little of this work is published and apart from the 'previous archaeological investigations' sections of consultants' reports, synthesis and critical evaluation of the increasing quantity of data is limited.

Without the big questions to provide research directions and guidance, the scientific significance of individual items of heritage such as coastal middens can be difficult to determine, and there is a danger of devaluing the intrinsic value of the archaeological record as a repository of past cultural and environmental information.

Session 5: Visual Landscapes: the role of rock art in mediating social relations through time and space

Convenors: Jo McDonald, Meg Conkey and Sally K. May

Format: 15 minute papers

Session Abstract: The movement of people and ideas through their social and natural landscapes has long been of interest for the disciplines of archaeology, linguistics and other related disciplines. It has also been an increasing focus of rock art studies internationally. In this session we will explore the idea of rock art as evidence for social action and how rock art researchers are addressing these questions. Participants explore whether changes in landscape-use can be identified through rock art studies and what methodologies have been successfully (and unsuccessfully) deployed to explore these issues. Theoretical approaches to interpreting change/movement of people/ideas from 'style' and 'form' will also be developed as part of these more specific discussions.

Papers:

1. Painted relationships: the production of distinctive anthropomorphic figures in the rock art of northwest central Queensland and their role in the negotiation of social interaction.

June Ross (University of New England)

There is a distinctive style of painted anthropomorphic figure, which has a limited spatial distribution focused around the Leichhardt, Argyll and Selwyn Ranges of northwest central Queensland. The standardisation of the form and its differentiation from rock art assemblages in neighbouring areas suggest that its production is likely to have been related to boundary maintenance over the last one thousand years. A fine-grained analysis of the anthropomorphic figures showed that within the standardised stylistic conventions, two different forms were produced, each in a different geographic context. These variations indicate that each form is likely to have functioned in mediating social interaction in a complementary manner. An increased need to mediate predictable social interaction would have become necessary with the expansion in widespread trade throughout the Lake Eyre Basin in the late Holocene, with the resulting movement of people and goods into and out of the area. In particular, the sourcing of valued raw material for the production of axes from within the heart of the region provided a significant economic, social and ritual resource for the trading network. The form of the art at specific locations related to traditional trade routes would have reaffirmed the affiliation of the inhabitants of the region to each other, while at the same time marking out their territory, thereby providing a means of governing the movements or behaviour of outsiders coming to the region to trade. I suggest that the artists utilised the graphic system to achieve a desired social outcome, while the viewer responded to the art by modifying their behaviour in some manner. Used in this way, rock art can be a powerful social tool that provides a means to reinforce social values, manipulate human behaviour and bring about predictable social interaction.

2. Facing Change: style and connection in "archaic faces" across Australia

Ken Mulvaney (Pilbara Iron/Rio Tinto)

When Warwick Dix, in the mid 1970s, located several face-like motifs in the Dampier Archipelago, Pilbara region, Western Australia, he surmised a connection with the 'archaic faces' in the Cleland Hills, Northern Territory, recorded by Bob Edwards in the late 1960s.

These faces were seen as very old and related to Australia's ancient past. Now, at the end of the first decade of the twenty-first century, with 81 facial representations currently recorded from the Dampier Archipelago and 50 others from 12 locations across Australia, it is possible to assess stylistic patterns and possible connections. Analysis of the Dampier data identifies four consistent structural forms which have some similarities with the other faces. In addition to the 'face' motifs, are anthropomorphic figures with elongated and patterned torso, and complex geometric designs both of which display possible links across the continent during the Pleistocene.

3. Advanced portable systems for non-invasive in-situ characterisation of Australian rock-art

Claudio Tuniz (The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy)

The composition and microstructure of archaeological materials is important to understand their origin and history, providing information useful for cultural heritage protection and preservation. Australian rock art, made by using both painted and engraved techniques, is particularly significant to understand the genesis of one of the first human cultures. Unfortunately, natural and human induced environmental effects are rapidly deteriorating this precious cultural heritage, which should be studied before it disappears. Systematic chemical and mineralogical analyses would help reconstructing the techniques used by the artist and also understanding the effect of climate and environmental change. Rock art often marks spiritual sites of great significance to Aboriginal people and the analysis should be done following protocols agreed with the traditional owners, without sampling paintings or rocks. Among several non-destructive analytical techniques, x-ray based methods have been widely used in the last years to characterize archaeological materials. Our group is developing devices for the in situ chemical and morphological analysis in the field, including remote archaeological sites. Compact and versatile portable systems for x-ray analysis can be developed thanks to progress in compact x-ray detectors and electronics. Portable systems can be designed for multiple analyses, including x-ray fluorescence, x-ray diffraction and microtomography. They are increasingly used in museums, galleries and restoration institutions for precious and non-movable objects. I will discuss the possible employment of portable x-ray systems for the in-situ analysis of Australian rock-art.

4. Drawing in the land – shifting relationships between people and land in the Upper Nepean River, of the Sydney Basin

Julie Dibden (Australian National University)

This paper examines changes in the relationship between people and land during the Holocene in the Upper Nepean catchment and the archaeological methodology used to explore this transformation. In the earlier phases of rock-art production a limited range of rock markings were created in a highly restricted geographic context. However, in the more recent past, the practice of marking land changed dramatically. This change is evident in a diversification of graphic imagery and gestural marks, and significantly, the geographic contexts in which they were made. The places which were chosen to be marked within the micro-topographic contexts of rock shelters also diversified and included the incorporation of congruent natural rock features in graphic construction. The methodology employed which examines the materiality of rock-art, the rock itself which has been marked, and its location within the environment, has resulted in richly textured and nuanced narrative of the dynamic relationship between people, land and rock-art as cultural praxis.

5. What bird is that? A painting of Genyornis newtoni from Western Arnhem Land

R. G. Gunn (Australian National University and the University of Melbourne) and R. L. Whear (Jawoyn Association)

A large painting of an unusual emu-like bird was recently recorded in Western Arnhem Land, Australia. Concordance with palaeontological evidence suggests that the painting is of Genyornis newtoni, the giant emu, which is believed to have become extinct in Australia around 40,000 years ago. This image raises two important questions: is the painting 40,000+ years old, or, did Genyornis newtoni survive in Western Arnhem Land until much more recently. Alternatively, are both questions correct?

6. From Altamira to Australia: Aggregation and dispersal as an explanatory framework for stylistic complexity in the Western Desert

Jo McDonald (Jo McDonald Cultural Heritage Management) and Peter Veth (Australian National University)

Meg Conkey's study of decorated antler/bone objects at Altamira highlighted the need to formulate explicit test implications of aggregation and dispersal in hunter gatherer settlement systems. She introduced the concept of diversity in design elements into the aggregation 'mix' of subsistence, social behaviours and ritual expression, thereby opening the door to rock art as a suitable element for archaeologists studying aggregation behaviour. This paper explores how Conkey's originally defined expectations and predictions for aggregation locales have been taken from Magdalenian rockshelters to petroglyph and pictograph sites, style provinces and culture blocs in the Australian Western Desert.

Session 6: Seascapes and Islands

Convenors: Mirani Litster and Duncan Wright

Format: 15 minute papers

Session Abstract: The marine realm is central to the economy and identity of maritime peoples. While landscape approaches to archaeological research are well-developed, our capacity to take a seascape approach to understanding maritime societies is under-developed and open to theorising. This session invites papers that explicitly explore the role of the sea in understanding how maritime societies operate economically, socially and ritually, and construct identity more generally. In particular, what special relationships do island societies have with the sea that extend beyond the basics of subsistence? As a fluid and dynamic realm, the sea has unique qualities that maritime people engage with in special ways that differ to landscape perceptions and engagements. Exploring these qualities and engagements is central to developing seascape approaches to archaeology

Papers:

1. Juru Spirituality and Ceremony: Preliminary results of excavations associated with salt flat stone arrangements at Mine Island, central Queensland coast.

Bryce Barker (University of Southern Queensland), Lara Lamb (University of Southern Queensland), Gudjuda Aboriginal Reference Group

In 2003 Ian McNiven published a paper in which he posited that stone arrangements on salt flats at Shoalwater Bay on the central Queensland coast were ritual sites relating to 'sea peoples' attempts to "spiritually manage and control their seas and ultimately orchestrate their seascapes". This paper describes identical forms of arrangements on salt flats at Mine

Island and posits that this unique form of ceremonial arrangement – duplicated at several sites ranging from Cape Upstart in the north down to Shoalwater Bay in the south - forms part of a culture complex relating to among other things a shared belief system explicitly linked to "spiritual engagements with the sea". A recent midden excavation directly associated with the Mine Island stone arrangements (one of literally dozens of associated middens) provides the first evidence of a possible temporal framework for the initial establishment of the stone arrangements and associated ritual practice.

McNiven. I. 2003. Saltwater People: spiritscapes, maritime rituals and the archaeology of Australian indigenous seascapes. World Archaeology Vol. 35 (3) pp 329-349.

2. From Little Things: Research arising from investigation of the Little Bay Midden, NSW.

Oliver Brown (Oliver Brown Consulting Archaeology) and Laura Farquharson (Godden Mackay Logan)

The Little Bay shell midden is the largest and most diverse relatively intact faunal deposit in the eastern Suburbs of Sydney. This makes it one of the most archaeologically significant sites in the region with regard to its rareness, representativeness and ability to address important research questions. It is also afforded high significance by the Aboriginal community in nearby La Perouse. This paper describes the site and the consulting archaeological investigation undertaken there in 2009 by Godden Mackay Logan. Following on from the management issues surrounding the site, the sample recovered from the midden has been used to address a number of further research issues, being: 1) methodological comments on the use of auguring in middens; 2) optimal foraging analysis of currently available species versus midden contents; 3) possible anthropogenic changes in relative abundance of two littoral gastropods, Nerita atramentosa and Cellana tramoserica; and 4) further evidence of culturally modified Nerite shells in southeastern Sydney.

3. A Scattered Landscape

Melissa Hetherington (Australian National University)

This presentation reviews the analysis of two large, open-site shell middens from Cape Preston, Western Australia that were excavated for mitigative purposes (s.18) in 2009. The project addressed two primary themes: First, key questions were addressed regarding the timing and patterns of late Holocene occupation and coastal resource use, as well as the

taphonomic impact of extreme weather on open sites. In contrast to the condensed lenses at Cape Preston, stratified middens across the coastal Pilbara vary from small, low-density surface accumulations at Cape Range, where surface collection is appropriate to distinctly stratigraphic mounds on the Abydos Plain. Second, it was recognised that mitigative excavation of stratified archaeological shell deposits in the coastal Pilbara is a relatively new practice and a standardised methodology for excavation is needed. Given that only two projects of a similar nature have been published prior to this excavation to establish radiocarbon chronologies and analyse food resource usage and is a high priority task. However, in a mitigative context, time or lack-thereof, is the primary setback for midden excavation and analysis. As such, the efficacy of the excavation techniques employed at Cape Preston was considered and recommendations introduced with the aim to help improve future efficiency for excavations conducted in a similar context. Collaboration between the ANU, CPMM, Traditional Owner stakeholders, Archae-aus Pty Ltd and AACAI has been essential and beneficial for this research.

4. Insular Ideas: The Archaeology of Isolation in the Wellesley Islands?

Daniel Rosendahl (University of Queensland), Sean Ulm (University of Queensland), Geraldine Jacobsen (Australian Nuclear Science and Technology Organisation) and Paul Memmott (University of Queensland)

Despite a rich ethnography documenting inter-island trade, exchange, contact and sea-crossings, ideas of isolation and insularity have been persistent in explanations of culture change in the Wellesley Islands. This paper peers back at the rationale for these ideas beginning with Roth's early observations of material culture and Tindale et al's observations of physique and genetics before assessing the notions articulated in more recent models against the available data. Earlier models maintain that systematic trade and exchange in the region developed in the recent ethnographic past and that isolation was the prevailing shaping cultural force through the deep past. Using an examination of the archaeological record, this paper assesses these claims of long-term isolation of the Wellesley Islands.

5. The Early Human Occupation of the Maldives

Mirani Litster (Australian National University)

This paper aims to present and review the archaeological investigations into the early human occupation period of the Maldive islands by Norwegian archaeologists in the 1980s and 1990s. The Maldives are located in the Indian Ocean and below Sri Lanka, and have been subjected to very few archaeological investigations. This has resulted in limited insight into the early human occupation period. Up until now, the investigations by Thor Heyerdahl have not received a detailed post-excavation analysis; however, this paper presents a preliminary analysis of these collections, in concert with other lines of evidence to present a discussion of the early Buddhist period prior to the introduction of Islam in 1153AD.

6. Initial Radiocarbon Dates and Otolith Analysis from Investigations into Ngarrindjeri Life Ways in the Lower Murray, South Australia

Christopher Wilson (Flinders University)

This paper will present new results from investigations into Ngarrindjeri life ways and occupation in the Lower Murray during the mid-late Holocene. In developing a locally specific model for change and continuity in this region, radiocarbon and otolith analyses have become fundamental in reconstructing human occupation, archaeological otoliths and the palaeoenvironmental record. To date, initial results have revealed three distinct periods of occupation for the Lower Murray including: an initial phase at 8500 calBP; an increase in riverine resource use from ca. 4500 calBP; and, ongoing occupation and settlement from 4500 calBP - present.

Session 7: Flying the Flags: Australian collaborative research overseas

Convenors: Tim Denham and Matthew Spriggs

Format: 20 minute papers

Session Abstract: Australian-based archaeologists are engaged in many exciting collaborative projects overseas with local and national institutions - in nations big and small. This session will focus on the experience of overseas collaboration: how it works; lessons learned; issues of academic colonialism, neo-colonialism and internal colonialism; and, tensions between international/national benefits and local aspirations.

Papers:

1. Seven Thousand Years of Death and Burial at Caleta Vitor, Northern Chile

Bianca Petruzzelli (Flinders University), Michael Westaway (Queensland Museum), Chris Carter (Australian National University), Mathew Cupper (University of Melbourne), Amy Roberts (Flinders University), Donald Pate (Flinders University), David Lambert (Griffith University), Calogero Santoro (Universidad de Tarapaca, Arica) and Jaime Swift(Australian National University)

Archaeological excavations at Caleta Vitor, Northern Chile, under the direction of Chris Carter and in collaboration with Calogero Santoro from the Universidad de Tarapaca were supported in June and July 2010 by a Flinders University archaeological field school. The excavations covered several thousand years of Chilean prehistory, including a rich marine archaeological record relating to the Chinchorro Cultural Complex. A full sequence relating

to the development of agriculture was also apparent in the landscape and included sites dating from the initial Early Horizon, the Tiwanaku Empire, the Aymara Kingdoms and finally the Empire of the Inka. The landscape is ideal for assessing the introduction of agriculture and understanding how it became an increasingly visible component of the diet. Due to the remarkable preservation of the Atacama, a striking element of the record comes from the evidence of the people themselves. The initial results of the bioarchaeological component of the field season are discussed and include an assessment incorporating OSL, C14, stable carbon and nitrogen isotope analysis and ancient DNA to reconstruct the prehistory of the people of Caleta Vitor. The research was designed to support the more extensive archaeological excavations and survey undertaken by Chris Carter into the diet and economy of the ancient inhabitants of Caleta Vitor and will provide important contextual information to a proposed nomination of the Chinchorro Cultural Complex to the World Heritage List.

2. The ANU-Vanuatu National Museum Collaborative Project in Vanuatu: archaeological research and public profile

Matthew Spriggs and Stuart Bedford (Australian National University)

The collaboration between ANU archaeologists and the Vanuatu National Museum has been ongoing since 1994. Our knowledge of Vanuatu's deep past has increased tremendously over the last 16 years but perhaps even more significant has been the public profile that archaeology, particularly of the foundational Lapita culture, has achieved during that time. We examine some of the public education efforts, media coverage in-country and in-Vanuatu reactions to archaeology during the last decade or so, and particularly during 2010 which may turn out to have been a watershed year in terms of the role of archaeology in Vanuatu society.

3. The Australian Cyprus Expedition – grand plans and mixed results

Judith Powell (University of Queensland)

Between 1937 and 1961, the Australian archaeologist James Stewart conducted a series of excavations in northern Cyprus and sponsored others. To the best of my knowledge these are the earliest overseas excavations led by an Australian archaeologist. In 1947 Stewart took up a position at Sydney University; the University created the country’s first

Department of Archaeology two years later. Although 'collaborative' is not a word easily applied to Jim Stewart, these excavations do highlight some of the problems and challenges of collaborative work overseas. Ambition, money, politics and difficult personalities – all played their part in making and breaking Jim Stewart's plans for a grand Australian Cyprus Expedition.

4. World Heritage in Papua New Guinea: The Kuk experience

Tim Denham (Monash University)

This paper explores the roles and relationships between national Papua New Guinea academics, cultural heritage managers and institutions, and those of international individuals and institutions in the nomination and management of the Kuk World Heritage site. These sets of issues will be considered with special emphasis on the local Kawelka community at Kuk.

5. Geomorphology, Palaeontology and Archaeology of the Walanae Basin, Southwest Sulawesi, Indonesia

Fachroel Aziz (Centre for Geological Survey, Indonesia), Adam Brumm (University of Wollongong), Gert van den Bergh (University of Wollongong), Iwan Kurniawan (Centre for Geological Survey, Indonesia), Mike Morwood (University of Wollongong), and Ruly Setiawan (Centre for Geological Survey, Indonesia & University of Wollongong)

There has been a long history of archaeological and palaeontological research in the Walanae Basin of Southwest Sulawesi, as well as consistent claims that patinated stone artefacts of the Cabenge Industry are associated with a highly archaic and endemic range of animals of reputed Lower Pleistocene age - including two dwarfed elephanoids (*Stegodon* and *Stegoloxodon*), a giant pig (*Celebchoerus heekereni*) and giant tortoise. Recent excavations by an Indonesian-Australian team have for the first time yielded a deep sequence of stratified deposits containing *in situ* stone artefacts and elements of this faunal assemblage. We argue that understanding the complex geological history of the region is essential for interpreting the significance and age of these finds.

Session 8: A Man on the Rim: Alan Thorne and Our Understanding of the Early Peopling of Australasia and East Asia

Convenors: Darren Curnoe and Paul S.C. Taçon

Format: 10 minute papers

Session Abstract: Alan Thorne has been a luminary figure of Australian palaeoanthropology for more than forty years. His enduring legacies include: developing the 'Multiregional Model' of modern human origins, the major global alternative to the 'Out-of-Africa' scenario; excavating, reconstructing and placing into an international context most of Australia's Pleistocene and earlier Holocene human remains; building bridges with Aboriginal communities and making anthropology relevant to Indigenous understanding of the past; sparking major public interest in human origins with his award winning television series 'Man on the Rim', at the same time inspiring a new generation of anthropologists and archaeologists; pioneering work in East Asia, especially through strong links with researchers in China and Indonesia; and training two generations of PhDs in Australian biological anthropology and archaeology.

The presentations in this symposium are dedicated to Alan Thorne. The symposium aims to cover major themes in Alan's research career and to present the latest findings in these areas.

Papers:

1. A Man on the Rim: a brief introduction and outline

Paul S.C. Taçon (Griffith University)

From the islands and estuaries of the Pacific to the desert sands of western New South Wales, from a remote corner of East Asia to a television screen near you, Alan Thorne could once be found adding to or calling upon his vast encyclopaedic knowledge of the human past. In this introduction to a session organised as a tribute to both the man and his career some of the many themes and issues Alan has always been interested in are briefly highlighted. In particular, his long-term interest in the peopling of East Asia is briefly discussed.

2. Alan Thorne's Legacy and the University of Sydney

Denise Donlon (University of Sydney)

Alan Thorne studied anthropology and anatomy at the University of Sydney from 1960 until the early 1970s. His PhD was concerned with what was to occupy him for many years to come – Kow Swamp and Mungo. During his PhD he also taught anatomy and physical anthropology and in doing so left a legacy of teaching in what is now the Discipline of Anatomy and Histology. Alan's expertise was in the fine attention to skeletal and dental variation. This presentation will give examples of how his legacy continues today in both teaching and research.

