



Friday 11<sup>th</sup> of May, 2018

Open letter to the Government of Western Australia, Department of Water and Environmental Regulation (DWER),

**Regarding: Further comments on Draft Burrup Rock Art Strategy (September 2017), incorporating the findings of the Australian Senate Environment and Communications Reference Committee's enquiry into the protection of Aboriginal rock art of the Burrup Peninsula.**

This open letter responds to DWER's opportunity to further comment on how the findings of the recent report released by the Australian Senate Environment and Communications Reference Committee's enquiry into the protection of Aboriginal rock art of the Burrup Peninsula (hereafter the Senate Report) can inform the Draft Burrup Rock Art Strategy (DBRAS). Firstly, we echo disappointment publically expressed by many other interest groups that the Senate Committee could not reach a consensus in their recommendations. We hope that this will not lead to a delay or dilution of any actions arising from the Senate enquiry as many important issues requiring prompt attention were raised regarding the preservation of rock art on the Burrup. In this further response we highlight those matters in the Senate Report that can, and should, be addressed as part of the DBRAS.

We (again) endorse the underlying principle of the DBRAS, taken from section 3A of the EPBC Act 1999, that 'if there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation'. However, we point out that DWER should strive for the most up to date scientific information available to inform conservation and management of the Burrup Peninsula (Murujuga) rock art assemblage, including the DBRAS. The Senate Report clearly highlights areas where further scientific work is urgently needed.

The headings below are taken from the DBRAS and are used to indicate where issues raised in the Senate Report can be addressed going forward. Numbered references given in brackets relate to sections of the Senate Report where the issues we have further commented on were documented. We conclude with a 'Further Relevant Issues' section to draw DWER's attention to matters that sit outside of the scope of the DBRAS, but can inform it.

The findings of the Senate Report throw doubt on the sustainability of industrial expansion on the Burrup. In order to ensure the preservation of Murujuga rock art further industrial expansion should be avoided, or minimised wherever possible. The pace of decisions being made about further industrial expansion on the Burrup is deeply concerning considering that the findings of the Senate Report have only recently been handed down and the Murujuga Traditional Owners have only just reached consensus about applying for World Heritage Listing (The Guardian and ABC 2018 respectively).

## **Monitoring and Analysis**

With regard to the monitoring of rock art degradation, we cannot overstate the importance of a firm baseline from which assessments concerning the preservation of rock art sites and their surrounding cultural landscape can be made. We strongly agree with the submission of Dr Mulvaney (5.14), that to ensure comprehensive monitoring of a sufficiently high scientific standard to be able to measure subtle changes to rock art preservation all consultants should either possess specific skills in rock art recording and analysis, or work with dedicated rock art experts in identifying and recording rock art. Only in this way will suitable study locations be chosen for further scientific analyses that are directly relevant to rock art of the region (this appears to be a consistent short coming of previous specialist dust, microbial and Yara Pilbara studies).

We agree with Dr Mulvaney, that arguments made by Yara Pilbara, that they have surveyed a 'representative sample' of the rock art sites (six) relating to their technical ammonium nitrate production facility (TANPF), are wholly insufficient (5.14-16). While the selection of these six sites was undertaken in consultation with the Murujuga Aboriginal Corporation the representativeness of sites in terms of their archaeological attributes and how they fit into the regional petroglyph sequence has not been established. How can these six sites be considered representative of the rock art that could be impacted within the 2km radius of the plant when the rock art within 2kms of the plant has not been recorded or assessed in detail? With the expansion of the TANPF a seemingly forgone conclusion (The Guardian 2018) this matter is urgent and should be addressed as part of the studies mandated in the DBRAS.

It is obvious from the Senate report that further studies relating to the preservation of rock art, especially air quality and microbial activity are warranted in response to growing industrial activity on Murujuga. Indeed, the Senate Report demonstrated that many questions remain unanswered about the formation of mineral skins on the engraved stone surfaces. It is imperative that the materiality of the rock art is thoroughly understood in order to design monitoring and management, to assure its preservation and underpin any conservation treatments. We again emphasise protective and preventive conservation should be prioritised (Agnew et al. 2015). Destruction of heritage sites, including moving engraved boulders (6.7), is unacceptable.

