

# Historical archaeology and Australia's cultural heritage sector: emerging issues for education and skills development

TRACY IRELAND, AMY GUTHRIE, RICHARD MACKAY and ANITA SMITH

*This paper reviews findings from the Heritage Trades and Professional Training Project (GML et al. 2010) and draws out emerging issues for historical archaeology and heritage management in Australia. The research project was designed to gather and analyse data on the nature of existing education and training for the historic heritage sector and on the skills most used by heritage professionals. The analysis reveals that archaeology differs from other professions working in historic heritage in that most archaeology degrees are likely to contain heritage related content. Further, archaeologists are more likely than other heritage professionals to have gained their most-used workplace skills through formal learning, rather than 'on the job' training, suggesting that archaeology education has responded effectively to the needs of employment in the heritage sector. However, a range of systemic problems in heritage education and training were identified including: the geographic concentration of education in SE Australia; the need for education to respond to the changing theory and practice of heritage; the need for improved national co-ordination and collaboration between education providers and regulatory authorities; and the need to make grant funding and project approvals conditional upon the employment of appropriately qualified specialists, in order to build demand for quality and best practice.*

## INTRODUCTION

This paper presents findings from the *Heritage Trades and Professional Training Project* (GML et al. 2010 – henceforth referred to as 'the project') commissioned by the Australian government to identify and address perceived gaps in historic heritage professional and trades education and training in Australia and New Zealand. The project included an industry wide audit of education and training opportunities and a skills needs analysis based on an on-line survey. Analyses of the gaps, trends and issues arising from the data assembled led to some clear findings about the strengths and weaknesses of heritage education and training, and to the development of proposals for a national approach to strengthen and improve the system. Although the project covered the cultural heritage sectors of Australia and Aotearoa/New Zealand, in this paper we take the opportunity to focus on the findings for Australia and, in particular, to explore some of the implications of these findings for Australian archaeological education and historic heritage management.

The project evolved after several years of debate and discussion by government and non-government organisations in Australia and New Zealand about the adequacy of education and training available to the historic heritage sector. As concepts of heritage broaden in Australia and internationally, the question of what constitutes an appropriate education or training for individuals involved in the identification, conservation, interpretation and management of that heritage inevitably becomes more complex (Benton 2010:1). For instance, as we discuss in the following section, the categories used for heritage legislation and management in Australia, such as historic, Indigenous and natural, along with the category of intangible heritage as defined by UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage, are subject to ongoing challenges and contestations by both experts and diverse communities (Harrison and Rose 2010:243). The brief for the project stated that 'Anecdotal evidence suggests that there is an Australasian wide shortage of skilled heritage practitioners and trades people. Likewise there is evidence from heritage sector employers and graduates that established heritage courses do not fully meet sector needs or students' expectation' (Project Brief:1). The project was therefore designed to gather much needed empirical data on

this situation and to produce a 'snapshot' of what the heritage profession 'looked like' in 2009 when the research was conducted.

As we will go on to discuss, the study highlighted several positive findings relating to archaeology education that contrasted with other disciplines involved in the historic heritage sector. It has been clearly demonstrated by research over the last decade that archaeologists working in Australia today are overwhelmingly employed in the heritage sector (Colley and Ulm 2005:9; Ulm et al. 2013:7). Research for this project demonstrates that tertiary archaeology education has responded to this evolving reality in several important ways. Archaeology undergraduate and postgraduate degrees are more likely to contain relevant heritage related content than other discipline based degrees where graduates also work in heritage and related fields. Further, archaeologists, more than other heritage professionals responding to our survey, reported that many of their most-used workplace skills were gained through formal learning, rather than 'on the job' training, suggesting that education and training prepared these respondents well for the reality of their work in the heritage sector. However, factors identified by earlier studies of Australian archaeology as key future challenges are also echoed by this project's findings for the broader heritage sector. Both Colley (2004) and Ulm et al. (2005; 2013) have commented on the pressing need for cooperation between education providers and between the private, government and university sectors, and the need for coherent national representation of all archaeology stakeholders. Our study raises further issues regarding the geographic concentration of education and training opportunities in SE Australia and the need for education to respond to the changing theory and practice of heritage. In the same vein, the project found that professional heritage education in Australia is highly fragmented, with few opportunities for regional or cross-disciplinary co-ordination, let alone information sharing or promotion of national issues such as the need for benchmarking and quality standards. Such a situation almost precludes the sector from responding effectively to factors such as regional skill shortages, emerging priorities for new skill development, or to contribute to nationally significant research agendas and to cultural and environmental challenges.

## ISSUES OF SCOPE AND DEFINITION

As we have already stated, the project had a very broad scope that included all historic heritage related professional and trades education and training in Australia and New Zealand. The brief included, for instance, the disciplines of architecture, landscape architecture, planning, engineering, building conservation and materials conservation, as well as historical and maritime archaeology, history and architectural history, and the gamut of trade skills. On the other hand, the brief was limited to so-called 'historic' cultural heritage, excluding Indigenous and natural heritage. This definition of 'historic cultural heritage' is commonly used in Australian heritage policy and legislation, where heritage is often divided into historic, Indigenous and natural categories, such as in the *Environment Protection and Biodiversity Conservation Act 1999*, the main national heritage legislation.

The excision of the category of Indigenous heritage from the brief immediately raised some complexities for our research methodology. Indigenous heritage places have generally been categorised as archaeological sites, art sites, sacred sites, landscapes, natural areas etc. Increasingly however, Indigenous communities' attachment to places such as urban areas, built heritage, missions, cemeteries, churches, pastoral stations and other rural places, is being recognised through community action, research and heritage listings (Byrne 2002). Simply put, this means so called 'historic' heritage may also be Indigenous heritage, while landscapes and archaeological sites often cross the boundaries between all three categories of heritage. This problem of definition occurs because notions of heritage significance are dynamic and reflect broader changes in society, and because sometimes socio-cultural change appears to accelerate at such a pace that public policy lags far behind and appears to be mired in outdated structures and straitjackets. It is clear that most archaeological and heritage education and research in Australia recognises these overlaps and complexities to some extent, and that while the project brief's definition of historic heritage was pragmatic from the point of view of government and legislation, its use also appeared to reinforce the existence of a separate category of historic heritage. If the project had been confined to a category of place, such as buildings, its scope could have been defined by the specialist skills needed to manage and conserve such places, irrespective of the cultural values reflected in such places. However, the scope encompassed skills and knowledge related to landscapes and archaeological sites, as well as built heritage, and we interpreted this breadth as a strength of the research because it therefore produced a rare overview of the various specialisations and subfields of the sector. On the other hand, we endeavoured not to reproduce the construct of 'historic' heritage in our interpretations of the data and, most importantly, in the report's recommendations.

