Development of Australian rock art recording methodologies: for the interpretation of cultural and environmental histories

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Abstract

This thesis documents the history of the ongoing process for developing and refining field recording, archiving and analysis techniques pertaining to rock art and cultural heritage in Australia. The original objective was to investigate every aspect that may permit science-based processes of ‘reading’ rock art. Information encoded in the iconic elements of certain forms of rock art offers a unique opportunity, not only to advance understanding of changing environments, but also the pertinent processes of cultural and technological adaption. The author, Grahame Walsh, has developed these techniques for the purposes of research, publication, conservation and management of rock art.

The recording methodologies discussed in this thesis cover many years, commencing with the most basic technological era of the immediate post-war, spanning the all-important advent of computer and digital technology, and ultimately the availability of Global Positioning System technology. Discussion includes both the failed research approaches, as well as the successful techniques and useful technologies, which are currently being used.

The original recording and archiving commenced in Queensland, then expanded into a national coverage. For the past 29 years the focus has been on the art and cultural resources of the Kimberley region of Western Australia, where surveys identified one of the world’s oldest and most prolific bodies of remarkably preserved art. The infinite examples of motifs recurring in superimposition allowed a Kimberley Rock Art Sequence to be established, where changes in alignment, combination and association of recurring elements could be studied. From this a formalised system of rock art interpretation developed. The evidence of the effectiveness of the developed methodologies is indicated in several major publications, some of which are submitted for examination in this thesis.
Statement of originality

No unapproved publications presented in this thesis have previously been submitted for a degree or diploma in any university.

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List of Publications Being Presented For Examination


3. 1979  'Mutilated Hands or Signal Stencils? A consideration of irregular hand stencil from Central Queensland' Australian Archaeology, No. 9, pp. 33-41.

4. 1981  'Site Locating by Helicopter in Queensland's Central Highlands'. Australian Institute of Aboriginal Studies Newsletter, No 15, pp. 73-78.

5. 1984  'Composite Stencil Art: Elemental or Specialized?' Australian Aboriginal Studies. No. 9, pp. 34-44.


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D  1977 GLW early analysis specific motifs ('Nets') Rock Art Sites (CSQB) Tickerybang area, Upper Warrego River.
1977 GLW Terminology Development: specific motifs ('Bird Tracks') Rock Art Sites (CSQB)

1979 GLW Site Management: Boardwalk specifications becoming Q.NPWS standards

1978 GLW Site Recording: Pro Forma development Draft section of Version 1 (for field testing)

1978 GLW Site Recording: Pro Forma development Draft section of Version 2 'yes/no' biased (for field testing)

1978 GLW Card Retrieval System – Aboriginal Archeology

1978 GLW Site Recording: Preliminary Aboriginal and Burial Site Record Carnarvon Ranges

1979 GLW Site Recording: Pro Forma development Final Draft of Version 3 (Forms A. A (ii), B, C, D, E, F, G, H & I)

1979 GLW Site Recording: Pro Forma development 'Classifications/Ratings/Codes' (Central Highlands Management Project)

1979 GLW Site Recording: Pro Forma development Data Entry Forms (draft copies (Forms A. A (ii), B, C, D, E, F, G, H & I)

1980 GLW Site Recording: Pro Forma development Archive Progress (reference checklist form)

1993 'A mark in time' ANH 1993 24:6 pp40-45 Mike Morwood and Grahame Walsh

1985 Visitor to art site surveys Carnarvon Gorge Mt Moffatt NP

1979 Management Data Forms

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1983 Need for a Computer GL.W/Q.NPWS


Historic Sites Survey: Preliminary Report

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‘Midden Analysis Details Project Flinders (Princess Charlotte Bay) 1985

1991 CQSB Organic Recording Project 1991

1990 ‘Carnarvon Cultural Complex: a proposal for a Carnarvon Keeping Place, Stage one of a multi-faceted cultural complex centred around a National Rock Art Gallery Feb 1990

1989 Site Recording Pro Formas Kimberley and VRD

2002 Graphic Illustration of myth preparation Takarakka Data Base

2001 Graphic Illustration of scanning steps for different medium Takarakka Data Base

2001 Instructions Sheets: number systems Takarakka Data Base

2001 Graphic Flow Chart: processes of data acquisition, processing and archiving Takarakka Data Base

2003 Graphic Flow Chart: Computer, peripheral and storage networking Takarakka Data Base

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1 Introduction

Aims

The primary aim of the majority of my publications is to reflect the challenge of being able to 'read' prehistoric art. 'Read' may, in this instance, arguably be considered a misleading term. However, it remains my firm belief that the initial creation of most Australian rock art was based on a deliberate intent of conveying a suite of information. This information transfer process may well have been elitist, was never static, and varied immensely in time and space. The commonality appears to be the practice of incorporating a suite of recurring elements, alignments, associations and colours within images and discrete panels, ensuring that only those privy to encoded meanings pertinent to the associated belief system gained the conveyed knowledge. The price of acquiring this status of iconic awareness undoubtedly varied greatly with the belief system, order and resource dependency of the associated cultures. One may argue that even the most humble forms of ancient rock art imagery surviving in north-west Australia represent some of the earliest evidence of an established, intellectually-based hierarchal system.

In an attempt to meet the challenge of being able to 'read' rock art, it has been necessary to establish a methodology to comprehensively and meticulously record the detail of rock art sites. This recording process has been enhanced over time by exploiting rapid improvements in relevant technologies.

This thesis aims to present the publications as outcomes of a 48-year endeavour to use systematic data-gathering processes to record rock art. Advances in technology have improved the recording process, and hopefully this has also improved our overall understanding of the rock art. The development of this methodology is recorded in chronological order through copious appendices and illustrations. It is to be hoped that recorders in the future will learn from my experiences and will have a greater appreciation of the conclusions presented in my publications.
Background

Being born and raised in the rural setting of Central Queensland provided me, as I have since come to recognise, with distinct advantages in my lifelong pursuit of understanding encoded information in the pre-literate assemblages of iconic forms. Firstly, I gained the elements of respect, appreciation and understanding essential for survival within very demanding natural Australian environments. Secondly, I acquired an appreciation for, and interacted with, a sizeable population of primarily illiterate Caucasian and Aboriginal people, thus becoming aware of the processes they develop to cope with information transfer. Without the capacity to at least appreciate the position of the past artists and scribes, I do not believe it is possible to adopt either the lateral or logical thought processes essential when approaching rock art decipherment.

From my first privileged introduction to a rock art site I was convinced that these graphic forms were not ‘art’ in the Western sense, nor meaningless doodlings of a long vanished culture, as was a common contemporary attitude. The time was 1957, and the place was the magical sandstone gorge setting of Moolayember in a remote tract of Central Queensland’s Carnarvon Ranges, the ‘roof of Queensland’. This chance combination of time, place and people seems fortuitous in retrospect. At the peak of my impressionable youth, my aged and colourful mentor introduced me to the mysteries of ancient imagery in a seemingly fantastic setting of caves, cliffs and palm trees.

This experience was to determine the course of my life. I hope that my subsequent 48-year quest to understand rock art may be regarded by future generations as having made some modest contribution to the understanding of Australia’s prehistory.

Initially, my youth, coupled with logistical limitations, determined my sphere of accessibility, which was the stencil and engraved art regions of the Central Queensland Sandstone Belt (CQSB). While bright orange and red stencils on stark white sandstone are visually spectacular, the repetitious use of a limited range of template forms presented a challenging dilemma to any level of interpretation.
The need to establish the relationship of CQSB art and environment to the broader range of environments and rock art forms resulted in an extended area of search, documentation and study to cover the length and breadth of Queensland. This extended search revealed apparent correlations of specific art ‘styles’ within specific environments, and also indicated the association of specific colour preferences and combinations within similar periods of art across widely distanced regional art bodies. These results indicated a need to expand the study area even further afield in order to obtain at least a primary overview of rock art and environmental relationships. Initially the survey and study extended progressively across northern and central Australia, eventually including southern mainland Australia and, ultimately, Tasmania.

By 1988 I had completed the first overall inter-regional studies of Australia’s rock art, providing the essential working model for permitting preliminary inter-regional comparisons of theme and technique in relation to time and environment. Of perhaps greater importance to my then 30-year quest was the identification of specific Australian rock art regions and styles, offering me the best opportunity to advance my personal objective of deciphering the coded iconic legacy of ancient cultures.

I then carried out comparative studies within the Kimberley rock art region of Western Australia and the neighbouring Victoria River Region of the Northern Territory. This persisted for a further six years, until finally I concentrated all studies solely on the north-west Kimberley. This remains my current focus.

Research Problems

Initially, the greatest research problems involved logistics and associated funding in attempts to determine, firstly, where the most likely art concentrations lay; secondly, the problems of physically reaching the prospective art areas; and thirdly, the processes by which field records could be rapidly and efficiently collated, permitting consistent comparisons.

Within my home region of CQSB any serious pursuit of rock art was
regarded, at best, as some form of eccentricity, and attracted a tolerance from the station owners as a form of local entertainment. Feedback regarding findings and hypotheses generated an increasingly enthusiastic support, at times extending to individual participation and invaluable use of equipment and resources.

The outcome of land-rights claims in the Northern Territory was presented as increasingly negative to landholders, and potential impacts on their operations and livelihood marked the end of this era of rural support. Knowledge of the existence of anything that could be argued as benefiting Aboriginal claims of ownership and causing lessee exclusion was rapidly perceived as a threat, and the welcome doors of land accessibility began to close. This situation deteriorated through the late 1970s and early 1980s, where any association of rock art studies with state or federal authorities attracted almost universal refusal of access.

Development of native title legislation resulting from the Mabo decision effectively brought an end to landholder tolerance of interest in rock art, and in some instances it brought bitter abuse and rejection by formerly enthusiastic participants. This effectively ended the period when so much could be achieved in the studies of rock art with an absolute minimum of resources.

In the Kimberley region, yet another level of withdrawal of lessee support and research access accompanied the progress of the main north-Kimberley native title claim. This potted history of the decline of public support and research access provides some appreciation of a large problem plaguing rock art research and ultimately grinding it to a halt.

From a research viewpoint, the greatest problems encountered during the early stages of the study were the processes by which the art would be assessed, recorded, photographed and analysed. There had been very few serious approaches to the in-depth analysis of rock art styles, motifs and colours, even on a regional basis, much less a pan-continental context. The possibility of applying these options to a secondary level of geographic and geological association had not been considered, and any relationship to additional levels of resource availability relative to environmental change resulting from climatic
change seemed too extreme to warrant credibility.

While there had been invaluable studies by rock art research pioneers such as Edwards, Mountford, Tindale and others, their approaches reflected the embryonic stages of the discipline, as well as their unavoidable limitations of logistics and technology. It seemed that a far more structured approach, targeted towards a far bigger understanding of humankind’s place in time and space, was required. The search for needs, standards and suitable techniques will be seen in the discussion on progressive publications.

A final major problem was identified in the all-important area of archiving data, and particularly images. The Takarakka archive currently contains in excess of 1.6 million images in a range of formats: transparency, negative and digital. Many thousands of pages of typed and written recordings of site summaries, together with a similar number of A4 pages of field motif drawings, are part of an ongoing scanning and digitising program. Although technology has made major advances during the duration of this project, and constant testing of options at the cutting edge of technology has been maintained, I still believe this to represent a major and far-from-resolved dilemma.
2 Overview Of The Development Of This Research

Theoretical and Conceptual Development

Rock art interest in Australia has a long history. Published accounts of observations date back to the earliest period of European settlement, with Governor Phillip describing engraved art of the current Sydney area in his first dispatches of 1788, and accounts from early explorers such as Allan Cunningham and George Grey. Early accounts were largely descriptive, but the more adventurous, such as George Grey's 1838 earliest-recorded European discovery of Wandjina art in the Kimberley region of far north-west Australia, included basic measurements, sketches and watercolour copies. These graphic records aroused sufficient international interest to confirm a very broad interest in the graphic records of little known cultures, generally perceived to be 'primitive'. Later discoveries in 1892 by Joseph Bradshaw, again in the Kimberley region, resulted in graphic illustrations accompanying his paper presented in 1902 to one of Australia's leading scientific societies of the time, the Royal Geographical Society.

A brief illustrated history of the pioneering discovery and recording of rock art in Australia has been discussed in Walsh (1988:17-33). From the 1930s to the 1950s, rock art documentation and study received progressively increasing interest from pseudoscience-based and, ultimately, science-based individuals associated with the ethnographic discipline of that time. Names such as Mountford, Tindale and Edwards appear in increasing frequency authoring papers and publications involving rock art recording and analysis in journals such as Mankind and Oceania. This early expansion of interest and study of rock art largely involved the most basic facets of statistical analysis accompanied by elementary descriptions. Where possible, these researchers sought 'traditional' interpretation from Aboriginals, not always directly associated with the art's geographic location or culture.

The 1960s heralded an expanded interest in more detailed studies of rock
art, particularly within specific geographic regions and at times focussing on specific ‘styles’ of art or figures. An example of this can be found in the Arnhem Land region of the Northern Territory, where the original recording and interpretation by Mountford were taken to more specialist and detailed levels by Eric Brindle. Subsequently, these studies were continued and expanded by Chaloupka.

**Interdisciplinary Application**

Rock art studies have experienced a long and chequered history during their process of maturing to a status of acknowledged potential for valid scientific study. This significant elevation has resulted from applying a more professional approach to developing and standardising systematic processes for recording, analysing and presenting findings.

This elevated level of credibility has permitted rock art researchers to investigate possibilities of interdisciplinary research projects. This process remains in its infancy, so neither the full extent nor degree of interdisciplinary interaction and support has been explored. When considering the rapid technological developments that are increasingly opening up new dimensions of technique, potential and ultimate accuracy across a wide range of potentially-associated scientific disciplines, this arguably heralds the most exciting era of rock art research.

When addressing this potential, I will limit comment to personal experiences with these opportunities for expanding interdisciplinary interaction with my rock art studies in the Kimberley. I remain confidently optimistic regarding the limitless future multi-disciplinary project possibilities offered by the exponentially-accelerating refinements to my highly-specialised field data gathering systems. These systems no longer deal only with the rock art, but extend to associated sites, environments, archaeology and geomorphology.

I believe my Kimberley rock art studies and systems are now on the cusp of
making a contribution to Australia’s collective understanding of its inhabitants’ cognitive and technological developments throughout a diversity of environmental extremes. Systematic proofing and fine tuning of the progressively established Kimberley Rock art Sequence has provided a unique regional ‘base line’, with an infinite number of definable points to which a diversity of disciplines may link, anchor or direct specific aspects of their respective studies. Whether offering datum points for research commencement, or target points for challenge, the Kimberley Rock art Sequence provides an invaluable foundation. The collective findings of rigorous multi-disciplinary studies will systematically construct a multi-layered structure of understanding.

Methodological Development

Considering the diversity of primary interest in rock art amongst the equally diverse backgrounds of the steadily-growing number of researchers, it is not surprising that the processes associated with recording, archiving and analysing rock art remained individual and incompatible.

My earliest ventures in attempting to obtain some level of personal understanding of the content and associated site settings may, in hindsight, be best considered ‘descriptive essays’. Even after the passing of more than 40 years, these would still be considered ‘informative’ to the general interested reader, but obviously lacking in consistency of approach, subject description or relationship summary. Awareness of these inadequacies was alone insufficient to determine either the necessary elements to focus upon, or even the processes which should be pursued to attain consistency. Attempting to seek a primary direction through the experience of others, I sought every opportunity to discuss options with any individuals encountered who were involved in cultural resource study or description. This provided no direction for procedures or objectives, but established an awareness of the urgent need for establishing some common elements for inclusion, and a process of recording and archiving these. The processes and procedures were seemingly as diverse as the interests and beliefs of the individuals involved.
A series of experimental approaches to addressing specific primary subjects of each site and art panel were tested, together with often-complex attempts at graphically depicting the actual site shelter to clearly identify perceived important geological and conservation features. Photography was, by current standards, very basic, due to limited access to technology, and minimal with regards to the financial limitations of a consumable recording medium.

In these 'pre-computer' days the importance of consistency in retrieval systems was by no means as apparent. There was, additionally, no concept that these modest efforts would ultimately expand to create an archive of such proportions that a system of order and retrieval would represent the very basis of functional usefulness.

Management

Management of non-renewable cultural resources, and rock art in particular, was an almost non-existent practice in Australia until the 1960s. Increasing interest amongst the small group of enthusiastic researchers slowly located an ever-expanding diversity of regional rock art bodies, and awareness, not only of the size of some regional art site concentrations, but the diversity of quality and subject matter amongst an obviously immense national body of art. The graphic presentation and associated interpretation coincided with a rapid increase in interest among the broader public, which in turn resulted in increased visitation to known site areas. An increasingly raised issue involved responsibility, curation and management of rock art sites and areas subject to the new wave of visitation, and potential deliberate and unintentional vandalism.

My commencement of employment within the Queensland National Parks and Wildlife Service (Q.NPWS), the chief authority responsible for the state's natural resources, increased my awareness of the very urgent need for management policies and practices for non-renewable cultural resources. As the formal brief of Q.NPWS at that time covered only 'natural' and not 'cultural' resources, there was a long-standing but unwritten acceptance that
responsibility for cultural resource management, more specifically Aboriginal and archaeological resources, lay with the authority appointed with the introduction of the Aboriginal Relics Preservation Act 1967, the Department of Aboriginal and Islander Affairs (DAIA). The newly-created Archaeology Division within DAIA was seen as responsible for all cultural resources on both national park estate and all other lands of the state. Q.NPWS were initially not prepared to risk inter-departmental conflict by being perceived as usurping the power base of DAIA. Accordingly, rock art sites of the CQSB that had long been publicly accessible remained unprotected, undeveloped, and uninterpreted. An increasing awareness of conservation developing among the general public resulted in an increasing level of criticism being levelled at Q.NPWS for the degradation of high-visitation rock art sites on their estate.

The archaeological work of John Beaton on the Carnarvon National Park art sites as part of his PhD research (Beaton 1977) created a liaison with national park management officers which permitted Beaton to arrange a joint presentation, together with myself, to Dr Saunders (Director Q.NPWS) illustrating the importance of Q.NPWS in taking the initiative of management responsibility for such nationally significant rock art sites.

This represented a major breakthrough in the course of cultural resource management in Queensland, and the commencement of a 13 year era where Q.NPWS management, conservation and interpretation attained international recognition. Q.NPWS commissioned an information brochure, jointly prepared by Beaton and myself (Beaton and Walsh 1977 Submitted Publication No 2), which was reprinted in appropriately updated forms for many years. This also resulted in the implementation of our recommendations for pioneering boardwalk developments in the two main Carnarvon National Park art sites, Cathedral Cave and The Art Gallery. The history of this is dealt with in Walsh 1988:271-2 (Walsh Submitted Publication No 8). Permission was granted for me to spend 50 percent of my work time with Q.NPWS in locating, recording and formulating interpretation and management recommendations for cultural sites within my range of accessibility. This all had to be undertaken at my personal expense, including equipment, film and consumables.
3 The Contemporary Relevance of Each Publication

The following provides an explanation of the contemporary relevance of each publication, in chronological order. Page numbers in PART Volume 2 are shown in brackets. Whilst not all the publications refer specifically to rock art recording, the findings and associated hypotheses indicate the concepts progressively developing. This justifies and indeed necessitates their inclusion in the overall body of research and development presented.


   This paper challenges long-accepted and published beliefs regarding stencil art motifs from the CQSB art corpus, and their interpretation. The authors’ close study and detailed photographic recording, coupled with experiments in stencilling techniques, provided a basis for challenging an erroneous, but widely accepted, interpretation. This publication commenced an ongoing process of encouraging a more serious and scientific approach to the documentation and study of rock art elements, a little-explored and hitherto under-rated aspect of the overall discipline of archaeology. “The conclusions that we have made are put forward as stepping stones to encourage further adventuring in archaeological rock art studies. By this exercise the archaeologist co-author of this paper has been encouraged to be less intimidated by rock art assemblages. Continuing research by Walsh in these ranges follow on from this paper and work towards answering questions which bear directly on the relationships between landforms and human populations” (pp 50-510).


   This paper deals with a historic and unique incident involving the
relocation of an endangered Aboriginal bark burial cylinder to a secure and anonymous adjacent location to protect it from the inherent risks of public knowledge of its original unprotected site. The opportunity was utilised to publish detailed information regarding this little-known traditional practice, which forms an integral part of the region's rock art and associated burial art practices. Bark burial cylinders were considered the most high-risk in Queensland's management procedures for in situ, non-renewable cultural resources, and their inseparable association with rock art sites and specific art styles necessitated the development of a theme-specific Q.NPWS recording pro forma. "Much of the stencil art of the central highlands of Queensland is of material culture items (Beaton and Walsh 1977). The investigation of cylinders and their associated material culture items could offer new insights into the interpretation of the rock art of that area" (p 69).

3. Walsh, G.L. (1979) 'Mutilated Hands or Signal Stencils? A consideration of irregular hand stencils from Central Queensland'
Australian Archaeology, No. 9: 33-41.

This paper provides a reassessment of the long-believed and published interpretation of 'irregular hand stencils' within the Central Queensland rock art corpus as representing 'mutilated hands' bearing evidence of amputation. The progressive development of increasingly systematic and detailed recording processes, coupled with on-site motif studies and experimentation with stencilling techniques supported by detailed photographic techniques, made these discoveries possible. A limited explanation of the inherent characteristics created by the application of the stencil technique to various shaped objects accompanies an alternative explanation of the original subject matter: "Although the appearance of these hand stencils may at first suggest missing or distorted fingers, the term 'mutilated' may well be inaccurate, but this is only borne out when a number of these motifs are closely examined. In most cases there is evidence of indistinct or foggy stencilling in the area of the 'missing' or 'contorted' digits, suggesting a possibility other than mutilation" (p 34).
Having established the widespread inaccuracy of interpretation of the primary subject matter, an argument was added for a possible traditionally-intended interpretation, based on the published, historic anthropological observations (1897) of WE Roth. “While I do not suggest a complete association between the central Queensland hand stencils and the northwest central Queensland sign language, it is nevertheless useful to indicate the possibility of these hand stencils being indicators in a similar fashion to actual hand signals. In this way they may convey information to others besides the original artist” (p 38).


The preparation of this paper was requested by researchers at the Institute of Aboriginal Studies to facilitate the dissemination of knowledge regarding the use of then cutting-edge technology to expand the scope of survey and subsequent levels of data-gathering efficiency when approaching site recording challenges in extremely rugged terrain: “The use of helicopters in an aerial site search of Queensland’s central highlands more rugged areas has proven a outstanding success, and an account of the difficulties. Advantages and disadvantages associated with this method may be of value to other researchers confronted with similar terrain and associated problems”. Personal experience using fixed-wing aircraft, as well as piston engine and turbine powered forms of helicopter for site location were discussed and compared, with the most practical and economic approaches being employed. “These experiences in site-locating by helicopter may assist other researchers in choosing the most suitable approach and machine for their particular project. There is little doubt that the helicopter, or its equivalent, will prove to be an invaluable asset in future work of this kind in difficult terrain” (p 78). Over the subsequent 23 years of field work, I have experimented with these initial findings, applying them to many dozens of helicopter types, fixed wing, seaplane and float plane forms, refining the processes and approaches to a very high level of site location efficiency and operational economy.

This paper continues with the process of disseminating information determined by the developing ongoing detailed recording and analysis process, again focussing on the extensive stencil-art corpus of the CQSB. Within this region’s numerous art galleries were many primarily geometric motifs which had long been regarded and published as being of ‘freehand’ application. The identification of these motifs as created by freehand techniques formed a strong element of the argument of technique development in the major two-volume Australian National University (ANU) PhD “Art and Stone: Towards a prehistory of central western Queensland” by MJ Morwood in 1979. While I had never been convinced that these unusual motifs were freehand paintings, I had been unable to provide adequate evidence to raise a sound challenge. The increasingly detailed recording (Form F Freehand Art), together with experimental photographic and darkroom processing techniques, highlighted a range of technique application anomalies resulting in the creation of a motif-specific recording pro forma to acquire a statistical base for the regional distribution (see CQSB Recording Forms Appendix). This publication used extensive illustrations and graphics to satisfactorily argue the case for a long-standing academic error of technique assessment, and illustrated the previously unknown technique of the art’s creation, subsequently known as composite stencilling. “Possibly the greatest tribute has already been paid to the now vanished masters of composite stencil art; for over forty years rock art experts have scrutinised and recorded these masterpieces without being aware that the complex ‘paintings’ were in fact stencils.” (Appendix K) This discovery had international significance by providing an explanation for some of the previously baffling techniques used on segments of motifs by the palaeolithic rock artists of Europe.

Part of the Central Highlands Management Project had been to not only locate and record sites, but to maintain ongoing observation and monitoring processes on publicly accessible sites. This involved the upgrading of individual site files with progressive photographic and descriptive additions, providing hard evidence to support proposals for public control, which at this time were frequently politically unpopular. This expanded role represented the nucleus of a focussed evaluation and management program. The assessment procedures, development criteria, boardwalk designs, interpretation processes and subsequent ongoing monitoring became internationally recognised as pioneering landmarks in the developing field of managing public access to areas of non-renewable cultural resources. This paper provides historic overviews, summaries of procedures and management strategies for some of the longest publicly-accessible rock art sites in Australia. This model became the standard for Australian site development at that time, with study and assessment visits by officers responsible for the later development of similar sites in the newly established Kakadu National Park.

"Although current methodology will undoubtedly change with the attitudes, needs and pressures of the general public, a basic summary may be drawn up into headings of 'requirements' and 'procedures'. Although tending to overlap slightly, the requirements represent basic essentials for 'soft' development of areas in which public visitation is making its presence felt. 'Procedures' cover the operation once a definite decision is made for the adoption of a 'hard' development management plan." (p 13)

The use of specialist burial site recording pro formas as part of the Central Highlands Management Project assisted in providing sufficient statistical data to identify termite damage as a major and omnipresent threat to the unique bark burial cylinders. The subsequent focus of attention on identifying the specific species of offending subterranean termite resulted in establishing these to be Nausutermes carnarvonensis, a little known species previously only described by their discoverer (Hill) in 1942. The interest aroused by this discovery within the entomology section of the Queensland Department of Forestry, resulted in joint field studies and management control experimentation with Walsh, in 1981. As the recording pro forma had identified mud wasp nest damage as one of the major naturally occurring threats to the art panels of the region, I continued my ongoing seasonal monitoring and species-collecting program during the period of 1982 to 1984 (p 336). Individual site observations and insect collecting programs covered both the Clematis and Precipice Sandstone formations on the remote headwaters areas of the Comet, Maranoa and Warrego Rivers (p 342). At this time, the pro forma analysis showed mud wasp nests to be present at 155 of 283 art sites surveyed. and subsequent publication of these findings (P 342) identified 27 species of wasp, of which Sceliphron laetum appeared the most common conservation concern.

This profusely illustrated 312-page book was the product of 10 years' research aimed at personally traversing the length and breadth of the Australian continent to determine the discrete rock art regions, and, within the limits of time and resources, to additionally investigate any identifiable indicators which may lead to establishing cultural, mythological or technological inter and/or intra regional links in time and space. The initial quest of developing an understanding of the Queensland regional art styles and apparent art periods, within the 'big picture' of a national perspective, highlighted the urgent need to develop, at the least, basic recording, photographing and archival retrieval standards among active researchers within the growing discipline. From 1977 to 1987, through my annual research forays to the Kimberley and other more readily known rock art regions, ongoing experimentation led me to develop some basic recording (and subsequent archiving) processes which I could use for intra-regional comparison and analysis at a worthwhile level. Attempts to develop such systems, and an associated terminology, attracted little interest from other field workers at that time, so I pursued a solitary course of ongoing experimentation, practical application and modification. Evidence of these directions is manifest in the contents of Australia's Greatest Rock Art (AGRA), with the elementary observations of stylistic and thematic intra-regional association. AGRA was joint recipient of the Australian Heritage Award for 1990.


This paper resulted from a presentation at a national conference on site registers funded by the Australian Heritage Commission and held in Canberra in November 1983. The primary recording pro formas are presented, together with definitions of the various associated aspects of the recording process.
These pro formas and associated systems were developed to suit the requirements of the Central Queensland Management Project, a joint venture established in 1979 between the Q.NPWS and the Australian Institute of Aboriginal Studies. These represented the pioneering attempts to establish a pro forma system suitable for modification to facilitate a wide range of non-renewable cultural resources, and specifically facilitate some level of intra-regional site and stylistic analysis of rock art sites and forms: "An obvious prime objective for any proposed ongoing regional recording program, is to establish criteria of basic data needs which must be recorded at every site. Ideally, such points should be prepared in an ordered progressive manner on a site record pro forma, which could be adapted, with minimal modification, to computerisation." (p. 57) These pro formas were the basis of the standard theme system which subsequently expanded to incorporate other discrete regions of rock art, and specific motifs within such corpus.


This paper provides the case history of the survey, recording, analysis, site assessment, development selection process, planning construction and final interpretation of the non-renewable cultural resources of the Flinders Group National Park in the Princess Charlotte Bay area of far north Queensland. This was undertaken by myself, a Q.NPWS Historic Sites Officer between 1982 and 1986, as part of a policy of making a representative sample of all regional rock art styles represented on the Q.NPWS estate publicly accessible. Using the standard Q.NPWS developed pro forma, modified where necessary to suit the regional environment, geography and cultural resources, and complimented by a series of motif-specific pro formas, a detailed search, survey and recording program was undertaken on the 2962 hectare island-chain national park. The
process of completing Project Flinders, overcoming the logistical nightmares associated with undertaking a high standard of development and presentation in such a remote location, is dealt with in this paper. The values achieved from the progressively developing recording and management processes were touched upon in the summary. "Benefits resulting from planned presentation, interpretation and increased official presence in the Flinders Group NP are the better servicing of public educational requirements, increased protection for cultural resources, and benefits to Aboriginal culture through fostering a greater understanding, appreciation and respect."


This paper presents the case history of a historic 'repaint project', involving a number of the great Wandjina galleries in the Kimberley. Discussion on this highly political and controversial landmark case is well documented, extensively referenced and copiously illustrated. Many issues and questions were raised pertaining to the rights and obligations of both traditional custodians and individuals charged with the preservation and conservation of non-renewable cultural resources. The issues involved official government funding for groups claiming Aboriginal ancestry to completely over-paint original traditional artwork and repaint major rock art galleries. These galleries were, at the time, associated with the living cultural traditions of other Aboriginal groups. Unprecedented circumstances included issues of legality, ownership, criteria, negotiation processes, and ultimate responsibility. This paper’s continued use as reference material in ongoing studies of Australian rock art indicates its contribution to the development of future recording and management practices.

This co-authored paper presents the preliminary observations of a joint-study project assessing possible approaches to the dating potential of ancient Kimberley rock art. I selected a series of sites, based on definable art styles and forms identified with through my ongoing recording and analysis program. The rock art sequence developed from this work, and introduced in the Bradshaws book, is established as the basis for future multi-disciplinary studies of the art in relationship to associated cultures, palaeoenvironments and geomorphological changes. On-site examinations and subsequent laboratory analysis identify two potential areas of focus for future Kimberley rock art dating: mineral encrustations and mud wasp nests.


A major scientific publication, this article was co-authored with a number of eminent scientists in a multi-disciplinary research project. It presented the findings of ongoing research on one of the two potential rock art dating options identified in the 1994 paper “The Dating Potential of Rock Art in the Kimberley, N.W. Australia”, involving mud wasp nests. Detailing the development and implementation of optically stimulated luminescence (OSL) and accelerator mass spectrometry (AMS) techniques on fossil wasp nests to determine a minimum Pleistocene date for a Kimberley Bradshaw which it superimposed. The sites were selected by Walsh using the Kimberley Rock Art
Sequence presented in 1994 in the *Bradshaws* publication. The findings, dating techniques and associated sequence presented in this publication for international scrutiny and challenge have, to date, not been disproved.


This article presents the preliminary research findings of the original team investigating the potential processes of Kimberley rock art dating, published in 1994 in “The Dating Potential of Rock Art in the Kimberley, N.W. Australia”. A discussion on the process of using accelerator mass spectrometry (AMS) techniques to determine minimum ages for selected motifs of the Bradshaw and Irregular Infill Animal Period rock art. The sites were selected by Walsh using the Kimberley Rock Art Sequence initially presented in 1994 in the *Bradshaws* publication. This paper, and the preceding 1997 paper, “AMS Radiocarbon Age Estimates for early rock Paintings in the Kimberley, N.W. Australia: Preliminary Results”, collectively present the preliminary findings and problems associated with the dating potential identified in the pilot studies three years earlier.


This publication illustrates the potential that rock art offers as a resource for studying technological and cultural developments spanning very long time periods of prehistory. With expertise developed by the ongoing refinement of detailed recording and analysis techniques, it is possible to interpret ancient graphic depictions to provide evidence seldom, if ever, surviving in the
archaeological record. By focussing on a single technological aspect—the spear and spear thrower combination—as evidenced in Kimberley rock art, I have illustrated the development of spears, spear tips and spear launching devices from Pleistocene times until the present. Using the Kimberley Rock Art Sequence (1994) to confirm the order of human forms associated with specific forms of technology, information established by the dating possibilities identified in 1994 and proven in 1997 are used to place the developments in specific time periods of prehistory.


This article presents the preliminary findings of exploring the potential of an option advanced in 1994—using mud wasp nests as a tool for dating rock art—and adding the study of fossil pollens trapped within the nests to obtain a ‘snapshot’ of the palaeoenvironment existing at that time. This new method of constraining the age of rock art expands the range of specialist scientific disciplines which can use the developed Kimberley Rock Art Sequence as a central medium to which the findings of their specific research may be tied in time and space, overlying and inter-related with palaeoenvironmental and geomorphological findings from distinctly separate but inter-related studies.

Bradshaw Art of the Kimberley is a major 480-page commercial publication, representing my fourth presentation of findings of ongoing rock art research, and associated disciplines, for a broader public readership. The 340,000 words of text are accompanied by 620 colour plates, supported by over 2000 graphics to assist the lay reader. Four chapters prepared by associated scientists involved in Kimberley research were included to provide readers with a wider understanding of the inter-related disciplines that have collectively contributed to an understanding of Kimberley prehistory and palaeoenvironments. This work relates all levels of rock art discussed to the original Kimberley Rock Art Sequence, presented in 1994, and includes four pages of selected elements from the Handbook of Rock Art Terminology, developed by myself to increase consistency and efficiency in recording and developing analysis programs. This book received two awards in the Australian Award for Excellence in Educational Publishing, including the "Tertiary Scholarly Reference" category, together with the "Joint overall Winner" category.
4 Development of Rock Art Recording Methodologies

Evolution of a Rock Art Recording and Interpretation Methodology

In order to appreciate the focus of a lifetime of commitment to developing increasingly efficient processes for recording data in the field, and systems for archiving and subsequent analysis, it would be advantageous to establish some understanding of my background which set this course.

Background to Personal Interest and Commitment

My mother had a seemingly insatiable thirst for knowledge and understanding, and her frequently quoted adage is still indelibly etched in my mind: “knowledge is no burden to carry”. Raised in a ‘solitary’ environment on my parent’s Central Queensland sheep and cattle station, my upbringing was in a suitably controlled environment to facilitate my mother’s almost obsessive programming regarding “learning and understanding”. Her philosophy that “to truly understand, one has to collect” must be considered in its relationship to the isolation of the outback Australian setting, and the extreme limitations of available reference works in those immediate post-war years.

Egyptian culture dominated the reading material, supplemented to a lesser degree by that of the Maya and Aztec, and there was little doubt that the maternal wish was for my future to lie in the world of ethnography, and preferably Egyptology. The limited material dealing with Aboriginal culture was poorly illustrated, dry in presentation and generally less interesting; however, Aboriginal culture represented the one sphere in which I could be realistically encouraged to participate in the hands-on experience of “collecting learning and understanding”.

When objectively reflecting on the obviously highly-selected ‘programming material’, there are three recurring criteria: first, archaeology; second, retaining a lateral approach to personal understanding; and third, an
ever-present element of mystery and exploration. The earliest memories I retain pertaining to any Australian element of the reading involved Danny O’Brien of the Royal Geographical Society, and his already-legendary Carnarvon Range expeditions to the north of our home. His regular expeditions through the area were accompanied by magic-lantern slide shows at public venues, with a wide sector of the community being involved. (see Plate 01). This local involvement added a touch of ‘reality’ to a largely book-recounted world of wonder, adventure and fantasy in the mind of this young ‘boy from the bush’.

From four years of age my parents supplied me with a pony, complete with a child’s saddle with clogs for stirrups. I was expected to ‘gaze and gather’ while following their mustering activities on the station, with details such as stone-tool scatters and stone-axe-cut possum holes in trees pointed out and explained as we rode (see Plate 02). The initial focus was on gathering, studying and identifying native flora, dutifully collecting, pressing and mounting tree leaves and wildflowers. My mother would then assist me to visually identify the species in a range of botanical reference books, then appropriately caption them for me in an ordered format. Encouraged by these display albums winning several prizes in local agricultural shows, the documenting and archiving process advanced.

The archival tendencies of my mother were manifest in her lifetime interest of not only maintaining prolific photographic records, but also her concern regarding filing of all associated negatives. As we would go through the masses of negatives, the importance of preserving the negatives was frequently stressed as being greater than preserving the photos. The negatives were kept in their respective Kodak print envelopes, gathered in a large Actil bed-sheet box and stored in the most secure location in the homestead—concealed in a wardrobe. Encouragement to learn the use of cameras and photographic techniques extend to my earliest memories, and the Kodak Pocket Model folding camera, and the ubiquitous Kodak Box Brownie cameras became ‘old friends’. The earliest record of this lifetime liaison with the camera dates from age 23 months (see Plate 03). This negative-archiving
training served me well, and I have retained every photographic negative I have exposed since age ten, storing them in increasingly sophisticated systems.

At age five, an old station stockman presented me with a small edge-ground Aboriginal stone axe found while mustering in the ranges. Although this encounter between a child and the most basic of utilitarian stone tools may seem inconsequential, it represented a landmark in my ultimate understanding of the history of Australia’s prehistoric art and culture. The glistening, black stone axe head was both a stone type and a creation alien to anything I had previously observed. The patination of its polished contours radiated an aura of antiquity, and combined with the mysticism inferred by its cold surfaces, it held an allure comparable only to the mythical philosopher’s stone. This ancient artefact seemingly transferred some inexplicable empathy and respect for its long-vanished culture which has never left me.

My fascination for Aboriginal culture received an additional boost with the advent of a series of Weet-bix (breakfast biscuit) cards, with a series titled “Aboriginal Tribes and Customs”. This 49-card series, completed in a dutifully dated (November 1951), covered and annotated album, became my most favoured reference and inspiration (see Plate 04). This album survives as part of my collection of 19 card-series albums from breakfast cereal, petrol and chocolate companies, collected over a 15 year period from 1947. Irrelevant though this trivia may seem, it was the catalyst responsible for focussing a lifetime commitment to the study, recording, archiving and publication of the Aboriginal culture.

In the “Aboriginal Tribes and Customs” series, two cards held endless fascination: card number 38, “Rock Engraving” (see Plate 05); but more so card number 39 “Cave Painting” which illustrated an Aboriginal creating graphic depictions of snakes, birds, animals, people and stencils (see Plate 06). Part of the associated caption introduced me to the importance of the Kimberley region. The Kimberleys were known in name to most bush people, but nobody knew anyone who had actually been there, something akin to an ‘Australian Camelot’. The caption read:
 Aboriginal cave paintings occur in many parts of Australia. Hundreds of rock shelters containing them exist in the Sydney and Hawkesbury river districts of New South Wales, but the finest are to be seen in the Kimberleys and in Amhem Land in northern Australia.

The romantic text and graphic supporting photographs of Ion I. Idriess’ 1947 classic, *Over the Range* initially fired my passion to some day visit the magical rock art areas of the Kimberley. However, a further 26 years of study and development of expertise and experience would pass before this dream would eventuate.

My first attempt at ‘recording’ rock art is synonymous with my first introduction to it in real terms. In 1957 a local Injune identity named Billy Humphries was to provide an experience which was to change my life forever. This colourful character was commonly referred to as ‘Little Billy Dingo’, and attributed with feats of cattle duffing and ‘poodly dodging’ of such magnitude and audacity that my youthful mind elevated him to some form of unassailable ‘bush godhead’ status (see Plate 07). On our family’s fortnightly ration run to the railhead town of Injune, my quest was to sit outside Ashney’s Store with the Saturday morning (pre pub-opening time) gathering of the local old timers. This was the forum for recounting history and events of interest among a small gathering of sun-wrinkled bushmen, where jodhpurs, riding boots and bull-shooter hats were an unwritten uniform. Comical though this setting may seem, it represented the final repository of first-hand Aboriginal site and cultural knowledge from a barely-literate sector of pioneering society. I shall always remain indebted to them for the invaluable knowledge they shared with me of their personal discoveries, observations and experiences with Aboriginal art and culture.

Injune was a 300-person township acting as the cattle-trucking railhead for the vast, and largely trackless, land of the Central Queensland Sandstone Belt (CQSB). To the north was an 86,000 km² area referred to as ‘the Carnarvons’. This was the rugged sandstone area formed by 24 ranges centring
around the main Great Dividing Range, where innumerable Aboriginal art and burial sites survived in the largely inaccessible terrain.

The bushmen’s tales of huge rock art caves littered with weapons of the vanished Aboriginals, cliff-side burial tunnels and caches of artefacts concealed in palm-shrouded gorges, had me totally fascinated. It was a sort of ‘Central Queensland Valley of the Kings’, awaiting discovery and study.

My mother’s family had maintained an ongoing annual extended visitation to the Carnarvon Ranges from 1920 until 1961, (Morwood and Walsh 1993:45). Her four brothers had undertaken regular winter sojourns from their Tiger Scrub area homeland (north of Roma) to the wilderness gorge-lands of the Carnarvon Ranges. Their Carnarvon presence was purely commercial, but undertaken in the most basic ‘hunter-gatherer’ existence style. However, they did encounter many rock art and burial sites while pursuing their trade, with their tales of discovery further inspiring me. They were initially ‘bear hunters’, shooting koala bears (*Phascolarctos cinerus*) for their valuable furs until this species was protected in 1928. The men used two favoured rock art shelters for camping and scalp storage, while living on a basic diet dominated by ‘salted bear legs’ (koala). The passing of my ‘white Aboriginal’ family in the Carnarvons is now evident only in their ‘art/graffiti’ mingled with the stencil records of the earlier inhabitants, and both created in the same red ochre local pigments (see Plate 08). John Beaton’s excavation of the Wanderer’s Cave gallery confirms human habitation spanning from at least 4320±80BP (Beaton 1977:83). Future historians may find it of interest that the 37 years of ‘Australian aboriginal’ seasonal occupation by the Sidney boys extends some 4283±80BP of ‘Australian Aborigine’ occupation to make Wanderer’s Cave one of the oldest known (and certainly the most recently inhabited) rock shelters in the CQSB. Ironically, my first encounters with Aboriginal shelters were, unknowingly, within hundreds of metres of my relations’ humble domicile.

Little Billy Dingo ultimately offered to take me to ‘the ranges’ and show me some of his Aboriginal site discoveries. That momentous day in 1957, venturing into a world of visual wonders beyond the realms of my imagination,
will forever remain as one of the highlights of my life. Lofty palm trees rose above permanent spring-fed streams that meandered between towering white sandstone cliffs with huge rock shelters in their bases. Our trek to this first site was interrupted by Little Billy pausing to dispatch an emu, unwilling to bypass an opportunity of acquiring his favourite ‘emu steak’ for supper (Plate 08a). This may now seem a somewhat bizarre event; however, at the time, it was merely the opportunistic action of a bushman who lived a lifestyle differing little from the former Aboriginal inhabitants of these Carnarvon Ranges. My initiation into the subject and study which was to dominate my life could not have been more spectacular to a youthful perception. There, at a spectacular monumental formation referred to by Little Billy as ‘Frog Rock’, I was to see my first rock art. This was also the beginning of my rock art recording career, commencing from that point with documenting the relationship between art, sites and resources, as shown in Plate 09, the Frog Rock outcrop, and Plate 10, recording my first view of stencil art. After 48 years of subsequent recording and research, these pioneering images still remain in the Takarakka Rock Art Archive.

In response to the visual impact of this first encounter, I asked, “Who painted this art?” to which Little Billy vaguely shrugged, “Must be the Murris”. A further inquiry of “What does this art mean?” was similarly casually dismissed with “Probably doodling”. Much as I revered the knowledge of this ‘sage of the ranges’, I felt he must be overlooking the significance of the site, setting and composition of these stark graphic creations. Surely no individual with an affinity for such a magical environment could go to the trouble of quarrying ochres and travelling to such a spectacular outcrop to simply ‘doodle’? This encounter represented the catalyst which focused the direction of my life’s endeavours. There and then I decided to learn how to ‘read’ rock art, and decipher the obviously significant information these ancient scribes had carefully and intentionally encoded in these compositions of graphic images. The challenge was in deciding where to start, and how to go about it.
Development of New Approaches and Research Design and Analysis

A retrospective assessment of my initial attempts to create a recording at my first encounter with rock art would at best be considered 'basic'. Irrespective of their degree of coverage, they have continued to hold significant value for the following reasons:

(a) I used a quality camera and medium-format film which obtained very sharp colour images.

(b) The images were catalogued and stored properly to insure their pristine survival during the passing of 48 years.

(c) The exact location of the site was identified sufficiently accurately to permit subsequent revisitation and re-recording for management monitoring purposes.

The lesson from this pioneering example of recording is that quality equipment, precision in documentation and care in archiving insures that even the most modest documentation holds increasing scientific value with the passing of time. I would argue that it is impossible to separate the recording process from the subsequent cataloguing and archiving stages, and an efficient and effective recorder must be multi-skilled and conversant with both field and office equipment.

Awareness of my total ignorance regarding what to look for or photograph during this first attempt at recording rock art set me on a quest to seek information and advice on the procedure. At the same time I also sought individuals who may have been able to assist me developing knowledge that may ultimately permit me to 'read' rock art. This ongoing quest confirmed only that, at that time, there were no defined rock art recording guidelines, nor individuals acknowledged as experts in this field. Official sources seemed to have very limited knowledge of even rock art regions, much less individual sites and stylistic details. To better understand this situation, it is necessary to see rock art in the context of attitudes of the times.
In 1958, the best-published material accessible to a non-academic reader was prepared by Frederick D McCarthy: *Australian Aboriginal Rock Art* and *Australian Aboriginal Decorative Art*, both published by the Australian Museum. McCarthy’s easily read and well illustrated publications became ‘bibles’ in my quest, and it was not until 1988, during my preparation of Australia’s *Greatest Rock Art*, that I had the privilege to meet this great rock art pioneer who had inspired me for thirty years.

McCarthy’s section on “Wandjina and Allied Art” inspired me greatly, and his introductory section spurred me on for a further 29 years before I finally reached the Kimberley and had a traditional owner introduce me to one of these great Wandjina galleries:

Of all the pictographs in Australia none have caused so much interest nor produced a larger body of literature than the huge Wandjina and Rainbow-Serpent (Ungud) paintings of the Kimberley. (McCarthy 1958:53)

Some may express doubt as to my inferred degree of focus and commitment regarding detail of data gathering procedures at age 12. I would add that at this time I already had eight years of disciplined study and organised collecting experience in a varied range of natural and cultural history. This focussed approach to collecting and archiving had already attracted public and media interest, winning a number of awards for show displays, and having had an illustrated review in *The Toowoomba Chronicle* titled “Private museum worth hundreds” (see Plate 11).

The Embryonic Years of Rock Art Studies

My first impression of rock art was that it was initially intended as far more than ‘art’ from a ‘fine art’ perspective, and at very least it was a complex form of ‘information transfer’, and in many cases, highly structured in recurrent
combinations of iconic forms and colour combinations. This hypothesis received little enthusiasm at any level, and it became apparent that any techniques for recording and analysis would have to be developed by myself, undoubtedly at the expense of much trial and error.

Since my earliest memories, my life and interests have operated within two basic premises:
Firstly, everything is predictable. Prediction requires:

(a) access to a comprehensive suite of information
(b) sufficient life experiences to provide perspective of view
(c) a lateral approach to application options.

Secondly, nothing is new. Recognising recurrent indicators requires:

(a) developing a broad understanding of natural and cultural history
(b) developing an image rather than fact biased mental retrieval process
(c) developing a memory biased to source reference rather than minute detail.

My entry into the field of rock art studies was perhaps at an opportune time, as I believe this late 1950s period was significant in marking the end of an era of perceptions regarding studies of prehistory. Before this time, studies dealing with cultures considered ‘primitive’ or ‘prehistoric’ tended to have been loosely grouped under a generic classification of ‘ethnography’. Ethnography seemed to have never attained full acceptance as a fully-fledged discipline, tending to have been widely regarded as the domain of ‘dabbling dilettantes’. Frustratingly, rock art was generally seen as too esoteric to be accepted under the tangible schema of contemporary archaeology, but too tangible to be welcomed to the budding discipline of anthropology.

Accordingly, as a specialised and more definable discipline, archaeology tended to be seen among the upper levels of the ethnographic grouping. In
contrast, the more esoteric elements of rock art interests tended to be seen as positioned somewhere in the amorphous lower levels of ethnography's structure. Perhaps rock art's closest parallel lay in the study of 'material culture'. Both shared subject matter involving combinations of symbolic, iconographic and mythological elements, which attracted increasing levels of public interest. This, perhaps, was a legacy of the Victorian era's fascination with 'primitivism' and 'the noble savage'. Material culture studies largely involved mobile or transportable artefacts, while rock art involved immovable 'artefacts' which were basically modified segments of an existing landscape.

If one could assume that in the 1950s any pursuit of rock art research should be associated with material culture rather than archaeology, then the processes of what to record and how to analyse it would be subject to a significantly different bias. Should rock art be considered primarily an 'art' form, with recording largely biased towards detail for aesthetic and technological studies? Should rock art be recorded as primarily an 'iconic information transfer' form, where recording was more archaeologically biased towards recurring elements and the psychological processes that created them? Basically, should Australian rock art be considered to be an artefact with associations linked to studies of 'fine art', or was it an 'artefact' with links to studies of 'archaeology' and 'iconography'? Any attempt to establish a clear scientific definition of 'art' has always attracted heated debate, and the controversial process of art interpretation is frequently seen as having a very personal bias rather than a scientific base.

Any instance where graphics and colours combine to form an aesthetic arrangement or challenging image will always be arguably a form of art. Such examples linked to preliterate or vanished cultures additionally exude elements of mysticism and primitivism. When considering all this in this perspective, rock art fitted comfortably into the collective forms regarded as 'primitive art', associated with studies of 'material culture', but with a primary scientific analytic value directly associated with 'archaeology' and 'iconography'.

38
Carnarvon Beginning

In the immediate post World War II years, Danny O’Brien was well known around Injune and the southern Carnarvon Ranges as ‘a man of science’ who had led numerous pseudo-scientific expeditions into Carnarvon Gorge since before the war. O’Brien was President of the Royal Geographical Society of Australasia (Queensland Branch), based in Brisbane, and became the champion of Aboriginal and natural history studies in the little-known Carnarvon Ranges (see Plate 12).

Some of the earliest formal attempts to record rock art originated from the O’Brien Carnarvon Expeditions, when RH Goddard O’Brien’s limited publications and frequent Magic Lantern Slide lectures, focussed on the Carnarvon rock art, burial sites and artefact caches, so it is not surprising that he became recognised to be the leading authority on these subjects in this area (O’Brien Nd). O’Brien’s expeditions, findings and publications thus became the focus of my interests in determining the most suitable recording systems for my planned long-term involvement.

An early scientific publication referring to the rock art and associated material culture in the Carnarvon Ranges came from AP Elkin:

“In the Carnarvon Ranges there are many caves which were used by the Aborigines...On the sandstone walls there are painted representations in red, yellow and black of human hands, feet, kangaroos’ tracks, snakes and fishing nets.” (Elkin 1941:114)

One of the few formally published papers originating from the O’Brien RGSA expeditions was by Goddard, and provided some description of the art styles he observed, interpretation of motifs encountered, and a basic attempt at recording engravings with casting (Goddard 1941) (See Plate 13). The Goddard and O’Brien publications mentioned art sites, and interpretation became the basis for my many early trips to Carnarvon Gorge. The very rugged terrain contained large areas of unexplored gorge systems, such as Moolyember (Plate 14), and huge tracts of the northern face of the Great Dividing Range (Plate 15). Searching these areas for art sites in the early
1960s required lengthy camping trips, carrying recording and basic camping equipment by backpack (Plate 16).

Publication by Mulvaney of the findings of art associated with his 1960 to 1964 archaeological excavations in the Mt Moffatt area (Mulvaney 1965) provided further interpretation to follow up and incorporate in the growing understanding of the subject. Mulvaney's was a major excavation, with a depth of 3,200 mm, in which 1,248 pieces of ochre were discovered (Mulvaney and Joyce 1965: Table 3), suggesting that a long and consistent artistic tradition existed in the CQSB.

My Formative Years Along the Pathway of Recording

It is appropriate to provide some brief comment regarding a series of events and circumstances which mark a noteworthy period of focus and development in my quest to learn how to 'read' rock art.

In my latter school years, a bonus came in the form of a series of non-curriculum 'hobbies' lessons, where a teacher provided the most basic instruction in photography, but more importantly, darkroom techniques. While my skills with basic photography were well practised at this time, the limitless potential involving the application of processing skills to recording techniques opened an exciting avenue of opportunity.

When my exit from academic pursuits came at age 16, with no hope of continuing further formal studies in archaeology, my focus was turned to opportunities for developing sufficient skills to continue the quest to 'read' rock art—but quite detached from the formal institutionalised processes. I immediately commenced employment as a trainee photographer with the Toowoomba newspaper, The Downs Star, under the instruction of the senior photographer Manfred Schmidt. Schmidt's history and meticulous thoroughness engender my greatest respect and admiration, and I dutifully persisted under his rigid discipline to attain mastery in 'recording light and shadow'. Under his insistence that mastery of image-capturing would never be attained by using another person's camera, I committed myself to my first 40
serious recording camera. This was a twin lens Rolleiflex camera, of 6X6 cm format with an F3.5 lens, and although a well-used second-hand unit, it took 23 weeks of my total income to pay for. Without this Rolleiflex camera, and the rigid teachings of Manfred Schmidt, I believe the developed understanding of Australia’s rock art, together with the extent of its documentation and archival record, would have been much, much less advanced.

A major motor-vehicle accident on 12 November 1961 represents another momentous incident in defining the pathway of a lifetime of recording (see Plate 17). This street-racing incident resulted in both myself and my trusty Rolleiflex being ‘severely broken’. Due to the technology of the day, the Rolleiflex was operational long before I was. During the subsequent eight-week period of total immobility, there was adequate time for me to personally assess my perceptions of the purpose and meaning of life. A long rehabilitation period followed, and I attended private typing courses, considering this to be a skill which would be essential in developing recording and archiving skills. Disassociated thought this incident may initially appear to the theme of developing recording and analysis systems, I believe that without this forced acknowledgment of the importance of every waking second, my subsequent tireless quest to leave some worthwhile legacy to science would not have manifested itself.

The Process of Discussing Development History

The decade of the 1980s marks the era which permitted me to make some of my most worthwhile contributions to the sadly-neglected processes of true ‘cultural resource management’.

My lifetime commitment to cultural resource management may, in a cursory overview, be seen as a single ‘journey’, ultimately focussing on a specific region of Australia—the Kimberley. Although the ‘destination’ of this ‘journey’ may not yet be finalised, the multi-disciplinary concept could not have been attained without the ‘experiences’ derived from three quite separate but inextricably linked ‘adventures’. The ‘adventures’ can best be related to
geographic regions: the CQSB, the Queensland estate, and the Kimberley. No single ‘adventure’ can be regarded as standing alone in its contribution to science, management and understanding. While each ‘adventure’ has a ‘beginning’ and an apparent ‘end’, their developmental and maturing as a collective ‘journey’ has been as a contemporaneous ‘trinity’. The contemporaneous nature of these ‘adventures’ complicates discussing the developments, successes and failures of the documentation, analysis, archiving and presentation techniques as single, clear processes. I have thus chosen to discuss the processes of these developments under a series of very general subject-oriented subheadings, biased to timing rather than geographic region.

The Lure of the Carnarvons

My obsessive pursuit of understanding rock art continued, and I attempted to change my lifestyle and workplace to be as close as possible to the primary Queensland rock art resource: the Carnarvons. There were ongoing forays to the more accessible areas of the Carnarvons, where the trusty Rolleiflex was carried on many long backpack expeditions as I developed an understanding of the art, how to locate art sites, and how to best photograph and record them (see Plate 16). Some of the high-quality medium-format images from this era have become unique and invaluable research resources. Modest though the recordings were that I had steadily accumulated in the 1970s, they were sufficient to confirm that a spate of major site damage, collapsed art faces and irreparable panel damage took place over a short period between visits in the latter part of this decade.

The most logical explanation seems to be an incident of regional seismic activity centred around the upper Chesterton Range. The rubble shown in Plate 18 represents the only surviving record of a once-unique Story Panel, totally lost as part of a major rock collapse in this incident. The abraded, engraved panel depicted, in track form, an amazing post-contact action scene, indicating a horse galloping beside a running cow, shown with cloven hooves. Fortuitously, the combination of always using quality equipment and maintaining
thoroughness during the development of archive processes during these embryonic years had already proven its worth. My archive contains a range of similar precisely-documented records which now survive as the only evidence of otherwise lost and officially unknown art forms and burial practices. Further evidence of the worth of these early archival records is shown in Plate 19. This 1969 ‘after’ image shows a collapsed, large engraved and stencilled art site of the Upper Warrego River, after suffering similarly as a result of possible seismic activity, but on a significantly greater scale. When I originally discovered this site, cattle and brumbies were licking the unique engraved art panels seeking minerals in this deficient environment. This is a widespread problem and results in rapid destruction of the site. (QNPWS 1984b).

In 1968 I was able to acquire my first four-wheel-drive, which permitted greater access to some of the very rugged cattle station areas of the Carnarvons. The following three years represent another identifiable period of escalation in my understanding of rock art studies, and the needs associated with locating, recording and archiving. The Toyota Land Cruiser permitted quick access, within mere hours, from my new Injune home base to formerly unimaginable, inaccessible areas of scientifically-untouched sandstone range environments. Areas of the remote Upper Warrego were regularly accessed, and potential geographic regions searched on foot (Plate 20). During this period I attempted to personally create other protective structures to protect rock art sites until the responsible authorities undertook a more active role. I believe the stock-fencing project on the Upper Nogoa River site of Turtle Rock, shown in Plate 21, represents the first of its kind in CQSB. Although the netting and steel posts for this modest ‘pioneering conservation project’ originated from my Injune chicken coop, I believe it has worked well for 35 years, and still represent this unique art panel’s only protection, (Plate 22).

The 1968 to 1972 period represents another definable peak in my development of recording and archiving practices. A very rudimentary archive system was created, where I transcribed field notes to typed quarto sheets, accompanied with annotated sketches of the sites, floor plans, art motifs and cultural items. Only two primary classifications of site types were used at this
time: Living Sites and Burial Sites. I have always believed it is essential to perceive any rock art as representing but one element of a complex cultural site setting. When seen as totally separate from any context, such forceful severance from the fabric of cultural strands reduces the ‘art’ to little more than an ‘artefact’. For this reason, all forms of rock art sites were considered as part of a much broader site form, generically referred to as Living Sites.

In these pioneering stages of site recording there was no concept of just how important the structure of a site numbering system would be in the future. My initial numbering system followed the basic pattern of other historically interested individuals of the time, using a representative region or station name to identify a group, or clustering, of recordings, with each site then allotted a running number within that clustering, such as Carnarvon Creek No.1, Carnarvon Creek No. 2, etc. Although this process worked well for the original recorder when only small numbers of sites were involved, it soon proved to have serious disadvantages for filing and even the most basic retrieval systems. In retrospect, I consider the lack of foresight regarding the numbering system as representing the greatest failing of these experimental documentation attempts. An example of a ‘cluster’ of Living Site recordings is shown in Appendix A, and a cluster of Burial Sites in Appendix B. All these early recordings were typed up on an Olivetti portable typewriter, which was left in the vehicle at field base camps where the material was prepared from written notes in field notebooks.