3. The Alan Thorne Cast Collection of World Wide Human Variation

Colin Pardoe (Colin Pardoe Bio-Anthropology & Archaeology)

During 2009-10, I had regular sessions with Alan in order to document and catalogue his collection of casts to prepare them for incorporation into the Shellshear Museum in Sydney where Alan studied as a young man under Professor N.W.G. MacIntosh. The Alan Thorne Cast Collection, once catalogued, clearly identifies Alan's intellectual interests, the direction of his research, and underpins the Regional Continuity model of human evolution that he developed along with international colleagues such as Milford Wolpoff and Wu Xin Zhi. In

this talk, I will discuss the Collection and how it relates to Alan's contribution to global human evolution as well as to his understanding of the colonisation of Australia.

4. What Came out of the Groves and Thorne Show? The role of dialectics in palaeoanthropology

Colin P. Groves (Australian National University)

In the 1990s, palaeoanthropology had its brief day in the Australian sun when journalists realised that Alan Thorne promoted the multiregional hypothesis of modern human evolution, whereas Colin Groves argued for the single-origin model, and public debates and broadcasts were organised. It all culminated in the award of an ARC grant which enabled us to go travelling to see the original fossils relevant to the origin of Homo sapiens. While true resolution was never going to happen, some new understandings did emerge. In this presentation, I will show briefly how we found new ways of looking at the terminal Pleistocene human populations of the Maghreb and Nubia and of the inhabitants of Klasies River Mouth; and how we shed light on the question of artificial cranial deformation in the Shanidar Neandertals.

5. The Toba Super-eruption and the Third Way between Multi-regional Evolution and Out of Africa

David Bulbeck (Australian National University)

The theory that Homo sapiens had evolved in Africa during the Upper Pleistocene, before spreading across Eurasia and replacing other hominins ('Out of Africa'), rose to prominence in the late twentieth century. The main opposing theory ('multi-regional evolution') was prepared to countenance some level of demographic expansion from Africa in the Upper Pleistocene. However, it argued that Eurasian hominins had interbred with the ex-African emigrants in establishing the ancestral gene pool for anatomically modern H. sapiens in each Old World region.

Both theories are called into question by recent research which suggests that Neanderthal DNA accounts for several percent of the nuclear DNA found in recent H. sapiens outside of Africa (Europe, China and New Guinea). Out of Africa would have predicted 0% while multi-

regional evolution would have expected a particular concentration in Europeans. One possible explanation for this unexpected result is that early H. sapiens in the Near East (Skhul/Qafzeh) had interbred with Neanderthals before retracting to North Africa when the climate became much colder at circa 120 ka. When H. sapiens from sub-Saharan Africa expanded across Eurasia tens of thousands of years later, interbreeding with the Skhul/Qafzeh descendants led to the slight presence of Neanderthal DNA in H. sapiens across Eurasia.

This scenario would be compatible with a Eurasian expansion of African H. sapiens at an earlier date than the circa 65 ka dating suggested by the mitochondrial DNA 'clock'. One view holds that this 65 ka estimate in fact dates the Toba super-eruption and its devastating impact on early Eurasian H. sapiens. The feasibility and implications of this view are reviewed in this paper.

6. Core and Periphery: lithic core technology and modern human expansion out of Africa to Australia

Chris Clarkson (University of Queensland)

A growing synergy exists between DNA coalescence ages, radiometric dates and skeletal remains, pointing to an early exit from Africa 60-80kya and colonisation of Australia and perhaps SE Asia by 50-60kya. This emerging story of modern human exit prior to the Upper Palaeolithic of Europe and South Asia requires a revision of current understandings of the archaeological signature of modern human dispersal, particularly lithic technology. This paper reviews current evidence for ancient lithic technologies along the dispersal route from Africa to Oceania, and presents preliminary results of a study of core technology from the oldest likely modern human sites along the southern arc. The paper examines ecological changes, population size, founder effects and mutations at the wave front of expanding populations as potential sources of increasing diversity, or loss of diversity, as populations expanded out of Africa.

7. Upper Pleistocene Human Evolution in Southeast Asia: recent research at Maludong locality, Yunnan Province, Southwest China

Darren Curnoe (University of New South Wales), Ji Xueping (Yunnan Institute of Cultural Relics and Archaeology, Kunming), Bai Kanning (Honghe Institute of Cultural Relics, Mengzi), Andy I.R. Herries (University of New South Wales), Bao Zhende (Mengzi Institute of Cultural Relics, Mengzi), David Fink (Institute for Environmental Research, Australian Nuclear Science and Technology Organisation), Luo Qiaoying (Mengzi Institute of Cultural Relics, Mengzi), John Hellstrom (University of Melbourne), Su Bing (Kunming Institute of Zoology, National Academy of Sciences, Kunming), Paul S.C. Taçon (Griffith University) and Zhu Yunsheng (Honghe Institute of Cultural Relics, Mengzi)

Alan Thorne has made a major contribution to palaeoanthropology internationally which includes pioneering investigations of hominin fossils in Southeast and East Asia. The peopling of Southeast Asia was an enduring theme in his work, and he constantly sought a connection between the region's earliest inhabitants and those of Australasia. Despite the comparatively large sample of Lower to Middle Pleistocene hominin remains, little is known about the Upper Pleistocene humans of Southeast Asia. In fact, the Australian human fossil record, much of it excavated by Alan Thorne, remains the largest sample of early modern humans for the whole of Asia. With this in mind, in 2008 we commenced a joint Australian-Chinese project to investigate the origin of modern humans in Southeast Asia, focusing on Southwest China. Here, as an example of our findings to date, we report on recent work undertaken at the locality of Maludong, Mengzi County, southern Yunnan Province. Our research follows from excavations undertaken by a Chinese team in 1989. We outline a revised stratigraphic sequence for the site and describe the first absolute dates to estimate both the formation of the cavern and sediments containing human remains and archaeological materials. An updated list of human fossils is provided which includes several new specimens identified by us from unsorted bags of materials from earlier excavations. Studies of several of the better-preserved human fossils show that Maludong contains fossils with plesiomorphic (archaic) characters as well as some with modern morphology. The emerging picture from Southeast Asia is one of overlap in both time and space between hominins of modern appearance and those evolved from the Middle Pleistocene populations. The disappearance of non-modern hominins in the region seems to have occurred surprisingly late in the Upper Pleistocene.

8. The Homo Erectus Question: A widespread polymorphic species or exclusively a South East Asia (Java) species?

Debbie Argue (Australian National University)

In 1964, Le Gros Clark defined H. erectus as distinct from H. sapiens and H. neanderthalensis and asserted a general consensus of opinion that H. erectus is ancestral to H. sapiens as the morphological characters of H. erectus conformed to a theoretical postulate of an intermediate stage between later species of Homo and the presumed common ancestor of Hominidae. This single lineage model of human evolution had earlier been articulated by Dobzhansky (1944) who proposed that 'All the phylogenetic transformations in Hominidae were always taking place within a single genetic system, a species consisting of geographically, but not reproductively, isolated races' (op. cit. 262). Dobzhansky's model contrasted to the prevailing 'classic' view that assumed the course of human evolution had been steadily divergent, producing a phylogenetic tree with many branches, the sole surviving branch comprising H. sapiens.

The tendency to place new hominin fossil finds in H. erectus, e.g. the East African crania KNM-ER 3733 and KNM-ER 3883 and skeleton KNM-WT 15000 reflected Le Gros Clark's single lineage model of human evolution, which appears to have become entrenched, apart from some exceptions, as a view that a single, long-existing, polytypic, widely dispersed species preceded H. sapiens and its immediate precursors. In the 1980s, however, the lumping of fossil Homo into H. erectus was explored in a number of publications; nevertheless the morphological boundaries of H. erectus continued to be stretched. The general augmentation of H. erectus and lack of agreement about the morphology of the species hinders any attempt to understand human evolutionary relationships in the Early Pleistocene. I undertake metric and cladistic analyses to test the hypothesis that H. erectus comprises a widespread polymorphic intercontinental species.

9. Through Sunda to Sahul: which way Down Under?

Michael C. Westaway (Queensland Museum) and Colin P. Groves (Australian National University)

A rethinking of the population history of Sunda has resulted from recent archaeological discoveries in Flores and Timor. Extending further back into the Pleistocene, reanalysis of hominin remains from the lower Sangiran units has added further detail to the story, indicating that a pre ergaster/erectus migration into the region may be represented in the

remains described by earlier researchers as ‘Meganthropus’. This is supported by the comprehensive analysis of Homo floresiensis. The evidence from biogeography is revealing unexpected information regarding the flow of populations from Sahul into Sunda. This holds implications for the movement of people back into Wallacea from the east. Almost forty years on from Thorne’s important paper ‘the centre and the edge’, what does this new evidence all possibly mean for the early population history of Sunda and Sahul?

Session 9: Wastelands: subversive spaces and landscapes of contemporary life

Convenors: Robert Maxwell, Annie Clarke and Ursula Frederick

Format: 15 minute papers

Session Abstract: The recent past is characterised by a superfluity of material representation in the contemporary landscape. Contemporary archaeology recognises the modern landscape as a diagnostic material resource. This resource has the ability to challenge assumptions regarding the 20th and 21st centuries based in historiography and memory. Archaeology allows the researcher to maintain an objective distance from the observable material, thus circumventing potential analytical complications of subjectivity or cultural embeddedness. Via the recognition of archaeological value in the modern landscape, contemporary archaeology asserts a continuum of human material behaviour which stretches from deepest prehistory into the present day - in the most immediate sense.

Until very recently, the modern world has been considered archaeologically null and void - the modern researcher existed in an archaeological vacuum, where value was ascribed to that which is archaic, defunct or forgotten. Contemporary archaeology, however, recognises archaeology as the evidential product of human interaction with the material. In this sense archaeology refers to anything with a material expression which is or has been culturally created, manipulated or mediated in the human past as evinced by that material expression. This includes our own cultural milieu and the landscape around us. By exploring the modern built landscape, we discover inheritances, superdepositions and stratigraphic relationships which living communities navigate and manipulate on a daily basis. This session is an

exploration of our own cultural footprint, and the recognition of value in the archaeology of the 20th and 21st centuries. We welcome papers that address any of these issues.

Papers:

1. Telco Takeovers: An archaeology of 'elevated' spaces in East Timor

Sue O'Connor, Sandra Pannell & Sally Brockwell (Australian National University)

The landscapes of East Timor could be regarded as 'geographies which struggle'. These are landscapes of disfigured places and abandoned spaces, of absences and obliterations, which dramatically convey recent histories of foreign occupation and local persistence. In post-occupation Timor Leste, perhaps, nowhere is this spatial struggle more apparent than on the knolls and hill-tops located throughout East Timor. In these crowded spaces pre-Colonial Indigenous fortifications abut derelict Portuguese postos and crumbling concrete edifices of Indonesian bureaucracy, and all via for space with newly-erected Catholic shrines, and that most visible symbol of modernity, the telecommunications tower.

While previously one of us explored some of the cultural factors informing the physical abandonment of sites in East Timor, in this paper, we consider the serial and sometimes coterminous occupation of hill-tops, particularly in the northern coastal town of Manatuto, and discuss the difficulties of identifying and disentangling the material signatures of use in these crowded spaces. In addressing this issue, also we touch upon the dialectics of structure and action, captured by the 'place-making' monuments of the recent past.

2. From the Backyard to Beyond: investigating the cultural significance of amateur satellites

Hannah Young (Flinders University)

Space has long captured the imagination of humanity; every culture, throughout space and time, has ascribed significance to the sky and its celestial bodies, proving that our fascination with the 'beyond' is deeply rooted within the human experience. However, despite this, and more than fifty years since the first human-made instruments entered orbit, we have been exceptionally slow to explore the connections that tie social life on Earth to the celestial realm.

Heritage and historical studies to date have focussed on national space programmes such as early satellites and human spaceflight (eg Vanguard 1 and the Apollo missions). However, from the earliest period of space exploration, and continuing today, amateur groups have participated by designing their own space missions with very different goals and outcomes. This project investigates the cultural significance of amateur satellites through applying Burra Charter principles. It is based upon the Australian amateur satellite Australis Oscar V, created by University of Melbourne students in the 1960s, and still in Earth orbit. This satellite, which nearly became Australia's first, is compared to the RMIT University project TOAST SAT from earlier this decade. Orbital space archaeology is an emerging field, and this project has expanded upon the identification of the human material culture associated with space exploration.

3. Wasteland and Wonderland: Bikini Atoll - from atomic bomb testing ground to world heritage cultural landscape

Steve Brown (Department of Environment, Climate Change and Water, NSW)

When the nude dancer, Micheline Bernardini modelled the bikini at a public pool in Paris on 5 July 1946, the blaze of publicity that followed the unleashing of the fashion icon immediately trivialised the humanly willed catastrophe wrought on Bikini Atoll and its Indigenous inhabitants four days previous. Between 1946 and 1958 a total of 67 nuclear bomb tests were carried out in the Marshall Islands, including in 1954 the world's first deliverable hydrogen bomb which destroyed three of Bikini's islands, created a crater two kilometers wide and 80 meters deep and produced radio-active fallout that resulted in the deaths of, and ill-health effects for, Marshallese, American and Japanese people and for the atoll itself.

In September 2009, I visited the almost uninhabited Bikini Atoll and made a preliminary documentation of the physical traces of nuclear testing – buildings, cables, causeways, a camp, jetties, machinery, antenna anchors, cultural plantings and landscape modifications. The presentation will outline the material evidence and will consider how the cultural landscape of Bikini Atoll has been (re)materialised and (re)imagined from a place for bomb testing to a place inscribed on the World Heritage list.

4. Prypiat as Pompeii – crisis and abandonment in the Chernobyl Exclusion Zone

Robert Maxwell (University of Sydney)

The Chernobyl Exclusion zone is a 30 square kilometre area surrounding the Chernobyl nuclear power plant, the site of one of the most famous events of the 20th century. On 26 April 1986 a sudden power output surge occurred in Chernobyl's Reactor Four. When an attempt was made for emergency shut-down, a further surge in power output occurred which led to a reactor vessel rupture and a catastrophic release of radioactive material into the atmosphere. Following the disaster the nearby city of Prypiat was completely abandoned over the course of two days. Built in 1970, Prypiat was one of the USSR's brightest examples of the 'Atomograd' or 'atom city' – a modernist industrial centre built in relation to, and dependent on, the nearby nuclear plant.

After the disaster the Chernobyl Exclusion Zone was installed to protect against further radioactive contamination. The exclusion zone also serves to preserve the archaeological integrity of the Chernobyl landscape and the signature of those two days in 1986. In this respect Prypiat, due to its isolation and contamination, has become a modern Pompeii; frozen in time in the shadow of its own Vesuvius. This paper documents field survey conducted inside the Chernobyl Exclusion Zone during October of 2010. It explores the relationship between ideology and archaeology in the creation of the Chernobyl landscape.

5. Battlefield or Gallery? A comparative analysis of contemporary mark-making in Sydney

Andrew Crisp (University of Sydney)

This paper will present an analysis of contemporary graffiti found in two suburbs of Sydney - Newtown and Miranda. The aim of my analysis is to examine whether the graffiti in these two contrasting suburbs has the same spatial and typological distribution. My research has examined the extent to which issues such as community visibility, interaction, and surveillance structure the distribution of graffiti. The results of my field survey have shown that areas of less access and lower visibility tend to trend towards greater amounts of graffiti and better quality of work while the opposite occurs for areas of high access. This comparative analysis is based on research by Travis Parno (2010) in Bristol and Orengo & Robinson (2010) in St Rock Street, Barcelona. Another contributing factor to the distribution of graffiti within the larger trend of access and visibility is the type of canvas selected, with

certain types of graffiti more likely to appear on certain surfaces within the urban streetscape. Analysis in line with that undertaken by Blake (1982) of declarative statements, which I have defined as 'slogans', in Miranda and Newtown have enabled an insight into community interactions and tensions within these two Sydney suburbs. The contrast of graffiti type and distribution between the study areas in Miranda and Newtown present compelling regional examples of what Iveson (2010) describes as the 'wars on graffiti and the new military urbanism'. This study presents a way for traditional archaeological methodology to be applied to a contemporary context and in doing so contribute to the understanding of a significant yet largely stigmatised urban social phenomenon.

6. The Archaeology of Destruction: Removal of the Sydney Tram Network

Peter Howard (University of Sydney)

From 1879 to 1961 trams were a feature of the City of Sydney. Despite record patronage in the mid 1940s the trams would disappear from the streets of Sydney by February 1961. This removal remains controversial to this day. By using the processes of destruction as well as the extant material traces of the system as a dataset it is possible to understand the role a calculated policy destruction plays in alienating a familiar utility from the public consciousness. What factors led to the implementation of such a policy? If the system was 'destroyed' then why do some items survive and other items not? The theories of contemporary archaeology, specifically those of Buchli and Lucas which look at the material strategies of used in the processes of remembering and forgetting, can assist in providing answers to these questions. They assert material culture shoulders the larger responsibility of our personal and collective memory. The corollary of this is that the decay or destruction of material culture brings forgetfulness. This research makes use of the archaeological remains and landscape remnants of the Sydney tram network to apply this argument to destruction of a transport system.

Session 10: Materiality and Narrative: constructing stories of people and place from objects

Convenor: Steve Brown

Format: 6 minute papers

Session Abstract: The purpose of this session is to stimulate thinking on the interpretation of archaeological material, and in particular the narrative potential of objects, by focussing on individual physical traces collected and analysed as part of archaeological practice. It also seeks to challenge archaeologists to construct pithy object narratives and deliver engaging presentations. The session will comprise a series of short presentations (6 minutes), each one interpreting an artefact or object. Presentations are sought that construct object narratives from the deep past to the contemporary past, that personalise the interpreted objects and contextualise meanings within a plurality of ideas, interests and belief systems. In keeping with the conference theme, presentations should consider the story and social meanings of each object in relation to understanding cultural and natural landscapes.

Papers:

1. 'Fishbone'

A short digital video produced and edited by Sarah Colley (University of Sydney)

The video will use visualisation and sound to present a series of interpretations and experiences associated with a fish bone from an archaeological site in coastal New South Wales. The aim is to use digital multimedia in an innovative way to create and present slightly different kinds of interpretations of objects with archaeological and other significances. Themes could include fish and fishing, coasts and seas, colonialism, Indigenous dispossession and survival, science and interpretation, taxonomies, digital archives, reference collections and visual aesthetics of fish remains. The video draws on content from the Archaeological Fish-Bone Images sustainable digital archive http://fish.library.usyd.edu.au/ developed jointly by Sarah Colley and Rowan Brownlee (University of Sydney Library). This contains over 500 still images of modern and archaeological fish remains from the Sydney region and was developed to support archaeological research on colonial and Aboriginal fish and fishing. However the final form and content of the video has yet to emerge. This is a deliberate exercise in creative and innovative presentation of ideas using sound and moving images. The aim is to cross boundaries between science and art. What it all means will depend as much on the reaction of audience members as on the intentions of the video producer.

2. 'A Story of Hafts and Shafts'

Harry Allen (University of Auckland)

Old Man [artist –recently deceased] worked with Nicholas Evans to record a story from his boyhood when he travelled from his home in North Central Arnhem Land across the Arnhem Land Plateau with his uncles to gather bamboo for spear shafts from Gundjeihmi country on the western border of Kakadu. Carrying heavy bundles of reeds, they returned via Djidbidjidbi and Bulawurru Billabong, and were met with cheers on their arrival. In a separate text of the same journey, recorded by Murray Garde, Old Man describes how these reeds were hafted with long iron wood points [Bokko]. This type of spear and this story intersects with other forms of evidence from Northern Australia, ethnographic,

archaeological and museological, raising some interesting questions, some of which will be explored in this presentation.

3. "The kangaroo teeth seem to have holes drilled in them….."

Sue Feary (Department of Environment, Climate Change and Water, NSW)

So said the forensic policeman in 1991, in his description of animal remains found with the skeletons of two Aboriginal people when floods washed away creek banks south of Canberra. The opportunity to examine the contents of the site was almost lost, due to a media-generated narrative explaining the red stain on the bones as coming from a settler's coffin made of red brick. Fortunately, the chance remark by the police prompted archaeological investigation by NPWS, generating another narrative, which turned a new page in the Aboriginal history of the Southern Tablelands. The burial was not only the oldest in the region, at 7,000 BP; it contained rare grave foods, including a possible necklace made from more than 300 kangaroo teeth.

4. 'A cake of spinifex resin'

Heidi Pitman (Flinders University)

An elongated, flattened, compact mass of dark brown.... a speckling of grass particles incorporated across its smooth, slightly lustrous surface...a subtle slightly sweet smell...exceedingly tough, like a rock, but surprisingly light for its size....