## THE EDUCATION AND TRAINING AUDIT

### The keyword matrix

To conduct the audit of education and training opportunities across the entire gamut of heritage related disciplines, it was necessary to first understand the main skill and knowledge areas which define historic heritage practice in Australia. Table 1 sets out the 'keywords' that we used to describe these skill and knowledge areas, generally irrespective of discipline, although some skills equate to discipline specific methods such as archaeological excavation. It is important to note that these 'keywords' were not 'aspirational', that is they did not represent what we thought *should* be the main skill and knowledge areas for heritage practice, but rather they reflect the research undertaken by the team into the nature of existing

practice. Each 'keyword' was then further broken down into up to 18 further knowledge or skill groups to form the matrix set out in Table 1. The audit of education and training opportunities then noted the number of keyword 'hits' for each educational or training offering (courses or unit of study) that was identified and these findings are set out in Table 2. The analysis of the on-line skills needs survey, which we will go on to discuss, then further broke down the keyword knowledge or skill groups into a hierarchy of generic, specific and specialist skills, based on the frequency of use of the skill and its identification by survey respondents as a priority for future training.

### Audit findings

The audit identified three types of education and training opportunities:

- *discipline based education (such as degrees or majors in archaeology, architecture, planning or history);*
- *specialist heritage related education (specialist undergraduate and postgraduate degrees or majors in heritage management or heritage conservation); and*
- *professional development short courses.*

Sixty-eight specialist heritage-related education opportunities were identified in the university sector and around 190 undergraduate or postgraduate courses in relevant disciplines areas. Only 20 professional development short course options were identified, which infers that following tertiary training relatively few options for formal professional development training currently exist. However it was also noted that professional development courses are often run sporadically or on a once-off basis and thus were unlikely to be captured by the audit if they were not being advertised or promoted at the time it was carried out.

The majority of the discipline-based university programs identified did not contain specific cultural heritage components, with the exception of archaeology programs. Archaeology programs, including historical and maritime archaeology programs, generally contain components focusing on cultural heritage management. Other discipline areas which offer subjects with a heritage focus include postgraduate courses in architecture and undergraduate and postgraduate courses in urban planning, geography and history.

### Quality and content

The audit was not able to evaluate the quality of the identified education and training programs in cultural heritage. No professional standards or accreditation relating to heritage education and training currently exist in Australia. In view of this, the audit could only identify training and education opportunities on the basis of their published content, and could make no comment on how courses might reflect best practice standards. The lack of established standards or an accreditation framework affects not only the audit of training opportunities but also the skills needs survey which we will go on to discuss. As there is currently no defined set of core skills or knowledge areas for the various sectors of heritage practice, the significance of the identified gaps in training can also only be analysed in a general sense.

However, valuable work has been done over the last decade on developing benchmarks for archaeology degrees in Australia. The benchmarking statements set out in the 2008 publication *By Degrees* reflect significant research into the changing nature of archaeological practice in Australia, in particular, the relationship between archaeology and the heritage sector (Beck 2008 and also see for instance Colley and Ulm 2005; Lydon 2004; Ulm *et al.* 2005). It appears, from

**Table 1: Lists of keywords and keyword subgroups, representing skill and knowledge areas.**

	Keywords							
	Physical Conservation	Recording	Management	Consultation	Interpretation	Archaeology	Historic Landscapes	Legislation and Policy
Keyword sub groups (breakdown of knowledge and skill areas within each key word)	Thatching	Fabric survey	Significance assessment	Stakeholder engagement	Communication skills	Research design	Landscape assessment	ICOMOS Charters
	Bricklaying	Site survey	Thresholds	Public speaking	Multimedia skills	Archaeological site survey	Aborigiculture	Resource Management Act (NZ)
	Mortar analysis	Mapping	Policy development	Recording information	Tour guiding	Archaeological excavation	Horticulture	Historic Places Act (NZ)
	Paint analysis	GIS	Risk management	Survey development and analysis	Visitor management	Permit applications	Landscape architecture	EPBC Act
	Gilding	Inventory preparation	Issues analysis		Historical themes	Artefact analysis	Historic map/plan analysis	State heritage legislation
	Traditional tool making and use	Cataloguing	Implementation		Content development	Artefact conservation	Curtilage analysis	State planning legislation
	Painting and decorating	Data management	Tolerance for change		Audience analysis	Report writing	View analysis	International agreements/conventions
	Interior finishes	Photography	Legislative/statutory context		Interpretation strategies/plans	Diving		OH&S requirement
	Glass conservation	Sketching	Comparative analysis			Underwater survey and recording		Building codes
	Stonemasonry	Photogrammetry	Legislative compliance					Natural heritage legislation
	Metalwork/forging/blacksmith	Measured drawing	Conservation strategy					Aboriginal heritage legislation
	Roofing	Oral history	Conservation management planning					Burra Charter
	Plastering	Historical research	Site analysis					
	Carpentry Joinery Engineering Traditional mechanical skills	Archival research						

the results we will go on to discuss, that this work has borne fruit and that a similar effort is urgently required to articulate the basic skill and knowledge areas for heritage related education and training more broadly.

