



Australian Government
Australian Research Council

EI
2018
ENGAGEMENT
AND IMPACT



Engagement and Impact 2018

The University of Western Australia

UWA21 (CAH) - Impact

Overview

Title

(Title of the impact study)

Murujuga: industrial and cultural connections.

Unit of Assessment

21 - History and Archaeology

Additional FoR codes

(Identify up to two additional two-digit FoRs that relate to the overall content of the impact study.)

20 - Language, Communication and Culture

04 - Earth Sciences

Socio-Economic Objective (SEO) Codes

(Choose from the list of two-digit SEO codes that are relevant to the impact study.)

95 - Cultural Understanding

97 - Expanding Knowledge

96 - Environment

84 - Mineral Resources (excl. Energy Resources)

Australian and New Zealand Standard Industrial Classification (ANZSIC) Codes

(Choose from the list of two-digit ANZSIC codes that are relevant to the impact study.)

10 - Exploration and Other Mining Support Services

89 - Heritage Activities

Keywords

(List up to 10 keywords related to the impact described in Part A.)

rock art

Dampier Archipelago

Murujuga National Park

Pilbara

Land tenure

air quality

pollution monitoring

nitrate production

native title

Aboriginal heritage

Sensitivities

Commercially sensitive

No

Culturally sensitive

No

Sensitivities description

(Please describe any sensitivities in relation to the impact study that need to be considered, including any particular instructions for ARC staff or assessors, or for the impact study to be made publicly available after EI 2018.)

Aboriginal and Torres Strait Islander research flag

(Is this impact study associated with Aboriginal and Torres Strait Islander content?)

NOTE - institutions may identify impact studies where the impact, associated research and/or approach to impact relates to Aboriginal and Torres Strait Islander peoples, nations, communities, language, place, culture and knowledges and/or is undertaken with Aboriginal and Torres Strait Islander peoples, nations, and/or communities.)

Yes

Science and Research Priorities

(Does this impact study fall within one or more of the Science and Research Priorities?)

Yes

Science and Research Priority	Practical Research Challenge
Resources	Knowledge of environmental issues associated with resource extraction.
Resources	A fundamental understanding of the physical state of the Australian crust, its resource endowment and recovery.

Impact

Summary of the impact

(Briefly describe the specific impact in simple, clear English. This will enable the general community to understand the impact of the research.)

Murujuga has one of the largest collections of engraved rock art anywhere in the world. The art is of cultural and spiritual significance to Aboriginal people, is on Australia's National Heritage List and has recognised international heritage values. The Murujuga National Park (MNP) created in January 2013, recognises the cultural heritage value of the rock art and its environment and is owned by Murujuga Aboriginal Corporation who lease this back to the State who co-manage it. UWA aims to deliver a scientifically rigorous approach to research, monitoring and management that will provide an appropriate level of protection to the rock art. This research underpins significant impacts in the environment, society and industry and culture of Murujuga and the Pilbara region of Western Australia.

Beneficiaries

(List up to 10 beneficiaries related to the impact study)

Murujuga Aboriginal Corporation

Western Australian and Commonwealth Ministers for Environment

Department of Water and Environmental Regulation; the Department of Biodiversity, Conservation and Attractions;

Western Australian Museum

Occupiers of licensed prescribed premises on the Burrup Peninsula (Rio Tinto, Woodside, Yara, and other industries)

Pilbara Ports Authority

City of Karratha

Commonwealth Department of the Environment and Energy

the Department of Planning, Lands and Heritage; the Department of Jobs, Tourism, Science and Innovation

Countries in which the impact occurred

(Search the list of countries and add as many as relate to the location of the impact)

Details of the impact

(Provide a narrative that clearly outlines the research impact. The narrative should explain the relationship between the associated research and the impact. It should also identify the contribution the research has made beyond academia, including:

- who or what has benefitted from the results of the research (this should identify relevant research end-users, or beneficiaries from industry, the community, government, wider public etc.)
- the nature or type of impact and how the research made a social, economic, cultural, and/or environmental impact
- the extent of the impact (with specific references to appropriate evidence, such as cost-benefit-analysis, quantity of those affected, reported benefits etc.)
- the dates and time period in which the impact occurred.

NOTE - the narrative must describe only impact that has occurred within the reference period, and must not make aspirational claims.)

The Burrup Peninsula (Murujuga) is known for its cultural and archaeological significance, as it is one of the densest known concentrations of rock engravings in the world with an estimated one million images.