This cluster numbering system remained in use for about six years, until the need to change to a system more conducive to mechanical filing and retrieval could no longer be avoided. The new system was based on a four digit primary number, which was preceded by three letters. The first two letters defined a specific 1:250,000 topographical map, which was the highest resolution available at that time. The choice of letters was related to the geographic region within the CQSB, such as the Eddystone 1:250,000 topographical map identified as WC, related to West Carnarvon, its general region. A space separated the two region-defining prefix letters from the third, singular, letter, identifying the site type, according to a now-expanded list of
site types, such as ‘A’ for ‘Art’, and ‘B’ for ‘Burial’, etc. Another space separated this single site-type prefix letter from the numeric four-digit number. An example of a small recording using this system is shown in Appendix C. By this time, the sensitivity associated with certain site types and the importance of protecting the identity of site locations had become very apparent, and a preliminary security-classification numbering system was developed, with a 1 to 3 security classification determined and added to each individual recording. Negatives and slides were also catalogued with this site number.

During these formative years of recording there was a lot of thought given to just what may be important in developing processes which may ultimately contribute to the primary objective of learning how to ‘read’ rock art. Initially, statistical analysis seemed the most logical, and was the approach most apparent in the limited published works of experts such as Edwards and Mountford. One of the distinctive rock art motifs on which I had focussed personal study was the Net motif, virtually exclusive to the CQSB. Basic datagathering pro formas were experimented with, seeking correlations between colour types and specific motif types when assessed on an inter-site and intra-site basis. An example of one of these 1977-era trial analysis projects of Net motifs from the discrete Upper Warrego region of Tickerybang is shown in Appendix D.

Ongoing experimentation with analysis, in attempts to develop a sequence of styles, colours and association, increasingly emphasised the urgent need to develop some basic forms of definable criteria as the most basic prerequisite to any serious analysis work. Even when a working criterion could be developed for a specific motif type, technique, or colour combination, description was unacceptably time-consuming in practice. The logical procedure to streamline any documentation and analysis process seemed to centre around developing a workable terminology to link to the established criteria. Initially I experimented with a four digit numeric system for each graphically illustrated form, but found this too difficult to remember under the pressures of the time constraints associated with on-site recording. The
numeric system was replaced by a description-based terminology, with field-
testing showing it was necessary to choose ‘visually logical’ rather than
‘politically correct’ terminology to facilitate maximum memory retrieval
without the assistance of a hard copy reference. An example of one of the
experimental charts of terminology development, focussing on the single theme
of Bird Track motifs, is shown in Appendix E.

My analysis experiments focussed on a widening variety of subject
matter, of which weapon stencils were a logical theme. Boomerangs
represented a common singular theme, but incorporated a diverse range of
variations, which certainly indicated stylistic clusters when viewed in time and
space observations. There appeared subtle differences in blade angle and
width, as well as blade-tip trim and possible ‘twist’ of blade leading edges.
Annotated field sketches were invaluable, but the variations were frequently
found to be too subtle to accurately graphically record for future comparison.
Photography may sound ideal, but the complications of accurately
photographing faded red paintings in layered superimposition represented a
major and ongoing dilemma. Trial and error identified the potential for
obtaining careful traced records of each weapon stencil, annotated with
pertinent technique detail. Clear plastic sheeting was found most suitable,
durable and economical, particularly the clear Visqueen product types,
marketed at that time as a moisture underlay control for concrete. Felt pens
were used to trace the weapons, with a directional arrow added to show the
upper wall alignment, together with a colour type, site number, and pertinent
superimposition detail. These were transferred on to individual 900 mm sheets,
and stored on backing boards in a similar fashion to leaves in a book. Sheets
could be quickly overlaid upon other examples, or in stacks, to study possible
technological transition. These tracings were always to exact size, and all
pertinent detail remained constantly with each image, facilitating a highly
flexible and rapid visual analysis process. An example of a clustering of CQS
weapon stencil types is shown in Plate 23, with a 10 cm scale drawn in as a
common reference.

Attempts to correlate styles and technological attributes of these
archaeological records to historic artefacts involved an ongoing study of artefact material in private and state museums and collections. As well as photographing and describing the attributes of the museum specimens, a tracing of the outline was obtained for ready overlay comparison studies. A sheet of museum specimen tracings is shown in Plate 24.

The ongoing process of building a graphic inventory of CQSB material culture items became one of the aspects of interest for later jointly funded research projects:

Tracings have been taken where possible without endangering the art surface, of all weapon stencils, with quite an impressive reference of material culture items now being compiled (NPWS 1980 Report to AIAS:2)

The ongoing process of comparing image to artefact forced close examination of real artefact manufacture and attributes, highlighting the fact that factors such as artefact cross-section and blade twist resulted in consistent telltale elements of the ancient stencil records. One example can be observed when thick, elliptic cross-section blade types are pressed flat onto a surface; the leading blade edges remain unavoidably elevated above the surface. This may seem inconsequential in casual observation, but when stencilled pigment is applied, it tends to ‘under-spray’ beneath the elevated leading edge, creating a ‘fogged’ perimeter. A similar visual record is created on returning variant boomerangs, where one leading edge twists ‘down’, and is close to the rock surface, and the other twists ‘up’, increasing the space from contact. Once this basic technique characteristic is understood, the recorder is able to better determine the physical characteristics and shape of a long vanished artefact, and from that, extrapolate a sounder range of flight characteristics and original purpose. In Plate 25 the large V Killer boomerang stencil clearly shows a sharp perimeter at the tips, indicating a relatively thin and flat cross section. However, on the upper left of the sharp curve, the ‘fogged’ leading edges of either side indicate a robust, thick, elliptic cross section characteristic of heavy war weapon construction.
Experimentation with Suitable Field Research Vehicles

While my personal livelihood may not be perceived as having any pertinent implications to my history of developing recording and data and analysis processes, it had a very significant and ongoing effect. For the benefit of future recorders contemplating options for developing systems to suit their project's special needs, I believe some comment is needed on the advantages and failings I found across a wide range of personal experimentation.

My earlier forms of employment as a trainee photographer and later auctioneer/valuer were based in Toowoomba, some 700 km from the centre of CQSB rock art site distribution. On moving to a self-employed role as owner-operator of a sheep and cattle property ('Croydon') in 1964, I attempted to create a situation 550 km in closer proximity to the art, with greater time flexibility to undertake research field trips. The diverse range of mechanical, engineering and vehicle operational skills that I developed during this period have been essential in fulfilling the multi-skilled criteria essential for the challenging remote-area surveys that were to follow. Without this period of experience, learning and experimentation, the later Kimberley surveys could never have been undertaken with the resources available.

The demands of operating a CQSB station through the droughts and recessions of the 1960s may have served to develop essential field skills and 'character building', but did not permit the anticipated blocks of field-trip time. Selling the station and moving to Injune, 50 km closer to the rock art areas, I commenced the Carnarvon Safari tour operations. While this permitted the acquisition of my first four-wheel-drive and allowed regular trips to remote areas of the Carnarvons, the demands of constantly supervising clients frustratingly permitted little time for personal survey and recording work. However, this period provided invaluable opportunities to identify potential target areas for rock art studies within the 86,000 km² area of the CQSB. It also permitted me to establish the essential prerequisite of good working relationships with many of the station owners and managers.

I then established in Injune a freehold garage and engineering works, the Carnarvon Gateway Service Station, and strove to make regular two and three
day field trips into the nearby rock art regions. Having well-equipped workshops and engineering facilities at my disposal, I systematically attempted to trial and modify a wide range of vehicles and equipment which would most efficiently cope with the survey and recording needs as they were identified.

Initially, I had hoped to be able to involve the participation of additional enthusiastic local individuals to assist with site search and recording projects, as the magnitude of the vast, inaccessible, and largely unknown regions was daunting. A conventional four-wheel-drive was found to have severe limitations in the broken sandstone-rubble terrain, and as the limitation of available time remained an omnipresent nemesis, a more lateral approach to addressing the logistics dilemma seemed essential. Locals spoke glowingly of the use by Shell exploration of an ex-army bren-gun carrier to assist with seismic survey projects in the eastern Carnarvons during the immediate post-war period. The advantages of a small, tracked vehicle with a low centre of gravity seemed a logical start for the perceived field survey-vehicle criteria.

In 1970, I acquired a 1942 military bren-gun carrier that had languished in the Injune area since a failed 'scrub-pulling' attempt in the post-war development era. This Mercury-V8-powered light tank weighed four and a half tonnes, and its track operation rendered it remarkably manoeuvrable in rough country, yet capable of attaining speeds in excess of 60 km per hour on ideal roads. Its ability to handle four metre drops and ford metre-deep watercourses assured an infinite supply of enthusiastic field volunteers. I fully refurbished this vehicle in my Injune workshops and was permitted to register it under the 'tractor' classification for road use. However, for economic reasons, it was normally transported to predetermined field-base locations in the Carnarvons on a six-tonne truck. Volunteers on these 'search and survey' forays (see Plate 26) travelled with all necessary equipment over otherwise impassable terrain (see Plate 27) to remote search areas, where paired-off teams then undertook surveys on foot.

The early 1970s saw the evolution of the 'modern' trail bike, adapted to the market requirements of rural Australia. After early and limited
experimentation in the outback with improbable machines such as the 90 cc Honda step-through bikes and the lumbering CZ Jawas, I experimented with a wide range of trail (and later trial) bikes to suit field survey work in the rugged and largely inaccessible areas of the Carnarvons. The first successful form was a much-modified Yamaha LT2 100 cc trail bike (see Plate 28), where smaller (13-tooth) drive sprockets were fitted to drive lathed and modified 62-tooth Honda rear sprockets. Cameras were carried in watertight Pelican cases mounted on specially-created backpack frames, permitting dust-free transportation in almost-indestructible containers. This permitted my covering very extensive surveys, fully equipped, through rugged gorge areas in two-day forays radiating away from the four-wheel-drive vehicle. As I largely undertook survey trips alone and at short notice when a time slot became available, a highly flexible and sole-operator-friendly survey unit was essential to optimise the field time. Among the most efficient was a four-wheel-drive XW Falcon ute (see Plate 29), transporting a larger Yamaha AT3E 125 cc electric-start trail bike (with similarly modified 13/62-tooth sprocket configuration). This combination of a high highway speed four-wheel-drive, with extreme off-road clearance and power, transporting a very low-gearred trail bike with the great bonus of electric start for assisting in precarious situations of solo surveys, proved to be ideal for the purpose.

To maximise my limited and unpredictable field-trip times, I decided to create a mobile field-research base which could be moved from survey region to survey region as required. An eight-metre American Airstream tandem caravan was purchased, which had originally been constructed as a specialist geologist’s mobile laboratory for a seismic exploration group. After a complete refurbish—rewired to 240v, and modified to suit my recording needs—this unit was moved in 1974 to its first temporary site on the Warrego River headwaters (see Plate 30). This unit could be towed over extremely rugged and trackless terrain with a four-wheel-drive or tractor, set up at a central point, quickly coupled to a small McCulloch 240v generator, and be fully operational within minutes. Recording equipment was stored in this mobile office, together with a typewriter, filing cabinets and ongoing work files as well as spares and tools to repair recording and field-survey equipment. Completed files, field sketches 50
and film were taken back to Injune at the end of each field survey. Rudimentary thought this field base and system may now seem, it facilitated greater flexibility for maximising the use of small windows of access opportunity, sometimes as short as a couple of days. Productivity and efficiency improved significantly. Ongoing modification and testing of this initial equipment and processes has culminated in the current efficient field operations in Kimberley, which will be dealt with later.

Ideal though the bren-gun carrier proved for multiple person surveys into extremely rugged terrain, it had two significant operational problems: First, its steering system was such that only a very fit male could steer a course across a steep slope, with the machine constantly attempting to swing up the slope; second, it had a propensity to ‘throw tracks’, mostly commonly in demanding situations of tight manoeuvres, such as fording rocky streams. With its accompanying track winch and some experience, a track ‘re-fit’ involved some 10 minutes work under ‘ideal’ circumstances. ‘Ideal’ seldom proved to be the operative word in the range-survey environments, and track re-fits invariably required far greater time, man power and temperament than could be willingly extracted from exhausted volunteers clinging to the heat-radiating armoured steel hull.

In 1975 a decision was made to seek a replacement ‘all-terrain vehicle’, without ‘track throwing’ propensities, and with some modicum of passenger comfort. The successful purchase of a Saracen armoured personnel carrier at the Brisbane military surplus auctions was followed by the unprecedented experience of driving the vehicle on a permit for the 700km trek to my Injune workshops (see Plate 31). This 12-tonne ‘tank’ Saracen was powered by a straight-eight Rolls Royce petrol engine, capable of propelling it at a disconcerting 120kmh on road conditions, but sadly lacking in sufficient visibility to adequately prepare the driver for the inevitable crisis situations it seemingly attracted. Its six-wheel drive and four-wheel steering configuration made it indescribably manoeuvrable, and military operators claim it capable of “outmanoeuvring a fleeing man in forest terrain”. However, it was dogged by mechanical problems, and both the Saracen and the bren-gun carrier were
ultimately retired from field-survey use, and both have ended their days in historic museum environments where few visitors will ever know the significant contribution they both made in the ‘quest to read rock art’.

A strong argument was raised at this time of experimentation for the use of horses in field survey work, which was contrary to my personal experience of having been raised in a horse-dominated workplace. Horses were used in a number of environments during the CQSB surveys, but only where station owners or potential informants would accept no alternative option, such as a visit to the great Expedition Range Gallery Complex in 1981 (see Plate 32). While horses undeniably permit access over relatively inhospitable landforms, there are significant disadvantages to recorders considering this historic form of transport. Their slow progress requires additional available field time and, accordingly, overnight camping on even small-area surveys. Even basic camping for a survey group in cooler climates requires the transport of a significant amount of additional equipment—more than can be safely carried by riders of average experience traversing demanding terrain. This invariably requires the use of a packhorse, which not only increases the size of the group, but also necessitates specialist pack saddles (rare in the 21st century), and expertise in packing and horse tailing. The supervising of saddle and pack animal grazing, together with saddling and pack-loading is an unavoidably time-consuming and specialist undertaking, where any level of efficiency and safety requires an additional task-designated team member as a horse tailer.

By 1977 I had standardised on modified trail bikes as the most efficient field-survey vehicle option for the CQSB requirements at that time. I constructed a suitable off-road trailer to carry two bikes (see Plate 33 & 34) behind a Toyota Land Cruiser with lock-up storage facilities for associated survey equipment and spares. By 1980 I had rebuilt and modified a ragtop Suzuki LJ50 four-wheel-drive to replace the Saracen for moving small group surveys through very demanding terrain. Using an A-Bar towing system, I could move a base camp quickly on my own (see Plate 35). These three-cylinder two-stroke powered four-wheel-drives represent one of the most remarkable multi-purpose survey vehicles I have used (in both CQSB and
Kimberley), with the exception of the much smaller and more recently developed quad four-wheel-drive motorbikes. Final stages of field work with QNPWS when completing the Chesterton Range survey was, through budget constraints, forced to be undertaken with one Honda trail bike (Plate 36). Attempting to carry all recording equipment, while balancing my field assistant as a pillion passenger, was one of most dangerous and inefficient systems I have attempted to work with. I would urge recorders to investigate all other options before considering similar systems, particularly if their survey areas include loose, sandy environments such as we were confronted with in the Maranoa River headwaters.

When developing field survey packages to suit specific needs, it is desirable to know of the failings as well the successes as can only be determined by practical field use. Further comparisons and assessments will be given in later discussions on the Kimberley research projects.

During this 1970s period, I accompanied various researchers and scientific specialists on specific task forays into the CQSB, seeking a broader understanding of the overall relationship of natural and cultural history elements which could contribute to developing a greater understanding of rock art and its meaning. This involvement led to several appointments associated with these specialist areas:

- 1969 - Honorary Warden under the *Aboriginal Relics Preservation Act 1967*, with the Queensland Department of Aboriginal and Islanders Affairs (DAIA);
- 1970 - Honorary Protector under the *Fauna Conservation Act 1930* with the Queensland Department of Primary Industries (DPI);
- 1970 - Honorary Ranger under *The Native Plants Preservation Act 1930* with the DPI;
- 1970 - Honorary Ranger under the *Forestry Act 1959* with the Queensland Forestry Department.
Academic Interest Develops in the Area of Rock Art Studies

In 1970 a very impressive publication became available, focussing entirely on hand stencils in rock art throughout Australia. In this work, The Hand Figurations in Primitive Australia, Verbrugge modestly comments: “This book attempts to fix the position of our knowledge on this subject” (Verbrugge 1970:Preface). The comprehensive overview of this book, and the serious nature with which this researcher pioneered studies of hand stencils, inspired my enthusiasm. When considered in perspective with the limitations of known and published material on Australian rock art at that time, my decision to take up the stencil-art interpretive challenge more seriously was compounded by his observation that “If in prehistoric Europe we have numbered hardly more than 15 sites comprising figures of hands, over 200 sites have been found with hand drawings in Australia, and there are certainly many more to be discovered” (Verbrugge 1970:Preface).

The 1970s was an era synonymous with an explosion of interest in the Australian outback, of which rock art and Aboriginal sites were a significant focal point. This represents a time of increasing general public affluence, but more significantly, marks the beginning of the four-wheel-drive era. For various reasons, this dramatic change in public mobility changed the understanding Australia’s rock art and associated areas forever.

The great public awareness of Australia’s outback, together with specific formerly unknown historic and prehistoric sites, became an ‘industry’. Television networks in particular seized upon this previously untapped market. Harry Butler and the Leyland Brothers were among a select group of individuals promoted through television series, ultimately becoming household names synonymous with nature and associated cultural resources. Detailed documentaries not only provided the viewing public with the exact location and detail of site content, but also portrayed an infectious macho image associated with discovery. The anonymity of location, which represented the last natural protection against mostly unintentional damage resulting from subsequent public investigation, brought an end to protection afforded to many sites.

Fortunately the 1970s also saw a blossoming of interest in
archaeological investigation, where rock art studies became a major component. Following Mulvaney's pioneering research in the western ranges during the first half of the 1960s, Michael Quinnell commenced research in the eastern ranges in the first half of the 1970s for his MA honours thesis, titled "Aboriginal Rock Art in Carnarvon Gorge, South Central Queensland". This was completed in 1976 (Quinnell 1976). Quinnell's exclusive focus on rock art was revolutionary for Queensland archaeology, but limiting the research area to Carnarvon Gorge was disappointing, as this effectively represents only one 'crack' in one range of the 24 collectively forming the 86,000 km² of the CQSB.

Quinnell's work largely involved a statistical approach based on a representative series of sites in a very limited and predefined area. This represented a widely accepted approach at this time, with pioneering examples provided by the findings in earlier published works of Robert 'Bob' Edwards from 1965 to 1979 (Edwards 1965, 1966, 1968, 1978, 1979). During the period of Quinnell's Carnarvon Gorge research, I visited his field camps whenever possible, attempting to learn recording techniques at a more professional level.

Stencilling—Understanding Technique by Experimentation

Practical experience with the 'statistical recording approach' left me far from convinced that this process could ever provide the depth of interpretive understanding I personally sought from rock art studies. A numerical inventory may be interesting, and provide the most elementary understanding of one facet of a surviving cultural resource, but at best it represented only the identifiable elements which had survived on a very fragile medium under diverse and often adverse conservation standards. Attempting any major cultural hypothesis on such a fragmentary inventory must, at best, be considered subjective, and would provide little valid understanding of the 'meaning' of the art, or its 'significance' to its associated cultures. Could the statistical dominance of left and right-hand stencils in an analysis of the region's art motifs be interpreted as significant in the intended information conveyed? Or, could the statistical
dominance of the left and right hands possibly be as repetitive and yet
inconsequential as the words “the” and “and” in a poorly written story?

A serious study of this region’s art seemed to me to involve a hierarchal
structure of understanding, the most basic level of which must involve
understanding the technology and techniques used to create various forms.
Perhaps then it may be possible to more confidently approach the second level:
that of making valid identification of individual motifs. A primary
interpretation of the motif’s intended meaning would the third level, and would
surely require careful studies of recurring associations with not only other
motifs, but possibly colours, alignments and perhaps topographical or
directional factors. The recurrence of motifs suggested a pattern, and all
patterns are based on underlying concepts of logic. If a process of encoding
specific information at the most basic level (pictographic imagery) had been
developed by one culture, then it could arguably be decoded by a different
culture, if lateral thought was used objectively to applying logic to the variables
of association and repetition.

The abundance of ochre sources and smooth creek-bed rocks provided
limitless opportunities to experiment with stencil, painting and engraving
techniques, and their application to a diverse range of subjects, shapes and
compositions. Practical experimentation soon emphasised the fact that modern
observers of rock art were all too quick in making interpretations of not only
subject matter, but also application techniques, without the vaguest
understanding of the mechanics associated with their creation.

In this mid 1970s era, Quin nell’s work in Carnarvon Gorge was
overlapped by that of John Beaton, who was undertaking his PhD research.
Beaton focussed on the archaeological aspects of the area, and undertook a
series of excavations in Carnarvon Gorge and the immediate eastern Carnarvon
Range areas. His findings subsequently became available in 1977 in his thesis
“Dangerous Harvest” (Beaton 1977). I regularly visited Beaton during his
period of major archaeological excavation work in the Cathedral Cave site in
Carnarvon Gorge (Plate 37). Beaton excavated three pits (Plate 38), of which
the central site area showed the transition from Aboriginal to European
occupation with masses of buried food tins in the upper layers (Plate 39). During this time I assisted, in a modest way, with the excavation process undertaken to expose below-ground-level wall areas of this huge art shelter. Exposed wall areas revealed concentrated engraved art extending 900 mm below present floor levels (Beaton 1977:104), indicating that this region’s art had a considerable antiquity (Plate 40). Cathedral Cave was subsequently found to have an occupation date of 3,560 ± 80BP (Beaton 1977). Personal experience in revealing rock art by excavation fuelled my enthusiasm and determination to create more efficient processes to facilitate the quest of learning to ‘read’ rock art.

During my visits to assist Beaton with his excavations, our lengthy discussions invariably turned to the proliferation of rock art decorating the surrounding huge rock shelter. I expressed my disagreement with some earlier and now frequently quoted interpretations of this art. Most obvious was the interpretation of “Paintings of seed pods as well as the seeds of the bottle tree (Sterculia rupestris) or black kurrajong (Sterculia diversifolia) are seen in this rock” (Goddard 1941:369). Similar stencils in the Tombs site on Mt Moffatt station (west Carnarvons) received differing interpretation by Mulvaney in his report on his archaeological excavations:

There are some interpretive problems. There are oval stencils at ‘The Tombs’ which could be emu or brush turkey eggs. Similar motifs in Carnarvon Gorge have been explained as the fruit of Macrozamia hopei, a species of Cycadaceae (Mulvaney and Joyce 1965:203)

These ovate images were, in fact, stencils of shell pendants, some with the suspension cord trailing away from the perimeter excusably giving an initial impression of some form of ‘fruit’ suspended from a ‘twig’. The clean, oval shapes of the stringless examples are examples of the motifs referred to as “emu or scrub turkey eggs” (Mulvaney and Joyce 1965:203) (Plate 41). However, close examination of such motifs mostly shows the tiny telltale spots of pigment which have penetrated through the vacant string hole. These shell pendants originate from the Princess Charlotte Bay area of far north
Queensland, where they were originally created from segments of bailer shell (*Melo amphora*) as decorative ‘balance weights’ on the grip extremity of the distinctive local spear throwers. After passing huge distances through inland trade routes, the original purpose of these shell artefacts was lost. The mystery of their origin has combined with that of their totally alien composition–marine bailer shell base–relegating their purpose to one of ‘magical power’. The larger diameter shell pendants were referred to as *chekara*, and the smaller sized examples as *chikaleri*, (Plate 42).

Beaton was sufficiently convinced by my explanation of the technical impossibility of creating these claimed subjects, with such perimeter precision, by the stencilling technique. He encouraged the presentation of these observations in a primary scientific form—my first scientific publication—co-authored with Beaton, and published in the journal *Mankind* in 1977 (Beaton and Walsh 1977) (*Submitted Publication No. 1*).

In the paper “Che-ka-ra” I argued that, based on personal experimentation with stencilling techniques, it would not be possible for the clear oval stencils of Cathedral Cave to represent records of “bottle tree fruit”, as claimed by Goddard (Goddard 1941:369), or “emu eggs or brush turkey eggs” as suggested by Mulvaney (Mulvaney and Joyce 1965:203). This assessment required a basic understanding of elementary stencilling technology, where sectional perimeter sharpness of a stencil is relative to the distance of the original subject’s perimeter from the rock surface at the time of paint application. Provided the artist is experienced with the stencilling technique, and has access to appropriately prepared paint, the stencilling of an object with a flat under-surface will create a sharp, clear silhouette to perimeters closely aligned with the rock surface. However, the same conditions applied to an object with a curved under-surface will create proportionally fogged stencil perimeters, where under-spray has ‘misted’ beneath the artefact’s edges, unavoidably distanced from the rock surface as a result of its convex sweeping underside. Any ‘egg’ would be considered subject matter displaying the most extreme examples of convex under-surface, realistically making it technically impossible to provide a clear, precise perimeter stencil silhouette. My personal
experimentation with stencil application confirms that an observer with practical stencilling experience has the ability to 'read' much about the original artefact's shape, weight and structure from such subtleties as perimeter variation around an individual stencil. It is possible to apply an understanding of 'fogging and sharpness attributes' to determine such detail as the directions of blade 'twist', not only permitting validation of whether or not the long vanished boomerang was a 'returning' or 'non-returning' type, but even if its owner was left or right-handed.

Modest thought this paper may have been in proportion, I believe it remains a landmark in not only emphasising the necessity of understanding the mechanics of rock art creation, but illustrating the invaluable resource rock art offers in understanding the subtleties of long-vanished material culture items which have not survived in an archaeological context.

The Making of a Life-Long Commitment

At this time, Dr Peter Ucko was beginning to structure Canberra's Australian Institute of Aboriginal Studies (AIAS) into an internationally recognised research facility, where rock art was to become a focus of their immediate interest. The fact that Ucko was creating three rock art research positions at the AIAS indicated that rock art held the potential for future acceptance as a serious aspect of archaeological study. The fact that these three positions were to be filled by overseas experts from England and France may have reflected poorly on the expertise of Australian contenders, but did auger well for a long-term career path.

Up until this time my rock art pursuits had unavoidably remained secondary to the necessity of earning a living. However, my choices of employment had been biased by the potential of the position to allow me sufficient free time to pursue these studies. After 17 years in the workforce, the last 13 of which I had been self-employed, I found it increasingly difficult to be able to devote what I deemed to be sufficient time to field forays and studies of rock art. There seemed to be three basic options in life: first, to successfully
make money; second, to pursue a career which was deemed to be making a worthwhile contribution to society; or third, to pursue a form of work which provided personal satisfaction. From my experience, any one of these options was not difficult, many were able to organise a combination of two options, but few could ever successfully organise all three in the one career. If one was to be true to one's self, there seemed no alternative other than to make a committed decision for one's long-term future.

Inspired by the discoveries resulting from Beaton's systematic work, together with the attraction of seemingly limitless potential in undiscovered CQSB archaeological sites and the possibility of a worthwhile long-term career path, I decided to make a firm commitment to a lifetime quest of learning to 'read' rock art.

A date of 30 June 1977 was set to lease/sell my successful commercial operations, and begin the new financial year with a totally new direction and life. I mention this perhaps seemingly unrelated decision as not only the turning point of my life, but I believe the beginning of a new era of rock art research, interpretation and conservation.

Fortune favoured this firm decision, and with the business leased on June 30, I headed out on my pioneering first trip to Kimberley on 1 July 1977. Fortune favoured me further with unique opportunities to develop lifelong associations with Kimberley station owners and managers, and, more importantly, with the dwindling numbers of traditional Aboriginal elders with knowledge of rock art.

Elders such as Mimi Tjapukai and Woolagoodja provided a first-hand introduction to the amazing Wandjina art sites, mythology and associated culture which had been impressed in my mind by McCarthy's statements from two decades earlier:

Of all the pictographs in Australia none have caused so much interest nor produced a larger body of literature than the huge Wandjina and
Rainbow-Serpent (Ungud) paintings of the Kimberley (McCarthy 1958:53).

The spectacular nature of the artwork, the impact of the gallery settings, the reverence of the Wandjina men, and the complexity of the associated belief system collectively created an impact on me surpassing the initial rock art encounter at Frog Rock in 1957. This represented an opportunity to pursue the very essence of understanding a true ‘living rock art tradition’. My frantic attempts at recording notes and accompanying field sketches coupled with and the totally new dimension of photographic requirements drove home the urgent need to develop systems, techniques and skills to cope with a rapidly vanishing window of opportunity. It was on this trip that I was also to see my first Bradshaw painting, additionally historically interesting as the only Bradshaw I have ever been taken to by an Aboriginal. This also began a lifelong friendship with Dicky Tataya, who took me to what is now arguably the most photographed solitary Bradshaw painting (Walsh 1988:Plate 275, Plate 43)

**Pioneering Management and Interpretation of Rock Art**

On returning from the first Kimberley field trip, I commenced work with the Q.NPWS, commencing at the lowest rank in the system at one third of my former income and having to provide a vehicle and equipment in order to get this opportunity. As assistant to a Planning and Management Officer, I had the opportunity to be based amidst the rock art regions of the eastern Carnarvons, as the first Ranger based at Robinson Gorge National Park. The Q.NPWS brief during these early years of its existence involved conservation and protection of only natural resources on their Queensland estate. Matters associated with Aboriginal or cultural sites were seen as beyond their responsibility, and any consideration of developing an inventory of recorded resources was considered a conflict of departmental interests.

The mid to late 1970s era represented the peak of public penetration into outback areas which had formerly been protected by their remoteness and
inaccessibility. This created a very real and undeniable threat to the survival of a number of the major CQSB rock art galleries made additionally accessible by their location on long-gazetted national park estate. Most significant and most visited of these were three galleries known as Cathedral Cave, The Art Gallery, and The Wall Paintings. These were located in Carnarvon Gorge National Park, which had been officially gazetted on 30 April 1932 (Walsh 1999:104). The visitor days at this park had escalated from 32,056 in 1975 to 50,551 in 1977 (Walsh 1984a:4). Peak holiday periods placed immense pressure on these unprotected art sites, and over the six-day Easter break of 1972, the Carnarvon National Park camping ground had been packed with thousands of individuals, with the overflow forced to camp along the 10 km approach to the park (Walsh 1984a:3).

A joint presentation to Dr Saunders, Director of Q.NPWS, by John Beaton and myself offered a range of options to approaching the cultural-resource management dilemmas the Q.NPWS now faced at Carnarvon National Park. Beaton's academic background and international base added credibility to this pioneering proposal, which was sympathetically assessed by Dr Saunders.

My first step into Q.NPWS rock art management and interpretation manifested itself in the form of an official Q.NPWS directive for me to prepare an information brochure, in conjunction with John Beaton. This was issued (in progressively updated forms) to every Carnarvon Gorge visitor for the following decade, extending in reprint runs into the tens of thousands. This educational brochure represented the beginning of my ongoing contribution to educational publications focussing on rock art and Aboriginal culture (Q.NPWS 1978). A combination of active awareness promotion through regular campground audio-visual presentations and distribution of the brochure meant the numbers of visitors continued to increase, as did the damage to the rock art through dust and inadvertent touching. By 1979 visitor days had increased to 64,657, with more than 2,000 visitors packing into the gorge on each of the two main days of the Easter holidays (Walsh 1984a: 4). Most of these individuals visited one or more of the art sites.
Under this growing visitation pressure, the QNPWS decided to undertake the second of the recommendations made in the 1977 presentation by Beaton and myself, which involved developing a pioneering boardwalk and interpretive package. Negotiations for state-government funding had been on the basis that two of these much-visited sites would be developed as ‘hardened’ sacrificial sites, on the condition that the third gallery, The Wall Paintings, would be progressively removed from public access.

Development of a boardwalk system was undertaken by myself in conjunction with the Carnarvon Head Ranger, Bill Morley, and the second-in-charge Ranger. While boardwalk systems in rock art sites are now a tried and tested form of management, this was the first instance in Australia, and was strongly resisted by purist groups. On-site experimentation with marked profiles was tested for fulfilling general photographic access requirements with a variety of medium and miniature-format cameras and lenses. Modified angles resulted in a visitor-friendly alignment while maintaining primary integrity for protection of all facets of the site and art. The system was designed on a modular basis, mounted on floating board bases to minimise impact on archaeological deposits and permit simple sectional removal for future excavation projects. Natural local cypress-pine timbers were selected to minimise the visual impact, as well as utilise the termite-resistant qualities inherent to this timber. This attention to aesthetics has been held as a standard in official management guidelines, such as Lambert 1989:95. The final design became the ‘standard’ for all future boardwalks which I designed for the various art sites made accessible on widespread regions of National Park estate throughout Queensland. Details of this design are shown in Appendix F.

In May 1980, a major airlift project used a Bell Jet Ranger helicopter to airlift 30 t of building materials in 800 lb lifts (Walsh 1984a:7) from the Ranger Base marshalling point to the respective art-site locations (Walsh 1984b: Plate 16a). Because of the logistics associated with the remote locations, workmen and their families lived in tents at the sites during this period. The two sites had quite different conservation and presentation requirements, and the boardwalk configurations were tailored to best suit these individualities.
The development of this form of rock art site management represents a major landmark in Australian attitudes to the conservation and presentation of cultural sources, and acted as a tried and proven model for subsequent developments in other states in later years.

**Studies in Portable Aboriginal Cultural Relics in CQSB**

The rock art of the Carnarvon Ranges had long been associated with evidence of a complex mortuary culture, with accounts by RC Lethbridge as early as 1904 (Howitt 1904:467). O’Brien, in his undated book *The Carnarvons*, referred to bark burial cylinders in the Carnarvon Gorge art sites during the early RGSA expeditions. At the time of my 1957 introduction to my first rock art site, I had also been shown an adult bark-burial site located in a spectacular setting within a monumental sandstone formation. The apparent public fascination with death resulted in significant management problems for the unprotected bark burial bundles in remote Carnarvon Range sites. Among my earliest recordings under QNPWS employment was a bark burial cylinder, considered to be under significant risk as a result of its public accessibility close to a major highway (Plate 44). Ongoing recordings identified a number of other equally-endangered burials, of which one example in particular remained unique.

In a joint ‘rescue operation’ in conjunction with RP Robins (Field Archaeologist for DAIA) the endangered bark cylinder and associated materials were recorded in detail and moved to a safer, but unknown, nearby location (Robins and Walsh 1979) (Plate 45). This provided a rare opportunity to publish an illustrated, detailed description of a remarkable example of a little-known CQSB Aboriginal practice (*Submitted Publication No 2*).

The publication of this work was timely, and continues to hold significance as a major reference in any CQSB cultural study. It stands as an unique descriptive document predating closure of both study and publication on this increasingly sensitive subject.
Creating Awareness of Urgency—Establishing a Cultural Resource Inventory

In 1977 I made a personal trip to Canberra to make a presentation to the AIAS Principal, Dr Peter Ucko, using a cross-section of my preliminary recordings to illustrate the extent and diversity of rock art and cultural resources remaining in situ in the CQSB. This was very favourably received by the institute’s executives, including its Deputy Principal Warwick Dix. I was appointed an Associate Member of the AIAS, and was later appointed to its Material Culture Committee, annually dealing with Australia-wide research funding applications (Plate 46). This opportunity to interact with the recognised leading academics, professionals and Aboriginal elders in the field of Australian rock art and material culture proved absolutely invaluable, encouraging me to expand my primarily regional views to a more valid ‘national big picture’. Perhaps the most significant facet of my understanding to evolve from this interaction and debate was not what was known about Australian rock art, but in fact, how abysmally little was known. This lack of knowledge was not confined to the intimacies of stylistic sequence, dating and traditional interpretation, but at the very lowest denominator of where major bodies of rock art existed! Many illusions may have been shattered during this period, but a very positive focus of ‘needs and directions’ evolved from it. Without this opportunity provided by Dr Peter Ucko, I doubt whether my research objectives could ever have had their sights set to the targets which permitted such rapid development of productivity and understanding. Ucko agreed with my argument that the most urgent need was to gain some understanding of the extent and associated needs of the rock art resource, which necessitated some level of systematic recording survey. My beliefs regarding the approach to this dilemma were again reported to the AIAS by Q.NPWS:

There appears only one solution to efficient recording. This was a setting out of at least basic occurring features and possible associations compiled from previous experience in that field. This combined with recordings of the presence or absence of a
feature insures that the Recorder has at least checked for the feature, with additional information gathered above this level being a bonus depending on the Recorder's experience and powers of observation. (NPWS 1980 Report to AIAS: 2)

Subsequent to discussions regarding the significance of recording the vast number of CQSB rock art and burial sites, Dr Ucko sent Deputy Principal Warwick Dix as an official AIAS representative to undertake an inspection. This regional visit took place over the Easter-holiday break in April 1978, flying into the wilderness of the western Carnarvons (Plate 47), then across to the eastern Carnarvons to witness the management dilemmas which were exploding in unbridled proportions. This first-hand experiencing of the escalating visitor pressures at Carnarvon Gorge had provided an abrupt awakening to previously unimaginable management issues. Together with establishing some confirmation of the extent and content of this region's sites, this awareness of urgent management needs resulted in designating the CQSB as a high priority research and management area.

As the Q.NPWS management executive became increasingly interested in accepting some level of responsibility for rock art and cultural resource sites on its estate, the need to establish at least a basic inventory of resources became apparent. As funding was limited, an application was submitted to the AIAS for assistance, resulting in the Central Highlands Management Project (Walsh 1984b: 45).

This decision to seek external funding in order to commence a pilot recording and resource management project represents a milestone in the bigger picture of future Australian rock art studies. The complexity of suspicion and distrust existing in the late 1970s between certain state authorities and federal bodies was intense. The extent of this impediment can be fully appreciated only by those who attempted to work within its stifling shroud. The extent of executive interest and support within Q.NPWS is evident in their negotiating permission in 1978 to submit to the federal AIAS a proposal titled "National Site recording - Queensland Central Highlands".

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The project aims were clearly defined as:

a) to provide an overview of the nature, variety, number and distribution of Aboriginal sites and relics within areas of national park interest (i.e. existing and proposed National Parks)

b) to obtain an appreciation of the conservational status of these sites and relics in terms of deterioration through natural and unnatural agencies, including deliberate and unintentional vandalism

c) to formulate strategies for the conservation of these relics, to be incorporated in the management plans of the National Parks.

After a period of negotiating, approval was given in December 1978 for $20,200 per year for three years.

This bonus funding freed my Q.NPWS position, and was then used to fund a field assistant position. Provided I continued to personally purchase field research vehicles and operate them on a mileage basis, I had the nucleus of my first field recording team. The Central Highlands Management Project may have been the beginning of an era, and forced me to address a range of unforeseen challenges, but the associated complexities have even now not diminished. As such, it is of value to future recorders to include cursory comment on some of these challenges. One must appreciate the complexity of the involved parties, their suspicions, agendas and attitudes. In this situation the quest to locate and record sites was to be undertaken by myself—locally born and raised, with a wide network of relations and individuals with similar upbringing and basic values. I was working for a state-government bureaucracy with a basic conservation ethic and land acquisition policy that few agreed with and many feared. Funding which was originating from a federal authority was sufficient for concern and suspicion. However, of far greater concern was the widespread perception that the AIAS’s primary role was to gain support for Aboriginal claims (which few condoned), and only secondarily was the AIAS seriously concerned with a research and scientific role, which most landholders
strongly supported. The standard concerns in 1978 in the CQSB are no
different from those plaguing research in Kimberley 35 years later: ‘why’,
‘where’ and ‘who’?:

(a) ‘Why’ is this recording and research being done?
(b) ‘Where’ is the information going to end up?
(c) ‘Who’ will have access to the location details in particular?

The Q.NPWS 1980 report to the AIAS on progress of the Central
Highlands Management Project provides some insight into these issues. As a
great percentage of the potential rock art areas were covered by grazing leases,
it was (and still is) essential to gain permission and support of the lessces to
proceed:

Many graziers in these remote locations regard with great suspicion
anyone or anything even vaguely associated with a Government body or
authority, so additional time had to be allowed for contemplation on the
implications of the request, or at least an in-depth discussion with the
often distant neighbours on their opinions. (Q.NPWS 1980 Report to
AIAS: 6)

Rather than merely arrive unknown and unheralded on a homestead
doorstep, a method was adopted of canvassing ‘likely’ stations in a particular
area with letters which included stamped self-addressed envelopes for replies.
Aims of the project and information sought were explained. Where permissible
the informant who suggested a possibility of local sites was also mentioned.

Experience revealed that in 9 out of 10 instances it was the wife who
answered the correspondence, so stations without a resident woman
offered little hope of reply. (Q.NPWS 1980 Report to AIAS: 6)

One point of deep concern which was repeatedly raised, was that of
where the information was to be stored, who would have access to it, and
who would be allowed to return to the sites. These points are deciding
factors in co-operation, and I know in many instances decisive in the quality of sites which were shown to the site recorders.

Guaranteed assurances had to be given in many instances as to the security of location and information data, the breaking of which will undoubtedly be a deciding factor in any future research carried out in the area. (Q.NPWS 1980 Report to AIAS: 6)

The Q.NPWS report provides an interim confirmation of the initial belief that the QSB would be found to be one of Australia's great rock art regions.

During the course of the survey’s field-work, a great many sites have been visited, only a percentage of which it has been physically possible to record in the available time. Acquaintance has been made with many new informants, a number of whom have had their interest aroused by the project and have since proven to be a steady source of leads on sites in their surrounding area. Sites are one thing that there appears to be no shortage of at present. (Q.NPWS 1980 Report to AIAS: 6).

It was decided to adopt the following policies with respect to these questions:

i) To aim at obtaining a sample of site recordings throughout the region

ii) To attempt to obtain recorded samples of the range of sites including the more extensive and complex as well as the simple and 'insignificant'. (Q.NPWS 1980 Report to AIAS: 3)

Many may not realise, or possibly doubt, the extent of the region’s [CQSB] sites, but the work alone so far indicates that the content of the sandstone belt may run into the tens of thousands of sites. Irrespective of how efficiently the problem is approached, it appears likely that the loss of sites will be far greater than the amount that can be financially recorded over that period. (Q.NPWS 1980 Report to AIAS: 3)
Developing the Basis of a Recording Pro Forma

Working in conjunction with members of Griffith University’s Australian School of Environmental Studies, joint field trips were planned to the Carnarvon area to collectively determine the needs and formats most conducive to the technology of data manipulation at that time. In February 1978 a nine member party of representatives from Q.NPWS, Griffith University and AIAS visited a range of Carnarvon art and archaeological sites, and discussed the most desirable elements to include in pro formas to cover archaeological, botanical, geological, conservation and management needs (Plate 48). Specialist advice was provided by members of the Institute of Applied Social Research (IASR) at Griffith University:

IASR members involved in the project’s early stages were A.K. Chase, M.J. Guilfoyle, R.A. Hynes, G.T. McDonald and E.C. Stock. During the later analysis period, Lex Brown provided considerable assistance with the preparation of the data (Walsh 1984a: 47).

I was subsequently appointed an Honorary Researcher with the Institute of Applied Social Research at Griffith University on 22 December 1978. Over a period of months, various draft layouts of pro formas were developed, field tested, and modified. An example of one of the earliest drafts can be seen in Appendix G.

A variant approach resulted in a 66-question form, based almost entirely on simple yes/no options, with a final section to facilitate a written ‘General Site Description’. A copy of the draft field-testing form is shown in Appendix H. The criteria for these early draft forms involved a system which could:

(a) be completed by an individual with only basic experience
(b) be completed with the minimal on-site time
(c) ensure consistent data would be gathered across a given number of
generalised site elements by minimising options

(d) rapidly create a working resource inventory for research and management use.

The final draft of this format was completed on 23 November 1978 and subjected to extensive field-testing (Appendix I).

Developing in tandem with the recording pro formas was an experimental process for manually manipulating the data, but in a format which could be adapted to suit the developing computer systems. While the computer systems were, at this time, in their relative infancy—the machines were limited to large institutions and their operating systems complex and trouble fraught—their rapidly-developing potential was undeniable. To develop any data-gathering system without acknowledging that manual manipulation was rapidly slipping into the twilight zone would have been absolutely foolish. Forms of combined letter and numeric code systems were experimented with to initially suit a card system, but in a consistent format which hopefully could be flowed into developing computerised systems. Examples of one of these associated card-based experimental forms are shown in Appendix J.

Regular meetings between the Griffith University and Q.NPWS supervisors permitted evaluation of tested drafts, and discussion on direction and improvement options. Initially it was considered advantageous if all levels of data entry, processing and manipulation could be undertaken manually. The advantages of maintaining this basic level of recording were largely economic, both in analysis-equipment requirements and the cost per site of recorders’ time. However, the issue of security regarding total control by the recording team over sensitive site location detail represented the strongest non-economically-based argument.

Evaluation of the field-tested formats, and assessment of the worth of data levels provided, gained group consensus that this level was inadequate for even the most basic current management and analysis needs. Greater consideration must be given to the basic framework of the system, ensuring that
it incorporated latitude for expansion and at least sectional modification to service management and research requirements as they were identified. My belief was that this new criteria necessitated some form of modular structure, with each module based on a broad subject or field, but linked to a common ‘datum module’ in which a limited number of carefully selected elements remained constant.

A general consensus was reached that this project’s potential was constantly hampered by the perhaps idealistic but somewhat unrealistic hope that the developed recording forms would receive a wider use by national park Rangers. In reality, it seemed overly optimistic that this use was likely to eventuate in the foreseeable future, and in reality it was improbable that any individual other than myself would be using this recording system. If this scenario was accepted, then this unique opportunity to establish a new direction for both rock art understanding and management should be utilised to its utmost. The wisdom of hindsight may see these decisions as logical, but they were monumental decisions involving major commitment in the 1978 era of attitudes and technology.

These decisions made the recording system options again open for complete restructuring in concept and content, but surely even the most revolutionary system could be only as efficient as its analysis process? The potential of a ‘Ferrari’ represents little more than a wasted overkill if forced to operate on ‘standard fuel’. The manual card manipulation system was a dying technology, and a serious approach to the recording dilemma surely required an equally serious approach to the data manipulation dilemma. Every effort should be made to move the developing concept directly into the computer era. The enthusiastic support and computer expertise of Dr Geoff McDonald is to be acknowledged in driving and maintaining the important analysis direction.

The modular approach to the recording pro forma system was chosen, and developed, through a series of drafts, field tests and modifications. Each module covered questions particularly focussed on specific aspects, and was given a recording form ‘identity’ letter and name:
• Form A—Site Identification (which dealt with all aspects of site number, type, priority, security, grid reference, land tenure, land ownership, attitudes etc)

• Form B—Site and Environment

• Form C—Conservation

• Form D—Stencil Art

• Form E—Engraved Art

• Form F—Freehand Art

• Form G—Burials

• Form H—Modified Tree

• Form I—Habitation/Surface Scatter Site

Additional specific site-type forms were created later as the system was progressively refined and specific needs identified. Examples of Forms A–I are shown in Appendix K.

This modular system was designed so that the questions continued numerically: Nos. 1–13 on A, 14–40 on B, 41–70 on C, 71–96 on D, 97–114 on E, 115–125 on F. Guidelines for the definition of a site, and other features associated with the recording forms were prepared, and can be noted in Walsh 1989 54:127. Because of the sensitive nature of burial sites, and the need to be able to analyse rock art and burial-site detail separately, a decision was made to record each as separate sites, under separate numbers, even when a burial may exist within the bounds of an art site. In such occurrences, this necessitated both the art and the burial site using the same forms A–C (questions 1–70), but then type-specific forms, D–F for the art site and G for the burial site. This meant that the burial site Form G contained their own subject-specific questions numbered 71–110, but because of the criteria of the site types, there could never be a clash of numbers 71–110 of burial-site data with numbers 71–110 of art-site data.
As this system was designed to establish an ongoing resource inventory for the Q.NPWS, it would ultimately have at least limited access by management staff, raising serious challenges to my ever-present concerns regarding guaranteed confidentiality of site location and associated land lessee details. I thus decided to redesign the basic format in a way which control could easily be exercised over the sensitive data. The original Form A was divided into two forms, A and AII, with A containing the essential and non-sensitive site identification detail. However, Form AII contained all the sensitive and location data, separated in a way which did not affect the integrity of the primary recorded data for general analysis purposes. The hard-copy system for the site recordings was designed so that each site consisted of two separate folders. The primary folder contained all forms except AII, together with photo prints, typed summaries, and copies of pertinent papers. The Sensitive Component folder contained Form AII and the printed air-photo location record. This was designed to be stored in a totally separate and appropriately secured filing system, accessible only on a strictly ‘need-to-know’ basis, and with individuals only allowed permission to the segments of data pertinent to their security rating. To remove all decision-making responsibility from the site registrar, a list of security classifications (1–6) were drawn up as part of the Classifications/Ratings/Codes description sheets, shown as Appendix L. This document also contained option references for all the questions in the Sensitive Component Form AII.

The Classifications/Ratings/Codes sheet also detailed the criteria for the 1–6 priority rating codes, designated by the recorder at the time of the initial recording, and based on their knowledge of the site, its content, and its relativity to scientific, political, cultural and conservation significance on a regional and national basis. Many factors must be considered in allotting the priority rating, and the actual recorder is considered most likely to be best informed. This rating allows an instant and honest identification of sites in a prioritised order for consideration in any conservation funding project, avoiding the common failing of the ‘biggest, best and most beautiful’ receiving all the attention.

After the first year of field testing and modifying the recording pro
forma system it was possible to provide a positive report to the co-funding authority, the AIAS:

From the work done to date it seems desirable that the problems of pro forma recording and computer analysis of site records has much to offer. Its merit would be greatly enhanced if it were possible to extend this system so as to achieve compatibility with similar recording designed for other regions of Australia (Q.NPWS 1980 Report to AIAS: 2)

A summarised history of the concept and development of this pro forma recording system was made available in publication in 1989, accompanied by copies of the CQSB forms to confine discussions to a discrete geographic region (Submitted Publication No 9).

My concerns with the overall recording project lay not with the demands of field-work, location and recording, nor with the end process of computer analysis, but with the unavoidable intermediary process of getting the data from the pro forma to the Griffith University main-frame computer. This demanding task was beyond my control, and by necessity of that era’s technology, was undertaken by individuals with high keyboard capabilities, but unfortunately no knowledge of the subject or data entered. The potential for human error with such masses of boring data entry appeared daunting.

In an attempt to minimise human error during this stage of the operation, I designed a series of Data Preparation forms, draft copies of which can be seen in Appendix M. The data was manually entered from the Data Preparation forms to the standard DCA-X5029 80-slot punch cards, also shown in Appendix M. Initially, attempts were made to reduce the questions in the recording pro formas so that the data could be entered on two 80-slot punch cards, but this could not be achieved without losing the integrity of the survey (Walsh 1984a: 49). Ultimately, each site recording required three 80-slot punch cards, which proportionally increased the risk of error, and when considering the issues of working with even the early stages of 500 sites—1,500 punch cards,
with some 112,000 punch slots, each with up to 9 variables—the human-error factor became daunting. Entry and print-out of recorded site data was organised throughout the initial project by Dr McDonald through Griffith University's computer facilities (Walsh 1984a: 47).

This new and expanded recording system placed considerable demands upon the resources of my personally-operated hard-copy archive, first located at Injune, and later at Carnarvon Gorge. In the initial stages there were 24 levels of processing before a site reached ‘preliminary completion’ status. A Checklist form was devised for the Takarakka Archive and bound into yearly volumes. The site register registered each completed process for each site on its respective checklist sheet, providing an instant reference to the current status of every element of every site in the archive. Copies of the Checklist forms are shown in (Appendix N).

A final report and data analysis of Stage One of the Central Highlands Management Project was undertaken over a four-month period in early 1984, after my appointment as an Honorary Researcher with the Australian School of Environmental Studies. This was specifically prepared by negotiated arrangement for submission to Griffith University as an MA thesis, and although completed, was never formally submitted. However, its content was seen by the Central Queensland Aboriginal Cultural Corporation as having sufficient scientific merit for them to fund publication of it as a limited edition volume. Fifty copies were subsequently distributed to Australia's leading universities and libraries to make its reference available for future researchers and management authorities.

Accompanying the development of a standardised recording system was the awareness of the equally urgent need to develop a site register and associated archive system to optimise the potential of this material. The importance of this was frequently stressed in my reports and submissions:

One very significant aspect which cannot be overlooked in the future expansion of the Site recording Program is the Site Register. This constantly expanding register of site files and archaeological information is rapidly developing into an
invaluable data base. Its uses and values are manifold, not only for
Service management but for a range of purposes to various
official and private bodies. (Walsh 1984b: 151)

Accompanying the creation of a compilation of all site location data into
a single, central site register, and ultimately a database to manipulate it, was the
then little-acknowledged responsibility for security. Even in the late 1970s the
threat to both rock art sites and associated non-renewable cultural resources as a
result of casual administration of site register data had become patently
apparent. My Q.NPWS memos of 13 February 1983 sought official
acknowledgment regarding this growing problem, and permission to introduce
"Relics Correspondence Confidentiality" within Q.NPWS, largely on a 'need to
know' basis.

The ‘Mutilated’ Hand Stencil Dilemma

During my early years of studying the CQSB rock art and attempting to
identify themes and sequences which may lead towards the ultimate quest of
learning to 'read' rock art, the close scrutiny and attempts to understand by
replicating techniques highlighted a number of fascinating themes. Some
comment has already been made regarding the stencilling technique studies
which led to the 1977 “Che-ka-ra” publication. As the basic hand stencil motif
dominated the CQSB region’s rock art, it represented a logical focus for
stylistic and technological technique study. Among the countless hand stencils,
a recurrence of a range of seemingly ‘contorted’ or ‘deformed’ hand stencils
became increasingly apparent. The variations occurring in each recorded site
were photographically recorded, systematically building an understanding of
variation and distribution. Examples of the variations encountered in one site
[EC A 8091] are shown in a July 1978 field notebook recording (Plate 49 and
Plate 50). An illustration of some of the range of variations is illustrated in
Walsh 1999: Fig 6 (Plate 51). Such a range of alignments need not be
inconsistent with the findings of a survey showing the percentage of ‘damaged,
deformed and mutilated’ hands among our contemporary Australian population.

One could also argue that the percentage of ‘damaged’ hands may well have been higher in the more physical environment of earlier hunter-gatherer societies. However, the repetition of certain ‘hand contortions’ suggested a definite intent among artists over a wide geographic distribution. Repetition suggests intent, and intent suggests significance, and significance, logically, has had to have had an understanding amongst at least a sector of the contemporary community. Understanding suggests logical association, even if exclusive to a specific community, in a specific geographic region and within a specific environment. If it is possible for an observer to ascertain the environment, the environment dictates the resources, the resources dictate the leisure time and security of the contemporary populace, and this in turn focuses a range of social structures most likely to have evolved. With this understanding, coupled with an ability to adopt a lateral approach to association, similarity and dissimilarity, I believe it is ultimately possible to develop some very credible interpretations of any iconic or graphic art form of any antiquity.

These contorted hand stencils were quite visually obvious, and many observers and researchers had commented upon them, and they had become increasingly accepted and referenced as depicting ‘mutilated hands’:

...at least nine of the twelve prints [stencils] dimly visible are ‘mutilated’, with one or two finger joints missing...Naturally the fact that this group alone of all the hand prints on the site, contains amputations and is in this cave behind the standing figure, raises the question as to whether the motifs are related. (Mulvaney and Joyce 1965:204)

A recurring characteristic observed with ‘mutilated’ hand stencils during ongoing recording was ‘blurred’ or ‘fogged’ areas associated with certain segments of these images, commonly around or near the apparent ‘missing’ digit sections (see Plate 52 showing a classic ‘fogged’ section stencil from
The significance of under-spray areas in determining object shape and, more importantly, the relationship of the object's perimeter to the rock surface, had been continually confirmed in experimentation which led to the earlier "Che-ka-ra" paper. These principals were applied in a range of experiments attempting to replicate some of the recurring 'fogged' areas. Perhaps it may have been the obvious nature of the possibility which had contributed to the explanation remaining unrecognised among rock art enthusiasts. Most of the 'missing' digits were in fact not missing, but had been deliberately folded, intentionally creating a recurring series of quite distinctive hand-based images. To raise the question of 'art' or 'iconography' would have attracted derision in the late 1970s era, so the safer tack was to assume that the purpose of these deliberate creations had been purely aesthetic, and as such it was surely 'art'.

On reassessing the then somewhat limited archive of recordings, it became apparent that there was an indication of recurring patterns of association of specific configurations of 'mutilated' hands, and at times in recurring associations with a limited range of specific non-body-part stencils, such as boomerangs and stencilled emu feet. As the landmark 1897 publication by the great Queensland ethnographer, WE Roth, represented a virtual 'bible' for researchers at that time, it is not surprising that similarities were noted between the stencil silhouettes and his detailed graphics recording north-west Queensland Aboriginal sign language (Roth 1897). An example of Roth's graphic sign-language documentation is shown in Plate 53. It would be presumptuous to consider interpretation of sign language from historic times would be directly applicable to deliberately-created stencil shapes from prehistoric times, and from a culture several hundred kilometres distant. However, it does provide a valid base from which secondary investigations may commence. Sufficient evidence does exist to argue a strong case for reclassifying the generic grouping of CQSB 'mutilated' hand stencils to a more appropriate term of 'signal stencils'.

CQSB artists have intentionally and carefully stencilled numerous Signal
Stencils in discrete arrangements, obviously with a premeditated end depiction in mind, and seemingly consistently aligned rising on an angle from lower left to upper right (Plate 54). Recurring associations of specific Signal Stencil forms were found with specific stencils, such as the stencilled emu track associated with a Signal Stencil comparable to Roth's illustration of sign language for 'emu' (see Walsh 1988:130-31). Another example of a clear and deliberate discrete panel involving a range of Signal Stencil variations interspersed by three pairs of macropod tracks is shown in Plate 55. Unfortunately, vandals have cut away and removed the art-face section covering the lower segment of this panel.

Discrete compositions such as this added support to my initial hypothesis that rock art must originally have been intended as far more than 'art', and many examples must at least be considered a sophisticated form of 'information transfer'. My ongoing experiments with stencilling and attempted replication of motif variations began to create an exponential growth of understanding of this art form. Among the subject matter closely examined were the hoppers and paws of animals, both for stencil and engraved art comparison. I systematically built up a personal 'reference collection' of stencilled appendages, acquired from 'road kills' during my Australia-wide travels. Sheets of white card were carried as a standard portable medium, with pressure pack black paint as the sprayable medium. This permitted high contrast imagery to be quickly and efficiently recorded to create a fast drying and very stable medium. The results were impressive. To inexperienced eyes the often subtle difference between the hoppers and paws of closely related macropod species was barely discernible in real life. However, the stencil process tended to operate in similar fashion to lithographic film, emphasising, to the point of exaggeration, these subtle differences in the harshness of black and white. By comparing the library of reference stencils, it became apparent that, to the experienced eye of a hunter gatherer, the various stencils presented unique combinations of subtle attributes which collectively created a virtual 'thumb print' of identification.

I have shown a representative assembly of stencil tracks from my

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reference collection, with the lower set of each panel showing the hopper ‘tracks’ in ‘sitting’ position, the central set showing the forepaw ‘tracks’ during ‘propelling’, and the upper set showing the ‘half hopper tracks’ of the same animal in motion. Plate 56 shows the tracks of a Queensland wallaroo (Macropus robustus), and Plate 57 shows the tracks of an eastern grey kangaroo (Macropus giganteus). The immediately obvious difference in these two species lies in the front section of the hopper and the extended claw. The bone structure of the hopper may differ very little, but the spreading coverage of coarse fur on the wallaroo leaves a distinctively broader track both in stencil format and when hopping through a soft mud surface. The short, worn claw detail of the wallaroo is logical for a species spending much of its life scrambling over abrasive rock surfaces, while the fine, long claw of the grey kangaroo is also logical for its lifestyle on the soil of the grasslands.