### Geographic spread

Table 2 summarises the results of the audit of professional heritage education/training opportunities, showing the number of courses identified that offer education or training in that keyword area for each state and territory. The table shows that there is a concentration of training opportunities in the ACT and Victoria – where all skill and knowledge areas are taught. Few training opportunities exist in Tasmania or the Northern Territory (those identified are heritage interpretation taught in tourism courses). South Australia has the highest number of training opportunities (57) because of the high number of specialist heritage management, historical and maritime archaeology degree and short courses run at Flinders University. South Australia is closely followed by the ACT (55) with a concentration of specialist heritage, materials conservation and archaeology degrees and short courses offered by the University of Canberra and the Australian

National University. Victoria also features a concentration of education/training opportunities (46) based on the number of specialist heritage postgraduate and short courses at Deakin University, heritage architecture and materials conservation courses at Melbourne University and the specialist heritage and historical archaeology focus of the archaeology degree at La Trobe University. New South Wales features only about half (24) the number of training opportunities in the key areas compared to those offered in Victoria (46), followed by Western Australia with 16 opportunities and only nine identified opportunities in Queensland. It was noted that a number of the courses are offered as distance education, making the training accessible more broadly than just the identified geographic location.

This distribution of education and training opportunities appears not to reflect the distribution of listed heritage places or the demand for heritage management and conservation skills – on that basis, greater concentrations of opportunities would be expected in Tasmania, Sydney and Brisbane, for instance. Rather, the distribution of education opportunities appears to describe a more complex history of university development, where local conditions have supported expansion into non-traditional curricula.

**Table 2: Keyword hits – Audit of professional heritage related education and training (degree, diploma, certificate and short courses) showing number of courses with content in each of the key skill and knowledge areas.**

State	Physical Conservation	Recording	Management	Consultation	Interpretation	Archaeology	Historic Landscape Management	Legislation and Policy	Totals
NSW	3	9	4		1	2		5	24
VIC	10	8	10	4	5	1	2	8	46
QLD			3			4		2	9
SA		10	12		8	15		12	57
WA			4		5	3		4	16
TAS					1				1
NT					1				1
ACT	4	6	11	1	6	8	7	8	55
<b>Total</b>	<b>17</b>	<b>33</b>	<b>34</b>	<b>5</b>	<b>27</b>	<b>33</b>	<b>9</b>	<b>39</b>	

## THE SKILLS NEEDS ANALYSIS

The on-line survey undertaken for the skills needs analysis was designed (using the ‘Survey Monkey’ tool) to provide information about the current and future training needs of the historic heritage sector. The survey aimed to provide a ‘snapshot’ of the skill sets that respondents most commonly used in their work, and whether these skills were developed through formal, on-the-job or short course training.

The survey aimed to capture the experiences of people according to five key areas:

- the industry sector in which they work;
- the nature of their employment;
- their primary tasks;
- past education/training; and
- future training requirements.

The information gathered also provides a ‘snapshot’ of the age and education of people working in the historic heritage management sector, and of the nature of the industry in which they work. The survey was available for completion online in Australia from 1–16 October 2009. People were alerted to the survey through the newsletters of professional organisations, email chat groups, government agencies involved in heritage management and through word of mouth.

### About the respondents

A total of 456 people undertook the questionnaire. Of this number, 25 per cent of the Australian respondents identified their profession as ‘heritage manager’, 22 per cent as ‘archaeologist’ and 23 per cent as ‘architect’. Archaeologists therefore made up a significant proportion of the heritage professionals in Australia who responded to the survey, and it was also clear that some individuals who identified as ‘heritage managers’ had also been educated as archaeologists. As can be seen in the discussion below, people responding to the survey were given the option of responding as an individual or on behalf of an organisation, and the results were therefore distinguished accordingly.

### Findings of the skills needs survey

#### *Level of education*

Overall, people working in the conservation and management of heritage places had a high level of education and most of it was gained through tertiary education. Sixty-six per cent of the respondents to the survey had a postgraduate degree or award (including 23 doctorates). Ninety-one per cent of respondents have a university education. Sixty-three per cent had also undertaken professional short courses or workshops. Despite a very high level of formal education across the industry, the

survey results showed that the great majority of industry-specific skills had been learnt informally ‘on-the-job’. Only in the case of skills used in archaeology and in historical research are those skills identified, on the basis of the number of individual responses, as most likely to have been learnt through formal education.

Thus, with the exception of archaeology, most heritage skills-based training appears to be occurring in the work place. The survey did not provide information about the nature of work place training, that is, whether it is systematic or organised or experiential. Interestingly, the majority of responses from heritage agencies, organisations or companies indicated that they only occasionally ran professional development training, suggesting that work place training was more likely to be ad hoc.

#### *Priority training areas*

The findings of the survey in relation to the skills most in use in the sector and those that were a priority for training in the future are summarised below according to the frequency with which particular skills were identified as ‘most used’ and ‘priorities for future training’ or ‘priority skills for staff in future’.

#### *Generic skills*

These are skills that were identified as ‘most used’ by a large number of respondents to the survey. We termed them ‘generic skills’ because they were used broadly across the various sub-disciplines or specialist areas in the heritage industry. In some cases, they were also identified as a priority for training but this was not always the case. Regardless of perceived need or priority, there will always be a need for training in these generic skills, although not necessarily for those already working in the industry. The generic nature of these skills and their common use throughout the heritage industry means that they would ideally be taught through university undergraduate and/or postgraduate courses.

#### *Specific skills*

These are skills or knowledge that received fewer responses for ‘most used’ but a relatively large number of responses to being a ‘priority for training’. They tended to be skills that are more specific to particular aspects of the heritage management process and/or to particular sectors of the industry. The relatively low numbers of respondents regularly using these skills, assuming this reflects the industry as a whole, mean they are less likely to fit an undergraduate university model of education but may be appropriate for postgraduate course work or intensive, or short course professional development training.