Understanding the formation of the patina, or 'dessert varnish', into which the Murujuga engravings have been carved is absolutely paramount. Professor Black's submission (3.30) regarding the processes of dessert varnish formation requiring a biological catalyst is scientifically unsubstantiated (Watchman et al. 2014). In short, the mechanisms of 'varnish' formation are unknown and this is a critical starting point for any conservation effort. For example, in South Australia rock varnish formation was found to be a two-step process where the redeposition of dusts from mechanical weathering of manganese enriched bedrock surfaces was the source of this key ingredient in rock surface encrustation (not microbes). The windblown manganese particulates were periodically dissolved by surface water to cement themselves and other leached residual particulates and debris to the rock surface forming the coating or 'varnish' (Aubert 2009).

Similarly, Professor Black's submission that the engraved surfaces are particularly sensitive to increased acidity (3.28) requires further specific investigation. We too suspect that any increase of atmospheric dust particles, particularly those rich in nitrogen or manganese, may stimulate the growth of micro-organisms, including fungi and lichens that are known to function as agents of rock art deterioration (Huntley and Officer 2016; Wallis et al. 2015; and noted by Professor Black and Dr MacLeod 3.33). The previous study of micro-organisms commissioned by DWER found equally low populations of cultivable bacteria close to and distant from industrial activity on the Burrup, along

with similar bacterial diversity (six species identified in all locations sampled). The same study indicated a relationship between lichen abundance and diversity and proximity to more humid environments (Dolphin Island, O'Hara 2008). However, these studies were undertaken more than a decade ago when industrial activity was much less than at present (2.12 and 4.101). We urge DWER to commission further studies to resolve uncertainties in the relationship between 'rock varnish' and micro-organism and to enable predicative modelling of any increase in favourable conditions for micro-flora such as lichens as part of the DBRAS.

Concerns raised by Dr Ken Mulvaney and Prof. John Black regarding CSIROs 2007 fumigation and dust deposition studies, specifically that these did not adequately account for the variety of rock types upon which Murujuga petroglyphs are found, exposes a weakness in the government tendering process for these conservation management works. Specific knowledge of the regional and local scale physiogeographic conditions, the regional archaeological record and rock art recording/interpretation must be the primary considerations from which conservation science and monitoring investigations are designed. If such expertise is not found within the successful tendering organisation (such as was the case at the CSIRO) it should be mandated that contractors consult with experts like Dr Mulvaney.

It was concerning to hear that Prof. Black was prevented from publishing his criticism of the CSIRO's colour change analyses in a peer review journal by a confidentiality agreement with the Department charged with oversight for the management of the Burrup rock art (4.47). In a circumstance such as the commissioning of a specialist independent study by a regulatory agency it is surely in the public interest to debate the scientific merits of these works in a peer reviewed forum as Prof. Black has done elsewhere (Black et al. 2017). We endorse peer reviewed scientific publications as an appropriate forum for discussion and for canvassing the diverse opinions of the scientific community regarding industrial activities on the Burrup. We suggest that the DBRAS include a specific statement to encourage and facilitate scientific publication as well as commissioned peer review of specialist studies.

### **Management Responses**

The title of the DBRAS, specifically 'decision-making framework', implies that there will be triggers for action should monitoring work find that rock art is being adversely impacted by industry. Apart from clarifying and clearly stating what these triggers are, we suggest that the DBRAS be used as a means to extend responsibilities to the Murujuga Rangers who patrol the Murujuga National Park and that they need to be given the same legislative powers to undertake enforcement activities as other rangers (6.45).

### **Representation of Murujuga Aboriginal Corporation (Joint management)**

It is pertinent to reiterate our statement about adequately communicating scientific findings to the Murujuga Aboriginal Corporation. We recommend the Burrup Rock Art Strategy include dedicated resources to report the findings of commissioned scientific studies to the local Aboriginal community in an accessible way, using plain language and appropriate translations. This is in accordance with DWER's responsibility to facilitate consultation with key stakeholders outlined in Section 6. It is important to directly involve Murujuga Aboriginal Corporation, as much as practical, in all further analyses and monitoring programs (this is further addressed in the Stakeholders and Consultation section below).