A cake of spinifex resin does not only have countless practical uses in Indigenous society, but may hold significant ceremonial meaning and play an important role in wider social networks. Perhaps it was made for hafting tools, as an adhesive for repairs, or for waterproofing a wooden container? Was it made to be used in the manufacture of objects of personal adornment, or to play a part in ceremony and be employed in the manufacture of a ceremonial item? This would have been a valued commodity; maybe this cake was made with the intention of being traded. This resin also has an intriguing beginning; skilfully collected and processed from the pointed leaves of Triodia spp. How was this resin cake made, and by whom, and what was its intended purpose? This paper aims to construct a

narrative of a spinifex resin cake and discusses the production of, and the significant role of spinifex resin within an Indigenous Australian context.

5. 'Scientific analyses and the narration of social context in rock art production'

Jillian Huntley (University of New England)

Rarely have the physical properties of pigments used to create rock art been studied to examine the social context of rock art production. Yet every choice from the selection of a procurement location to the preparation and application of pigment to the rock surface has been made within a set of structured social relationships. Recent advances in non-destructive compositional and structural analyses are making it possible to examine the physical evidence for rock art's social context without the constraints of opportunistic sample collection and destructive or composition altering sample preparation. In this presentation some preliminary results of one such analysis of pigment from the north-western Kimberley rock art assemblage is presented.

6. 'The Manly ground-edged stone hatchet'

Val Attenbrow (Australian Museum) and Peter Grave (University of New England)

In the historical descriptions of the Sydney region and south-eastern Australia generally, the ground-edged hatchet was a ubiquitous item. Both men and women used them, though they were more commonly described as used by men. They were recorded as being an item of trade, with many exchanges taking place at initiation ceremonies which were attended by people from across a wide area.

Archaeologically they are an important tool type as they can tell use much about past behaviour. Their appearance 3000-4000 years ago in southeastern Australia shows the introduction of a new technology. Studies by researchers such as Isabel McBryde show the extended distances over which such items travelled from the source of the raw material from which they were made to their find spot, having reached there by a variety of way: direct access, through trading partners, or down-the-line exchange. Non-destructive elemental comparison (PXRF) of the Manly hatchet with potential source rocks in the Sydney Region suggests that it comes from outside this area.

The Manly ground-edged stone hatchet was donated to the Australian Museum in 1995. The donor, Ms Gledhill, described how it had been given by an Aboriginal man to a young girl in Manly in the 1830s. Thus the Manly hatchet can be seen to represent a relationship as in pre-colonial times – however, one different to those earlier times – a relationship between two people from very different cultures.

7. 'The Salt Pan Creek Nulla Nulla: An archaeology of land rights?'

Paul Irish (Mary Dallas Consulting Archaeologists)

Though inherently interesting to behold, there are few known details about a wooden club with embedded horse-shoe nails from Salt Pan Creek off Sydney's Georges River. It might seem to be just another 'post-contact artefact' with little more to say that the fact that it exists. However historical descriptions, pictures and even movie footage of the Aboriginal camp from which it came allow us to place it in a much broader context of Aboriginal cultural survival and the struggle for civil and land rights in the early 20th century.

8. 'Man with hat and pipe—inscribing convict identities in time and place'

Tracey Ireland (University of Canberra)

An image of a man with hat and pipe is found on a rock surface on Devine's Hill, Wiseman's Ferry, close to the Great North Road and less than 50 metres from the site of a stockade. Grace Karskens' has explored how the myth and memory of convict road gangs is woven through the narrative landscape of the Great North Road, recently inscribed on the World Heritage List as part of the serial listing of Australian convict places. Grafitti, symbol or sign? Act of defiance, deference or dalliance? This image reinforces the focus on this place as a site of convict labour and all the connotations that this has for the reinvention of convicts as nation builders. As evidence of past lives, identities and relationships, the material presence of this image in the landscape conflates time, identity and place in a web of cultural memory.

9. 'Marooned! The old people, a dolphin and a model canoe'

Annie Clarke (University of Sydney)

Hazel painted this canoe for me. The old lady carved it, but Hazel painted it for me, with my name written proudly on the bow. It commemorates our boating adventure out there on the high seas of the Gulf of Carpentaria; a story of fieldwork madness, a dodgy boat motor, an unscrupulous mechanic, a cold night around a fire on a beach, the strength of the old people, a dolphin dreaming and a pair of dolphin earrings.

10. 'The materiality of plainware pottery in Polynesia'

Tom Sapienza (University of California, Berkeley)

Plainware pottery sherds are among the most abundant artefacts recovered from the earliest levels of West Polynesian archaeological sites, and yet relatively little research has focused on this material. Instead, most researchers have devoted their efforts to examining the decorated vessels in these pottery assemblages: beautiful ceramic wares integral to ancient Polynesian ceremonial life. While this focus has resulted in detailed understandings of these intricately decorated vessels, it has come at the expense of a clear picture of how the undecorated ceramic pots, which make up the vast majority of the pottery assemblages (~90%), fit into ancient Polynesians' daily lives.

This paper will explore the materiality and biography of a single ancient Samoan plainware pot, in order to demonstrate the ways in which even "merely utilitarian" pottery vessels could be important agents in structuring daily social practice. Performed with care, a narrative exploration of plainware ceramics could offer insights into the roles played by these quotidian artefacts. Even plainware pots were dynamic entities during their lives; the construction, use, and discard of each one would have involved multiple people interacting within and between houses, villages, islandscapes, and possibly even entire islands and archipelagoes.

Plainware pottery is an unglamourous artefact – especially compared to its decorated cousins – but its exclusion from Polynesian research, while certainly unintentional, is a research bias that should be rectified. By emphasising and focusing on the materiality of these common and plain potsherds, we will also be engaging more fully with the day-to-day practice of prehistoric Polynesian societies.

11. ‘Shalimar and Sukarno: the archaeology of a perfume’

Denis Byrne (Department of Environment, Climate Change and Water, NSW)

Guerlain’s 1924 perfume, Shalimar, found in the bedroom of President Sukarno upon his death under house arrest in 1970, has left a faint but detectable trail through the modern history of Indonesia. The archaeological materials here comprise the bottle, its liquid contents, and the vaporous emanations from this liquid adrift in space and perhaps time. The afterlife of Shalimar in the landscape of Bali, like traces of the tragic events of 1965 on that island, is now almost imperceptible.

12. ‘Enter Sandman’

Ursula Frederick (Australian National University)

In 2005 the National Libraries of Australia mounted an exhibition to showcase over 170 priceless treasures. Amongst Ned Kelly’s helmet and Governor Arthur’s proclamation there hung the blueprints for the Holden Special. The plans for this car reveal as much about designing a car as they do about designing national identity. But while the Special is celebrated in our institutions as an icon of post-war modernity and suburban bliss, I’ve come to realize the real star in the Holden family is the panel van. In this paper I describe the pleasure of holding the Sandman between your fingers.

Session 11: Education and Archaeology

Convenors: Wendy Beck, Sean Ulm and Lynley Wallis

Format: 10 minute papers

Session Abstract: Archaeology is a discipline which crosses the traditional Humanities/Science divide and has a greater breadth and diversity than many other professional disciplines. The archaeology employment sector is also expanding rapidly as a response to the resources boom. All these factors bring with them a particular set of challenges in preparing graduates for the workforce, which have been increasingly the focus of attempts to improve archaeology teaching and learning outcomes. In addition, external issues such as the new government focus on developing university discipline and degree standards and the national curriculum in History are also providing new pressures on archaeology as a discipline. In this session we invite papers from educators, students, employers and others which focus on extending the archaeology teaching and learning agenda in a proactive manner into the next decade.

Papers:

Part 1: Disciplinary 'Standards' in Higher Education

1. Profiling Australian Archaeology: Results from the Australian Archaeology in Profile 2010 Survey

Sean Ulm, Cameo Dalley, Stephen Nichols (University of Queensland) and Geraldine Mate (Queensland Museum)

Results from the largest survey of professional Australian archaeologists ever undertaken are used to explore a range of professional practice and training issues. The survey asked questions about the composition of the archaeological workforce, remuneration, professional activities, skills and qualifications needed to work in archaeology, and opinions on university learning and professional training. Results from the 2010 survey are compared with the first survey from 2005 to identify longitudinal trends. These data are crucial for benchmarking the current status of our discipline and for informed teaching and learning decision-making into the future.

2. Archaeology Education 'Standards' in Australia and the United Kingdom

Wendy Beck (University of New England) and Anthony Sinclair (Higher Education Academy UK and University of Liverpool)

Australian Archaeology has undergone a Subject benchmarking exercise in 2008, whereas in the UK Subject benchmarks have been in place since 2000. Not the least of the benefits of subject benchmarking has been the renewed focus thrown on issues of the institutional context of Archaeology education professionalization, training and the relationship of the academy to the wider profession. In Australia there is currently a debate about reaching consensus on disciplinary academic standards for higher education, in light of new government regulation from 2011. In the UK there has been a long debate between the professional and the academic sectors about the balance of vocational and academic skills taught in universities, set into the context of potential graduate employability with the benchmark a central pivot of debate. Legislative change to the professional sector in 2010, and government funding responses to the global financial crisis will sharpen this debate still further in the very near future. In this paper we compare the benefits of subject

benchmarking as observed for Australian archaeology with the UK experience in order to understand the future potential for Australian university practice.

3. Implementing Archaeology Benchmarks at the University of Queensland

Andrew Fairbairn and Clair Hughes (University of Queensland)

Higher education communities around the world are being challenged to develop common frameworks and subject benchmarking statements to serve as points of reference for curriculum design and the comparison of student outcomes. Australian archaeology is at the forefront of these developments in Australia following the publication of "By Degrees", a set of archaeology benchmarking statements with unanimous backing of academic institutions and professional organisations (Beck and Clarke 2008). This paper reports the findings of an investigation into the impact of the archaeology benchmarking statements when implemented in an Australian university, namely The University of Queensland. This investigation was a collaborative activity between the school and the university's academic development unit to monitor existing activity and to explore ways of enhancing effectiveness. The study had a particular focus on assessment. Implementation was investigated through the collation and analysis of course materials and through interviews with staff and students. This allowed the identification of evidence of early success in the implementation of the benchmark statements and also of factors that had contributed to their incorporation into the practice of both staff and students.

Reference: Beck, W. and Clarke, C. (2008). Benchmarking archaeology degrees at Australian universities. Australian Learning and Teaching Council and Australian Archaeological Association, Joint Implementation Committee for Archaeology Teaching and Learning. Retrieved 27 May, 2010 from http://www.altc.edu.au/system/files/resources/grants_pp_report_archaeology_une_mar09.pdf

4. Education and training in the cultural heritage sector: systemic issues and their implications for archaeological heritage management.

Amy Guthrie (Godden Mackay Logan Heritage Consultants), Tracy Ireland (Donald Horne Institute for Cultural Heritage University of Canberra), Richard Mackay,(Godden Mackay Logan Heritage Consultants) and Anita Smith (La Trobe University)

Heritage Victoria, on behalf of the Heritage Chairs and Officials of Australia and New Zealand, has recently completed a project reviewing education and training across the heritage sector. The project was undertaken by Godden Mackay Logan Heritage Consultants, La Trobe University and the Donald Horne Institute for Cultural Heritage at the University of Canberra. This paper will outline the research undertaken for this project and discuss its key findings, especially as they relate to the archaeological heritage management sector. Research undertaken included an audit of current education and training opportunities and an online skills needs analysis survey. Key findings highlight issues including the aging profile of experts across the sector, and a range of systemic factors which make it difficult to recommend any 'quick fix' responses to the issues identified. These systemic factors include the lack of:

- overarching national heritage education and training policy;
- industry benchmarks for heritage education and training outcomes;
- appropriate models for training in various sectors and at different career stages; and
- quality standards for heritage management and mechanisms for their enforcement.

This situation puts Australasia's cultural heritage at risk because:

- Students of heritage education and training have no formal indication of the adequacy and standard of current educational products in the cultural heritage sector;
- Potential employers have no assurance that graduates and trainees possess core competencies or knowledge areas relevant to their area of heritage work;
- Government and the broader community have no mechanisms to ensure best practice standards are maintained in heritage conservation, management and research; and
- Cultural heritage research, conservation, interpretation and management will stagnate and be ineffective without a sustainable educational foundation.

A key recommendation of the study suggests mechanisms designed to create demand for training and skills through improved long term planning, collaboration between education providers and regulatory authorities, and making grant funding and project approvals conditional upon the employment of appropriately trained specialists.

5. A Recent Graduate's View of American Archaeology Education

Elizabeth Hartnell (Flinders University of South Australia)

Within the United States, anthropology (and therefore archaeology) programs have been slow to shift towards curriculum that provide graduates with the practical skills for cultural resource management. Educators have typically expected archaeology students to receive their practical training at summer field schools and/or through research associated with higher degrees. Although well established in Australia, heritage has only penetrated the education system in the States more recently. Recent reconfiguration within some American departments has attempted to better prepare students for real world situations. A major impetus for the change has been tightened budgets and educational shifts towards interdisciplinary degrees.

After a general discussion of current American archaeology academics, I will highlight two recent examples that reflect a trend toward multidisciplinary and heritage focused approaches. The Industrial Heritage and Archaeology program of Michigan Technological University is housed within its Social Science Department in Houghton, Michigan and has grown beyond a masters program to include a PhD. The University of Massachusetts, Amherst established the Center for Heritage and Society last year by combining faculty from eight different departments. These examples will enable comparisons to the discussions of other presenters within this session and contribute to the dialogue of approaches to archaeological education in the next decade.

Part 2: Learning and Teaching Strategies in Higher Education

1. Capturing Archaeological Performance on Digital Video: Implications for Learning Archaeology

Sarah Colley and Martin Gibbs (University of Sydney)

In 2009 we started producing and editing our own short digital video clips about archaeological methods and theory. In 2010 a series of clips showing staff demonstrating key fieldwork methods was made available to students via You Tube http://www.youtube.com/user/ARCAUSYD to help teach an undergraduate 'Field Methods' unit at University of Sydney. Our paper will explain background to the project, present results from student questionnaire feedback on the videos, discuss staff and students' experiences of using digital communication technologies for teaching and learning and outline some challenges and potential benefits of using these kinds of technologies in communicating different areas of archaeological practice to audiences.

2. From the Moat to the Murray: Current field training at La Trobe University

David Frankel, Richard Cosgrove, and David Thomas (La Trobe University)

This paper will present the two current subjects which provide training in archaeological fieldwork and associated research procedures. A version of the TARDIS facility developed by Jay Hall has been constructed beside the Moat at La Trobe University. This is the focus of a Third Year subject "Approaches to Archaeological Research" which introduces students to issues involved in developing approaches to excavation, field procedures, documentation of excavations and the preparation of formal reports. A Fourth Year Honours subject is based at the Trust For Nature property at Neds Corner near the Murray in north-west Victoria. Here students work on archaeological survey, site recording and documentation within a management framework.

3. The Opportunities and Challenges of Graduate Level Teaching in Cultural Heritage Management

Lynley Wallis (The University of Queensland) Alice Gorman and Heather Burke (Flinders University)

In recent years there has been greater examination and discussion of teaching and learning in archaeology, and exploration as to how best to reconcile the sometimes competing interests of students, industry, teachers and university requirements. Greater concern has also been placed on the development of a cohesive set of graduate attributes (both within

and across departments and universities), and benchmarking of degrees. A key development in recent years has been the emergence of graduate level programs in archaeology and cultural heritage management across Australia and the contrast this offers to the standard and long accepted Honours degree. In this paper we reflect on the opportunities such programs afford to effect positive change in the training of graduates, as well as considering the challenges presented in such programs. Drawing on real life experiences of staff, students and industry partners of the Flinders University Cultural Heritage Management graduate program we demonstrate that carefully crafted graduate level teaching programs offer some solutions to the issue of providing students with a well-rounded degree, whilst also meeting the particular needs of industry to produce work-ready graduates.

4. Where's the McDonald's? How can lessons learned in the field be put to use in the classroom and beyond?

Melanie Fillios (University of Sydney)

Both students and seasoned archaeologists alike can recount tales of less than pleasant field experiences. While some of these experiences certainly make good stories after several beers, perhaps we could use that old adage and learn from our mistakes. Lessons learned in the field might just provide a good starting point to reconsider the basics and delineate the skills we need now, and will need in the future. Given the necessity of using the "hard sciences" in archaeology, coupled with the need to be au fait with the murky world of heritage legislation, perhaps we have lost sight of the necessity of first providing future archaeologists with a solid foundation. This paper offers some preliminary food for thought regarding how we might get back to the basics. Drawing on personal experience in the classroom, the field, and consulting, it examines some of the most common practical issues faced by new graduate archaeologists. It then provides some preliminary suggestions on how we might overcome some of these issues using a bit of cross-industry and academic collaboration (and a lot of dirt).

Part 3: Archaeology Outreach and Education

1. Extending the reach of archaeology and Australia's deeper past through the new National History syllabus.

Warren Clark (NSW National Parks and Wildlife, Mungo National Park) John Tunn (Parks Victoria), Darren Griffin (Wurrundjeri Aboriginal Heritage Organisation), David Milne (Queensland Museum), Trish Barnard (Museum of Tropical Queensland), Robert Biggs (Robinvale High School) and Michael Westaway (Queensland Museum)

The roll out of stage 1 of the new national history syllabus provides the opportunity to expose on an unprecedented scale future generations of Australians to Sahul's great antiquity. If done well, the new syllabus has the potential to address a range of issues, from promoting the conservation and protection of Aboriginal cultural heritage to encouraging a deeper appreciation of the complexity and significance of Australia's Aboriginal past. The great risk is that if engaging and intelligent content is not developed then the opportunity may be lost. We outline an approach incorporating not only new resources and training opportunities for secondary teachers but one that includes site visits for students with Aboriginal educators in areas representing a number of different school catchments. An approach that brings together traditional owners, secondary educators, and archaeologists is crucial to developing new learning materials for the successful implantation of stage 1 of the National History syllabus. Significant sites such the Willandra Lakes World Heritage Area already possess the resources and public programs to initiate the new syllabus. Other sites, such as Keilor, contain similar archives documenting complexity and change over deep time and have the potential to serve large metropolitan educational catchments through the targeted development of its educational resources. Together these unique educational resources have the scope to not only address the content of the new syllabus, but to serve as pilot studies to guide the development of the national history syllabus.

2. Keeping Country: a web-based approach to broadening indigenous engagement in cultural heritage management education

Stephen Nichols, Andrew Fairbairn, Patrick Faulkner, Annie Ross and Sean Ulm (University of Queensland)

The Australian archaeological community is strongly committed to increasing participation by Indigenous Australians in our profession, but has struggled to attract Indigenous

participants. In part this is due to a dearth of accessible, high quality information for potential Indigenous archaeologists, and indeed the wider community. There is still almost no coverage of Australian archaeology in schools and informed opinion about our profession is usually locked away within a university education, which still too few Indigenous Australians are able to access. Keeping Country is an initiative of archaeologists at The University of Queensland that aims to provide free training in cultural heritage management for communities across Australia through web-delivery of assessed, structured teaching units using Moodle, an open access educational software package. The concept, design, problematical launch and first 4 months of its operation will be discussed, including feedback from an Indigenous reference group, who were closely involved in the development, design and review of the project.

3. Gummingurru – A Community Archaeology Journey

Annie Ross and Sean Ulm (University of Queensland)

The Gummingurru Aboriginal stone arrangement site on the Darling Downs of Queensland was originally an initiation site attended by Aboriginal people from many parts of SE Queensland and NE NSW en route to the triennial festivals in the Bunya Mountains. The activities at Gummingurru and the Bunya Mountains included knowledge sharing, alliance making, trade and exchange. In recent times the journeys to and from Gummingurru have changed. Although knowledge sharing and alliance-making continue, there are now new aspects to the journey. In this paper we outline the social framework within which the current research project at Gummingurru is situated. We emphasise the community/researcher/student networks that have evolved over the past ten years of this community-based collaborative research project, and explore the positive lessons learned by all participants. We also outline ideas for future journeys in this place.