## Generic skills

Industry area or sub-discipline	Skill or knowledge	Individual responses		Agency/Organisation/ Company responses	
		'Most used'	Priority for training	'Most used'	Priority skills for staff in future
Physical conservation	Architectural analysis	✓✓	✓	✓✓	✓
Recording	Historical research	✓✓✓		✓✓	✓
	Site survey (general)	✓✓✓		✓✓	✓
	Photography	✓✓✓		✓✓	
	Archival research	✓✓✓	✓	✓✓	✓
Management	Significance assessment	✓✓✓		✓✓	✓
	Conservation management planning	✓✓✓	✓	✓✓	✓✓
	Legislative/statutory context	✓✓✓	✓	✓	✓✓
	Conservation strategy	✓✓	✓	✓	✓
	Policy development	✓✓✓		✓	
	Site analysis	✓✓✓			
Consultation	Stakeholder engagement	✓✓✓	✓	✓✓	✓✓
	Recording information (consultation)	✓✓✓		✓✓	
	Communication skills	✓✓✓		✓	✓
	Historical themes	✓✓		✓	
Interpretation	Interpretation strategies and plans	✓✓	✓✓	✓	✓✓
Archaeology	Report writing	✓✓		✓	
	Archaeological site survey	✓✓			✓
	Research design	✓✓			
Historic landscape management	Historic map/plan analysis	✓✓	✓	✓	✓
	Landscape assessment	✓✓	✓✓	✓	✓✓
Legislation and policy	State heritage legislation	✓✓✓	✓	✓✓	✓✓
	Burra Charter	✓✓✓	✓	✓✓	✓
	State planning legislation	✓✓	✓	✓	
	OH&S requirements	✓✓		✓	

## Specific skills

Industry area or sub-discipline	Skill or knowledge	Individual responses		Agency/Organisation/ Company responses	
		'Most used'	Priority for training	'Most used'	Priority skills for staff in future
Recording	GIS	✓	✓✓	✓	✓✓
	Data management	✓	✓	✓	✓
Management	Thresholds	✓			✓
Consultation	Public speaking	✓✓	✓		
	Survey development and analysis	✓✓			✓
Interpretation	Audience analysis		✓		✓
	Content development	✓	✓	✓✓	✓
	Visitor management				✓
	Plain English publication	✓✓		✓	✓
	Multimedia skills		✓		✓
Archaeology	Artefact conservation		✓		✓
	Artefact analysis	✓✓			✓✓
Historic landscape management	Curtilage analysis	✓	✓	✓✓	✓
	Landscape architecture		✓	✓	✓
	View analysis		✓	✓	
Legislation and policy	Building codes	✓		✓	✓
	Aboriginal heritage legislation	✓	✓✓		
	EPBC Act	✓	✓	✓	

### Specialist skills

These skills are represented by only a small number of responses to all questions, but a relatively high number in the questions around priorities for future training or staffing. The overall numbers of people in the industry with specialist training in these areas will continue to be small but they (and other specialist skills) are essential to the industry and would be overlooked in assessing industry training needs if this was based purely on numbers. Appropriate models for training in specialist areas may be through technical colleges, short courses, postgraduate courses, internships with mentoring and a significant component of on-the-job training.

### Findings specific to historical archaeological practice in the heritage sector

In each keyword area, the survey asked respondents to identify the:

- skills that are most used by them in the workplace;
- skills in which they have received formal training;
- skills in which they have received informal or on-the-job training; and
- skills that they see as a priority for training in future.

The following section discusses findings from three of these

## Specialist skills

Industry area or sub-discipline	Skill or knowledge	Individual responses		Agency/Organisation/ Company responses	
		'Most used'	Priority for training	'Most used'	Priority skills for staff in future
Physical conservation	Stone masonry		✓		✓
	Carpentry				✓
	Mortar analysis		✓		
	Engineering		✓		
	Traditional tool making or use		✓		
	Traditional mechanical skills		✓		
Recording	Photogrammetry		✓		
Archaeology	Underwater survey and recording		✓		
Historic landscape management	Landscape architecture		✓	✓	✓
	Aboriculture		✓		
	Horticulture		✓		

keyword areas that are relevant to historical archaeological practice in the heritage sector. These are 'archaeology', 'management' and 'consultation'.

### Archaeology (85 respondents)

As shown in Figure 1, the skills needs analysis for the keyword 'archaeology' identified the following as practitioners' most used skills:

- report writing (61)
- archaeological site survey (51)
- research design (46)

The skills identified as priorities for future training were:

- artefact conservation (20)
- research design (18)
- artefact analysis (17)

### Issues

With the exception of the skills 'permit applications' and 'artefact conservation', skills were learned in formal training more than on-the-job training, reflecting the specialist university training required for archaeologists to be able to work as consultants in the Australian heritage industry.

With the exception of 'artefact conservation', the overall low number of responses to 'priority for future training' in relation to 'skills most used' suggests that current training in the archaeological skills listed is generally adequate.

Training in 'artefact conservation' was identified as a priority by 20 respondents but only 28 identified it as a skill most used. This may suggest a perception that this skill may increase in importance in future or that its current limited use is an outcome of a lack of training opportunities.