### **Governance**

We strongly suggest that the DBRAS be revised to include a requirement that when DWER commissions studies and selects peers to review scientific investigations, the DWER staff making these selections have a suitable level of scientific expertise and experience to inform their choices. The submissions by Dr Ken Mulvaney and the Bob Brown Foundation (5.10 and 5.11) highlight a very

concerning trend that rather than enforce compliance or imposing penalties the regulator has historically varied the conditions of the TANPF at Murujuga in relation to a need for a heritage survey within two kilometres of the plant. This is a worrying precedent as it appears to endorse the company's lack of concern for heritage. If a second TANPF is to be considered on the Burrup it is imperative that their proximity and any potential impacts to Aboriginal heritage sites be thoroughly assessed beginning with a detailed recording of all sites close to the plant(s).

DWER need to ensure greater external oversight of current and proposed industrial activities on the Burrup. The Senate Report documents failures by the Yara Pilbara to self-refer non-compliance of their TANPF in regard to the conditions of their approval (5.3) and shows that Yara Pilbara have a track record of administrative non-compliance within the TANPF suggestive of a corporate culture that does not take environmental management and responsibilities to not impact national heritage site of Murujuga seriously (5.5).

In relation to section 6.30 of the Senate Report, it is unclear whether there has been an assessment of the 'benefits' (financial, education and training) to the Traditional Owner communities. This is important in order to evaluate if these communities experienced any advantage from the compensation paid for extinguishment of their Native Title rights. If this assessment has been carried out, the documents should be made publically available. Regardless of any prior assessment, DWER should commence an up-to-date assessment of the impacts and opportunities for Traditional Owners within the joint management framework of Murujuga National Park/National Heritage Listed Site.

#### **Stakeholders and Consultation**

It is disheartening to hear that the Murujuga Aboriginal Corporation feel that they have been inadequately consulted in relation to the expansion of industry on the Burrup (6.35, 6.36 and 6.37) and that they feel they have 'no way of obtaining independent scientific advice or evidence that damage has occurred' and are 'forced to trust past, current and future monitoring regimes'. It should be a priority of the DBRAS to explicitly provide adequate access to information from technical reports and to include a higher proportion of Traditional Owners on peak bodies to ensure Indigenous custodians are given priority in monitoring and management decisions at Murujuga (6.37).

Representation on the joint management and advisory committees is proportionally skewed in favour of industry. We reiterate our suggestion that the Burrup Rock Art Stakeholder Group include five representatives of the Murujuga Aboriginal Corporation. This would be a means of recognising the primacy of Traditional Owners in decision making about their heritage and would bolster the representation of Aboriginal custodians to one third of the 15 member committee, ensuring that they reach parity with the five pro-industry delegates. We also reiterate our suggestion to ensure technical reports are presented in accessible ways to key stakeholders including Traditional Owners. A good way of achieving this would be to host dedicated workshops at the conclusion of specialist studies to communicate their results and have the specialists available to discuss their work.

#### **Other Relevant Issues:**

##### **World Heritage Listing**

There was a lot of support in the Senate Report for Murujuga to be World Heritage listed. While we are deeply in favour of such a listing, we would remind the Western Australian and Federal Governments not to replicate the lengths that previous Australian Governments went to in order to ensure that industrial activity could continue in other Australian World Heritage Sites in the late 1990s. Following an extraordinary meeting of the World Heritage Committee in Paris on 12 July 1999 the Australian Federal Government refused to allow the Kakadu World Heritage Site to be placed on

the World Heritage in Danger list, instead supporting further mining activities within Kakadu National Park (Cameron and Rössler 2016: 230). We hope that DWER and the current Federal Government will support efforts to inscribe Murujuga on the World Heritage and to ensure the World Heritage Values of the site are protected once inscribed.

### **Antiquity of Burrup Rock Art**

The claimed 30-40, 000 year age for the Murujuga engraved rock art assemblage (1.14, 3.29, 6.62 and 7.3) has no scientific basis (Watchman et al. 2014) and does not affect their cultural, scientific or atheistic significance and potential World Heritage status. The age of the petroglyphs does however matter in terms of conservation issues. We are pleased to see the DBRAS take a more conservative approach when discussing the antiquity of the Burrup rock art (p. 3). The Australian Research Council Linkage Project commenced by the University of Western Australia in 2015 with funding from Partner Organisation Rio Tinto Iron Ore and Murujuga Aboriginal Corporation as collaborators should fill some of the gaps in our knowledge about the antiquity of human occupation in the Burrup Peninsula including the 40 islands of the area. We encourage DWER to consider the emerging findings of this work as they become available to assist in contextualising the DBRAS within the broader cultural landscape of the Murujuga. We also encourage DWER to commission further scientific studies into the age of the engraving surfaces.