ENVIRONMENTAL

On 2 March 2011, the Australian Heritage Council (AHC) undertook an assessment of the outstanding universal values of the Dampier Archipelago and any threats to the site. The resulting assessment was based upon studies by Jo McDonald and Peter Veth, and stated that the Dampier Archipelago rock art collection 'represents the longest continual production of rock art in the world'.

Land tenure and uses around MNP are diverse, with the most significant industries being the iron ore rail head and shipping, solar salt, liquefied natural gas (LNG), liquefied petroleum gas (LPG), and ammonia production. In order to assess whether industrial emissions were accelerating the natural weathering of petroglyphs, a rock art monitoring program was established in 2000 and completed its work in 2009. In 2009, following the completion of these studies, the Burrup Rock Art Monitoring Management Committee (BRAMMC) recommended that the study of air quality and rock microbiology be suspended and only recommenced if warranted by a major increase in emissions, or if new evidence makes further monitoring warranted.

Professors Black and Hallam (CSIRO/UWA) conducted an analysis and review of the monitoring program. As a result of this analysis, a number of recommendations have been made to government and industry about pollution monitoring. The Burrup Peninsula Aboriginal Petroglyphs: Colour Change & Spectral Mineralogy report 2004–2016 was released by the WA Government. Black argued that the report includes an 'important admission to substantial errors in analysis and interpretation of all previous reports'. Of particular concern was that: '...these reports have been used...to place the ammonium nitrate production facility in the midst of the rock art and to justify its high levels of emissions.'

A Senate inquiry was called in November 2016 to investigate if State and Commonwealth regulators and companies operating in the area were adequately protecting this nationally significant site. The inquiry also investigated the impact of industrial pollution on the National Heritage-listed Aboriginal rock art of the Burrup Peninsula. The inquiry called upon academics, industry, and concerned public citizens to make submissions.

SOCIAL AND POLICY

MNP Management Strategy (2013) together with the new Murujuga Cultural Management Plan (2015) are the result of the compulsory acquisition of native title by the WA State Government and the Traditional Custodians of the coastal Pilbara. This allows for industrial development to progress across the Burrup as well as for the provision of conservation estates and management of the important Aboriginal heritage and biodiversity values. The establishment of a jointly managed national park marks a significant development in the management of protected areas in WA. The recognition of ongoing Aboriginal interests and responsibilities for managing country is at the core of this innovative and inclusive approach. The plan describes how the National Heritage listed values will be protected, how research can be conducted, and how access and facilities for visitors, tourism opportunities, education and interpretation of the magnificent cultural values can be provided.

CULTURAL AND INDUSTRY

Murujuga Aboriginal Corporation (MAC) is the representative body for five Aboriginal language groups. MAC has

developed a cultural management plan and training initiatives with the help of researchers from UWA. Cultural protocols have been developed to ensure that knowledge of traditional law remains at the foundation of all human interactions across this environment. In 2015, the MAC Research Protocol guideline was approved by MAC as part of the Cultural Management Plan. These cultural protocols call for any research to initially be discussed and approved by Elders or the traditional landowners and custodians of MAC first, prior to any field work being conducted on Country. This was a vital step in managing research projects being undertaken on Murujuga country.

In 2013, Rio Tinto was part of the application team for the 'Murujuga: Dynamics of the Dreaming', ARC Linkage Project focused on understanding the deep time aspect of the rock art and the contemporary social values of the Dampier Archipelago. The collaborative Linkage Project granted in 2014 involves seven UWA researchers, MAC (as collaborating partner (with MLSU Rangers, traditional owners in the Circle of Elders) and Rio Tinto's Heritage team. The Rangers work on country in the National Park and patrol 42 islands of the archipelago conducting sea patrols, collecting data using advanced GIS tools and apps and living their law and culture on sacred sites. Rio Tinto has partnered with MAC and UWA to undertake collaborative projects into the nationally significant rock art and other culture values of the Dampier Archipelago. UWA has developed a series of research protocols with MAC's Circle of Elders which has allowed the excavation of various archaeological sites across the Archipelago as well as the sending of soil samples for OSL dating at Oxford University and radiocarbon dating at Waikato University. Developing a new level of trust and cooperation between MAC and researchers has been a significant output of the project and it is hoped that this will achieve ongoing research co-operation between tertiary institutions and others wishing to conduct work on country working with community. This collaborative project, managed by UWA, has resulted in a far better appreciation of the local and regional cultural and scientific heritage values. With the re-engagement of the traditional owners, more appropriate mechanisms can be established to ensure the long term preservation of the nation's cultural heritage.