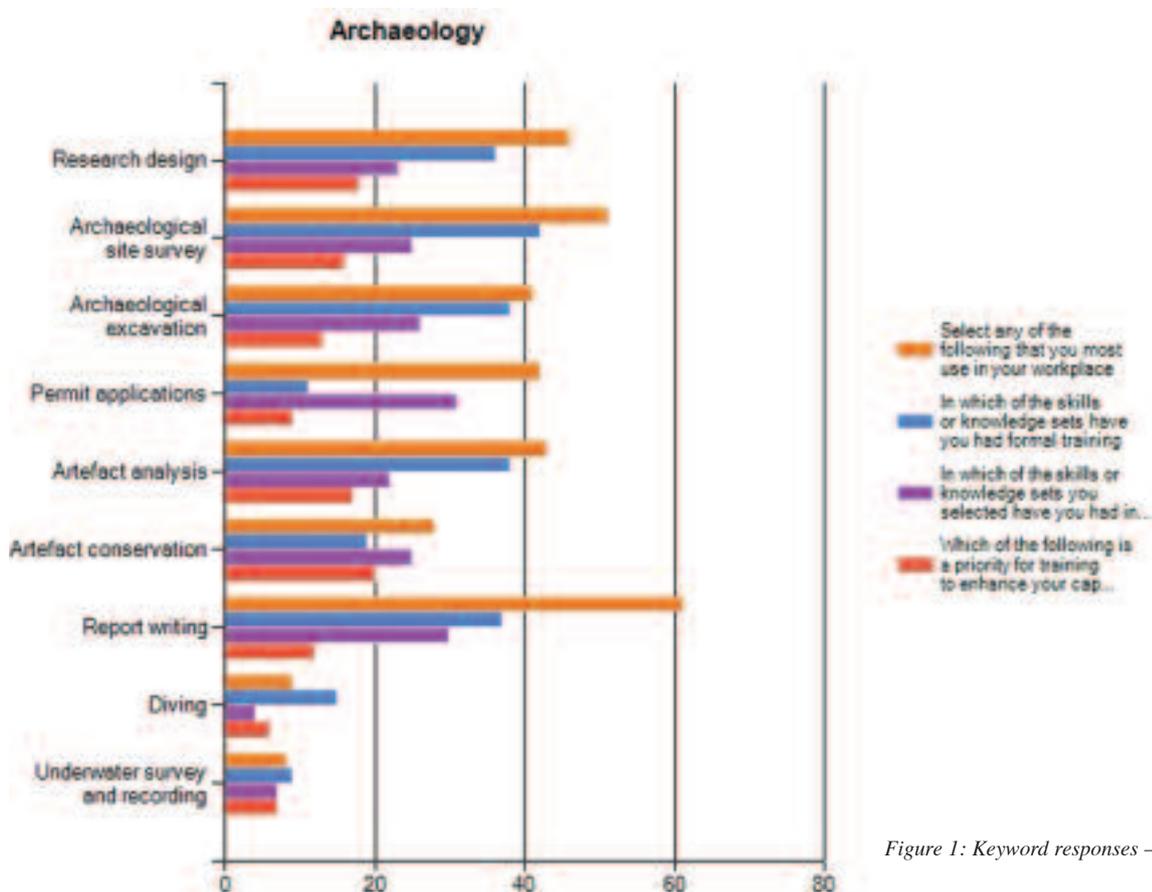


Figure 1: Keyword responses – archaeology.

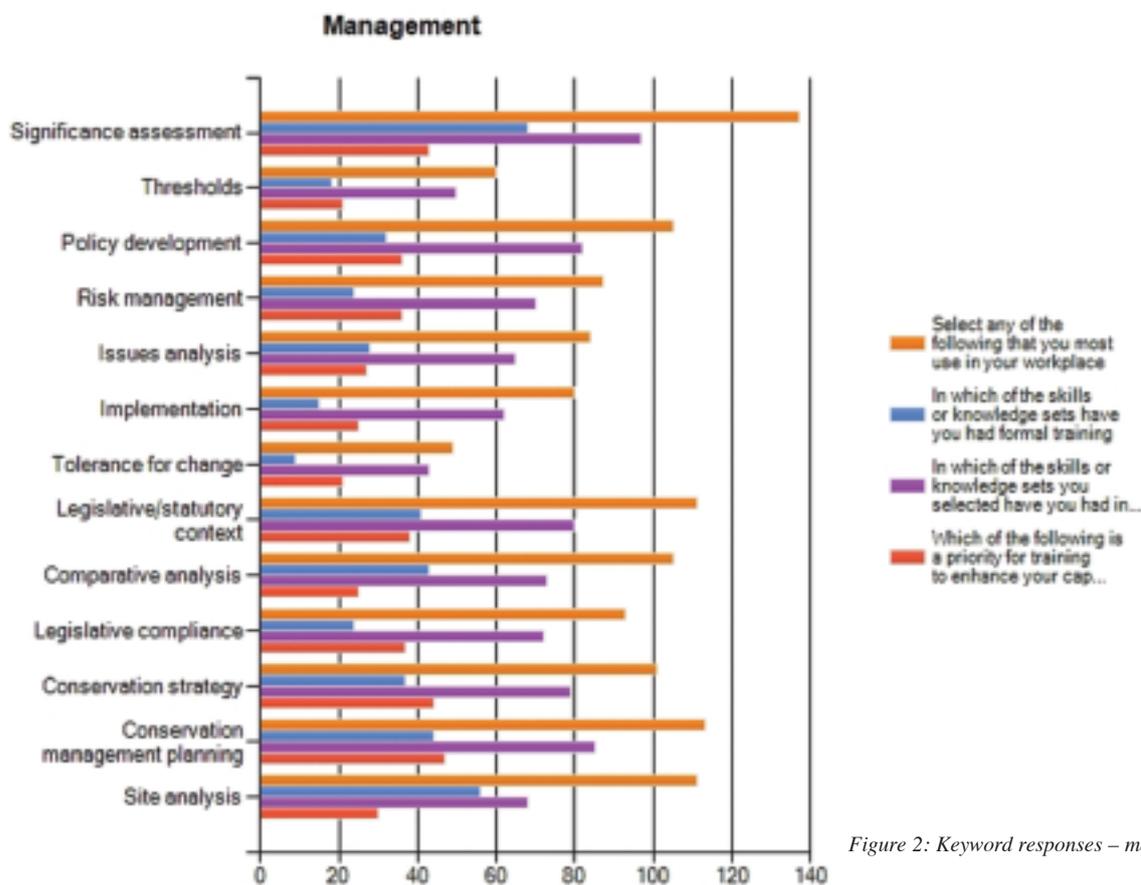


Figure 2: Keyword responses – management.

*Management (164 respondents)*

As shown in Figure 2, the skills needs analysis for keyword ‘management’ identified the skills listed below as practitioners’ most used skills. There were, however, a relatively high number of responses for all the identified skills in this section.

The most used skills were:

- significance assessment (147)
- conservation management planning (132)
- legislative/statutory context (123)

The skills identified as priorities for future training were:

- conservation management planning (53)
- conservation strategy (45)
- significance assessment (43)

*Issues*

Although significance assessment is the most used skill in this section, it does not stand out to the same extent in the training priorities, suggesting a perception that current formal and informal ‘in house’ training is adequate.

For all skills listed under ‘management’ (with the narrow exception of significance assessment) more than twice the number of the respondents had informal, on-the-job training as compared to formal training.

Conservation management planning, conservation strategy and risk management have the highest number of responses for future training priorities, relative to skills most used. Although not highly significant this does suggest a greater need for training in these areas as compared to the other skills in management.

*Consultation (161 respondents)*

The section on ‘consultation’ included only five skills, including public speaking and survey development and analysis. Again these are generic and to a varying extent used across a range of heritage professions. The large number of responses indicates the importance of consultation.