Session 12: Current Research in Papua New Guinea

Convenors: Anne Ford

Format: 15 minute papers

Session Abstract: This session will explore the range and diversity of current research being undertaken in Papua New Guinea. Important changes in landscape and subsistence use will be seen both spatially and temporally, through a range of papers that investigate different techniques, regions and time periods. This will include papers on both the highland, coastal and island regions of Papua New Guinea, from the earliest occupation in the Pleistocene, through to the recent Holocene and historic periods. Techniques for exploring archaeological landscapes will include current and innovative fieldwork, artefact analysis and sourcing, palaeoenvironmental analysis and stable isotope studies.

Papers:

Part 1

1. Linking the Landscape with Lithics: Investigating settlement patterns and subsistence economy in the Ivane Valley, Papua New Guinea.

Anne Ford (University of Otago, New Zealand)

Recent research at Kosipe in the Ivane Valley, Central Province, has shown valley-wide occupation during the late Pleistocene. Now dated as one of the earliest occupations in Papua New Guinea, the Ivane Valley has the potential to provide valuable insights into how early modern humans colonised new landscapes, coping both with moving into an unfamiliar high altitude environment at 2000 metres above sea level, and encountering a brand new

Gondwanaland flora and fauna. With stone tools forming the bulk of the assemblage, a life-history approach has been undertaken in order to explore how the various stages of procurement, manufacture, use and discard of the stone tools can provide information on how early modern humans used and moved around the Pleistocene landscape.

2. Starch Residue Analysis of Stone Artefacts from the Ivane Valley, PNG.

Judith Field (University of Sydney), Anne Ford (University of Otago), Glenn Summerhayes (University of Otago), Matthew Leavesley (University of Papua New Guinea) and Herman Mandui (National Museum and Art Gallery of Papua New Guinea)

Stone artefacts excavated by Glenn Summerhayes and colleagues from a number of sites in the Ivane Valley PNG, were sampled to determine if starchy use-related residues were preserved in adhering sediments. All artefacts sampled yielded starch assemblages, some of which contained grain morphologies consistent with tubers. Of particular interest were the results from the oldest dated archaeological levels (49-36ka) where yams, specifically Dioscorea have been identified. It is likely that during the period when the archaeological record was forming, local environmental conditions precluded the growth at yams at this altitude (c.2000m asl). As such, it is likely that these plants may have been transported, as an economically important foodstuff, during the period of first human arrivals in the region.

3. Diversity in Lithic Procurement Strategies on New Britain, Papua New Guinea.

Jim Specht (Australian Museum)

Lithic procurement studies have contributed significantly to the development of bodies of theory relating to a range of human behaviours. Within the New Guinea region, the focus has largely been on procurement of material for ground stone adze production in the highlands and on Woodlark Island, and of obsidian in Manus and West New Britain Provinces. Such sources are fixed point locations, in contrast to others that are dispersed across the landscape. The latter include chert in the sedimentary limestone areas of interior New Britain, where Pavlides noted a major shift in procurement patterns through time. The present paper offers an explanation for this shift through reviews of chert distribution, availability and accessibility. These are compared with procurement at the obsidian sources

of northern New Britain, and highlight differences that may have affected land use strategies through time.

4. Lithics and Land Use: a critical assessment of long-term research in the Willaumez Peninsula, Papua New Guinea

Robin Torrence (Australian Museum)

Among the most controversial issues in the prehistory of the lowland regions of Papua New Guinea is the history of plant use: particularly its relationship to the contested processes of 'domiculture', 'domestication,' 'cultivation,' 'agriculture,' and local vs imported vs transported crops and methods of food production. Ideally, analyses of stone artefacts should play a role in these debates through the detection of tool-use, but also in terms of the identification of patterns of land-use and mobility. Recent research in the Willaumez Peninsula of New Britain, Papua New Guinea was designed with just these questions in mind. Around 150 test pits chosen to sample environmental variability across two regions have yielded a wealth of stone artefacts from well-dated contexts. Given this ideal data set, how does the lithic data measure up to the significant questions? A long, hard, cold look at the potential of stone tool studies in the lowland tropics for monitoring land-use patterns produces some interesting surprises.

5. Holocene Skin Working Tools in Melanesia: tattooing and scarification?

Nina Kononenko (University of Sydney)

Skin ornamentation by tattooing, scarification and painting is widely practiced among contemporary peoples in the Pacific region. Scholars have proposed that tattooing of human skin using sharp points was introduced from SE Asia about 3,000-3,300 years ago and influenced the designs on Lapita pottery. Use-wear/residue analysis of small flakes and stemmed tools recovered from a range of archaeological sites in New Britain, Papua New Guinea and Vanuatu indicates that since tattooing and scarification began prior to 3,200 years ago, the practice was more likely to have been indigenous rather than introduced.

Part 2

1. Palaeoecological perspectives on the antiquity of Sago (Metroxylon sagu Rottb.) cultivation in Papua New Guinea

Simon G. Haberle, Jan Finn, Matthew Prebble and Geoff S. Hope (Australian National University)

The Sago palm (Metroxylon) is an important food (starch) source across its range from Southeast Asia, New Guinea and the Pacific Islands. In Papua New Guinea Metroxylon sagu is cultivated in lowland tropical rainforests and freshwater swamps, where it is a major staple food for around 10% of rural villages. The economic and cultural significance of sago in lowland PNG is immense, but the extent to which human populations have managed sago in the past is poorly understood. Here we present new pollen and phytolith records from freshwater swamplands in the northern and southern lowlands (0-800m altitude) of Papua New Guinea. The evidence shows the presence of Metroxylon sagu in association with lowland swamp forest disturbance (fire related) by at least 5000 yr BP. This suggests that these environments were being managed for the production of sago at a time when swamp forests in the highlands of PNG were declining in extent due to clearance for agricultural production.

2. The antiquity of village occupation in the Kikori River Delta, Gulf Province, Papua New Guinea and implications for the historical emergence of regional polities.

Bryce Barker (University of Southern Queensland), Lara Lamb (University of Southern Queensland), Bruno David (Monash University), Kenneth Koraki (Kerewo Clan) and Alois Kuaso (National Museum and Art Gallery of Papua New Guinea)

This paper proposes an explanatory model of occupation for the densely populated Kikori River Delta within Kerewo clan lands in the western Gulf of Papua, Papua New Guinea. We suggest that efforts by local tribes of the Kikori River Delta to indirectly control the trade of redistributed pots coming from the east led to the initial permanent occupation of the islands and allowed for large population densities as well as the development or expansion of the Kerewo head-hunting cult. Fieldwork to test this model has now been carried out at 3 abandoned ancestral village sites in the Kikori Delta. The archaeological results point to initial establishment of villages in the Delta islands from around 500 years ago. Initial village

establishment coincides with the beginnings of the Hiri trade described in Motu oral traditions and is thus broadly supportive of the proposed model of occupation.

3. Size Matters: An archaeological investigation of the bivalve Batissa violacea assemblage from Emo (Gulf Province, Papua New Guinea) – implications for understanding occupational trends and regional resource use.

Eddie Thangavelu (University of Southern Queensland), Bryce Barker (University of Southern Queensland), Bruno David (Monash University), Jean-Michel Geneste (Centre National de Préhistoire, Ministère la Culture et de la Communication, France), Lara Lamb, University of Southern Queensland) and Robert Skelly (Monash University)

This paper reports on the Batissa violacea assemblage from the site of Emo in the Kikori River delta region, Gulf Province, Papua New Guinea. Our aim was to determine occupational trends and patterns of resource use at Emo through an analysis of B. violacea shell sizes over time. By investigating temporal trends in shell sizes, we investigate changing patterns of predation pressure on shell populations through time. The results indicate changes in shell size coincident with phases of occupation as identified through radiocarbon dates. We conclude that human impacts on shell populations largely account for the observed trends in shell sizes. These results enable us to suggest that human groups moved significant distances away from the site during those times between the dated occupational phases, thus providing a clear picture of occupational trends and resource use in the broader Emo landscape.

4. Oral History and Archaeology at Epemeavo and Kea Kea (Gulf Province), Papua New Guinea: Preliminary results from a new series of excavations

Robert Skelly (Monash University)

Missionaries, travellers and colonial administrators of the late 19th to early 20th centuries recounted spectacular annual trading expeditions (hiri) whereby fleets of Motu trading vessels (lakatoi) left villages around Port Moresby catching the northwest monsoon and sailing up to 400 km westward, to exchange their cargos of pots and shell valuables for sago and large dugout canoe hulls. Previous archaeological research confirmed that Port Moresby

and Yule Island pottery has been traded across the land and waters of the Papuan Gulf for at least 1900 years; however, further research is needed before the archaeological story of the hiri (and antecedent systems) can be fully understood.

While visiting Epemeavo village in the recipient Gulf Province during June 2010, ancestral stories were recorded and archaeological site surveys were conducted inland through sets of remnant dunes considered likely sites of once-coastal villages. Site surveys were guided by village elders and followed ancestral stories to the villages of Old Helau (2.4 km inland), Kouri Kapou (3 km inland) and Kaveharo (4.3 km inland). Today these villages are abandoned and have been reclaimed by the jungle, yet each place is marked by surface scatters of pottery sherds attesting to local beliefs that these are the exact places of ancestral villages.

According to oral traditions, people of the Gulf traditionally positioned villages on the most seaward stable coastal dune. The ancestral village sites recounted in oral history are located on remnant coastal dunes consistent with local geomorphological processes whereby the coastline has been prograding at an average annual rate of c.3m. Here we present preliminary results from a community-based archaeology project involving excavations at a series of ancestral sites relating to the oral history of Epemeavo. We aim to track back through time this history along a sequence of now-inland dunes in the Epemeavo-Kea Kea region.

5. Prehistoric Migration at Nebira, South Coast of Papua New Guinea: New insights into trade and social complexity using isotope and trace element analyses

Ben Shaw (University of Otago)

Migration is a commonly used explanation for cultural change in world prehistory, and is also a central theme in the prehistory of the Pacific Islands. Migration was essential for colonisation, and maintaining cultural solidarity between neighbouring communities in this complex island environment. In Papua New Guinea around 2000 years ago, the south coast was settled by an intrusive group of people bringing with them a distinctively designed Early Papuan Pottery. Over the next 1500 years, a series of long distance trade networks were established between communities along the coast, which would have influenced and facilitated culture contact and interaction.

This paper applies isotope (87Sr/86Sr, δ18O) and trace element (Ba/Sr) analyses to a sample of 27 individuals buried at the archaeological site of Nebira (ca.720-300 BP), located inland on the south coast of Papua New Guinea. The analyses seek to identify non-local individuals within the population, and to test the 'outstation' hypothesis which states that Nebira was a hub in a reciprocal trade network with coastal communities in late prehistory. Correlating the isotope and trace element results with biological and burial context data also provides a more in-depth understanding of the social identity of immigrants in this community.

The combined isotope data suggest that as many as nine individuals were potentially non-local to Nebira, from several different locations, with five of the nine individuals possibly migrating from a coastal location. The data suggest that the inhabitants from Nebira were in contact with coastal, and other, communities in the region. Correlation with biological and burial context data also suggests that some non-locals had close relationships (possibly familial) with local individuals at Nebira.

Session 13: Integrated Approaches to Palaeoecological and Archaeological Research

Convenors: Simon Haberle and Janelle Stevenson

Format: 15 minute papers

Session Abstract: Our understanding of how people adapted to and impacted upon past environments can be enhanced by an integrating approach to palaeoecological and archaeological research. The resulting environmental reconstructions provide us with key data critical to the development of models of regional as well as local landscape change. This session will bring together the diverse range of palaeoecological work being carried out in Australia and overseas and will highlight the implications of this work for archaeological research.

Papers:

Part 1

1. The Golden State down under: North American fire palaeoecology research and its applicability in an Australian context

Tom Sapienza (University of California, Berkeley)

Australia and California, two of the most fire-prone regions of the English speaking world, each possess unique biomes that have evolved in cooperation and competition with fire – as regular exchanges of firefighting personnel and resources attest – and ancient humans in California and Australia were well aware of the power and utility of fire in their respective

landscapes. Yet despite the commonalities of the two regions, there is little cross-institutional interaction regarding the archaeology of study ancient fire regimes and fire effects.

As a first step towards promoting enhanced interaction between Californian and Australia archaeologists working on the palaeoecology of ancient fire regimes, I propose to review a cross-section of current work being conducted in California today, with a specific focus placed on how these theories, methods, and ideas could be put to work in Australia. This paper stands in light of the fact that Californian researchers have access to a larger palaeoecological dataset than most Australian researchers, and from it are better situated to test hypotheses and refine methods. This data imbalance is, perhaps, unsurprising, given the fact that the state of California is approximately 1/2 the size of NSW, yet has a population of 30 million people.

I believe that a preliminary attempt to bring together aspects of the two regions' respective fire studies would deliver results for multiple groups. Ecologists could learn more about underlying traits of fire/biome dynamics; archaeologists could develop better ways to determine the scope and type of landscape management practiced by ancient peoples; and the descendants of these regions' indigenous inhabitants could gain more concrete examples of how the respective Terra Nullius and "empty wildernesses" encountered by European settlers were actually inhabited landscapes that had been actively managed, maintained, and domesticated.

2. Late Quaternary Fire Regimes of Australasia

Scott Mooney (university of NSW), Sandy Harrison (Macquarie University), Patrick Bartlein (University of Oregon), Anne-Laure Daniau (University of Bristol) and Janelle Stevenson (Australian National University)

We have compiled 223 sedimentary charcoal records from Australasia in order to examine the temporal and spatial variability of fire regimes during the Late Quaternary. While some of these records cover more than a full glacial cycle, here we focus on the last 70,000 years in an attempt to examine some persistent controversies about the relationship between fire, climate and humans. On orbital time scales the analysis has found fire in Australasia to predominantly reflect climate, with colder periods characterised by less and warmer intervals by more biomass burning. There is no distinct change in fire regime corresponding

to the arrival of humans in Australia at 50 ± 10 ka and no correlation between archaeological evidence of increased human activity during the past 40 kyr and the history of biomass burning. However, changes in biomass burning in the last 200 years may have been exacerbated or influenced by humans.

3. The Origin and Temporal Development of an Ancient Cultural Landscape

Michael-Shawn Fletcher (Universidad de Chile, Chile and University of Melbourne)

Curiously, much of western Tasmania's Wilderness World Heritage Area is regarded as a cultural landscape. Contrasting with the 'Wilderness' moniker is an impressive archaeological record that indicates human occupation for at least ~35,000 years and a present day landscape dominated by a fire-dependent treeless vegetation type considered to be an artefact of Aboriginal burning. Paradoxically, this dominance by fire-dependent vegetation occurs despite a perennially wet and cold climate, under which rainforest vegetation is the predicted climatic climax. The dominant paradigm formed to explain this apparent anomaly is derived from pollen records and depicts an expansion rainforest across the landscape during the Late Pleistocene – Holocene transition, with a late Holocene expansion and subsequent dominance of fire-dependent vegetation in response to a combination of climatic deterioration, oligotrophy and increased effectiveness of Aboriginal burning. This paradigm has recently been challenged, with an alternate paradigm proposed that argues for the dominance of the landscape by fire-dependent vegetation since the Late Pleistocene as a result of Aboriginal burning inhibiting the climate driven post-glacial expansion of rainforest and facilitating the spread of fire-dependent/tolerant species across the landscape. These two contrasting paradigms are derived from essentially the same palaeoecological data, highlighting the need for a means of objectively and accurately predicting past vegetation from pollen data. In an attempt to resolve this debate, I have screened 12 post-glacial pollen records from the region using an objective numerical 'finger-printing' procedure that makes use of an extensive modern pollen-vegetation database. I then use the same procedure to screen previous interglacial pollen records in an attempt to ascertain whether the Holocene vegetation landscape is unique in the Quaternary vegetation history of western Tasmania. Lastly, I present an analysis of charcoal records from the post-glacial, full-glacial and previous interglacial periods (pre- and post-human time-frames) in an attempt to (i) elucidate how the role of fire in the western Tasmanian

vegetation landscape has changed through the Quaternary; (ii) ascertain whether there is any discernable change in fire regime that is attributable to human arrival; (iii) and gauge what, if any, effect this has had on the vegetation landscape of western Tasmania.

4. Reconstructing Aboriginal Management Practices - an ecological approach

Beth Gott (Monash University)

The possibility that the presence in Australia of Aboriginal people for many thousands of years may have effected evolutionary change in the vegetation has until very recently never been considered by plant ecologists. The prevailing romantic picture of hunter-gatherers having no impact on the landscape was accepted without question. Consequently the biodiversity first encountered by Europeans became a benchmark for a pristine continent. Yet modern ecological studies, particularly in relation to fire, are revealing the Aboriginal management practices which have shaped the evolution of various ecosystems. It is possible to analyse the relationship of these practices to the important plant resources available in the ecosystems.

5. People and Megafauna at South Walker Creek, Central Highlands, Queensland

Scott Hocknull (Queensland Museum), Stacey Budby (Woora Consulting), Emma Oliver (Woora Consulting and Flinders University) and Michael Westaway (Queensland Museum)

Excavations at South Walker Creek, west of Mackay, within the BaradaBarna peoples traditional lands, have revealed a rich archaeological assemblage intermixed with megafauna. Two distinct megafauna units would appear to exist at the site, indicating an older closed forest taxa and a later open plains fauna. Excavations in the 2009 season have focussed largely on the lower units and have recovered a number of artefacts including a core that is derived from within the older unit. Excavations of the upper unit in October 2010 at the large extinct varanid site will focus on recovering fossils and hopefully artefacts that are associated with the later faunal unit. One of the main objectives of this season will be to further our understanding of the relationship between megafauna and artefacts.

6. Searching for the Lapita Cultural Complex on North Queensland's Coral Coast

Matthew Felgate (University of Auckland), Simon Haberle (Australian National University), Jim Specht (Australian Museum), Carol Lentfer (University of Queensland), William R. Dickinson (University of Arizona), Peter Sheppard (University of Auckland), Wal Ambrose (Australian National University), Fiona R. Cameron (University of Western Sydney) and Hans Bader (Archaeology Solutions Ltd, Auckland, NZ)

This paper is a brief overview of an integrated program of archaeology and palaeobotany, which commenced in 2009, with further archaeological testing in 2010. Analysis of temper sands in pottery from the intertidal zone in the Western Province of Solomon Islands 1996-2004 suggested ceramic transfers from a place like Lizard Island to Solomon Islands across the Coral Sea and Solomon Sea, circa 800BC-500BC. In 2006 a research project to collect comparative sand samples from Lizard Island resulted in discovery of a intertidal scatter of potsherds. A three-year program in association with Dingaal Traditional Owners is attempting to augment the artefact sample and provide a vegetation history, the latter seeking evidence also for food production in the past. A magnetometer survey has also been completed at Mangrove Beach to try to define the extents of the site. Work continues on developing a communications plan to disseminate results to the traditional owners and the Australian public. A brief project overview will be followed by pollen core results, with phytolith results presented separately.

Part 2

1. Middens and more……palaeoenvironmental analysis of the Site 17 midden on Lizard Island, north-east Queensland

Carol Lentfer (University of Queensland), Jim Specht (Australian Museum), Robynne Mills (La Trobe University)and Matthew Felgate (University of Auckland)

The midden at Site 17, Lizard Island, first excavated in 1992, has a ca 3000 year history of human occupation, with shell collection associated with the primary period of midden development commencing at ca 2000 BP. The site was re-excavated for palaeoenvironmental analysis in 2009 at a location adjacent to the original trench. This paper discusses the results of phytolith and charcoal analyses showing changes in vegetation and burning patterns, which align very closely with the archaeology. These results provide the basis for a much more informed interpretation of human activity and impacts on the

vegetation which might be linked to intentional burning well before the commencement of shell exploitation and possibly earlier than 3000 BP.

