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## PROGRESS REPORT FOR AINGRA09030

<b>PROJECT TITLE</b>	<b>AMS determinations at the Gledswood 1 Shelter, northwest Queensland</b>	
<b>INVESTIGATOR(S)</b>	<b>Institution and Department</b>	
<b>Chief Investigator</b>	<b>Dr Lynley Wallis</b>	Archaeology, Flinders University (former) Aboriginal Environments Research Centre, University of QLD (current)
Other Investigators		
Students	Mr Ian Moffat - Australian National University (PhD candidate)* Mr Ben Keys - Flinders University (Honours student)	
ANSTO Investigators	Geraldine Jacobsen	
Specialist Committee	A	

\* please note that Ian Moffat is a PhD candidate currently enrolled at the ANU, working on a project for his doctoral thesis that is entirely unrelated to this AINSE funded project. His role in this AINSE funded project was as a co-investigator and co-supervisor of honours student Ben Keys, hence I have not included details of his thesis (or it's proposed submission date in the relevant section below), as it cannot be considered an outcome of this project.

### SCIENTIFIC OBJECTIVES

This project aims to refine the dating of an important Pleistocene aged archaeological rockshelter (Gledswood Shelter 1) in inland northwest Queensland excavated during 2006-2008. The site has an initial date of 15,000 calBP from approximately halfway down the 2.75 m deep cultural sequence; further AMS determinations are required to date the lower half of the deposit and refine the age of the upper sequence. This will provide a chronological framework for longterm human use of the site, and palaeoenvironmental conditions (ascertained through phytolith analysis of the shelter sediments) for the region during the late Quaternary.

### PROGRESS REPORT and RESEARCH OUTCOMES

The radiocarbon dates obtained from this project have greatly enhanced our understanding of the chronology of human occupation of the Gledswood Shelter 1 archaeological site. They have allowed us to confirm use of the site during the LGM period, and during the post-LGM late Pleistocene-early Holocene period. They have also demonstrated use of the site from at least 33,000 uncal. BP, making GS1 the oldest site in the northwest Queensland savannah corridor (outside of a 'refuge' area such as Lawn Hill Gorge or Riversleigh) yet discovered. This research has important implications for our understanding of the mechanisms and timing of human dispersal across the Australian continent. The radiocarbon age estimates provide a baseline against which a complementary OSL chronology can be compared, since some of the OSL samples were taken as paired samples with the C14 samples. The understanding we know have of the GS1 site is of particular benefit to members of the Woolgar Valley Aboriginal Corporation, within whose traditional lands the site is situated, as it demonstrates their long connection to country.

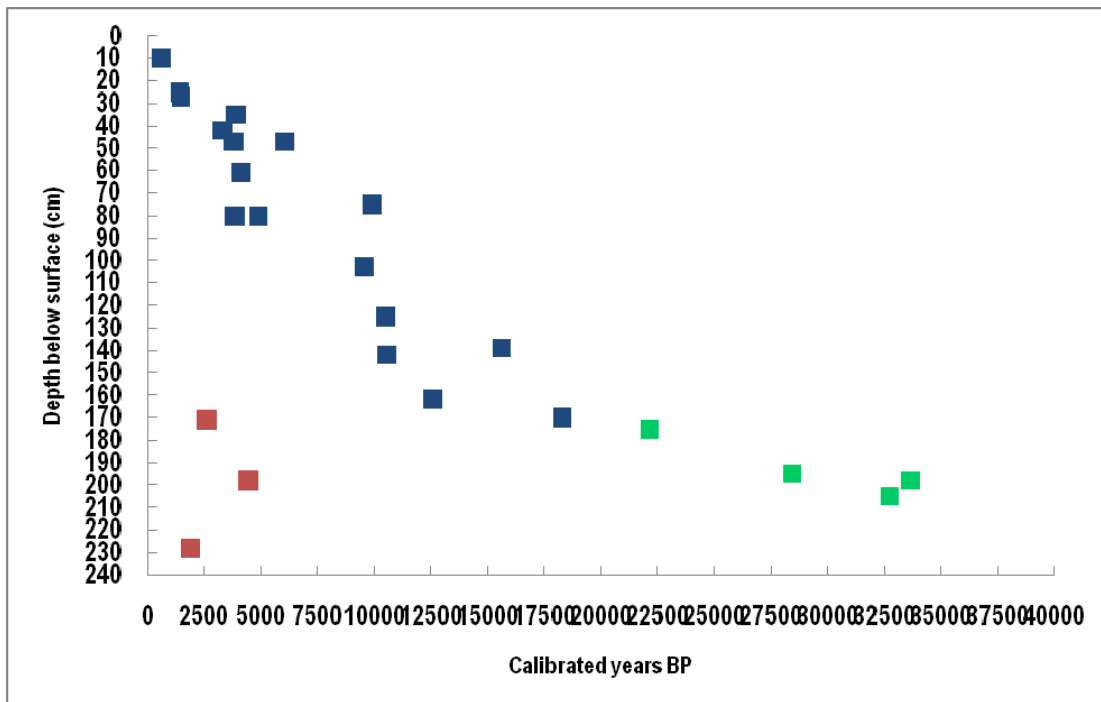
A funding application to undertake further analysis of the GS1 lithic, phytolith and charcoal assemblages to ARC Discovery projects in the 2009 round was unsuccessful, however the application will be revised and resubmitted in the March 2010 round drawing on the AINSE results from this Award. When the additional analyses have been completed, they will provide us with an important palaeoenvironmental record for a part of northern Australian for which they are essentially no palaeoenvironmental knowledge – such knowledge is critical for accurately modeling future climate change, and will thus be of great benefit to the Australian community.