To return to the panel illustrated in Plate 55, we can now interpret with reasonable certainty that the species deliberately involved is not just ‘a macropod’, but a very specific species of macropod: a wallaroo. A study of the reference stencils in Plate 56 also permits us to confirm the artist’s intended ‘activity’ of the wallaroo, and that is mobility. The fact that there are no forepaw stencils between the pairs of tracks confirms the rate of mobility: the animal is not casually propelling along, but is travelling at speed, where forepaws do not touch the ground. To achieve this specific track appearance, the artist has had to forcefully bend the heel section of the animal’s hopper up off the rock surface during the stencilling. As the lack of over-spray indicates that each pair of tracks was stencilled simultaneously, this modelling and application process would almost assuredly have required two individuals. This panel was unquestionably intended as a ‘story panel’, including a segment about a wallaroo hopping at speed. The alignment of the track component of the Story Panel, mid way through the upper-right angling line of five variant Signal Stencils, adds a convincing argument that these are not casual ‘contorted hand stencils’, but a deliberate and carefully drafted Story Panel, undoubtedly a sophisticated example of iconic information transfer. I believe this is further evidence to support my life-long quest that ultimately it will be possible to ‘read’ rock art, at least in some panels, to at least the broader level of original
interpretive intent.

A summary of the preliminary observations regarding Signal Stencils was presented in the 1979 paper "Mutilated Hands or Signal Stencils?" (Submitted Publication No 3).

The 'Freehand' Technique Question

During the ongoing survey and recording forays, close attention was paid to not only motifs, but also the techniques which would have been necessary to create them. The importance of practical experimentation had proven invaluable with identifying the anomalous identification of many 'mutilated hand' stencils. The recurrence of a range of motifs which did not appear 'quite right' attracted innumerable unsuccessful attempts of replication. Some involved complex motifs formed of seemingly broad freehand 'painted' lines, often based on grid (Plate 58) and zig-zag themes (Plate 59). These unusual and largely linearly-based motifs had long held a fascination and suspicion for me, and had been specifically listed as focus questions in the original recording pro forma F, (see Appendix K). Other motifs clearly involved the stencil technique and depicted apparently readily-identifiable silhouettes such as stencilled emu 'feet' and 'painted' emu 'tracks' (Plate 60), but contained inexplicable yet recurring anomalies in replication attempts.

In this pre-computer era I then experimented with processes attempting to enhance detail which may not have been identifiable with the naked eye. A wide variety of these 'questionable subject matter' motifs were selected for photographic experimentation, first with infrared film, in the Art Gallery and Cathedral Cave sites of Carnarvon Gorge. The strict procedures associated with loading and unloading the infrared film made this a difficult field process. The results were disappointing, adding little to determining the processes of original motif creation, and the infrared experiments were abandoned. Subsequent experiments involved litho films—a high-contrast black-and-white medium more common to graphic layout presentations. These were combined with trials of a wide variety of Kodak Wratten gelatin filters and glass photographic filters,
applied under a range of exposures with variations of controlled natural and artificial lighting conditions. The disciplined darkroom techniques learned earlier from my photographic mentor Manfred Schmidt ultimately provided evidence to make the breakthrough (Plate 61 and Plate 62). The tell-tale fine speckles associated with stencilling techniques became visible around the originally-considered ‘painted’ elements of the figures, in instances where there was no evidence of stencils in the immediate vicinity.

Ultimately, it required a combination of very specific approaches in both the field and darkroom, using:

(a) special purpose recording media
(b) controlled lighting conditions
(c) specific darkroom techniques
(d) specialist darkroom materials.

Field recording required using a high-contrast black-and-white film under controlled lighting conditions, an electronic flash under totally controlled lighting conditions and deliberately underexposing the shots. The subsequent darkroom component required the film to be processed with strict temperature and developing times in high-contrast developer to create a ‘harsh’ and high-contrast negative. Final print creation involved using Grade 5 Ilfopress (‘hard’) high-contrast paper, together with appropriate print exposures, sectional ‘dodging’ and ‘pure chemical enhancing’, before the subtle tell-tale evidence first became visible. All these ‘questionable subject matter’ motifs had, in fact, been created by some previously unidentified form of the stencilling process.

Only after lengthy stencilling experimentation with a variety of naturally available ‘masking objects’ did the simple, but extremely effective, basics of the technique of Composite Stencilling become apparent. The pigment projection involved the standard stencilling procedure, but required practiced lip control, alignment and variation in blowing pressure. The stencil perimeters were created by a ‘masking process’ incorporating a wide range of artefacts and body parts. By carefully aligning paint projection using spread fingers or
cupped hands as masking elements, an apparent ‘painted’ V or ‘diamond’ could be very quickly created (Plate 63). Styles A, B and C in Plate 63 create a solid infill ‘diamond’ or V, and are referred to as Positive Composite Stencils. Instances involving folded-over fingers as a solid object create Negative Stencils, as in Style D of Plate 63. Variations of the Negative and Positive Composite Stencils can also be created by using overlapped artefacts and objects, as shown in Styles E, F and G of Plate 64. An example of a discrete arrangement of 16 Style A Positive Composite Stencils, blown between the spread index and middle fingers, together with a single Composite Stencil ‘diamond’ of Style B Positive Composite Stencil, on the far upper left of the panel, can be seen in Plate 64.

By repeating the Composite Stencil ‘diamond’ and/or V motifs in slightly overlapping vertical alignments, the artists could create lines, which at a cursory observation appear to be ‘painted’ (Plate 65). The complete motif from which this sectional detail is shown covers an 880 mm width, and incorporates 326 individual Composite Stencils (Walsh 1999:49). The overlapping Composite Stencil process offered limitless potential, and was not the ‘clumsy’ process initially envisaged by discussions of arranging multiple replicated motifs.

Another remarkable creation, a diamond stencil, is shown in Plate 66. Plate 67 shows a 1,035 mm wide spiral motif which has been created by 331 individual overlapping Composite Stencils, formerly shown in (Walsh 1999:50). This composition is located in the same remote and well-concealed gallery as the Plate 66 example, with detailed technique study suggesting this is almost assuredly the work of the same highly-practiced artist. As a matter of interest, this huge and remarkable gallery in the Carnarvon Range is considered to represent the world’s finest stencil-art gallery.

By repeating this process and partially overlapping each single application, a clear, broad line could soon be created, following any sweep desired, even to the degree of creating complex ‘anthropomorphic’ depictions (Plate 67a). On some examples of these ‘anthropomorphic’ depictions the artists have added stencilled hands to the extremities of the Composite Stencil,
creating ‘arm’ stumps (Plate 68), and in more complex examples, have added stencilled feet to the tips of ‘leg’ stumps. While I refer to these remarkable creations as representing ‘anthropomorphous’ depictions in line with the wider, and more politically correct, interpretation, I believe this to be a simplistic assessment. I believe they more likely represent stretched and dried human skins, as part of a far more complex element of the remarkable CQSB mortuary culture (Walsh 1988:180).

As the CQSB motifs created by Composite Stencil techniques commonly represent ‘burial art’ or can be directly associated with rock shelters used for either burial preparation or secondary burial deposition, I believe there is a strong probability that the use of this technique in creating a specific, but limited, recurring suite of motifs may have held ritual significance beyond our present level of understanding. As the variants of ‘anthropomorphous’ depictions represent the apex of composite-stencilling complexity, I believe a primary reference to the preparation, purpose and appearance of the human skin tradition is warranted. A description of these ritually prepared human skins has been described from the Brisbane area by Tom Petrie:

A “turrawan” would take a piece of dry sapwood from an old tree, and lighting it well by the fire would keep knocking off the red ashes till it burnt with a flame like a candle. With this he would give the body an extra good singeing all over, excepting the head, until the skin turned from black to a light brown colour. Then the body would be rubbed free of any singed particles, and turned face downwards, and three or four men, who had been solemnly standing at some distance from the others, would slowly advance, one by one, singing a certain tune, to the body. Each of these men held a shell or stone knife in his hand, and the first would start by slitting down the legs, and so on till the skin was opened right to the heels, and would peel off in one whole piece.

During all this performance never a joke nor a laugh was heard, but everything carried out with the utmost quietude and
solemnity. The body would be cut up when skinned, and the whole tribe sitting around in groups in a circle, each group possessing a fire, would watch expectantly for their share of the dainty. One can imagine how they would look forward to a feast as time advanced, and doubtless they watched with hungry eyes as the old men divided out the flesh in pieces to each lot. Immediately on grabbing their portion, each group would roast and devour it, and in no time "all was over and done". The heart and waste parts would be buried in a hole dug alongside the fire, and this interesting hole was marked by three sticks driven into the ground, standing about a foot high, and bound with grass rope. The hair, ears, nose, and the toes and fingers, without the bones, would be left on the skin, which was hung on two spears before a fire to dry. Sometimes it would take some time to dry, and would have to be spread out each day; then, when ready, it was blackened with charcoal and grease. After the skin was folded up and put into a "dilly" [bag], and so carried everywhere by a relative with the certain bones they kept.

These remains were always carried by a woman relative, who kept them for six months or so, when she tired of the burden, or there was a fresh one ready to carry; and so a hollow tree or a cave in a rock was used as a depository...A tree used in this was considered sacred, or "dimmanggali", and no one dare trifle with its contents. (Petrie 1932: 33-35)

During a subsequent 1991 CQSB Organic Recording Project (to be discussed later), I had the opportunity to study and record in detail a well-preserved example of one of these ritually-preserved human skins, which well fitted the stylised appearance of the image depicted in Plate 68. This specimen was believed to have been the example described by Petrie (Petrie 1932: 35-36) which he observed in a camp near the present Brisbane Exhibition Grounds, and was presented to him by Yabba, the father of the deceased.
During the late 1970s, a second PhD thesis research project was contemporaneous with that of John Beaton. This was undertaken by Mike Morwood, also from ANU, who undertook archaeological excavations, but targeted this work specifically towards shelters containing specific rock art forms. This project was a pioneering attempt to ascertain relationships in time and space between rock art and conventional archaeological excavation findings. His findings were subsequently made accessible in 1979 in his thesis "Art and Stone" (Morwood 1979). I was able to visit Morwood at some of his excavation sites, to study the recording systems he had developed to undertake this one-off PhD project. Some of the sites selected for his survey contained extensive numbers of motifs, such as the Black's Palace site (reputedly the world's largest stencil site) found to contain more than 9,471 motifs (Morwood 1977:261).

Morwood selected seven technical categories as the basis for his analysis research project (Morwood 1977:Table 7.5), and provided a summary of the technical aspects of these processes (Morwood 1977:270). Examples of Composite Stencil were subsequently described as the 'painted' technique and featured prominently in the subsequent analysis as "executed with wet pigment" (Morwood 1977:270). However, I would consider that based on my findings there are significant anomalies apparent in this overall system. Composite Stencils, are quite distinct from 'freehand', and to collectively group the totally different Composite Stencil and 'freehand' techniques under a single 'painted' category must arguably negate the validity of any subsequent sequence hypothesis using technique as a major analysis criteria.

In fact, Composite Stencilling represents one of the most important technological developments evident in the prolific CQSB artistic tradition. Its significance in the development of prehistoric art in an international perspective is arguably equally important, as has since been acknowledged by technique studies of Europe's palaeolithic cave art.

Motifs created by the classic process of freehand 'painting' are certainly common throughout many regions of Australian rock art, however they are extremely rare occurrences in the CQSB rock art corpus. Differentiating
between the vastly different Composite Stencil and ‘freehand’ techniques thus represents a matter of the utmost importance in any analysis of not only technique, theme and colour, but more importantly in the ultimate determination of a formal CQSB art sequence.

Examples of the motifs referred to by Morwood as appearing exclusively in ‘painted’ technique, not ‘stencilled’, are shown as the ‘tree’ motif in Plate 69, and the ‘ladder’ motif in Plate 70. These are not freehand, but of Composite Stencil technique, with the detail of the mid-right perimeter of the ‘ladder’ motif (Plate 70) shown in Plate 71, and illustrates the overlaying of individual Composite Stencil ‘diamond’ and V elements, together with fine associated specks of over-spray. This is an example of the motif type referred to as a “complex ladder” in Morwood’s analysis survey (Morwood 1977 Vol2: Table 7:3).

A very important aspect of Morwood’s extensive survey and analysis was his development of a basic structure for the CQSB rock art sequence. This sequence was based on technique and colour preferences (Morwood 1977:Fig. 8:19). Some of the key motifs in the survey, in fact, occur in both freehand (‘painted’) and stencil (Composite Stencil) techniques, such as the ‘net’ motif. Plate 72 is a classic example of the Net motif, in the favoured early colour of red, and is a Composite Stencil creation. In Plate 73, examples of Net motifs are shown in a Composite Stencil of the Late Classic style, which continued to favour white paint (centre right), partially superimposed by a fine example of the most recent freehand style, where the preference for white continues until the end of traditional cultural rock art practices (upper left and upper centre). A noteworthy presentation change accompanying the appearance of true freehand depictions, is the drafting trend of enclosing Net motifs with an oval, rather than rectangular, boundary. My observations suggest this change accompanies a progression from angular-lineal to curvilinear manners of graphic presentation, more in keeping with the Arid Area Art Tradition.

While this may seem a minor issue of technique identification, I would argue that the long-term consequences resulting from such trivial detail can have major implications in separate but associated studies of prehistoric
cultures. As always in specialist research, 'the devil is in the detail'. To support this belief, I draw attention to an example:

Spears are an uncommon element in central western stencil art and only three were recorded. The stencil spear-head at Ken's Cave 1 is more elaborate and with 4 rows of double barbs (Plate 3:2), it is quite unlike any seen by early observers in the region. (Morwood 1977:327)

This interpretation of a multi-barbed spearhead suggests the existence of a far more sophisticated level of technological development in CQSB than has so far been indicated by early observations, the rock art or archaeological traditions. Multi-barb spears in northern Australia are mostly associated with advanced development of at least two-part spear technology: a shaft and a mounted multi-barb head. The two-part spear technology is arguably linked with the development of spears of different weight ratios, commonly in response to the introduction of spear-thrower technology where light-shafted spears are required. This represents a major landmark in technological development. Some of the implications of this have been discussed in Walsh and Morwood 1999 (Submitted Publication No 15). There is no evidence to indicate that the traditional Aboriginal culture of the CQSB possessed spear-throwers or the associated technology. All early observation reference, and archaeological evidence, particularly associated with burials, indicates that, in this region, the single-piece hardwood 'javelin' type spear was still in use, tapering to a fire-hardened tip. Rock art evidence of the presence of multi-barb spear technology thus has enormous ramifications on not only technological development of the CQSB people, but their warring and territorial protection capabilities in a region renowned for some of the most historically aggressive groups in Australia. The controversial rock art motif in question is illustrated in Plate 74, where it is shown to be not of a multi-barbed spear-head, but an arrangement of four overlapping, right-facing Style D Negative Composite Stencils (Plate 63), involving the crossed-over fingers configuration as illustrated by the hand shown in the plate.
My explanations regarding the significance of composite-stencilling development failed to attain academic acceptance, and my proposal that the CQSB artists had, in fact, developed one of the most sophisticated levels of stencilling techniques in the prehistoric world similarly remained unaccepted. Totally incorrect references to CQSB 'freehand painting' persisted, becoming second generation 'credible references'. The incorrect argument involving the development of freehand techniques became increasingly accepted as a technological benchmark in CQSB regional artistic development. To counter these growing inaccuracies, I eventually published in 1984 the paper "Composite Stencil Art: Elemental or Specialised?" (Submitted Publication No 5). While discussion of this remarkable prehistoric artistic development was naturally limited in the space of a paper, the work remains a turning point in the studies of technology and interpretation associated with Australian rock art.

Ironically, the discovery of this artistic technique received international acceptance with French palaeolithic cave-art studies, an area in which I had long argued that some of the more spectacular motifs displayed many attributes of the Composite Stencil technique. In an article titled "Spitting Images: Replicating the spotted horses of Peche Merle", the renowned French rock art expert Michael Lorblanchet discusses how he was able to "copy the entire 'Black Frieze' from Peche Merle, the foremost decorated cave of the Quercy region of southern France." (Lorblanchet 1991:26) The description involves his reproducing "the spotted horse panel, the best-known work at Peche Merle and one of the most famous of all of Palaeolithic art." (Lorblanchet 1991:26) Lorblanchet says:

My inspiration came from research that I had done in Australia.

It was the Australian rock art specialist Grahame Walsh who revealed how the Aboriginal cave painters of Queensland had produced linear and geometric drawings, as well as grids, ladders, zigzags, plant shapes, circles, and spirals using powdered ochre in different shades of red. Because of the fragility of the sandstone cave walls, which precluded any direct application of paint, the Queensland artists used a sophisticated technique of
blowing or spitting the pigment into the rock surface. They also employed a variety of screens or stencils to guide the pigment - either their hands in a number of positions, or objects such as leaves and boomerangs. (Lorblanchet 1991:26)

Lorblanchet used illustrations from my publication to illustrate the technique (Plate 75), accompanied by illustrations of the Palaeolithic art panels which he replicated (Plate 76), together with a graphic of the famous Spotted Horse motif, showing the Composite Stencil techniques and hand alignments used to create it (Plate 77).

During subsequent studies of Kimberley rock art, I found that the Composite Stencil technique had either been discovered or introduced to the traditional artists in very recent prehistoric times. There is no evidence of its use in any of the earlier and archaic art periods and styles, but only in a relatively discrete geographic region in the most recent forms associated with the Late Wandjina period. It’s use is relatively small, and restricted almost exclusively to creating the Ondolin fog clouds on the headdress ‘halo’ of the late Wandjina anthropomorphic figures (Plate 78).

A Decade of ‘Selling the Importance of Rock Art Research’ Through the Public Media

The early 1980s marked another burst of expansion and experimentation with my recording, conservation and interpretation strategies, assisted by an increasing official awareness of the value that my recording and management proposal policies offered their resource-management objectives. I commenced an active and ongoing program of taking the subject of rock art research and conservation to the public, seeking their support through increased awareness. This process included ongoing public lectures combined with optimising the use of the increasingly-popular medium of television documentaries. Some of the key programs used to channel this approach over that decade included the presentation of my ongoing work in television documentaries such as Home of
the Rivers’ (ABC 1978, Plate 79). Others included: Carnarvon Aboriginal Rock Art (Channel 7 1981); “Aboriginal Burial Cylinder Problems” (Nationwide, ABC 1982); “Interview on CQSB rock art’ (Andrew Carol Show ABC 1983); “Carnarvon Gorge” (Centre State, Channel 7 1985); “Carnarvon Gorge Rock Art” (Centre State, Channel 7 1985); Carnarvon Rock Art (French television documentary series 1988); “Grahame Walsh” (Countrywide, ABC National 1989); and On the Route of Capricorn (Chilean documentary 1989).

My Q.NPWS supervisors allowed me increasing latitude to prepare recommendations dealing with cultural sites, not only within my traditional focus of the CQSB, but cautiously expanding this process to include all areas of Q.NPWS estate.

**Experimenting with Aerial Survey Options**

By the late 1970s the increasingly-systematic field survey and recording processes were beginning to provide a basic understanding of the most common site forms in the more readily accessible geographic settings of the CQSB. However, the ever present dilemma was whether or not these findings were representative of sites across the entire diversity of CQSB topography and environments. Within the CQSB there were many areas where the demanding terrain associated with the spectacular landforms made it logistically unrealistic to undertake even an effective sampling survey while operating conventional land-based practices.

Since earliest childhood I had been fascinated by my mother’s recounted story of her flight in a Gipsy Moth biplane over the southern Carnarvon area, and the visibility it permitted to see the detail of “every rock and tree”, and this seemed a logical way to undertake preliminary surveys.

The RGSA had, at the time of their first expedition in 1938, arranged a biplane for the first aerial geographical survey of the Carnarvons. As this period predated local airstrips, Captain Moody landed on Old Man Plain close to Injune. My mother paid the then very significant fee of three pounds to be
taken on a flight north of Injune (Plate 80).

Aerial observations thus appeared a logical process to investigate a possible solution to the dilemma surrounding logistics of preliminary site survey work in the more rugged areas of the CQSB. Aerial surveys had been effectively used by Percy Terzise for some years in the Laura area of far north Queensland, which is now widely recognised as one of Australia’s great rock art regions. Remarkably, it became officially known as recently as 1960 after reports by a Main Roads employee who made a chance discovery of galleries close to ongoing roadworks (Trezise 1971:7). Trezise was an experienced commercial-airline pilot, and subsequently opportunistically used aircraft as large as the Fokker commercial passenger aircraft to identify rock art sites (personal communication):

My occupation as an airline and aerial ambulance pilot took me daily on trips across the length and breadth of Cape York and I was able to study the geology and topography of the country to determine those areas which offered the best prospects of containing rock shelters suitable for habitation and consequently, for paintings. (Trezise 1971:7)

Trezise effectively combined his aviation and mapping skills with his competent bushmanship to pursue this regional rock art quest, where his subsequent lifelong commitment has established his legendary status as the indisputable ‘grand old man of Laura rock art’:

Concentrating on the sandstone areas I fly as low as possible whenever weather conditions permit and map the most likely looking sites containing shelters with a north or westerly aspect and adjacent to a possible permanent water supply. In some of the more open shelters it is possible to see the actual paintings in the brief glimpse afforded as the aircraft flashes past. The aerial surveys are followed up by driving as near as possible by Landrover and then carrying a swag for upwards of a week, to
investigate the area thoroughly on foot. The intimate knowledge of
the country gained on these trips has enabled me to refine my
aerial prospects down to almost entire certainty in locating new
galleries. (Trezise 1971:7)

However, considerable differences exist between the type and setting of
the Laura area rock shelters and those of CQSB. The Laura settings frequently
involve broad, open valleys rising in high, steep talus slopes to a low sandstone
scarp which forms the perimeter of extensive open-forested plateau crests. The
rock art shelters tend to be located in the base of these escarpments, but atop
daunting slopes of up to 300 m. While presenting an incredibly taxing
environment to undertake land-based site surveys from the valley floor, this
topography readily suited aerial surveys. The broad, deep valleys permitted
flying with relative safety at levels which permitted observers to virtually look
directly across from the aircraft cockpit into the escarpment-base site shelters.
The greatest limitations lay in the airspeed necessary to maintain a safety factor
over the rugged, open-forested talus slopes.

Prior to personal encounters with Trezise’s aerial survey techniques, I
had from 1977 been personally experimenting with light-aircraft survey
approaches in the Expedition, Bigge and Lynd Ranges of the eastern CQSB.
Erring to caution in the extremely rugged gorge systems of that region, I had
confined my experimental forays to an aircraft having the lowest available air
speed. With equal caution I had rejected all offers from prospective pilots other
than a highly skilled ex-World War Two Beaufort pilot with long, personal
experience amidst the unpredictable updrafts and turbulence inherent in the
dissected sandstone landscape timbered with towering Spotted Gum
(Eucalyptus maculata) forests.

Initially, I experimented with fixed-wing aircraft for site-survey
purposes, particularly the readily available Cessna 185. With it’s single engine
and high-wing configuration it offered acceptable visibility, however the stall
speed proved far too high to allow adequate observation in the CQSB
environment, where very lofty Spotted Gum-dominated forests cloak slopes
associated with the sandstone escarpment environment. A vintage 1958 Cessna 172 was trialled, where a much lower stall speed accompanied similar attributes of high-wing visibility (Plate 81). McConnell’s experienced confidence permitted remarkable, and almost stall-speed, observations along kilometres of escarpment, with proximity to the scarp base seemingly limited only by the modest wing length. At times the proximity and visibility was such that there was no problem literally counting the fingers on many of the very clear and high-contrast hand stencils.

The modest Cessna 172 was used for basic air surveys for some years. After the sale of ‘Glenhaughton’ station, a friend who owned ‘Carnarvon’ station purchased this machine for his use on the western side of the Ranges. Opportunistic use of this aircraft was assisted by my ability to carry avgas fuel at my Injune office, and provide refuelling from there (Plate 82).

The Quest for the Overview: The 1980 Helicopter Site Survey

During my 1978 research trip to the Arnhem Land rock art areas, my colleague George Chaloupka had been given glowing reports of the flexibility of small helicopter to gain access to otherwise inaccessible site areas for undertaking ground-level site surveys. Rotary aircraft seemed a much more efficient possibility to pursue than the rather limited fixed-wing aircraft.

I prepared a proposal seeking limited funding for experimental trial of mustering helicopter use in a specific site survey project. While the use of helicopters for art site survey may now seem not unusual, a quarter of a century ago in CQSB it was, at best, considered outlandish. Due to far-thinking Q.NPWS executives, modest funding was made available for a total of 19 flying hours. This trial machine was a Bell Sioux 47-D with excellent observation capabilities, but its slow cruising speed of only 110 km/hr made ferrying costs very significant. As ferrying time had to be deducted from the total 19 hours budget, the exact course of survey flights had to be carefully planned and rigidly adhered to in order to attain any degree of cost efficiency per site located. Project preparation extended over months, developing exacting
flight plans on prepared flight path strips of rephotographed and enlarged sections of applicable air photos (Plate 83) with accompanying typed progressive course observation reminder notes.

Part of the helicopter survey project involved attempting to relocate significant sites reported as chance discoveries by stockmen, some as many as fifty years earlier, with their believed location in terrain which still remained remote and inaccessible. The content of some ‘lost caves’, and mystique of the settings, seemed more akin to Queensland outback versions of the Old World’s Camelot. Stories of a ‘paintings of men and birds’ site, a ‘cavern containing over 200 bark-wrapped human bodies’, ‘stencilled human buttocks’, a ‘wall of carved trees’ in the depths of a herringbone maze of gorges, and a ‘stencilled flying child’ were but some of the claimed key features.

Some of these ‘lost’ galleries had been ‘christened’ with European names, such as ‘The Picture Gallery’ for the ‘wall of carved trees’, and ‘Dragonhead’ for the cave with a ‘stencilled flying child’. Years of recording local history and following up with field searches had shown that most local legends were, in fact, based on an element of truth. A number of believed site areas of these mythic sites located close to the planned survey flight routes were incorporated as targets, with a maximum specific search time allotted for each. Detailed dossiers were prepared on each site, with all pertinent interviews and leads, to be taken with me in the helicopter. One of these mythic sites, Dragonhead, held the best prospects, as I had been allowed to copy a 1930s photo taken by the original discoverer with his trusty Kodak Box Brownie (Plate 84). His photo showing his pack horses grazing in front of the cave containing the ‘stencilled flying child’ was taken during a period of forced retreat to avoid a pursuing party of police and trackers (Plate 85). A visual record and seemingly-sufficient bush descriptions made this a priority search target.

My excellent working relationships with landholders permitted me to establish a series of station-homestead bases to operate the helicopter forays from, the most easterly of which was at historic ‘Reedy Creek’ station (Plate 86). Fuel
dumps were established strategically across the CQSB in order to minimise unproductive flight time. The helicopter was fitted with small 'lifting litters' along either side, so our swags and a drum of emergency fuel were strapped to these as we moved from base to base (Plate 87). My field assistant drove my work Toyota from base camp to base camp, carrying additional fuel, maintenance tools and stores. Weight was of the utmost importance with the underpowered machine operating at the higher CQSB altitudes, so fuel levels were kept to an absolute minimum during search flights to maximise the safety factor. The small fuel dumps established at strategic points prior to commencing the project (Plate 88) minimised unproductive ferry time.

The Dragonhead cave was rediscovered after an acceptable expenditure of search time, but due to the rugged terrain and a surrounding sea of burnt acacia trunks, the helicopter could not be landed within walking range of the site. Positive confirmation of the site location, together with a photographic record of the cave entrance (Plate 89), was all that could be achieved. Although panels of bright red stencil art could be seen on visible areas of the cave walls, it was not yet possible to confirm whether the remarkable 'stencilled flying child' really existed.

Many sites were located during the carefully planned search legs. A system had been developed to maximise the observation and identifying time of the flights, as I had worked out that at the operational cost per second rate it would cost $10 to turn the helicopter to recheck a possible observation. A form of 'positive/probable' coding had to be developed to maximise the aerial observation time associated with this rare luxury of helicopter assistance. Chinagraph pencils were subsequently used to plot the exact flight route (including turns) of the helicopter on the prepared, enlarged air rephotographs. A positive site identification was marked with red chinagraph pencil, while probable identifications were marked by blue pencil. This procedure had been developed to assist subsequent planning of return walk-in trips to study and record the discoveries. The blue and red chinagraph codes assisted in planning the route for return, as time, resources and logistics simply did not permit revisiting all the sites identified in the aerial surveys. Marking the exact flight
route provided a valuable guideline when physically walking in to the sites to determine nearby potential areas which could not have been assessed from that route, but looked worthy of extra walking to check. This may sound like excessive concern, but for recorders who have worked the rugged Carnarvon gorges system, the merit of this discipline for detail will be eminently obvious.

Due to the visibility reduction frequently resulting from emergent Spotted Gum treetops rising from the dense slope forests, it was, at times, impossible to determine the size, quantity or significance of partially-observed art panels. Evidence of the need to investigate every observation can be found in one extremely remote site. Initially this was identified by only the finger tips of a single red hand stencil, fleetingly observed through a barrier of emergent treetops. However, when trekking in to investigate the sighting months later, the shelter was in fact found to be an art site of incredible significance, now considered to rate as the world’s greatest stencil art gallery. The outer section of its very extensive and remarkably preserved main panel is shown in Plate 90.

The most significant factor pertaining to efficiency and safety which was identified during this pioneering helicopter site search project involved machine power. These older, piston-engine machines had a maximum operating ceiling of approximately 1,500 m, and the power was found to be totally inadequate for the demanding situations unexpectedly encountered during this form of aerial survey. The CQSB search area is known as ‘the roof of Queensland’, and represents some of the loftiest and most rugged environments in the state, where search areas attaining 1,200 m in altitude were not uncommon. Searching narrow gorges proved the most hazardous procedure, often operating close to the canopy of dense, 30 m forests, which offered no possibility of an emergency landing. The underpowered machine was frequently incapable of clawing its way up through the thin air to scan the surrounding escarpment walls, at times towering to heights in excess of 200 m. In such situations, the pilot reassuringly dismissed the sickening sound of rotor blades flailing emergent treetops as ‘character building’.

The 1980 helicopter survey experiment proved highly cost effective with regard to the results provided. Combining this data with that of years of field
recording permitted me to establish the first working overview of site type and distribution across all environments and landforms within this defined geographic region. The potential and associated problems with helicopter use for site locating were subsequently published (Submitted Publication No 4), as were my recommendations for future projects, ideally utilising more powerful helicopters. (Walsh 1981:78).

The Quest for the Overview: The 1981 Helicopter Site Survey

As more powerful helicopters were not available in Central Queensland in 1980, a detailed proposal was subsequently submitted to the Department of Defence, seeking their assistance and participation in an expanded CQSB site survey project. This request listed equipment requirements, based on my experiences in the 1980 pilot project, and suggested the use of an Army Air Bell Kiowa turbine powered helicopter, equipped with lift winch facilities adequate to permit lowering myself through dense low forest settings to facilitate ground proofing of observations at the time of discovery. Fortunately, the Army Air unit saw merit in this research proposal as an ideal air crew training operation, and readily provided confirmation for willing participation.

A similar fuel dump and field base preparation program preceded the arrival of the Army Kiowa helicopter. Three station homestead bases were set up from east to west across the CQSB, of which ‘Reedy Creek’ was the most easterly (Plate 91). The significantly more powerful jet-powered machine was able to undertake landing in small openings amidst the tall forest (Plate 92), permitting far greater ground proofing at the time of site observation. This advantage eliminated the need for months of field trips and lengthy hikes to later return on the ground to physically check observations.

Army air regulations thwarted my plan to be winched from the helicopter, but an enthusiastic Corporal Smith had requested permission to be lowered on a rope to formally undertake searches on my behalf (Plate 93).

During the eastern segment of this survey, the Dragonhead Cave
(rediscovered during the 1980 helicopter survey) was revisited with the more powerful Kiowa helicopter. Corporal Smith volunteered for preliminary descent, climbing to hang suspended from the skids, then dropping the four metres from the tops of the menacing field of burnt acacia trunk stubs to the ground, this time clearing a landing area sufficient to permit descent by the hovering helicopter. The subsequent recording now confirms that another of Carnarvon's former 'Speerwah legends' does exist, and although now in a stage of advanced weathering, the stencilled image of a child survives timelessly 'flying' across the cave wall.

One important 'local legend' stencil site was unfortunately not able to be verified, as our access attempts were foiled by unforeseen logistics problems. Corporal Smith was lowered from the helicopter skids to the sloping surface of a massive sandstone monolith rising above the dense vine scrub canopy (Plate 94), as this had been tentatively identified as the formation hosting the art panel. The intent was to have the volunteer climb down the sandstone face and report observations by radio. We had planned to then undertake a long trek from the closest escarpment crest landing point to record the reputedly 'unique' stencil motif. Corporal Smith's investigation found impossible overhanging cliff sides to the formation which would require abseiling equipment. After a difficult extraction of Smith from the outcrop, the time and probability factor of reaching an unconfirmed gallery forced abandonment of the quest for future generations.

While undertaking the central segment of the 1981 Helicopter Site Survey, we operated from the 'Early Storms' station homestead base (Plate 95). Shortly after the survey I purchased this station, excising a segment to retain under a special lease, and constructed the Takarakka Rock Art Research Centre, which has since been the repository for all recorded data. The Takarakka Rock Art Research Centre has since been relocated to Brisbane.

Another special project planned to utilise the abilities of the helicopter winch in the construction of an experimental protective mesh screen on a small but significant art site discovered earlier in a lofty, and extremely inaccessible, ledge setting, on a protruding blade edge of the Carnarvon range. The
remarkable setting of this panel suggests either the art or the setting once held considerable significance within this region’s traditional Aboriginal cultural. The single panel consists of a series of overlapping red Composite Stencil ‘diamond’ motifs, created with the rare Style C positive ‘diamonds’ (Plate 63). This unique panel was suffering from a form of rapid weathering spreading from a fracture in the very-friable white Precipice Formation sandstone (Plate 96). Having sought expert advice regarding the most appropriate conservation measures to moderate this apparently rapid deterioration process, I had been told that it appeared to be wind associated, and some form of screen to reduce the uncontrolled course of winds in this elevated and exposed setting would be most appropriate. Advances in conservation research over the past 20 years have suggested a much different source, namely moisture.

In preparedness for the helicopter lift assistance, I had constructed an angle-iron framed panel, with fine galvanised arc-mesh infill, together with prefabricated mounting posts, stays, support cables and bolt kit. Myself and a field assistant were first airlifted into a pre-cleared, but precarious, ledge edge landing point (Plate 97), with the helicopter then returning to the field base, winching the load, and returning to the site. The prefabricated kit was then winched down through the lofty Spotted Gum trees to the upper slope (Plate 98) before the helicopter landed for the crew to assist with erection of the experimental conservation screen (Plate 99). Part of the screen kit can be seen resting against the cliff face in Plate 99.

During the search for another ‘lost’ gallery in the dissected gorge systems of the Carnarvon Range, the terrain and vegetation was such that a chainsaw was carried to clear vegetation to permit exits from extremely tight helicopter landing sites. Although the physical rotor diameter measurement remains constant, there can be a critical variation in the radius measurement required, depending on associated vegetation, which is absolutely critical to be aware of in planning helicopter survey work. In situations involving flexible forms of vegetation greater than three metres high, a skilled pilot may get into seemingly improbable locations where sapling locations leave only centimetres clearance from the unchanging rotor diameter measurements, however, it will
not be able to safely lift-off without adequate modification of surrounding vegetation. The process of down-flow of air through helicopter rotors provides a force which literally blows outward any flexible lofty vegetation as the machine descends, virtually temporarily enlarging the descent path without needing to 'clip a leaf'. However, this process is reversed on takeoff, where the air pulled down through the rotors pulls the flexible lofty vegetation into a diminished ascent path, and unavoidably pulling the associated vegetation into the rotor tips. The potential for a catastrophic end to such takeoffs is very high, and a heavy responsibility rests with the recorder not to urge pilots to attempt any vegetation-associated landing against their professional experience.

An instance of a vegetation-risk landing during the CQSB survey is shown in Plate 100. The experienced pilot was able to skilfully land the helicopter in a deep gorge bed, with less than 200 mm rotor clearance to the gorge rock wall. However, we had to clear surrounding flexible vegetation with the carried chainsaw before lift-off was possible, and the landing would not have been attempted without this escape plan.

In the western sector of the search survey, flight time was budgeted to search for two 'lost' galleries: 'The Picture Gallery' said to contain the 'wall of carved trees' panel; and a huge, painted wall site located much further west. After expending 75% of the budgeted flight time searching prioritised side gorges within the herringbone maze, not so much as a 'mark on a wall' had been observed in the spectacular scenery. I then had the helicopter taken to 4,500 ft. to hover for five minutes while I attempted to establish one last shot, based on personal experience and intuition. There are factors of selection of seclusion from casual discovery for 'special' sites, moderated by fear of the omnipresent threat of malevolent JunJuddy and Eunjie spirits endangering the presence of even interloping artists in certain types of confined settings. From the local myth description of 'The Picture Gallery', it certainly fitted the 'special' site category. With 10 minutes of budgeted search time remaining, a 'last shot' small rock face in a seemingly suitable, but very remote, side gorge was selected, and as we levelled into the tight gorge for a landing, there before us lay an amazing wall of well preserved engraved art, and by the motifs,
indisputably 'the wall of trees'—a mystery no more. A section of this remarkable engraved wall panel is shown in Walsh 1983:52.

A remarkable number of sites were discovered throughout the 1981 Helicopter Site Survey, and it took more than two years of ground trips to reach and record them. The increasingly refined preparation and implementation processes of site surveys learnt from the early Carnarvon experiences have been taken on and systematically fine tuned in my ongoing research in the Kimberley. Without this process, which still must be regarded a luxury, our knowledge of the prehistory of the Kimberley would have been significantly less.

**Protection: Vandalism, Legislation and Education**

The decade years spanning the 1970s to and 1980s marked the passing of many of the old timers of the CQSB region, and with them was lost a tremendous amount of knowledge associated with traditional Aboriginal practices as well as the location of many sites. Awareness of the urgency of this matter, and the significance of the knowledge at risk, led me to prepare proposals for Q.NPWS to expand my research scope to cover this. This expansion of responsibility for not only recording archaeological sites, but also verbal histories and associated cultural and historic sites, ultimately led to the establishment of a specific section within Q.NPWS Management Services, which was named the Historic Sites Section. I was in charge of this section, and permission was given to establish the primary facility regionally at Injune, in the hub of the CQSB field-work focus, rather than at Brisbane headquarters, as was then the accepted practice.

At my personal expense I had a specially designed 14 m demountable building constructed to serve as office and archive. This facility was designed to optimise archival conditions: it had no windows, but was air-conditioned and double insulated. A separate fully-equipped darkroom and processing facility was also constructed to permit my total control over the quality and security of all gathered data.
Where possible, field trips were planned to facilitate multiple purposes and we took Aboriginal and elderly local stockmen with us where possible to obtain on-site recordings of discoveries and historic events. A memorable series of recordings involved Sir Francis Biddulph, over 100 years old at the time, who provided invaluable first-hand accounts of traditional Aboriginal burial cylinder practices at the time of his pioneering settlement of 'Mt Playfair' station. Among the most invaluable informants was Fred Lawton, an elderly local Bidjara Aboriginal man, who provided an immense amount of history, linguistics, Aboriginal cultural information and actual site location. The informants would be taken by myself and my field assistant on field trips of sometimes a week or more through the areas of CQSB where they had intimate historic knowledge, so that the locations and associated detail could be accurately confirmed on the ground. Space was always a problem, as the QNPWS provided no vehicle in those days and my own short-wheelbase Land Cruiser was the only mode of transport available for field work. Informant Fred Lawton's personal swag was so large that it had to be carried between the bull bar and bonnet of the vehicle (Plate 101), where the legal implications of such obstructed view would make such trips illegal and impossible today.

Driven by the urgency of the rapid loss of knowledge with the passing of old timers, many thousands of kilometres were undertaken in this recording project. In spite of the limitations, this logistically demanding period of research was timely in providing an immense pool of information.

One of the somewhat contentious management issues appearing in the early 1980s involved the need to determine a clear policy regarding 'historic' graffiti. The options were:

(a) to remove all graffiti and strive to restore sites to their 'original' condition

(b) to leave 'historic' graffiti, and remove only 'vandalistic' graffiti.

Examples of graffiti on art sites in CQSB date back to 1873, where a local brumby (wild horse) runner named J Hunt chose to carve his name over a number of sites he discovered in the far-western section of the ranges (Walsh 1988:261). I draw attention to the graffiti issue as but one of the many details
which must be considered from the very conceptual stages of developing recording forms. Preliminary involvement soon identified three scientifically and historically founded perspectives:

(1) From an archaeological purist’s viewpoint, the logic associated with the ‘restore to original’ option seemed unarguable.

(2) From an archaeological management viewpoint, the retention of older graffiti to serve as a ‘dateable surface modification’ for ongoing rock art weathering studies was invaluable.

(3) From a historical viewpoint, ‘historic graffiti’ from the post contact period was equally as significant from an Australian-pioneering cultural perspective as the pre-contact ‘graffiti’ (rock art) was from an Aboriginal cultural perspective.

I had envisaged future controversy arising over the issue of ‘historic graffiti,’ and in particular that created by known explorers, pioneers and bushrangers. I had added sections in my original recording pro formas to gather pertinent data to address this future challenge. In Form C, under ‘Preservation’, there are two pertinent sections: ‘History of European Visitation’; and No 56, ‘Vandalism - list Names and Initials’ (see Appendix K).

In order to compile essential dossiers of names and initials of potentially historically significant graffiti in scientifically significant and publicly accessible ‘high-profile’ sites, I used my Aboriginal Site Recorder role to take elderly informants to the sites (where possible), and systematically recorded pertinent detail. In Plate 102, the Bidjara Elder Fred Lawton is shown providing information on the many examples of historic graffiti covering the walls of the Kenniff Cave site. Historic graffiti included the charcoal-scratched name of Jimmy Cubby, an original local Aboriginal police tracker who guided early police pack-horse patrols through the ranges.

The CQSB provides an unfortunate, but invaluable, historic model for the study of historic sites management, with its long history of uncontrolled public access to one of Australia’s major rock art regions. Countless art sites are associated with remarkably ‘soft’ local sandstone surfaces, creating an
attractive medium for individuals to ‘leave their mark’. The huge Blacks Palace site is not only the largest stencil art site, but one of the most heavily vandalised, with graffiti dating in this site from 1911 (Walsh 1988:261). Not only are names carved across art panels (Plate 103), but also a number of examples of high-powered bullets fired into the artwork are an even more insidious and deliberate form of destruction (Plate 104). This site also represents one of the worst examples of surface removal in a single site, illustrating the futility of considering unsupervised legislation as an adequate protection for rock art sites, as the Blacks Palace site is historically significant in being the first site covered by the ‘Declared Site’ status in Queensland (Walsh 1988:261). Examples of attempted surface removal are not uncommon throughout the CQSB. Evidence suggests that most are failed attempts (Plate 105 and Plate 106), although there are some where large sections appear to have been successfully removed intact (Plate 107). This practice was sufficiently common to include a specific sub-question (No 56/4 ‘Surface removal, or other’) in the ‘Preservation’ section of my Form C recording pro forma (see Appendix K).

The significance of historic graffiti is dealt with at length in the ‘Early Discoveries’ chapter of my book *Australia’s Greatest Rock Art* (Walsh 1988:17-33, Submitted Publication No 8). Further detail of the history of this management dilemma was published in the popular magazine *ANII*, titled “A Mark in Time” (Morwood and Walsh 1993:40-45, Appendix O).

During a site-maintenance assessment project, some of the earlier recorded art sites were revisited, and deterioration monitored. In June 1979 I encountered an instance of deliberate art site defacement. The offender had abraded his name and the exact date of the event—8 February 1979—, and additionally removed a large slab of stencil art (Plate 108 and Plate 109). Removal had been ‘brutal’, an axe being used to hack and lever out a sizeable ceiling section. A detailed report, including ‘before’ and ‘after’ photographs was submitted to the Roma Criminal Investigation Branch, including the original recording photos of the now-stolen art panel (Plate 110). The local police dutifully pursued the matter, and a conviction was subsequently recorded.
in Roma, where Stipendiary Magistrate K Flick ordered a $100 fine (Western Star, 21 September 1979).

In spite of the total lack of presence or participation by the authorities responsible for implementing the site preservation Act, much-publicised local prosecutions against rock art vandals greatly assisted in promoting an awareness of the likelihood of conviction for would-be vandals. It was apparent that the police were prepared to pursue and prosecute vandals, and that the potential media exposure represented a very real incentive for mining and exploration companies, in particular, to make sure their employees complied with the new Act. I was contacted personally by the executives of one of the leading natural gas exploration authorities with ongoing lease surveys underway in the CQSB. They requested my assistance in providing an explanation briefing to their extensive field-survey groups, and to undertake preliminary surveys for rock art sites after the surveyors had defined seismic routes, but prior to the bulldozers clearing the lines. Their offer was to guarantee support for full implementation of the legislation if I assisted them with these levels. I draw attention to this proposal, as it was an historic time in exploration companies’ willingness to make a major and expensive change in their long-established modes of operation in order to come into line with new and developing attitudes towards the preservation of historic sites.

In order to promote the possibility of harmonious joint ventures within the site-rich CQSB, I worked closely with this group. During the 1982 survey of extremely rugged areas in the southern Carnarvons, I was unable, as a solitary individual, to keep up with the multiple survey and clearing parties’ progress deviating through the massive gorge systems. In a period of less than an hour, rebellious members of the survey group had deliberately desecrated an art site with an extensive amount of the crudest abraded vandalism. Erotic depictions (Plate 111) and slogans such as ‘Sex, Drugs and Rock & Roll’ (Plate 112) were carved across the art panel. As only a very specific number of known individuals could be involved in this extremely remote setting, the actions could only be considered as a deliberate challenge to the frequently-unpopular issue of protecting anything associated with Aboriginals. To the
credit of the company executives, they insisted the matter be fully pursued in accordance with their agreement. Police from the region’s surrounding police stations of Injune, Rolleston, Springsure, Roma and Mitchell descended as a convoy to undertake a major raid and investigation of the camp and interrogate its crew. The saga of subsequent procedures was long and complex, but the importance of the preparedness of all parties to take such issues of rock art destruction to such levels was invaluable in setting the future direction for CQSB rock art conservation. In spite of ongoing intensive and extensive surveys in the CQSB, to my knowledge, there have not been any further occurrences of senseless and deliberate vandalism from this sector of the community.

Not all damage to sites was intentional, and among the strangest CQSB instance was a lessee who built a permanent barbecue setting in a rock art site located in a remote and scenic sector of his land (Plate 113). Visitors were treated to an opportunity to ‘appreciate the paintings in their natural state’, genuinely oblivious to the inadvertent damage resulting from campfire smoke and splattering sausage fat.

I believe that an active education-based policy has contributed significantly to current rock art conservation by increasing public awareness and appreciation. This involves ongoing liaison with the lessees, public audio-visual presentations and campsite talks to visiting school groups.

Presentation and Interpretation: Boardwalk Concept Development

Issues of management and public development of sites represent a major element of my contribution to rock art studies, and are an important and ongoing aspect of Australian cultural resource needs. A summary of the history of the commencement of this phase of site management is covered in Submitted Publication No 6.

The term ‘management’ may now be commonly associated with all forms of cultural resource and rock art projects, but in the 1970s it was yet to be officially implemented, and equally importantly, publicly accepted, in
Queensland. Any authoritarian role associated with any government body tended to be viewed with extreme suspicion, and matters pertaining to protective, policing or punitive roles associated with Aboriginal issues of any form attracted exceptional reserve.

The introduction of the *Aboriginal Relics Preservation Act 1967* was the first formal protective legislation, listing its administration administrator as under the Department of Aboriginal and Islander Affairs. Issues pertaining to responsibility of ongoing management of sites within the bounds of declared National Parks, effectively made accessible to the public by their legislation, and the *Forestry Act 1959* remained unclear and untested. Matters questioning inter-departmental authority and control were compounded by public scrutiny from both purist and political perspectives, making the first moves to develop physical management measures a very controversial one. However, it remains a tribute to the far-sighted attitudes of the Q.NPWS inaugural Director, Dr Graeme Saunders, that he was prepared to accept the criticism for the long-term preservation of elements best seen at this time as ‘non-renewable cultural resources’.

In accordance with the initial people-management strategies discussed with the Q.NPWS Director by John Beaton and myself (see the section on “Pioneering management and Interpretation of Rock Art”), the National Parks Management and Planning section chose to investigate management options for the now heavily-visited Carnarvon Gorge rock art sites.

At this time there were three major rock art galleries receiving regular, unsupervised visitation. A long history of public visitation had resulted in their locations appearing on both official and unofficial information leaflets and maps. All three galleries displayed evidence of vandalism, with the Wall Paintings site (*Plate 114*) suffering attempted surface removal and accompanying limited abraded graffiti. The Art Gallery and Cathedral Cave were heavily defaced with masses of abraded graffiti, together with massive disturbance to floor deposits from constant pedestrian traffic and uncontrolled camping of backpackers in the site (*Plate 39*). My archive of historic photos provided visual confirmation of a rapid deterioration of ‘touchable’ level wall
surfaces and associated rock art. Floor disturbance not only resulted in extensive dust damage to art surfaces, but also physically endangered these large shelters. In Cathedral Cave the countless feet climbing the steep, loose deposits below the south-east art panel were causing the steady slide of many tons of floor deposits (Plate 115). In The Art Gallery, visitors struggling up the long access slope promptly sought resting areas in a setting where engraved floor area rocks provided the ‘seats’ and observation platforms (Plate 116). These once-profusely engraved rocks had been reduced to weathered chunks by this ongoing unintentional damage. The scalable sections of the main art panel had long provided a ‘posing platform’ for the ‘conquest’ photos so commonly sought by tourists to any feature. Historic photos confirmed this process had been going on since at least the 1930s (Plate 117). The QNPWS had erected basic signs at the sites requesting public restraint regarding touching wall surfaces and caution in disturbing dusty floor deposits, but no form of control had been implemented (Plate 118).

When considering the basic protection issues for rock art and cultural sites, I believe that consideration of any process for its primarily educational approach must display a potential to have clear policies defined, together with the development of presentation and interpretation skills, prior to acceptance. Management based on restricting public access and backed by punitive legislation is not a popular bureaucratic option, but education-based management without consistent and persistent follow through has been found to not only fail miserably, but also commonly accompany irreparable damage to the associated resource.

Development of Site Protection Measures

Having no precedent to follow, the now-obvious processes of site protection took some time to develop. On-site planning commenced in conjunction with Bill Morley (Ranger in Charge of Carnarvon National Park), and Steve Murray (2IC second-in-charge of Carnarvon National Park). I undertook lengthy on-site studies to develop a series of realistic management
and presentation options. A list of primary project criteria were prepared and grouped into categories of 'objectives', 'musts' and 'must nots'. The primary objective was to:

Develop a site-management process which protects the art, retains the site integrity, but permits unsupervised public visitation to appreciate an educational and culturally rewarding experience.

The 'must' criteria included:

(a) providing visitors with optimum visibility of the art
(b) permitting visitors to obtain good photo compositions without having to leave the boardwalk
(c) incorporating basic seating for visitors, strategically aligned to encourage appreciation of the art
(d) providing unobtrusive interpretive signage easily relating to specific art motifs
(e) using signage to gain visitor understanding and support for the introduction of control measures
(f) incorporating an option to permit visitors to 'leave their mark' in a positive way.

The 'must not' criteria included:

(a) not, in any way, disturbing the archaeological stratigraphy of the deposits
(b) not, in any way, challenging the visitor through unacceptable levels of impediment in appreciation and photography
(c) not being seen as using the threat of legislation to invoke unsupervised control over visitors
(d) not leaving any doubts regarding the good intent surrounding the introduction of 'intrusive structures' into the aesthetics of natural site
settings.

Expectations of the general public tend to be simple and reasonable: permission to ‘visit and view’ in order to ‘appreciate and understand’ at a modest level. Every effort was made to facilitate these expectations in the design, planning, alignment and structural design of the proposed structures by striving to service the identified needs of the visitors while remaining ever-mindful that the ultimate priority must always be the preservation of the art and associated site. Levels of curiosity and interest drive the majority of visitors to undertake the physical commitment associated with the unavoidable long walk to these sites. Any development failing to fully service these needs has little chance of success.

Taped boardwalk alignments were contoured to facilitate observation of the art, not to pursue the soft option of ease of construction. Walking tentative alignments while viewing artwork through 35 mm and medium-format cameras with standard and wide-angle lenses progressively determined the optimum alignment which would raise no reason for leaving the provided access. The curving walls of the huge Cathedral Cave site provided a real challenge: to create boardwalk alignments which would permit visitors to personally see every facet of the walls, even where there was no significant art, leaving no question as to what may be ‘just out of sight’. This may appear overly pedantic, but I believe this attention to dealing with the human element of the issue is one of the key factors which have made this original design so universally successful.

With the ideal alignment identified and drawn to scale, the issues of structural design and appropriate materials had to be determined. School groups and tour groups represented a significant component of visitors, so small observation decks were incorporated in the concept, strategically positioned to permit group gatherings to observe specific art during explanations by guides. Seating was incorporated at points where resting visitors could quietly appreciate some of the finer panels of art and overall aesthetics of the site. A weatherproof visitors-book compartment was positioned close and clearly

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visible from the seats, to encourage positive recording of individual visits and experiences at the site.

Considerable deliberation surrounded the all-important selection of materials which, in turn, largely dictated design. Factors of ease of construction, low maintenance and overall reduced cost accompanied a ‘functional’ but visually-challenging structure, certainly neither complimentary to the site aesthetics or the overall ethic of National Parks presentations. Optimum aesthetics and harmonious blending with the environment was perceived as attainable only by the use of timber of ‘chunky’ format, and retained in natural finish where possible. This option was accompanied by greater expense, ongoing maintenance requirements, and far greater logistics difficulties with getting raw materials to the sites. The timber-and-aesthetics option was chosen because of the importance of the art sites and the significance of the long-term objectives.

Over a period of drafting and on-site checking, a final set of construction plans was prepared (Appendix F). As it was expected that there may have to be modifications to the alignment as a result of problems which would become apparent with ‘visitor testing’, it was decided to use a standardised, modular form of boardwalk design. The modules were to be mounted, wherever possible, on flat timber pads on the floor deposits, requiring minimal deposit disturbance. This concept facilitated the rapid detachment of a single module, which could then be physically moved by 12 men, simplifying realignment, or temporary exposure of deposits to undertake future archaeological excavation work. The local cypress pine (*Callitris columellaris*) timber was selected as most appropriate for local conditions, with its inherent termite-resistant characteristics and proven longevity in exposed conditions.

A prefabrication facility was established near the Carnarvon Park headquarters, where Ranger carpenters pre-cut much of the 30 t of materials to suit the plans. Assisted by a specially constructed set of rocker scales, they carefully packed and bound components into defined helicopter-ready bundles not exceeding 800 lb weight. A chartered Bell Jet Ranger airlifted materials to drop zones close to
the two sites, a task taking two and a half days to complete under the hazardous gorge conditions (Walsh 1984:7, Plate 119).

Physically transporting 30 t of material up into art sites and constructing the boardwalks was an extremely laborious task, at times involving up to seven staff, and taking eight months to complete (Walsh 1984:7). Because of the distances involved, the construction teams had to live in tent camps near the sites, some accompanied by their wives and children during the lengthy undertaking.

Final positioning of the very extensive boardwalk system in the Cathedral Cave site can be seen in Plates 120 and 121. The process of permitting public access over the massive slope slip area (shown in Plate 115) can be seen in the elevated staircase and platform system shown in Plate 121. The approach to The Art Gallery site boardwalks is shown in Plate 122, and the subsequent visitor use of the seating facilities constructed in front of key art panels is shown in the June 1984 scene in Plate 123. Initially, public resistance was encountered to requests to remain on the boardwalks, and on-site studies of public reaction showed that existing foot prints on the floor deposits off the boardwalks added justification to subsequent visitors to also disobey the restraint requests. For some years it was a practice during peak visitation periods for a Ranger to visit the site and ‘clean away’ evidence of tracks (Plate 124), which proved a very successful process in long-term ‘education’ of visitors.

Initially, this pioneering project was completed and opened to the public before interpretive signage could be approved and installed, with only a basic summarised cultural history sign in place (Plate 125). This seemingly minor incident proved a valuable exercise in learning to deal with public attitudes in developed sites, as there was a very vocal and negative attack on the National Parks Rangers and system for despoiling the aesthetics of these sites with the introduction of such visually challenging structures. Once interpretive signs were erected (1 December 1983) explaining the reason for the structures, and seeking public assistance in insuring the rock art’s long term protection, the attitudes changed completely (Plate 126). From this valuable lesson, I
established promoted a policy that no future developments would be opened in National Park art sites without having fully-completed, appropriate and adequate interpretive material.

In December 1980, the Australian National Parks Service sent two of their rock art resource officers to Carnarvon to inspect these experimental boardwalk management systems, and prepare modified designs for consideration in the art sites of the recently gazetted Kakadu National Park. In Plate 127, George Chaloupka and Dan Gillespie from Kakadu National Park are shown taking details of the management developments in The Art Gallery sites.

The Carnarvon boardwalk developments and their associated history, as Australia’s longest officially-controlled setting of publicly-accessible rock art sites, provided a unique cultural-resource-management test case. The significance was such that the Australian National Parks Service organised study visits for each group of Aboriginal trainee Rangers from their newly-gazetted Kakadu National Park.

Surveying Public Attitudes to Management of Rock Art Sites

A visitor book facility had been installed in each of the Carnarvon Gorge developed sites in an attempt to provide an acceptable option for potential graffiti artists to leave their mark. It was also seen as a potentially valuable tool in maintaining an ongoing ‘public attitude barometer’ to not only site development, but National Park management and changing politics of the times as they affected parks, management and policy.

I maintained constant monitoring of visitor books from the sites, and at times had assistants forming databases to analyse comments associated with specific times, associated politics of the time, and origins of the visitors. An interesting discovery from these ongoing surveys was the ability of visitor books, or, more specifically, the developed theme of recorded comments, to change the overall trend of visitor attitudes. When negative or racist comments appeared, they frequently attracted more, until within a short period the
majority of comments were following an increasingly negative trend. The only way to halt this trend, at that time, seemed to be to start a clean page in the visitor book, with several ‘artificial visitors comments’ in a positive vein. Subsequent comments and attitudes would almost invariably again return to the positive and supportive. Even pages bearing the most obscene and racist comments were never removed from the visitor’s books, as these documents were regarded as an invaluable resource for future researchers studying the development and principals of ‘people management’.

In 1984, I organised a survey of visitor attitudes, to be undertaken at both the Carnarvon Gorge and Mt Moffatt sections of the Carnarvon National Park art sites, preparing a task-specific pro forma to permit gathering of consistent data for analysis (see Appendix P).

In an attempt to gather data to determine the trends of public visitation to the publicly-accessible rock art sites, I had compiled all surviving data regarding camping permits and figures for Carnarvon Gorge. These were, not surprisingly, found to be inconsistent and incomplete, so I prepared a standardised data entry form for ‘Visitor/Day Usage: Carnarvon Gorge, Carnarvon National Park’ (see Appendix Q), and had its mandatory use officially sanctioned. This provided an accurate, ongoing statistical record, month by month, which permitted me to develop management and interpretive strategies to suit predictable use patterns. This proved to be of such value that, after a decade of sound records, I believed the findings should be made more readily available to others involved in managing cultural resources. I supervised a Research Assistant who analysed this data on a monthly basis for the 1976 to 1986 period. The findings were presented in the unpublished 1987 Q.NPWS Report ‘Visitation Figures/Booking System’, and gave statistical support to my arguments of increased cultural-resource management in preparedness for progressively increasing visitation pressures. It is of historic interest in site management to note the basics of these findings from this important period:


From a management viewpoint it is additionally interesting to note that the major drop in visitation of 11.5% in 1980 was associated with the first massive rises in fuel prices. The 1983 drop of 3.6% was associated with a period of extreme floods in the prime tourist season (Walsh 1987:1). A similar noticeable decline in tourist numbers to the art-site areas of the Kimberley some 20 years later was also associated with unprecedented fuel prices. While the public tends to adapt to such unexpected costs associated with reaching rock art areas, this evidence suggests that it is not a permanent reprieve in pressures, and managers can expect a lull of possibly only 12 to 18 months.