The most used skills were:

- stakeholder engagement (133)
- recording information (131)
- public speaking (121)

The skills identified as priorities for future training were:

- stakeholder engagement (47)
- public speaking (40)
- plain English publication (35)

*Issues*

More respondents have had informal or on-the-job training than formal training in all of these skills; however, this is most marked in relation to stakeholder engagement.

More respondents identified ‘stakeholder engagement’ as a skill most used than any of the other keyword skills under consultation. Three times the number of respondents identified that their training in stakeholder engagement was informal rather than formal.

A relatively high number also identified this as a priority for future training. While training in stakeholder consultation is obviously occurring in the workplace, this does not appear to meet current training needs.

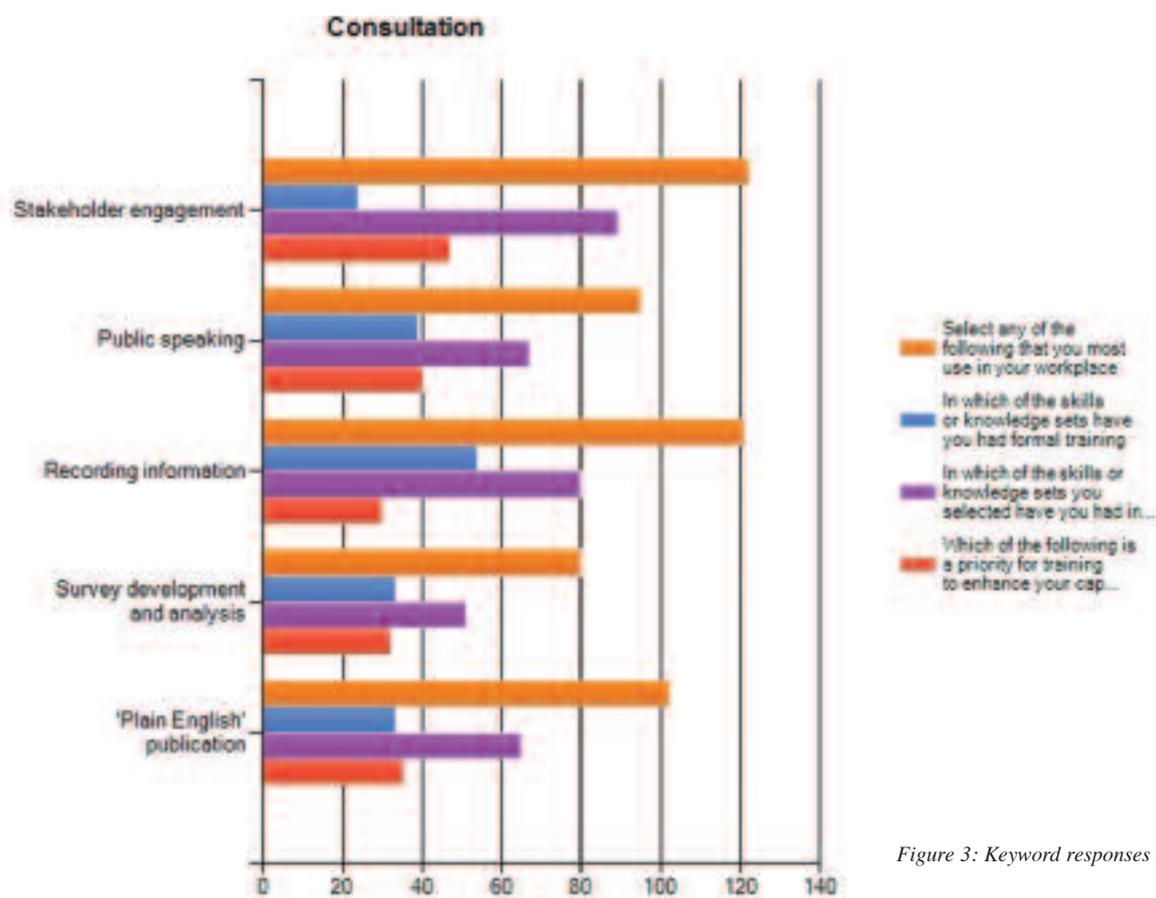


Figure 3: Keyword responses – consultation.

## Analysis of heritage sector skills needs

### Generic skills

The skills needs analysis revealed geographic gaps in the provision of education/training in heritage sector wide generic skills, as well as a possible under supply of opportunities in particular skill areas (refer to Table 2).

- Physical/technical building conservation skills are taught in only a small number of courses/degrees in New South Wales, Victoria and the ACT.
- Historic landscape management and consultation skills are the least taught of the generic skill areas and were offered in Victoria and ACT only. Stakeholder engagement and historic landscape assessment are two areas which received high priority ratings for skills in demand but there are few training opportunities in these areas.
- Legislation and policy is the most taught of the generic skills but remains a constant need in terms of training because of frequent change.
- Archaeology is more likely to be taught in a heritage management focused or specialist course than the other relevant heritage discipline areas of engineering, architecture, history geography and so on. This means there are more opportunities for students studying archaeology to receive training in the generic heritage skills in their undergraduate and postgraduate university courses. Other discipline areas, therefore, must tend to rely more heavily on access to specialist postgraduate degrees and/or short courses.

### Specific skills

- GIS and data management – most large scale or regionally based heritage projects now require some form of GIS based mapping and data management that is compatible

with government and other researchers' databases. Training in these skills is quite readily available; however, courses tailored to heritage management would be more accessible to most heritage professionals who wish to gain expertise in this area.

- Significance thresholds, building codes, and heritage legislation are all areas of public policy subject to recent change in Australia. Training in these areas could be seen as partly the responsibility of government agencies responsible for the administration of the legislation.
- Artefact conservation and analysis – the fact that this specific skill area has been identified as a priority for future training reflects changing practice in archaeological heritage management. A growth in emphasis on the conservation and management of excavated collections has occurred in some jurisdictions, while more exacting standards of artefact analysis are required as a result of increased research, publication and regulation.
- Interpretation skills – the need for training in this area may reflect its increasing requirement by regulators, the growth in the use of new technologies for heritage interpretation (such as multimedia), and a growing need for more rigorous evaluation and visitor management methodologies and techniques. It also appears that heritage interpretation has become a more specialised set of skills within the broader heritage industry over the course of recent decades.
- Consultation skills – this is another area of the heritage industry that has become more closely regulated and more critically researched in recent years. All heritage practitioners active in community-based projects need to develop (or develop access to) specialist skills and knowledge in this area. The audit clearly shows that this is one of the least frequently taught skill areas. These skills

could be taught more frequently in undergraduate and postgraduate courses as well as through professional development courses.