2. A multi-proxy record of Late Holocene palaeoenvironmental change and human impact on the environment in Western Flores, Indonesia

Sue Golding, Emma St Pierre , Jian-xin Zhao (University of Queensland), Ken Aplin (CSIRO), Russell Drysdale (Newcastle University), Michael Griffiths and Quan Hua (Australian Nuclear Science and Technology Organisation)

Limestone caves can act as excellent repositories of palaeoenvironmental information and past human activities. This paper presents a multi-proxy record of late Holocene palaeoclimate and palaeoenvironmental change derived from environmental archives in Liang Luar Cave, western Flores, Indonesia. Liang Luar, located ~1km from Liang Bua (the discovery site of the hominid species Homo floresiensis), is a ~1.6km long passage with several large chambers and numerous speleothem (stalagmite and stalactite) formations. A palaeoclimate record was characterised through C/O stable isotope analysis of a stalagmite precisely dated to 0-1800 yrs BP, using U/Th dating. The stalagmite C-O isotope record demonstrates rapid vegetation change c. 800 yrs BP (seen in carbon isotope fluctuations decoupled from oxygen isotopes), unrelated to climate influence. Excavated owl pellet deposits in the entrance of Liang Luar were dated with 14C AMS dating of charcoal, revealing continuous sediment deposition from at least 2400 yrs BP to the present. The 14C chronology demonstrates a sudden increase in depositional rates of the cave entrance deposit as well as an increase in the abundance of charcoals, somehow coincidental in timing with the vegetation change recorded in the stalagmite. Faunal remains indicate the commensal species Rattus exulans arrives early in the sequence while Rattus rattus appears much later. A surprisingly late arrival of the wet rice field rat, Rattus argentiventer, indicates wet rice farming was only recently introduced to the area. These paleoenvironmental records act as a basis from which to understand the timing and intensity of human impacts on late Holocene environments in western Flores, and the relationship of this incursion to changing land use patterns.

3. The north-eastern Mekong River Delta since the mid-Holocene: Palaeoecological history and implications for prehistoric settlements

Ulrike Proske, Till J.J. Hanebuth (University of Bremen), Hermann Behling (University of Göttingen), Nguyen Van Lap, Ta Thi Kim Oanh (Vietnamese Academy of Science and Technology) and Bui Phat Diem (Provincial Museum Long An)

This study presents three radiocarbon dated sediment cores from the north-eastern Vietnamese Mekong River Delta that have been analysed using a multiproxy approach (grain size, pollen and spores, macro-charcoal, carbon content) in order to unravel the palaeoecological history of the region since ~8000 years B.P. During the mid-Holocene sea-level highstand a diverse, zoned and widespread mangrove belt (dominated by Rhizophora) covered the extended tidal flats. The subsequent regression and coeval delta progradation led to the rapid development of a back-mangrove community dominated by Ceriops and Bruguiera but also represented locally by e.g. Kandelia, Excoecaria and Phoenix. Along rivers this community could endure even when the adjoining floodplain had already shifted to freshwater vegetation. Generally this freshwater vegetation has a strong swamp signature but locally Arecaceae, Fabaceae, Moraceae/Urticaceae and Myrsinaceae are important and mirror the diversity of this habitat.

Since the beginning of its progradation, the Mekong River Delta provides new land for colonisation and thus holds a rich archaeological record. Numerous Bronze to Iron Age settlements are located in the study area. The palaeoecological reconstruction implies that these sites were established in the freshwater vegetation-dominated floodplain. Nearby back-mangroves could have offered a prolific source for food, timber and other raw materials. It appears, however, that despite the fertility and the accessibility of the area these settlements remained relatively small and people did not alter their environment beyond the surroundings of the sites.

4. Molluscs as Ecological Indicator in Palaeoanthropological Contexts

Stephen Munro (Australian National University)

A number of methods are available to researchers investigating the palaeoecology of ancient human sites. One such method involves examining the fossil fauna of sites associated with ancient human remains. Faunal analysis has been employed increasingly over the past few decades, but most studies are restricted in at least one of two ways; 1) the faunal data analysed are often restricted to a particular sub-set of the fauna, large mammals for example; and 2) the number of sites examined is often relatively small, sometimes restricted

to a single site. In this study focus is directed at a taxonomic group, the Mollusca, that has received relatively little attention in the context of human palaeoecology. A relatively large number of sites (32) are included, making this one of the more wide ranging studies of its type. Data have been collected through literature searches and studies of Museum and University collections, including original studies. Each fossil mollusc taxon has been evaluated in light of the ecological requirements and habitat characteristics of closely related modern taxa, as well as ecomorphological characteristics. The results of the analysis are evaluated in light of other data and within the context of human evolution. The study concludes by outlining ways in which molluscs can add further information regarding the palaeoecology of fossil sites, and identifies areas for further research.

5. Archaeological tests of palaeoecological models of central Africa demography during the Pleistocene

Jessica C. Thompson (University of Queensland), Menno Welling (Catholic University of Malawi) and Alex Mackay (Australian National University)

Questions concerning the timing and processes behind the emergence and dispersal of modern Homo sapiens have fuelled one of the most prominent debates in palaeoanthropology over the last decade. Recent work has identified the Middle Stone Age of Africa (MSA; ca. 280 – 30 thousand years ago) as the time and place that witnessed the final transition to biological and behavioural modernity, but many of the factors that drove these changes are only beginning to be explored. It has been proposed that 'megadroughts' recorded in lake sediments from Lake Malawi triggered substantial demographic reorganisation during the Late Pleistocene of central Africa, and that this in turn drove the migration of early modern humans out of Africa. The purported lack of MSA archaeological sites in central Africa has been cited as evidence supporting this palaeoecological model of human demographic and behavioural change. However, there has also been a notable lack of research focus in this region. Fieldwork in Malawi in August 2010 confirmed early reports of a very rich MSA record along the shores of Lake Malawi. Lithic technological data from these sites clearly show that the area was inhabited for at least part of the MSA, and suggest that the megadroughts may have had varied and more localised effects on human populations. This illustrates how paired palaeoecological and archaeological studies are essential for building and testing models such as these, and highlights the need for

integrated, cross-disciplinary research in understanding the nuances of Pleistocene palaeodemography.

6. Discerning use-related micro-residues on archaeological tools

Geeske H.J. Langejans (University of the Witwatersrand, South Africa)

In residue analysis, minute remains of processed materials are identified on the edges of archaeological tool using microscopy. In this paper I explore how post-depositional contaminants and non-use related ancient residues may be distinguished from use-related residues directly associated with the application of ancient artefacts.

It is assumed that contaminant and unintentional remains have a random distribution over a tool's surface. Preserved use-related residues, however, are expected to have a consistent spatial distribution around a working edge. To test if this is the case, residues on used and unused experimental flakes were recorded after they underwent weathering. Some flakes were used to scrape fresh bone or wood and to cut muscle tissue or potato. The flake surfaces were divided in four quadrants, of roughly equal size. The surface coverage of the residue types per quadrant was then recorded. A total of 62 flakes was selected for this study.

On used flakes with well preserved residues, the use-related residues are more abundant on portions associated with the sharp edge than on portions associated with blunt sides. On the samples without identified use-related remains and on the unused sample, the distribution of micro-remains is more uniform. This study confirms, that by using the contextual approach it is possible to distinguish use-related remains from non-use-related and co-incidental remains.

Session 14: Australian Cultural and Natural Landscapes: an Indigenous affair

Convenors: Dave Johnston and Mark Dugay-Grist

Format: Short presentations and panel discussion

Session Abstract: Australia's Indigenous archaeologists along with numerous Indigenous community members continue to work on a range of exciting archaeological and heritage projects and initiatives. From private research, government engaged or sponsored projects to EIS consultancies, Indigenous focused management, protection and interpretation of our entwined 'cultural and natural' landscapes remains a primary aspiration of our people. This session includes Indigenous archaeologists and community heritage managers and researchers presenting short papers on current Indigenous archaeological and heritage projects, thoughts and initiatives as well as a panel discussion.

Session 15: The Australian Association of Consulting Archaeology session

Convenors: Mick Morrison and Oliver Brown

Format: 15 minute papers

Session Abstract: AACAI represents archaeologists carrying out heritage assessment, survey, excavation, and mitigation. Consulting archaeologists carry out a wide range of projects across and beyond Australia. While the location of these investigations may be random with respect to the archaeological record, the methods used are not. As the industry has matured, research into improvement of methods has gathered pace. At the same time, the number of investigations has increased dramatically. These have brought about a sea change in our knowledge of the archaeology of many parts of Australia. This session seeks to showcase the diverse ways in which consulting archaeologists are embracing, critiquing and enhancing landscape approaches in Australian archaeology. In particular, we explore:

- Methodological innovations, particularly to sampling and working at a landscape scale in a consulting context;
- Examples of how consultancy projects have helped resolve local or regional research questions (or how such projects have thrown existing regional models into disarray);
- Collaborative, cross-disciplinary approaches to heritage management in a landscape context, particularly the role of oral history, anthropology and Indigenous Knowledge to managing cultural landscapes;
- The issue of spatial scale: how can results obtained from often highly localised studies contribute to understandings of region wide issues;

- The question of theory in relation to the archaeology of landscape in a consultancy context - does it have a role, and if so, what?
- Innovative, regional (or landscape scale) approaches to heritage management and interpretation;

This session will provide an overview for students who may be considering where they might continue their interests in archaeology. It will also demolish the old saw of the grey literature, providing an avenue for other researchers to engage the discipline. As such, papers will also outline results, innovations, problems and opportunities associated with consulting archaeology in Australia, particularly those with some bearing on the conference theme.

Papers:

1. Augering Well

Rebecca Parkes and Timothy Maloney (Navin Officer Heritage Consultants Pty Ltd)

One of the challenges in heritage management is that of cost effective subsurface sampling across broad areas. It is the duty of the consultant archaeologist to not only map out the most cost efficient strategy for their client, but to also ensure that the methodology employed will provide an accurate and meaningful sample that can then be used to evaluate the significance of cultural deposits. Moreover, the methodology needs to be one of minimum impact, which begins to be problematic when testing is required at depths in excess of 1-1.5 m.

This paper seeks to explore the value of utilising a specialised auger attachment known as a 'cleaning bucket'. This piece of equipment is normally employed by engineers on bridge construction to clean out the holes dug for pylons; it can be used to not only dig deposits at considerable depth but also to extract the excavated deposit. In the context of archaeological sampling, this means that potential cultural deposits can be reliably sampled at depths that would normally only be possible through opening out an increasingly larger excavation area or by shoring up the excavation sides, both of which entail additional costs/impacts for a project.

The potential benefits of employing an auger cleaning bucket in landscape sampling will be examined through a review of a recent subsurface testing project within the Macleay Valley on the mid-north coast of NSW.

2. Predicting the Pilbara: towards a predictive model of archaeological site location

Annabelle Davis (Rio Tinto), Andrew Sneddon (University of Queensland), Sean Ulm (University of Queensland), Jonathan Corcoran (University of Queensland) and Yan Liu (University of Queensland)

Over the last three decades Rio Tinto has commissioned numerous archaeological surveys and excavations in the Pilbara region of Western Australia. As a result, Rio Tinto is the joint custodian of an enormous heritage database that includes up to 1000 heritage survey reports and a GIS relational database for many thousands of archaeological sites. Rio Tinto is presently collaborating with a team of archaeologists and geographers from the University of Queensland to make best use of this valuable resource for future archaeological research and for effective ongoing heritage management in the Pilbara. Together the team is using sophisticated GIS and statistical methodologies to test previously posited predictive models and to generate new ones for both the Pilbara region and Australia generally. This paper presents the preliminary results of the project and outlines some exciting future directions and applications for this kind of research both in the Pilbara and throughout Australia.

3. The Archaeology of the Australian Capital Territory: a strategic region for understanding cultural and natural landscapes in South Eastern Australia over the last 20,000 years

Peter Dowling (National Trust ACT) and Sally Brockwell (Australian National University)

This project proposes to investigate the archaeology of the ACT from Pleistocene to Contact within its palaeoenvironmental context. The ACT's border is a modern political construction, however, forming as it does the watershed of several rivers and creeks, and possessing a varied geography of mountains, plains, rivers and wetlands, the ACT forms a natural microcosm of a much larger geographic region. As such, the ACT can offer a unique insight into the human and environmental history of south eastern Australia over the past 20,000 years. It is strategically positioned to test models of Pleistocene settlement, and subsequent

trajectories of cultural change and interaction. The project will employ a multi-disciplinary approach with collaborations between archaeologists, bioanthropologists, historians, palaeoecologists and local Aboriginal communities. A key first step in the project is a survey and inventory of the grey literature held in the ACT Heritage Library, consisting mainly of reports of consultancies undertaken prior to urban development, and compiled since self-government in 1988. This preliminary investigation will enable our team to determine what landscapes have been surveyed, what sites have been found, and the gaps in knowledge that remain, and will allow the development of a focussed field work strategy.

4. Reverse survey strategies and significance assessment in western New South Wales, Australia

T. Bryant Fanning, (Macquarie University) and Simon Holdaway (The University of Auckland)

The Peery section of the Paroo Darling National Park (PDNP) has been the focus of Western New South Wales Archaeological Program (WNSWAP) research since 2002. It contains multiple catchments of varying sizes that drain into the western edge of Peery Lake, an overflow lake of the Paroo River located approximately 100 km north of Wilcannia. Surface exposures of Aboriginal archaeological material, particularly stone artefact deposits and the remains of heat retainer hearths, are common. An initial survey in the park targeted three small areas that were under consideration for development of visitor facilities. There followed an intensive survey over four years (2005-8) of approximately five percent of the valley floor of the 62.5 km catchment area of Rutherfords Creek, documenting and analysing over 24,000 artefacts and 1300 hearths exposed at the surface.

Such an intensive survey has provided a detailed understanding of what the patterning in the surface record means for past Aboriginal use of the landscape. However, cultural heritage management (CHM) surveys only rarely have the resources for this level of detail. This paper documents the outcomes of research carried out over the past three years using transect surveys to interpret differences in artefact density between Rutherfords Creek and other catchments on the western edge of Peery Lake. One of the aims of this research is to build a bridge between research-focussed intensive survey and the reconnaissance-level survey characteristic of CHM. Implications for significance assessment are discussed.

5. Mapping Anthropogenic Fill with GPR: A new approach to burial detection

Paul Bladon (Flinders University), Dave Guilfoyle (Applied Archaeology), Alice Beale (Western Australian Museum) and Ian Moffat (Australian National University & Flinders University)

Geophysical techniques are commonly used for the location of unmarked graves despite these techniques rarely being able to locate buried remains directly. Most studies rely not on imaging skeletal material but instead on distinguishing the subsurface disturbance created by grave digging. This approach can only be effective when sufficient contrast exists between detectable properties of the grave fill and the surrounding sediment, such as soil structure mineralogy or porosity. This is particularly problematic where anthropogenic fill is in place, as it is often complex in character and lacks a natural stratigraphy.

Many archaeological investigations are more concerned with avoiding the disturbance of burials rather than locating them allowing a modification to the standard methodology. We suggest that ground penetrating radar (GPR) can be used to locate modern anthropogenic fill so as to provide evidence that these areas of the site can not contain burials older than the fill, indicating that a site is clear of burials. This approach, common in the engineering and environmental literature, is trialled on a site thought to contain the grave of Mokare, a significant historical figure in the Albany area. The delineation of a package of modern fill in the shallow subsurface and a consideration of the probable earthworks on the site demonstrates that Mokare is not buried in the surveyed location. By avoiding the need to detect burials by grave digging disturbance this approach could allow wide application of geophysical techniques to suitable sites in Australia.

6. Dumbing-Down. The push towards prescription and what this means for the future direction of archaeological consulting

Alyssa Gilchrist (Quality Archaeological Consulting), Paul Irish (Mary Dallas Consulting Archaeologists), Sharon Lane (Quality Archaeological Consulting) and Jim Wheeler (Archaeological & Heritage Management Solutions Pty Ltd)

The value of an archaeological consulting industry can be measured by asking three basic questions:

- Does the assessment process work to protect areas of archaeological and cultural heritage significance?
- How does this work contribute to our knowledge of past use and/or occupation? and
- Has the process provided value for money?

We are concerned with current policy directions that inhibit our ability to satisfactorily answer these questions, presenting a risk to the future relevance of Aboriginal consulting archaeology. While other branches of environmental consulting have moved to values and significance based approaches, Aboriginal archaeological consulting appears to be heading in the opposite direction. During the last few years we have witnessed a concerted push to codify archaeological practice into rigidly prescribed standards that are more akin to the sort of absolutes usually found in fields such as engineering. We argue that this approach is unsuited to the nature of the Aboriginal archaeological record and will result in poorer quality assessments that will lessen the relevance and value of consulting work.

Instead, we advocate non-site approaches that aim to understand the nature and significance of Aboriginal archaeological deposits across the landscape and promote meaningful conservation and mitigation outcomes. We also note the critical role consultants need to play in advocating for improvements to the quality of the system to ensure we have an interesting, relevant and sustainable industry.

Session 16: Monumental Landscapes

Convenors: Gail Higginbottom

Format: 10 minute papers

Session Abstract: Is it as Stangl explains, that "the monumental sustains collective memory, linking the past, present and future' whilst 'the vernacular provides spatial forms for the routines of everyday life? Should the monumental be so divided, separated from certain 'parts of living'. Loukai, 2004, in highlighting how memory and the notion of monument are linked, states that "memory, the personal and social function that refers to monumentality, is an intense quest for communication, authenticity and fulfilment ‘thus opposing the notion that monumentality works within only 'one' particular sphere of lived experience. In considering landscape, Ingold (2002) argues that landscape is a whole entity that is heterogeneous. Further, landscape is not that "world of nature … (that) …'lies out there' separate from us…it is a place in which we live and have lived and where we and all the other variables (like river systems, animal usage, forest and grassland management, mountains, coastlines, the design of built structures and the location of built structures) exist together as this whole entity’. Ideas such as these provide stimulus for us to consider more sharply what we mean when we use such terms as monuments, monumentality and monumental and further what we might mean by 'monumental landscape'. Through the presentations, this session intends to reflect upon such definitions and provide examples and case-studies of what we might consider to be monumental landscapes. Ultimately, we will think about how 'monumental landscapes', as opposed perhaps to other archaeological approaches, provide us with information and interpretative ability.

Papers:

1. Monumental Tether: The Nabataean transition from trade to agriculture

Douglas Comer (CSRM, Baltimore)

Profound cultural changes were occurring in the Arabian Desert at the dawn of the Common Era. Three centuries before, Alexander the Great found no houses, fields, temples, or anthropomorphic images there. Agriculture and permanent settlements were eschewed. Trade by camel caravan over trackless desert was the engine of wealth. In contrast, Petra by AD 100 was filled with temples, houses, theatres, a nymphaeum, a paradeisos, and massive tombs, all adorned with humans, animals, and the fruits of nature. Agricultural fields surrounded the city. We examine here the appearance of monumentality through the introduction of large built structures (or not) and various transformations of the land. We will see whether or not these activities may have been linked to the transition from trade to agriculture and how land-use on all levels was a way to communicate to those within the local society and without. It will be shown that through these creations we have an example of that intense quest for communication, authenticity and fulfilment of the community.

2. Puma on the Rock: monuments, felines, origins and identity among the Inkas

Ian Farrington (Australian National University)

The landscape of the south-central Andes was a living crucible in which the Inkas (and many other peoples) conceived of their origins and worshipped their ancestors within the natural rugged world of mountains, lakes, caves and valleys. It was animated with sacred places that were protected or identified with animals and riven with mysterious powers. This paper takes one attribute of the general origin myth on the Island of Titiqaqa, where the world began and where the Inka watched in awe the ‘cat on the sacred rock’ and which became transferred to the paqarina (place of Inka origin) at Tambo T’oqo and then to those of the various social groups and the memorial rocks, caves and buildings for the Inka ancestors around Cusco. Such was the power of this message that another rock at Saywite was carved as an image of the world carried on the back of a puma, confirming the Inka, the people and their capital as the 'centre of the world'.

3. Unravelling Notions of Communal Memory and Connection

Gail Higginbottom (Australian National University)

This paper contains some theoretical discussion for the session. It will essentially deal with three things: theoretical notions that surround the thinking about the making of things and the reasons we, as humans, do so, what is monumentality, and how the making of that which is monumental is different to the making of other things. Through this discussion it will be shown that the making of the monumental connects the community to a specific location as well as to the wider world. The monuments signal that this is a place in which we live and have lived and where we exist together as a community.