Establishing Takarakka Rock Art Research Centre

By 1981 it was becoming apparent to me that if the ‘quest’ of developing some process of ‘reading rock art’ was to be attained in my lifetime, my recording and analysis processes would have to become far more efficient, specialised and focussed. If the somewhat esoteric pursuit of rock art could not be elevated to a more structured level, the study would never attain serious credibility, and without these credentials, support, funding and scientific acceptance would always remain at best, elusive.

A primary prerequisite appeared to be to optimise whatever time, resources and expertise were available, and the first step towards this would seem to be relocating my base and operations to the closest association with the resource. As my support base and income was, at that time, largely state oriented, and the hub of public and scientific access to rock art was the Carnarvon Ranges, the logical location for operations would be as close as possible to the Q.NPWS infrastructure of Carnarvon National Park. At that time, many issues surrounding archaeological and historic sites were far from officially clear, so there was no possibility of establishing a formal research
facility through the official processes of QNPWS. Any serious development would have to remain autonomous and clearly detached from any government lands or control. The improbability of anything eventuating within this criteria was so remote and without precedent that the bureaucracy was unprepared for the series of rapid events which followed. I believe this fortuitous set of circumstances will historically be considered as effectively changing not only the course of Australia’s understanding of rock art, but the way that Australia’s unique rock art is seen in a global perspective.

In 1981 I was able to negotiate the purchase of a 20,500 acre station (Grazing Farm No. 3676), fronting the eastern boundaries of Carnarvon National Park. The lease was promptly forfeited with an application for two separate leases, the most important of which was a 32.14 acre (13 ha) area along Carnarvon Creek, adjoining Carnarvon National Park on its western boundary (Plate 128). The area’s close proximity to the National Park’s administration area, together with its setting in the heart of the Carnarvon Ranges rock art environment (Plate 129) made it an ideal location on which to develop a focal point for future rock art studies. Approval was given on 10 November 1981 for the issuing of Special Lease No 44801 over this area. The associated Special Lease Conditions stipulated that:

1. The lessee shall use the leased land as the site for a Rock Art Research Centre and purposes associated therewith.

2. The lessee shall within five (5) years from the commencement of the term of the lease and to the satisfaction of the Minister establish a Rock Art Research Centre on the leased land.

This was the beginning of the Takarakka Rock Art Research Centre, with the main brick administration, archive and residence area completed by 1982 (Plate 130), and the staff quarters soon after (Plate 131). Workshops, additional archive buildings, a darkroom and process camera facilities, power generating and back-up systems ultimately resulted in the creation of a self
sufficient, efficient and totally autonomous research centre. The main office had two work stations, an extensive research library and extensive data preparation areas (Plate 132). This modest and totally privately-funded facility represented the basis of many major research, management and publication projects to follow for the next 18 years.

My employment by Q.NPWS since 1977 had effectively defined my research focus to geographic regions of immediate relevance to my employers, which was the CQSB. This major rock art region lay isolated in an extensive but discrete setting, incorporating a diversity of major topographical features and containing an almost limitless resource of art and cultural sites. Constrained though this may seem in the context of even Australian rock art, this forced focus has, in hindsight, proven to be the invaluable factor facilitating the refinement of my approach to rock art studies. The CQSB offered an unparalleled opportunity to develop recording and analysis processes and testing hypotheses.

Today’s technology permits even the most modest project-specific Geographical Information System (GIS) to show correlations of data instantly and in an almost infinite diversity of correlations. However, in the early 1980s ‘pre-computer’ era, perhaps the most daunting dilemma lay in the challenge of developing some process capable of converting large amounts of diverse data into formats conducive to visual assessment.

A visual overview of the region of interest was created by overlapping and gluing all the 1:250,000 topographical maps of the CQSB, into a single, massive, mosaic. This mosaic was mounted on a huge pinboard, the area of which covered an entire office wall (Plate 133). Overdrawn onto this mosaic as the ‘primary data layer’ were the pertinent Aboriginal tribal boundaries, as identified by Tindale (Tindale 1974).

This created an essential overview of the 86,000 km² primary research area, showing the natural topographic features which may have served as arbitrary boundaries for the prehistoric cultural groups. The most logical natural features were the seven major river systems radiating from this area so frequently referred to as ‘the home of the rivers’, together with the 24 mountain
ranges associated with the primary Great Dividing Range. The addition of tribal boundaries and geological map data began to indicate logical correlations between hypothetical cultural groups and natural features. Even when considered within a national context, the combined elements of the CQSB region offered a unique study environment for determining the relationships between Aboriginal populations and the environment, using the tangible elements of rock art and archaeological evidence as a basis. This mosaic became known as the ‘CQSB Overview’, and represented the invaluable basis on which all survey, recording and analysis was developed, and many hypothesis were developed and tested through subsequent ground proofing.

The approach to sample surveying this extensive region, as listed in the initial AIAS research grant application, was planned and monitored on the ‘CQSB Overview’ wall mosaic. Setting the Carnarvon Gorge base as the arbitrary centre of the research project, the surrounding area of the mosaic was divided up into radiating segments. Each segment was regarded as a unit within the total, and would systematically become the focus of a series of planned field trips which would permit development of an acceptable overview of its site types, art content, environment, geology, natural resources and perhaps individual management and conservation needs. To have considered attempting to locate and record every site in this culturally rich region would have seen the essential overview objective of the project bogged down as a result of ‘data overload’.

As sites were recorded, they were marked on the ‘CQSB Overview’ with map pins, using designated colours for specific site types. Perimeter lines were then created using coloured woollen cord to match the pins, stretching it around the outermost pins, and expanding this as the site data grew. Crude though this may seem in the computer GIS era, it provided an immediate visual overview of multiple ‘layers’ of data, immediately showing correlations between site types with river drainages, geology, believed tribal lands, and even altitude. A cursory examination of the questions in the CQSB recording pro formas (Appendix K) will provide an immediate appreciation of how the site data was also being gathered in a format which would suit future electronic data analysis,
as we perceived it may be required.

At the completion of the first year of the Central Highlands Management Project it was possible to provide a positive report of the progress of the site-recording sampling process:

The objective of the twelve months work has been to attempt to obtain an overview of the distribution, types and problems of conservation of Aboriginal sites occurring on National Parks on areas of national park interest in the central Highlands of Queensland. (Q.NPWS 1980 Report to AIAS: 1)

Recording systems and field procedures became progressively refined, streamlined in implementation, and efficient in process, and the amount of systematically gathered data increased proportionately in both quality and quantity. Some indication of the rate at which this data began accumulating can be seen in Plate 134, where I can be seen with the stacked recording forms and boxes of 35 mm transparencies resulting from the 1982 field season only. The Takarakka Rock Art Research Centre Archive expanded accordingly, with increasingly efficient archiving and retrieval systems developed to deal with this body of hard copy material.

Unfortunately, a disaster struck in 1988, ripping a massive limb off a nearby tree, and plunging it 25 metres down across the office. Some indication of the resultant damage can be seen in Plate 135 and Plate 136, where the brick building was literally cut in half, with massive damage to equipment, files, electronic data, and archive transparencies.

Refinement of CQSB Recording Techniques and Field Surveys

Increasing the efficiency of recording techniques and data-handling systems has been (and remains) an ongoing process of experimentation and trial. Some comment on some of these processes may assist future recorders in pursuing processes already trialled.
In the early stages of the recording projects, predating Global Positioning Systems (GPSs), and prior to the availability of 1:100,000 topographical maps for the research areas, the accurate marking of site locations represented a very challenging undertaking. Only when one attempts to relocate a small site in very rugged terrain does one appreciate the absolute necessity of attention to precision of location. The 1:250,000 topographical maps proved totally inadequate for marking accurate locations in the CQSB environment; I was forced to use aerial photographs to obtain any acceptable level of accuracy. However, a major problem involved the process of accurately marking site locations in an archive environment for long-term reference. Ongoing experimentation resulted in my developing a system which proved the most effective for the available resources of that era.

In **Plate 137** the base site location detailing apparatus is shown, where the pertinent air photograph is sandwiched between a section of a non-reflective picture glass and a plywood backing board, retained by four bulldog clips. A pre-cut white cardboard overlay mask, with a 100x100 mm aperture, is used to focus on a definable area of terrain (a 100x100 mm area of an air photo shot from a 25,000 ft flight). Two slots permit a strip of paper to be mounted through the lower section of the overlay mask. On this is written or typed:

(a) the designated site number
(b) the air photo number
(c) the air photo run/map details.

Permanently on the overlay map is an arrow indicating north, and a clarification that the aperture area is a constant 100x100 mm. A small, sharply pointed plastic arrowhead is used to indicate the exact location of the site, then the mask moved around to insure a number of very distinctive topographical features are visible in the masked ‘window’, to assist positive correlation to topographical map details.

With all components firmly sandwiched beneath the glass, a camera suspended vertically from a tripod permits aperture/exposure combinations to
maximise the depth of field and ultimate topographic detail in the final archive negative (Plate 138). The created site-location negative remains archived for posterity with the pertinent site’s other black and white negatives. Prints from the negative are mounted with the hard-copy site files, and contain all essential relocation details in a single readily-transferable unit, appearing in the format shown in Plate 139. A three-page explanation brochure on operating this system was prepared and submitted to colleagues involved in recording at that time (Appendix R). This was found to be a very efficient site location process, and I believe it remains worthy of consideration for archival use of any rugged terrain sites, but using a modified current technology process of digitised 1:50,000 topographical segments with GPS detail and allotted site number overlayed digitally in Adobe PhotoShop. This may be considered excessive by office-based archivists. However, those having experienced the frustration associated with attempting to relocate old site locations, often having only GPS references of questionable precision, will welcome any possibility of additional recorder-defined location in relation to topographical features to supplement these, at times, insufficiently-precise GPS reference details.

As technology progressed, I attempted to convert to the Global Positioning System (GPS) devices as they became commercially available, with some of the progressively used models shown in Plate 140. The first model used in Kimberley was a Trimble Ensign model (shown in the upper left of the plate) where data had to be manually transferred to the computer. A range of Garmin models of similar processes led to the Garmin 50C (upper right of the plate) which required a very complex series of after-market leads and converters to permit problematic downloading of data. The Garmin Map 60C (lower left of the plate) was the first model which we were able to use successfully at cruising speeds in the Robinson helicopters. This model claimed USB downloading capabilities, but it required a year of upgraded drivers before this was satisfactorily possible. In 2005, a BT338 GPS was first used (centre lower left of plate), and this miniature cordless device was mounted to the inside of the helicopter bubble with my fabricated mounting bracket to transfer data in real time to the Apple computer by the small Blue Tooth receiver (on the yellow card in the plate). In spite of the claims of
efficiency and accuracy with GPS systems, I have experienced many failings and, with some models, wildly incorrect data. Only from the Garmin Map 60C model forward would I consider the GPS option sufficiently reliable and accurate to accept as the primary location process for site recording. This system is currently being adapted into a Takarakka Standard Global Information System as the next stage of multi discipline analysis of overlaid layers of data.

During my early years of field recording I attempted to use exclusively medium format cameras, shooting in 6x6 cm transparency and black-and-white mediums (Plate 141). My personal SL 66 Rolleiflex systems were supplemented at times by loaned Rolleiflex equipment from the AIAS. Using the very heavy and extremely sensitive equipment under the demanding, dusty rock shelter conditions attracted a very high and expensive maintenance schedule. The turn around time on the highly specialist repairs was frequently lengthy, and attempts to keep recording with failing equipment at times required drastic field stripping of cameras in the sites, frequently equipped with only a Boker stock knife as a tool kit (Plate 142). Future researchers working with the photographic records of this era are unlikely to appreciate the difficulty, frustration and cost associated with attempting to maintain the highest possible levels of image recording under the field conditions of the 1970s and 1980s.

Expansion of Rock Art Recording to Incorporate Major Queensland Sites

Historic Sites Section

As the value of my recording and report work became increasingly recognised as a useful tool in national park management and planning, there was increased interest from Rangers in many scattered areas of the state for 124
assistance and advice regarding cultural resources existing in their respective areas of responsibility. My frequent requests to head office for assistance and logistical support in complying with these requests received increasingly positive hearings. Ultimately, I was requested to prepare submitted publications as to how I thought my systems and broader parks policy could realistically be advanced to an efficient section servicing requests on a state-wide basis. The reports represented a method of presenting a structured data assembly and plans for future needs for the protection and maintenance of recorded sites.

Computer technology was becoming increasingly accessible at a public level, and although my experience had largely been with university mainframe systems, the potential was indisputable, and appeared to represent the future of archiving and analysis with limited manpower and resources. In 1983 I prepared an internal submission to Head Office titled “Need for Service Computer–Aboriginal Site Recording Program” (Appendix S), which in its modest form now marks the turning point of my career in recording and analysis. Ultimately a Kaypro 4 system was provided by the Service, and the early forms of the Takarakka Data base and Archive began to develop on a slow and largely trial and error basis.

A second submission was prepared titled “Need for Reassessment of Service–Cultural Resource Management: A Q.NPWS Historic Sites Section”, and submitted on 14 June 1983, (see Appendix T). This submission received strong support from both Head Office and the Regional Directors, and was soon accepted and the basic framework acknowledged. A position for a Historic Sites Officer was created as a Public Service Position, and after the due interview process I was successful in obtaining the appointment, while continuing to operate the state-wide operations from my Research Centre at Carnarvon Gorge.

To inform the Q.NPWS regions of the objectives of the newly formed Historic Sites Section, and to seek involvement of field staff in attaining a working inventory of state-wide cultural resources, I organised a series of Historic Sites Workshops around the state. My personal interest involved the
urgency associated with locating and obtaining records of arguably the most naturally endangered of all Queensland rock art forms: those associated with the islands and tropical rainforest areas. A basic 18 point single sheet pro forma was created to facilitate field staff providing basic levels of site information for follow up recording, and this was titled “Historic Sites Survey: Preliminary Report” (Appendix U).

This approach was well received, and attracted significant feedback from field staff and Marine Parks Rangers, establishing a very positive and highly productive introduction and acceptance of the new Historic Sites Section. Enthusiasm displayed by the Marine Parks Rangers for assisting in developing a cultural resource inventory covering their area of management resulted in the preparation of a three-page recording pro forma titled “Island Survey - Historic Sites” (Appendix V). Feedback from National Parks field staff across the state indicated that many individuals were interested in assisting with primary information regarding discoveries made in the course of their duties, but had no knowledge of site recording, and were reluctant to agree to filling out any level of subjective detail under these conditions. In order to maximise the potential at even the most modest level of the growing number of QNPWS staff in the field, a very simple one-page ‘Primary’ recording pro forma was developed and distributed (Appendix W). This most basic form required no site or cultural knowledge, and required only the listing of location and tenure details which all Rangers had reputedly been taught in initial employment training. Ideally, the more adventurous Rangers would attach other recording forms, sketches and summaries to the ‘Primary’ sheet, but at very least it gathered location detail in a consistent and data-entry-ready format to facilitate my visiting the site when working in the associated region.

As the structure and content of my database began to expand, the scope of computer manipulation of data became apparent. I decided to investigate processes which may take advantage of this developing technology to advance recording to the next level. This involved undertaking detailed analysis of specific motifs, initially targeting recurring distinctive motifs which, at times, occurred only in one time period of one discrete geographic art region. The 23

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question pro forma’s options permitted gathering detail on colour, application technique, proportions, superimposition etc. “The Net Motif” was produced in 1985 as the first in the “Rock Art Detail Survey” series (Appendix X). An accompanying advisory use sheet was prepared with the introduction of the “Specialist Motif Recording Form” series (Appendix Y) explaining that their use was to be in conjunction with pro formas A and AII, which were considered the ‘absolute bottom line’ of recording.

Field staff interest in the state-wide recording program increased rapidly, to the degree that calls regarding processes, and the provision of feedback from submitted recording detail, began to take up large amounts of my time. Suggestions from Jim McEvoy of the Head Office executive brought about the planning of a series of regional workshops to explain the processes of preliminary recording to field staff. To provide a reference base and illustration of preliminary recording procedures, I prepared a 19-page Historic Sites Handbook (Appendix Z), which was printed and distributed to the National Parks offices.

Information provided by the Historic Sites Recording pro formas assisted in locating many significant sites along the Queensland coast and island environments, leading to my submitting numerous illustrated region-specific reports on findings to Head Office, including those on Hinchinbrook Island, Fraser Island and Dunk Island.

Increased flow of data, images and recordings to my Takarakka Archive required ongoing re-evaluation of archiving and retrieval systems, with the optimistic hope that developing computer systems would simplify the increasingly labour-intensive data-maintenance requirements. A system of cards and forms were developed in the mid 1980s to introduce order to the growing system, and to prepare records for the ultimate transfer into computer systems (Appendix A).

An Era of Expansion of Recording and Conservation Responsibilities

The first half of the 1980s is a period which arguably represents my
worthiest contributions to cultural resource conservation and management. As my field and archiving systems became increasingly efficient, the increased inventory of resources and ability to make valid management and conservation recommendations increased exponentially. To better understand the environment in which this process was able to develop so rapidly it is essential to understand the changes taking place in Australia at that time. The period of affluence which was developing in the late 1970s saw a rapid change in the lifestyle of the average Australian: more leisure time accompanied by increased disposable capital. Leisure time at this period of Australian development was synonymous with television. The astute commercial operators driving the expanding television industry were quick to recognise a theme which held increasing fascination to a broad sector of the new watching market—a developing Australian ‘dream’ of family adventures and experiencing the sun, surf and great outback. The richness of Australia’s unique scenery and wildlife provided limitless potential for documentary-type programs, with television productions cleverly promoting a series of individuals to the status of household names in order to ‘sell’ this new product. Names such as Harry Butler, The Leyland Brothers and the more colourful Alby Mengles are synonymous with this ‘Great Outdoors Era’. Waning stars and themes have been quickly replaced by Les Hiddens (the Bush Tucker Man), Steve Dan, and most recently the controversial Steve Irwin (the Crocodile Hunter). Individuals who have been promoted to market the ‘Australian Outback’ image at an international level have included Paul Hogan (Crocodile Dundee), and more recently the charismatic Ernie Dingo. This potted history is significant in the history of cultural resource management, conservation and interpretation in Australia.

The Commercial Promotion of the Australian Outback and The ‘Great Escape’

The formerly-conservative ranks of suburbia increasingly sought its share of the media-promoted image of freedom and mobility. The tourism industry blossomed to service the expanding needs, in turn providing greater political incentive for QNPWS to present and preserve more resources to serve this rapidly-expanding industry.
In 1982 I undertook a preliminary survey of the Mitchell and Palmer rivers of the limestone-dominated region of far north Queensland, (Q.NPWS 1982) investigating the range of Aboriginal site types with regard to significance in national park proposals for the region. A preliminary summary of the site types and art styles published in 1984 provides the first published descriptions of this previously little-known rock art region (Walsh 1984).

Public mobility resulting from the four-wheel-drive explosion was bringing increased pressure on Q.NPWS to provide more comprehensive information on the rock art and historic sites, particularly in high-visititation destinations such as Carnarvon National Park. The original interpretive brochure was only ever seen as a primary education tool, and my reports and recommendations had promoted the concept of Q.NPWS initiating a user-pays secondary level of educational publications. My recommendations were that Q.NPWS should investigate the compilation of a target-specific form of commercial publication. Publications prepared by Q.NPWS could utilise the expertise of their research section, and the layout and publications skills of their drafting section, to compile commercial volumes in keeping with the government’s developing user-pays policies. Such a direction required an initial investment, largely of existing staff time, but guaranteed that the public not only received quality information presenting Q.NPWS’s ethics and values via a process in which visitors virtually paid for their own education.

This concept was accepted in principal, and I proceeded to prepare my first commercial publication for this role, titled *The Roof of Queensland*. This colour illustrated book covered the pertinent details of the CQSB geography, geology, history, Aboriginal rock art and National Parks, published under the copyright of the Queensland Government. This became known as the “Visitor’s Bible” to Carnarvon Gorge and had a wide commercial distribution, receiving a gold seal of recommendation from the Australian Conservation Council. In 1985 the Royal Geographical Society of Australia honoured me with the JP Thompson Foundation Medal for “Recording of geographical knowledge through photography and publication” as a result of the educational publication. The public interest in this book is evident in the fact that its
original 5,000 print run was followed by a further 5,000 illegal forgeries, and, at a later date, by an additional 4,000 forgeries from a different source.

This decade represents arguably the greatest and most revolutionary period in Queensland cultural-resource management, recording, conservation and presentation history, and I believe many revolutionary concepts were implemented, and an attempt was made to lay down a clear foundation for the future. As such, it warrants discussion of some of the key projects, objectives and resource-management techniques which resulted from this 'golden era' of cultural resource management.

**Kenniff Cave Graffiti Restoration**

As the Q.NPWS expanded its estate within the CQSB, land sections believed to have high content or unique examples of Aboriginal cultural heritage attracted increased interest, and subsequently, additional investigation. A major advancement was achieved for the goal of protecting archaeological sites when Mt Moffatt station (app. 90,000 ha) had been purchased by Q.NPWS and set aside as a national park on 19 December 1979, largely because of its Aboriginal site content. On 6 March 1982, lands of the recently-purchased Mt Moffatt Station were gazetted as an addition to the existing areas of Carnarvon National Park, making it a total of 217,000 ha. This area now contained some of the least known and most spectacular gorge and escarpment environments of Queensland, and an infinite number of diverse forms of Aboriginal sites.

My years of earlier field work had permitted me to establish a working understanding of the basic location and distribution of various site types, and in 1981 I made an initial submission to Q.NPWS to gazette a large area of the western sector and Chesterton Range areas of Mt Moffatt NP as a 'Restricted Access Area'. This was intended as an interim management tool to assist in the control of public and official access to an area known to contain a very significant amount of sensitive and fragile sites. This was at a time when the Q.NPWS was attempting to implement major management and conservation strategies on one of Queensland's most important areas of sensitive Aboriginal
sites. A further detailed submission on 4 May 1982 presented a recommended manageable boundary defined on aerial photographs. This proposal assisted greatly with protection during the early years of transition to a national park.

Awareness of the responsibility associated with this dramatic increase in cultural resources on the National Park estate; together with increasing media coverage of rock art matters and the subsequent increased public interest meant that issues concerning management and conservation strategies received a more respectful audience. Mt Moffatt station had long been publicly known as the repository for spectacular Aboriginal rock art sites, as well as having Australia’s first scientifically-confirmed Pleistocene human habitation site. Mulvaney’s excavations of the early 1960s had firmly established the Kenniff Cave site on the world archaeological map (Mulvaney 1965). In spite of its remote location, Kenniff Cave had received considerable unsupervised visitation dating back to the 1902 saga associated with the infamous Kenniff Brothers, who reputedly had used this cave for shelter (Walsh 1999:89-100). The extensive wall panels of rock art had suffered badly from charcoal scratched graffiti, rapidly becoming a major conservation dilemma as Wet season seepage progressively bonded this defacing to the rock surface.

Although the graffiti despoiling the Kenniff Cave art panels had been done prior to Q.NPWS acquiring the area, media presentations incorporating the Kenniff Cave history soon drew public attention to the need to restore and conserve one of Australia’s globally significant archaeological sites.

Bidjara Aboriginal Elder Fred Lawton was taken to Kenniff Cave and his involvement was sought in the preparation of a management plan for this important site, the entrance to which is shown in (Plate 143). Panels of art were closely inspected and any non-historic graffiti was listed as appropriate for removal (Plate 144). Lawton was able to identify the names and history of several Aboriginal trackers and stockmen whose graffiti was considered of arguable historic significance and listed to remain intact at this stage of conservation planning.

In my role as Q.NPWS Aboriginal Site Recorder, I developed a joint proposal with David Lambert, then Site Conservation Officer with NSWNPWS.
The proposed project involved restoration of the Kenniff Cave art panels, and minor restoration assessment of other publicly accessible sites in Carnarvon National Park. The main focus was graffiti removal on the long-defaced art panels of Kenniff Cave (Plate 145), with four days spent on the project in April 1982 (Plate 146). An example of the results can be seen in Plate 147 in comparison to its vandalised state in Plate 145. Limited restoration was also undertaken on The Tombs site (Plate 148), including the vandalism which had resulted in my successful 1970-prosecution action. During the four days' practical restoration work on the Mt Moffatt sites in April 1982, I learned many restorations skills which proved invaluable in my subsequent years of site recording, management and conservation responsibility. A report on the successful project was prepared for QNPWS, titled “Report on ‘Kenniff Cave’ graffiti removal - April 1982”. A media article titled “Kenniff Cave Restored” also appeared in the Western Star on 14 May 1982.

As a result of the unrestricted entrance to the major gallery of Kenniff Cave (Plate 143), a bullock had wandered into the dark recesses and died, its body lay in a slowly-mummifying state in front of the art panel for over a year. I prepared a submission to QNPWS to have immediate measures undertaken to temporarily fence off the Kenniff Cave cavern, in a measure sufficient to control feral animals and unauthorised visitors. These protective measures were completed by December 1983 (Plate 149). The secondary entrance to the cave had a grill mounted into its sizeable aperture (Plates 150 and 151).

This was intended only as an interim measure to protect this very important site, to serve until such time as funds could be acquired to develop it with a proper boardwalk system. There was no intention to restrict public visitation, and signage advised visitors at the Park boundary to call at the Ranger Headquarters and collect a key to gain entry to the site.

Another serious management problem which had to be dealt with during this transitional period of national park acquisition involved feral livestock, both cattle and horses. After a century of grazing in the Upper Maranoa and Upper Warrego River drainages, livestock in this mineral deficient environment had developed practices of climbing the talus slope to the escarpment base in
search of minerals associated with the weathering sandstone surfaces. Rock art sites in certain mineral-rich seepage areas had unfortunately become the focal point of regular stock visitation, with disastrous effects. For political reasons, the de-stocking of the former Mt Moffatt station area was a gradual process, with extended token grazing rights maintained over gazetted national park areas, even though the original 4,500 head of cattle had been removed from the lease. This policy necessitated cultural resource management practices incorporating provisions to deal with issues involving introduced feral animals on gazetted conservation areas. Some appreciation of the magnitude of the site management problem may be gained by the fact that during 1981-82 alone there was a confirmed total of 2,170 brumbies (feral horses) shot on the lands.

In Plate 152 one of the Hereford cows still roaming the area can be seen licking the rock art panel in a quest to obtain minerals deposited by ongoing leaching processes. This little-known conservation dilemma may initially have had humorous overtones when discussing cows and horses ‘eating’ the art sites, until it became obvious both of the gravity of the situation and the rapidity with which site loss could take place. In Plate 153 the surviving section of a once extensive art site featuring deeply engraved vulva motifs can be seen. This site was monitored over a nine-year period of ‘surface-licking’ by brumbies to determine the time frame associated with total site loss. In many areas of the Mt Moffatt section of Carnarvon National Park the feral horses and cattle had frequented galleries favoured for mineral-licking with such regularity over a sufficient time frame for their hooves to have carved mini-roadways up to the sites, as in Plate 154. This alteration of the fragile site slopes resulted in escalating erosion, accompanied by loss of archaeological integrity, and in some instances, massive damage to the associated environment.

I had personally commenced stock fencing of particularly endangered sites in the 1960s (see Plates 18, 20 and 21). In view of the official policy of progressively phasing out the grazing of introduced species on gazetted National Parks, I requested permission to extend site-fencing as an interim management measure to selected high-risk sites. Permission was granted, but
on the understanding that no funds would be available for materials. An appeal to a number of CQSB graziers who had long been supportive of my research resulted in donations of Toyota loads of second-hand netting, wire and star pickets. Park Rangers freely gave their personal time to this cause, and by December 1982 these interim conservation measures were completed on such important sites as Marlong Cave and Kookaburra Cave (Plate 155) and The Tombs.

The media coverage of Mt Moffatt attracted increased public interest, and visitation numbers increased. The Tombs art site became the focus of a public eager to see the amazing full-human stencil, the only known example in the world. Concern regarding uncontrolled public access to a site with such unique artwork resulted in approval to construct a modest boardwalk development to assist with presentation and preservation. In 1983 an application to the Commonwealth Youth Employment Scheme was successful in obtaining a grant of $14,000 to employ two individuals and provide materials for the preliminary Kenniff Cave fencing, and The Tombs boardwalk. Cypress-pine materials were again used, and construction was completed by July 1984 (Plates 156 and 157). Interpretive signs were mounted later, and a general site description sign mounted on the approach by 1990 (Plate 158).

Development of The Tombs proved highly successful, and this site became one of Mt Moffatt National Park's favourite attractions. Unfortunately, the 1990s saw the effects of potential Native Title claimant factions on management and conservation practices. Inter-group bickering over ‘ownership’ resulted in closure of the access track to this important art site, and all public visitation halted. Management and conservation maintenance schedules for the site were halted, with bracken fern and bladey grass quickly overgrowing the now ‘off-limits’ site. A bush fire reputedly swept through the accumulated vegetation, burning the boardwalk structures and ravaging the un-maintained site. This sadly brought an end to the brief era of active conservation and public appreciation of a truly unique art site.

In 1987 an application was submitted to the Australian Institute of Aboriginal Studies Rock Art Protection Program for a grant to assist with a
boardwalk system for Kenniff Cave. My original plans presented the proportions of the cave (Plate 159) with two boardwalk alignment options (Plates 160 and 161), both sharing a common outer-shelter boardwalk plan (Plate 162). When the construction was completed, option number two (Plate 161) was chosen. Interpretation of Mulvaney’s early archaeological excavation work featured prominently in the interpretive signage at the site entrance (Plate 163). Part of the development included a revolutionary concept of providing self-charging automatic lighting sources to permit enhanced interpretation of the basically dark, underground site. Solar-powered battery systems were constructed in a discrete bushland area above the site, supporting a series of subject-targeted spotlights in the site, in turn connected to backlit interpretive signs in the hand rails. Unaccompanied visitors during their inspection could press prominent buttons beside the respective handrail sign, which would illuminate the sign text with backlighting and activate the associated spotlight which highlighted the art panel dealt with in the text. After an appropriate time the automatic switches shut down the power supply. This process permitted high quality information in an innovative and clear process which proved very popular with visiting groups, and I believe represents a work first in prehistoric art interpretation (Plate 165).

Expansion of the Sphere of Site Recording and Management

Success of the CQSB projects involving cultural resource recording, conservation and development attracted increasing interest within the regionalised Q.NPWS, where each of its five regions had its own geographically distinct site types and associated management problems. Initially, requests for reports and comments regarding cultural sites outside the Central Region (which was responsible for the CQSB) were of a cautious and unofficial kind. The first of these region-specific assessments was undertaken by myself while officially on recreation leave, and recommendations were submitted regarding the urgent need for “Basic Conservation Work” in archaeological sites of the area (Walsh 1984).
Two additional areas of rock art becoming subjected to increasing public visitation and displaying management needs were the Lawn Hill area of north-west Queensland and the Princess Charlotte Bay area of far north Queensland. Although the major projects associated with these regions advanced contemporaneously, their history and contribution to the advancement of recording and management strategies will be discussed separately.

Lawn Hill, North-West Queensland - Project Duwadari

A Unique Opportunity to Protect an Undisturbed Site

My first visit to the Lawn Hill rock art region in August 1982 was as part of a personal preliminary study investigating the diversity and styles of regional art bodies. The spectacular gorges and limestone environment have been referred to as ‘Queensland’s Katherine Gorge’ and represent a veritable oasis in a basically hot and arid outback setting—a setting logically destined to hold great tourist attraction.

Negotiations to acquire sections of Lawn Hill station as the nucleus of a new far-outback region national park, added a finite time frame to the need for making management and conservation recommendations for the still-unknown sites. The Lawn Hill situation offered a unique opportunity to develop cultural resource management strategies. Unlike many areas of Queensland’s National Park estate, the sites had, to this time, been afforded a degree of tacit protection by private lessees restricting public access. Without the opportunity of public discovery, the site locations had remained anonymous within the protection of huge tracts of a remote and inhospitable grazing lease. No valid appreciation of the distribution, types or significance of sites was available to assist even tentative plans regarding public access in preparation for the imminent park gazettal. My preliminary 1982 survey had shown a range of definable art
styles, suggesting a sequence spanning a significant time frame, with Peter Hiscock’s excavations of the Colless Creek site confirming at least a Pleistocene human presence in the region. Rich lithic scatters extending across flood plains to extensive mussel-shell middens line huge waterhole systems believed to never have been dry. The nearby Riversleigh fossil fields rediscovered by Michael Archer were already revealing this limestone region to be one of the world’s richest fossil deposits. Collectively, the Lawn Hill region presented an opportunity for archaeology and environmental sciences to unravel the mysteries of humankind’s adaptation to Australia’s harsh and ever-changing environment.

My second brief foray to the area was accompanying Jim McEvoy, Acting Director of Q.NPWS, who wished to personally evaluate the potential and immediate needs of the planned national park. McEvoy’s scientific background as one of the original Q.NPWS executives originating from the Department of Primary Industries research environment made him ideally experienced for such assessments. McEvoy’s ongoing support and commitment to the scientific and conservation aspects of cultural resource management proved instrumental in making the major rock art management projects possible over the next decade.

My submission to Q.NPWS to develop a new approach to Q.NPWS cultural-resource management received approval, with the objective of identifying, assessing and developing for public access a representative selection of sites prior to gazetted. Q.NPWS management had previously been burdened with the legacy of a long history of public visitation to sites preceding official presence. Situations such as the historic dilemma of Carnarvon Gorge National Park had represented management nightmares, where any attempt to curb long-established visitation patterns to, at times, sensitive and very fragile sites, was accompanied by political issues of the traditional ‘park for the people’ philosophy. Lawn Hill provided an opportunity for management to determine a strategy where the public still enjoyed their educational and recreational rights; but not at the cost of risk to fragile or culturally sensitive sites.
Project Duwadari was the name given to the complete Lawn Hill survey, management and development project, which was in the far northern region of Q.NPWS. Extensive planning of each facet of the proposed survey and associated logistics was planned from my temporary Q.NPWS Brisbane head-office base.

In order to undertake a systematic search and survey operation of the proposed park’s rugged terrain in the remaining time, it was necessary to develop a volunteer survey process, which, in modified form, is still continuing with my ongoing Kimberley research. At the height of the subsequent survey there were over twenty individuals in the field, drawn from national park volunteers, public servants from other departments, an Aboriginal Ranger, and a number of enthusiastic Mt Isa-area honorary relics wardens. Several four wheel drives and aluminium dinghies were seconded within the Q.NPWS to transport the team and equipment the three day drive from Brisbane.

Survey Process

A base camp was set up at the south-east entrance of the lower gorge of Lawn Hill Creek, centrally located for survey groups to radiate from into the extensive escarpment approach areas, and close to a launching point for dinghies ferrying volunteer groups upstream. Daily field work groups were compiled of individuals with expertise, skills or local knowledge to assist with the task-specific terrain and associated logistics.

Due to the rugged and largely inhospitable terrain in its virgin state, the extensive waterways of the central Lawn Hill Creek provided the most efficient option for transporting volunteer groups to their commencing points of radiating upstream surveys. Each day, dinghies had to be hauled up and down a natural tufa dam on the upstream end of the lower gorge (Plate 166):

The logistics associated with transporting equipment over rough terrain to remote sites meant that a large amount of valuable daylight time was lost in this way. Aluminium boats were used
where waterways permitted, in an attempt to reduce this time loss.

(Q.NPWS 1985b:85)

Small electric motors had been brought to power the dinghies along the long navigable reaches of the gorge systems, so efficient manhandling of the dinghy at each portage required synchronised group-stripping the craft of motor, battery, and all equipment to be manually carried to the relaunch point and reassembled. On the eastern approach areas, and the southern Louisa Creek areas, drivers transported the daily work groups as close as possible to the survey commencement points by four-wheel-drives. Groups working these areas required some members with four-wheel-drive operation experience in very rugged terrain, and at least one with mechanical skills. There was no radio communication available, and the inherent dangers associated with this very rugged and diverse terrain required careful planning to avoid participant risk, and to have contingency rescue plans in place in case of the unexpected. For these communication reasons we limited the volunteer forays to day surveys only so that there was a constant checking factor.

Aboriginal Elders Involvement and Approval

In accordance with my recording beliefs to seek out and incorporate traditional Aboriginal knowledge in any instance where any may have survived, this practice was maintained with Project Duwadari. The Lawn Hill area was located relatively close to Doomadgee, then the largest Aboriginal community in Queensland, so I sought the assistance of the Elders from the various groups gathered in this community. A meeting was organised with the Deputy Chairman of Doomadgee for 18 April 1984, which I attended, together with Peter Harris (official representative of the Q.NPWS Far Northern Region) and Eric Smith (Head Aboriginal Ranger for the DAIA Archaeology Branch). The Doomadgee community had elected three Aboriginal elders (joongai) as representing the former inhabitants of the Lawn Hill area. These elders were Arthur Peterson (Bibialgee), Jock Pedro (Nardlyyn) and Dinny Pedro
(Wahgardii). Project Duwadari was explained fully, expressing my hopes of involving any Aboriginal elders, and documenting any traditional knowledge, mythology or place names. Although mild interest in the project was expressed, the consistent advice was that little knowledge had survived for the area of interest:

During the recorded discussions all three Joongai were most co-operative, expressing a positive attitude to an interest in the site recording project in operation at the Gorge. All spokesmen were agreeable to the art sites being made accessible to all members of the public, including women and children. Concern was expressed that the artwork should not be touched or damaged by visitors, and objects should not be taken from the area. (Q.NPWS 1985b:87)

Bibialgee had agreed to spend time with us at the survey area to provide any detail regarding place names, identify possibly sensitive areas, and actively participate in recording any information regarding the area. I arranged for Aboriginal Ranger Eric Smith to accompany Bibialgee to insure that there was clear understanding of his information, and full implementation of his wishes. The Pedros had claimed to be too old and frail to participate (Walsh 1984:87):

Arthur Petersen [Bibialgee] was the most physically active of the Joongai, and he later visited the Gorge in the company of Eric Smith to carry out on-site inspections and discussions. At each site being considered for development, discussions were held, and Arthur repeatedly assured all involved there were no restrictions applied to people visiting the sites, and there were no objections to the proposed development. (Q.NPWS 1985b:87)

Some of the most important surviving Aboriginal mythology associated with the Lawn Hill survey area involved the presence of the Rainbow Serpent, known locally as Boodjamulla, where caution was urged by Bibialgee to
properly introduce the members of the survey team to *Boodjamulla*. *Bibialgee* took a small twig of green leaves, wiped it under both his armpits to capture his sweat scent, which was known to *Boodjamulla*, and then tapped the head and shoulders of each team member with the ‘scented twigs’ to transfer a known scent prior to his formal introduction of us to *Boodjamulla*:

Members of the group were introduced by Arthur to the *Garra* area and *Boodjamulla*, the Rainbow Serpent, which lived in nearby *Luluwalla* waterhole. A brief ceremony involved the chant of certain lines and terminated by Arthur throwing a stone into the waterhole. (Q.NPWS 1985b:87)

Having properly introduced all team members to *Boodjamulla* (Plate 167), *Bibialgee* assured us that it was safe and acceptable for us to continue with the defined processes of Project Duwadari.

**Recording Project Duwadari for a Documentary Management Film**

I had hoped that through Project Duwadari I would be able to develop a process and standard for Q.NPWS to assess, conserve and maintain cultural resources in an efficient and realistic format which may have it officially recognised as a mandatory part of the process for incorporating all new land acquisitions into to their Queensland estate. In order to document the full process in a mode suitable for assisting training of future management and planning teams, I had urged that the full undertaking be recorded on movie film, and ultimately edited into a detailed training film. While the concept received full support at an executive level, no funds could be obtained. A summary of the process was covered in a subsequent report:

Consideration was given to the long-term value of documenting on film not only the project’s operation, but also the environment of the proposed park prior to any development. Chris Strewe offered his expertise and personal 16mm cinematography equipment on a voluntary basis, to carry out
such work. Tina Dalton of the Service Media Section assisted with sound recording, as well as obtaining additional material and coverage for her section. Interest could not be rallied for support for such a film to collect unique footage, either as a Service archival record of a great park's beginning, or as a documentary. All possible avenues of financial assistance were exhausted and abandonment of this part of the project appeared inevitable. At the last minute the Service Site Recorder decided that this valuable record should be made and paid for it out of his own pocket for all the film stock to be purchased. It was hoped that at a later date funding would be obtained to have the exposed stock processed and preserved as an archival record.

(Walsh - 1985:82)

The filming process was able to record an invaluable historic record of the traditional Aboriginal knowledge and significance of individual areas, where Biblicalgee was taken to the main art sites and his full statements recorded, as can be seen in one of the subsequently developed sites in Plate 168. Full permission and Aboriginal support was documented to allow us to continue the recording work and gain approval to develop the identified sites for unrestricted public access, including assurances that the developments, planned camp ground and administration area would not affect any areas of possible Aboriginal significance. Unfortunately, I personally could only afford to supply and process the significant amount of 16mm colour negative film to processed stage, and funds have never become available to complete the final editing and printing stages of the unique documentation of Project Duwadari.

Having had to attempt to deal with some of the unfortunate conservation legacies associated with un-managed public access to Carnarvon National Park art sites, I sought to experiment with whatever technology may be available to most accurately document the proposed Lawn Hill ‘publicly accessible’ art sites prior to Park gazettal. Scientific publications of the late 1970s indicated that
photogrammetry was a rapidly developing technology which held potential for very accurate documentation of surfaces for long-term conservation monitoring. Research on the possibilities of this technology led to negotiations between myself and the then leading state government authority on the subject of terrestrial photogrammetric surveys:

Advice and assistance was sought from the Department of Mapping and Surveying [DMS] with regard to these specific requirements. Discussions resulted in the development of a very productive joint department working relationship to achieve the survey work. Expert assistance was provided by DMS Staff Surveyor Bill Kitson and terrestrial photogrammist Kevin Jones. Travelling in the DMS vehicle, this team assisted the survey at Lawn Hill from 11-19 September. Both theodolite and photogrammetric survey equipment was supplied by DMS and were used in the recording work. (Q.NPWS 1985b:83)

Theodolite surveys were undertaken of the major sites; such as the Pleistocene deposit Colless Creek Site (Plate 169), in addition to the normal site floor and profile recording. The two main rock art sites were surveyed by the DMS team with the Zeiss Jena UMK 1318/10 terrestrial survey camera (Plate 170). The camera alone was a massive piece of equipment typical of sophisticated pre-digital technology, but the associated equipment and 12 volt car battery for operation (Plate 171) made transportation of the operational unit a logistics nightmare.

On short hauls it was possible to leave the DMS team to transport the complete terrestrial survey camera system by multiple trips through the escarpment base vegetation (Plate 172). Moving the terrestrial survey camera system to distant sites required the orchestrated participation of most of the available survey team members (Plate 173). Loading and reloading the fragile camera system at the pandanus-lined access to dinghy portage areas was a particularly time-consuming undertaking. Reaching and recording one site alone involved 20 arduous ‘man-days’ to achieve (Plate 174) with a recording
technique for which the true worth will only be assessable by future generations.

Detailed photogrammetric coverage was undertaken of the art panels of the “Wild Dog Dreaming” and “Rainbow Dreaming” art sites. Both sites have extensive fragile mussel shell middens associated with them, that at “Rainbow Dreaming” is illustrated in Plate 175. An example of the main panel from “Wild Dog Dreaming” can be seen in Plate 176, with alignment targets in place. Experimentation with various mediums to seek the best contrast for photogrammetric images of the challenging red paintings on red stained rock surfaces resulted in determining that Kodak Aerographic PlusX aerial film and Agfa Gevaert Aviphot Pan 100x18 cm plates were best suited to rock art recording:

This material will prove an invaluable base record against which deterioration, natural or visitor-caused, can be accurately monitored. The true value of this work may not become apparent for many years. (Q.NPWS 1985b:84)

Recording Pro Formas

The original objective of developing a pro forma system capable of representing a base for region-specific variations, permitting analysis and comparison of key elements on a state-wide basis had now been under field testing for some three years. The streamlined pro forma system was by now seen as suitable for this purpose, and Project Duwadari provided an opportunity to test the second stage of this objective: adapting a region-specific element in a manner conducive to multi-regional analysis. Based on the information gained from my preliminary surveys of the Lawn Hill region, I was able to prepare a regionally specific variation of the tried and tested CQSB pro forma system. The presence of extensive mussel-shell middens in the Lawn Hill area added an important cultural factor which is absent from the CQSB sites. An additional form $M$ was developed to deal specifically with the key attributes of shell middens (See Appendix AB):
Recording of individual archaeological sites was approached along the same lines as the method developed and tested over years in central Queensland by the Service Site Recording Section. A computer oriented data-collection form was modified to cover the different facets of the Lawn Hill sites and an additional form *M* was designed to record features of the area’s extensive middens. (Q.NPWS 1985b:83)

Another feature common to the art sites but not previously encountered in CQSB was a wide range of post-contact relics, Plate 177. These represented a legacy of historically recent habitation in many of the sites, with European items as diverse as mouth organ remnants to partially-filled oil drums. Much of this reflected the relationship of Aboriginals with the nearby historic Lawn Hill station complex, as the Aboriginals returned at least seasonally to briefly use the rock shelters for traditional habitation. In order to facilitate consistent documentation of this material, an additional pro forma *I* was developed, to cover ‘Habitation/Surface Scatter Sites’ (see Appendix AC). A comparison of the Project Duwadari modified pro forma equivalents of and their CQSB originals can be seen in Appendix D (Q.NPWS 1985b).

During Project Duwadari these recording forms were only used by myself when undertaking the secondary detailed recording of sites mostly located by the field survey groups. This approach was considered the most efficient, as most of the team members felt insufficiently experienced to accept the responsibility for secondary recording and photography. The field survey groups systematically covered their prescribed area, located sites, completed a prescribed list of notes pertaining to site type, basic content, shelter description and direction, relocation details, and ideal photographic time. I then planned my recording visits according to geographic distribution of identified sites and suitability of photographic times.
Experimentation of Portable Computers Under Field Conditions

As I had been able to obtain a Kaypro 4 portable computer system for the Historic Site Section, this was seen as an ideal opportunity to field test a process which I believed would have to be the way of the future with rock art recording. Any form of computer approach to recording was, at this time, considered at best audacious, and the embryonic forms of 'portable' computers available at this time were dominated by the Osborne. Having a plastic case made its bulky form quite unsuitable for transportation under real field working conditions, and I had been successful in encouraging the QNPWS to allow me to trial the Kaypro 4, with metal case and claimed construction to military standards. A very basic database system had been developed to permit field testing of entry and analysis on a daily basis from a field camp. In Plate 178 the Kaypro 4 can be seen under field-testing of data entry by field assistant Helen Clark, with the main Lawn Hill Lower Gorge in the background.

Ironically, field testing showed the Kaypro 4 sufficiently robust to withstand the field use requirements, but it was the medium of the 5.5 inch floppy disks that failed under the heat and dust conditions. In spite of much preparation for the anticipated secondary use of the field-analysed data from the ongoing recording project, this failed first attempt at true field use of digital technology in rock art management resulted in abandonment of its second stage.

Management and Development Processes - Lawn Hill

After completing the survey, the amassed documentation, observations and Aboriginal interviews were compiled, assessed, and a management and site development plan was developed from the Takarakka Rock Art Research Centre base. From the series of sites having potential for 'hardening' processes to safely permit public visitation, two sites were selected. As detailed recordings, site and approach surveys and carefully mapped contours and profiles had been acquired during the survey, it was possible to complete all planning and construction design from the base.

In order to focus public interest and visitation on the more manageable
lower gorge (Luluwulla) area, and attract attention away from the culturally sensitive site areas and major archaeological sites, the selected public sites were in relatively close proximity, as shown in the site management plan map (Plate 179). Walking trails were planned in a process to guide visitors through an easily-managed course, passing optimum viewing points for major natural features around the Island Stack formation (Garra), with seating points encouraging pauses to appreciate these aspects of the spectacular environment (Plate 180).

The Rainbow Dreaming site, featuring large bichrome paintings interpreted by Aboriginal informants as Boodjamulla, the Rainbow Serpent (Plate 176), had its approach slopes covered by a massive, but fragile, mussel-shell midden, requiring additional protection from inadvertent damage by pedestrian access. A boardwalk plan was developed to incorporate a long sloping access ramp, so that the shell masses remained untouched (Plate 181) and became a significant feature in the interpretive signage. A variation of this shell midden over-walk concept was also used at the main shelter in the Wild Dog Dreaming site, (Plates 182, 183 and 184). The completed over-walk had thin concrete overlaid walking tracks on its approaches to minimise the ever-present dust threats from concentrated pedestrian traffic on the dry, decomposed limestone soils (Plate 185).

Wild Dog Dreaming consisted of a large tunnel shelter with two entrances, where floor deposits remained undisturbed with their scattered prehistoric and historic artefacts, providing an interesting setting for multiple aspects of cultural and archaeological interpretation. The site setting presented significant challenges in developing a plan that permitted optimum visitor visibility of the site contents while insuring no risk of disturbance. The final combined staircase and viewing platform design filled all criteria (Plate 186), with the elevated rubble slope requiring besser block piers to support the viewing platform (Plate 187) which was constructed in a manner which permitted it to blend in with its natural environment (Plate 188).

The final report included a list of recommendations for development, park extension and research. Further recommendations were listed for ongoing
site management and ongoing site maintenance as guidelines for Park Rangers responsible for day-to-day supervision of the sites. (Q.NPWS 1985b)

The final detail of Project Duwadari—mounting interpretive signage—was completed only hours before the official opening of Lawn Hill National Park in December 1984, bringing to a successful end the first landmark recording and management project of cultural resources in Q.NPWS.

Princess Charlotte Bay and the Flinders Island Group

Far North Queensland Island Art Sites

One of Queensland’s regions of rock art which had long held almost mythic fascination for me was the Flinders Island Group of far north Queensland, and the levels of survey, recording, development and interpretation which I developed during work on this area have had great significance in the ‘bigger picture’ of my lifelong quest. My earliest memories of narrations from journals of Australia’s nautical pioneers remain synonymous with colourful references to rock art discoveries on these little-known islands.

Captain Mathew Flinders is attributed with having made the first documented discovery of Aboriginal rock paintings in Australia. This discovery was made on 14 January 1803 on Chasm Island off the north-east coast of today’s Northern Territory, during his momentous 1802-03 voyage which circumnavigated the continent (Walsh 1988:1). Neither Flinders’ description of artistic technique nor subject matter indicate a spectacular form nor artistic rendition:

In the steep side of the chasms where deep holes and caverns, undermining the cliffs: upon the walls of which I found rude drawings, made with charcoal and something like red paint upon
the white ground of the rock. These drawings represented porpoises, turtles, kangaroos, and a human hand. (Flinders 1814:188)

My fascination lay with the second discovery of rock paintings in Australia, made by Alan Cunningham, better known for his botanical expertise associated with exploration of inland Queensland’s Darling Downs. This incident discovery took place during a voyage on which Cunningham accompanied Captain Phillip Parker King on his hydrographic surveys of the Australian shoreline, which represented an extension of Flinders’ earlier invaluable coastal survey (Walsh 1988:1).

During June 1821 Captain King’s two vessels, the Dick and the San Antonio, visited Princess Charlotte Bay (PCB) and anchored in the Flinders Group of Islands. On 22 June Alan Cunningham and Mr Montgomery sailed across to Clack Island in the ship’s boat, where they made a large shell collection. It was during this visit that the wealth of rock art was discovered (Walsh 1988:1). Captain King’s description of the PCB rock art is little more inspiring than that of Flinders some 18 years earlier:

As this is the first specimen of Australian taste in the fine arts that we detected in these voyages, it became me to make a particular observation thereon: Captain Flinders had discovered figures on Chasm Island in the Gulf of Carpentaria, formed with a burnt stick; but this performance, exceeded a hundred and fifty figures, which must have occupied much time, appears at least to be one step nearer refinement than that simply executed with a piece of charred wood. (King 1837:27)

With Trezise’s much later descriptions of the nearby Laura region’s spectacular large paintings, there was the hope that the little-known regions of the Princess Charlotte Bay hinterland may hold undiscovered forms of the colourful Quinkan style paintings. My first trip to investigate this possibility was in 1979, travelling to the Lakefield station area, visiting Jane Table Hill
and adjacent range areas bounding Cape Melville and the Princess Charlotte Bay. Although few art sites were located during this brief exploratory foray, the possibility of reaching the elusive Flinders Islands via this approach became a reality.

From 1979 I systematically gathered every reference to rock art or archaeological sites in the Coen to Cooktown hinterland area and the associated continental islands. This initially was part of my quest to ascertain the place and relationship of the CQSB rock art within the bigger arena of Queensland, and ultimately within a national perspective. The first stage was to identify occurrences of rock art, as more of Australia lacks evidence of rock art than has art sites. The second stage planned was to undertake preliminary surveys of a sample of identified sites to permit arbitrary divisions into broad definable groupings, based on geographical distribution or stylistic criteria. The third stage was to undertake focussed regional recording and analysis to establish regional rock art sequences to which time frames and environmental factors could then be established.

The early 1980s marked the beginning of major public mobility in far north Queensland, arguably a flow-on of the ‘outback rediscovery’ trend which had blossomed a decade earlier among the more densely populated areas in the south-east of the state. The major effects this trend brought to the protection and management of cultural resources has already been discussed in the “Pioneering management and interpretation of rock art” section. Cape York became increasingly promoted as ‘the last frontier’, which was applicable only if viewing Australia from a very parochial east-coast perspective. However, the pressures resulting from the urban adventurers began rapidly changing the integrity of the Cape York environment forever, both on land and at sea.

Much of the less-populated areas of Cape York north of Laura were considered ‘untamed tiger country’ where urban myths of lawless activities and eccentric recluses were rife, and stories persisted of night activity of trail bikes and light aircraft at abandoned wartime air strips, and even natural clearings. Tracks in this very remote and normally inaccessible hinterland region
indicated that sites containing rock art and very sensitive cultural material were being illegally visited, and in instances, interfered with.

Management of the huge tracts of this recently-gazetted Lakefield National Park area was difficult at best, and the only immediate option appeared to involve increasing the legal capacity to pursue and prosecute any evidence of trespass. On 19 February 1983 I commenced formal action within Q.NPWS to have Jane Table Hill and its surrounding landscape declared a ‘Restricted Access Area’ under the National Park legislation. This process was subsequently sanctioned, and added demonstrably to the capacity of local Q.NPWS Rangers to pursue instances of intruders in this area. Evidence of activity around the site areas progressively ceased and an acceptable level of site protection was again attained.

Simultaneously, management problems were developing with art and burial sites on the adjacent off-shore islands, a number of which were part of the Flinders Group National Park. The remote ocean settings necessitated access by boat, and as the closest Q.NPWS regional base was in Cairns, the combination of suitable boats and skippers for the long trip made site supervision an impossibility. An even greater management dilemma lay in the fact that there was no official knowledge of the site locations, types or concentration.

Associates in southern institutions had been providing details of site information coming to their attention from well-intended individuals returning from far northern cruises. Eventually this was accompanied by the donation of a section of very fine basketry weaving taken from a cave burial site by a visiting yachtsman. On 21st May I submitted a Q.NPWS internal report on the rapidly deteriorating situation of safety for cultural resources on island National Parks, and requested permission to attempt a preliminary survey trip to the islands to undertake a first hand assessment of problems and management options.

While addressing the dilemma, I received support in principle from Q.NPWS executives, but there were certain inter-departmental politics which, at that time, complicated any action. The only acceptable option was for me to
take recreation leave and undertake the unofficially sanctioned trip on non-
government time. Subsequent to negotiating assistance from Lakefield
National Park Head Ranger Ron Teece, this survey was undertaken between 27
July and 10 August 1983, with Dana Kelly accompanying me as field assistant.

With optimism bolstered by unparalleled good fortune we transported a
four metre aluminium dinghy through a torturous series of semi-jungle tracks to
the shores of Princess Charlotte Bay and set sail.

During the days of undertaking the site searches over the rugged terrain
of Flinders and Stanley Islands, we located a range of site types, indicating the
area was in fact far richer in rock art and archaeological sites than could
possibly have been anticipated. Burial sites containing organic artefact material
were also located (Walsh 1984, Plates 20A to 24A). Several days camping at
Dart Spring provided an invaluable appreciation of the remarkable number of
yachts which were visiting these islands and, frequently, a number of the
unprotected sites.

During this visit I undertook recordings of all sites located, which
included the major galleries of Ship Shelter, Flinders Shelter and Endaen
Shelter. As the CQSB pro forma in its unmodified form was unsuitable for this
vastly different art body and environment, the recordings were written and
drawn into a field notebook (Plate 189) and were later redrawn into the
permanent archive site files. As the diversity of form and colour present in the
rock art indicated potential for analysis in regional stylistic grouping surveys,
preliminary recording tables were created, relating recurring motifs to colour
and stylistic characteristics (Plate 190). This preliminary assessment format
was continued on adjacent mainland areas after leaving the islands. The
mainland area had been arbitrarily divided into three definable geographic
regions for the purpose of preliminary comparison: Cape Melville; Jane Table
Hill; and PCB (see Plate 191).

An important objective of this rather ambitious preliminary survey had
been to reach Clack Island and assess the rock art potential and diversity (Plate
192). Each attempt at crossing the long ocean stretch to Clack Island in the
little dinghy was thwarted by heavy seas. In desperation, I sought the
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assistance of the operator of the trawler *Cest-la-vie*, which had come in to moor overnight in Owen Channel. The skipper’s interest in the project resulted in his towing our dinghy out to the Clack Reef barrier, but seas remained too rough to make an attempt, and reluctantly the objective had to be abandoned. Concern for the naivety and inexperience exhibited by our cavalier approach to such an open-ocean foray in such an ill-equipped and unseaworthy craft saw the skipper tow our dinghy back to Bathurst Heads (Plate 193).

I visited Cooktown hospital to spend lengthy discussions with Johnny Flinders (jnr), the son of the original sorcery artist who had attracted attention to the significance of Clack Island. I recorded as much detail as Johnny Flinders could provide about the art and his father, and sought his permission and approval to attempt further survey and recording work on the islands. He was very supportive of any effort which might document the art and history of the islands.

The subsequent report on the observations and recordings made during this first survey aroused awareness within Q.NPWS of the extent and sensitivity of the sites existing on Q.NPWS estate within the general PCB area. Reports of increased public visitation to the region, accompanied by published directions of site location details in a prominent east coast cruising book resulted in a further investigation project in June 1984. The Marine Parks Division of Q.NPWS had arranged the opportunity for myself and a field assistant to accompany their members on a flying visit to the Cape York area. Their survey was to extend from Cairns to the tip of Cape York, using a chartered Grumman Mallard seaplane to permit their scientific group to land and inspect the most remote and otherwise inaccessible marine environments. This unconventional, and normally prohibitively expensive, mode of transport offered possibilities for overcoming problems associated with the open sea crossing to reach Clack Island. Plans involved dropping us on the island, allowing us two days field survey time, then picking us up on their return flight. This plan was not without a risk factor, as the unpredictable ocean conditions surrounding Clack Island were well known for thwarting boat access, and could easily stop the seaplane landing to pick us up, large though the aircraft was. The total absence of any
water source on this small, isolated, rocky island posed a very significant concern if unavoidably marooned for more than a few days.

When the seaplane reached PCB, the seas were of their usual less-than-ideal standard, and after several observation passes the pilots considered there was only one area where the large amphibian may be able to venture sufficiently close to the surrounding reef for us to disembark (Plate 194). After an ocean landing, the large amphibian taxied through the swell to various angles in the lee of the island, but with no hope of attaining the objective. The obsessive pursuit of recording the Clack Island rock art was, by this time, beginning to seem an unattainable objective.

When the Mallard floundered out of the white-capped swell, it was able to land in the sheltered Owen Channel corridor of the Flinders Islands, and permit us to get ashore on the small sand beach of Apa Point on Flinders Island (Plate 195). Over the following two days, Dr Athol Chase and myself were able to circumnavigate Flinders Island, locating the burial cavern which was becoming the increasing focus of uncontrolled yachting visitation. A number of other art sites were also located and recorded, providing a much better understanding of the recording and management needs of this area.