**DATA**

The following is a list of radiocarbon dates relating to the Gledswood Shelter 1 site – the samples highlighted are those collected within this award.

Lab Number	Sample Name	Depth below surface	14C age	±
Wk-19346	GS1/C0/3	10	619	47
ANU-2625	GS1/C0/5	25	1530	35
ANU-2626	GS1/C0/6	27	1600	35
OZM092	GS1/D1/7	35	3590	45
ANU-2627	GS1/C0/9	42	3100	40
ANU-2629	GS1/C0/10	47	3525	40
Wk-19347	GS1/C0/10	47	5233	67
ANU-2630	GS1/C0/13	61	3765	40
OZM093	GS1/D1/15	75	8810	80
Wk-19348	GS1/C0/16(2)	80	3566	51
ANU-2631	GS1/C0/16(2)	80	4260	45
Wk-19349	GS1/C0/19(2)	103	8581	40
ANU-2633	GS1/C0/22(1)	125	9310	50
Wk-19350	GS1/C0/24(2)	139	13185	75
OZM101	GS1/B1/South wall	142	9330	60
OZM100	GS1/B1/South wall	162	10620	80
OZM095	GS1/C1/East wall	170	14950	80
ANU-2635	GS1/C0/27	171	2540	40
OZM096	GS1/C1/East wall	175	22180	130
Wk-24199	GS1/B1/East Wall	195	28419	320
OZM097	GS1/B1/42	198	3975	45
OZM098	GS1/C0/41	198	33650	340
OZM094	GS1/C1/43	205	32730	290
OZM099	GS1/C0/47	228	1935	35

The following graph shows the above radiocarbon dates mapped against their depth below surface to create a crude depth-age curve for the site. Red dates are those that are anomalously young, blue are those that have been calibrated and green are those that remain uncalibrated because they are beyond the limit of calibration within the Calib calibration software. The three anomalous dates were all samples collected during excavation as “in situ” samples – the most parsimonious explanation for these samples is that charcoal fell/was blown into the trench from higher up in the sequence without this being noticed by excavators. Thus, while they represent ‘real’ C14 ages, they do not truly represent dates for those excavation levels. In support of the theory that these three samples have fallen into the excavation from higher up in the sequence, is the fact that all samples collected by the CI directly from stratigraphic sections upon completion of excavation are in sequence and have produced no such anomalously young age estimates.



Signature of Investigator preparing the report for After signing this report please fax this page with your signature for our files	Proj: AINGRA09030
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**PUBLICATIONS / REPORTS arising as a result of your work.**

Wallis, L.A., B. Keys, I. Moffat and S. Fallon 2009 Gledswood Shelter 1: initial radiocarbon dates from a Pleistocene aged rockshelter site in northwest Queensland. *Australian Archaeology* 69:71-74. {Note that this paper was published before the AINSE dates were obtained and thus they are not referred to in it, nor AINSE's support acknowledged} (c)

Wallis, L.A., B. Keys, I. Moffat, S.J. Fallon and G. Jacobsen 2009 Gledswood 1 Shelter: Initial Radiocarbon Dates from a Pleistocene Aged Rockshelter Site in Northwest Queensland. Unpublished paper presented to the Australian Archaeological Association Annual Conference, Flinders University, Adelaide (11-14 December 2009). (s) (c)

**PhD STUDENTS**

Keys, B. 2009 Engrained in the past: Using geoarchaeology to understand site formation processes at the Gledswood Shelter 1 site, Northwest Queensland. Unpublished Bachelor of Archaeology honours thesis, Department of Archaeology, Flinders University, Adelaide.