### *Specialist skills*

Historic landscape management – as discussed above historic landscape management is the least frequently taught skill area after consultation. There is a need to work co-operatively in this area with other professions to supply skill needs, but this does not obviate the need for increased training opportunities for perhaps already qualified landscape architects who may be interested in extending part of their practice into the historic heritage arena. Landscape management is a key need for many heritage listed historical archaeological sites and cultural landscapes.

## **SUMMARY**

The report revealed some clear trends in the perceived education/training needs in the heritage industry and in the availability of training and education on both a skills needs and geographic basis. Trends derived from the changing and evolving nature of heritage practice are also revealed, such as the growing demand for skills in consultation, historic landscape management, GIS and artefact conservation and analysis. These findings also reflect the breakdown in the perception that Indigenous archaeology deals only with stone tools while only historical archaeologists deal with ceramics! This is clearly borne out by the findings of Ulm *et al.*'s most recent study where Indigenous consultation and GIS were identified in the top ten skill gaps for historical archaeology, while GIS, conservation of artefacts and ceramic analysis were in the top ten skill gaps for Indigenous archaeology (Ulm *et al.* 2013:41). The fact that artefact conservation and analysis were identified as a priority for future training also reflects a growth in emphasis on the conservation and management of excavated collections and sites has occurred in some jurisdictions, while more exacting standards of artefact analysis are required as a result of increased research, publication and regulation (Gibbs 2005; Ireland 2012).

## **REPORT RECOMMENDATIONS**

### **Building a sustainable heritage sector**

In policy terms, a range of systemic factors make it difficult to recommend any 'quick fix' responses to the issues identified in this study, in terms of the availability of training and education, and perceptions of gaps in skills and future training priorities. A key conclusion of the project is the need for a national policy for setting and maintaining standards in heritage conservation and management practice.

The following areas need to be addressed in an overarching heritage training and education policy:

- Accreditation or Benchmarking of Training and Education – identifying core competencies/knowledge areas and accrediting educational products which deliver these outcomes;
- Standards and Quality – developing benchmarks against which standards of practice/quality can be measured and evaluated;
- Guidance – availability of high quality advisory material to support best practice. Development of a range of online or published products which support best practice;
- Research and Development – formulating a research agenda and strategy for cultural heritage which stimulates and informs the development of standards and best practice;

- Compliance and Incentives – supporting the use of statutory approval processes and permits which require accredited or appropriately qualified practitioners, as well as conditions on grant and funding, which reinforce standards of practice and expertise; and
- Audit and Evaluation – supporting an ongoing policy for the collection of data about education and training in the heritage sector and the development of tools to evaluate whether or not industry objectives are being met.

### **Compliance and incentives**

The size of the market for heritage services is limited in Australia. While there are very skilled practitioners, they are few in number and the findings of the project suggest that the skilled cohort in many parts of the sector is aging. However, the market size and structure is such that, without government intervention, emerging practitioners do not acquire the full range of heritage skill and knowledge areas. At present this situation is especially true for archaeologists working in Australia: various pieces of recently updated legislation, as well as the mining boom, have combined to create huge demand for archaeological survey and assessment, so many graduates, gainfully employed on surveys at the present, do not see the need for additional heritage related skills acquisition. The result of all of the above is a 'market failure', in which skills acquisition and learning do not occur of their own accord. Government intervention is required to address this situation. The project recommends that this occur through a 'demand-led' process. Co-ordination of grant funding can be used to create 'demand' for particular services – but must occur in combination with advance warning for professional associations, education and training providers. In this way, there are resources and incentives for training to occur. The other form of government intervention is through regulation – such as making approvals contingent on the use of professionals with appropriate qualifications and skills. This, of course, also relies upon a sound accreditation system which, as we have already discussed, is also lacking.

### **Research and development**

While heritage practitioners undertake substantial amounts of research, cultural heritage conservation and management is itself not a well developed research area in Australia. Efforts to address education needs should also include the commensurate need to sustain a viable research program to promote the growth and vitality of heritage as a relatively new discipline area. In particular, efforts to develop heritage education need to give equal consideration to the development of the necessary infrastructure for research. This might include industry scholarships, awards and prizes, promotion of industry research agendas or identification of government and industry resources for heritage related research.

## **CONCLUSIONS: ARCHAEOLOGY AND THE HISTORIC HERITAGE SECTOR**

In 2005 Ulm *et al.* concluded that their survey of professional archaeologists showed 'a young, well-qualified and enthusiastic professional archaeology workforce in Australia' (Ulm *et al.* 2005:21). Debates in the early 2000s about the 'standard' of Australian archaeology graduates appear to have successfully opened a channel of communication between universities and the heritage sector (Gibbs *et al.* 2005). This period marked an historical juncture where a new generation of academics, often with some experience of heritage sector employment, influenced course content and pushed for more vocationally relevant curricula. Lydon goes further to suggest

that these changes in university based archaeology education reflected a broader epistemic shift, or paradigm change, concerning the recognition of the public dimensions of disciplinary practices and the socio-political context for the construction of disciplinary knowledge (Lydon 2004). Decolonisation and related issues of social justice remain central to the problem of defining the appropriate knowledge and skills for practitioners of archaeology and heritage in Australia and indeed for the other professions employed in the broader heritage sector. It is clear, for instance, that students require a holistic approach to Australian history, material culture, places, landscapes and environments, including education in Indigenous culture and knowledge systems.

Debates about archaeological education inevitably continue, as recently revisited by Ulm *et al.* (2013). Tensions remain between an archaeological education delivered through a broad-based and generic undergraduate university system and the need for skills based, practical, industry responsive training. Both this study and Ulm *et al.* highlight skill gaps in the areas of GIS, community consultation and conservation of artefacts (2013:41). While our study also highlighted further gaps in the availability of learning opportunities in interpretation, community consultation and historic landscape management.