4. Wiradjuri and Yuin Sacred Landscapes – Archaeological theory and its application to understanding natural landscape hierophanies

Tom Knight (Australian National University) and Philip Boot (Aboriginal Heritage Regulation Unit, Department of Environment, Climate Change and Water, NSW)

In conventional terms the concept of monumental prehistoric landscapes tends to rest more comfortably in the realm of places such as Europe, North Africa and Latin America where megalithic or architectural archaeology is both regularly encountered and promoted. However, recent research into the 'archaeology of natural places' (cf Bradley 2000) has revealed that considerable potential for meaningful archaeological interpretation of past belief systems resides in landscapes that display little or no readily apparent cultural alteration. Such a methodology holds great promise for research in hunter-gatherer contexts where large-scale human modification of natural features is all but absent. In this session application of Bradley's (2000) model to the archaeology of two south-eastern Australian culture groups – the Yuin and the Wiradjuri – is utilised to reveal strong cosmological connections and corresponding archaeological signatures within natural landscape settings. We argue that particular site types such as stone arrangements, earth rings, rock art and burials/interments, show regular and predictable spatial association with certain types of natural features or 'hierophanies' (cf Eliade 1961) and that utilisation of ethnographic information in the form of conceptual 'templates' may be used to strengthen and explain these archaeological trends.

5. Monumentality in Micronesia: The landscapes of a Pacific blind-spot

Katherine Seikel (Australian National University)

Monumental landscapes typically fall into one of two broad categories, 1) significant modification of the landscape itself (e.g. land reclamation) or 2) landscapes across which monumental constructions are scattered. The statues of Easter Island, Samoan star mounds, and the heiau of Hawaii are some of the most familiar monumental landscapes in the Pacific. Yet, Polynesia does not corner the market on monumentality. Willard Price (1944:12) called Micronesia "the blindspot of the Pacific." This statement still holds true and the monumental landscapes of Micronesia are not commonly recognized in discussions of socio-political development in the Pacific region and elsewhere. Micronesia contains diverse types of monumental landscapes, which include monumental architectural constructions (e.g. Nan Madol and the House of Taga), modified hillsides (Palau), and sites of land reclamation (e.g. Leluh). This paper discusses monumentality as it is manifested in Micronesia and how these landscapes fit into the diversity of monumental landscapes found elsewhere in the Pacific.

6. Dwelling among the Monuments

Philip Tonner (Glasgow University, Glasgow)

Recent theoretical contributions in archaeology have begun to take heed of the significance of the phenomenological philosophy of Martin Heidegger. It is now largely accepted that coming to terms with Heidegger is crucial for the development of our understanding of theory and practice. We read, for example, in Thomas's Time, Culture and Identity that '…making use of Heidegger's work…is of critical importance for the development of archaeology…' (Thomas 1996, 3). Centrally important, not just for archaeology but for the human sciences generally, has been the recognition of the importance of Heidegger's novel configuration of human being-in-the-world in terms of 'dwelling' and the relevance this has for our appreciation and understanding of the material shaping of the landscape by communities. This paper will investigate the issue of what are monuments, monumentality and the monumental in terms of dwelling, and how this relates to the issue of the creation of monumental landscapes.

7. 'Like a large chessboard': shaping the Roman monumental landscapes. The case-study of Aquileia

Arianna Traviglia (Macquarie University)

Strategically positioned in proximity to the coast at the convergence of natural navigable rivers and ancient trade routes, Aquileia was, according to ancient Latin sources, the ninth in importance among the cities of the Roman Empire. The natural hydrological network surrounding this city was reshaped in Roman times to maximise its navigability and to integrate it with an extensive road system, making the city a nodal point in the distribution of goods and people in the NE Adriatic basin. The ancient landscape was radically altered by the Roman land division, known as 'centuriation', a process that had a substantial impact on the environment and dominated the topography for over seven centuries. The Aquileian territory subjected to centuriation represents one of the largest areas that the Romans had tackled in a single event, in which novel theoretical and practical issues were faced for the first time. Moreover, the land division model continues to have significant influence on present-day agrarian organisation since the imprint of Roman centuriation on the landscape was here, as everywhere else in the Mediterranean basin, so enduring and profound that it is still possible to catch sight of its conspicuous traces everywhere it took place. Thus, in the monumental landscape of Greater Aquileia the primeval environment was both subdued and seconded and the landscape engineered to accommodate harmoniously the natural and the built territory, balancing settlement strategies, population needs and natural exigencies. Using the Aquileian territory case study, this presentation will discuss the concept of centuriation as monumental landscape and will address how this approach enhances our understanding of settlement dynamics and settlement evolution.

Session 17: Practice and Outcomes - recent developments in CHM and archaeology of the Hunter Valley, NSW.

Convenors: Dave Cameron, Luke Godwin and Richard Fullagar

Format: 15 minute papers

Session Abstract: Considerable investment in cultural heritage over the last few decades by developers (notably the mining industry in consultation with Aboriginal stakeholders and archaeologists) has resulted in a vast cultural heritage database that is still rapidly accumulating in the Hunter valley, NSW. Because of such rapid growth, study of engagement processes and management strategies in the Hunter Valley provides a window on the current cultural heritage management issues faced in Australia today particularly the impact of development on cultural and natural landscapes. The aim of this session is to provide scope to examine engagement processes, management strategies, and the results of archaeological case studies in the region. We propose to examine these issues in the light of outcomes with a range of case studies. As recently reported by academics and other professionals around the world, the so-called grey literature in consulting reports provides a rich but often overlooked database that has the capacity to fundamentally change our interpretations of Aboriginal heritage and prehistory. Consequently, this AAA session will form the basis for a publication focussed on the Hunter Valley with both management and archaeological perspectives.

Papers:

1. "All of our sites are of high significance" – A consideration of significance assessments; Reflections form recent work in the Upper Hunter Valley and a possible way forward (?).

Mary-Jean Sutton (University of Queensland), Barry Anderson (Lower Wonnarua Tribal Consultancy Pty Limited) and Jillian Huntley (University of New England)

The Hunter Valley is a "significant" cultural heritage landscape which, through the processes of cultural heritage management pertaining to impact assessment, has been subjected to decades of intensive archaeological survey, assessment and excavation involving many Aboriginal stakeholder groups encompassing the Wonnarua people. This paper will comment on recent case studies in the Hunter Valley to critically discuss the concepts of "cultural heritage values", "cultural significance", "scientific significance", the impact assessment process and Aboriginal consultation. We also consider some of the theoretical issues encountered when studying cultural landscapes, including recent criticisms of cultural heritage assessment criteria in environmental psychology; particularly in relation to the use and understanding of "values", "history" and "place" by heritage professionals including government agencies and Indigenous stakeholder groups. The purpose of this paper is to draw on the authors' recent collective cultural heritage management experiences in the Hunter Valley, form both indigenous (Barry Anderson, Wonnarua descendant) and archaeological (Mary-Jean Sutton and Jillian Huntley) perspectives. We aim to stimulate constructive discussion regarding the possible use of concepts of significance derived from environmental psychology in the cultural heritage assessment process.

2. Conserving Country & Culture - The Rio Tinto - Coal & Allied Aboriginal Cultural Heritage Conservation Areas Initiative

David Cameron (Rio Tinto Coal Australia), Dan Gillespie and Luke Godwin (Central Queensland Cultural Heritage Management)

More than three decades of cumulative coal mining development in the Upper Hunter Valley (NSW) has necessitated the disturbance and destruction of a great many Aboriginal cultural heritage objects and places within the mining province. While archaeological and Aboriginal cultural heritage assessments, excavations and salvage activities have provided some measure of mitigation of these impacts, there have been few effective efforts to conserve

areas of land for the long-term protection of significant Aboriginal cultural heritage values. Guided by Rio Tinto's Cultural Heritage Management Standard and ethos, Coal & Allied has engaged with representatives of the Aboriginal Community through the auspices of the Coal & Allied Upper Hunter Valley Aboriginal Cultural Heritage Working Group to implement its Aboriginal Cultural Heritage Conservation Areas initiative. Coal & Allied and the Working Group have identified and assessed more than 1,000ha of Coal & Allied land as being of high cultural heritage significance which will form the nucleus of an Aboriginal cultural heritage conservation areas estate to conserve country and culture and to be jointly managed by the community and the company. The Conservation Areas initiative seeks to address some of these cumulative impacts by establishing areas for the permanent conservation of Aboriginal culture and heritage that are to be managed by and for the Aboriginal community of the Upper Hunter. The Conservation Areas initiative seeks to address the concepts of limits of acceptable change and social licence to operate by striking a balance between Coal & Allied's land access requirements for development and the expectations of the Aboriginal community for greater self-determination the management and conservation of their cultural heritage and access to country in order to deliver improved cultural, social, educational, economic and employment outcomes for the Aboriginal community of the Upper Hunter Valley.

3. A systematic regional overview of accumulated impacts, conservation status, and potential survey priority in the Hunter Valley using the ASDST

Mal Ridges (Culture and Heritage Division, Department of Environment, Climate Change and Water, NSW)

One of the challenges with developing a comprehensive overview about the status of Indigenous archaeological heritage in a region is extrapolating the findings of archaeological studies to the whole landscape. Such a view is necessary in order to attempt some systematic appraisal of accumulated impacts, conservation status and potential survey priority, particularly in places experiencing high rates of assessment like the Hunter Valley in NSW. DECCW's Aboriginal sites decision support tool (ASDST) addresses this issue through the use of site predictive models describing the likelihood of site feature distribution across pre-colonisation and current landscapes (Ridges 2010). Combined with GIS and survey gap analysis, the tool has been used to develop systematic context setting of Aboriginal site

heritage at the regional scale. This paper presents ASDST analysis applied to the Hunter Valley region in order to situate the current status of Aboriginal site heritage and to guide future work in the region.

Ridges, M. 2010. Aboriginal Sites Decision Support Tool (ASDST). State-wide product outline and technical summary. Department of Environment, Climate Change and Water NSW, Sydney.

4. Landscape History in the Hunter Valley, NSW: Why there is a multitude of Holocene archaeological sites but so few Pleistocene sites

Philip Hughes (Huonbrook Environment & Heritage Pty Ltd and Australian National University)

The Central Lowlands are rich in Holocene stone artefact scatters in the open, many thousands of which have been recorded since the 1970s in the course of archaeological surveys for development projects. In contrast, very few verified traces of Pleistocene occupation have been found. Since human settlement of Australia about 50ka the Central Lowland would have been an attractive place to live so there must be Pleistocene sites to be found. Understanding the landscape history over the last 90ka is the key to understanding why finding them has proved to be so difficult.

5. Dating Aboriginal sites in the Warkworth Sands

Richard Fullagar (Scarp Archaeology and University of Wollongong), Michael Slack (Scarp Archaeology), Tim Cohen (Macquarie University), Gerald Nanson (University of Wollongong), Bert Roberts (University of Wollongong) and Zenobia Jacobs (University of Wollongong)

Archaeological excavations were undertaken between May, July, and in December 2008, and in February 2009, by Scarp Archaeology at Warkworth Sands, a large body of apparently windblown sand approximately 500m (north-south) × 200m (east west) and up to about 4m deep. The sand sheet is located along Sandy Hollow creek and its alignment indicated to previous researchers (AMBS 2002) that it derived from Wollombi Brook (3.5km away). Luminescence dates suggested accumulation of sand since at least 50,000 years ago. Test pitting in a previous study (AMBS 2002) identified that stone artefacts were associated with

OSL age determinations of at least 14,000 years and possibly more than 45,000 years in one of 10 excavated Test Pits (each 0.5m × 2m). A primary aim of the more recent excavations by Scarp Archaeology was to evaluate these results, and secondly to determine the frequency, stratigraphic integrity and antiquity of stone artefacts particularly those lying just above the clay horizon.

Scarp Archaeology increased the previous excavation area and volume tenfold and recovered 1067 artefacts including 1014 flakes, 29 retouched flakes (a total of 1043 complete flakes) and 24 cores in over 100m^3 of excavated sediment. Despite considerable mixing, age estimates for the cultural material are possible based on archaeological evidence for two artefact concentrations. The upper concentration (best age estimate of about 1-2,000 years old) is characterised by backed artefact technology typical of later Holocene prehistory commonly found in the Hunter Valley. The lower stone artefact concentration (best age estimate of about 8450-14100 years old) lacks backed artefacts and has no diagnostic technological indicators of chronology.

On the basis of archaeological analysis, geomorphic study, magnetic susceptibility tests, radiocarbon dates and single grain OSL data, further archaeological work is most unlikely to recover any stone artefacts that can be securely dated to a Pleistocene age (older than about 10ka). Nevertheless, the range of tests provide a window on the nature of site disturbance and sediment mixing which is of broader significance for understanding site formation processes in loose sands, and beyond the Hunter Valley.

POSTER SESSION ABSTRACTS

An analysis of grinding patches and environmental context, Abydos Plain, Pilbara Region, Western Australia

Jared Barnett (BHP Billiton Iron Ore)

Increased aridity during the last glacial maximum facilitated a dietary change with seeds forming a basic staple food within the arid zone. This dietary change led to the development of a specialized seed grinding technology. Consequently, grinding implements are an essential element of the arid zone archaeological record, with grinding patches considered a fixed equivalent of portable grinding implement. However, despite being one of the most numerous archaeological features within regions like the Abydos Plain, Pilbara, Western Australia, grinding patches are under researched and under represented in models of settlement patterns. Considering that ethnographic observations reveal that water was used to facilitate seed grinding, this research employed spatial analysis to determine what relationship exists between available water sources and the location and size of grinding patch sites. Analysis showed that both the number of grinding patch sites and the number of grinding patches decreases as the distance to available water sources increases. Grinding intensity, as indicated by an increased degree of polish and overall patch size, increases as the distance to water increases with more intensely used patches further from water. A higher probability of grinding patches were located on rock outcrops exhibiting a sloping, moderately rough surface indicating that grinding patches could potentially be classified as a formal tool type. The results of this research agree with settlement models which argue that larger, more intensively used sites will be located near more permanent water sources and has confirmed the existence of a seed-based subsistence strategy based on non-portable grinding implements within the Abydos Plain.

Partnerships in the Training Process: The Happy Valley Archaeological Project, Coastal Pilbara Region, Western Australia

Liam M Brady (University of Western Australia), Ken Mulvaney (Pilbara Iron/Rio Tinto) and Annie Carson (Eureka Archaeological Research and Consulting, University of Western Australia)

One of the many challenges facing Archaeology departments today is the increased pressure to train students to suit the needs and goals of a range of employers while also ensuring they recognize the importance of contributing to broader research concerns in archaeology. In Western Australia, a large proportion of recent archaeology graduates find employment and further training in the resources industry. Whilst experience with stone tool identification and analysis is probably one of the most desirable skills of employers of newly-minted archaeologists in Western Australia, practical skills in archaeological site recording, excavation and rock-art analysis are equally important. This poster describes a new initiative involving Rio Tinto, the University of Western Australia, and Murujuga (Dampier Peninsula) Traditional Owners aimed at providing undergraduate students with valuable skills in the ethics and practice of undertaking archaeological research and fieldwork, with a focus on rock-art recording and analysis. With rock-art being a major cultural component of the broader Pilbara landscape, we argue that collaborations of this kind – between industry, universities, and consultants – are crucial to the training of the next generation of archaeologists and will ultimately contribute to a more ethically sensitive approach to rock-art recording and archaeological research in Western Australia.

Unpacking the Cargo: Using the depiction of ships and their cargo in rock art to expand our knowledge on the contact period in western Arnhem Land, Northern Territory, Australia

Megan Berry (Australian National University)

The rock paintings of western Arnhem Land, Northern Territory, are associated with some of the longest continuing artistic traditions found anywhere in the world. The paintings document the ever changing world of Indigenous Australians; including the period of culture contact which they have chosen to illustrate for more than 500 years. This poster ‘unpacks the cargo’ depicted within ships which now reside on the rock faces of western Arnhem Land to explore how these depictions provide insight into the nature of ‘contact’ in this dynamic area of Australia.

Acheulean stone technology in the Early Pleistocene of Flores, eastern Indonesia

Adam Brumm (University of Wollongong), Mark W. Moore (University of New England), Michael J. Morwood (University of Wollongong) , Gert D. van den Bergh (University of Wollongong), Fachroel Aziz (Geological Survey Institute, Republic of Indonesia) Iwan Kurniawan (Geology Museum, Republic of Indonesia) and Jublina Tode Solo (Tourism and Cultural Department, Republic of Indonesia)

Acheulean picks—along with handaxes, cleavers and other large retouched stone artefacts—are widely argued to reflect the earliest evidence for cognitively advanced tool-making. These Early and Middle Pleistocene tool forms are distributed throughout Africa and Western Eurasia, but are thought to be largely absent from East and Southeast Asia. This pattern has led to a consensus that early stone technology in eastern Asia was more simple and static in nature than technologies elsewhere. Our recent excavations at Wolo Sege in the Soa Basin of Flores, Indonesia, yielded three *in situ* Acheulean picks dating to ~1 million years ago. The discovery of picks at Wolo Sege refutes the interpretation that early lithic technology in Southeast Asia was less advanced than contemporaneous Acheulean industries of Africa/Western Eurasia.

A new Late Quaternary palaeohydrological record for the Atherton Tableland, north Queensland, Australia

Mark Burrows (Australian National University)

Bromfield Swamp is located on the Atherton Tableland in north east Queensland. The Swamp, occupying the base of the largest maar on the Tableland, presently has a diameter of approximately one kilometre.

Late Quaternary unconsolidated sediments many metres thick presently fill the base of Bromfield crater. Other maars on the Atherton Tableland (Lynch's Crater, Lakes Barrine, Eacham and Euramoo) and scoria cones such as Quincan Crater also contain thick sedimentary sequences. These sedimentary sequences have been the focus of many palaeoecological and palaeoenvironmental studies over the past four decades. A current research program on the Tableland (a collaboration between palaeoecologists and archaeologists), seeks to differentiate human impacts from climatic impacts on rainforest / sclerophyll vegetation.

This project, which is allied to the above-mentioned research program, seeks to interpret the palaeohydrological record of Bromfield Swamp. In June 2009, three long cores of sediment were extracted from the Swamp. A suite of palaeoclimatic proxies are currently being applied to the sediments (humification, grainsize, magnetic susceptibility, pollen of aquatics, macro-charcoal and macrofossils) with the aim to investigate changes made by climate and humans to the Swamp and its immediate catchment in the Late Pleistocene and Holocene. Preliminary results are presented and comparisons made with records obtained from Quincan Crater.

Late Holocene Noongar use and management of forests in south-western Australia

Joe Dortch (University of Western Australia), David Guilfoyle, Wayne Webb, Toni Webb, Zac Webb, Stuart Johnston and Fiona Dyason

Archaeologists have often struggled to interpret the sparse evidence for past hunter-gatherer use and management of densely-vegetated forests. Here we present preliminary results of surveys in the recently-designated Walpole Wilderness Area, a 3600 km^2 tract of forested sandplain and granite hills located between Lake Muir and the Southern Ocean coast of south-western Australia. The aim of these surveys has been to identify the distribution of past human activities, and relate these findings to the economic potential of local environments and their responsiveness to manipulation by fire. Our surveys concentrated on exposed ground along forestry tracks and at granite outcrops. We identified more than 150 stone structures made to provide attractive shelters for small game animals, and numerous stone artefact scatters. These two categories of sites together show that Noongar people had used resources around river systems and granite outcrops. Excavations at two sites in forest indicate that occupation of these sites had been continuous through the past 5,000 years, which is also the minimum date for the establishment of present-day types of forest at those sites. Continuing analysis of charcoal and pollen sequences aims to document possible fine-scale anthropogenic alteration of vegetation in this period.

The first application of anthracology to the archaeology of precolonial New Caledonia: Evaluating methods and results through the comparison of two case studies in the Tiwaka Valley (northeastern Grande Terre)

Emilie Dotte-Sarout (University of Western Australia)

Anthracology is defined as an archaeobotanical discipline focusing on the study of ancient woody vegetation and its relation to human activities, based on the taxonomic identification of wood charcoal macro-remains collected during archaeological excavations. It has undergone considerable developments of its methodological, experimental, and interpretative tools since the early 1980's and is now systematically associated to archaeological investigations in Europe. Although these progresses have triggered a diffusion of the discipline to other parts of the world, including the tropics, during the last 10 years, it has remained poorly applied in Australian and Pacific archaeologies among others. (Asouti and Austin 2005; Figueiral and Mosbrugger 2000; Thiébault 2002).

This poster aims to present some of the results from recent PhD research which applied anthracology to New Caledonia for the first time, as an integrated approach with archaeological and ethnobotanical analysis of precolonial Kanak landscapes (Dotte-Sarout 2010). The research focused on the Tiwaka valley, located on the north-east coast of the main island. The methods used, from sampling strategies in the field, taxonomic identification resources and laboratory procedures, to the evaluation of statistical representations and models of ecological interpretations, will be detailed. We will compare the analysis and results yielded by the study of two Kanak pre-colonial settlement sites. Their implications for New Caledonian Kanak archaeology will be evoked as a conclusion.