A major illustrated report on the findings to date was prepared and submitted to Q.NPWS to provide an appreciation of the urgency surrounding management of unprotected cultural resources in the PCB area (Q.NPWS 1984c).

**Preliminary Survey of the PCB Islands**

My subsequent report and recommendations requested the urgent implementation of a process of fully assessing the region’s resources, and undertaking management and conservation actions as soon as the needs had been identified, because the situation at Clack Island had not yet been assessed. The Marine Parks Division of Q.NPWS commenced organising a follow up research visit to the PCB area to assist this objective, and to permit preliminary assessment visits to as yet unvisited islands and adjacent mainland areas. This
was undertaken from 22 to 27 April 1985, using the chartered Lizard Island Research Station research catamaran, the Sunbird (Plate 196).

In addition, I had been attempting to reach the Howick Islands to search for rock art. These were a pair of small and rather uninspiring continental islands made famous as the scene of Ion Idriess' popular 1941 adventure book 'Madman's Island'.

Once again the combined tides and rough seas made a landing impossible from the Sunbird. Landings were made on a number of PCB islands, as far distanced as the Cliff Islands, and preliminary surveys showed a wealth of shell middens associated with an interesting and unexpected range of rock art within such a relatively small geographic distribution.

An early morning attempt was made at Clack Island, mooring the Sunbird at a safe distance north-west of the partly emerged barrier of Clack Reef. A rubber inflatable was used to try to negotiate a landing in the extensive Clack Lagoon, but a combination of misfortune and a significant swell saw the 'rubber duck' impaled on the sharp coral, tearing a huge hole and immediately collapsing one of its three air compartments (Plate 197). With all members straddling the port side pontoon, optimistically holding recording gear aloft, an ignoble but memorable landing was finally made on Clack Island on April 24 (Plate 198). While the Marine Park Rangers attempted emergency vulcanising of the huge tear in the inflatable's pontoon, I had four hours of frantic scurrying around the multiple levels of the small but very rugged island. While the unavoidable constraints of time and tides severely limited this survey time, this preliminary evaluation confirmed the abundance and significance of rock art.

After leaving Clack Island, a brief survey of sections of Flinders Island was undertaken, attempting to locate some of the southern galleries reported by visiting yachtsmen. During this search we were fortunate in not encountering a berserk trawler crewman who had been forcibly marooned on the island for three days by his skipper. A police boat was sent up to locate and remove the violent sailor after our departure. We were able to make brief landings on islands as far north-east as the Cliff Islands, and located sufficient sites to develop an awareness of the art styles and site environments which should be
recorded in regionally specific site-recording pro formas.

Recording the Sites of the PCB Islands

Reports containing additional information gained on the survey were submitted to Q.NPWS stressing the significance of the PCB rock art sites, and identifying priority areas such as Stanley and Clack Islands for art sites, and Flinders Island for the sensitive burial sites. Due to the increasing incidence of uncontrolled visitation, I recommended that immediate plans be considered for a comprehensive survey of the region to establish an inventory of cultural resources. From this survey I hoped to be better informed to prepare a management and conservation proposal for this important area. Logistics associated with a survey covering such a vast area of ocean required the optimum sea conditions for small craft. This effectively narrowed the window of opportunity down to the tropical cyclone ‘build-up’ season, basically November and December. The humidity at this time is almost indescribable, as are the associated hoards of sandflies and mosquitoes, but at times sea surfaces are reduced to an oily calm. If there was to be any hope of reaching the elusive rock art galleries of Clack Island, all considerations for a tolerable working environment had to be forsaken.

An official response to this report resulted in the availability of funding to undertake the specified regional survey. The Marine Parks (Far Northern Region) assisted with the difficult associated logistics, making one of their aluminium survey boats (the Remora) available for the short haul surveys within PCB. An experienced Marine Park Ranger (Gary Selwood) was provided to organise day-to-day operations under my direction, and a qualified skipper was provide to operate and maintain the Remora.

Our survey group was flown from Cairns to the Lizard Island Research Station on the Shrike Commander aircraft used for ongoing surveillance and survey of the northern Barrier Reef (Plate 199).

A prearranged fuel dump had been established at the commercial trawler service barge moored in Owen Channel, and the commercial vessel the Aurora
(Plate 200) was contracted to move our group and supplies to Flinders Island. The survey boat Remora was towed through the open sea areas to our survey camp site at Frederick Point on Flinders Island (Plate 201). The Remora’s aluminium hull construction seemed ideal for such inter-island survey work, where shallow waters and reefs were a constant threat. With twin 115 hp outboard motors, its 28 knot capacity seemed well suited for the high-speed manoeuvring required to outrun the daily squalls which accompanied the ‘build-up’ season.

‘Madman’s Island’ - Howick Island Art

Another attempt was made on November 9 to reach Howick Island to search for the Idriss referenced gallery. After striking a reef while attempting to reach the island, we left the operator to repair the sheered-off propeller and waded through mangrove estuaries in search of outcrops fitting Idriss’ description, which in this rugged terrain was less than helpful:

I searched for a hiding-place, some deep, walled-in crevice. Animals search that way. I found a place, down through a narrow cleft where, ten feet below, the black darkness widened out into a rough chamber. The roof of this gloomy little cavern was a mass of boulders wedged one against another... (Idriess 1941:118)

After several hours searching the rugged mangrove environment, the small crevice shelter was located (Plate 202). The walls of the narrow shelter were found to contain only one small panel of paintings, as shown in Plate 203, of which the clearest surviving scene is a vertically aligned End-To-End Sex Scene in monochrome white, differing from any other example of island and coastal art so far recorded in Queensland. The art was of a basic Aboriginal style, with no suggestion of European ‘forgery’.

Basic though the Madman’s Island art panel may appear, it remains a very significant example in the overall discovery and documentation objectives
of Queensland islands and rainforest rock art. Representing one of the least-known bodies of Queensland rock art, it is also one of the most endangered and rapidly vanishing, due to the mostly moist, humid environments in which it has been depicted. It is also highly important in our understanding of the role and theme of rock art in the resource rich environments of tropical coastal Queensland. The theme, size, application and draftsmanship adds support to my hypothesis that rock art played a very minor role in the cultural belief systems of Aboriginal inhabitants inhabiting coastal environments in the more recent historic period, where the predictability of reasonably rich resources created a relatively stable environment which, in turn, permitted linguistic groups to survive in the protective isolation of relatively small territorial domains.

Some of the recorded details were unfortunately damaged in the rapid retreat from the site to the dinghy, where it was essential to cross a rapidly-flooding mangrove estuary (Plate 204). Future recorders searching for this site should plan their visit to carefully coincide with the tides, which can make access difficult and dangerous. My Field Journal for 8 November 1985 states:

Skipper was getting ‘twitchy’ about the incoming tide, so hurriedly departed, with very little detail on the small site....

As soon as we hit the tidal estuary it became evident we were in trouble, within 6 ft out it was 4 ft deep, and racing. ... I had the green backpack on my head, and my notebook under my hat. So we proceeded on tip toes, with water up to my chin - over seemingly endless distances.... Passing across a wide estuary, the skipper was perhaps 25 m ahead, when suddenly he whirled around and screamed out - ‘Wait, whatever you do, don’t move!’ With a great flurry a med. sized (2’6’’) turtle swirled around in an area from him in front of us, and ‘jetted’ off, then we saw the problem, a very big shark.... Poss. 10 to 12 ft, swirled around in front of him, towards us, clearly visible in the water. It arced around in front of us, and thankfully, ‘jetted off’. The skipper
was just as scared as us, and just stood there white...’ (Walsh Field Journal 8 November 1985)

This site requires revisiting and re-recording to establish a history of the deterioration rate of an unusual and regionally-distinctive form of island rock art. A possible landing approach, with the crossing point of the estuary is shown in Plate 204a.

The Project Flinders Recording Pro Formas

The opportunity of undertaking the survey of cultural sites within the PCB and adjacent mainland areas provided an ideal opportunity for the practical application of survey and recording techniques progressively developed primarily from the CQSB area. The preliminary PCB survey and evaluation trips of 1979, 1982, 1983 and 1984 had permitted a good working appreciation of the variation of rock art types and styles, as well as the associated cultural sites ranging from middens to cave burials. From this understanding a region-specific set of recording pro forma was developed, including a special version of the ‘Burials’ recording pro forma, form G (see Appendix AD).

Because of the recurring subjects obvious within the discrete rock art region, it was decided to advance the potential of inter site and intra site association of specific attributes associated with four of the most frequently recurring motifs: ‘Moths’; ‘Turtles’; ‘CHZ’; and ‘Sailing Boats’. These are shown in Appendix AE.

Marine resources had, not surprisingly, represented a significant factor in the lifestyle of this region’s former Aboriginal inhabitants. Abundant archaeological evidence supporting this was to be found in the areas of extensive shell middens, occurring in both open camp-site settings and associated wet-season rock-shelter camp sites.

My experience with this form of resource and site type had previously
been limited, as shell deposits of any form, including freshwater mussels, were not a feature of CQSB archaeology. Freshwater mussel shell middens had been found to be an important part of the Lawn Hill archaeology of far north-west Queensland, and the first variation of a form $M$, for middens, had been designed for use in the associated Project Duwadari.

Cursory examinations of the PCB middens during the preliminary survey visits suggested to my limited knowledge of conchology that there was recurring evidence of two distinct environmentally associated groupings of shell species. In the broadest classification, this could be termed ‘clear water species’ and ‘muddy water species’. While middens containing shells from either environment did exist, where both species were found in a single midden, the ‘clear water species’ appeared visually ‘ancient’ in comparison to the ‘muddy water species’ which invariably overlaid them. Even without expert knowledge of individual species, the recurrence of groupings clearly identifiable from two distinctly different environments, together with the clearly-visible superimposition of these species in middens, was significant. I believed that this resource may offer potential for developing a sequence of resource use, environmental change, possibly related to climatic change. Optimistically I hope the gathered data may lead to dates, and ultimately correlations of rock art styles and themes.

In order to familiarise myself with the species component recurring in this obviously important regional site type, I systematically acquired a comprehensive reference collection of all variants of shell types and marine resources observed in the many middens. Attempts to personally identify this diverse assembly became bogged down, and I sought the specialist assistance of the Queensland Museum, which in turn sought the assistance of local specialist shell collectors. Time consuming though this process of developing a formally-identified shell reference collection may have been, its subsequent worth in the recording and analysis phases of Project Flinders proved to be of inestimable value. Initially, I had planned to bring the reference collection back into the field during the recording survey, permitting positive on-site species identification. However the associated logistics were daunting when
considering the problems of transporting the bulky reference collection on backpacking island searches, dinghy shorelines surveys and inter-island crossings.

An attempt to resolve the dilemma while retaining accuracy of on-site midden recording, resulted in my field assistant Helen Clark and myself drawing up a series of shell species reference sheets. Graphic representations of each species were angled to emphasise each shell’s most distinctive attributes of identification, was and then laid out as a seven page field identification chart, shown in Appendix AF. Each graphic was accompanied by the scientific name, and a number specific to the specialist pro forma (see Appendix AF). This developed recording process proved highly successful, and I would strongly recommend consideration be given to this process by any recorder dealing with coastal cultural resources.

During the extensive field survey and recording work of Project Flinders this graphic identification relating to using the numeric entry process was found to be quick, efficient, and highly successful. The extent of its data-gathering potential can be seen in the analysis sheets “Shell Species Occurring in Midden Sites”, shown as Appendix AF, and originally included in the major report “Archaeological Significance of Flinders Island/Princess Charlotte Bay” (Q.NPWS 1984(c)). This shell species data was then used as part of the extended analysis of the middens, shown as Appendix AF.

On 10 November, we moved equipment from the Aurora to our proposed base camp site at Frederick Point on Flinders Island (Plate 205). The strategy was to opportunistically make forays to the numerous widely-separated islands as the weather dictated, with absolutely optimum conditions required for the most difficult of all: the Clack Island landing. Weather tended to deteriorate in the afternoons, so an early and clearly-focused start was required for each day’s project. The Remora was used to tow a dinghy to the respective island (Plate 206) where we would then continue the search with multiple landings in the small dinghy. This process proved successful, and as efficient as could be expected with the resources and logistics involved. The skipper was left in charge of the survey boat and dinghy logistics, operation and maintenance, and
the Marine Parks Ranger assisted with transporting recording equipment and the general site search and survey process. Future recorders may consider this approach as sounding like some form of tropical holiday, but I would urge extreme caution in taking too lightly the unforseen and at times life-threatening problems which can arise when dealing with the logistics of such a major marine environment survey with minimal equipment, particularly when forced to operate within a very tight time frame. To emphasise the importance of caution and contingency plans in similar survey project preparations, I have added some extracts from my field journal associated with locating and recording the art on the remote Cliff Islands:

... had lost the dinghy earlier when it drifted out in the rising tide, and was forced to swim after it. He was pretty ‘toey’ over it, as this is where a trawler had hooked a 14 foot tiger shark on a set line while we were here last [with the RV Sunbird](Walsh Field Journal 15 November 1985)

Loaded the dinghy and set out for ‘home’, with a strong south-westerly and perhaps 2 m swells.

... started off into the waves at a reasonable rate, then went crazy and slammed it into full pace, 28 knots! The result was frightening, the normally unbalanced craft leapt fully into the air between waves, crashing down on the hull with incredible force. Spray was going higher than the cab, and filling the dinghy tied across the back. It was impossible to hold on, and we wedged ourselves between the seats, on our backs, with feet forced against the canvas back cabin section. Water cascaded down into the cab, everything awash, while the machine stood on its tail with the twin 115HP outboards screaming. I wasn’t game to speak, and Gary lay there clutching at the seat pillar with a look of dismay on his face.... After several minutes of this incredible nightmare with walls of water towering above the hull there was a great ‘thump’ - and Helen landed on the floor between the seats.
Attempting to get out of the seat, she had been physically thrown to the floor. Clinging with her arms around the seat pillar, lying on the floor, she was hurled around like the rest of us. She was absolutely terrified and wild-eyed, yelling that she would jump overboard and never get back on the boat. Gary struggled up and had words with ... who also yelled, but slowed down to a mere ‘frightening pace’. The boat then only left the water every few waves.

After an hour and a half we watched the sun set in a tropical storm over the stern, as Flinders Is. came into view. It took a long time to reach Owen Channel, and we were caught fully in the dark, but fortunately with the feeblest of light from a new moon. (Walsh Field Journal 15 November 1985)

Clack Island Recording

As time began to rapidly run out, the persistent poor weather conditions continued to threaten one of my prime research objectives - to obtain an overview of the rare ‘sorcery art’ body of Clack Island. On Saturday 16 November an apparent weather change offered a last chance for an attempt on Clack.

The complete absence of any form of drinking water on the small, rocky island represented a valid concern regarding survival in the event of the unexpected. Even if a landing was possible, the rapidly changing ‘build-up season’ weather may not permit an escape. The unpredictable weather conditions thwarting access to Clack were generally accompanied by squalls and at least limited rain. The possibility of being marooned may be extremely unpleasant, but the prospect of perishing during such an enforced stay was low. However, as the Remora represented our only link with the outside world, it would be irresponsible to consider keeping it with us during the survey. Even the briefest duration moored along the island’s exposed and ocean-pounded rock perimeter created an unacceptable risk. A preliminary survey of the
numerous Clack Island sites was anticipated as requiring three days, so the plan was to have a field assistant and myself left on Clack Island, with minimal gear, to be picked up after two to three days, dependent on weather conditions.

The promising fair weather Sunday morning saw a rather sober group escaping the sandfly hoards at base camp to make the monumental crossing to Clack Island. Because of the seaward location of King Island, I decided to survey the small outlier while the weather held.

Undertaking a landing on Clack Island is not an easy task, and eventually were able to manoeuvre the dinghy through a small deep-water approach to a south-western rock shelf ledge, permitting us to wade ashore with the recording and camp equipment (Plate 207). This is probably the same small landing point described by Coppinger who had visited the island in his 1878-82 cruise of the Alert to see the paintings discovered by explorer Allan Cunningham:

After about an hour’s sailing we reached the [Clack] island.... But we now found it no easy matter to find a landing-place. On the south-east extremity was a precipitous rocky bluff of about eighty feet in height, against whose base the sea broke heavily, while the rest of the island—low and fringed with mangroves—was fenced in by a broad zone of shallow water, strewn with boulders and coral knolls, over which the sea rose and fell in a manner dangerous to the integrity of the boat. After many trials and much risk to the boat, we at length succeeded in jumping ashore near the south-east or weather extremity of the island. (Coppinger 1883:191)

The appalling humidity and heat made the five kilometres of trips lugging gear to the only shelter a debilitating undertaking which is unimaginable from a retrospective armchair assessment.

We commenced systematically searching and documenting any art on the bold south-west headland, which included some spectacular paintings, such
as the detailed crab painting (Walsh 1988: Plate 161). We assumed that the large and prominent shelter, clearly visible from the ocean approach (Walsh 1988: Plate 160), would have been the site that Alan Cunningham described when he landed on 22 June 1821. This event, together with the associated art and sites, will always remain significant in Australian rock art studies, as it represents the second European recording of rock paintings in Australia. The earliest discovery is attributed to Captain Mathew Flinders, when on 14 January 1803 he discovered rock paintings on Chasm Island (NT), during his momentous 1802-03 voyage which circumnavigated Australia (Flinders 1814:188).

Captain King records the event of Cunningham’s discovery in his published narrative of the journey:

... For the next ten feet there is a horizontal stratum of black schistose rock, which was of so soft a consistency, that the weather had excavated several tiers of galleries; upon the roof and sides of which some curious drawings were observed, which deserve to be particularly described: they were executed upon a group of red ochre, (rubbed on the black schistus), and were delineated by dots of a white argillaceous earth, which had been worked up into a paste. They represented tolerable figures of sharks, porpoises, turtles, lizards (of which I saw several small ones among the rocks), trepang, starfish, clubs, canoes, water-gourds, and some quadrupeds, which were probably intended to represent kangaroos and dogs. The figures, besides being outlined by the dots, were decorated all over with the same pigment in dotted transverse belts. Tracing a gallery around to windward, it brought me to a commodious cave, or recess, overhung by a portion of the shishtus, sufficiently large to shelter twenty natives, whose recent fire-places appeared on the projecting area of the cave... (King 1837:27).

This was also believed to be the shelter where Coppinger found some
rare examples of ‘art mobiles’, featuring classic examples of the distinctive local zoomorphic figures painted on sections of post-contact driftwood. These were donated to the Ethnography Department of the British Museum, and are illustrated in Walsh 1984: Appendix No1.

One of my personal objectives was to relocate a small shelter containing a rare example of ‘sorcery art’, created by one of the now-deceased local Walmbara Aboriginal elders named Johnny Flinders (Wathyethi orrayin). The creation of this painting had been discovered by Peter Sutton while undertaking linguistic studies on Palm Island, and had been the focus of a subsequent AIAS expedition (Walsh 1988: Introduction). Dr Athol Chase had been a member of this historic 1974 expedition, and had assisted me with invaluable information pertaining to relocating the small shelter.

To scale the broken rock terraces leading to the western areas of small art shelters (Plate 208) required wading thigh deep through a large swamp, where the mangrove canopy created a dark environment of leaf-strewn channels leading to the ocean (Plate 209). On earlier aerial surveys I had observed numerous sharks and a sizeable saltwater crocodile in the shallows bordering the tropical island shores, and was aware of the high probability of such inhabitants in this unavoidable obstacle. I had taken a .44 magnum to provide some protection should any advance warning be given. In spite of large turbulence in the dark waters while wading through, no crocodile was encountered, which was not the case later on Flinders Island.

Numerous small shelters were located with varying degrees of art content, with shelter heights ranging from one metre to as little as 40cm, obviously purpose-specific art sites and not habitation sites. Dense bodies of rat droppings covered the cave floors and provided some warning of the population of these feral inhabitants which we later had to deal with by night. With a clear beach camping area of only metres between the cliff face, the sea and the ‘crocodile swamp’, the misery of being engulfed by clouds of minute sandflies was compounded by the formations of fearless feral ships rats, undoubtedly the masters of this rocky bastion. Oblivious to hurled driftwood, these ravenous creatures proceeded to chew anything and everything, including
our feet. Only the ‘overkill’ of applying the .44 magnum eventually saw their thinned ranks retreat. One would hope that future rock art researchers following on our work will find Clack Island a more hospitable camp. After a sleepless night we resumed the search for the ‘Johnny Flinders Site’, finally locating it and recording the art (1988: Plate 30). My field journal entry for 19 November provides an indication of the frustration experienced in attempting to obtain adequate recordings in the limited time and under the appalling ‘build-up’ season weather conditions:

Seas calm, but wind starting to rise, loaded the gear aboard. Returned to the Flinders Sorcery Sites of the upper level, wading through the swamp, and started on them [the sites], a seemingly endless task, thousands of motifs in massed superimposition on ceilings ranging from 90cm to 40cm off the rat shit covered floors. It would take weeks, and by 9am..... [the skipper] was pushing to leave the place [Clack Island]. Worked till 12pm in a lather of sweat and filth, getting some coverage, but far from adequate. Finally boarded the Remora and watched Clack Is. disappear in the great white wake of wasted horsepower left by the Remora. I don’t think I’ll ever set foot on Clack Is. Again. (Walsh Field Journal, 19 November 1985)

The survey located numerous sites and established an acceptable level of understanding of the style, subject and conservation status of this very important example of tropical Australian island rock art. (AIAS 1988).

The remaining islands of the broad PCB area were all visited and subjected to search and recording forays, ultimately providing an enormous amount of data gathered in an ordered format which permitted immediate computer analysis and checking of a range of art/environment/resource association hypotheses. Some of these findings were presented in 107 pages of histograms in the "Clack Island Report". Field recording was undertaken using 35 mm and medium format (6x6 cm) Bronica systems, of both transparency and black-and-white mediums. Individual motifs were drawn at the site, with one
image to an A4 page of art paper. These were later inked in with bichrome colours which would permit accurate reproduction in the most economical photocopy for duplication. Detail was added of motif size, colours, alignment and site number. This was part of the original attempt to develop a graphic form of establishing stylistic sequences in rock art. A sample of 84 of these was included in the “Clack Island Report”.

The midden recording segment proved extremely successful, and permitted a wide range of analysis by species (indicating original environment) on an inter site and intra site basis. The broad geographical groupings of sites for the preliminary analysis were arbitrarily defined as ‘Island’ and ‘Mainland’, but with the mainland groups further divided into ‘Bathurst Heads’ (shoreline) and ‘Jane Table Hill’ (inland). The basic associations are shown in the five page document of Appendix AF. Details of the preliminary midden analysis from the Project Flinders survey are shown as histograms in Appendix AG.

On 29 November, a De Havilland Beaver float plane was brought in from Cairns to take us, together with the recording equipment and gathered data, back to Cairns to expedite commencing the planning and preparation for the next stage of Project Flinders. The Aurora arrived at the same time to tow the Remora project boat and camp gear back to Cairns (Plate 210).

Data entry and analysis of stage one of Project Flinders was undertaken at the Takarakka Rock Art Research Centre, at Carnarvon Gorge. Assessment was made of the sensitivity and fragility of a number of the key sites considered for ‘hardening’ and development for public visitation. A series of options and associated conservation requirements were submitted to Q.NPWS head office, and final decisions permitted the compilation of a materials list and task specifications list.

The two sites selected for development and interpretation to the public were commonly known as Ship Shelter and Endaen Shelter. Detailed floor plans and location of specific art motifs and points of cultural significance had been prepared on site for the major galleries during field recording, and these served to prepare the development plans. The Ship Shelter plan is shown in Plate 211, and the Endaen Shelter plan in Plate 212.
Construction plans and material acquisition were the responsibility of Ranger Gary Weidon, who had capably handled the Project Duwadari boardwalks and development. Weidon had assembled a multi-skilled group sharing genuine empathy for the conservation ethics and extreme care required for such major constructions in very sensitive sites in extremely remote settings.

**Project Flinders Field Operations**

The planning for the multi-faceted approach associated with the implementation of field recommendations for the PCB islands was enormous. The collective 1983-1986 survey, development and conservation work is referred to as Project Flinders, and I believe that this will long remain as one of most significant single rock art projects in Queensland.

Prime objectives were to complete the boardwalk developments on two major rock art galleries, create an associated cultural trail, add protective measures to an endangered burial cave, and establish a basic field base for visiting National Parks staff. This was to involve two islands—Stanley and Flinders—where all equipment, materials and operators had to be brought in to the very remote area from Cairns.

The most suitable time for undertaking such labour-intensive projects in the tropics was in the cooler periods after the wet season rain and humidity had abated, and May 1986 was ultimately agreed upon.

Boardwalk and associated constructions were based on the now-standardised Carnarvon model, so progressive fine-tuning of layout had permitted the efficiency of Gary Weidon to not only gather together the vast amount of materials required, but pre-cut most of the requirements in his workshops at Lake Eacham National Park. A Cairns-based coastal 40 ft (16 m) barge, *MV Tasma*, was contracted to transport all materials to an Owen Channel operations point in the Flinders Island Group.

Participants involved in the field implementation of Project Flinders were derived from four sources: a Marine Parks Ranger group from Cairns; a National Park and associate commercial carpentry group from Lake Eacham; a
volunteer Army group from Townsville Barracks; and my research group from the Takarakka Rock Art Research Centre at Carnarvon Gorge.

The Marine Parks Rangers organised a somewhat luxurious form of camp and catering arrangement by chartering the luxury cruiser *Nimrod* (commonly referred to as *The Ramrod* by the island camp members), and sailing with it from Cairns to the Owen Channel operations point (Plate 213). I travelled by vehicle to a point at Bathurst Heads to rendezvous with the Army volunteers bringing their equipment in a Mercedes Unimog. My work dinghy (Plate 214) was brought to use daily in ferrying work groups, and a Marine Parks boat transported our gathered group and towed my dinghy to our planned camp site on Frederick Point on Flinders Island.

The project had been considered to be of such worth that we had been able to secure the short-term use of the Queensland Government Emergency Services helicopter, based at Cairns. As this helicopter was on 24 hour call for emergencies, its absence from its Cairns base had to be as minimal as possible. Our use of its invaluable services thus had to be carefully planned around its 650 kg lift capacity, with subsequent operations implemented smoothly, and with maintained continuity.

Hovering over the moored barge (Plate 215), Weidon’s construction crew coupled prepared bundles to the sling of the Squirrel helicopter (Plate 216) which then lifted them to the prearranged island dump sites (Plate 217) where waiting ground crews uncoupled and stacked materials. Alternative flights would pick up lift-buckets, prefabricated from 200 litre drums, permitting quick loading and on-site emptying of 600 kg lifts of smaller building hardware and tools (Plate 218). Groups of emptied drum-buckets were gathered from the island dump sites to be returned to the *Tasma* for refilling (Plate 219). Prefabricated steel-mesh panels for conservation of the burial site (Plate 220) were also slung direct to the site. Using this process, the helicopter landed only to refuel, and it was able to comfortably undertake the transfer tasks and return to its Cairns base in the one day.

Prior to departure, the helicopter was used to lift 200 litre drums of seawater to the respective sites for use in later concreting. This was very
effectively completed by the pilot using the empty lift-buckets after the materials transfers had been completed, flying low over the open sea, using movements of the chopper to create a forward to rear swing on the suspended bucket, the dropping and dragging it through the sea to fill, and a direct lift to the sites. This saved many man hours of heavy labour under difficult terrain, and greatly speeded up the project process.

A demountable building had been transported from Cairns on the barge, together with a small Caterpillar D2 bulldozer (Plate 221) to quickly and efficiently haul it from the barge to its planned Frederick Point location. Gaining a landing point on the mangrove-lined foreshore could only be attained for a brief window of opportunity at high tide (Plate 222). Once the building had been moved to the planned location of the visiting-Ranger station, together with rainwater tank and materials for an protective awning (Plate 223), the bulldozer was reloaded on the barge and taken back to its Cairns base with the returning barge. An aluminium flat-bottomed ‘mini barge’, known as a ‘river truck’, had been brought to ferry work crews and materials from base to work sites (Plate 224), and proved absolutely ideal for working in the mangrove and mud-bank lined shoreline landing points.

To minimise the time associated with moving building materials from helicopter drop sites to the various construction sites, a small Daihatsu 4x4 had been brought from a car wrecker in Cairns and shipped with material on the barge. Its required working life could be measured in hours, but the potential for saving man hours in completing the major project in the very limited time was invaluable. The barge was unable to make a landing on Stanley Island, where the vehicle was primarily required, so a mini-barge was fabricated from the River Truck, modified with eight 200litre empty fuel drums lashed around its sides to increase the buoyancy required to support the vehicle weight. A tarpaulin ‘wave-prow’ was constructed up the nose to deflect breaking waves (Plate 225), with a dinghy lashed to either side to minimise the risk of capsize, a slow but successful voyage was ultimately made to shore. Considerable doubt was shared that the overweight and top-heavy load would be successfully moved over the less-than-ideal seas, and a capsize and sinking of the Daihatsu
seemed probable. As the magnesium wheels and special sand tyres represented the biggest investment in the project-specific work vehicle, a contingency plan was prepared to salvage these in the event of capsize. A fishing float attached by a 15 metre rope was mounted atop the Daihatsu front rack to permit relocation with scuba gear to salvage the wheels. This valiant little vehicle proved invaluable, transporting tons of materials and failing only briefly as a result of wheel bearings (Plate 226).

Part of the environmental protection associated with the art site developments involved ‘hardening’ and defining walking tracks to guide the inevitably unsupervised yachting visitors on a course to minimise environmental impact. Sand, cement and shell grit for aggregate was transported in small loads on the Daihatsu to a central work area which was ultimately to be developed as an island lookout area in the Interpretive Trail. Army volunteers undertook the demanding batching task under the debilitating humid conditions (Plate 227). Transporting mixed concrete up steep, sandy slopes to the path areas proved an incredibly labour and time-intensive process, and it was obvious the project would not be completed in the very limited time available. A multi-person barrowing process ultimately resolved the dilemma. A concrete-filled wheelbarrow had one individual pushing and maintaining stability, while a long rope allowed two and three person pulling teams to drag through the loose steep sand (Plate 228). Plastic sheeting was laid directly on the sandy slope deposits to retain the integrity of midden and cultural material where it may exist in shallow buried settings, and the concrete laid direct on this sheeting (Plate 229). Should future management changes or excavation projects require moving or realigning paths, the plastic underlay will permit removal to reveal the undisturbed original sand surfaces.

**Stanley Island Boardwalks**

In order to meet the time schedule, the two art sites identified for development had separate teams of carpenter-builders working on them simultaneously, supported, where necessary, with movement of materials from helicopter drop sites by Army volunteers and Marine Park Rangers. The sites were fully surveyed, and the pylons for the boardwalks positioned in a process
causing absolute minimum disturbance to the archaeological deposits (Plate 230).

Experience and ongoing monitoring had confirmed that boardwalk designs which did not provide visitors with alignment allowing them to personally see all areas of the site’s potential art surfaces and obtain acceptable photographs would invariably fail in their primary conservation role. When visitors have made the not insignificant personal effort to reach an art site, most are sufficiently interested to want to see everything of interest that is present. When confronted with the controlling factor of a boardwalk and interpretive signs, the inherent distrust of authority in many Australians initially raises suspicions regarding the agenda of associated bureaucracy, and what rights are to be challenged. If the design gives any indication that the public is being restrained from at least viewing something, a sector of the community will take up the perceived challenge of bureaucracy and see just what is being withheld. A percentage of visitors will then leave the boardwalks to see for themselves what may be hidden from them, and the primary conservation principle of boardwalk construction is lost.

Boardwalk alignments must be designed in a manner which permits visitors to personally see all surfaces of the site, and at times a compromise in having access pass arguably close to a lesser section of wall surface is the price for insuring that the primary purpose of keeping visitors to the defined areas is achieved. The Ship Shelter site represents a complex floor plan and elevation, with a large, hanging outer entrance section having concentrations of art on its inner surfaces (Plate 231). While an argument may be made for keeping the boardwalk alignments entirely outside such a complex alignment, management history has shown that this configuration will not work with the public in the long term. In order to achieve the primary conservation objective, an extension was made from the outer boardwalk into the inner cavern (Plate 232), permitting clear viewing and photography of both the rear wall panels, by the inner walls of the hanging panel.

Disturbance of archaeological deposits always represents a much-argued challenge to the worth of boardwalk construction, and it was always my policy
to ensure absolute minimum disturbance of these deposits, even if it required increased monitoring and maintenance. In Ship Shelter it was necessary to have relatively high pylons supporting the outer boardwalk and, for structural robustness and termite rejection, square besser-block constructions with inner reinforcing rods mounted on modest concrete surface pads were used (Plates 229, 230, 231 and 232). These will require ongoing inspection, but have left the archaeological integrity of the immense entrance midden intact.

Protective layers of plastic concrete underlay sheeting were suspended around the shelter walls to protect the art panels (Plate 229 and Plate 230), a practice I had found worked well during any site-management work.

Ship Shelter site was integrated as part of the larger Cultural Trail, where visitors were guided by the concrete-surfaced access tracks to the approach staircase (Plate 233), and exited via a separate staircase (Plate 234) which straddled the huge entrance midden, and led down the slopes to the Endaen Shelter.

Endaen Shelter is a huge, open shelter with high ceilings and very extensive floor deposits. This required a very extensive boardwalk system which permitted the interpretation of an Aboriginal sleeping platform, seen as a cluster of then-collapsed saplings in Plate 235. The treated hardwood boardwalk was constructed to the original Carnarvon Gorge style, in quickly-moveable modular sections (Plate 236). The sleeping platform was restored and explained in the interpretive signage.

As part of the local Aboriginal involvement in the project, Conrad Rosendale had been employed from the Hopevale Community. Rosendale assisted in identifying various species of native flora used as food and material sources in traditional times (Plate 237), and the course of the Cultural Trail was planned to pass and incorporate a representative sample of these.

The burial cave which, through its ongoing visitor interference, had attracted my original visitation to the PCB islands, was considered an area requiring levels of public physical restraint. The absence of a permanent Ranger presence unfortunately left restrictive fencing as the only economical
option at that time. Due to the humid conditions associated with the organic materials of the adult burial containers, it was essential to permit maximum through flow of air. Steel framed galvanised mesh panels were prefabricated at the Lake Eacham workshops and air-lifted to the outcrop of the burial cave, where the construction team then completed final modifications and mounting (Plate 238).

This major management and construction project was completed on schedule. Standard-format National Parks wooden signage was erected at the island's landing point (Plate 239) and etched aluminium interpretive signs were used elsewhere throughout the Cultural Trail to minimise maintenance in the harsh, tropical environment. A public statement regarding the project was made by the Q.NPWS Minister, the Honourable Mr Peter McKechnie, to the Cairns Post newspaper on 30 May 1986:

The base is on Flinders Island in Princess Charlotte Bay, one of the most remote National Parks of the State half way between Cairns and Cape York...The work party was also building two boardwalks on nearby Stanley Island to give visitors off cruising boats and yachts the opportunity to see Aboriginal art on the national park island....the Flinders and Stanley Island projects were expected to cost $150,000 including wages.

A summary of the overall project was subsequently presented at the AURA International Rock Art Congress and made available in the published proceedings (Submitted Publication No 10).

Operation Raleigh and the Jane Table Hill Survey

An extension of the Princess Charlotte Bay survey was undertaken in September 1986 with an intra-regional focus on the Jane Table Hill area of Lakefield National Park. Because of the extent of rock art and sensitive cultural resource sites, and the growing presence of unsanctioned visitation to the area, I
had been successful in an application to have it declared a Restricted Access Area within the National Parks estate. Although located in an extremely remote area of Cape York, where logistics had long protected the sites from discovery and interference, the growing presence of drug-related activities in the early 1980s had changed that. Jane Table Hill is a spectacular isolated formation rising high above the surrounding flat, and largely featureless, environment, presenting a distinctive and unmistakable landmark (Walsh 1984 Plate 32A). Concerns at the time involved light aircraft coming from external origins and using this distinctive landmark to make illegal drops of drugs. A favoured pick-up process reputedly involved boats discretely moving up the nearby Normanby River (Walsh 1984 Plate 32B), where trail bikes could be transferred to the banks and ridden to the pick up points. Other instances involved landing light aircraft by night on small abandoned wartime air strips in the area, where drugs were brought in, and exotic birds illegal back-loaded out.

While the passing of a quarter of a century may make these activities sound difficult to believe, they represented a major concern at the time. Considering the setting of vast tracts of unpopulated Cape York wilderness, any level of adequate surveillance was impossible. Apprehension of illegal entrants interfering with sites during drug associated activities was as improbable as it was dangerous, and police investigators had warned against any attempts of non-official apprehension under these conditions. Restricted Access Area classification did provide Rangers with authority to control public entry from conventional approaches.

Although I had made several personal visits to undertake interim evaluations of the cultural resources of the Jane Table Hill complex, the terrain and extent of the site-potential area necessitated a larger and more systematic survey to establish the essential resource inventory. Significant sensitive burial sites were located in this preliminary survey (Walsh 1984 Plate 39A to 41B).

An approach from the Operation Raleigh Australia organisers for possible once-off group projects for the Cape York area provided an opportunity for the human resources required for such a survey. Field assistant Helen Clark and myself organised the Operation Raleigh volunteers (Plate
who originated largely from a range of overseas countries. After brief training, they were sent in two-person teams to cover a designated sector of the search area. Large tracts of surrounding environment were also searched for cultural sites, resulting in the location of significant shell middens and habitation areas (Plate 241), some well distanced from the main art-site area. Summaries, motif descriptions, sketches, and location details of discovered sites were collated nightly in the base camp. To maximise my efficiency in follow-up recording of the located sites, a route was plotted based on the primary criterion of ideal photographic light.

The Jane Table Hill Project in 1986 represented my first attempt at using large groups of approved volunteers for field search and survey operations. Results were sufficiently rewarding for the time and resources invested that this process has been reused in increasingly refined form to form an invaluable element of Kimberley research, which will be dealt with later in this assessment.

The White Mountains Survey

Part of my ongoing management responsibilities involving cultural resources on the Queensland National Parks estate was keeping abreast with not only issues on gazetted land areas and formally proposed areas, but also potentially significant areas. This resulted in ongoing research on potential areas, and liaising with various research, management planning and scientific sections of the Service to keep abreast with short and long term investigations throughout the state. My participation in many of these regional investigation projects was ongoing for periods at times extending over years. Gradually, historic, geographic, scientific and cultural element files would be compiled for each region, often accompanied by periods of library, archive and inter-departmental file research when working out of Brisbane Q.NPWS Headquarters. Personal field trips and joint field trips with other specialist arms of the Q.NPWS would be undertaken on these areas, and ultimately reports and recommendations submitted to assist executive acquisition and management
decision making.

One of the important geographic regions in this process is frequently referred to as ‘The White Mountains’, and lies basically north of Hughenden in central northern Queensland. This very rugged and largely pristine area of weathered sandstone gorges extends east of the Flinders River, which forms a spectacular 100 m descent from the westerly-sweeping basalt tablelands environment (Plate 242). The White Mountains may be regarded as a miniature regional variation of the Central Queensland Sandstone Belt, sharing attributes such as being visually spectacular, extreme inaccessible, and having unknown cultural content. A small 2,940 ha national park presence had existed in the area since its 1952 gazettal, and was known as Porcupine Gorge National Park (Q.NPWS 1985a: 115).

My preliminary survey of the White Mountains area was undertaken in 1983, on return from one of the earlier discussed surveys of the Flinders Islands. Sufficient sites were located to ascertain that this discrete geological region deserved more detailed survey and evaluation as a potentially highly desirable acquisition to the National Parks estate (Q.NPWS 1985a).

Among the range of art sites located was one major pavement engraving site which represents one of the finest known examples of this uncommon site type in Queensland Examples of large-plan view anthropomorphous forms can be seen in (Q.NPWS 1985a Plates 7 and 8), which were also presented as nationally significant art forms as Plates 90 and 91 in Submitted Publication 1. A graphic inventory of the diverse motif forms encountered is shown in Q.NPWS 1985a (Fig 28). Archival and local research, together with a number of interviews, permitted inclusion of local Aboriginal mythology of beings such as the Koonkoolmija and the Yahoo (Q.NPWS 1985a: 148-152) which provides tentative links between traditional belief systems and rock art forms—a rare feature in Queensland.

My subsequent report provided a resource to hasten the gazetted proposal, and the Aboriginal rock art documentation and presentation proved significant in the final protection of this very significant area. (Q.NPWS 1985a).
In 1990 the 55,685 ha White Mountains National Park was declared as Queensland’s tenth largest national park. Minister Pat Comben said:

This is a superb new park as it preserves significant Aboriginal rock art sites... According to researchers who have surveyed the archaeological sites, White Mountains has an air of mystery created by its dark closed gorges... For the Aborigines these gorges were the homes of many spirits with sinister powers... White Mountain’s rock art and rugged beauty will make it a popular spot for visitors and tourists, but as yet there is no public access to the area. (The Star 20 April 1990)

The Hook Island Project

A remarkable study involves the survival in anonymity until the early 1980s of a major gallery, amidst the onslaught of massive commercial tourist development. Since known as The Hook Island Site, it is located in Nara Inlet on Hook Island, and contains the finest known examples of a distinctive regional style of Queensland rock art. Hook Island is one of a number of islands which collectively form the Whitsunday Islands Group, long recognised as a tropical focus for yachting enthusiasts, and more recently becoming the focus of an affluent expanding tourist industry.

Reports of the chance discovery attracted my immediate attention, as I had long been undertaking a state-wide project to discover and document any surviving examples of rock art from the conservation-challenging rainforest and island environments. Very few examples of art had been officially reported from these environments, where moist air, humidity and associated vegetation and seepage problems posed an omnipresent threat to their survival. I believed it should be a research priority to establish an inventory of these resources, establishing quality recordings which would serve as the basis for ongoing monitoring and studies of conservation problems. Regular field trips to potential areas, accompanied by an active promotion of this quest in official and
private enthusiast areas had resulted in a steady flow of leads and support. This promotion led to the first knowledge of the recent Hook Island discovery.

We reached the area by trusty De Havilland Beaver float plane (Plate 243), and further surveys of the dense tropical vegetation cloaking the island revealed no additional art panels. Due to the rugged terrain and dense vegetation (Walsh 1984: Plates 1 and 2) this should not be considered a final assessment, and there is a need for a systematic survey to confirm the lack of other artwork.

Colours, paints and preservation of the artwork does not suggest any great antiquity, but a number of recurring non-figurative geometric forms (Walsh 1984: Plate 6) initially present a remarkable stylistic similarity to the much-distanced CQSB styles. However, the factor of absence of known rock art throughout the vast distances between the separate areas make suggestions of any direct cultural link to be a very arguable hypothesis (Q.NPWS 1985b).

Support for the report and recommendations resulted in funding becoming available to construct a boardwalk system, based on the original Carnarvon Gorge concept and design (Plate 244). Prefabrication of much of the boardwalk system was undertaken in the Conway National Park workshops, and shipped to the island. With the assistance of a Jet Ranger helicopter and 21 volunteer army personnel from the Townsville Army Workshop Troop, the materials were air lifted to a drop point near the site, and assembled in a similar procedure to the earlier Princess Charlotte Bay developments. The completed boardwalk system has since serviced regular public visitation from the increasing number of yachts in the Whitsunday Islands.

Proposals to Extend Rock Art Knowledge to the Community and to Advance Research

A Proposed Material Culture and Rock Art Gallery

One of the major projects which I introduced and promoted, but was unable to see to completion, involved the establishment of a combined museum.
and national Rock Art Gallery at Carnarvon Gorge. Considering the support that the discipline of rock art studies would gain from its creation, the concept should not be totally abandoned. Assisting this objective justifies including a brief history of the concept and objectives in this record covering my involvement in developing methodologies in rock art.

When studying the CQSB rock art I found it impossible to separate the rock art from the material culture, as much of this region's predominantly stencil art depicted weapons and material culture objects. Frequently these quite distinctive shaped artefacts were found recurring over a wide geographic region, yet their original artefact form was unknown in collections or published material. While the art and the quest to decode its meaning remained my primary focus, unequivocal merit lay in developing a fuller understanding of not only the artefacts depicted, but of perhaps greater importance, their utilitarian, secular or sacred role in the now-vanished prehistoric culture. Obviously such information represented important keys in the primary decoding process, with stencils displaying degrees of proportional accuracy not present in other techniques of rock art application. Fine detail associated with artefacts depicted in freehand and engraved art were dictated not only by the artist's ability, perspective skills and technological expertise, but also the degree of stylisation governing the art of that particular art period. Even when allowing for average levels of application experience, the stencilling technique still arguably presents a more reliable scientific one-dimensional record of specific objects.

Due to the fragile nature of these largely organic composition artefacts, the probability of examples surviving physically intact in an archaeological context are, at best, minimal. Stencil art thus offers an invaluable graphic record of the most fragile elements of vanished stone-age cultures. Mention of my early recording attempts to compile an inventory of basic stencil artefact types has already been mentioned and illustrated in Plates 23 and 24. Studies of museum collections to learn the form and purpose of stencilled artefacts emphasised the remarkable paucity of surviving organic material from the CQSB. An ironic situation when considering that the CQSB area contained an
unparalleled graphic artefact record in its stencilled art. Art and artefacts represent the tangible elements of past culture, providing an opportunity to develop an understanding of the more esoteric and intangible elements, together with cognitive development, and ability to adapt to changing resources and environmental conditions. If a full understanding of this culture was to be attained, the study of the art and the artefacts must be considered inseparable.

A matter of urgency accompanied the importance of initially establishing a detailed record of the limited extant material, and ultimately establishing a central repository with an apolitical brief which may attract the long-term loan and curatorship of endangered material remaining outside official collections. From the viewpoint of rock art studies, Aboriginal cultural understanding and archaeology, this could only be considered a positive objective.

While my field recording of the rock art continued, discussions with Aboriginal groups, Q.NPWS executives, associated government bodies and the local graziers were undertaken. As interest in the concept increased, a number of meetings were progressively organised to bring together the stakeholders and, through the process of discussion, attempt to allay the fears and overcome the differences. At this time the representative body for the Aboriginal people was the National Aboriginal Conference (NAC). Levels of difference between the state government of the time and the NAC placed significant restrictions on my undertaking discussions while remaining a Q.NPWS employee. The Carnarvon area was considered to have geographic areas associated with various Aboriginal linguistic groups, and discussions regarding rock art, material culture or a museum facility had to take this complex situation into consideration. Discussions showed two main Aboriginal groups interested in discussion and involvement: the Bidjara groups centred around Charleville; and the Woorabinda and eastern groups centred around Rockhampton.

One of the public meetings in Injune in May 1983 attracted participation and positive support from local landholders, NAC members and officials, and Q.NPWS officers (Plate 245). Negotiations with state authorities ultimately attained a concept approval, with a September 1983 announcement of a proposal for submission as a Bicentennial Project, with a tentative figure set
down by Premier Bjelke-Petersen as $640,000. This resulted from “an
election promise to build an Aboriginal museum at Carnarvon Gorge” (*The
Morning Bulletin* 25 November 1983). The Carnarvon Museum project was
listed with other major proposals such as the Stockman’s Hall of Fame for
Longreach, and the Great Barrier Reef World for Townsville (Plate 246).

Discussion resulted in the NAC arranging for a $5,000 feasibility study
to be undertaken on the museum concept by Dr Paul Memmot. This 77-page
document was duly presented for assessment in August 1983 as “Proposal for
an Aboriginal Museum/Cultural Centre at or near Carnarvon National Park”.
This listed the project cost for the proposal at $1,720,000 (Memmot 1983:61).

On 5 August 1983, a group of Aboriginal Elders, their families and other
representatives, including members of the Fraser, Robinson and Lawton
families, visited Takarakka for several days of inspection and discussions
(Plate 247). A series of local meetings followed, initially at Emerald (Plate
248).

As the proposal gathered momentum it attracted increasingly favourable
media support (Plate 249):

> One imagines, too, that the complex would become, quite
> properly and without its purpose and function being diminished
> in any way, a tourism focus of great significance and
> popularity.... Here surely, is as noble a project as there could be
to celebrate Australia’s Bicentenary. (*The Sunday Mail* 9 October
> 1983)

While the primary Carnarvon Museum concept continued to receive
support, concerns began to be expressed regarding subsidiary activities, and the
effects they may have locally. The proposed site was within the Bauhinia Shire,
which at this time had made little secret of its opposition to the significant
expansion of National Parks in its region and the implications this was having
in decreasing their rate income capacity and increasing their shire service costs
(Plate 250)
On 13 March 1984 a Cabinet Submission by Premier Bjelke-Petersen drew attention to the Feasibility Study estimate of $1.7 million compared to the original state proposal of $640,000, and the implications for the responsible authority having to raise significant additional funds. Recommendations were made to seek the Museum Board of Trustees’ agreement in accepting this responsibility.

The subsequent detailed evaluation of the project cost estimations by the Department of Works Queensland was submitted by the Queensland Board of Trustees on 18 May 1984, based on my original offer to donate the freehold land to the project.

However, the costs now included sealing the roadway, purchasing two four-wheel-drive vehicles, a $190,000 Electrical Supply Authority connection fee, and a $169,000 consultants fee, arriving at a total cost of $2,750,000! The modest original concept had been transformed from a realistic, and largely privately constructed, proposal into a bureaucratic Department of Works monster. Not surprisingly this resulted in officials rapidly distancing themselves from any association with the proposal:

The proposed Carnarvon Aboriginal Museum has been ruled out as a bicentennial project. The premier, Sir Joh Bjelke Petersen, announced yesterday that the development of an Aboriginal and Torres Strait Islander cultural centre at Rockhampton would be included in the bicentennial commemorative program. The Queensland Museum has been involved in the Carnarvon proposal, museum director Dr Alan Bartholomai said yesterday it appeared Cabinet had ruled it out and it was unlikely to surface for quite a while. He said the museum had provided Cabinet with an estimate of cost which greatly exceeded the amount available under the bicentennial program. (Western Star 21 August 1984)

The Premier’s relocated support for the Dreamtime Cultural Centre proposal for Bicentennial Project funding saw its concept become a reality, and
the Carnarvon Museum proposal abandoned to oblivion.

In the face of this rejection I continued over the following decade with the objective of establishing a detailed recording of all material culture items known to have originated from the CQSB. Expanding amounts of files, sketches and photos required more efficient and standardised process of registering details and keeping track of locations for cross referencing as the project advanced. To facilitate this process, and prepare data in formats conducive to future database entry, a series of forms and cards had been developed for this Sandstone Belt Material Culture Project Appendix A. Various types of data-gathering forms were progressively modified to suit the increasing access to PC systems and modest electronic database systems. An example of the basic pro formas used in the 1991 CQSB Organic Recording Project, together with examples of reference sketches, are shown in Appendix AH. Problems were experienced in obtaining suitable photographic settings and documentation copying systems during this project, not only when dealing with private collections, but in those early days of technology, also with major institutions. A Mita portable photocopier was purchased to permit on-site recordings of documentation and associated correspondence. I constructed padded shipping trunks for the equipment, reduced to a size such that two individuals could carry the containers into workspace areas of the institutions. A collapsible light table and camera stand system was designed in crate-shipping form along with a set of three stand Elinchrome flash/flood studio lights. This permitted transporting state-of-the-art archival recording systems to even the most remote locations.

During the stages of museum recording of this project, visits were made as far afield as Adelaide. Visits were arranged to coincide with Norman B Tindale's infrequent research visits from his home in Californian. Having long admired Tindale as one of the most organised researchers I have had the pleasure to work with, he proved most supportive and helpful with my material-culture projects, making available extensive amounts of his pertinent field notes and materials from his 1930s expeditions. During the 1985 visit he also assisted greatly with a subsidiary material-culture project I was simultaneously
working on, dealing with the crayon drawings that he and C.P. Mountford had gathered during their ongoing work with the desert Aborigines (Plate 252).

Ultimately, a joint proposal was prepared with Aboriginals and Elders, seeking funding to publish an illustrated reference book titled “Material Culture of the Central Queensland Sandstone Belt Aborigines”. Funds from the successful grant application were lodged in a joint signatory account awaiting the completion of the ongoing project and compilation of the data. Unfortunately the sad passing of the two Elders saw the funds removed by other signatories (without my knowledge or consent) to be used in a building project. This effectively brought an end to this project, and although an immense amount of personal time and resources had been committed to gathering this data from nationwide sources, it is now unlikely to ever see completion in publication.

My ongoing recording and research continued to emphasise the importance of establishing not only a repository for the material culture items and information, but additionally a focal point for my rapidly expanding archive of rock art information. My ongoing work with the QNPWS site-recording responsibilities, together with personal interstate rock art studies, had, through the process of research and dissemination of information, aroused significant public interest and support.

Several subsequent proposals were prepared and submitted for an expansion of the original Carnarvon Museum concept to include a Rock Art Archive segment, and a revolutionary concept to establish a National Rock Art Gallery. An artist’s impression of the proposed facility is shown in Plate 253. The most comprehensive submission in February 1990 was a staged proposal for “Carnarvon Cultural Complex: A proposal for a Carnarvon Keeping Place, Stage one of a Multi-Faceted Cultural Complex Centred around a National Rock Art Gallery” (Appendix A1). A brief overview of the concept has been presented from the submission:

Most Australian rock art survives on the surface of immovable geological formations, and it would be incomprehensible and totally unethical to consider displaying even salvaged fragments
of rock art. To maintain the integrity and spirit of the project, as well as obtain universal support, an unbending policy should initially be established (and clearly stated) that consideration would never be given to displaying original rock art in any form

The theme for such a National Rock Art Gallery should be to present the chosen selection of Australian ‘prehistoric masterpieces’ in the form of the most exacting facsimiles capable of being produced with today’s technology. Photography may permit the accurate recording of rock art masterpieces, and certainly should be considered an invaluable supplementary display medium, but the main theme should centre on exacting three dimensional facsimiles. (Walsh 1990:7)

My personal pursuit of this project ended in 1989 when leaving my position in the QNPWS to work for the Dreamtime Cultural Corp. at Rockhampton, but I have attempted to encourage others to continue with a modified concept of this ideal. I believe the need persists for a nationally-recognised facility incorporating a rock art archive and a national rock art gallery, not only for the support and advancement of research and conservation, but to act as a point to disseminate knowledge and findings to the broader public.

**Dreamtime Culture Centre**

A close working relationship developed between myself and two groups of descendants of CQSB Aboriginals. Positive and productive working relationships were particularly developed with Nola James and Ted Mitchell (Plate 254) on matters pertaining to the Central Queensland sites and management. Their advice and at times direct involvement was sought on a range of issues by both QNPWS head office and the Central Queensland Sandstone Belt Advisory Committee (CQSBAC). The CQSBAC had been established by the Minister at a ministerial level as a voluntary advisory group
to assist increasing liaison and understanding between the Q.NPWS, graziers, Aboriginal groups and conservation groups, and proved highly successful in permitting acceptance of the major Q.NPWS expansion of its CQSB estate in the decade extending from the late 1970s. Originally operating as representatives of the Rockhampton-based Central Queensland Aboriginal Cultural Corporation, and later of the Dreamtime Cultural Centre, Nola and Ted actively supported and participated in numerous conservation projects, such as the Goat Cave Project. They also played an invaluable role in selecting and liaising with Aboriginal Rangers employed by Q.NPWS on special funding at Carnarvon Gorge, Mt Moffatt and Blackdown Tableland National Parks.

In 1989 my career took a major change in the pursuit of the ongoing quest to develop processes of ‘reading’ rock art. The newly created Dreamtime Cultural Centre at Rockhampton, which was the museum/cultural centre which replaced the controversial Carnarvon Museum in the final Bicentennial Projects funding, offered me a research position. The brief involved advising on the major new Dreamtime Display, training Aboriginal interpretive staff, teaching Aboriginal children about cultural matters, and pursuing an objective of documenting any surviving traditional rock art knowledge wherever that may be located in Australia. An initial 13 week annual field trip was proposed, operating with provided field equipment, and focussing primarily on the rock art areas of Kimberley and Victoria River District (VRD) in the Northern Territory.

Such a proposal offered the potential to initially make a valuable contribution to the ongoing preservation of CQSB Aboriginal cultural knowledge, while assisting a genuinely interested Aboriginal group to take an active role in the preservation and accurate presentation of traditional and scientific knowledge to the public on a self sustaining basis. From my personal research viewpoint, this would permit my focussing on the area identified by my 12 years of national survey as Australia’s most important region of rock art and associated traditional knowledge.

My “Dreamtime Display Report” covering recommended content for the Dreamtime display was submitted on 7 April 1990, incorporating material
published in my *Roof of Queensland* book, and with mythology theme
displays based on my children's books *The Goori Goori Bird, Didane the
Koala* and an unpublished volume *Firesnake and the Moon*. Working in close
liaison with Natureworks, a most impressive display area of synthetic
Carnarvon sandstones provided the background for the CQSB theme display
(*Plates 255 and 256*). As a later addition to the outdoor cultural displays, I was
able to assist with the concept and themes of a freestanding synthetic cave
decorated with a representative sample of CQSB art and themes (*Plate 257*).
To incorporate optimum accuracy in the examples of stencil artwork, I sought a
good cross section of artefact-type stencils from my comprehensive archive of
recorded tracings, as shown in *Plates 23 and 24*. Paper templates were cut by
projecting the clear plastic tracings, and these used as secondary templates to
transfer precise silhouettes to construction plywood sheeting, which in turn was
cut to the defined shapes with a jigsaw (*Plate 258*). In order to create accurate
'soft' stencil areas, such as the feathered hand grip on the Juan Knife template
(upper right of plate), teased cottonwool was glued to the ply perimeter. A
young Aboriginal artist from Brisbane was trained in the application of
Composite Stencil technique (*Plate 259*), and using the prepared plywood
template a very impressive and representative display of Carnarvon stencil art
was created for public interpretation. As the *Moonda Gari* (Rainbow Serpent)
is a significant feature of local mythology, the Elders requested that one of
these should be created. As the rare serpent depictions in the CQSB art were
using Composite Stencil technique, an agreement was reached to retain this
distinctive local application technique rather than the much simpler freehand
 technique. However, at the Elders' insistence, a degree of artistic licence was
incorporated to portray the mythological figure as they perceived it had
appeared (*Plate 260*).

The basic concept of facsimile art-site settings and quality replications of
regionally-specific artwork were legacies of my plans for the Carnarvon
Museum and National Rock Art Gallery, discussed earlier. The simplified
forms created at the Dreamtime Cultural Centre have proven very popular with
the visiting public, and one can but hope that the original concept may come to
fruition in the future.
Part of my training program for interpretive Aboriginal staff at Dreamtime involved a group field trip in November 1990 to permit trainees to personally experience selected cultural areas of Carnarvon Gorge and Mt Moffatt National Park. I prepared a "Central Queensland Sandstone Belt Staff Training Manual" as an ongoing reference source, which after 16 years remains in use.

Part of the Dreamtime position involved establishing an efficient field-recording system, and the vehicles and equipment to support its implementation, and this will be discussed as a segment of the larger Kimberley Quest segment.
5 Adapting Rock Art Recording Methodology to the North-West Region of Australia

The Kimberley Quest

Even though the first 12 years of my association with Kimberley involved solely personal leave-period projects while primarily employed in by QNPWS, to facilitate a continuum of events, I have addressed the progression of this research as a single discussion. Where pertinent relationships exist with my non-Kimberley work I have attempted to cross reference them.

Dreams of the potential significance of Kimberley rock art had been indelibly etched in my mind since my early childhood days. Readings accounts of the discoveries of George Grey and Joseph Bradshaw, together with their personal sketches of these wondrous figures, had over the passing years transformed my impressions into an almost fantasy-like illusion of the knowledge they may hold. The Kimberley remained a mythic utopian land of countless mysteries as I systematically gathered all information and newspaper clippings possible to develop my understanding of how to approach this rock art challenge. In the early 1980s, I finally had the opportunity to speak at length with a person who had moved from my hometown of Injune to live and work in Kimberley. Descriptions of the little-known landscape, and apparently relatively intact traditional knowledge of the few remaining Aboriginal Elders, served to confirm not only the rock art potential, but the urgency of pursuing the associated vanishing knowledge.