### **Concluding Remarks**

We agree with the Senate Committee, that the Burrup rock art is of 'immense national and international archaeological and heritage value' (7.1.). As an academic research hub for rock art scholars, particularly those engaged in applied archaeological science including conservation studies, the Place Evolution and Rock Art Heritage Unit is pleased to see that dedicated rock art conservation concerns have received national and international attention through this Senate Enquiry. We congratulate the Western Australian government tackling the complex issues required to preserve rock art, through DWER, in a considered (rather than reactionary) approach.

The Senate Report recognised the vast cultural and historical values of the rock art of the Burrup Peninsula and is of the view that it is critical that the petroglyphs should be protected and conserved for current and future generations (7.5). This requires proactive management and long term planning. We see the DBRAS as a fundamental first step. We hope that the issues highlighted through the Senate Report, particularly the need for dedicated rock art expertise, further scientific study of desert varnish formation, dust accumulation and the age of the rock art will be addressed. Finally, and most importantly, there is clearly a need for a higher level of engagement with the Traditional Owners of Murujuga and we look forward to the DBRAS facilitating this.

Yours sincerely,



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## References Cited:

Contributions by PERAHU staff are underlined.

Agnew, N., Deacon, J., Hall, N., Little, T., Sullivan, S. & Taçon, P. S. C. 2015. *Rock Art: A cultural treasure at risk*. The Getty Conservation Institute, Los Angeles.

Aubert, M., (2009). *La datation par les séries de l'uranium en archéologie: nouvelles applications à la datation de l'art rupestre et des fossiles humains*, Unpublished PhD thesis, Université du Québec, Institut National de la Recherche Scientifique, Quebec, Canada.

Australian Broadcasting Association (ABC) 2018, *ABC News West*, <https://www.facebook.com/abcnorthwestwa/photos/a.262810096810.148181.261072136810/10155262556266811/?type=3&theater>, published online 29 March 2018

Black, J. L., MacLeod, I. D. & Smith, B. W. 2017. Theoretical effects of industrial emissions on colour change at rock art sites on Burrup Peninsula, Western Australia. *Journal of Archaeological Science: Reports* 12: 457–62. doi:10.1016/j.jasrep.2017.02.026

Cameron, C. and Rössler, M., 2016. *Many voices, one vision: The early years of the World Heritage Convention*. Routledge: London.

Huntley, J. & Officer, K. 2016. Analysis of dust and other surface deposits within Aboriginal Rock Art Site WCP72, Wilpinjong NSW: Wilpinjong Coal Mine Aboriginal rock art monitoring and assessment program. Unpublished report for Wilpinjong Coal Pty Ltd by Navin Officer Heritage Consulting.

O'Hara, G. 2008, *Monitoring of Microbial Diversity on Rock Surfaces of the Burrup Peninsula*, Final Report to the Burrup Rock Art Monitoring Management Committee by Murdoch University, published online: <https://www.der.wa.gov.au/our-work/major-initiatives/36-burup-rock-art-monitoring-program>

Wallis, L., Huntley, J. & Watchman, A. 2015. A study of painted rock art sites in the Central Pilbara: Final report. Unpublished report to BHP Billiton Iron Ore.

Watchman, A., Taçon, P. S. C. & Aubert, M. 2014. Correspondence on 'Erosion rates and weathering history of rock surfaces associated with Aboriginal rock art engravings (petroglyphs) on Burrup Peninsula, Western Australia, from cosmogenic nuclide measurements'. *Quaternary Science Reviews* 91: 70–73.

The Guardian 2018, *WA accused of undermining Burrup peninsula's world heritage listing*, <https://www.theguardian.com/australia-news/2018/apr/24/wa-accused-of-undermining-burup-peninsulas-world-heritage-listing>, published online 24 April 2018.

UNESCO. 1999. *Convention Concerning the Protection of the World Cultural and Natural Heritage*; 22nd Session of the World Heritage Committee, Kyoto, Japan, 30 November to 5 December 1998. Retrieved from Paris, 29 January 1999.