Asouti E. and Austin P. 2005. Reconstructing Woodland Vegetation and its Exploitation by Past Societies, based on the Analysis and Interpretation of Archaeological Wood Charcoal Macro-Remains. *Environmental Archaeology* 10: 1-18**.**

Dotte-Sarout E. 2010, *« The Ancestor Wood ». Trees, Forests and Precolonial Kanak Settlement on New Caledonia Grande Terre: case study and anthracological approach in the Tiwaka Valley (Northeast).* Unpublished PhD Thesis. Université Paris I Sorbonne and the Australian National University.

Figueiral I. et Mosbrugger V., 2000. A review of charcoal analysis as a tool for assessing Quaternary and Tertiary environments : achievements and limits. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 164: 397-407.

Thiébault S., 2002. *Charcoal analysis : methodological approaches, palaeoecological results and wood uses* ; proceedings of the second international meeting of anthracology, Paris, September 2000. B.A.R. International Series. Oxford : Archaeopress.

Reconstruction of a pre-European landscape on the Atherton Tableland in tropical north Queensland

Åsa Ferrier, Richard Cosgrove, Paul Kajewski (La Trobe University) Simon Haberle (The Australian National University), Patrick Moss and Lincoln Steinberger (University of Queensland)

This poster presents a reconstruction of a pre-European landscape on the Atherton Tableland in north Queensland's Wet Tropics Bioregion. Information from historical survey plans; previous pre-clearing vegetation maps and geological data were used to recreate a map that represents the traditional country of the Ngadjon-ji Aboriginal people. In the late 19th and early 20th centuries, explorers such as Carl Lumholtz and Eric Mjöberg observed Aboriginal campsites in large clearings on the rain-forested Atherton Tableland. Early European settlers referred to these large clearings as 'pockets', which were described in 1913 as "patches of eucalypt trees interspersed within the dense rainforest vegetation. Seen from above they appear as light islands in a sea of dark rainforest" (Mjöberg 1913). The question of how these eucalypt pockets were maintained in the face of expanding rainforests during the Holocene, and the potential role of burning to promote open forests to survive in the tropical rainforest region, is being investigated in an ARC funded multidisciplinary research project. A commonly held assumption is that Aboriginal people had established these clearings, possibly taking advantage of episodic cyclonic events breaking the canopy and subsequently maintaining them through fire and weeding. An alternative explanation is that these pockets represent patches of Pleistocene remnant eucalypts that survived Holocene rainforest expansion through continual Aboriginal disturbance, to promote economically important plant foods and for use as campsites and hunting grounds.

The "pig factor": Experimental studies of scavenging by pigs and dingoes in Australia

Melanie Fillios (University of Sydney)

An important consideration in the creation of experimental models of faunal accumulations resulting from scavenging in Australia is the damage inflicted on carcasses by introduced species, especially feral pigs. In experiments conducted over several field seasons in 2009-2010, feral pigs were the primary scavengers of kangaroo carcasses in and around waterhole contexts in study sites in the temperate and semi-arid zones of New South Wales. The "pig

factor" raises the issue of the applicability of modern actualistic scavenging experiments to archaeological faunal assemblages.

Dingoes are also active scavengers of native fauna, and have been in Australia since the mid-Holocene. While several feeding experiments with dingoes have been carried out over the years, none has examined their effects on whole large mammal carcasses. In order to use pigs as a proxy for Australia's past endemic scavengers, such as dingoes, we must first establish whether the two species have similar END effects on carcass fate.

This study delineates the results of scavenging experiments carried out with both pigs and dingoes, examining bone breakage patterns, skeletal element frequencies, and analysis of tooth marks using Scanning Electron Microscopy, to address the comparability of the two species in Australian actualistic faunal studies.

Identifying flake attributes of the indirect percussion technique

Dean T. Fleming and Mark W. Moore (University of New England)

Flaked stone axes and adzes with rectangular cross-sections are documented in two parts of the world: Scandinavian Europe and island Indonesia. Modern stoneworkers agree that the production of a rectangular cross-section is only possible by indirect percussion using a punch. This is suggested by technical features of the adze blanks themselves, such as the precise placement of blows combined with the sizes of flake scars. Flakes produced by the indirect percussion technique are also said to be diagnostic of the technique; for example, indirect percussion flakes are said to have a more pronounced bulb of percussion than flakes produced by direct percussion. In this study we compare a number of attributes between an assemblage of rectangular-section axe flakes made by indirect percussion and flakes made by direct hard-hammer percussion. We find that none of the selected attributes can be used to reliably identify flakes made by the indirect percussion technique. This is discussed in the context of an archaeological assemblage of rectangular-section adze debris from Song Gupuh, Java, Indonesia.

Graffiti? ... I don't think so! An archaeological study of historical inscriptions at two northern Australian sites

Jane Fyfe (University of Western Australia)

Rock art research has mostly looked at rock art, Indigenous rock art and contact rock art. Now it's time to open the door a little and bring in a new perspective. Europeans have been

writing on rocks for millennia, and they were not reticent about adding their signatures to the rock surfaces in Australia.

Extant inscriptions in the Pilbara, Western Australia, and the island of Ngiangu, Torres Strait, are the subject of this archaeological study of historical inscriptions. Power plays, dominance and 'mixing it up' with existing rock art are some of the topics discussed in this investigation of the social and symbolic behaviour of Europeans in the Australian landscape.

Winangali – Agricultural wasteland and heritage haven

Patrick Gaynor

Winangali, a 230 hectare property situated between Gunnedah and Coonabarabran NSW, geologically belongs to the Jurassic Pilliga Sandstone Formation. According to Jensen (1912:147), the Pilliga Sandstone soils contain the lowest plant nutrients of all the sandstone soils in NSW. The Pilliga Sandstone Formation is also the main NSW intake of water for the Great Australian Basin (Hind and Helby 1969:496). The combination of poor soils and the inability to hold moisture relates to Winangali's present low agricultural value. Past European attempts at various uses for this type of land, have met with failures either from changing values for commodities or the failure to control the Pilliga scrub vegetation. While Winangali's low agricultural value is detriment to making a living off it, it nevertheless has great both Aboriginal and European heritage value. The hilly nature of the property has saved it from widespread clearing, although it was subjected to bursts of logging and mining. The sandstone outcrops present throughout the property were ideal for Aboriginal shelters and these were widely used in the past, according to the artefacts still present. Evidence from this property could be used to locate similar locations that may still contain both Aboriginal and European Heritage sites.

Modern Emu Butchery and Economic Utility: implications for understanding Australian zooarchaeology and megafaunal extinctions

Jillian Garvey (La Trobe University and University of Sydney), Judith Field (University of Sydney) Brett Cochrane and Chris Boney (Brewarrina Local Aboriginal Land Council)

The study uses a multidisciplinary approach to understand the role of the emu in Australian archaeology, and the implications for interpreting the late Pleistocene extinction of another large flightless bird, *Genyornis newtoni*. This is done via several methods including: (1)

modern Indigenous butchery practices; (2) undertaking economic utility experiments to quantify the meat, fat and marrow from specific body parts to predict the likelihood of selection and transportation by humans; and (3) evaluating the fatty acid content of the meat, fat and marrow to determine the nutritional and therefore physiological benefits of particular body parts. As suggested by O'Connell (2001), understanding prey selection, butchery patterns and food sharing in modern contexts may provide important interpretive frameworks for the archaeological record. This paper presents the results of a butchery and economic utility study of emu from the semi-arid zone of south eastern Australia. The results are discussed with consideration of O'Connell's (2001) suggestion that open locations such ephemeral waterholes may have been important hunting locations in semi-arid and arid Australia; and with reference to Cuddie Springs, NSW, where the bones of *Genyornis* are found co-occurring with flaked stone artefacts.

Reference: O'Connell, J.F., 2001. An Emu Hunt. Australian Archaeologist: Collected papers in honour of Jim Allen. Anderson, A. and T. Murray, eds. Coombs, Academic Publishing, The Australian National University, pp. 172-181.

A toolkit cache from the Arcoona Plateau: differentiating between toolkits and discard assemblages

John Hayward (Flinders University)

The concept of a toolkit has been used to describe functional aspects of lithic assemblages since the 1960s, but has proved difficult to define. In Australia it has become a generalised term which has been used to explain the complete range of technologies available to a culture, as well as defining strategies for risk management and mobility.

This research investigates the concept and its applicability to Australian lithic assemblages. In 1970 a cache of 105 stone artefacts was discovered at the top of a sand dune in the arid landscape of the South Australian Arcoona Plateau. Its finder interpreted the cache as 'a comprehensive woodworking kit'. This 'tool-kit' is compared with assemblages from four campsites collected from nearby Mungappie Creek by the same person, to analyse the existence of toolkit structures in lithic assemblages. The results indicate that the toolkit cache was a unique collection of artefact and material types that were scarce or non-existent at any of the four campsite assemblages. The conclusion is that there are significant differences between discard assemblages and discrete entities such as caches and toolkits, suggesting the need for a revision of the toolkit concept from a generalised to a specific interpretation.

The Jordan stone-built structures field survey 2010

Karen Henderson (University of Western Australia)

Kites, Wheels, Pendants and Cairns are the most common prehistoric sites in Jordan. Numbering in the thousands, they are clustered in the Basalt Desert of the Eastern Panhandle, and form a landscape of features of which little is known. The Jordan Stone-Built Structures Survey (JSS) is a large-scale aerial survey covering approximately 30,000 km^2 using Google Earth and various other types of aerial imagery and maps. The survey will identify, catalogue and categorise each site in order to construct a more complete typology of sites. Additionally, the use of GIS and mapping will enable the interrogation of spatial relationships and environmental placement patterns. The 2010 field survey to be carried out near Azraq in the west of the Basalt Desert aims to establish benchmarks for future research on the ground by using pedestrian survey, total station mapping and test excavation. Test trenching is particularly important, as none of these site types have been excavated in Jordan before. The poster will outline the methods used and include a discussion of preliminary results.

Reconstructing Quaternary archaeological and fossil landscapes using palaeomagnetism and uranium lead methods: examples from Australia and South Africa.

Andy I.R. Herries (University of New South Wales)and Robyn Pickering (University of Melbourne)

Palaeomagnetism can be used to reconstruct Quaternary landscapes by the cross correlation of stratigraphy from different geological sections and archaeological excavations. This data can also be used for dating the various archaeological and fossil deposits within the landscape. Palaeomagnetism is most often used on open landscape sites where thick sections of stratigraphy occur. However, palaeomagnetism can also be conducted on short sequence stratigraphy in cave sites if the right situation exists or if a radiometric age can be obtained for at least one layer in the site. The dating of many early to mid-Quaternary cave deposits has been hampered by an inability to provide radiometric ages older than the age of the uranium-thorium method (~500 ka). Recent uranium-lead dating of speleothems from cave deposits, combined with palaeomagnetism, has enabled the accurate dating of early hominin bearing cave sites in South Africa. These methodologies are now being used on Australian fossil sites such as the Wellington Caves. Such work is also helping to refine and

accurately date the palaeomagnetic excursion record that will provide the ability to refine the dating of archaeological and fossil sites using palaeomagnetism.

A review of archaeological geophysics in Australia

David Hunter (Hunter Geophysics and La Trobe University)

Geophysics provides a means of remotely detecting buried archaeological features. Using the appropriate technique, almost any feature can be remotely detected. While geophysics has been used in archaeology for the best part of half a century, its use in Australian archaeology has been seldom at best. This poster will review some of the geophysical surveys that have been undertaken in Australia and internationally and will examine the benefits of further use of the technology on Australian sites.

Traces in the landscape: a survey of Aboriginal cultural heritage at a site in the Border Rivers region of southern Queensland

Peter Jesser

Traditional Aboriginal society in the Border Rivers region of southern Queensland had disappeared by the late 1840s and the subsequent development of agriculture erased much evidence of the earlier way of life. However, significant amounts of cultural heritage have recently been identified on one property in the region. The cultural material is concentrated along ten kilometres of creek frontage in four separate catchments. This poster sums up the findings of a cultural heritage survey funded by the Queensland Murray Darling Commission, which has confirmed the presence of large quantities stone tools and flakes, earth ovens and scarred trees. A few pieces of worked glass indicate that some sites were still occupied when Europeans entered the area. As protected vegetation covers more than half of the property, there is a degree of landscape integrity which places the cultural material in context. Ongoing work will address the challenges of identifying the sources of imported stone and finished tools in the cultural material, protecting the sites, and placing them in a wider regional perspective.

What we did NOT learn at University: A guide for students

Sarah Keiller, Helen (Nelly) Tierney, Kelly Michael and Shannon Smith (Flinders University)

When, in 2004 Jamie McIntyre self made millionaire was interviewed in regards to his career success he replied, “What I didn’t learn in school…”. This ideology is the basis for our poster, which focuses on our experiences as four postgraduate students. These experiences were gained during our past and current enrolments with Flinders University, and other Australian Universities, and go beyond the expected learning outcomes. Furthermore, these experiences have been unique to each of us and have been gained outside the perimeters of topic aims.

Traditionally the objectives of these learning opportunities have been to develop basic field skills and other professional competencies. However, we have found that there are many unexpected outcomes from the inclusion of field schools and practicums within the archaeological curriculum. This is one reason why field schools and non-classroom activities are important to the professional development of archaeology and cultural heritage management students. Our experiences demonstrate that a more hands-on approach is the key to gaining sufficient experience to be work-ready in the archaeological world.
For more information: http://whatwedidnotlearnatuniversity.wordpress.com

Crafting Pre-Lapita Valuables: Locating obsidian stemmed tool craft specialists in the pre-Lapita landscape of west New Britain, Papua New Guinea

Michelle Jane Lau (University of Sydney)

Two obsidian quarry assemblages from West New Britain, Papua New Guinea contained evidence of stemmed tool production during the pre-Lapita period 5900-3500BP. These tools have the potential to challenge the notion that the pre-Lapita societies were egalitarian. Recent research has contributed interesting and useful information about how these artefacts were produced and exchanged throughout West New Britain and beyond. Locating the presence of craft specialists at the quarries informs an understanding about the context of social organisation in which stemmed tools were produced and functioned. Investigating the presence of craft specialists was made possible through a comparative typological analysis of the staged manufacture of these distinctive tools. Analyses suggest that craft specialists were present at the quarries and further support
the hypothesis that stemmed tools were valuables. Valuables were used as social tools in trans-egalitarian or stratified societies. A greater understanding about the nature of pre-Lapita society contributes knowledge towards resolving the controversy about the origins of the subsequent Lapita culture.

Technological and geochemical study of Vanuatu ceramics

Mathieu Leclerc (Australian National University)

The objective of the project presented on this poster is to identify prehistoric pottery manufacture locations and reconstruct exchange networks as well as population movements through a study of ceramic collections originating from archaeological sites throughout Vanuatu. Because of its particular geographical location between Melanesia and Polynesia, this archipelago represents a crucial place for understanding population movements in the Pacific.

It is generally agreed that the first human settlers in the Pacific left behind a coherent set of specific archaeological features grouped under the Lapita cultural complex. The most distinctive element of this complex is the decorated pottery, which has been found on numerous sites in Vanuatu. Besides Lapita, more recent ceramic styles have also been identified in Vanuatu. Thanks to well-stratified archaeological sites and excellent preservation conditions in general, a robust and fairly complete ceramic sequence for Vanuatu have been established.

In the framework of this project, geochemical and technological analysis of ceramics, clays and temper will be used to reconstruct intersocietal interactions at different time periods, and to study transformation of these interaction patterns through time. This poster presents the results of the 2010 fieldwork season.

Magyar Ethnogenesis: Tracking people and language across the Eurasian landscape

Sylvia Marshall (Australian National University)

Can archaeology explain the origins of an ancient people whose language is their only certain 'landscape'?

'Landscape' is both a physical and an intellectual concept.

This poster considers landscape in both senses – the various physical landscapes the Magyars are purported to have lived in and migrated across over a long period; and the intellectual landscape of language and how archaeology must sometimes attempt to 'put the dirt under the feet' of other scholars, such as linguists and their attempts to locate the origins and boundaries of languages in the physical terrain.

The text and accompanying images present: the 'key issues' pervading the debate over the ethnogenesis of the Hungarians (Magyars); the 'known facts' of the arrival of the Magyars under Árpád in the Carpathian basin circa 896AD and scholarly works attaching their language to the Finno-Ugric language family; and the 'research underway' to establish the

process by which that linguistics view, developed in the 18th/19th centuries, then attracted historical and archaeological dimensions placing the ethnogenesis of the Magyars in the Ural Mountains steppes region around 3,000-5,000BC.

Landscape archaeology in the arid northeast region of South Australia: Preliminary investigations into relationships between site distributions, surface geology, water sources and wind patterns

Ben Marwick, Traevis Field, Jordan Martinez, Paulina Przystupa, KayLee Abbott, Kimbi Macy, Laura Minchk (University of Washington) and Philip Hughes and Marjorie Sullivan (Huonbrook Environment and Heritage Pty Ltd)

During 2007-2009 several thousand archaeological sites were recorded in the vicinity of BHP Billiton's Olympic Dam mine in the arid northeast of South Australia by Huonbrook Environment and Heritage Pty Ltd (HEH), with the Kokatha, Kuyani and Barngarla Aboriginal communities. In 2010 students participating in a University of Washington field school at Olympic Dam conducted preliminary analyses on some of these archaeological sites to investigate relationships previously proposed by the project archaeologists between the locations of sites and a selection of landscape attributes. The database of sites was analysed using ESRI's ArcInfo software and Exploratory Data Analysis techniques were carried out using IBM's SPSS software. Sites containing hearths were found to be strongly correlated to geological regimes dominated by quartzite, the material from which most hearths are constructed. Sites tend to be more numerous on the south flanks of sand dunes than the north flanks, possibly a result of the southerly prevailing winds in this region. The number of sites per square kilometre tends to be higher near water sources and sites more frequently contain hearths near cane grass swamps compared to the other two types of water sources in the study area. From these preliminary investigations we conclude that the surface archaeology of this area is highly patterned and that prehistoric Aboriginal occupants were highly sensitive to local variations in geology and geomorphology.

Archaeolinguistic stratigraphy in the Kimberley region of Australia

Patrick McConvell (Australian National University)

Against a background of high linguistic diversity (three Pama-Nyungan subgroups and four non-Pama-Nyungan families) there is also significant diffusion of words between families and subgroups which tells us a great deal about the prehistory of the Kimberley region.

Archaeolinguistic stratigraphy matches strata of words with archaeological horizons. The diffusion of words for 'muller' (top grindstone) is dated to after the unity of a Pama-Nyungan sub-group linguistically and linked to appearance of such artefacts and the seed-grinding economy in the region 3000-2000 years ago (McConvell and Smith 2003). Another example is a word for spear thrower which is the same as the word for a tree species in the east Kimberley but the chronology of the diffusion of the word south and west beyond the distribution of the tree can be tracked by sound changes, and by archaeology, rock art and material culture studies. While the reason for spread of other *Wanderwoerter* (travelling words) e.g. for flora and fauna, is less immediately obvious, the species may have been of some economic and/or cultural significance at some earlier stage, or may have changed geographical distribution during the Holocene. Examples are drawn from fish and bird species.

Microlith blank production by the 'long axis method' in southeast Queensland

Mark W. Moore (University of New England)

The Holocene period in Australia saw a proliferation of backed microliths. Despite the ubiquity of this technology across much of the continent, the methods for producing blanks for backing are described only in the Hunter Valley of New South Wales. A focus of the author's research in southeast Queensland is to produce a reduction sequence model of stone tool manufacture applicable throughout the region. One aspect of this southeast Queensland model—the Aboriginal method of microlith blank manufacture, called the 'Long Axis Method'—is described here. The method is technically simple but choices among several options across the eight flaking phases led to an extensive array of possible flaking permutations. Many of these have been identified archaeologically and others are predicted but not yet observed. A key challenge is to document and explain the nature, distribution, and timing of these permutations.