It was fortuitous that the appearance of this direct link to Kimberley access coincided with my earlier-mentioned decision to change the direction of my life.

A firm commitment was made to implement this change, and the date set for 30 June 1977 to either sell, lease or walk away from my very lucrative and self-created business. Fate seemingly rewarded this focussing of commitment,
with an option materialising in the eleventh hour, permitting me to purchase a suitable vehicle to pursue this new direction. My life’s direction became irreversibly changed by 1 July.

**Transport Challenges**

An ex-Queensland Police Stock Squad Toyota Landcruiser was purchased at the Government Auctions, subjected to basic modifications, and together with two companions we were on the road to Kimberley in the first week of July. This was the first of 28 years of trans-continental field trips, where the bane of successful field research—optimistic naivety—soon became tempered by the harshness of reality.

Demographics dictate that most future Kimberley researchers will probably operate from distant eastern Australian bases, and although conditions are constantly changing, the dilemmas of logistics and equipment suitability will always remain a challenge. I cannot overly stress the importance of choosing the correct research vehicle and applying appropriate modifications. Where possible, I would recommend including a ‘bush mechanic’ in your team, as the unanticipated situations developing during extended Kimberley field seasons frequently require a lateral approach moderated with experience. In this section some of the challenges are touched upon, and hopefully future researchers will be better prepared by an awareness of both the potential problems and processes which I have developed to deal with them.

Kimberley road conditions in 1977 proved considerably worse than anticipated. Even my carefully-assembled tools and spare parts stock proved inadequate for the demands of the then dreaded Gibb River Road, resulting in the simultaneous total collapse (not break) of both rear springs. Such a situation today would have an easy solution, with basic mechanical skills and access to the numerous abandoned vehicles associated with Aboriginal communities. However, in 1977 the Kimberley still lingered in the ‘Old World’ pursuit of the traditional English Land Rover. I use this as an example of the most basic issue in recorders planning serious remote field trips. My
inexperience resulted in choosing a field vehicle for its superior technology and efficiency rather than a lesser vehicle in step with the contemporary preference, spares and support in very remote locations. The three-day epic to Kununurra was plagued by the inevitable constant tyre failure problems (Plate 261). In these pre-portable compressor times each recurring stress-related tyre problem involved not only considerable time loss, but also a mandatory 1,000 stokes with a hand pump. New springs had to be flown in to Kununurra from Darwin at great expense (Plate 262). The importance of wise selection and equipping of field vehicles was a hard learned but essential lesson.

Road conditions have improved significantly, vehicles are generally more reliable, and communications for assistance are far improved. However, vehicle efficiency has been achieved through technological complexity, which I believe has been accompanied by a general diminishing of multi-skilled abilities among the populace. Many vehicle problems now involve electronics requiring specialist equipment for even a mechanically minded person to attain the most basic diagnostics. This must be borne in mind by researchers, and the ‘KISS’ principal (Keep It Simple Stupid) still remains the golden rule of expedition equipment planning.

An Introduction to the Dying Days of Traditional Knowledge

Through my home town contacts now in Kimberley I was fortunate in being able to establish the basis of a network which has facilitated enormous advances in Kimberley studies. The most significant of these meetings was with Peter and Pat Lacey of Mt Elizabeth station, who have become life-long friends and staunch supporters in the quest for recording Kimberley prehistory. Through their assistance I was able to make contact with a number of key Aboriginal Elders still retaining levels of traditional rock art knowledge.

This era of my ongoing quest to develop processes of ‘reading’ rock art enters an historically important period, where emotion and politics increasingly cloud the broader visions of truth and accuracy. One cannot envisage where these will lead, or how the increasing trends towards political correctness will
impede future researchers with a genuine quest to attain understanding. I thus believe it is essential to add a brief summary to establish a basis on which the future credibility of my various rock art hypotheses rest.

Increasing numbers of misconceptions continue to develop around issues of Aboriginal knowledge and their intimate knowledge and harmony with the challenging Australian landscape. I believe this situation can be directly linked to the rapidly changing Western world, where increasingly corporate and materialistic trends rapidly separate people from their links with the landscape and more harmonious lifestyles of our forbears. Adapting to the ever-increasing speed of modern living may offer short term materialistic rewards, but at a cost of sacrificing many traditional values of the perceived quality of family life. Change remains one of the most difficult things for humans to accept, and it is not surprising that many people cling to memories of the past, often unintentionally sanitised by the passing of time. Nostalgia associates happiness and harmony with simpler times, with a certain logic rationalising that even simpler lifestyles associated with even more distant times must reflect a greater harmony and ‘oneness with nature’. One may argue that in current Australian times the seemingly most simple living identifiable group is the Aborigines, and the setting most distanced from the environment of escalating urban development is that amorphous area referred to as ‘the outback’. Additionally, documentaries and the general media tend to promote Kimberley as the most remote and little known wilderness area of ‘the outback’. If we may now step back and assess this situation objectively, it is not surprising that combining discussions of Aboriginals from the Kimberley region of the outback is a recipe for largely unbridled romanticism. I believe this situation will escalate as the pressures of modern urban living increase, and this factor must be recognised and added into the equation of evaluation of historic data and records by future researchers.

Some of the common current misconceptions involve the belief that all ‘old’ Aborigines are ‘Elders’, all dark skinned individuals are Aborigines, and Aborigines must by default automatically know ‘all about’ traditional practices and rock art. Sadly this is not the reality of the situation.
One of my most memorable experiences with traditional Aboriginal culture originated from this 1977 trip, occurring while undertaking interviews at the Mt Elizabeth Aboriginal camp. Unannounced, an old Aboriginal suddenly strode from the timber line towards the camp, pausing at the mandatory shouting distance range to await identification and a verbal clearance to approach closer. Most remarkable was the fact that this wiry little man was brandishing a cluster of three metre spears and associated weaponry. Displaying obvious self-confidence and maintaining a justifiably aloof bearing, he commanded quiet respect from the station Aboriginals as they the silently watched him rack his spears in the branches of a tree (Plate 263). This was a traditional procedure to avoid damage of such fragile weapons in a community camp environment. The man was Jagamarra, with the station name of Freddy; one of the last traditionalist bush Aboriginals roaming the north Kimberley (Plate 264). For several months Jagamarra had been walking and hunting his way south from the Kalumburu settlement. His weaponry included a steel blade kangaroo spear, a broad shovel-nose cattle spear and a steel-rod-tipped turtle spear for hunting, but additionally carrying two glass tipped spears, and a huge Kimberley war woomera for defence purposes (Plate 265). Jagamarra was, at this time, a unique individual, and this intelligent, quick moving and totally self-sufficient individual clung defiantly to the old ways. His infrequent visits to station camps maintained social connections, but wherever possible he shunned European ways and presence. He chose to live by the old ways, maintaining a solitary existence hunting and moving through the Kimberley bush, visiting the Wandjina sites and keeping alive his belief system.

The manufacture of fine glass spear tips remains synonymous with the Kimberley region, evolving as a logical development from the preceding stone pressure flaking practices, arguably representing the apex of Australian pressure flaking technological development. My fascination with the this traditional technology developed at an early age, after viewing representative collections of these jewellery-like glass spear tips brought back to Queensland by early missionaries. Studying the finer nuances of the flaking techniques had been a priority for my initial Kimberley field trip, and fortuitously Jagamarra was considered to be one of the few remaining craftsman not only capable of
making these tips, but still using them regularly in practical applications. Having optimistically brought with me a range of coloured glass fragments, the hope of locating a surviving craftsman was fulfilled by the unplanned encounter with Jagamarra. This provided a golden opportunity to use these resources and document the techniques and processes of classic glass spear tip manufacture.

Using a small rock set firmly into the soil as the working anvil, a glass fragment was held firmly on paperbark padding covering the anvil, his practiced hands moved quickly and systematically through the lengthy flaking process using bone and wire finishing tools (Plate 266). Secondary processes of mounting completed spear tips to the spear shafts were also documented (Plate 267). A small ‘pat’ of resin prepared from local Spinifex grass was carried by the men to undertake field repairs in replacing spear tips broken during the hunt, and Jagamarra showed the process of using heat rising from a small smouldering fire to soften the resin to a malleable plasticine-like consistency.

Jagamarra was truly ‘a man among men’ in those last days of traditional practices, practicing his belief in the old ways right to the end. When he ultimately believed his time had come, he quietly expressed his choice to ‘finish up’ not in the settlement, but in the bush like the Old People. Taking up his bundle of spears, and gathering his faithful dogs, he slipped out from Kalumburu heading south-west, probably marking the end of an era of dignified bush death which had persisted for thousands of years. Dying as he had lived, in solitary independence, Jagamarra engendered me with a lasting respect for ‘the culture that was’, determined to preserve to the best of my ability an accurate record to serve as a link with the past for ‘the culture which was evolving’.

While recording art mythology with local old men, there were recurring references to another ‘No. 1’ glass spear tip maker. This was found to be Sam Woolagoodja, a Worora man then living in the old Mowanjum community at Derby. Subsequent meetings with Woolagoodja showed him to be another remarkable individual, retaining a vast amount of traditional knowledge, including aspects of mythology and technology associated with Wandjina rock
art. His cheerful disposition and ability to converse at length on often complex subjects marked him as a truly remarkable man (Plate 268). Further detail of the pressure flaking techniques was recorded during long periods sitting beneath a Bauhinia tree in old Mowanjum, fabricating tips from the coloured glass I had brought (Plate 269).

Additional information was recorded on the processes associated with the Wandjina gallery repainting tradition, including the practice of leaving food offerings for the paintings in traditional times. Woolagoodja had personally undertaken levels of maintenance and retouch on some of the Wandjina galleries in his Worora coastal homelands. This represented a unique opportunity to record details from one of the last traditional Wandjina repainting artists. By providing Woolagoodja with a stone slab and local pigments, I was able to document the processes and songs associated with painting a Wandjina. The resulting ‘art mobile’ depicts a Wandjina he identified as Chingoolday (little man) (Plate 270). When seeking a logical European-type explanation for the anomalies in digit numbers on his painting, he casually shrugged it off with the reply: ‘All the same.’ This absence of numeracy of amounts exceeding four was encountered consistently with ‘bush Aboriginals’, compounding my belief that need for quantifying objects which is a trademark of Western materialistic societies was largely absent in at least traditional hunter-gatherer cultures, a fact which should be constantly borne in mind by recorders developing hypotheses in rock art analysis. Examples of pages from my field notebooks documenting various aspects of this process are shown in Plates 271, 272 and 273.

Woolagoodja’s personal Wandjina was Namarilay, a dominant deity of the west coast salt-water sites. Initial recording of mythology (Plates 274 and 275) developed over the years into a complex series of stories. During the numerous times working with Woolagoodja he touched upon a wide range of subjects. Some of these were essential in my developing an understanding of the traditional values associated with rock art, love magic, ceremony and sorcery. Detail associated with Argula (devil) beliefs, and local versions of sorcery ‘singing’ were also recorded, with extracts from Field Notebooks shown in Plates 276, 277 and 278. Other old men also in Old Mowanjum at this time were custodians for specific Wandjina galleries in their Ngartinyin homelands to
the north. Mythology recorded for the then unseen sites proved invaluable in interpreting the art and role of the sites when they were ultimately rediscovered. Some sites remained undiscovered for as long as 22 field seasons, with noteworthy instances discussed later in this section. One of these elderly art-site custodians illustrated the crude but effective process of cold-drawing tips on the steel rod segment of the then much used turtle spears (Plate 279). During these Old Mowanjum visits, time was also spent with the late David Mowaljarlai, documenting detail of burial practices and after-life beliefs. His knowledge of rock art and associated mythology at that time appeared limited and I abandoned further pursuit in favour of those with obvious knowledge. History shows a remarkable change in Mowaljarlai’s role in Kimberley rock art issues, and seemingly meteoric rise in his level of knowledge on the subject.

The traditional processes of visiting Wandjina galleries and the role of associated mythology linking the actual paintings with the broader environment and creation beliefs, were invaluable experiences in my many dealings with Mimi Tdeerwin (Rolly), then residing in the Gibb River station camp (Plate 280). During the 1977 to 1979 seasons Mimi Tdeerwin took me to a number of the great Kimberley classic Wandjina galleries, formally introducing me to the Wandjinjas in the traditional way, and patiently reliving the mythology until he was satisfied I had it ‘proper’. Mimi Tdeerwin was custodian for several of these galleries, including the legendary Wanaliirri gallery, the hub of Kimberley ‘Great Flood’ beliefs. Once satisfied that the proper introductions were completed, and due respect being afforded by us to these towering figures as we systematically recorded them, Mimi Tdeerwin would lie beneath the gaze of the dominant Wandjina and retire to the sleep of the just (Plate 281). His eagerness to insure the mythology of his galleries was accurately recorded was not matched by his understanding of vehicle capabilities in the process of reaching these remote sites. Several near disasters resulted from trusting his implicit belief of stock horse capabilities for the Toyota, and the recurring claim that “this one alright” was soon regarded as a warning for extreme caution rather than simple acceptance (Plate 282). Some of these galleries were revisited several times, to check details of particular figures, and historic detail
of the names of previous custodians and the most recent retouch artists (Plate 283).

**Traditional Knowledge of Ancient Rock Art Forms**

One primary focus throughout the dealings with these last traditional Elders was documenting any knowledge of the history, origins, mythology, or even location of the then little-known Bradshaw paintings. Aboriginals from the Mt Elizabeth camp guided me to a number of art sites, but only one solitary painting of a Bradshaw Figure (Plate 43), which has been mentioned earlier. This example, shown by Dicky Tataya, who passed away in 2005, represents the only example of a Bradshaw Painting which an Aboriginal has taken me to over the 28 years of Kimberley research. My copious notes dealing with these Elders consistently record that they had no knowledge of the art, its artists, a name for the paintings, or even where they were located. This was quite the reverse of the Wandjina art, which they all related fondly to, and regarded with great awe and respect as part of their then living belief system.

Further documentation confirming the lack of knowledge associated with any of even the Clawed Hand Period (CHP) art was obtained repeatedly with different Elders at different sites. Knowledge rested with the Wandjina art, as part of a then living belief system, while earlier but still colourful art forms, associated only by proximity of motif distribution, would be interpreted in usually logical manner based on the individual’s cultural and technological background. One example of recurring interpretation involved interpreting highly stylised CHP Bobby Pin Figures as depictions of contemporary form spear throwers (Plates 284 and 285). This represents a very significant aspect of prehistoric art studies which will be dealt with in future publications on ancient Kimberley rock art.

Basically, such incorrect but consistent interpretation reflects a pattern of image association with the cultural background of the viewer, as would be expected from Aboriginal or European viewers. From the viewpoint of psychological studies this supports the hypothesis of a common image-
identification bias existing across the broader human species, irrespective of
time and place, hence compounding the argument surrounding the value and
effectiveness of iconographic forms on information transfer in any culture.

From the viewpoint of scientific versus emotional studies of rock art, the
interpretations offered from traditional indigenous people, from the same
geographic region as the artwork, but of a much different time frame, clearly
emphasises the argument that contemporary Aboriginals have no greater ability
to provide accurate interpretation than Europeans for cultural elements
preceding their personal belief system. ‘Being Aboriginal’ cannot alone be
sufficient criteria to be considered capable of providing scientifically accurate
information about past cultural evidence which may now be argued as ‘theirs’
because its geographic setting happens to be on an area argued to be ‘their
land’. If individuals choose to accept these responses as a contemporary
Aborigine’s interpretation of ancient art, then that should be considered valid,
and documented as such. However, for science to document these as
‘traditional knowledge’ because of the proponents skin colour, is totally
unacceptable. Such well-intended but emotion-driven arguments in journals
and publications represents just one of the key attributes which have thwarted
for so long the persistent attempts to have rock art studies accepted in true
scientific circles. Combining any form of art with emotion and politics is a
recipe for disaster, and I believe will continue to plague the acceptance of
serious rock art studies as a true science for many years to come.

Of further interest in this discussion on the important issue of validity of
interpretation by claim of Aboriginality is the way unchallenged authority tends
to grow and attain levels of credibility by default. In this instance, my 1977
informant (Dicky Tataya) was called on 16 August 2001 as a major expert
witness in the on-site hearing of the Wanjina Wunguur-Wilinggin Native Title
Claim (WAG6016). This fine old man was (I believe) compromised by being
instructed to stand at a major Wandjina gallery, in front of the large gathering
of Aboriginals, Europeans and the court officials, and be forced to
systematically provide an interpretation, motif by motif, along the long art
panel. My experience has been that these old men are not, by nature, in the
practice of telling untruths, but do not know how to cope with the shame of
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appearing not to know seemingly basic elements of their culture and their land, particularly when facing (and representing) their gathered family and community. This panel included motifs from the entire spectrum of the Kimberley art sequence, probably spanning some 55,000 years of human occupation. He did not want to have to make this interpretation, and had been physically ill over the issue immediately preceding his public interview. While certain segments of his presented associated mythology may be debatable, many of the clear physical painted depictions are not. Examples of this are the two black cockatoo headdress feathers on the Wandjinjas which were interpreted as ‘Kamumungu yams’ and the plan view depiction of a Wandjina style wallaby and neck interpreted as ‘a foot print’. To the credit of Dicky, when questioned as to “Who put him [the paintings] here?”, he honestly and openly replied “God knows!” As this old man passed away in 2005, these many reluctantly-extracted interpretations now remain forever quotable interpretations by a traditional Elder, acquired in the formal setting of a court interview.

Kimberley rock art history studies are marked by numerous similar instances were arguably well-intended actions of often self-appointed European ‘minders and gatekeepers’ have been instrumental in local Aboriginals saying and doing things which they would otherwise not have done. Traits of colonial paternalism seem to be exacerbated by the public interest in the visual elements of Aboriginal culture, particularly rock art, at times resulting in irretrievable damage to not only the non-renewable cultural resources, but the hard-won good relationships between local Aboriginal people, researchers and landholders.

**The 1987 Kimberley Repaint Saga**

One of the most controversial black marks associated with Kimberley rock art in historic times will forever remain as a classic example of a monumentally disastrous ending to an initially well-intended, officially-funded project. This was originally referred to as “The Gibb River Repainting Incident”, but has since become standardised in studies and publications as
“The 1987 Repaint Project”. The history of this project has been covered in my published paper “Rock art retouch: can a claim of Aboriginal descent establish curation rights over humanity’s cultural heritage?” (Submitted Publication No 11). Funding to undertake this revolutionary project was obtained as a Federal grant, under the Commonwealth Employment Project (CEP) (Walsh 1992:49). Project details list the Aboriginal group Wanning Ngari Corporation of Derby as sponsor for the projects, which was described as ‘Aboriginal Sites/Cultural Maintenance’, receiving $109,019 (Walsh 1992:49). Initially, this project was intended to involve nine unemployed Aborigines (five male and four female) for 39 weeks, under the supervision of an Aboriginal officer from south-east Western Australia.

Procedures basically involved documenting the gallery with a video camera and photography, painting over the existing artwork with a white background material, and then repainting copies of the original paintings on the fresh, white background.

A 1987 article published by David Mowaljarlai and Cyril Peck presented a perspective of two of the key individuals involved in the project, noting “Ten rock shelters at eight different places have been re-painted so far” (Mowaljarlai and Peck 1987:72). Their conclusions were that “The paintings of eight sites have been re-painted and twelve young people have experienced culture firsthand. More programmes like this are planned” (Mowaljarlai and Peck 1987:72).

Establishing the criteria and liaising with the traditional custodians of the sites was described as:

At a big meeting we decided that we would only re-paint sites that were faded and needed re-painting. Photographs were taken at each site before the re-painting took place.... We talked to the custodians of the sites and they agreed that the re-painting should be done. An elder was present at each site when it was repainted and told the stories about the place and showed the young people how to re-paint the sites. (Mowaljarlai and Peck 1987:71)
A significantly different perspective of the undertaking was subsequently presented by a number of Kimberley Aboriginal Elders, particularly in discussing specific sites which they believed they held responsibility for. One example of this involved the site referred to as Warringa (Mowaljarlai and Peck 1987:76). Billy King, senior Ngarinyin elder living at the Kupingarri Community immediately below this site, later said that no elders had been present at the repainting of this site, which was up a high talus slope, and that some of the old people had broken down and cried when they had later been shown photos of their Wandjinias which had been repainted 'wearing white shorts' (Mowaljarlai and Peck 1987:Photo 10). Examples of the unpainted Wandjina panel are shown in Plate 286, taken when I was shown the site by Mimi Tdeerwin. The same Wandjina shown after the repaint work, wearing the 'white shorts', is shown in Plate 287.

An example of the implications that issues of repainting hold for understanding not only the historic stylistic development, but establishing time frames for the development of contemporary renditions of mythology associated with Wandjina art, can be found in the Norndja site. My 1977 records of this Wandjina Goanna site (Plate 288) show the original stylistic development of a primary goanna theme through the most recent Wandjina Period of Kimberley rock art. The prominent near-horizontal goanna on the white prepared background is from the Late Wandjina Period, and can clearly be seen superimposing the earlier forms of a pair of vertically aligned goannas from the Yellow Infill Phase, which is the important artistic development predating the very significant cultural and mythologically-associated white Prepared Background Phase, and are from the Early Wandjina Period. The post 1987 Repaint Project modification of this panel is shown in Plate 289. In the repaint process the young artists have simply repainted the main motifs in their interpreted form into a single scene. This has effectively obliterated all evidence of a lengthy theme extending through very significantly difficult stylistic periods, and was accompanied by a modification of the existing mythology to appropriately incorporate the 'new' and now equally dominant figures. These significant changes do not simply have minor implications to this solitary but significant mythological site, as an anthropological discussion
may argue the result is simply an acceptable part of the ever-changing mythology of a preliterate culture. The Norndja site is but one 'station' in a long series of Wandjina sites, marking the physical evidence of an enormous and extremely complicated Dreaming Trail. This trail incorporates a number of key mythological heroes, marking their trails in a series of parallel and interlocking events in the Creation period of Kimberley mythology. Such initially small changes to these paintings, and modification of mythology to suit, have significant ramifications on an association of galleries, stone arrangements and mythology extending from approximately 50 km to the east on the Gardiner Plateau, right through to the Indian Ocean. This represents one of the largest Dreaming Trails in north-west Australia, and arguably in the world, so the implications of such changes to culture and science (if they are considered important factors) are very significant.

Further evidence of the unintentional but improper treatment of both sites and contents is evident from the Low crocodile site. In Plate 290, a section of the main panel with a freshwater crocodile scene is shown, with the site's Boonjgul stone positioned on a portable grinding slab on the central site floor. Both the grinding slab and the Boonjgul stone can be seen to have been brightly painted (not repainted), with a decorative frieze of non-figurative red added for aesthetics around the perimeter of the Boonjgul. These Boonjgul stones represent but one form of sacred stone commonly found associated with the White Infill Phase sites depicting classic Wandjina forms. Boonjguls are commonly natural water worn stones, often transported huge distances from origin to site, and holding great religious significance in the mythology of that site. With animal paintings, such as snakes, crocodiles and goannas, they represent the eggs of these ancestral heroes. When associated with Wandjinjas they represent their testicles. Having personally observed literally thousands of Boonjguls in situ, and interviewed numerous Elders regarding their role, I can state with some authority that they were never decorated, and they were traditionally respected for their power which was so awe inspiring that even touching them was considered sacrilege, and potentially incurred the wrath of their associated deities.
Concerns regarding the imminent risk of the repainting team moving to a major Wandjina gallery listed on the national heritage register resulted in the Australian Heritage Commission contacting me. They were aware that I was working on my annual field season in the general area where the repainting project was under way, so they requested a confidential report on events. I submitted a brief report to them with observations made at these sites while the repainting project was in progress. Having known most of the targeted sites for a decade, and having encountered the repainting team several times during the season, I had no difficulty in preparing the requested summary. Awareness of the modifications taking place as part of the repainting process brought a prompt official reaction, with the addition of graffiti such as ‘Lizard 14.5.87’ added to the originally well preserved Barralumma Wandjina dingo site considered beyond any level of transformation of traditional practices. Added images of equally-questionable acceptability included the comic panel at the Low gallery (Plate 291), and the now infamous frog caricature (Plate 292). The frog attained front page status in the national newspaper The Australian on 11 September 1987, accompanying an article titled “Priceless art ‘desecrated: grant cancelled’”. Subsequent meetings between federal bodies resulted in an official investigation. This was undertaken by the Western Australian Sites Department, which was the State authority responsible for the sites at that time. An investigation team was sent to the sites and presented an unpublished report titled “Wanning Ngari CEP Project Assessment”.

This report tends to avoid mention of comic additions, such as the caricature turtle at Low, and the ‘ginger bread man’ at Nornjar, which were found to have been scrubbed from the site surfaces after their visit, together with removal of all decorative paint from the Boonjgul stone (Plate 292) which had now returned to its original unpainted state (Plate 293). The painted graffiti which would have attracted prosecution had a European been responsible, was not only glossed over in the report, but its application complimented with the comment that it had been ‘neatly engraved’.
A solitary set of initials neatly engraved... Is the only evidence of such activity by the CEP team... This set of initials, done despite instructions to the contrary, can be easily removed without damaging the site. (Randolph and Clarke 1987:18)

Subsequent legal action by one of the European anthropologists linked with the project culminated with a report in the *West Australian* newspaper on 9 June 1990:

The white world is split on whether the tradition should be allowed to continue - and on Friday the row led to a $75,000 defamation award to a Perth anthropologist, Mr Nick Green.... The payout, believed to be WA’s third-highest, stemmed from a decision in 1987 by Kimberley Aborigines to teach their youth the traditional art of repainting...

Controversy over the 1987 Repaint Project still attracts heated discussions, and my original publication “The Gibb River Repainting Incident...” remains the primary reference source for this very important conservation and management dilemma.

**Contemporary Aboriginal Cultural Knowledge—the Reality**

In order to clarify the environment of my work with Aboriginal people, I believe a brief comment is required to establish the setting for use of my gathered information by future researchers. My work with Aboriginal people has always been with people living in station camps or communities, none still living a fully traditional lifestyle in the bush. As such, my gathered information must be considered to contain a certain amount of European, settlement bias, often additionally biased by Christian values resulting from missionary presence. The most obvious bias one must be constantly be aware of is the general ‘sanitising’ of information, particularly when dealing with ceremony and mythology associated with the rock art. Influence of bible stories on
mythology and interpretation is enormous, and has become markedly pronounced over my past three decades of involvement.

This evidence of influence is not surprising, as no society remains static. When dealing with a living culture which is largely isolated from the fast-changing outside world and global events, the bias towards elements that surround them is a very logical one. Recorders should constantly bear these important factors in mind. Always exercise caution when discovering some ‘new and supposedly long-hidden secret meaning’, whether it be associated with a specific element of mythology or interpretation of art. Frequently ‘new’ versions of mythology or interpretation seem more logical than early recordings. This does not necessarily indicate that they are the ‘real’ story, but more likely a contemporary version, updated to incorporate elements of European values and beliefs which now surround Aborigines, making old stories more pertinent to their contemporary community life, and accordingly more ‘logical and understandable’ to the analytical mind of a recorder originating from that world of bias.

I have found that when judged against my own values and life experience, many stories closer to the traditional living and values are at best illogical, and contain elements which seemingly have no bearing or significance. I believe that this reflects now lost elements of the traditional culture, which when presented totally divorced from their cultural background now seem pointless, but possibly in their original context, represented the very essence of purpose of these same stories.

An example of this contemporary adaptation to events that affect isolated cultures is one story about the northern culture hero Walaru, the far northern coastal equivalent of Wanjina, but still a single entity deity. When ‘the Japanese men come’ (World War Two) and they were attacking the Kalumburu people in their planes, Walaru (who travels through the sky in a canoe) attacked the Japanese men to protect the people. In the huge fight that ensued, he was badly hurt, and crashed to the earth on Anglo Peninsular, where his bones can be seen as a big stone arrangement. Another example was a period in the 1980s when the region’s top songman had attained remarkable
status through dreaming and creating a big corroboree about Cyclone Tracey. This became a great favourite in ceremonies, in spite of the fact that Cyclone Tracey had struck Darwin in the Northern Territory on Christmas Day 1974, having no affect on the North Kimberley people, but the aura of European stories, linked with the destructive powers of the elements used by the Kimberley Wandjina deities, had resulted in a 'best seller' contemporary but unrelated ceremony. How does one rationalise the logic of less-obvious bias in contemporary recording of information? With extreme caution, and always kept in perspective!

Wherever there has been a possibility of working with Aboriginal elders and involving them in a valid and worthwhile documentation of information, mythology or interpretation, I have tried my utmost to maximise the opportunity. The passing of the few remaining old people with real primary knowledge, black and white, has become so rapid that there is a major onus on recorders to maintain a clear priority to avail themselves of this vanishing resource. However, I would also like to clarify my involvement with Aboriginal informants, and be clear on the fact that I have always attempted to avoid the largely paternalistic colonial approach of spending limited field time with individuals simply because they are Aboriginal, when they obviously have no primary traditional information to contribute, or genuine commitment to seeing traditional Aboriginal culture and knowledge recorded as accurately and completely as possible. Time remains the most precious commodity that any of us are blessed with, and I believe that my lifetime commitment has permitted the development of certain expertise and abilities which, for the betterment of all future generations, should be used wisely and efficiently. If it is necessary to apply a certain degree of subjectivity in order to maximise the long-term benefits of the expertise and experience that I offer, then so be it. This approach may attract criticism from certain areas, but I believe it reflects the harsh reality of the world we live in, and only history will be able to judge if my lifetime work and contribution will warrant this firm direction.
Ongoing Work with Aboriginal Informants

My early years of sample survey and investigation across Australia while attempting to identify discrete rock art regions provided an invaluable overview. Although discrete geographic regions, the Kimberley and the Victoria River District (VRD) shared a remarkable number of similarities, particularly in the most ancient and most recent art forms, and with recent mythology. Even though located in separate states, where one may initially associate the VRD with the Arnhem Land art region, proximity and geographic association does not fully support this. I believe there are, and have been in distant times, close cultural and possibly mythological links between VRD and Kimberley, rather than Arnhem Land.

My hypothesis is that this association is probably linked with resources and environmental similarities, which have resulted in not dissimilar cultural trends. If cultural development is found to be biased by resources, and resources obviously a product of environments, then there is logic in considering cultural interaction between separated groups being more likely to favour groups developing within distinct but similar parameters. Because I have long set Kimberley as the focus of my life work, any cultural links which may expand our understanding of artistic development or even origins of the cultures must be pursued. This resulted in my spending a large amount of time working in the VRD rock art areas, particularly in the 1980s and 1990s. Seeking to identify similarities and dissimilarities between the two regions extended to historic Aboriginal knowledge and mythology. During the two to four weeks annually spent in the field in VRD, some important examples of rock art links with the Kimberley were located.

Links of the recent Kimberley Wandjina themes and mythology with the VRD Lightning Brothers can be seen in the two anthropomorphs in Plate 294. The huge, sinuous lightning bolt accompanying them is also a feature of the most recent art era in VRD. Some indication of the size of these figures can be seen by comparing them with myself, seated below. Large Rainbow Serpent motifs depicted in a range of distinctive regional styles and alignment are one of the dominant themes of VRD rock art. Some examples are huge, and the
panel compositions indicate the work of much practiced artists developing elements of aesthetics into more formal iconic forms. One of the examples discovered remains my most favoured rock art depiction observed in a lifetime of global pursuit of the subject (Plate 295).

Large female figures with prominent genital detail, depicted in erotic imminent coital ‘squatting’ alignments, are a distinctive feature of both recent VRD and Kimberley rock art. The VRD forms more frequently display strands of cat’s cradle string held aloft over their heads (Plate 296), which is a distinctive characteristic of the Namara’kain malevolent female spirits of recent Arnhem Land regional rock art. Kimberley female figures less frequently display held string strands, but we have over time accumulated a significant amount of mythology, interpretation and song about them. These Djilinjas are beautiful, promiscuous female spirits which lure away and seduce males, and are much hated by the females. In both Kimberley and VRD these ‘squatting women’ depictions are found uppermost in superimposition sequences (Plate 297), confirming the recent appearance of their mythology in traditional rock art of north-west Australia. In very recent years in the VRD area there has been the development, particularly apparent in Land Claim arguments, by females claiming these ‘squatting women’ as paintings by females. In keeping with developing New Age female trends, I anticipate this new claim will advance from tacit tolerance to referenced fact in a very short time span. While respect must be acknowledged for supporters of a formerly downtrodden people seeking an identity, I personally find it sad that graphic elements so important to their forbears have now become mere tools in the ongoing war of political correctness and gender equity. Future generations of Aboriginals seeking the truth of their identity will, I believe, equally deplore the rewriting and sanitising of traditional history.

In 1989, a significant amount of time was spent attempting to attain overviews of the East and West Baines River areas, where I received considerable assistance and valuable mythological information from Elders such as Bobby Whitopur (Plate 298). People from the Bulita and Amandidgie Communities were particularly helpful with mythology, as I was particularly
interested in pursuing inter-regional links indicated in the rock art based on the Mooloogoor (Devil Dog) mythology. Ginger Packsaddle was also a great supporter of our work in locating and documenting sites in his area, where knowledge of their existence was by that time largely lost.

Work was not only with male Aboriginal Elders, but also with female Elders, particularly in the north Kimberley, documenting songs and mythology associated with the promiscuous female Djilinja spirits, and the male Argula devil spirits. Some of the Kalumburu female informants included Manuela Punan, Mary Pandilow and Dolores Cheinmora, with the latter accompanying me to sites on a number of occasions (Plate 299 and 300).

Male informants from north Kimberley included the notorious Dicky Udmara, and later his brother Hector Tungal. Udmara was one of the last old men to come in from the bush, and his activities while roaming the Kimberleys with spears were legendary. He was held in absolute awe within the Kalumburu community where he had settled, rejecting houses in preference to living under a mango tree with his 19 beloved dogs (Plate 301).

During my time in Kimberley I had actively sought any knowledge pertaining the elusive Ledjmorrow Wandjina site, referred to by researchers as early as AP Elkin, but its location remained seemingly unknown to both white and black people. Progressively, Ledjmorrow had attained a certain aura of mysticism, perhaps not unlike Camelot has in English mythology. Ledjmorrow represented a veritable lynch-pin gallery in the Wandjina belief system, and was the sacred location where Wallanganda, a supreme deity, had ‘pushed up the sky’. This site and its mythology records one aspect of Wallanganda creating the Milky Way, where he has resided since completing his earthly travels in the Lalai Creation Period. Few individuals believed Ledjmorrow to be a real site, regarding it as a non-existent element within a very complex mythology system. However, during a late 1980s Wet season, Udmara walked into the Mt Elizabeth community, and in discussions he mentioned having been to Ledjmorrow. As it was common knowledge throughout Kimberley communities that I had long sought Ledjmorrow, Peter Lacey kindly phoned me to relay this quite unexpected lead.
Subsequent meetings with Udmara, to convince him of my bona fide intent, is a long story; but eventually he offered to take me to this mythic place. He had not visited the site since he had been there for ceremonies as a young man to have his initiation scars cut on him (Plate 302), which was probably around 40 years earlier. Udmara was, by then, too old to undertake the long trek of walking in to Ledfimorrow, so I attempted to carry him in on the luggage rack of one of my field quad motorbikes. In the way common to many old bush Aboriginals, Udmara would only sit cross legged during travel (Plate 303). His overweight condition greatly altered the centre of balance and made operation extremely difficult, further compounded by his total lack of understanding of the limitations of small, overloaded vehicles operating in extremely rugged off-road terrain. His memory of the landscape was remarkable, but he was unable to understand that at times it was necessary for a wheeled vehicle to divert from the old Aboriginal walking trails he was obviously guiding us along. After a trip such as I would not wish to repeat, we reached the elusive and truly remarkable Ledfimorrow gallery (Plate 304), naturally concealed in a setting which did not attract attention to the huge gallery. Recording the associated mythology of this most important mythological gallery possibly represents the most memorable event of my working with Kimberley Aborigines in piecing together the complex Wandjina belief system.

Other work with Udmara involved recording non-art mythological sites and their associated stories (Plate 305). Many previously-unrecorded aspects of the Wandjina belief system were encountered during discussions about associated activities of mythological ancestors, often part of secondary creation stories indirectly linked to these sites. Without having a good background knowledge of Wandjina mythology recorded by early researchers such as Elkin, Petri, Lommel, Coate and Capell, I do not believe it would have been possible to know the basic questions to pursue in order to have this bonus detail revealed. The knowledge provided by Udmara was of the highest standard I have encountered in Kimberley, possibly due to the fact that he and Jagamara were the last to lead a hunter-gatherer bush life in Kimberley. They ‘lived’ the culture and landscape, not ‘reminisced’ as was the way with so many community based Elders. The location, name and traditional purpose of non-art
sites such as the Ungud (Rainbow Serpent) stone in (Plate 306) is of great importance, with the mythology of the waterholes in the distant rear another element. The role of this stone in the huge Dreaming trail of the Unguds extending from Bonaparte Gulf across Kimberley to the Indian Ocean is another. But the subtleties of the erected flat stone behind Umdara, as a Rain Stone, used as a ritual painting palette to induce and halt Wet seasons, using the power of Ungud in his metamorphosed standing stone form, is yet another dimension to the inter-woven complexity.

The quad motorbikes have proved an ideal mode for transporting Aboriginal Elders to site locations. They provide freedom from enclosure, are free of most traversing limitations of a large 4x4, permitting people to move slowly through the bush at the height and visibility closest to that experienced when originally walking the landscape. Most informants have not walked the land for many years, and have to re-synchronise themselves with a landscape often much changed since their last visit. Quads provide the next-best option to actually walking the country, and I have found that informants disoriented by the speed and elevation of helicopters, and the unavoidable meandering of 4x4 traverses, are able to re-orient themselves when quad transport is reverted to.

During the 1989 to 1995 period my field work focussed on maximising opportunities of working with Aboriginal elders, and generally gathering as much as possible of living knowledge pertinent to rock art and associated mythology. During this time, Dicky Tataya again accompanied me on a number of traverses to Wandjina sites which he knew of (Plate 307).

Science from Mythology

Prior to my first Kimberley trip I had long pondered over the landmark 1956 publication by Agnes Schulz covering 'North-West Australian Rock Paintings'. As one of the two female recording artists on the 1938 German Frobenius Institut Expedition, Schulz had studied the paintings millimetre by millimetre as she made large-scale painted facsimiles of the key panels. Personal experience had long convinced me that only by careful study and
copying of motifs, at the site, could one even begin to understand the subtleties of all important technological and stylistic change. Kimberley art was of course alien to her cultural background, and the expedition’s art and mythological studies were ground breaking, rather than refining the works of predecessors. As such, this was one of the first detailed regional studies of Australian rock art involving a multi-disciplinary approach, and became the datum for my years of Kimberley studies of the recent Wandjina Period art. Ian Crawford’s remarkable 1968 book *The Art of the Wandjina* complimented and extended certain aspects of the earlier work. I retain the greatest respect for the work of both these authors, and the contribution they have made to the study of Kimberley rock art.

During early Kimberley trips, the detail in these publications permitted me to ask informed questions of potential informants, providing opportunities to expand and clarify secondary levels of often-subtle unrecorded mythology and ultimately assist with the iconography interpretation which I sought. Both Schulz and Crawford had the advantage of accessing closer-to-traditional-level Aboriginal informants than I could now possibly hope for. One would thus be wise to use their invaluable information as the foundation of any refinement attempt. Part of my Kimberley quest thus involved gearing field work wherever possible to facilitate rediscovering these ‘lost’ Wandjina galleries. The term ‘lost’ is appropriate in these instances, because the recorders were guided to galleries known at that time to their informants, at least in geographic location, even if not in mythological context. Mapping of Kimberley at the time of this early research was poor, and in the time of the Frobenius Institut Expedition they were using maps created by the 1901 Brockman Expedition, where huge areas surrounding the headwaters of the major rivers still remained unmapped. In fairness to these researchers, it is not surprising that they frequently had little idea exactly where they were taken, and at times could not confirm even which river system they were taken to. This created a probably unique situation, where an amazing amount of traditional information, as well as formal photographic recording, had been undertaken and archived on a range of major art galleries, where the locations had then been lost with the passing of the Aboriginal informants.
My assessment of the available information was that, realistically, the elements of traditional culture surrounding the creation of rock art were already in a state of advanced collapse even by the time of Schulz, and certainly Crawford. Little of the recorded interpretation could thus have originated directly from practicing rock artists, but more likely represents second-generation knowledge where interpretation was based on a knowledge of identification keys still identifiable by individuals long influenced by missionary and settlement values. We may never be able to fully learn the intimate nuances of the original artists, but with careful recording, study and analysis, I believe it is possible to regain at least the secondary level of ‘reading’ the art by way of incorporated identification keys. Remoteness, inaccessibility and seemingly insurmountable logistics plagued search attempts in the south-west Kimberley hub of classic Wandjina development.

Progressively individual files were created on each referenced site, where any scrap of possibly pertinent information was systematically added. This permitted a steadily expanding understanding of each site, its art and pertinent mythology, making it possible to ask increasingly-rewarding questions from informants, as well as focus search areas as opportunities arose. The first fifteen years were the most frustrating, but as any living knowledge passed, the progressively fine-tuned site-search files, combined with developing technology, began to produce results.

Efforts were also increased in the ongoing pursuit of mythological trails identifiable in my progressive consolidation of material originating from the work of Elkin, Petri, Capell and Coate. My objectives were to primarily identify potential geographical features described in the often-detailed progression of Wandjina-specific mythology.

The masses of hard copy information was progressively digitised with the assistance of volunteers, and a theme-specific Filemaker Pro database developed, and with the increased analytic potential, the genealogy of the Wandjinjas began to form. Obviously the bulk of the essential mythology, names and Dreaming Trails are lost forever, and it would be delusional to consider a complete genealogy could now ever be created. However, the
preliminary levels that were attained were remarkable. The veteran Kimberley researcher Howard Coate had often expressed a belief to me that his lifetime involvement with people following the Wandjina beliefs had led him to conclude that it was essentially a quasi-ancestral hero-worship cult. On information to hand, I tend to agree at this time, and dating so far has confirmed that it is a very recent artistic and presumably also religious belief system.
6 Contemporary Rock Art Recording Issues

Meeting the Challenges

A landmark event in my studies of rock art, and the development of increasingly efficient processes to cope with its recording and analysis involved the preparation of the Bicentennial Project publication Australia's Greatest Rock Art (AGRA), (Submitted Publication No 8). For more than a decade I had been systematically visiting and developing a personal understanding of known and rumoured rock art regions throughout Australia. It should be remembered that in this the late 1980's, official awareness regarding the distribution, diversity and significance of Australian rock art resources was at best fragmentary.

Australia's isolated setting as the world's largest island, encompassing an immense diversity of environmental, climatic and geological regions, made it an ideal subject area to test developing hypotheses regarding the use of iconic information transfers by preliterate societies. My research was increasingly indicating that there was a correlation between environment and rock art. This appeared most evident in the differences between non-figurative and largely geometric art associated with the resource sparse arid environments, and the more detailed pictorial art of the more resource abundant tropical regions. If this ultimately proved correct, it would require a major revision of recording systems to permit the gathering of comparable data from such widely differing graphic forms. In order to devise such systems it was first necessary to establish a working knowledge of the stylistic and technological diversity occurring throughout the length and breadth of Australia. Extensive research of journals, theses and the AIAS library confirmed the enormous extent of potential rock art areas throughout Australia about which nothing was scientifically known.

This dearth of information about regional rock art styles and distribution led me to make increasing numbers of personal field trips to undertake preliminary assessments, spending time with locals, and where possible
undertaking backpacking forays to develop a feeling for not only the themes and styles of the art, but perhaps equally importantly to attempt to identify any regional correlation between specific art with specific resources or geographic features. The progressively expanding inventory of diversity, confirming correlations between certain art forms and environments, included many visually spectacular art panels, with equally fascinating interpretation. An opportunity to receive limited funding to complete this preliminary Australian rock art overview came with the Australian Bicentennial Project. A proposal was submitted and ultimately received strong support. Subsequent traversing backwards and forwards across the Australian continent was such that it consumed the working life of a new Toyota Land Cruiser, but ultimately provided a remarkable coverage, as shown in the map included in the introduction of the published book (Plate 308).

Problems and frustration associated with the writing and final layout of this major publication forced me to make the then enormous move to adopt all computer technology in the office. This represents a major turning point in my development of systems dealing with the research and analysis of rock art, forcing a sequence of major changes. AGRA was my last handwritten work, using the traditional ‘cut and paste’ technique. Although this terminology has continued into computer technology, contemporary researchers may not be aware of the incredibly laborious process it replaced. In order to meet the deadline I had to average ‘one metre of hand written final text per day’, and the target area was marked out on the office floor. Editing of the hand written first draft involved physically cutting, moving and pasting re-positioned sections to form the physical copy of the second draft (Plate 309). Rewriting, a second editing, liberal application of ‘white-out’ paint and another ‘cut and paste’ produced draft three. After a third editing it had to pass the one-metre-length-text (Plate 310) before I could finish the work-day. Researchers arguing that they now spend more time rewriting and massaging text in electronic cut and paste should pause and appreciate that this luxury is attributable to the technological developments in word processing which most take for granted.

The variation of site types, surfaces and setting was far more diverse
than I had previously encountered, so there was a huge learning curve associated not only with the understanding of the art, but attempting to develop techniques to adequately record this diversity. This provided opportunities for me to field test a wide range of recording techniques, greatly assisting me in making quantum leaps in developing specialist photographic techniques over a relatively short time frame. As these would be of particular use to future researchers working on these art forms, a brief explanation is added.

Engraved art panels which had weathered to very low relief on erodable rock surfaces were particularly challenging. Many engravings now displayed low contrast appearance, resulting from repatination of the modified surfaces. Poor lighting frequently combined with difficult access to panels making the capturing of both detail and depth of field in photographic records a very difficult task. Many techniques were experimented with, with the most effective system eventually being designed in my workshop, based on a folding stepladder. The base of a telescoping movie camera monopod was modified with a bolt-and-wingnut to permit quick field assembly to the stepladder's top step. A rotating ball-socket photographic head on the other extremity permitted camera quick-coupling. Combined advantages of the ladder's elevation, together with ball and telescopic variables, provided an infinite range of quick and positive camera alignments. Stability gained by monopod mounting permits the optimum modelling use of available light, but small f stop aperture at very low speeds to attain maximum depth of field (Plates 311 & 312). The results warrant the time involved (Walsh 1988:Plates 45).

Extensive pavement areas of shallow pecked engraved motifs are a feature of large areas of the Pilbara rock art region of Western Australia. The hard granite surfaces are invariably patinated, but often in two widely differing levels of contrast, indicating the frequently larger, lower contrast and lower relief motifs are probably of considerably greater antiquity. Individual figures exceeding three metres are not uncommon, and Story Panels may extend to eight metres long or more. The large surface areas involved ruled out artificial lighting, and the most efficient process was to note the angle of the pavement in relation to the path of the sun, and return to the panel when it was approaching
a 45 - 60 degrees to obtain ideal oblique lighting. By using the stepladder and monopod combination, aligned at approximately 160 degrees from the sun, and using a wide angle lens to obtain depth of field, very satisfactory results can be obtained (Plate 313).

An even more difficult form of engraved art to photograph involves a regional style of pavement setting engravings synonymous with outback New South Wales. These are frequently on rock areas emerging from the surrounding arid environment in distinctive gently convex arching formations referred to as ‘whalebacks’. Combinations of originally shallow pecked engraved art, long blasted by moving sands and weathered to very shallow contours, are patinated with an almost black surfacing. Conventional daylight photography provides flat images almost devoid of detail, whereas oblique flash provides only detail on a small segment of the convex surfaces. To establish totally controlled conditions, I worked at night, with a set of three Multiblitz Minilight 200 studio flash/flood lighting systems mounted on high-rise tripods. Using the three lights and experimenting with distances and angling each unit, with the addition of ‘barn door’ directional attachments on the main light source head, and bouncing the flash out of umbrellas on the secondary units, it was possible with time to obtain absolutely ideal, controlled lighting on the specific groups of desired motifs. Again the stepladder is used to achieve optimum angle for depth of field on the target motifs (Plate 314).

Even more challenging were the underground limestone finger-fluting art mark panels synonymous with Koonalda Cave on the Nullarbor Plain, and the cavern systems of Mt Gambia in South Australia. Generally there is no contrast evident, and the very shallow ‘abraded’ finger markings have no contrast and very little contour relief to enhance detail. The Multiblitz light system, together with a 500watt portable 240volt generator, were initially lowered down the sink hole by ropes, then carried in areas of total darkness for nearly one kilometre through the cavern system to the main art panel amphitheater. Setting up and trialing modelling alignments in the dark amphitheater, far below the desert landscape, was for me a photographic experience (Plate 315). When attempting to record detail over a large section
of finger flutings, almost devoid of contrast, some shots were taking 20 minutes of trial lighting modification, but the results for such a difficult subject warrant the effort (Walsh 1988: Plates 35 and 36).

**Equipment to Deal with Extended Kimberley Field Trips**

The first Kimberley field trip revealed the harsh realities of the many logistics and equipment challenges which must be dealt with if the limitless potential of its rock art was to be pursued. To refer to it as ‘a steep learning curve’ would be a gross understatement - but the potential in the primary quest to ‘read’ rock art far outweighed the problems.

Short wheelbase Toyota Land Cruisers, and by 1988 the intermediate wheelbase models, were subject to extensive modification and used with great success. However, it must be stated that at this time the recording processes were far simpler, the subjects of attention more limited, and the duration of the field seasons more limited. It would be impossible to consider this type of field vehicle to service the demands of the current recording projects. However, there is value in noting the progression by which my systems have developed, as recorders may identify one of these levels as adequate for their present requirements.

Developing a system to cope adequately with the challenges and potential data only became possible in 1989, when I commenced work with Dreamtime Culture Corp. There was a realistic and ongoing budget allotted, resources and flexibility to obtain a Toyota and to modify the body and build a trailer to suit perceived requirements.

**A Functional Long Range Field Recording Vehicle**

As the field vehicle is the most important element in the very survival of field members, I believe it warrants a brief discussion. My experience with many field vehicles has confirmed that the Toyota Land Cruiser cab and chassis
currently remains by far the most efficient vehicle for serious field-work. As the preferred work vehicle of the outback, Land Cruiser spare parts are the most readily available. Reliability rather than features remain the very essence of survival when undertaking extended trips to extremely remote areas. Perhaps the greatest failings associated with modern off-road vehicles lies in their electronics and hi-tech components. These assist in attaining previously unimaginable efficiency, power and highway speed, but make it almost impossible to get failed systems operational with average mechanical ability and a basic tool kit under field conditions. The choice of a diesel powered engine adds significantly to the reliability of operation, particularly in wet conditions, and makes the issue of carrying spare fuel much safer than the more volatile petrol. I would thus urge serious consideration to be given to the standard diesel powered Toyota Land Cruiser cab and chassis as the basis on which to build a field unit.

Dust remains one of the greatest enemies of sensitive field recording equipment, and even the best equipped and supported field program cannot succeed in the face of dust associated equipment malfunctions. Serious consideration must be given to planning adequate storage facilities which still permit ease of access. The most efficient system I have experienced involves lockable metal trunks, with dust proof strips added to lids, stored mid-section of the vehicle to minimise movement on rough tracks. Effective dust proofing of large closed areas seems an impossibility, creating a vacuum effect which actually sucks dust in. The only effective system involves travelling in dusty conditions with the flexible sides of the vehicle rolled up, and rear flap down, using natural air flow to counteract any vacuum associated problems.

The end product of the Kimberley field equipment construction can be seen in Plate 316. Removal racks on the trailer allowed the dinghy to be carried on either setting. Quick detachable sideboards on the Toyota were reinforced with added inner grips, serving a multiple role as loading ramps for the Suzuki quad ATV’s (Plate 317).

The aluminium dinghy was intended for use in moving recording equipment along navigable downstream sectors of some of the larger Kimberley
rivers, such as Drysdale River (Plate 318). Resorting to transporting a dinghy may seem excessive, as most of the Kimberley rivers have areas where rocky bars permit scattered crossing points, However the lower areas of some of the major rivers form effective barriers greatly restricting surveys. In some instances it is possible to search until a shallower fording area is located (Plate 319), but the prevalence of saltwater crocodiles in these large, permanent tracts of water does rouse a certain level of concern. Gaining vehicular access to the downstream river launching areas represented a constant problem, frequently hampered by dense scrub bordering approaches of loose sand and dense pandanus. Additional roof rack mounts on the Toyota proved invaluable in permitting transfer of the boat from the trailer to the Toyota, and without the trailer its increased bush-bashing manoeuvrability allowed greater access to watercourses. Many loose sandy environments made access with the heavily laden Toyota an impossibility, so the dinghy would be towed through often quite lengthy approaches. Logistical limitations associated with having to backpack lengthy distances from the end of dinghy access were eventually resolved by shipping the quads as individual loads in the dinghy (Plate 320). Due to the high centre of gravity and bulk (rather than weight) associated with shipping quads, care was required in driving the quad over ramps to a central travel point on the two rows of seats (Plate 321). Once securely roped down, the quads could be shipped quickly and safely along the placid river stretches. When sand bars and lengthy shallows halted the loaded dinghy, the quad was unloaded and towed the dinghy through the shallows before reversing roles and continuing.

Introducing the Field Use of Quad ATV’s

Experimenting with the use of quad ATV’s for Kimberley field-work was regarded as a novelty in 1989, but has since become accepted as one of the most efficient and best suited modes of off road mobility for both stations and authorities. The fully self contained mobile field base carried two quads, spare tyres, spare fuel, basic spare parts, maintenance tools, and a small 240volt
portable generator. We could comfortably operate in total isolation for up to six weeks unless sustaining major breakdowns of vehicles or recording equipment. The Toyota and trailer were designed to serve primarily as a self contained base camp, and not as a vehicle to actually reach the sites, as had been the case during my previous 20 years of site recording.

When a proposed survey area had been determined, the Toyota would move the trailer and gear to a base camp point within sensible driving range of an emergency contact, at times 80km out from station homesteads or communities in the basically trackless environment. Sufficient water was carried to avoid the constraints of having to select a water source for a base camp, with many camps ultimately being ‘dry’, but having been selected for their strategic position for the subsequent field forays.

Quads were modified to permit carrying food, water, basic camping equipment, a light swag, long range detachable fuel tanks, and recording equipment over terrain beyond the scope of conventional 4x4 vehicles (Plate 322). We were able to comfortably undertake five-day field forays away from the Toyota before having to return to replenish flash batteries and supplies. The increased range attainable by this progressively refined approach permitted the commencement of a long-term art sampling process which would otherwise have been unattainable.

Much of the early experimentation of quad based surveys was undertaken in the VRD, where a period was spent annually working with the late Howard McNickle. While the VRD is by no means as rugged or inaccessible as Kimberley, there are vast tracts of terrain littered with hard small rubble, camouflaged in dense spinifex, and not well suited to the early quads with low clearance (Plate 323). In the pre-GPS days navigation by circuitous routes to reach potential rock art survey areas, this was extremely demanding, at times requiring 80 to 100km of plateau routes to cover 20km direct treks. In some desert environments of the south field trips of up to 10 days would involve several hundred kilometres of quad travel (Plate 324).

Researchers may question the validity of travelling such distances rather than simply backpacking direct. However, the weight of the recording
equipment was very significant, as I was undertaking all recording in medium format colour and B&W, with 35mm transparency backup. This involved two SL66 Rolleiflex bodies, three magazines, four primary lenses, one 35mm camera with two lenses, three Metz flash guns, nine nicad battery packs, 2 sumpack flashes, flash meter, approximately 50 rolls of 120 film, 25 of 35mm film, recording equipment, camping gear for zero nightly temperatures and food for 10 days (Plate 325). When inevitably having to descend into the gorge systems and commence the art surveys, it was essential to be reasonably physically alert. With no radio contact or safety measures, there was no latitude for careless moves resulting from premature fatigue caused by two-day forced marches.

Much of the VRD rock art is associated with walls of broken defiles and gorges, where it was impossible to take quads (Plate 326). We would thus move the vehicle to a suitable base camp location, take the equipment by quad as far as possible to a secondary field camp, then trek in to a survey camp with all the equipment. From the survey camp we would proceed to work designated areas with day packs to locate, record and return to the field camp. When a designated area had been satisfactorily sampled, we would move all gear back to the plateau crest quads and the secondary camp, moving by quad to the next secondary camp, and repeating the process.

At the end of our VRD season, before moving on to Kimberley, we would use both quads to move Howard McNickle with his equipment and stores out to the most distant possible point to commence his annual big survey walk. McNickle was truly an ‘Iron Man’ in regard to his dedication. His systematic solo surveys of VRD are legendary, ranging from 18 to 21 days, and unlikely to ever be equalled. He incorporated the most unorthodox bushwalking procedures, surviving on the most frugal diet of primarily tea, milk arrowroot biscuits, soup and fanta soft drink. Where possible he would organise food dumps along his proposed search route, but otherwise strode through the rugged gorge search areas with backpack and plastic shopping bags in each hand (Plate 327). Strange though this approach may seem, McNickle’s rock art discoveries were enormous, and without his assistance I would have been many years
obtaining a sufficient overview of the VRD art to make valid stylistic and cultural comparisons to the Kimberley art region.

Quad ATV’s Extending the Scope of Kimberley Site Sampling

When commencing in 1990 with the use of quads as the primary tool around which the Kimberley field sampling survey objectives were to be attained there was quite a learning curve associated with their operation. As their introduction has altered forever the concept of field recording, the progressive increase in efficiency we have been able to develop over the subsequent 15 years of field use has made them indispensable. Future researchers continuing with our work would do well to investigate the contemporary equivalent of our quad ATV’s, and heed our experiences to plan even more efficient survey projects. A brief summary of the key points learned about quad use has been added for reference.

The greatest failings associated with quad field recording use in Kimberley involved the tyres and the rubber protection boots covering the CV joints on their drive axles. Factory fitted two-ply tyres were absolutely hopeless with puncture problems, particularly in post-fire conditions associated with acacia sucker country. This was overcome by fitting the quads with specially ordered six ply tyres. Small battery operated compressors became a standard component of each quad’s operation kit, and a cigarette lighter power outlet wired into the quad to facilitate quick and easy operation.

Rubber boots on the CV covers in their exposed under-body location were easily punctured by even small sticks. Punctures need not be readily visible, but allowing sand and water from stream crossings into the CV joint and the concentrated abrasive action in the rotating CV drives rapidly destroyed the joint, at times of extreme use taking as little as several hours. Irrespective of cost and difficulty in replacement, under the worst conditions this could result in a life-threatening situation for an inexperienced operator in
an extremely remote location. Various trialled modifications ultimately identified an easy, cheap and very effective process of mounting a ‘flexible shield’ suspended in front of the drive. Cord-reinforced rubber sheeting proved to be an ideal material, with its flexible and tear resistant composition diverting sticks down below the fragile CV boot.

Small HF radios were mounted on the quads, permitting communication to be maintained between operating units, and in absolute emergencies to search aircraft or support helicopters. In later years when Global Positioning Systems (GPS) became commercially available, one of these was also mounted on the quad handlebars. As the robust Apple Duo 230 laptop computer system became available, additional power sockets were added to the quads to allow these to operate under field conditions (Plate 328).

Fire was a constant threat with some models of quads, in instances where the long dry grass became caught close to the exhaust system. Flames suddenly erupting from the motor area up either side of the fuel tank, when surrounded by a sea of dense grass, presents a very serious situation, and requires an instant and efficient contingency plan. We found that access to water and its application in the conditions involved tended to be unreliable, and the most efficient process involved carrying a can of Coca Cola exposed in the handle bar rack. With a high temperature maintained by exposure to the Kimberley sun, and remaining in a constant state of extreme effervescence by the rough motion of the quad, an opened can of coke provided the most effective and instantaneous small fire quelling device that was readily attainable and economically replaced. Inexperienced recorders may regard these precautions as unnecessary, however, some indication of the density of even the shorter species of Kimberley grass immediately after the Wet season can be appreciated by Plate 329, with the density of flammable fuel surrounding the quad rider visible in Plate 330.