Associated research

(Briefly describe the research that led to the impact presented for the UoA. The research must meet the definition of research in Section 1.9 of the EI 2018 Submission Guidelines. The description should include details of:

- what was researched
- when the research occurred
- who conducted the research and what is the association with the institution)

Researchers at UWA during the assessment period have long-term connections with archaeological studies of the Burrup peninsula: they have been engaged in heritage management projects since the original Woodside development in 1982. The UWA Centre for Rock Art Research and Management has existed since 2010. This Centre has transformed our critical understandings of the emergence of human creativity and cognition and demonstrated the significance of rock art in communication networks at the regional, national and international levels. By exploring the central role of art and symbolic behaviour in human communication, we generate new insights and solutions as the world enters the next era of globalisation and global citizenry. Research has been done on the Burrup Rock Art itself, on its importance to the traditional owners of the land, on the co-management of the area, on the intersection of industry and culture, and on the impact of industry on the rock art itself. The team comprised UWA Professors Hallam, Mulvaney, McDonald and Veth.

FoR of associated research

(Up to three two-digit FoRs that best describe the associated research)

20 - Language, Communication and Culture
21 - History and Archaeology
04 - Earth Sciences

References (up to 10 references, 350 characters per reference)

(This section should include a list of up to 10 of the most relevant research outputs associated with the impact)

Hallam, S, 2009, COMMENTS on Burrup Rock Art Monitoring Program - Summary of Study Reports, response to report to the Burrup Rock Art Monitoring Committee.

Mulvaney, K. 2015, *Murujuga Marni: Rock Art of the Macropod Hunters and Mollusc Harvesters*, UWA Press, Perth, Australia

Mulvaney, K. 2014, 'Dampier Archipelago Petroglyphs', *Encyclopaedia of Global Archaeology*, Volume 3, pp. 2025-2029.

Ward, I., Larcombe, P., Mulvaney, K., Fandry, C. 2013, 'The potential for discovery of new submerged archaeological sites near the Dampier Archipelago, Western Australia', *QUATERNARY INTERNATIONAL*, 308-309, pp. 216-229.

Mulvaney, K. 2013, 'Iconic imagery: Pleistocene rock art development across northern Australia', *QUATERNARY INTERNATIONAL*, 285, pp. 99-110.

Australian Heritage Council. 2012. "The Potential Outstanding Universal Value of the Dampier Archipelago Site and Threats to that Site." A report to the Minister for Sustainability, Environment, Water, Population and Communities.

McDonald, J. 2016, *Murujuga National Park: co-management of cultural heritage through a future act agreement*. (In) McGrath et al (2016). *The right to protect sites : Indigenous heritage management in the era of native title*. Canberra, A.C.T. AIATSIS Research Publications

McDonald, Jo. 2014. "I Must Go Down to the Seas Again; or, What Happens When the Sea Comes to You? Murujuga Rock Art as an Environmental Indicator for Australia's North-West." *Quaternary International* 385: 124–35.

McDonald, J. & Veth, P. 2006 *Rock art and social identity: a comparison of graphic systems operating in arid and fertile environments in the Holocene Archaeology of Oceania: Australia and the Pacific Islands*. (in) Lilley, I. (ed.). First ed. Malden: Blackwell, p. 96-115 (Blackwell Studies in Global Archaeology)

McDonald, J. and P. Veth. 2009. "Dampier Archipelago Petroglyphs: Archaeology, Scientific Values and National Heritage Listing." *Archaeology in Oceania* 44, S1: 49–69.

Additional impact indicator information

Additional impact indicator information

(Provide information about any indicators not captured above that are relevant to the impact study, for example return on investment, jobs created, improvements in quality of life years (QALYs). Additional indicators should be quantitative in nature and include:

- name of indicator (100 characters)*
- data for indicator (200 characters)*
- brief description of indicator and how it is calculated (300 characters.)*

Name

Award: AAA Ulm-Ross Prize

Indicator Data

AAA Ulm-Ross Prize for best paper published in Australian Archaeology in 2013/2014

Indicator Description

McDonald and Veth were awarded the AAA Ulm-Ross Prize for best paper published in Australian Archaeology in 2013/2014: Rock art in arid landscapes: Pilbara and Western Desert petroglyphs. Australian Archaeology 77: 66-81

Name

Award: AAA Rhys Jones Medal

Indicator Data

AAA Rhys Jones Medal: awarded in 2016 to Jo McDonald for outstanding contribution to Australian Archaeology

Indicator Description

2016: The AAA Rhys Jones Medal: awarded to Jo McDonald for outstanding contribution to Australian Archaeology.