Shifting sands: archaeology and heritage management in the Cape Flattery dunefields, eastern Cape York

Mick Morrison (Flinders University), Nicky Horsfall (Consulting Archaeologist, Edge Hill, Cairns), Brian Cobus (Nguurruumungu Clan Group, Cape Flattery) and John Deeral, Garreth Deeral (Diingal Clan Group, Cape Flattery)

The Cape Flattery region on eastern Cape York is renowned for its extensive dunefields comprised of silica rich sands. While the vast majority of the area is listed on the National Heritage Register for its natural heritage values, one isolated sand mining operation continues. This paper addresses two issues. First, it highlights the contribution of consulting archaeology to understanding what is, in archaeological terms at least, a relatively poorly understood region. Second, it explores a range of issues relevant to identifying, assessing and managing archaeological places within these complex and dynamic landscapes. Of particular note at Cape Flattery is the way in which archaeological deposits are shaped and reshaped by the dynamic nature of the landscape itself particularly in regard to the ways very large dunes form, move and are dispersed as a result of wind action. This ongoing research is being supported by Cape Flattery Silica Mines, Cairns.

Identifying stone projectiles using 'tip cross-sectional area': An Australian perspective

Kim Newman and Mark W. Moore (University of New England)

Archaeologists have long debated the timing and implications of the appearance of stone projectile weaponry in prehistory. One method for identifying long-distance projectiles—those propelled with a spearthrower or bow—is through the tip cross-sectional area (TCSA) of the stone armatures. TCSA is said to reliably differentiate hafted North American ethnographic dart points, arrow points, and replicated hand-cast/thrusting spear points. These functionally-specific values, when applied to the TCSA measurements of archaeological point assemblages from Africa, Levant, and Europe, suggest that long-distance projectiles do not appear until after 40 Ka (Shea 2006). In this study, we calculate the TCSA values on hafted Australian ethnographic specimens of macroblade spears and stone Kimberley points. We found that the TCSA measurements on Australian hafted long-distance armatures fail to match the functionally-specific TCSA values determined from the North American samples. The implications of this are discussed.

Finding a spot for Thune River (and its tributaries, Mmadale River and Pepe River) sites in the archaeological landscape of the Shashe-Limpopo: eastern Botswana

Cynthia Ontiretse Mooketsi (University of Western Australia)

Active archaeological research in the Shashe-Limpopo catchment area, eastern Botswana started in the late 1970s which was way behind that of the neighbouring South Africa and Zimbabwe. This late start led to our research themes being shaped to follow the debates of the time which were focused on Iron Age archaeology. The results of the survey conducted

in 2008 revealed more sites in the greater catchment areas of the Shashe-Limpopo, especially along Thune River and its tributaries that are of hunter-gatherer, herder and agro-pastoralists time periods. These preliminary results highlighted the need to move away from the Shashe River and Limpopo River confluence zone in order to have better understanding of the archaeology of this region.

Contact rock art of the Pilbara: An application of the Heurist database system

Alistair Paterson (University of Western Australia) and Andrew Wilson (University of Sydney)

As part of the ARC Discovery Picturing Change project, several seasons of fieldwork have been conducted in the Western Pilbara. This work has documented rock art related to Indigenous interaction with Europeans from the 1860s onwards, as well as collecting information on associated settler sites and activities and a wide variety of documentary, pictorial and spatial data.

With the support of BHP Billiton Iron Ore Pty Ltd and the Ngarluma Aboriginal community, the Archaeological Computing Laboratory at the University of Sydney is developing a Heurist database tailored for Pilbara data. Under development at the ACL since 2005, Heurist is a generic digital knowledgebase for managing heterogeneous and relatively unstructured data. It is designed to overcome the problems of research data stored in many separate incompatible databases by allowing the storage and interlinking of all research data, notes, annotations and digital attachments in a single web-accessible, shared database, while providing individual and group 'views' on this data and controlling access to sensitive data. It has provided the enabling technology in several leading eResearch projects including the Dictionary of Sydney.

This poster documents and explains the application of this innovative database system to rock art data.

'Picturing change - Twenty-first century Perspectives on recent Australian Rock art' is an ARC Discovery project is a national study into historical rock art produced by indigenous Australians following contact with outsiders. The project is directed by Prof Paul S.C. Tacon (Griffith University), Dr June Ross (University of New England), Associate Professor Alistair Paterson (University of Western Australia), and Dr Sally K May (Australian National University).

Rockshelters and stone procurement in the Kimberleys: Evidence from the Lower Mitchell River

Yinika Perston and Mark W. Moore (University of New England)

An archaeological research program was begun recently into the art and archaeology of the Lower Mitchell River, northwest Kimberley region, Western Australia. The hard quartzite bedrock of the region is ideal for the preservation of an extensive corpus of rock art thought to span the Pleistocene to the recent past. In many areas, this quartzite was sufficiently siliceous for stone tool-making; flaked seams and boulders are a familiar sight in the region's rockshelters. Here we document the long duration of this practice based on differences in iron staining, relative stratigraphy, oxalate crust formation, and superimpositions of rock art motifs and stone flaking. Technological issues are noted and future research directions are suggested.

Pointless spinifex? A review of Indigenous spinifex use throughout Australia

Heidi Pitman (Flinders University) and Lynley Wallis (University of Queensland)

Avoided by the explorer, cursed by the surveyor and generally only used as a drought reserve by the pastoralist, it is difficult to find a favourable colonial reference to prickly spinifex, "the chief scourge of the continent's flora" (Greenway 1973:71). It has, however, many useful properties and was an important resource for Indigenous Australians. Yet despite its distribution across one-quarter of the Australian continent and its numerous applications by Indigenous peoples, relatively little research has been undertaken on spinifex use and its associated technologies. Thus contemporary knowledge about this widely used resource is limited in extent, general in nature and consequently limited in value. Traditionally the two dominant and most widely known uses of spinifex were the production of resin, which was employed for hafting stone artefacts onto wooden handles and repairing storage vessels and wooden objects, and as cladding in shelter construction (Memmott and Go-Sam 2007). However, there are numerous other uses of spinifex which include resin for ornament manufacture and ceremonial and sorcery objects, fishing and trapping, fibre-work, medicinal purposes, as a food source, in games, fuel for fire and subsequently for hunting, light, heat and communication, and miscellaneous other uses including minimising water loss in water carriers, wrapping objects and shoring wells. In this poster we explore some of

these lesser known uses of spinifex, focusing on building narratives based on objects in museum collections.

Greenway, J. 1973 *Down Among The Wild Men: The Narrative Journal of Fifteen Years Pursuing the Old Stone Age Aborigines of Australia's Western Desert*. London: Hutchinson and Co.

Memmott, P. and C. Go-Sam 2007 Spinifex houses of the Western Desert. In P. Memmott (ed.), *Gunyah, Goondie + Wurley: The Aboriginal Architecture of Australia*, pp.208-231. St Lucia: University of Queensland Press.

The Ngaut Ngaut (Devon Downs) Interpretive Project – Presenting archaeological history to the public

Amy Roberts and Alex van Wessem (Flinders University), Mannum Aboriginal Community Association Inc.

Ngaut Ngaut, known in the archaeological literature as Devon Downs, is one of the discipline's iconic sites. Located on the Murray River in South Australia this rockshelter was the first Australian site to be scientifically excavated. The excavations, conducted by Norman Tindale and Herbert Hale, began in 1929. The results of this research provided the first clear evidence for the presence of Indigenous Australians in one place and over a long period of time.

Prior to Hale and Tindale's excavations little systematic research had been conducted in the field of Indigenous Australian archaeology. In fact the thinking of the day was that Indigenous Australians were recent arrivals to Australia and consequently it was generally believed that the material culture of Indigenous Australians had not changed over time. Hence, the research at Ngaut Ngaut provided a turning point in the way the Indigenous Australian archaeological record was viewed. Over 80 years have elapsed since this turning point in both Australian and archaeological history. These years have seen many changes in the archaeological discipline, cultural heritage management as well as changes to the Ngaut Ngaut site.

In this research we present some of the results of the Ngaut Ngaut Interpretive Project. The project, initiated in early 2010 by Amy Roberts and the Mannum Aboriginal Community Association Inc., aims to present to the public the many tangible and intangible values of this significant place through a variety of mediums. Some of the many values attached to the site (in addition to its archaeological history and excavations) that have required interpretation

include: rock art, Dreaming, oral history, discussions about Aboriginal group boundaries and 'totemic' issues. In this poster we focus on the need to consider the ways in which iconic archaeological sites are managed and interpreted and the issues involved in presenting archaeological history to the public.

The use of *Sporormiella* to understand the past distribution and quantity of large herbivorous mammals in Australia

Sue Rule (James Cook University & The Australian National University), Christopher Johnson (James Cook University), Barry Brook (University of Adelaide) and Simon Haberle (Australian National University)

To understand present-day environmental impacts, both anthropogenic and climatic, on threatened species past biological responses to environmental change is critical. In Australia the demise of the megafauna has been fervently debated with the main arguments divided between rapid elimination via overhunting (blitzkrieg); landscape transformation by anthropogenic fire and a combination of both human and climate factors. However there is limited evidence of a continual presence of megafauna within the landscape and their response to environmental change. Extensive studies overseas have found that the dung fungus *Sporormiella* is not only a reliable indicator of the presence of large herbivorous mammals but also biomass quantity. Two long continuous records covering over 100 thousand years located in the south and north of Australia were examined. *Sporormiella* was present throughout both records. However the northern Australian record had very high *Sporormiella* counts between the period 41-60 kyr but then decreased significantly. This decrease occurred before an increase in charcoal suggesting that anthropogenic fire was not a factor in the megafauna decline.

The distribution of human skeletal and cultural material found in Metal Age jar burials in the Philippines

Heidi Shaw (Australian National University)

In 2008, a jar burial site near Catanauan, Quezon Province, Philippines was partially excavated with a total of sixteen jar burials unearthed. Inside of these jar burials were uneven distributions of skeletal and cultural material. The variety and uneven distribution of both the skeletal and cultural material suggests that there is a possible significance in the placement of certain individuals and material in certain jars. The type of material found

included highly eroded skeletal elements, beads, degraded metal implements, shells, non-human bone, coral slab covers, and pottery. In 2009, the material was examined for possible patterns of distribution which led to inferences concerning the significance of certain combinations of variables. Once the data was collected it was then analysed using a visual recreation of the jar burials and examined the distribution of various material, such as the sex of the skeletons, type of material found, as well as specific aspects of some of the material recovered, such as the distribution of bead colours and type of coral slab covers. This poster presents the results of the examination of the distribution of the material found in the jars, as well as possible interpretations of those results.

Excavation of a large grinding groove site in the Hunter Valley, NSW

Scarp Archaeology, Rio Tinto Coal Australia, and the RTCA Cultural Heritage Working Group

Grinding groove sites are well known throughout the sandstone country of the Sydney and Hunter regions. Archaeologists have usually inferred the age, use and extent of these areas by inspection of surface features and context, but few archaeological excavations with usewear studies of these sites have been documented.

In June 2010, a grinding groove site within the RTCA Warkworth Mining Lease (Hunter Valley NSW) was excavated and studied by a large team from the Aboriginal community, RTCA and Scarp Archaeology. The mitigation program included excavation of a 30m x 10m area surrounding the grinding grooves; recovery and subsequent analysis of materials including usewear studies; and relocation of the sandstone boulders with grooves to a culturally appropriate location.

The project found several more grinding grooves (in addition to previous records), some occurring as subsurface features permitting minimum age estimates. A low frequency of flaked stone artefacts is most likely a consequence of fluvial deposition from nearby creek banks. Usewear studies assisted in the identification of grinding groove function, most likely the result of shaping and sharpening stone axes/hatchet heads. The results indicate that dating studies of similar sites should be possible.

From Camps to Quarries: An introduction to the archaeological landscape at Woodie Woodie, east Pilbara, Western Australia

Jim Stedman, Wendy Reynen and Jess Reynolds (Eureka Archaeological Research and Consulting UWA)

Over the past three years Eureka Archaeological Research and Consulting has been undertaking archaeological heritage surveys at Consolidated Mineral Limited's (CML) Woodie Woodie mine site. Woodie Woodie is located in the eastern Pilbara, approximately 400 kilometres from Port Hedland, Western Australia. The CML project is focused on the Gregory Range, one of the easternmost mountain barriers between the Great Sandy Desert to the east, and the vast, well-watered Oakover basin to the west. The project area therefore comprises a varied landscape of semi-permanent and permanent creeks and waterholes, valleys, alluvial plains and hills. Minimal archaeological work has been conducted in the Woodie Woodie area previously, and Eureka's recent surveys comprise the majority of the archaeological knowledge base in the area. Over the course of nine fieldtrips conducted between 2008 and 2010, Eureka archaeologists, with Njamal Traditional Owners, have surveyed large tracts of land nominated by CML for exploration drilling. Preliminary results indicate that stone quarries are the most common site type and there is an intriguing lack of habitation sites in the areas inspected. This survey work indicates that the Woodie Woodie landscape provided a significant source of raw materials within a well-resourced area. This poster will provide preliminary results of the fieldwork conducted in the Woodie Woodie area by Eureka archaeologists and Njamal Traditional Owners.

A minimum age for early depictions of 'Macassan' praus in the rock art of Arnhem Land, Northern Territory

Paul S.C. Taçon (Griffith University), Sally K. May, Steward J Fallon, Meg Travers, Daryl Guse (Australian National University) and Ronald Lamilami (Senior Traditional Owner, Maung)

In 2008, we began a research project that focuses on recent Australian rock art, made after the arrival of Europeans and Asians. *Picturing Change* is a national project with fieldwork in four areas, including western and northwestern Arnhem Land. Within Arnhem Land the Wellington Range was chosen as a case study because of its extensive and diverse rock art, including many examples of paintings that reflect contact between local Aboriginal people and visitors to their shores. At some sites figures made of beeswax are found under and over paintings, thus providing a means of obtaining minimum and maximum ages for pigment art. In this poster, we report on the results of an initial dating program that revealed the earliest ages for 'Macassan' subject matter in Australian rock art as well as Australia's earliest contact period depictions discovered to date.

Depicting *Djenj*: exploring fish species, styles, chronologies and representations of biodiversity in the rock art of western Arnhem Land

Meg Travers (Australian National University)

This poster presents research undertaken on fish, collectively known in the *Kunwinjku* dialect as *djenj*, painted within one rock shelter on Injalak hill, in western Arnhem Land, Australia. The research examines species depicted, styles and stylistic change over time, chronologies and questions whether these paintings of fish reflect the surrounding ecosystems. While some work has been undertaken on depictions of fish in rock art (for example, Taçon, Chaloupka, and, to a lesser extent Mountford and McCarthy), very little research has been undertaken into how representative these rock paintings are of the actual fish species present in the surrounding ecosystem at the time of production. This study aims to build upon previous research to expand our understanding of the fish artists are choosing to depict, and why, as well as understanding the differing painting styles for fish as they change through time.

Monumental landscapes from above: enhanced perceptions of archaeological palimpsests

Arianna Traviglia and Raffaella Massi (Macquarie University)

Remote sensing in archaeology has a hundred year tradition with satellite-based applications becoming increasingly common in the last thirty years. The technology has evolved into a well-established research area with a high public profile and huge opportunities for the efficient detection, mapping and management of cultural heritage sites and landscapes in a variety of different environments.

The possibility of locating unidentified archaeological features by spectral recognition (based on the spectral characteristics of satellite images) is an extraordinarily valuable addition to traditional survey methods. Image processing products allow recognition of archaeological and palaeo-environmental traces that cannot necessarily be observed on the original images or using traditional survey methods, especially when their scale requires observation from above in order to understand the significance of scattered elements. This is particularity true when the features that are being looked for trace and define a monumental landscape where anthropogenic and natural elements are inextricably entwined and can only be detected from a bird's eye view. The links between the dispersed objects forming a disparate "monumentalised" cultural landscape - such as the Roman land division

(centuriation) characterising many Mediterranean countries or the intricate grid-like layout of the greater Angkor in Cambodia - become therefore understandable.
This poster will showcase some case studies that demonstrate how remote sensing is crucial not only for identifying these monumental landscapes, but also for adding chronological resolution and for separating out the layers of the complex palimpsest of features that form these settlements.

High or dry? Lake level change, environmental change and technological organisation at Lake Mungo

Jacqui Tumney (La Trobe University)

Three assemblages of chipped stone artefacts from the Lake Mungo lunette have been studied. Fine-grained silcrete is the most common raw material identified in each of the assemblages. This material was probably readily available from several locations within a radius of 25 km, although the exact source that was used has not been confirmed. Small quantities of quartzite were also present; the closest source of quartzite known geologically is approximately 70 km away. Coarser-grained silcrete is also present at similar percentages to quartzite. This material is assumed to be of much lower quality, and the source is unknown.
The first assemblage studied is associated with sandy sediments associated with high lake levels; the second, in the same geographic location, is associated with finely layered clays and silty sands associated with low and fluctuating lake levels. The third assemblage is from a different location, and is also associated with low and fluctuating lake levels. These three assemblages provide a unique opportunity to investigate change and variability in the organisation of chipped stone technology at Lake Mungo in association with hydrological changes just prior to the last glacial maximum.

Elemental analysis of archaeological artefacts – The perils of PIXE

Anne-Marie Williams (University of Tasmania)

As part of a larger project on the analysis of teeth from children, who died in the mid to late 1800's, an opportunity arose to undertake a large-scale replicability study on the use of PIXE in trace element analysis. The teeth were analysed using proton induced x-ray emission (PIXE) at the Australian Nuclear Science and Technology Organisation (ANSTO). As part of the project multiple teeth were analysed several times using different PIXE setups in order

maximise the yield from the analysis. As changing the PIXE set up should not affect the results of the analysis, except for very low concentration elements, the data collected allowed for a number of studies on the replicability of PIXE. The results of this study indicate that the presence of both systematic and random errors can cause difficulties with the interpretation of PIXE results. In the case of tooth enamel the lack of enamel homogeneity and uneven surface add to the difficulty in differentiating between real trace element differences and experimental error. Although PIXE is a useful fast non-destructive method for multi elemental analysis of many materials, users need to understand the errors inherent with PIXE.

Wajarri rock art in the Weld Range, Murchison, WA

Vicky Winton, Trina Corunna, Viviene Brown, and Richard Cameron (University of Western Australia)

The rock art of the Weld Range in the Murchison region of Western Australia is dominated by ochre hand-stencils. In May 2010 fieldwork for a UWA Honours Student Project was undertaken to record rock-art sites selected for study by the Wajarri Traditional Owners. The aims of the project were to quantify attributes of the rock-art assemblage at the sites in order to allow interpretation of population demographics for the Wajarri painters and to explore the techniques by which the art was created. Laboratory experiments were conducted to investigate possible techniques for producing hand-stencils as suggested by the Wajarri, literature review and improvisation. The methods used to record motifs in the Weld Range were developed in the light of results of the experimental data with a focus on attributes that would help to identify the technique of production. This poster presents the results of preliminary analyses.

Lower Murray Archaeological Project (LMAP): Stone Artefact Analysis

Shannon Smith (Flinders University), Chris Wilson (Yunggorendi First Nations Centre, Flinders University) and Uncle Tom Trevorrow (Chair, Ngarrindjeri Heritage Committee).

This poster describes a lithic analysis undertaken as part of the ARCH8508 Directed Study in Cultural Heritage Management graduate subject in the Department of Archaeology, Flinders University. The lithic assemblage was excavated in 2008 by Chris Wilson, from the Glen Lossie Midden and Burial Site (GLMBS), in South Australia, as part of his doctoral investigations. The Glen Lossie Irrigation Area is undergoing major irrigation infrastructure

and was identified by the Ngarrindjeri Heritage Committee (NHC), as a priority for archaeological research.

The main aim of this project was to produce a detailed recording of the GLMBS lithic assemblage, which consisted of fifty-five mainly quartz artefacts, with some imported raw materials and produce basic metrical data for other assemblages from Chris Wilson's doctoral research, including Hume Reserve (POMA) and Swanport Reserve (SWM). This data was used to produce a better understanding of technological changes during the mid-late Holocene in the Lower Murray region by relating them to Wilson's (2010) chronology of occupation and Ngarrindjeri lifeways in the Lower Murray.

The industry partner for this study is the Ngarrindjeri Heritage Committee, represented by Uncle Tom Trevorrow. The analysis was undertaken under the supervision of Chris Wilson and Dr. Alice Gorman. Wilson's research forms part of a broader cultural heritage management strategy being implemented by the Ngarrindjeri Regional Authority.

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