During the first very long forays into far flung potential rock art areas a ‘support vehicle’ in the form of a station modified ‘bull buggy’ was enlisted to accompany us (Plate 331), and in times of quad failure, we were able to continue and reach the proposed survey area by piggy backing the Field.
Assistant on the bull buggy (Plate 332). This by no means indicates the quads were an inferior field research vehicle to the heavily modified three cylinder, two stroke Suzuki 4x4’s, which represented my second choice for a multi-purpose field survey vehicle. There were instances where the quads had to piggy-back operators of the bull buggies after mechanical inability to deal with the very demanding terrain.

As procedures developed through experience, increasingly longer and more far-ranging field surveys were attempted using only the two quad team. No radio contact was available at this time in the event of emergencies or accidents, so each unit and operator had to be as self-sufficient as possible. Travelling to search areas was most efficiently undertaken travelling together, but when working search areas, greater primary location of sites can be attained by operating separately, which for the inexperienced does offer many unexpected problems. Regular radio contact thus represents an essential safety requirement. An example of one of the unexpected and invisible threats to a solo operator is quick sand, which is unpredictable in this location, and not apparent in even shallow clear water. We developed a connecting rope system for use when crossing such areas, first walking the crossings to determine the point of least resistance, then ‘rushing’ at speed with one quad, while the other remained on the bank with connecting rope extended at the ready for a rapid reverse salvage operation in low range. Once crossed, the rope is transferred to the lead quad, which stands ready for the following quad. The rapid implementation of this process saved a sinking quad on several occasions, where speed is the essence, as the sinking vehicle has at best minutes of operational ability to assist before the motor submerges (Plate 333).

Quads are very stable work vehicles when operated sensibly, but narrow, deep erosion channels concealed in the long grass can create traps which instantaneously roll the vehicle (Plate 334). Having had two personal instances of being knocked unconscious in such accidents, I would urge a strict policy of regular radio contact between survey quads operating separately. In an instant a quad and rider can disappear into grass-hidden crevasses (Plate 335), and without a policy of working together, the trapped operator could
easily be subject to extreme circumstances before discovery.

Instances of severe mechanical failure such as broken chassis components on this fully camp-equipped quad, 80km out from the closest homestead (Plate 336), required disassembling of the quad and transport back with piggy-backed crew for repairs. Major mechanical failures require a certain amount of mechanical experience between the operators to be able to strip down and repair machines under emergency conditions (Plate 337). I raise these points to draw the attention of future researchers to the problems which can confront even the best resourced project equipped with new state-of-the-art equipment. There must be great attention paid to safety measures, contingency plans and insuring that there is an element of experience and at least basic mechanical knowledge amongst the team’s operators.

I would additionally consider it a basic prerequisite when considering serious field survey projects to insure at least one main team member has reasonable ‘bush mechanic’ skills. When venturing beyond the comfort zone of station roads, the Kimberley environment can be very challenging for heavily laden equipment. Contingency plans should be in place with expertise and repair materials to extricate immobilised equipment to at least safe and workable settings. Extended off road travel over rock country has through abnormal leverage on the trailer ‘A’ Bar caused metal fatigue which has had disastrous ramifications (Plate 338). Through an interim process of temporary rope-bound saplings it has been possible each time to extricate the quad trailer to areas where we could safely undertake major cutting and re-welding procedures (Plate 339).

While a policy of caution has always been implemented with moving the fully laden field research vehicle and quad trailer to proposed bush field base locations, situations invariably occur where a combination of adverse conditions and the sheer weight of the assembly causes a disaster. A heavy duty winch, snatch block and extension cable system proved capable of extricating the assembly from most rock holes (Plate 340) and conventional bogs (Plate 341). However, certain Kimberley soils hold the potential to present unexpected and major problems in post-Wet season conditions,
including normally safe elevated hillside slope areas. Soils, particularly of some melaleuca environments, can be reduced to seemingly bottomless quagmires of ‘spewy’ consistency when thin surface crusts are broken through. The instance illustrated in Plate 342 shows an example of these unobtrusive settings, equally devoid of suitable winch trees. In this instance the vehicle sank to rest on the underside of the body, where even after abandoning the trailer, the stress created by the suction and weight of the vehicle literally disintegrated the winch gears. Extricating the vehicle took a week, with digging and corduroying with saplings a series of escape paths to the crest of the ridge. The loss of irreplaceable field time and associated winch replacement resulted in my developing a set of short emergency bog strips, which have since been carried mounted to the underside of the trailer. Four sections of military metal Mansel Matting were cut to two metre lengths, which have proven invaluable in permitting a slow but sure system of moving the vehicle in repeated two metre stages. Preparing for such instances may seem excessive, but for a serious recorder attempting lengthy field work during the very limited window of Kimberley seasonal access, a realistic contingency plan must be in place at all times.

Extending the Range of Field Surveys

After five years demanding field work the two quads were beyond resurrection, and it was only with the kind patronage of Dame Elisabeth Murdoch that two of the new generation of more efficiently designed quads were obtained in 1996. During a Kimberley visit to view the Bradshaw Figure art which had so long fascinated her, Dame Elisabeth was able to inspect these essential vehicles which now made continuity of field research possible (Plate 343).

These more efficient quads, with greater clearance and fewer fire problems (Plate 344), permitted safer and much further ranging survey trips, with the equipment further modified to suit this approach (Plate 345). Better battery systems were introduced for the electronic flash units used in recording,
and the associated charging systems allowed us to remain mobile longer away from the Field Camp. The power outlet systems and connections fitted to the quads permitted a veritable mini office and camp to be quickly constructed around them nightly, wherever the end of a recording day left us (Plate 346). Because of the progressive adaption of more sensitive photographic and computer equipment dust was becoming an increasing problem, particularly in mobile survey camps, and where possible rock shelters were used as bases. The small shelter shown in Plate 347 became the office headquarters for seven days of intense location and recording in the immediate area.

As increased mobility permitted access to a more diverse range of environments, there was also an increased range of different problems to deal with, of which not all applied to equipment and technology. When working in swampy areas immediately following heavy Wet seasons, the concentrations of mosquitoes at times extended beyond an annoyance to the point where the intensity of their activities made recording inefficient through the inability to concentrate (Plate 348). Future recorders would be advised to heed the serious problems we encountered, and incorporate appropriate precautions in project planning. During the later segments of my early Kimberley field season, particularly in the warmer periods of August and early September, my team members experienced serious problems with wounds developing from mosquito bites, march fly bites (Plate 349) and speargrass punctures. Seemingly innocuous insect bites would over a 24 hour period transform through stages of angry red appearance, to purple surrounded sores, to final cavernous tropical ulcers. These required ongoing physical treatment in scraping out the gaping wounds, and if medical assistance was not promptly sought, the associated limb developed symptoms of blood poisoning, requiring hospital treatment.

Similar problems were experienced by McNickle at the end of early VRD field seasons, so I assume the process is associated with conditions of increasing temperatures in the dry, dusty tropical environment. The availability of Betadine antiseptic liquid provided a controlling mechanism for the problem, and the trial of the use of antiseptic soaps, such as Sapoderm, as a replacement for all toilet soaps in field camps brought an end to the problem.
Some medical advice has suggested that the problem may have been of bacterial origin, exacerbated by fine dust lodged in skin pores during periods of profuse perspiration in rising summer temperatures. Others have argued that it is associated with individuals from a different environment requiring some years to develop basic immunities to the bacteria. As local long-term residents do not experience the problem, I believe this may be the case. However, the potential jeopardy to extended recording projects through problems arising from incidental issues such as insect bites is real and serious, and caused the premature abandonment of several of my early field surveys.

Noteworthy insect associated recording challenges involve native bees, of which several species are commonly encountered in Kimberley rock shelters. North Kimberley shelters most commonly host the ground-dwelling species, while southern limestone environments tend to be dominated by the cliff-dwelling species. Their quest for any source of moisture is such among species inhabiting the basically very dry limestone environments as to seem desperate. A recorder entering site shelters inhabited by a hive will immediately attract myriads of the tiny insects, pursuing the salty moisture of skin perspiration. Unlike European bees, these small stingless insects pose no risk of physical attack, but density of their hovering swarms is such that it literally makes photography impossible through the encompassing dark cloud. Massing over any exposed perspiring skin surface they remain undeterred by brushing, clinging tenaciously until death (Plate 350). Swarming at the site where this photo was taken has been so rapid and determined that in spite of making three revisits over the years, attempts to obtain photographic and sketched records of its art content still remain unsuccessful.

Photographic Developments in Kimberley Recording

Photographic recording commencing with the focussed Kimberley survey period of the post-1989 era initially involved an extension of the
techniques and systems developed to suit the needs of Queensland sites. Compared to the common Queensland range, comparatively huge paintings were not uncommon, and often associated with low ceilings or concave wall panels in often low-light environments of darkened shelters. This presented many challenges, and the development of adequate systems was a process evolving over years of ongoing experimentation.

My life long working relationship with medium format Rolleiflex cameras persisted in Kimberley, in spite of the incredible bulk and weight involved in basic systems adequate to cope with the Kimberley art forms. The bulk of the recording equipment was divided between myself and a Field Assistant to carry in backpacks, and involved a 35mm camera, 20mm wide angle, 35mm standard and 150mm telephoto lenses. The medium format system involved two SL66 Rolleiflex bodies, three 120 magazines, a prism finder, 30mm, 40mm, 50mm, 80mm 120mm and 150mm Rolleiflex lenses, together with two Metz commercial electronic flash guns, back up batteries, and sturdy Manfrotto tripod with professional ball-mount head. Even when divided between two individuals, this presented a daunting task to move and maintain.

My most difficult personal undertaking with this clearly two person system occurred in 1989 when my Field Assistant unexpectedly became totally incapacitated, and I was forced to continue solo to complete a major regional survey. This was in the very rugged and inhospitable lower Drysdale River, home of the dreaded *Pungens pungens* spinifex - a local species daunting in its size, with piercing ‘needle-tipped’ leaves dripping with a sticky, treacle-like residue. Arguably the most horrific nemesis of recorders in all Kimberley.

Foolishly I attempted to maintain the almost unattainable levels of photographic recording which I had voluntarily levied on my Kimberley research. Loading the medium format backpack in reverse on my chest, and the 35mm and flash backpack on my back, with camping gear, food and film for three days, I regrettably attempted the five km trek to the survey area. Transporting the weight and bulk through this terrain in high heat and humidity over such a seemingly short distance may be argued by some to be a character building exercise. However, coupled with three days recording, attempting solo
implementation of photographic, flash and recording process designed as a
two person operation, simply proved too much. Physically broken for the first
time, this marked a turning point of my recording career from levels which have
never since been attainable. Forced to reassess field systems, contingency plans
were progressively developed to deal with instances of unavoidable solo forays.
Minimum standards of site data acceptability were reluctantly reduced to permit
reduced levels of photographic coverage in preference to no record whatsoever.

A second incident occurring on 11 August 1990 changed my field
recording processes completely. An offer to use an amphibian aircraft to
overcome logistics associated with reaching shoreline rock art areas in far
north-west Kimberley initially appeared a heaven-sent offer to extend our
understanding of rock art stylistic distribution. On the second day of the survey
we refuelled the Lake Renegade aircraft at Drysdale River station (Plate 351)
and proceeded to Cape Voltaire, the most north-west extremity of mainland
Kimberley. After low level aerial observation, followed by landings in the
fronting ocean and undertaking land searches, we located a number of sites
which included ancient art styles previously not encountered. After an
extensive site search in the western shores of Admiralty Gulf, pilot error during
a second attempted takeoff ended in disaster. The crashed aircraft rapidly sank
tail first in the Timor Sea off Meyers Island (Plate 352), beneath approximately
15 metres of muddy waters in an area heavily infested with sharks and large
saltwater crocodiles. My entire recording system of medium, 35mm, flash and
associated items went down with the aircraft. Almost symbolically the last
surge of water escaping the cockpit of the vanishing aircraft shot a still buoyant
red backpack into the air, dramatically landing close by. Although seeming
almost within reach, my inability to swim, coupled with serious head injuries
sustained in the crash, forced me to watch the recording equipment steadily sink
and take with it an incredible $5000 Rolleiflex 30mm architectural lens,
marking the end of an era of high quality medium format recording which I
could never financially replace.

Fortunately my Field Assistant and the pilot were strong swimmers, and
eventually managed to get us ashore in a small bay on the inhospitable coastline
(Plate 353). Locating a cavern shelter (ironically containing no rock art), I spent a most miserable time lamenting the loss of all my equipment and many records, before search aircraft located us the following day. Some weeks later a barge and scuba team located the crashed aircraft at optimum tides (Plate 354) and salvaged the remains (Plate 355). Some 35mm recording equipment was salvaged from the hull by the scuba team, and returned to me. Unfortunately water had penetrated the containers, and in spite of attempts to treat the mechanisms, camera technicians were unable to save any of the salvaged equipment.

A remarkable story unfolded with the lost camera gear, and over a seven year period a further three packs of the lost equipment were found, at widely separated locations around the Kimberley coast, and eventually returned to me. Two packs were discovered exposed in shorelines after cyclonic influences, and the main waterproof pelican case backpack found wedged in mangrove trees far to the north-east. Unfortunately when this case was opened (Plate 356) the contents were found to have been destroyed by salt water which had entered by corroding away backpack mounting bolts. Although $48,000 worth of specialist recording equipment had been lost, one can but marvel at the odds associated with the uncanny series of events which saw not only saw the sea cast up the three separate sets of recording equipment, in three widely separated locations, but also to see it all return to my office some 4000km away.

My involvement in a second plane crash in 1996 was more fortunate. This incident was on land at Carnarvon Gorge in Central Queensland (Plate 357 and Plate 358), on the return from Mt Moffatt National Park, with all recording equipment surviving.

Costs associated with replacing this total loss of recording systems brought an end to my lifetime association with Rolleiflex medium format field cameras. Economics forced an acceptance of all 35mm systems, and I converted to all Nikon F3 systems because they still carried a range of manual lenses in a now largely auto-focus world of photography.

Three Nikon F3 cameras and a range of lenses were then carried to record sites in colour transparency, B & W and with colour print additionally
for selected study motifs. The purpose of including this medium will be dealt with in terminology discussions.

Ongoing experimentation with electronic flash finally allowed me to master the application of the technique to the challenging settings and surfaces of rock art. An upgrade to Metz 45CT1 electronic flash guns provided greater flexibility through their more powerful output, but their nicad battery systems require regular access to power sources for charging. A Honda 500w portable generator was transported to charge these in the field (Plate 359), and although troublesome, an efficient charging program was ultimately developed. Cigarette Lighter powered charger units were in continual use on quad outlets to top up charges while working on sites.

An enormous number of flash shots were used daily, as the unpredictability of these units when transported under these rough and dusty conditions necessitated a flash meter test shot on each gun each time it was switched on. The use of as many as five flash guns on a single large Wandjina art panel was not uncommon, normally involving three Metz 45CT1, and two Sunpak GX14 fill-in flash guns. The skills required to correctly position and align these guns, as well as compensate for the reflectivity of the surfaces they were covering, took some years to perfect. The number of flash shots used, and subsequent demands on guns, batteries and cables can be gained by appreciating the amount of film exposed each season. In Plate 360 the films and associated Field Notes for 2001, the last full non-digital year provide some indication of the magnitude of electronic flash requirements. Five Metz 45CT1 flash guns were taken annually into the field to allow for breakdowns, which mostly averaged three guns ‘dying’ each season.

Photography of rock art is not a simple task, particularly if the essential subtle detail is to be adequately captured to permit later stylistic and superimposition studies under office conditions. I believe electronic flash is essential to obtain this clarity of colour and identification of detail. Automatic flash and automatic exposures used in recording results can only ever create ‘good’ results, and serious off-site research requires consistently ‘great’ results to be valid. Although digital photography is changing the levels of real
photographic skills required, I believe it remains essential that any serious rock art recorder must fully understand electronic flash, and develop high levels of practical experience.

Acquiring ideal rock art records effectively involves the photographer mastering the ability to 'paint with light'. This process does not always involve the addition of light, but not uncommonly requires subtracting the light contributed by certain natural sources. Obtaining quality research records of rock art subject to direct sunlight is impossibility. As logistics frequently do not permit recorders the luxury of returning at times when natural lighting is more suitable, realistic contingency plans must be developed to maximise the opportunity of presence.

Including at least one small, lightweight polytarp, one quality, reusable Space Blanket and a role of thin blind cord in the standard field kit is essential for the undertaking of at least reference photography at all encountered rock shelters. Improvised sun shields can be quickly created by the innovative use of available saplings and lengths of blind cord to adapt the polytarp to the specific art panel alignment (Plate 361). Flash photography can then be undertaken in an environment of controlled lighting. Another useful tactic is to fabricate temporary extensions for the electronic flash guns by binding the unit onto a long sapling with blind cord. High wall panels set up with temporary polytarp sun shields may then have the flash positioned in the ideal right-angle alignment to the subject surface (Plate 362). This avoids the extremes of under and over exposure which would otherwise result from the oblique lighting originating from flash units hand-held from ground level.

Using a Space Blanket to redirect available sunlight towards specific rock art panels is a regularly used process. Instance of large ceiling panels covering low irregular surfaced ceilings can often be recorded by moving an extended Space Blanket round the entrance floor until the desired panel is suitably highlighted (Plate 363). By using two, and ideally three Space Blankets it is possible to redirect light from well distanced exterior sources onto specific inner dark areas. By no means a revolutionary technique, this multiple reflection system was used as a standard for illuminating inner areas of temples
and tombs in ancient Egypt.

Digital photography has dramatically changed field recording, and its ever developing process will continue to provide unimaginable recording opportunities as it becomes increasingly refined and sophisticated.

Initially, digital photography did not offer sufficient resolution or flexibility to be a valid recording tool in still photography. However, digital movie recording of sites and Aboriginal informants was used with the then revolutionary technology of the Panasonic NV-DX1EN Camera from 1997. Unique and historically significant records acquired in this early high resolution digital format include interviews with traditional Elders discussing sensitive issues of the 1987 Repaint Project and the more volatile issue of contemporary Aboriginal association with Ancient Bradshaw art.

Digital movie recording was upgraded in 2001 with a Sony DCR-PC110E Handycam, which has been an invaluable tool providing an enormous amount of archival material. It’s capacity to also shoot JPG format stills to a removable Memory Stick provided early field experimentation opportunities to determine the suitability of digital as a replacement for emulsion mediums in archiving. While the flexibility of digital was undeniable, the low resolution of the early 2.1 megapixel forms was insufficient for all but basic record shots.

In 2002 a Sony DSC-F717 digital fixed lens camera was introduced to assist the unavoidable transition into all digital recording. The greatest field use disadvantage identifiable with top quality detachable lens cameras during this period was dust. During lens-changing procedures, the electrostatically charged image sensor plate tended to attract dust through the exposed body aperture. This continues to remain a major disadvantage with even the latest models. The Sony was selected as the top line fixed lens model, thus eliminating this problem. The disadvantages were the inadequate 5-megapixel resolution, and extreme limitations of macro and wide-angle abilities so essential in serious rock art recording.

By 2003 the end of emulsion based photographic recording was unavoidable, and with considerable teething problems and ongoing frustration
we persisted and established the first all digital photographic season. Macro capabilities were totally unacceptable, and in 2004 a Canon 300D detachable lens digital camera was used in tandem with the Sony, largely for close up detail. Its 6 megapixel resolution and sharpness of fixed lenses heralded a progressive return to the image quality standards of early days. In 2005 a Canon 350D digital camera with 8 Megapixel resolution replaced the failing 300D, and the increase to acceptable levels of archival quality was apparent.

Converting to all digital recording provides another suite of associated requirements in field downloading and interim field storage, which will be discussed in the final overview of contemporary recording issues.

Kimberley Recording and Terminology

When preparing for long term Kimberley recording involvement in 1989 it was assumed that the most logical approach to site recording would be to develop a modified variation of the pro-forma systems which had been developed and refined to very successful levels for Queensland regional surveys. With a background of 12 years Kimberley rock art involvement, I was aware that even on the most superficial levels the art body was far more complex and diverse than anything encountered in eastern or southern Australia.

Based on personal experience an interim set of recording pro formas were developed for use in the 1989 field season (Appendix A). Initial intentions were to regard the collective Kimberley and VRD area as a single rock art ‘region’. Ultimately sufficient overview survey analysis would establish criteria permitting the division of the geographic collective into two or more definable rock art regions. Hopefully this process would additionally permit future identification of prehistoric cultural regions, ideally based on scientific evidence rather than the greatly disputed verbal recounting of urban mythology.
My hypothesis basically involved the belief that evidence already suggested a diversity of discrete cultural groupings had existed within each of the various geographic regions at varying times across north-west Australia. Evidence to refine this hypothesis would progressively appear with the careful stylistic, thematic and technological analysis of rock art across the collective region.

To facilitate the initial stages of the ‘Big Picture Survey’ which commenced in 1989, the recording pro-formas were designed with a generic segment which would cover the basics encountered across Kimberley and VRD. These individual pro-formas were termed ‘Primary’, ‘Site Detail’ and ‘Rock Art’ (Appendix AJ). In addition, a 100 point tickbox pro-forma was to cover the broadest overview of most sites at a level which could permit the most basic intra-regional analysis with a data base system. This pro-forma was termed ‘Specialist Form Checklist’ (Appendix AJ).

Supplementary specialist forms were prepared to cover two key art styles synonymous with Kimberley - ‘Bradshaws’ and ‘Wandjinjas’, and two themes common in VRD - ‘Anthropomorphs’ and ‘Rainbow Serpents’ (Appendix AJ.). Reduced A5 size forms were produced for ease of transport in field survey conditions.

Already the importance of subtle detail was apparent in the process of determining the sequence of development and transition in key motif themes throughout this region. The necessity of establishing a standardised graphic based terminology to address this immense and complex body of rock art was patently apparent from the earliest planning stages of the survey project. Small graphics which included accompanying detail oriented questions in the initial pro-formas were developed for this project.

Development of Rock Art Terminology Handbook

One of the most significant contributions I believe my long term research has made to date is in developing processes for studying minor change
within motifs, to permit classification of specific figures within specific definable art periods. This will ultimately develop a very fine-tuned graphic record of an art sequence, which within a multi-disciplinary approach will identify not only human cognitive development, but adaption within specific periods of dramatic climatic change and resource fluctuation. Outside the obvious value of prehistoric human studies, this holds potential for making a modest contribution to the current global dilemma of human preparedness for apparent significant climatic change.

The years of trips transecting Australia to establish an understanding of regional rock art regions and styles had been invaluable for a variety of unanticipated reasons. Possibly the most significant aspect of this approach is the unique opportunity of permitting me to experience not only a wide range of art forms in the context of their equally diverse environments, but perhaps more importantly, to undertake this over a relatively short time. As the existence of a range of these art forms was largely unknown at that time, I had the additional advantage of approaching these initial on-site observations without any preconceived values or interpretations. Visual differences apparent between certain art forms sharing relatively close geographic distribution was one observation which I considered noteworthy, and challenging my understanding of cultural interaction within historic Aboriginal societies. It seemed illogical that groups existing in such close proximity, sharing similar lifestyles within similar environments, could have created and maintained such distinctly different forms of graphic records, seemingly devoid of inter-regional stylistic influence.

This represented an important lesson in studying and interpreting prehistoric art forms, and that they must always be considered in a two dimensional state of ‘time’ and ‘space’. When dealing with graphic forms of a preliterate culture there are seldom any obvious elements which establish a perspective on possible ‘time’ of the event, and this mostly is only determined by long and persistent scientific study and dating work. However, students visiting sites seldom have difficulty in placing the graphic evidence in a ‘place’, by mere factor of their personal understanding of the physical distance travelled.
between sites. In our present fast-moving society it is not surprising that it is a basic human reaction to quickly evaluate encountered information within a 'here and now' framework. Discipline is required to step back from presented information and attempt to assess it within the more logical but demanding process of a 'time and space' framework.

When assessing the varied art observations in an environment distanced from the settings, the bias of close geographic proximity was no longer the dominant factor in seeking an explanation, and it was possible to approach the dilemma in the more logical 'time and space' framework.

The possibility of these distinctly differing regional art styles surviving as graphic records of not one diverse culture, but more probably a diversity of cultures, was as exciting as it was challenging. How does one address the issue of tens of thousands of images, involving innumerable numbers of recurring basic motifs, and all subject to the unavoidable but unknown factors of artistic licence as exercised on a case by case basis. As a single body, the collective rock art record is of too great a magnitude to consider addressing with the time, technology and resources currently available. The whole rock art picture was carefully assessed, seeking to identify any recurring feature which could be considered representative across the spectrum, and could be selected as a single cultural marker to pursue.

Initially one may consider that in hunter-gatherer societies food resources, and in Australia more particularly the animals, would be the dominant recurring theme. However, anthropomorphic forms were found to frequently comprise a significant theme in the regional blocks of art in northwest Australia. I believe that this alone is an indicator that much of the art and history has played a significantly different role in these past cultures, and arguably indicates a higher level of existence, where human cultural activities were perceived as more important than the base requirements of food, survival and personal comfort. This will remain an argument on which lengthy debate will persist, and in which I believe an underlying factor of climatic change, environment and ultimately resource availability will be the underlying criteria.

From the basic level of systematic study of the art at the most
elementary level, the anthropomorphic form appeared the logical image to
focus on, and this process and decision was a landmark in the recording,
analysis, hypothesis and publication which has followed.

Concentrating focus on the single subject of the anthropomorphic, or
basically ‘human’ form, was invaluable in directing systematic scrutiny of any
attribute or technological attribute which may provide a subtle but valuable link
to determining style, activity or status of the subject.

Headdress, appendage and limb detail tended to vary more than basic
body shape, which almost invariably was depicted in plan view. To
compliment my preliminary assessment notes of each area, I began adding
small sketches of these key components, (see Plate 364). As the numbers of
casual reminder sketches grew, it became apparent that some segments were
recurring in different combinations in different areas. This pattern was such
that it was difficult to regard these widely scattered anthropomorphic depictions
as purely ‘art’. Their primary purpose increasingly seemed more akin to
iconography, with an extensive but at least partially recurring series of
‘elements’, combined to portray static but apparently significant depictions.

An inventory of graphic records of motif types, headdress variations,
and body decoration was progressively developed. Simplified sketches of these
forms accompanied summaries and comments on apparent inter-regional
similarities, which steadily expanded to permit a basic stylistic overview, but
with the wisdom of hindsight it was a time consuming and inefficient process.

A focus on the elements as components of human form did have some
surprises, such as identifying correlations between certain non-figurative
motifs, most commonly encountered in their solitary form in the classic forms
of desert art. In the transitional areas they were incorporated as the key
identification element in highly stylised anthropomorphic forms (Plate 365).
Such evidence of element incorporation not only emphasises the iconographic
rather than ‘artistic’ form of these paintings, but also illustrates the progressive
stylisation and simplification process that accompanies art form transition from
semi-naturalism to areas of higher resources, to the non-figurative and
geometric of the harsh desert areas.
Additional graphic-based files were maintained to record interpretation and mythological interpretation provided by semi-traditional Aboriginal people encountered in remote areas, often found to incorporate a range of recurring track motifs (Plate 366). Some research areas containing not only a significant numbers of a specific motif, but in recurring superimposition, permitted theme specific field notes to start developing a preliminary sequence (Plate 367). This example deals with a distinctive eye style encountered on both anthropomorphic and zoomorphic figures in the western VRD region, of which the ‘epicentre’ of its development appears to have been in the West Baines River area. However it is significant that ongoing recording has used this unique graphic detail to confirm cultural influence extending as far west as the southern Kimberley areas of the west Napier Ranges. Simple though these graphic attributes may be, they offer no irrefutable evidence of cultural interaction westward from the Northern Territory into the transitional area between desert and classic west Kimberley cultures in immediate pre-contact times. The worth of establishing definable terminology as a primary tool in extending invaluable cultural distribution and association studies is not yet fully appreciated. However, it may be argued to be of equal importance in these studies as establishing stone tool technology terminology is in the more widely acknowledged sphere of ‘dirt archaeology’ studies.

Indications of the potential of a graphic terminology on a national rather than regional level appeared when seeking similarities to distinctive elements recurring on certain Kimberley figures from its Clawed Hand Period (CHP). This period includes some of the most esoteric figures yet encountered in Kimberley art, displaying floral and yam attributes (Plate 368). Although different and more refined, figure variations occurring in Chaloupka’s Yam Period art represent Australia’s closest match. The Kimberley CHP and Arnhem Land Yam Figure art both appear to have originated in Post Glacial Maximum times, and possibly may be found to reflect stressful times of minimal resources, when yams became an essential part of existence, and rose to prominence in ‘deified anthropomorphosed forms’ in the art. Whether ultimately confirmed or not, this supports the worth of extending my Kimberley Rock Art Terminology quest to cover all Australian rock art.
As regional site sampling progressively established an increasing understanding of the distribution of seemingly associated art styles, the reassessing of the growing graphics register was an ongoing part of the evening 'housekeeping' processes in tidying up and storing the day's recording work. When field-work focussed on a region for more than a few days the level of developed familiarity permitted the development of hypotheses regarding sequential development which I do not believe could be attained by later subjective studies of recordings. To field test these hypotheses, I began redrawing to a single sheet any of the elements which appeared to be part of a regional sequence. Redrawn elements were accompanied by their basic site number, facilitating quick reference to the original complete sketches and photographs to check additional characteristics or motif associations which may be identified (Plate 369). These work-in-progress' transition sheets proved an excellent way of distilling multiple levels of possibilities into a tangible reference form.

From this concept further macro studies developed, addressing often subtle detail such as may be encountered within specific headdress types, or infill variations, associated with particular types of figures. An example of this is seen in Plate 370, dealing with aspects of minor detail appearing on Wandjina headdress. Interestingly, the findings from this particular study ultimately proved important in the process of determining the sequential positioning of otherwise similar figures within the rapid transition of the late Wandjina Period.

One of the regrettable unattained objectives of my terminology studies is the development of software which would facilitate rapid digital creation of any form of motif in any alignment. The initial stage involved identifying the key recurring elements within rock art, progressively creating high quality pen and ink graphics of these, in a consistent slightly stylized clear form to a defined criteria of size, line widths and alignments. Each defined element was allotted a unique interim reference number and scanned to form an individual digital file. Part of the process was to identify the recurring body and limb alignments, and shapes, as well as allotted terminology.
As the objective was to allow electronic compilation of a defined number or elements on a specific body form and limb alignment, it was essential that extensive experimentation was undertaken to insure that the graphics of elements, such as hand variations, were drawn in the correct alignment which would permit their unification area (in this instance the wrists) with the primary selected body style and alignment. Without detailed discussion, which is beyond the scope of this general thesis, such a project and objective may sound somewhat esoteric. However, its potential for not only my Kimberley art research, but many other forms of rock art on a global scale, was very significant. Ultimately the operating system would permit the instant digital assemblage of printable graphics of not only particular defined figures, but allow researchers to swap individual elements with variants which they hypothesised may have been subsequent stylistic developments, or perhaps preceding forms which would indicate transition from other known figures and styles from a known period. The potential to permit rapid and limitless graphic manipulation of elements and subtleties to create real and hypothetical forms and styles provides serious iconographic thinking researchers to develop evidence supporting cultural, technological and religious changes in time and place, and in response to known resource change resulting from climatic change.

Years of pursuing terminology as a potential tool for establishing a Kimberley rock art sequence had resulted in an ever expanding register of identified recurring elements. Once these developed beyond the capacity of the already mentioned earlier stages involving physically drawing the defined element into the field notes, I experimented with allotting a unique reference number to each element. This increased efficiency, and reduced the on-site time in obtaining increasingly complex and detailed figure, superimposition and sequence detail in recordings. This efficiency attracted a rapid expansion and refinement of the element inventory, which accordingly increased the number of reference numbers involved. The escalating increase in the unavoidable use of numeric references, which had no real relationship to the graphic form they represented, soon had my basically 'visual and graphic' thought processes bogged down in confusion, with errors in the noted element numbers 246
increasing, resulting in totally incorrect motif reconstruction when later reviewed. The numeric reference system was ideal and essential for the future computer manipulated objectives of digital image creation, but in the short term of field use by an image-oriented brain, the system was failing.

As an interim process to permit me to use the Terminology Project in a functional field capacity, I trialled allotting each defined element with a unique name, based on a description of some distinctive visual attribute, such as ‘W’ Angle Arms, and Petal Fingers etc. For quick determination of the use of (a) defined terminology, and (b) a purely descriptive term which coincidentally included the same words as was used in formal terminology for an element, I used upper case letters for all terminology in my field notes and analysis, while retaining the lower case conventional for all descriptive terms.

A working Terminology Field Manual was drawn up in an A4 format, with provision for on-site additions as elements were identified during recording. This soon confirmed its worth and efficiency in time and accuracy, becoming a constant companion in all field operations. Examples of some of this Manual, showing the ‘descriptive terminology’ is shown for parts of Figure Alignment (Plate 371), and segment of the Decorative Infill (Plate 372).

A tremendous amount of office time was spent by myself and an office person in drawing carefully aligned graphics for over 800 of the defined terminology elements, which were archived and scanned according to logical groupings, such as ‘hands’, ‘sashes’ etc (Plate 373). My limited PageMaker skills permitted the first attempted desk top printing of a working Terminology Hand Book, as a section organised pocket reference 210x110mm format (Plate 374).

Final printing of the Terminology Hand Book has not eventuated, and attempts to create the software to operate the digital ‘Identikit’ theme software failed in several attempts in the early 1990’s, largely as a result of insufficient computer power and memory. The terminology reference process has been in an ongoing use and refinement mode with my research for over 15 years, and without this I do not believe it would have been possible to deal with the immensity of the Kimberley rock art challenge, and develop the Kimberley rock
art sequence. The understanding required to create both the major publications, Brashaws: ancient rock paintings of north-west Australia (1984), and Bradshaw Art of the Kimberley 2000 (BAOK) (Submitted Publication No 17), could never have been attained without first establishing the terminology. Examples of the terminology system used in the research was included in BAOK, (Plate 375). Levels of refinement, addition and standardisation remain to fine tune the Terminology Hand Book system, but I would argue that the concept has through ongoing field and publication use proved to be an invaluable tool in the study, analysis and interpretation of rock art.

Technology to Tame the Logistics

My personal Kimberley rock art quest can be basically divided into to broad grouping - ‘Ancient’ and ‘mythological’ - each sharing many basic requirements in the process of location and recording, but differing greatly with the process of interpretation and dating. Both offer as yet unappreciated potential to the collective objectives of understanding humankind’s adaption and cognitive development under extremely varied environments spanning a vast time frame. Kimberley rock art arguably represents one of the world’s longest and largely continuous graphic recordings of human development. Separate discussion will be given on the approaches to the ongoing location and study of each grouping of art.

Although recent in the overall time frame of Kimberley rock art, the Wandjina art style is one of the most visually spectacular prehistoric art forms. Huge individual anthropomorphous figures to 12 metres length frequently dominate colourful panels in dramatic natural geological settings. Aside from its visual appeal, the Wandjina art style remains as the physical embodiment of ancestral heroes associated with the Kimberley Creation Period, known as Lalai. Wandjina art sites were deeply significant places, where the associated Wandjina ancestor had ‘laid down’; his physical form had remained as a ‘painting’, and his spirit had returned to its source. A diverse range of other physical indicators of the Wandjina’s creative power are often also found.
associated with the art site area, often not initially obvious to the untrained Western visitor's eye. These include charlarlars (standing stones), boonjgul stones (religious stones), stone-lined walkways, stone arrangements, stone heaps and 'sneezing' heaps. In its traditional form, the mythological and religious role of Wandjina art and its associated belief system remain unparalleled among prehistoric art forms of the world.

My first physical visitation to a Wandjina site has been mentioned earlier. However, the introduction by the remarkable Elder and site custodian Mimi Tdeerwin was an experience which had a marked influence on my future directions. The combination of respect and reverence for even the approach to the site, together with the sincerity evident in his relating the associated Wandjina's mythology, moulded my concepts regarding a 'living rock art'. Surely this must be a privileged experience of the last functional remnant of pre-literate art-based belief system which had at time accompanied humankind's development of at least six of the world's seven continents. It seemed somewhat ironical that this was not just the end of a tradition which had accompanied humankind's cognitive development, but the very apex of the known forms of rock art and associated mythological belief systems. Although the significance of the Wandjina art and belief system had been apparent in my studies of the Frobenius Expedition, Coate, Capell and Crawford, it was the experience shared by Mimi Tdeerwin at Waardal Dart Moomba Gnarrt that finalised my commitment to document and preserve the bigger picture of this amazing relationship between rock art, mythology, creation and the environment.

In the early years I attempted to seek out any of the Aboriginal Elders who still retained any trace of traditional knowledge about the Wandjina culture, mythology or sites, and document in the best possible detail all aspects. Contact was made with Ian Crawford in the first year of 1977, seeking his assistance in pursuing further some of the detail he had earlier recorded and presented in his excellent book The Art of the Wandjina. However, as the response for collaborative assistance was less than warm, attention for pursuing early documentation was turned to The Frobenius Expedition members and
Howard Coate.

Helmut Petri had led the 1938 German expedition, but had unfortunately been killed in a tragic auto accident shortly before my research in Germany had become focussed. Through ongoing correspondence, I arranged to travel to Germany to meet with Dr Gisela Petri-Oderman (Petri’s widow) and Dr Andreas Lommel, to pursue any possible unpublished material relative to the Frobenius Institute Expedition. Over the years a total of three trips were made to Germany to follow leads and sources for Kimberley rock art detail.

Dr Lommel was most helpful with detail of not only the 1938 expedition, but his postwar return visit in 1955, when he was accompanied by his wife Katherina who was a professional artist-recorder for rock art expeditions. An integral part of the German recording process for rock art galleries in the first half of the 20th century involved the laborious task of accurately copying the art to often large-scale canvases. On the 1938 expedition two of these skilled female artists had accompanied the expedition to undertake this task, trekking into areas which still remain as some of the most remote and unknown environments of earth. Gerda Kleist and Agnes Schulz were these first two artists, with a monumental 1956 publication on the art by Schulz (‘North-West Australian Rock Paintings’) having been one of my primary inspirations for the Kimberley quest. Lommel assisted willingly with access to his journals and photographic records from the expeditions, together with lengthy periods of deliberations with Katharina regarding their recollections of landscape features traversed during their trips guided to the sites by Aboriginals (Plate 376). One of the most elegant early European recordings of a Bradshaw Figure remains a copy created by Katharina Lommel (Plate 377). Andreas Lommel and Gisela Petri-Oderman provided invaluable assistance, remaining in regular written communication with additional information during my years of ongoing search to relocated these now ‘lost’ great Wandjina galleries.

Lommel and Petri-Oderman also kindly provided me with original copies of the German publications on the Kimberley expeditions, which included Der Unambil (1952) by Lommel, together with Sterbende Welt in
Nordwest Australien (1954) and the two volumes of Der Australische Medizinmann (1952 and 1953) by Petri. To maximise the use of detail contained in these books to assist with the quest to relocate and re-record these ‘lost’ galleries, assistance was sought in the massive job of translating the German text to English. With the much appreciated financial assistance of the Australian Decorative and Fine Arts Society (ADFAS) this laborious task was undertaken over a couple of years by Dr Ian Campbell. The Lommel book was published in an English translated form as The Unambal in 1997 by my publishing company, Takarakka Nowan Kas Publications.

Several of the great Wandjina galleries recorded by Lommel’s 1955 expedition still remained unknown, and due to the poor detailing on incredibly inaccurate maps available in 1938, it was many years before I was a was able to relocate the first of the then ‘lost’ galleries, which was Kalingi Odin in 1987. This was with the assistance of a helicopter, and was the year in which a new dimension of Kimberley site location and recording was commenced.

From 1989 onward time would be spent each Field Season working with Howard Coate, going over his incredible assemblage of a lifetime’s work on the Ngarinyin language, largely documenting Wandjina mythology to maintain ongoing repartee with the last old people speaking the most complete forms of the language. Some of his monumental studies had been published as an two volume Oceania Linguistic Monograph titled Ngarinyin-English Dictionary as a 1974 co-authored work with AP Elkin. Together we formed a ‘Kimberley Wandjina Project’ where we worked together on a long term research project aimed at systematically locating all the major Wandjina galleries, progressively linking the sites and their Wandjina heroes with any recorded mythology, and ultimately building a Wandjina genealogy. This was pursuing Coate’s summation after a lifetime involvement in traditional Wandjina beliefs that it represented a quasi-ancestral hero-worship cult. Our hypothesis was that many Wandjina stories were effectively recounting travels of real human ancestors in the not too distant periods of prehistory, which had become mythological beliefs through the process of recount and contemporary adaption by a preliterate society.
Coate had maintained incredible amounts of carefully written records of Wandjina mythology written in Ngarijin, many with inter-linear translations and a few in edited and punctuated form. As his writing had deteriorated, he had found he was at times unable to read the miniature writing of his filed notes, and he had abandoned personal camping equipment and food supplies on his field trips to carry a ‘portable’ typewriter on his back. The term ‘portable’ has quite different connotations for 1960’s typewriter technology than current researchers may imagine from computer laptop equivalents, as can be seen in Plate 378. Although lacking formal academic qualifications, Coate's personal commitment to accuracy of data should never be questioned by any future researcher privileged to work with his material. The thought of this frail but committed little man walking unassisted to some of the most remote area of the Kimberley, carrying the huge typewriter on his back while attempting to live off the land to conserve weight, represents a level of commitment which few recorders could ever aspire to.

The first real access to helicopters as the invaluable tool in systematic searches for the ‘lost’ Wandjina sites came in 1993, as a legacy of an extended visit from the inaugural members of the Bradshaw Society. As part of the logistics associated with their visit, two helicopters were chartered, a Jet Ranger and a Kawasaki (Plate 379), providing access to previously inaccessible areas, such as a number of the offshore islands in pursuit of Kiara (Gayara) forms of Wandjina (Plate 380). The use of the Kawasaki (Plate 381) for eight flying hours after the group departed allowed the first opportunity to follow up believed location areas for some of the ‘lost’ galleries, as deduced from analysis of the growing data. Although none of the galleries were located, elimination of possibilities facilitated an increasing familiarity with the vast south-west Kimberley area where they lay.

Year by year the use of quads, backpacking and fixed wing aircraft, supplemented with mustering helicopter use whenever the opportunity arose, increased the success rate in locating the ‘lost’ galleries as my personal familiarity with the extensive search area increased in intimacy. Donations of 200 litre drums of Avgas fuel, and sponsorship of chopper time by the hour
increased as interest grew among the increasing number of local and Eastern state supporters.

The Field Season of 1997 will remain synonymous with a year of total focus on a concerted use of helicopters to finalise the increasingly focussed ‘lost’ site quest, in particular the most sought Kooralyi and Modum sites. A Kawasaki helicopter was used for the first survey of the extremely rugged Glenelg River and south-western regions (Plate 382), locating a number of ‘new’ galleries, but none of the ‘lost’ galleries. However, several distinctive geographic features were located which bore similarities to referenced points in the Frobenius trek. After a week of cross checking all observed features and understanding with archive gleaned detail, I felt convinced that neither the river drainages or ranges listed by the original expedition members could be correct, and a new approach was planned.

A second helicopter search was undertaken, this time using a chartered Robinson R22 helicopter supplemented by 400 litres of fuel donated by supporters (Plate 383). The rewards of years of research and ground survey commenced with the discovery of a number of the ‘lost’ galleries, with the most successful being three in the one day’s flying. However, no clue had been revealed regarding the two most sought galleries, Kooralyi and Modum.

After a further week of reassessing all available information, another foray was launched, using a different Robinson R22 mustering helicopter, with donated fuel and operator’s time. Like so many discoveries of the ‘great’ Wandjina galleries, it was the investigation of an intuitive feeling experienced while flying back to base on the last tank of fuel over the most improbable area (Plate 384), which brought success. After 22 years of searching, the incredible ‘lost’ gallery of Kooralyi had been relocated on 24 July 1997, and every bit as spectacular as its mythology and Frobenius references indicated.

Attention was then turned to continuing searches in far northern areas, where a Kawasaki was used to ferry camping and recording equipment out to a central area of recording Wandjina and ancient art, which was found to include remarkably well preserved Irregular Infill Animal Period thylacine paintings. After this survey and recording was completed the helicopter returned to ferry
us out of the area (Plate 385).

The quest to relocate and study in detail the great ‘lost’ Wandjina galleries was by no means a solo effort, and future researchers working with the subsequently gained detail will hopefully respect those who gave so much to see these goals attained. In July 1997 Howard Coate expressed a wish to accompany me in an attempt to relocate one of the major Wandjina galleries we had been unable to relocate. He had walked with Aboriginal Elders in to the incredibly remote setting and recorded the site over thirty years earlier. Although the recordings and location detail had since been lost, this gallery, its art and mythological features, remained of the highest importance in establishing an understanding of the final stages of traditional Wandjina practices. Coate’s recordings of detailed mythology and songs linked this Wulingari site and its Wandjina Wulizan to the final decadent period, when the expanding Kurrangara sexual cult overtook the primarily good Wandjina practices. Coate had by this time become increasingly feeble, and virtually deaf, having for some time been confined to the old people’s home in Derby.

With connecting charter aircraft and helicopter we were able to get this frail old man out to the trackless lands of the Moran and Row Rivers on 17 July 1997 (Plate 386), where his determination to actively participate in this desperate relocation attempt will remain forever in my memory as a standard of commitment which I believe few recorders will ever aspire to. Clad in his dressing gown and hospital pyjamas, buffeted in the slipstream of the doors-off Kawasaki helicopter, having to communicate by writing on a mini-whiteboard (Plate 387). Coate attempted to aerially retrace his original trek down the crocodile infested arms of Prince Frederick Harbour. His journal showed that his last known point on the original trek was a major Wandjina crocodile gallery named Bunaba, which I had been able to relocate after 19 years seasonal search. Landing at Bunaba, Coate desperately attempted to recall his movement from this point three decades earlier.

Ultimately Coate reluctantly conceded that even with the inspiration of returning to Bunaba he could not recall the subsequent detail of his trek (Plate 388). The short return walk to the helicopter proved too much for Coate, and
fiercely refusing assistance, dropped to his knees and crawled slowly through the spiky spinifex to the Kawasaki. His repeated apologies for his perceived inadequacies of his failed memory were humbling and unforgettable. My greatest hope was that with persistent searching I may be still able to relocate this important gallery in time to seek his involvement in its recording the detail, as he alone remained the custodian of the subtle detail handed down by the Elders. Unfortunately the search for Wulingari would continue for a further two years before the long-sought rediscovery took place, on 23 July 2000. By this time the passing of Howard Coate had marked the end of the great pioneering era of Kimberley site recording.

The last of the great ‘lost’ galleries of the Frobenius Institut Expedition remained elusive until 26 July 1998. My field search observations from the pre-1997 years had been progressively overlaid with snippets of additional information gained from ongoing correspondence with Lommel. Lommel’s comments regarding their return, wading in the moonlight across a tidal stretch, indicated a possible site location well distanced from the area which the Frobenius Expedition members had believed they were in. The negotiated use of a Robinson R22 mustering helicopter to reach this remote search area had been arranged well in advance, with its availability restricted to one day only. However, a bad fall sustained on the previous day had resulted in the Flying Doctor aircraft to taking me to the Derby Hospital. Once the dislocated shoulder had been ‘pulled in’ there was little more that could be done locally, leaving a complete shoulder reconstruction as the only option. The one day availability of the helicopter represented an opportunity not likely to be soon repeated, so a deviation was made in the return drive to Brisbane for one final search for Modum.

The severe limitations accompanying immobilisation of one arm in a sling forced abandonment of the normal land-and-search approaches, with total reliance on aerial observation. A less scientific assessment of the events may argue that ‘the time had come’ for closure of this quest, with a remarkable series of fortuitous circumstances prevailing. During a low level traverse my attention was momentarily caught by a small object seemingly out of context
amidst the scrub and rubble of the incredibly rugged setting. Investigation showed this to be a human bone dislodged from the site by wildlife.

Concealed behind dense vegetation in a small and improbable rubble outcrop was the remarkable five metre reclining Wandjina panel, with the mythological ‘cloud’ on which the Wandjina travelled to his final resting place metamorphosed as the rock in front of him (Plate 389).

Apart from the scientific importance of this major cultural and mythological site, the elusive Modum gallery held additional historic significance. Modum was the main Wandjina gallery which AP Elkin had been taken to by traditional Aboriginals during his 1928 Kimberley visit. This was the first expedition by Elkin in the role that was to see him remembered as ‘the father of Australian anthropology’. Elkin was struck by the complexity of the Wandjina culture, together with the scientific potential offered by these last vestiges of a stone age culture, surviving here in the isolation of Kimberley.

Here remained the world’s last example of a living rock art and mythological tradition. His support and encouragement for any facet of research into the subject continued for the remainder of his life. His academic promotion of the Kimberley’s importance, centring largely around his ‘Modum experience’, inspired the noted German scholar Leo Frobenius to organise his major 1938 expedition, in spite of the ominous gathering war clouds. The Modum experience drove Elkin to support Howard Coate in his lifelong Kimberley quest, and also to encourage the noted linguist Arthur Capell to turn his Pacific research focus to Kimberley. Capell ultimately publish his findings in the 1972 monograph Cave Painting Myths: Northern Kimberley.

Modum will in the future be synonymous with the history of Wandjina art recording, and had it not been for a series of events and one fallen bone from a former custodian of this great site, it may well have remained forever one of the great ‘lost’ galleries of Kimberley.
Developing a Data Base to Service Expanding Requirements

As the information progressively amassed from my ongoing annual field-work, together with the findings from archival research, the bulk of the material and diversity of medium on which it was stored became increasingly unworkable for the manipulation capabilities of a one person operation. Goaded by my ongoing basic belief that ‘unusable information is useless information’, I had constantly sought assistance in addressing issues surrounding concepts, systems and equipment to cope with the dilemma. Unfortunately practical expertise was scarce in dealing with an ever-expanding multi-media data problem such as this, while appropriate systems seemed unknown, and resources virtually non-existent for the less spectacular back-room essentials such as order and archiving. As I was able to develop modest systems, the range of elements and associated medium expanded, and the time which I could devote to the basic archive operation was insufficient to keep abreast with the needs.

Development of an efficient, user-friendly and yet freely expandable archiving system must represent the most basic but also most important prerequisite in any serious recorder’s operations. As such, I believe some discussion is warranted for the references of future researchers approaching the thankless dilemma of devising a functional system to suit one’s specific research requirements. No single system will be ideal for all needs, so it is essential to develop the system centred around identified criteria of needs and objectives, but learning from not only the successes, but also the failures and identified deficiencies of the systems of others.

My experience with ordering masses of data has been that human error is by far the largest single factor for concern. Human error increases dramatically with boring and repetitious processes, and escalates with non-user friendly and complicated systems. An increasing problem with riding on the crest of the wave of cutting edge technology is that the basic software and systems are created by ‘boffins’ who’s brains and skills are centred around the
inner minutiae of intangible elements of a cyberspace world which few mere
mortals understand. Those that have the minds which create the essential
software and manuals to operate it could not be considered ‘average’
individuals, and there is a desperate need for any recorder to be able to take
these invaluable tools and present their use through an inviting and user friendly
computer window. This represents the much underrated crux of the dilemma
confronting all serious recorders. Time expended in developing this part of the
process may seem a waste during the laborious creation process, but is in reality
a prudent investment in the long term quest for efficiency and minimising the
omnipresent spectre of human error. The complexity of operation should be
developed, fine-tuned, standardised and then cloaked in a shroud of inviting
appearance. Insure that the operator’s undivided attention is focussed on the
tasks of data entry and manipulation, not confused by unnecessary moves which
could be script automated, or threatened by complex appearances.

Logically the process had to be based around the reality of minimal staff
involvement, as history emphasised the improbability of my ever acquiring
funding to secure skilled staff dedicated specifically to archive and office
functions. Any system must thus be centred around expandable technology as a
lower ongoing cost compared to the option of capable staff. Technology for
even the immediate future involved digital directions, so the most basic
requirement involved eliminating the problem of multi-media archived
material, and somehow upgrading it quickly and efficiently to a single digital
medium. While this may sound relatively simple, the ever-present problems of
time, expertise and resources were additionally compounded by the ever-
changing processes and systems associated with the cutting edge of digital
evolution.

Volunteers were sought as an interim solution to get the projects under
way, and to a stage where presentation may attack a realistic level of ongoing
support and funding. Systems which I had been progressively developing and
modifying through practical experience had to be formalised into processes
with guidelines and mini-manuals to assist a number of casual volunteers,
present at varying and often unpredictable times, to systematically follow on
from each other and produce consistent digitised systems. Preparing graphic illustrations and mini-manuals became another demand on the dwindling time available for my primary objective of creative presentation of publicly accessible material dealing with the analysed, distilled and illustrated finding of the ongoing research.

Using the earlier discussed Wandjina mythology research as an example, the graphic illustration covering the process and stages of advancing a single version of one Wandjina myth through to archive standards is shown in (Appendix AK).

Varying forms of data base systems had been in use and subject to ongoing modification and replacement since the initial 1977 concept and use of university main frame computers using the embryonic punch card systems. However the trials experienced and the enormity of time wasted in locating material during production of the BAOK book had shown that addressing the now unworkable archive system could no longer be avoided. Working in close association with Pauline Heaney a totally new approach was developed, based on the much expanded form of my modest existing FileMaker Pro system. Heaney’s remarkable aptitude for layout allowed us to take the essential criteria and levels perceived as essential for Stage One of the Takarakka Data Base and trial its use in increasingly logical and user-friendly formats. My graphic based approach to understanding and problem solving were not conducive to easy use of standard data base and spreadsheet formats. My attempts to use template formatted data base presentations of FileMaker Pro and Excel were challenging, and for me unfriendly and confusing experiences. If a process or system is not user friendly to myself and as the primary user, then it would be unfair of me to expect volunteers to have to persist. A great deal of attention was thus focussed on the presentation and user interaction aspects of the ‘front’ of the developing basic data base, which could then be modified to suit a wide range of its specialist components and levels. I believe that even at the present developmental stage this has been achieved by the skilful assistance of Heaney.

Colour has been used as an important part of identification within the developing Data Base system, overlaid on a basic criteria that no window/page
of the system can appear overly challenging, crowded, or unclear, and that the
multiple windows/pages remain a more user friendly approach than a single
window/page which has all options crammed into a single entry/analysis
display.

Using the Wanjina mythology segment of the greater database, with
it's four window/pages clearly identifiable by their common bright yellow
background. Page one of four deals with the attributes of the key Wanjina,
and for reference is termed the 'Hero' page, with an identifying pink theme
inner page, (Plate 390) The Hero page deals with data questions one to 17, but
in a far less challenging format than most databases. A scrollable copy of the
digitised text story of the specific myth is present for quick reference in a large
and easily read right window on each of the four pages of the form.

Page two of the form is the 'Activity/Object' component, identified by a
yellow theme inner page, and dealing with data questions 13 to 16 (Plate 391).
Page three is the 'Origin' component, identified by a light blue theme inner
page, and dealing with data questions 16 to 25 (Plate 392). Page four is the
'environment' component, identified by a light green inner page, and dealing
with data questions 25 to 30 (Plate 393).

Layout permits ongoing upgrading of pertinent detail by either a skilled
volunteer or the recorder, once the primary digitised story text has been entered.
A primary viewing level of entry can be extracted from the scrollable story, and
entered in applicable data slots. As geographic features, scientific species etc.
are identified these can be entered at any time, as with questions 16, 18 and 28.

The Wanjina Genealogy segment of the Takarakka Data Base can be
operated as a stand alone system, or linked back to other specific segments,
such as the Site Register, identified by a bright red background, of which one
window displays the digitised images in numeric order as catalogued to that site
(Plate 394). This can link an individual image to the 'Art' window, identified
by a bright pink background' (Plate 395), as part of the 'Site Register' segment.
This provides a record of pertinent dimensions, theme and art period details,
with provision to upgrade description notes, and a particularly useful segment
pertinent to tracking images through the often complex stages of publication
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preparation. Data entry in this level includes the use of key words and defined terminology for search and retrieval processes.

Within the Site Register segment is the ‘Wildlife/Environment’ window, with green background (Plate 396). This has provisions for call up by keywords, links to the mythology segments, and identification of graphics already prepared from this image. The provision of basic figure attributes by defined terminology permits links to the ‘Terminology’ segment of the Takarakka Data Base (Plate 397). The cross referencing of the field use ‘descriptive nomenclature’ with a numeric equivalent was part of the developing Identi-Kit role of the Terminology, as has been discussed earlier.

Volunteers working with the preparation of field data for entry in digitised form into the Data Base were provided with a graphic illustration of the basic processes their scanning of slides, sketches and plans on various scanning systems would take, (Appendix AL). A three page instruction sheet explains the elements and significance of the numbering systems used throughout the field and archive systems of the Takarakka Data Base, (Appendix AM). Assisting to illustrate the role an individual task held in the overall structure of data acquisition, processing and archiving, a graphic flow chart was compiled for daily project use (Appendix AN). A particular project is highlighted on a photocopy of this sheet so that a Volunteer can refer at any time to the place and potential interaction their task may have with other Volunteers tasks at any one time.

As Volunteers are working on their allotted computer within the office system, it is essential for them to understand where their processed data is stored, and where its backups are archived. Two graphic flow charts of the office computer, peripherals and storage systems are used in photocopy form to highlight the path of data for the current project of each individual Volunteer. This highlighted reference copy remains with their daily operational note book for reference by themselves and their supervisor (Appendix AO).
Joseph Bradshaw’s Original 1891 Discoveries

Quite separate but inextricably interwoven with the recent Wandjina art forms in Kimberley are a diversity of seemingly unrelated art forms. Wildly differing in themes and sizes, some identifiable groups display markedly different levels of expertise in drafting and application.

Most unusual and most interesting from a purely artistic perspective were the smaller and more detailed paintings of human forms frequently referred to as Bradshaw Figures. The first European discovery of this distinctive art form was made by the early explorer-entrepreneur Joseph Bradshaw, during his search for suitable Kimberley grazing lands. When negotiating a rugged area north of the Prince Regent River he encountered a painted panel on 16 April 1891. Bradshaw was sufficiently impressed with the difference of these paintings in comparison to other observed artwork that he returned and made copies of some of the figures. The sketches were subsequently published in accompaniment with a presentation he made to the Victorian Branch of The Royal Geographical Society on his return to Melbourne. In the paper titled ‘Notes on a recent trip to Prince Regent’s River’ his description of the unusual art was accompanied by an observation which captured the fascination of segments of the general public and scientific community for the following century.

‘Some of the figures were life-size, the bodies and limbs very attenuated, and represented as having numerous tassel-shaped adornments appended to the hair, neck, waist, arms, and legs; but the most remarkable fact in connection with these drawings is that wherever a profile face is shown the features are of a most pronounced aquiline type, quite different from those of any natives we encountered. Indeed, looking at some of the groups, one might think himself viewing the painted walls of an ancient Egyptian temple. These sketches seemed to be of great age, but over the surface of them were drawn in fresher colours smaller and more recent scenes, and rude forms of animals, such as the kangaroo, wallaby, porcupine, crocodile etc.’ (Bradshaw 1892).
The name ‘Bradshaw Paintings’ or ‘Bradshaw Figures’ did not originate from the pen of the original discoverer, but appears to have been first coined by Frau Agnes Schulz in the publications of the recording work by the Frobenius Institut Expedition. This resulted from their inability to determine any Aboriginal name for this art from the traditional Aboriginals guides who took them to the Wandjina galleries. In lieu of no Aboriginal name, Schulz simply refers to the the distinctive art form as ‘Bradshaw paintings’.

Although interest remained high in this art form throughout the following century, comparatively few examples were recorded by early enthusiasts such as Dacre Stubbs (1974), and Crawford (1968) who briefly touches on the Bradshaw Figures in Chapter 10 of his landmark publication The Art of the Wandjina, with an assessment of their apparent antiquity added in his summary.