The multidisciplinary of heritage confronts traditional university structures and professionalisms and gives rise to particular challenges for the establishment of benchmarks and standards for education in heritage theory and practice. Heritage practice may be 'flavoured' by a range of disciplinary backgrounds which serve as a basis for the development of generic heritage based skill and knowledge areas (Gibbs *et al.* 2005:29). In this project we attempt to come to grips with this issue by drawing out generic, specific and specialist skill and knowledge areas in our analysis of the skills needs data. As we discussed above, generic skills were those identified as 'most used' by a large number of respondents to the surveys, as well as the highest priorities for future training. However, the generic skills identified here have evolved through an organic process and may not represent the ideal set of generic skills for the heritage professional. Further work on these heritage generic skills needs to be undertaken in order to determine appropriate benchmarks and quality standards for education and training in heritage and archaeology.

While some archaeologists working in the heritage sector focus on archaeology as a distinct field of research and practice, government and policy makers concerned with cultural heritage tend to see archaeology as only one of the many interest groups or stakeholders which make up this field. As the heritage sector is the largest employer of archaeologists in Australia, it is vital that the archaeological discipline maintain strong representation within the broader heritage sector, through participation in appropriate sector-wide professional associations and lobby groups. This is particularly true for historical archaeology, for while there are excellent reasons for specific courses and training in specialist skills and knowledge areas for some aspects of historical archaeology, it is also important that this small subfield of practitioners have their interests represented by broader and numerically larger professional lobby groups. In particular, there is a need for a forum for coordination of research and development into the educational needs of the heritage sector. Ideally such a forum would be multidisciplinary, responding to the needs of the heritage industry by providing a bridge between the traditional university-based disciplines and sub-disciplines, including the 'archaeologies' (historic, maritime and Indigenous), architecture, planning, history and so on.

Finally, it is clear that government, professional organisations and education providers must work together to establish the conditions which provide high quality education

and create the demand for qualified practitioners and high quality heritage outcomes in the community. High quality education will be ineffectual if it exists in a policy vacuum, and if it is not supported by the use of statutory approval processes and permits which require appropriately qualified practitioners, as well as conditions on grants and funding, which reinforce high standards and build the demand for quality.

## ACKNOWLEDGEMENTS

This paper presents results from work commissioned by Heritage Victoria and the Heritage Chairs and Officials of Australia and New Zealand (HCOANZ). Funding for the project was also provided by the Australian Government Department of Sustainability, Environment, Water, Population and Communities. The authors also acknowledge Dr Jennie Harre Hindmarsh and James R. Lynch, QSM who undertook the project's research in New Zealand. In particular we thank the steering committee for the project: Jim Gardner (Heritage Victoria), Leanne Handreck (Department of Sustainability, Environment, Water, Populations and Communities (DSEWPaC), Elisha Long (Heritage Branch, NSW Department of Planning) and Amanda Mulligan (Heritage Victoria).

## REFERENCES

- BECK, W. (ed.) 2008 *By Degrees: Benchmarking Archaeology Degrees in Australian Universities*, Teaching and Learning Centre, University of New England, Armidale.
- BENTON, T. 2010 'Introduction', in T. Benton (ed.) *Understanding Heritage and Memory*, Manchester University Press, Manchester and New York, pp. 1-6.
- BYRNE, D. 2002 'An Archaeology of Attachment: Cultural Heritage and the Post-Contact', in R. Harrison and C. Williamson (eds) *After Captain Cook: The Archaeology of the Recent Indigenous Past in Australia*, Sydney University Archaeological Methods Series 8, Sydney, pp. 135-146
- COLLEY, S. 2004 'University-Based Archaeology Teaching and Learning and Professionalism in Australia', *World Archaeology* 36(2):189-202.
- COLLEY, S. and S. ULM. 2005 'Teaching, Learning and Australian Archaeology', *Australian Archaeology* 61:7-10.
- Environment Protection and Biodiversity Conservation Act*, 1999 <http://www.environment.gov.au/epbc/about/index.html>
- GIBBS, M. 2005 'Editorial', *Australasian Historical Archaeology* 23:3-5.
- GIBBS, M., ROE, D. and D. Gojak 2005 'Useless Graduates? Why Do We All Think Something Has Gone Wrong with Australian Archaeological Training?', *Australian Archaeology* 61:24-31.
- GODDEN MACKAY LOGAN HERITAGE CONSULTANTS, LA TROBE UNIVERSITY and DONALD HORNE INSTITUTE FOR CULTURAL HERITAGE 2010 Heritage Trades and Professional Training Project, Report Prepared for Heritage Victoria on behalf of Heritage Chairs and Officials of Australia and New Zealand. Available at: <http://www.environment.gov.au/heritage/publications/hcoanz/index.html>
- HARRISON, R. and D. ROSE 2010 'Intangible Heritage', in T. Benton (ed.) *Understanding Heritage and Memory*, Manchester University Press, Manchester and New York, pp. 238- 276.
- IRELAND, T. 2012 'Excavating Globalisation from the Ruins of Colonialism: Archaeological Heritage Management Responses to Cultural Change', in E. Negussie (ed.)

*Changing World, Changing Views of Heritage: The Impact of Global Change on Cultural Heritage, Proceedings of the ICOMOS Scientific Symposium 2010*, ICOMOS, Paris, pp. 18-29.

LYDON, J. 2004 'Archaeological Heritage Management in Australia: From Professionalism to Democratisation?', in T. Murray (ed.) *Archaeology From Australia*, Australian Scholarly Publishing, Melbourne, pp. 85-97.

PROJECT BRIEF. 2009 HCOANZ Heritage Trades and Professional Training Project, Heritage Victoria on behalf

of Heritage Chairs and Officials of Australia and New Zealand, (unpublished document), pp 1-10.

ULM, S., NICHOLS, S. and C. DALLEY 2005 'Mapping the Shape of Contemporary Australian Archaeology: Implications for Archaeology Teaching and Learning', *Australian Archaeology* 61:11-23.

ULM, S., MATE, G., DALLEY, C. and S. NICHOLS 2013 'A Working Profile: The Changing Face of Professional Archaeology in Australia', *Australian Archaeology* 76:34-43.