‘There is good reason to believe that the Bradshaw figures are an achaic art form in Kimberley. The illustration of implements which are not now used in Kimberley suggests that this is the case, and a study of superimpositions, the lack of interest shown by Aborigines and the weathered state in which we find them all support this conclusion’. (Crawford 1964:90)

After years studying of Bradshaw Figure variations, none of the thousands of recorded images showed the degree of detail and differences described by Joseph Bradshaw as associated with his original discovery. As with most sciences, we can base our deductions only on material which has been accessible for study, and absence of evidence can never be sufficient grounds alone for arguing evidence of absence. My personal long experience with relocating and reassessing early rock art discoveries made by explorers and pioneering settlers has taught me to exercise caution in such instances. I retain a reserved suspicion regarding any early descriptions indicating features significantly beyond the parameters of known art (Walsh 1988 pp17-33). Even
observations and sketches made by skilled artists tend to incorporate levels of subjective bias, mostly traceable to the recorder's cultural background. Chances seemed high that the atypical detail present in both Bradshaw's interpretation and graphic renditions were a combination of artistic license and cultural bias. However, the possibility of very sophisticated forms of this little known art still remaining undiscovered could not be ruled out. Locating the original panels represented an increasingly important priority in the process of developing a valid understanding of the ancient culture responsible for the Bradshaw art.

Joseph Bradshaw's journal was discovered in an archive search in 1991, permitting lengthy studies to be made of his environment descriptions, attempting to overlay these on topographical maps and air photos. Environmental description in his journal indicated Bradshaw's original art site lay within a definable area of several square km, but well distanced from the broader setting he generally referred to. On 23 June 1993 the Bradshaw Society organised limited helicopter time to undertake a preliminary survey of the identified area. The dense bull spinifex which dominated the long unburnt setting made a full survey of the small but rugged area impossible in the limited available time. The information and aerial photographic records gained during the search were later shared in the pooling of resources with another group from Western Australia also researching the site. On 2 June 1997 access to limited helicopter use in this year of focussed and highly successful helicopter surveys, and a return to the same setting in its now recently burnt setting resulted in success.

Bradshaw's gallery proved to be a very average example of this art form, confirming the suspected explanation of artistic license compounded by interpretation reflecting a very Eurocentric perspective. This by no means lessens the scientific significance of the Bradshaw's artistic discovery, and remains a tribute to his worldly knowledge and powers of observation. Bradshaw's comments regarding the difference and detail remain valid, and the controversy and mystery surrounding the origins of the artists' culture remains as satisfactorily unresolved as it was a century ago.
The process of establishing a Kimberley rock art sequence is I believe the keystone on which a broad spectrum of cultural, environmental and climatic studies is now developing, and due to its significance, warrants some explanation of the process which created it.

When first viewing a cross section of Kimberley rock art one is immediately struck by two obvious features;

(a) there is a tremendous variation in quality of artistic draftsmanship and technical abilities in paint application,

(b) where superimposition is evident, the finest depicted and best preserved paintings are invariably in the underlying layers of paintings.

This is not an isolated example, but the pattern across the north-west Kimberley, sufficiently obvious even to the untrained eye. Joseph Bradshaw even commented on it in describing his original 1891 discovery;

'These sketches seemed to be of great age, but over the surface of them were drawn in fresher colours smaller and more recent scenes, and rude forms of animals, such as the kangaroo, wallaby, porcupine, crocodile etc.' (Bradshaw 1892).

Logic decrees that the underlying paintings in a superimposition must predate those overlying them, and only the question of time difference in their creation remains open to debate. However, it seems a common trait in western technological societies to assume that the most recent examples of most things will be 'better' than preceding examples, as they tend to incorporate the elements of advancements of development and technology. While this may be largely valid when assessing technology, it is continually shown to be incorrect when dealing with the human elements of personal skills in creativity, philosophy and artistry. These tend to be elements very much linked to the individual's mind, focus and personal commitment - seemingly aligned with a quite different and esoteric dimension. Perhaps the dimensions of reality and the esoteric may exist in parallel, but I consider them to be quite separate, and
believe this represents a good working concept to retain when reassessing the dilemma of the superimposed exquisite art panels in Kimberley.

To understand any challenge it is essential to first define the parameters of the issue, establish a basic inventory of the resources involved, and by applying the ‘similar/dissimilar’ assessment criteria develop the most basic understanding of the diversity and groupings within the resources in question. These basic principals had been developed and refined with the years of research on the CQSB rock art. Initially this model and basic system were introduced in a modified form to address the Kimberley challenges. The region specific recording pro-formas initially developed have been presented (Appendix A.)

Attempting to undertake the most basic survey of the immense Kimberley area in order to define the parameters of the rock art distribution was a challenge of magnitude beyond anything I had previously undertaken, and is in reality still ongoing some 28 years later. The logistics were incomprehensible, the Aboriginal politics complex, the European landholders' concerns significant, and the equipment totally inadequate. By remaining totally flexible and opportunistic in approach, the Kimberley overview survey quietly but surely came together in the way of a jigsaw. The art was not as widely distributed as many imagined, and there was a pattern of distribution emerging. Most significant of the patterns was the association of rock art with specific geological formations. Rock may cover most of the Kimberley, but not all the rock of the Kimberley had rock art. The reason for this appears to be associated with a number of factors, as yet not fully understood, and undoubtedly warranting the scope of a thesis in its own right. Basically it is the now harder surfaced and more dense sandstones which contain most of the ancient rock paintings, particularly on the King Leopold and Wharton formations. Surface stability of these silica rich sandstones has seen fine examples of the earliest art forms survive in remarkable states of preservation. Not only do the silicified surfaces resist the natural erosion process, but there appears to have been some process of natural stabilisation taking place since the creation of these paintings, which has additionally protected the art work on the
additional stabilised underlying rock surfaces.

After three years of pursuing the survey challenge with the pro-forma system, it became increasingly apparent that the Kimberley art was too diverse and complex for this system to be efficient in the initial levels of broad brush survey recording. This process would be the ideal tool for the second or third wave of rock art recording, but was far too subjective in its target, and totally inadequate in scope for the overview. In order to achieve the essential overview, the pro-forma system was abandoned until this could be achieved and the system further refined.

Initial impressions of a major Kimberley gallery suggests a conglomerations of:

(a) fine paintings by way of their repetition appearing to reflect an ordered system,

(b) precisely painted and usually larger figures suggesting the work of experienced artists but not necessarily an ordered system,

(3) crude paintings suggesting the work of unskilled individuals with little indication of an ordered system.

The question was the association between these forms. How contemporaneous were they? Were they the work of a artists with a broad range of skills and experience undertaking paintings over a relatively short time frame? Were they indicating examples of the typical art of specific cultural periods, where superimposition suggested contemporaneity merely by proximity? Could they represent typical art from specific cultures, spanning a long time frame, now visually confusing by combinations of superimposition and remarkable preservation?

Superimposition appeared to hold the key to the first level of understanding, but the art body was so complex and diverse that it would be physically impossible for one mind to retain information from a multitude of superimpositions over a research project logically spanning years. There was an urgency to develop a quick and efficient process to document specific art
forms in field notes to permit accurate retrieval of such detail for comparative assessment. Considering the tens of thousands of images involved, and the logistics associated with an initial research area spanning twice the size of the state of Victoria, this system had to be simple, quick, foolproof and easily understood by fellow researchers and collaborators.

My terminology concept appeared the most logical starting point in a process of developing a standardised system of initially identifying recurring definable motifs. The second stage required defining criteria to further direct the definable motifs into clusters of similar/dissimilar broad groupings. Additional definable attributes which added further potential for analysis to a third level to a specific motif included;

(a) Paint colours
(b) Recurring combinations of paint colours
(c) Paint preparation and application
(d) Dominant motif type within a similar grouping
(e) Theme or activity indicated by the motif

Since approximately 1996 I had become aware that motif proportions and alignment bore an important role in identifying often subtle changes in the transition of a single motif theme through a single period of art. This inspired me to undertake a sketch of the key motifs in recorded sites, adding their vertical and horizontal measurements. A bonus accompanying this change in recording practices involved removing the need for dutifully including a small scale in each photograph. This practice of including a scale was largely a legacy from the early days when researchers strove to have rock art considered a more scientific study. Scales did nothing to enhance the aesthetics of the artwork in published images, and with accurate measurements accompanying the image, the use of photographic scales became redundant.

The initial quick motif sketch during recording began to show significant additional benefits, forcing me to at least briefly give total focus to a
particular image, which otherwise would be passed over amid an often confusing mass of fascinating artwork. I have since noticed that a fairly predictable natural visual assessment process exists among humans, particularly when introduced to a complex conglomeration of unfamiliar images. A subconscious process seems to guide our vision processes to initially scan for the brightest, most spectacular or largest motifs in the conglomeration, and focus on them. Discipline and training is required to change this visual assessment process, but without developing that process, I believe recorders have little hope of coping with the analysis necessary to deal with large and complex assemblages of images.

My forced focus during the process of completing the quick motif sketches began to make me aware of subtle but recurring variations, in the most obvious elements common to the ancient art forms - the headdress. This may appear insignificant if regarding the ancient art forms such as the Bradshaw Figures as 'art' in the Western perception of 'fine art'. However, the repeated depiction of the human form in at times almost monotonous duplication had long convinced me that beautiful though they may appear, their purpose within their original culture was much more. If their role had been 'information transfer', then there was logic in using a standardised common form as a 'base' on which an extensive range of additional elements may be appended.

As the subtle detail was incorporated in the field sketches, they became more detailed and precise in proportions, I found myself increasingly referring back to my field sketches rather than the transparencies when later checking detail, as the subtle elements had often been identified and checked while sketching, thus showing more clearly than often showed in even excellent photographs of faint or deteriorated motifs. Increasingly detailed field sketches were accompanied by arrowed notes detailing key points, superimposition or retouch, finally becoming one of the most important and valuable reference mediums in my site recording (Plate 398). As the range and diversity of my field sketch motif inventory expanded, its potential use as a tool in identifying stylistic change, and ultimately a sequence, became apparent. This became known as the Graphic Analysis Project (GAP). Several basic hypotheses were
formed regarding a series of graphic, thematic and stylistic attributes which
would permit arbitrary classification of art 'types' at the most basic level.

Developing an expandable system which would permit me to study, sort
and group large numbers of graphic images by an as yet undefined series of
criteria presented a major challenge. Initially, I photocopied the pages of my
field sketches, cutting motifs into single images with pertinent notes and site
number added, and then collectively glued examples sharing obvious attributes
onto A4 pages (Plate 399). This process may sound unbelievably basic, but
digital technology was unknown in the era that this approach was conceived,
and even photocopier access was 800km away in Brisbane.

By using a comb binder system, the pages could be moved and
regrouped as the developing analysis process permitted increasing refinement
of grouping and transition determination. As figure groupings increased, the
ongoing search for evidence in instances of superimposition permitted the most
rudimentary form of sequence to be developed and constantly field checked for
anomalies. While the basic motif form remained the focus of categorisation
studies, the importance was never underestimated of studying this within a
wholistic overview of Kimberley art. Subsidiary cut-and-paste assemblages
were maintained where grouping was based on criteria covering technique and
theme. This multi-level analysis process proved essential in determining
tentative 'periods' of Kimberley art. Individual comb binder books were created
to encompass the motifs, groupings and styles into 'period' assemblages (Plate
400). The process of developing hypotheses and subjecting them to rigorous
field checking was ongoing, progressively fine tuning sets of criteria to define
not only groups and sub-groups of figures, but phases of colour and technique
dominance, as well as collective periods of art (Plate 401). The process
ultimately permitted the entire Kimberley art body to be divided into three
definable epochs (Plate 402). This established the Kimberley Rock Art
Sequence, laying a firm foundation for the development of a wide range of
future hypotheses and multi-disciplinary research projects.

As an expansion of the visual analysis process, I sought an economic
way of creating a comparable hard copy photographic equivalent.
Transparencies had long represented the primary medium of my archiving systems, and in those pre-digital days the cost of having a working copy colour print made from the slides made any large scale print based inventory economically unrealistic. This marked the period of my introducing a third 35mm camera into the standards of site recording, which has been mentioned earlier. This camera ran exclusively 100asa Kodak print film, and was used to shoot specific record shots suited to my developing GAP requirements.

Two sets of prints were acquired from the colour negatives, which was a very economic undertaking in the highly competitive ‘one-hour-print era’ that preceded our current ‘digital era’. One set of prints was destined for the Takarakka Archive files, while the other was for the primary purpose of GAP working material.

Each print had its blank rear surface used as an ongoing data record, so that identified elements and image associations were noted as bullet points which remained with the image as it moved through the GAP analysis stages. Each image was given primary registration details, which included a unique number derived numerically from details of ‘year-film-frame’, as well as its host site number, and broad geographical location - such as ‘Central Drysdale River’. The generic figure type was identifiable from the earliest stages of the project, as in ‘Bradshaw’, ‘Wandjina’ etc. Additional analytic points were added as they were progressively identified and described through the GAP studies over the years (Plate 403). The colour prints were laid out in workable groupings, and initially addressed on the similarities/dissimilarities assessment process, and when definable to a larger group, this classification would be added to the rear of the print as an additional bullet point (Plate 404). As the groupings progressively became refined into levels of sub-groups, phases, and distinctive elements as defined in the equally expanding Terminology Handbook, they were stored as groups separated by a classification defined spacer card (Plate 405). Primitive thought this system may seem today, it permitted rapid access to large numbers of tangible graphic images, which could be viewed in masses, readily physically moved to test transition and sequence hypotheses, and arguably is more foolproof and less prone to loss than
a contemporary digital equivalent. This process served my demands well, and it was the GAP system which allowed me to define and test the Kimberley Rock Art Sequence, and advance the Terminology Handbook to its current invaluable level in ongoing Kimberley research.

The GAP system permitted me to define and cross check hypotheses on the sequential appearance of different sub-groups of figures within the larger groupings of a defined Kimberley Art Period. These findings have been the bases of the *Bradshaws: ancient rock paintings of north-west Australia* and *Bradshaw Art of the Kimberley* (*Submitted Publication No 17*) books. This also permitted papers on the subject of Kimberley artistic transition (Walsh 1997a and Walsh 1997b).

Increasingly refined levels of resolution regarding the sequential transition of figures could be directly related to associated technology which was often depicted, particularly boomerang and spear types. I believe that future studies of the technology and associated fauna depictions in ancient Kimberley rock art will be a focal point to link studies in climatic change and in turn associated environment and resource change.

Detail of technological change and development observed during the GAP operation permitted great detail to be recorded on changes in apparel and particularly weaponry, with one specific segment of these observations published in the 1999 paper 'Spear and spearthrower evolution in the Kimberley region, N.w. Australia: evidence from rock art' (AIAS 1988).
7 Dating Protocols

Attempts to Date Rock Art in the Kimberley

This chapter addresses the range of protocols used to assist dating of rock art in Kimberley. Considerable research has already occurred and the variety of methods are detailed below.

The Role of Insects in Prehistoric Art Research

One of the most scientifically rewarding of my numerous subsidiary studies associated with the bigger picture of rock art conservation and interpretation has involved insect activities in rock shelters.

Because of the damage sustained to CQSBA art panels by mud wasp nest-building activities, insect studies have featured prominently in the range of management concerns, and were summarised in my report “Managing the Archaeological Sites of the Sandstone Belt”:

Damage from mud daubers to art sites within the Sandstone belt is a conservation aspect which to date has received virtually no expert investigation. (Walsh 1984:103)

From my earliest CQSBA recording pro formas (Appendix K) details have been sought to facilitate study and better understand the role insects play in prehistoric art studies. Some examples of the importance of this issue can be gained by the findings of this subject-specific problem in the original CQSBA survey:

Of the 283 art sites involved in the analysis, only one site bore no evidence of mud wasp or swallow nests. Mud wasp nests occurred only in 78 sites (28 percent), while 77 sites (27 percent) featured mud wasp and swallow nests. This in effect means that 55 per cent of the art sites recorded during the survey were affected to some degree by mud wasp nests. (Walsh 1984:103)
My ongoing study of rock shelter-associated insect species included wasps, native bees and termites. During the summer of 1983/84 my focus on insect associated problems rose to a more focussed and systematic approach:

A determined attempt was made during the September-January 1983 period to obtain a reference collection of the mud dauber/wasp species frequenting the Carnarvon Ranges area.
(Walsh 1984:103)

An important earlier discovery associated with the effects on cultural sites by the termite forms of insect resulted from a CQSB recording project involving a close liaison with the Aboriginal Elder Fred Lawton. This incident was the catalyst triggering this initially minor subject-specific study expansion into a multi-disciplinary approach which now holds enormous implications regarding global studies of rock art and its potential for understanding the associated cultural adaptation.

The CQSB is synonymous with evidence of a complex traditional mortuary culture, at times found associated with rock art sites, and frequently having its own distinctive forms of ‘burial art’ (Walsh 1988:128 and illustrated in Walsh 1988: Plates 139, 140, 141 & 142). Recording pro formas were used to record such burial sites as a separate, but associated, element of the larger site setting. Question 110 of this pro forma permitted us to gather statistical evidence of problems associated with termite activities, which analysis showed as affecting 11% of recorded sites (Walsh 1984: Fig G66).

During the field work involving Fred Lawton, I gathered samples of termites found associated with a range of sites, and forwarded them to Queensland Department of Primary Industries entomologists for formal identification. This process was also progressively assembling a reference collection, intended to simplify identification in the ongoing field recording project. One suite of termite specimens gathered from an active colony in a Warrego River headwaters burial site was shown to Lawton to document the
Aboriginal name for termite in the Bjdara language. This sample was shown to Lawton, together with a number of other specimens, all of which were simply listed by field collection numbers, which provided no knowledge of their origin. The reaction from Lawton was remarkable, as he visibly drew back from this specimen in question, positively stating that: “These [are] bad ones, these eat men.” To the untrained eye, there appeared no readily identifiable difference between the various termite specimens presented.

Subsequent identification necessitated this specimen being sent to CSIRO in Canberra, as it proved unknown in local entomological collections. This specimen was ultimately identified as Nasutitermes carnarvonensis, and was only the second recorded observation since its initial discovery in the Carnarvon Ranges area which it was named after.

Confirmation of approval for ethically undertaking further research into conservation issues associated with such a potentially sensitive subject was achieved by taking Fred Lawton to the site. As the senior Aboriginal Elder for the region’s associated linguistic group, Lawton personally inspected the problem in order to advise regarding Aboriginal wishes (Plate 406). Lawton was fully supportive of any form of research or subsequent action which could contribute to controlling insect damage, and similar positive support was unanimously forthcoming from other Elders descended from other CQSB linguistic groups.

In December 1981, I organised a field trip to take the entomologists Ross Wylie and Robin Yule to the termite source area. We undertook a collecting expedition investigating both termites and mud wasps, but focussing primarily on the original burial site sustaining ongoing damage by the *carnarvonensis* termites (Plate 407). Some appreciation of the extent of damage resulting from this termite species can be seen from Plate 408, with the bark component of the burial cylinder remaining largely intact, while its bone contents had been reduced to a digested mass of termite nest. Focus of this species of termite on bone in preference to wood is atypical, suggesting *carnarvonensis* sought calcium rather than cellulose. If this ultimately proves to be the case, the discovery of this termite species’ activities raises a serious
management dilemma, particularly for conservators dealing with the preservation of the unique CQSB mortuary culture.

This termite-ravaged burial-site area became the focal point for experimental conservation measures, attempting to develop processes which may permit protecting unique organic materials without having to enter or disturb the site (Plate 409). This project attracted sufficient attention to receive prominent coverage in the Central Queensland media (Plate 410). Preliminary findings from the ongoing research were subsequently presented as a joint publication (Submitted Publication No 7). An additional element of significance associated with this project is the evidenced powers of observation held by some elderly Aboriginal people still retaining close associations with their land. Lawton’s identification involving only a casual glance from aged eyes remains a memorable experience in my long interaction with Aboriginal Elders. Not only did he identify a minute termite species among numerous other seemingly-similar specimens, but explained the undocumented characteristic of that species’ food preference for skeletal material rather than wood.

The potential conservation problems which other insect species posed to rock art were also shown by my CQSB survey, where 28% of all sites surveyed had their art in some way affected by mud wasp nests (Walsh 1988:Fig G23). The ongoing research into the mud wasp problem extended from its CQSB beginning to my subsequent Kimberley studies. Pursuing this element of personal research interest has led to a series of quantum leaps in our understanding of human development and adaptation in the driest continent on earth. Observations lead to a still-expanding dimension of multi-disciplinary research, inextricably linked to the established rock art sequence. A brief summary follows, to highlight niches of opportunity for future joint-project participation by developers of increasingly specialist scientific techniques.
Research Expansions Resulting from Kimberley Insects Studies

Numerous Kimberley art sites contained evidence of mud wasp damage, so the established CQSB collection and study process was continued to establish a Kimberley regional-species reference collection. Subsequent studies began to identify interesting anomalies to the CQSB findings, including some previously unobserved characteristics. Apart from the obvious characteristics associated with mud nest construction and appearance of different wasp species, Kimberley included an additional variable involving material composition. Three definable, basic nest compositions may be described as:

(a) conventional crumbling mud construction (appearing recent)
(b) smooth glazed and hard surfaced construction (appearing recent)
(c) rock-hard white construction (appearing ancient).

The type (b) nests appeared to be the product of traditional mud wasp species opportunistically using forms of Spinifex gum as a construction material. This results in an unusual (but explainable) 'toffee-apple' type appearance for the 'resin variant' nests of Seleriphon sp., and olive-bronze clustered capsules for smaller species (Plate 411). While the materials and process were explicable, no consideration was given to the significance of why 'mud daubers' would regionally abandon the traditional nest construction materials for which they are universally known.

The type (c) nests appeared to be the result of secondary processes involving some form of chemical action on originally mud-constructed nests. Presumably, this process is associated with seasonal water seepage, which probably facilitates the transfer of some as-yet-unidentified natural mineral, partially replacing components in existing mud nests. Considering that Kimberley is subjected to an annual tropical monsoon season, some site surfaces would logically be subjected to lengthy periods of water seepage during the Wet season.

Using my earlier described GAP colour-print image sorting system in the 'similarities/dissimilarities' assessment of wasp nest site studies, the visual
capabilities highlighted a subtle but significant anomaly. Only in very few instances were the type (c) hard nests encountered in close proximity to examples of the conventional type (a) mud nests (Plate 412).

Initially, I erroneously assumed this confirmed an inordinate degree of annual seepage transporting abundant natural minerals, operating at such a rate that the transformation from crumbly type (a) mud nests to ‘sub-fossil’ composition was taking place almost as the original mud structures were created. If this process was taking place, the art surfaces hosting the mud wasp nests must be subject to similar treatment, and this may in part explain the remarkable state of preservation associated with many Brudite and Archaic Epoch art works.

Expert examination revealed that these type (c) nests were, in fact, forms transformed to sub-fossil and at times fossil state, but any further assessment of the chemicals involved, and the time involved would require a specialist laboratory project. The systematic surveying of sites with a focus for collecting sample study nests from a diversity of sandstone types, topography and environmental settings permitted me to personally assess an immense number of variables over a short time. From this, a most interesting environmental correlation became apparent: the occurrence of type (c) fossil wasp nests without accompanying type (a) mud nests was associated with heavy sand environments, and never with areas of conventional soil. The absence of type (a) mud nests had no bearing on either absence of the insect species or the rapidity of mineral transformation processes, but was a reflection on dramatically changed surrounding environments. The fossil wasp nests were a product of an ancient period when the surrounding landscape contained areas of conventional soil, with the clay components essential for mud wasps to mould bondable capsules. The present sand environments were devoid of clays, and without a bonding component, even under the most ideal weather conditions, the still-present mud wasps could no longer construct nests of ‘mud’. We know there are logistics limitations with suitable construction mediums, and in the studies of mud wasp activities in Arnhem Land, the availability of mud was found to be the ‘more critical factor’, and the female wasps were recorded
travelling only distances of 200 m to acquire mud (Naumann (1983:135). The mud wasp presence in rock art sites thus provides an opportunity for documenting environmental changes in the immediate proximity. In instances, wasps were turning to the use of Spinifex-type resins as building materials, not opportunistically as I had believed, but out of sheer necessity through no other alternative.

This indicated a remarkable concept, where an insect species had changed and adapted to radical environmental changes. An exciting research possibility involved correlating findings from the insect/environmental change studies with the proliferation of graphic records documented in the associated rock art sequence. This effectively opened a new avenue of the much-sought multi-disciplinary approach to understanding the human presence in north-west Australia, determining the social, cultural and technological adaptation in response to seemingly-massive environmental and resource change.

Wasp Nests Assisting in Understanding Human Adaptation to Environmental Change Studies

If the hypothesis proved valid that wasp-nest compositions could become indicators of broader environmental conditions, there appeared to be several options to consider and seek evidence to corroborate:

(a) Non-resin wasp nests indicated the presence of clay content soils in relatively close proximity.

(b) The presence of only type (c) fossil wasp nests evidenced a soil-to-sand change in relatively close environment at some time in relatively recent prehistory.

(c) Type (c) fossil wasp nests are the product of sustained wet periods, presumably requiring greater and more consistent levels of precipitation than in historic times.
Increasingly, detailed studies of wasp nests in sites showed that in rare instances type (c) ‘fossil’ nests were discovered not only superimposing ancient paintings, but at times additionally having traces of seemingly very old paintings superimposing their mineral-transformed compositions (Plate 413). If some process could be devised to date either the wasp nests, or any remnant organic content, it may be possible to establish:

(a) a minimum age for any painting style superimposed by the nest

(b) a maximum possible age for any painting style superimposing the nest.

Investigations of this possibility were enthusiastically pursued, optimistically hoping that this may lead to not only a scientific understanding of the remarkable preservation at times associated with very ancient art forms, but also identifying possible options for experimentation with dating processes.

Initially, my investigations were biased towards themes involving the basics of the well known AMS dating processes. These focussed on possibilities of organic material associated with wasp nest construction, or trapped in subsequent layers resulting from the chemical metamorphosis. Contemporaneously, I was working collaboratively with Mike Morwood and Doug Hobbs on other Kimberley projects, and it was through contacts of Morwood’s extended archaeological projects that attention was drawn to another possible dating process—Optical Stimulated Luminescence (OSL) dating. In 1994 Morwood was also involved in a joint project with Bert Roberts and Rhys Jones, funded by an Institute of Advanced Studies Australian Universities Research Collaborative Scheme grant. That project involved the re-excavation of some of Australia’s key archaeological sites, permitting a re-dating project using the OSL technique, validating the accuracy of the increasingly challenged original AMS dates, which lay at the extreme upper limits of the C14 process. During the re-excavation of Mushroom Rock Gallery at Laura (Queensland), an interest developed in investigating the possible adaptation of OSL techniques to the mud component of the wasp nests.
From 27 July to 1 August in 1994, I took Roberts and Jones (Plate 414) to a representative selection of early and ancient north Kimberley rock art site discoveries which contained wasp nests. Samples were gathered from three sites for preliminary experimentation and testing. Roberts' analysis in his LaTrobe University laboratory subsequently provided the then amazing dates of 1,000 to 5,000 years for the sampled wasp nests. This confirmed my field observations that, under ideal conditions, some wasp nests survived in remarkable condition for a very long time.

Roberts and Jones returned to the north Kimberley in 1995, inspired by the possibility that much older wasp nests may exist in superimposition with rock art, and that specialised forms of OSL dating techniques may be developed to deal with the challenge. A range of sites containing examples of the bleached white fossil wasp nest stubs associated with rock art were selected for them to assess.

Roberts and Jones were guided to a cross section of sites containing a range of wasp nest types to provide a working overview, but the primary focus remained examples of fossil type (c) mud wasp nests. At this time there was no real consideration regarding the possible antiquity of the fossil nests. Approaches were more towards investigating the possibilities of adapting OSL techniques to wasp nests, hopefully establishing minimum ages for artwork superimposed by such wasp nests. The first tested examples were associated with the more recent Wandjina art forms (Plate 415), where the results confirmed the belief that under ideal conditions fragile mud wasp nests could survive in situ for hundreds of years, as this date proved to be 610 ± 40 BP (Walsh 2000:49). These findings attracted a more focussed approach to the rock art dating potential offered by wasp nests.

Inspired by the potential of the OSL dating processes, a second field research project was launched in 1995, extending the sampling to remote and difficult access areas (Plate 416). A good cross section of fossil wasp nest samples was obtained across a reasonably diverse geographic distribution of the far north Kimberley research area. Work was undertaken on this material by Roberts in his LaTrobe University OSL laboratory (Plate 417). Where
possible, sample nests had been acquired from panels with multiple superimposition of defined art styles, so that any dates which may be obtained could assist with a bigger picture of understanding the time frame of the rock art sequence, rather than a single motif. One of the more interesting of these selections is shown in Plate 419, where a fossil wasp nest stub was gathered from a discrete panel, with its location involving superimposition of:

(a) an Irregular Infill Animal Period (IIAP) hand stencil
(b) a post Bradshaw Figure
(c) a Clawed Hand period ring-tail rock-haunting possum motif.

Detail of the two sampled wasp nest locations can be seen to the upper left of Plate 420, and superimposing the headdress tussock of the post-Bradshaw figure in the enlarged section shown in Plate 421. Dating this nest would provide a minimum age for the post-Bradshaw era, and also a minimum age for the IIAP art which the post Bradshaw figure superimposed. This wasp nest provided the first significant date for Kimberley rock art, with an age of 16,400 to 23,800 BP (Walsh 2000:49). Findings of this research were initially published in 1997 in the prestigious journal Nature (Submitted Publication No 13), and in a discussion on advancement in dating research in 2000 (Submitted Publication No 16).

Obtaining scientifically-derived dates from the OSL analysis for minimum ages of the Kimberley Erudite Epoch art attracted technique scrutiny from peer group researchers, but also international interest from the broader community. The expanding potential developing from a humble beginning in the CQSB stencil studies some 15 years earlier, attracted additional offers of financial and logistical support for further research. Most noteworthy of these involved the generous assistance of an anonymous private patron to provide one week’s use of a Squirrel helicopter in July 1998 to address research logistics. The helicopter use provided a unique opportunity to transport Roberts to extremely remote sites that would otherwise remain inaccessible to scientific study. However, the luxury of access was accompanied by having to restrict
site presence to daylight hours, rather than the total darkness required during
the process of physically gathering the wasp nest samples to avoid light
contamination. To overcome this essential requirement, I designed a 'collecting
bag' sewn from dense black cloth. This had two 'sleeve extensions' which
fitted over the operators arms, and terminated in a sizeable 'open bag', where
its firm, but flexible, perimeter could be pressed over the surrounding irregular
rock surface, creating a light-proof work areas for the operator to gather and
pack the pre-selected wasp nest. Although requiring a team effort to support
perimeter light-proofing with the assistance of a folding aluminium ladder, the
technique proved highly successful (Plate 422). Team members then assisted
with positioning the Gamma Ray Spectrometer for readings (Plate 423) while
Roberts recorded pertinent details to accompany the sample (Plate 424). The
helicopter access and team effort, permitted visiting and sampling a wide range
of sites with fossil wasp nests superimposing a range of early art forms. These
included fossil nests over IIAP Positive Prints and String Prints (Plate 425),
and over IIAP animal paintings and decorated Positive Prints (Plate 426).

Having successfully completed the field work of getting Roberts to my
earlier-discovered sites and establishing a comprehensive range of well-
documented fossil wasp nest samples associated with a range of ancient
Kimberley rock art styles, the issue of lab work remained. In order to acquire
sufficient research funds to follow through on the suite of samples, an
application was made to the Australian Research Council under the ARC Large
Research Grants Scheme 2000 for Roberts and Olley, as the Chief and Partner
Investigators, and Chaloupka, Jones, Lawson and Walsh as Associate
Investigators. Funding sought was for a three year project covering 2000 to
2002, for a project titled "Luminescence dating of prehistoric rock art and past
environments in northern Australia using ancient mud-wasp nests". The
application noted:

The Kimberley sequence has been the most extensively sampled
for dating (50 samples, 7 dated), especially in the early (older)
part of the sequence. Several nests have been collected from over
and under "Irregular Infill Animal" and enigmatic "Bradshaw"

The proposal was partly successful, and received sufficient funding for Roberts to engage a Research Assistant for three years. The submitted objective was described as:

The aim of this project is to construct a secure numerical chronology for two of the most significant rock art sequences in the world - the prehistoric paintings and engravings of animals, humans and other motifs in the Arnhem Land (Northern Territory) and Kimberley (Western Australia) regions of northern Australia. (Richard Roberts & Jon Olley, ARC Large Research Grants Scheme 2000 applications, 1999:1)

No further dates have been provided, in spite of this academic and private patronage support. The sad passing of research-team member Professor Rhys Jones on 19 September 2001 marked not only the loss of promotion for this project, but a sad loss of one of Australia’s most respected prehistorians.

The original OSL dating results indicated ancient art of the Kimberley predated the Glacial Maximum (GM), supporting my long-time hypothesis, arguing that the seemingly abrupt ending of the Erudite Epoch in Kimberley rock art coincided with dramatically changing climatic conditions, resulting in diminished resources. A graphic summary of scientific evidence supporting this hypothesis can be seen in Plate 427, presenting a compilation of evidence revealed in the findings of a number of Kimberley archaeological excavations.

The Multi-Disciplinary Dating Approach Expands in Kimberley

The 1994 field season will remain a landmark in implementing my long-sought ideal of developing an orchestrated multi-disciplinary approach to
Kimberley research. While my work continued with the systematic surveying of Kimberley rock art site distribution and content, Morwood and Hobbs pursued an archaeology project. Part of the 1994 collaborative projects involving Morwood, Hobbs and myself was investigating the excavation potential of rock shelter sites containing examples of ancient art. Although there may be thousands of ancient art sites in Kimberley, a characteristic which has progressively become apparent is that very few contain any significant evidence of floor deposits, almost invariably having either rock or rubble floors. This complicates any hope of ever solving the mysteries of the Bradshaw culture through ‘dirt’ archaeological approaches of shelter floor excavations. However, I believe this absence of floor deposits in ancient art sites is part of a much bigger and more complex issue of climatic change and dramatically changed environments, which still remains the focus of my ongoing research. This is discussed further in later sections.

Morwood and Hobbs excavated the finest known example of an ancient art floor deposit (Plate 428 and Plate 429) finding shallow deposits formed by mostly washed in material, contributing very little to the primary aim of understanding the ancient Bradshaw culture presence in Kimberley.

The two separate 1994 field trips dealing with collaborative dating projects did not involve survey components, but were organised to maximise the valuable field time of these experts, and guide them directly to a selection of earlier located sites. Certain problems were encountered on these first trips, largely through our collective lack of understanding: my lack of understanding of the type of conditions required by the respective researchers’ techniques and their inexprience regarding Kimberley sites and art surfaces disadvantaged them in being able to adequately describe their sampling conditions. The collaborative project investigating OSL dating potential was with Roberts and Jones, and a similar collaborative project dealing with AMS dating potential was with Allan Watchman.

The quite-separate 1994 research project with Allan Watchman involved guiding him on a brief visit to assess the suitability of Kimberley art sites for the Accelerated Mass Spectrometer (AMS) dating techniques which he was
then working with. My personal objective in committing such amounts of my limited 1994 field time and resources to escorting key representatives of both OSL and AMS dating techniques to sites had a specific objective. This involved facilitating a fair field assessment of the long-term potential of these two developing dating techniques and their proponents. Certain cynicism has developed from years of listening to slick seminar presentations and protracted hypothetical discussions regarding the potential of new techniques, and the productivity of associated researchers. I believe that it is essential for researchers to constantly bear in mind the unavoidable denominators of their limited physical field life, and normally limited resources. If we are to achieve realistic research goals we must discipline ourselves to be fair, firm and resolute in assessing the projects which we can realistically support. My experience has shown that the best assessment is to support a fair field testing of project proposals, followed by a period of sufficient time and support to permit proof of hypothetical feasibility. Ultimately, time constraints necessitate a harsh assessment of ‘possibility’ or ‘pontification’, and commitment of ongoing support can only be justified for the former.

A range of art-site types were visited over a broad geographic distribution, permitting the gathering of samples of oxalate skins associated with ancient art panels, beeswax from the more recent beeswax figures, and oxalate crusts from the Pecked Cupules (Plate 430).

The preliminary findings of these trial surveys were presented in the co-authored 1994 publication “The Dating Potential of Rock Art in the Kimberley, N.W. Australia” (Submitted Publication No 12). As further information became available, the findings were published in the 1997 paper “AMS radiocarbon Age Estimates for early rock Painting in the Kimberley, N.W. Australia: Preliminary Results” (Submitted Publication No 14).

The wording of the published findings has since caused unjustified challenges to the meticulous field sampling and peer-group assessed findings of the OSL dating work. The issue involves a single sample, listed as KF1 in the published findings (Watchman et al 1997:table 1). The KF1 sample is listed as ‘under-paint’ on a Tassel Bradshaw, where the Laboratory Number of OZB351
is listed as providing a C14 age of 1430±180BP, giving a calibrated age of AD432-779. Discussion comments compound the issue by stating:

Apparent differences in AMS ¹⁴C age estimates for the algae and diatom-rich lamination over the ‘Tassel Bradshaw’ (KF1, dated at 1490 BP) and for the carbon in the accreted paint layers of the stylistically related Bradshaw paintings (CB3, dated at 3910 BP) could provide evidence either of considerable time delays between painting of the rock and its encapsulation rates for different mineral accretions on adjacent surfaces. However, the age estimate for the algal layer (half way to the present surface above the paint layer) suggests that all the silica over the painting accumulated during at least 3000 years. We tentatively conclude that the ‘Irregular Infill Animal’ and Bradshaw figures may be more closely related in time than previously thought. Further studies of rock surface accretions are under way to investigate these factors. (Watchman et al, 1997:25)

The sample in question (KF1) was gathered from a site [00685] which I had located and recorded five years earlier, and Watchman was guided to as a result of its areas of oxalate skins making it potentially suitable for dating studies. The Tassel Bradshaw referred to by Watchman (1997:25) is shown in Plate 431, photographed at the time of sampling, and shown to be on the vertical wall of a small boulder outcrop. As there was deemed insufficient depth of oxalate accumulations over the actual Bradshaw Figure, which was positioned at the edge of the deposit flow, it was opted to gather a sample from the ideal depths to the immediate left of the motif, in the area indicated by the black rectangle. This was intended to provide an ideal test sample of the flow deposits affecting the panel, but could not be considered to be from UNDER the painting. During the final draft proofing of the publication, both secondary authors advised that the wording was either poorly structured or inaccurate, and should be appropriately edited before submission. These requests by the collaborating authors were not complied with, and the incorrect inferences in
the subsequent publication have provided a basis for ongoing challenges to not only the real age of the Erudite Epoch art, but also to the OSL datings published in the *Nature* article.

This published assessment by Watchman remains a cloud over Kimberley rock art dating research, and I believe the procedure should be replicated under stringent standards, and the findings published to clear the reputations of all involved.

My assessment of the AMS dating process capabilities in that stage of development, was that it was not suited to the minimal thicknesses of Kimberley oxalate deposits actually overlaying paintings. All available time and resources were subsequently devoted to assisting the advancement of the OSL dating research, of which it’s proven success has already been discussed.

**Beeswax AMS Studies**

A quite separate Kimberley rock art dating project had been undertaken in collusion with Dr Morwood, with the support and approval of the Kalumburu Community Aboriginal Elders. Essential support with technology and costs associated with obtaining the essential AMS dates was obtained through several ANSTO grants, and the lab work was undertaken at their Lucas Heights facilities.

While there were problems associated with obtaining sufficient samples of organic material to undertake AMS dating on the ancient art forms, this was not the case with some forms of the more recent rock art, which I had long hypothesised were associated with the cultures colonising the Kimberley in Post Glacial Maximum times. Most obvious of the potentially dateable Kimberley art forms involved the little-known beeswax art, most commonly associated with the work of George Chaloupka in the Arnhem Land area (Chaloupka 1993: 156-161). Dating work in that area has shown examples of beeswax art dating back for at least 4000 years (Chaloupka 1993: 160).

Experience by association had shown me that those highly skilled in laboratory techniques and associated scientific processes seldom had any
significant understanding of the primary source of field samples, even when taken to the site. One must remain ever vigilant against becoming part of the almost inevitable 'statistics ballistics' euphoria which develops from successful acquisition of ancient dates in an area of prehistoric studies. Contemporary Western cultures appear to have an increasing fascination with antiquity, possibly associated with the transient way of even the most stable aspects of our overly-materialistic society. Scientific objectives can all too easily be swept over by media and public fascination for old dates, and all too frequently the need for researchers to curry public and political interest in order to obtain support and funding for ongoing research. Prior to commencing the selection processes for Kimberley beeswax dating, I spent time investigating options which would permit attained dates to contribute to the understanding of multiple aspects of Kimberley cultural, sociological and climatic prehistory. Obviously, the primary date would assist in determining:

(a) the age of a particular motif

(b) the time frame over which the beeswax technique of graphic depiction was practiced in Kimberley.

My systematic recording had already illustrated a number of unusual attributes of the Kimberley beeswax art, perhaps most significantly its geographic distribution almost exclusively associated with the coastal slopes west and north from the Gardner Plateau. I developed selection criteria which necessitated each subject-motif offering potential to additionally contribute to our understanding of: (1) superimposition; (2) thematic change; (3) belief systems; or (4) social practices.

An immense amount of diverse understanding and associated dates have been systematically obtained from this study, although all associated with the most recent 2000 years of Kimberley cultural presence. Two samples provided dates and attributes which are so out of context with the final analysis that publication of findings has been restrained until these two important subject examples can be redated.
Some indication of the aspects of this study are evident in examples such as Plate 432 (from site [00907]), ANSTO sample OZC117, which provides a 1680±50 BP date for the very high relief depiction of a pair of 'hopping' macropod tracks. The artists have carefully shown only the toe, dew claw and central pad of the hopper, which indicates motion, as the 'heel' of a macropod pes does not contact the ground, or leave a track, during hopping. The skilful use of high-relief two-dimensional modelling to convey information of species and activity in such a graphic form of rock art is otherwise unknown. Of additional importance is that although having a crazed surface, the beeswax displays a remarkably bright, high contrast black appearance, even though exposed daily to direct sunlight. This confirms that under ideal conditions beeswax art can retain a deceptively 'fresh' appearance, and researchers should maintain extreme caution when considering stylistic assessments based solely on the physical appearance of Kimberley art.

An invaluable insight into Kimberley cultural and ceremonial practices in prehistoric times can be gleaned from Plate 433, with the beeswax depiction of a plan view, standing, anthropomorphous being. ANSTO sample OZD678 (from site [01131]) provided a date of 1850±40 BP. From an artistic viewpoint, this is significant in determining a minimum date for the reappearance of the tall, tapered headdress in Kimberley art, referred to as the Dunce Cap Headdress during its common depiction in the Bradshaw Period of the Erudite Epoch art. There appears to be an absence of this distinctive headdress form throughout the separating Clothes Peg Figure Period, believed to mark cultural changes in response to stress associated with environmental change in immediate pre-Glacial Maximal times. Of additional importance is the very detailed two-dimensional representation of a sub-incised penis on the beeswax figure, where the exposed tract of the urethral tube is shown as a central 'groove', as is the result of the ceremonial cutting away of the skin on the underside of the penis in Kimberley in historic times. Details of this practice from the west Queensland area have been described by Walter Roth (1895:177-180), and illustrated in Roth (Plate XXXIV). Some early researchers argued that the presence of subincision practices in north-west Kimberley was an historically recent introduction, and was still expanding in 1938, associated
with the Kurrangara cult originating from the southern desert cultures (Petri 1950 45-51). While their ethnographic research from traditional informants is not questioned, my belief that the origin and practice of subincision is very complex, possibly associated with cultural ‘waves and pulses’, is supported by this beeswax dating finding of $1850 \pm 40$ BP.

Potential of the dating work to develop an understanding of the otherwise intangible elements of prehistoric cultures, such as religious beliefs, is illustrated by Plate 434. This beeswax depiction of a classic ‘devil’ form, with domed head, exaggerated ears and upraised arms from site [00909], ANSTO sample OZC111, provided a date of $1770 \pm 60$ BP. ‘Devil’ anthropomorphic figures in identifiable form first appear in the Clawed Hand Period art, which still remains undated. However, the AMS capabilities of beeswax art have allowed us to establish that ‘devil’ beliefs have been present in Kimberley for at least 1800 years, possibly paralleling the Christian beliefs of Western cultures. This is significant when studying the Wandjina art and belief system, for which Kimberley has become synonymous.

The large and spectacular Wandjina figures of Kimberley represent one of the few painted forms offering widespread AMS dating studies. Artists have used the colour black to highlight important elements of these figures throughout the ‘classic’ Wandjina period, and studies have shown this to mostly have a charcoal base, with obvious AMS potential. The associated religious practice of repainting the Wandjina figures has resulted in multiple layers of superimposition, which the combinations of paint types used and climatic condition has seen subject to rapid and extensive deterioration. John Clark’s early studies provide some appreciation of the degree of stratified depictions:

Over-painting is common; usually a new white background is applied, and new figures painted. This has resulted in paint up to 5mm thick, with over 40 layers being built up on the surface in places. (Clarke 1977:59)
Some indications of the layering and deterioration problems associated with Wandjina art can be seen in Plate 435, with the head section of Djirrimba, the mythological yellow-spotted rock cod fish. The repaint process involving a preliminary 'whitewashing' over the existing surface as a preparation layer, followed by addition of the detailed layer in secondary colours, results in two layers for each repaint in key detail areas such as the eyes. The double density of paint in these areas, combined with lesser composition of the charcoal-based black paint, results in a propensity for accelerated cracking and exfoliation of these areas (Plate 435). This unfortunate conservation problem of falling away sections of stratified black (charcoal rich) paint extending back to the rock surface, offers us opportunistic sampling of material already naturally broken away from the wall.

Considering instances of over 5mm depth of repaint, involving over 40 layers of paint, one would initially anticipate indications of significant antiquity, which is contrary to my progressively established hypothesis of definable cultural change in Kimberley. Most of the AMS samples indicated material too historically recent to date, but the Argula (devil) figure in Plate 436, from site [00518], ANSTO sample OZB022 provided a date of 430 ± 130 BP. Selecting beeswax figures superimposed by multiple repainted classic Wandjinas, show they postdate 1440 ± 120 BP, with the oldest arguable Wandjina associated date being 1200 ± 90 BP. Further dating is required to formalise findings, but the 'classic' Wandjina form is certainly not of significant antiquity in the complex Kimberley art sequence. The 'devil' belief system appears to predate the Wandjina cult, and was certainly present until the last of the 'devil clan' Elders passed away in 2002.

My work in ongoing recording, analysis and dating projects has greatly expanded our understanding of the styles, themes, significance, cultures and time frames of Kimberley, and this contribution has only been attainable with the progressively developed processes and systems discussed earlier.
Evidence of Environmental Change in Art and Geomorphology

Undoubtedly, there is an additional role for continued studies of the potential of oxalate skins as contributing to the multidisciplinary studies of human adaptation in changing Kimberley environments. One of my preliminary personal studies of the mineral accumulations associated with the ancient IIAP art indicated stratified layers of ochre from superimposed paintings separated by layers of mineral accumulation. Considering that the most recent painting was a large IIAP macropod (Plate 437), which is from the most ancient surviving identifiable form of Kimberley art, such discoveries suggest potential evidence of even earlier but now unidentifiable art forms. In Plate 438 the microscope view of a cross section shows granular composition of the host King Leopold Sandstone at the base. Immediately above this is the dark red band of a very ancient painting, in places flowing contours of already formed surface minerals. Above this is a subsequently-accumulated irregular band of white mineral deposits. Remains of the IIAP macropod painting’s red paint lies above this, since superimposed by stratified accumulations of mineral deposits, which by their banding suggest evidence of varying environmental conditions.

I observed equally interesting evidence of stratification in preliminary microscope studies of cross sections of the originally-human modified surfaces of the ancient Pecked Cupule art. A basic overview of the Pecked Cupule art has been covered in Walsh 89-108. An example of a small, but concentrated, wall panel of Pecked Cupules is shown in Plate 439, where the typically fully patinated surfaces can be clearly seen. A microscope view of a cross section of the oxalate skin accumulations from a Pecked Cupule can be seen in Plate 440, where the coarse granular structure of the host King Leopold Sandstone can be seen artificially smoothed by the surface finishing process commonly used on the rough pecked cupule by the ancient artists. Overlying this are the multiple stratified layers of oxalate skins, varying from light caramel to dark brown, indicating additional elements settling from the surrounding environment at differing times in prehistory.
Most desirable of the potential research possibilities associated with these stratified oxalate skins involves dating, initially investigating increasingly sophisticated AMS developments as a focus for minute organic components trapped in the skins. Some Pecked Cupule surface skins show multiple bands of very dark deposits (Plate 441), suggesting charcoal residue, assumedly resulting from ash fallout from bushfire activity. While there would always have been bushfires in the Kimberley environment, evidence of increased fire has, in other areas, been argued as evidence of human activity in deliberate and regular firing of the landscape, as noted by Kershaw’s palynological work on the Lynch’s Crater site on the Atherton Tableland of tropical north Queensland:

The change to sclerophyll vegetation from rainforest is gradual...Perhaps - 12,000yr... It is best explained as a gradual replacement of fire-sensitive rainforest by fire-promoting sclerophylls under a regime of frequent burning of the sclerophyll vegetation. (Kershaw 1986:99).

While entirely hypothetical, a possibility does exist of eventually identifying similar evidence of environmental and associated climatic change in these oxalate skins of Kimberley Pecked Cupules. This change, evidenced by levels of charcoal at approximately 38,000BP and identified by Kershaw as possibly associated with vegetation change, is well within the span of known human presence in Kimberley. If the Pecked Cupules are proven to represent the earliest surviving art form in Kimberley, their human-modified concave surfaces may well have served as receptacles for airborne microscopic particles, thus creating mini time capsules, retaining records of the environmental response to a human presence in Australia.

Of even greater interest is evidence identified by Gurdhap Singh in the deposits of Lake George in New South Wales, where his 18 m core spanned a period of 730,000 years. This indicates evidence of eucalypt species challenging the preceding fire-sensitive species as early as 130,000 BP (Singh & Geisler 1985:434). They argue that this significant environmental change is potential evidence of an earlier human presence in Australia than has been
confirmed to date by the archaeological evidence.

Questions had long been present surrounding new approaches which may reveal evidence permitting correlation of a chronology of Kimberley climatic change, resource fluctuation and effects on human presence with the art sequence record. Preliminary studies of the stratified layers of oxalate skins directly ‘trapped’ in the concavities of ancient Pecked Cupule art motifs were encouraging. The possibility of expanding this stratification of originally airborne particles to a larger and more abundant study resource seemed a logical extension for investigation.

The Aeolian Sands and Climatic Change Studies

Pursuing evidence of climatic change has proven to be one of the most fascinating elements evolving from the multi-disciplinary approach which has expanded from the basis of my Kimberley rock art research. I believe aeolian sands studies hold significant implications for developing an understanding of the increasingly topical questions surrounding climatic and environmental change.

Systematic studies of detail recurring in the Kimberley rock art record increasingly indicated a correlation between graphic records of change in food sources, human activities and weapons. My hypothesis was that this represented a unique pictorial record of prehistoric human response to resource availability, in turn possibly indicating environmental change, probably the result of climatic change. The record of weapon development represented a history of human technological adaptation to suit the changing resources in the altering environment. Scenes of human activities through the sequence indicated an increasing response to stress; a factor which is noticeably absent from the records of preceding artistic cultures. A theme of human aggression correlates comfortably with depicted changes in weapons and resources. I thus argue that the most probable explanation involves aggression and ultimately conflict developing as groups are forced to defend increasing challenges for control of territory and diminishing resources. The abrupt cessation of the
Erudite Epoch rock art portrays the most violent depictions of armed human conflict encountered in the long sequence of Kimberley rock art. With no evidence indicating artistic transition, this abrupt cessation of a sophisticated and prolific graphic record presents a challenging dilemma. I argue that this rock art represents a unique graphic record of the collapse of an ordered prehistoric society, which had flourished during earlier times of abundance, but environmental change eventually saw a critical point reached. Ultimately, diminishing resources were no longer adequate to support the population and ordered structure of that society.

Many scenarios may have been possible, based largely on the option of cultural presence or cultural change. Possibilities for a greatly and rapidly reduced cultural presence include a pandemic, theoretically easily transmitted from nearby south-east Asia, as is reflected in the current spectre of 'bird flu'. A less plausible argument for the cultural change scenario suggests a dramatic cultural change, where the sophisticated and long practiced rock art tradition was simply abandoned by a still-resident population. Themes evolving in the graphic record arguably indicate a far more logical scenario, involving an explanation increasingly found to be associated with collapsed prehistoric cultures on a global perspective, and that is major climate change.

My first indication of tangible evidence which may support the climatic change hypothesis appeared in August 1987, while I was undertaking fieldwork in the remote King George River drainage area of far north-east Kimberley. This was at a time when early diamond exploration was persisting in the same Wharton Sandstone environments in which we were searching for Bradshaw art. During campfire discussion with Field Geomorphologist Justin Robins, the inevitable question arose regarding the seemingly abrupt cessation of the sophisticated Bradshaw art. My normally hotly-challenged climatic change hypothesis was not only accepted, but also commented upon as a possible explanation for an apparent geological anomaly revealed by trenching activities during recent diamond survey work. Robins described having cut through a band of apparent aeolian sands concealed by a shallow overlay of typical Kimberley sandy loam when sample trenching. Robins commented that
although these deposits displayed all the characteristics of aeolian sands, they were completely within the context of recorded north Kimberley geology. Noteworthy depth deposits concealed beneath a shallow overlay on a plain setting suggested a possible geologically recent event, and a visit to the still-exposed trench was arranged.

The narrow trench wall exposed a remarkable and exciting sight. Deposits over one metre in depth of bright yellow sands, fine and consistently sorted, lay concealed beneath a 300 mm overlay of typical Kimberley grey sands. They rested on a 120 mm pisolitic layer which directly overlies the region’s weathered Carson siltstone. Samples were taken with preliminary examinations arousing mild but cautious interest among specialists. However, this provided the first possibility of evidence to support the ‘Climatic Change Hypothesis’ indicated by my rock art studies, and provided a tangible starting point to which I could attempt to enthuse interest from a diversity of paleo-disciplines.

During 1987, the pioneering stages of the OSL dating project with Roberts and Jones was progressing, and the potential for applying these techniques to the buried aeolian deposits seemed a logical progression. Logistics in reaching the very remote site setting prevented my personal return, and in compliance with the mining lease requirements, the narrow exploration trenches had been refilled. With the support of the exploration group, a backhoe and team was sent back to the site, and the area re-excavated in August 1998 so that the OSL samples could be obtained (Plate 442). These samples were forwarded to Dr Bert Roberts for OSL processing, but no results have been provided.

In 1999, during a period of helicopter site surveying, kindly supported by a patron, Dr Roberts was flown to the remote site setting, again refilled, where further samples with supporting field tests were taken (Plate 443). As with the 1998 samples, no results have been provided.

Samples were provided to Professor Grant McTainsh of Griffith University in 1999 for laboratory studies to confirm their aeolian origin. Details from this analysis were published in Walsh 2000, Figs 641-643.
Preliminary assessments of three levels of deposits were described as:

The 60-70-mm deep sediment population is probably aeolian
dusts deposited after, or towards the end of, the arid phase, when
local soils were becoming more stable. The coarser dusts would
have been of local origin, whereas the fines may have been
transported from more distant inland sources. The north-east
Kimberley region lies within the deposition zone of a quaternary
Dust Path which originates in central Australia and passes off the
Kimberley coast contributing to sediments in the Indian Ocean.
(Walsh 2000:384)

The believed dust paths associated with Australia are shown in Plate
444, and an example of the extent of dust moving seaward from the Kimberley
under favourable conditions is shown in the satellite image in Plate 445.

Encouraged with the confirmation that the newly-discovered sands were
of aeolian origin, and located in the extreme north of the Kimberley, I began
seeking any other indicators of a possible wider occurrence of such deposits.
During the course of field surveys, I had, over the years, encountered seemingly
isolated occurrences of fine sands in sometimes extreme shades of red and
yellow. Although noting that such settings seemed totally out of context, their
significance had not been realised, and the locations not recorded. As unusual
‘coloured’ sand occurrences were discovered, they were recorded from that
time on, and assistance sought with the powers of observation of local station
people, mustering pilots and tour operators. As interest increased, so did the
number of observations of possible sightings, which I visited whenever I was
working in the general area. One chance discovery exposed by erosion in a
remote area of the Gardener Plateau revealed a deep underlying deposit of fine,
red, wind-blown sand resting on the King Leopold Sandstone. A number of
natural plateau-crest ‘trap’ areas were also identified, holding possibility for
containing evidence in their shallow deposits.
Professor Grant McTainsh's ongoing assistance and enthusiasm for the potential of such a vast and little-known area resulted in his organising a brief visit to assess the potential and justification for forming a joint research project. In 2001, the Griffith University team brought coring equipment to assist with preliminary evaluation (Plate 446). Visits were made to some of the major Kimberley ancient art sites having obvious amassed deposits, to develop an appreciation of the settings and associated landforms and current soil types (Plate 447).

With the invaluable assistance of a patron, the testing equipment was lifted by helicopter to extremely remote and otherwise totally inaccessible environmental settings (Plate 448). Coring tubes, equipment and research members were ferried to the sites and assessments that would otherwise have taken months were able to be completed in days (Plates 449 and Plate 450).

Preliminary surveys and evaluations were completed, with the objective of structuring a more comprehensive long term research project. Initial findings from this first stage data were encouraging, and although continuity on the bigger picture investigation has lapsed over the past few years, it is hoped that interest and focussed commitment may be resurrected in the foreseeable future.

In an attempt to keep the environmental change components of the multi-disciplinary research quest operational, patrons funded a month-long return visit in 2005 of one of the original soils survey team, and survey and sampling was extended to a broader range of geomorphological sites which I had observed over the years of field work. Working within the constraints of manpower in the 2005 interim mode, some very interesting and important discoveries were made. These further corroborate my original hypothesis regarding the significance of climatic change in solving the riddle of the vanished high cultures of Kimberley prehistory.

A far more comprehensive coring survey of exposed swamp was undertaken (Plate 451) over the range of the Kimberley plateau to seek stratigraphy of trapped wind-blown material. This was accompanied by the coring of soakage areas associated with remnant rainforests, with the objective of seeking the most likely settings to ultimately determine a palynological
sequence, focussing on settings most likely to have supported a continuous vegetation presence. Quad four wheel drive bikes were used to transport coring materials and team members out to otherwise inaccessible sampling areas (Plate 452).

Preliminary field research was undertaken in 2005 as part of an ongoing project to establish an understanding of present and past environments, with one approach involving the use of faunal evidence from my rock art research and the archaeological excavations of Sue O'Connell. The significance of O'Connell's excavation findings at the now-remote far north-western coastal site of Widgingarri was stressed in my 2000 publication:

Subtle evidence of encroaching desertification appears at Widgingarri, a west Kimberley art and habitation shelter. Evidence of the bilby (*Macropis* sp.) is found in deposits immediately predating the height of the Glacial Maximum, which coincided with abandonment of the site. This marsupial now survives only in arid habitats associated with the Great Sandy Desert areas far to the south-east. This suggests that levels of aridity had increased sufficiently to prevent the creation of an environment suited to the bilby, which is basically a desert one. (Walsh 2000; 385-86)

I had also included a record of one of my earlier discoveries which was a very detailed and anatomically correct depiction of a bilby in the far north-central Kimberley, originating from the IIAP, as the earliest phase of Kimberley painted art (Plate 453). The closest current known colony of bilby to the location of this painting is now over 700 km to the south, and is logically associated with the very specific environment and resources required for this now-endangered species. As part of the regional cover sands sampling survey component of the project, the current bilby environment was assessed (Plate 454) to evaluate the believed environment that would have existed in the Widgingarri site area at the time when the prehistoric cultures were harvesting the local bilby population, immediately preceding the Glacial Maximum. The 300
current inhospitable Widgingarri environment of exposed broken rock ridges differs greatly from the red sand landscape required by the bilby, where low sand hummocks and bilbys survive because the root binding Spinifex, and stunted scrub provide suitable settings for a maze of bilby habitation burrows (Plate 455).

Detailed studies were continued on a selection of earlier-discovered deep red and yellow sand deposits, believed to represent surviving relics of past arid environments. The immense proportions of some of these occurrences of finely sorted wind-blown sand can be appreciated in Plate 456, which reveals that sands may extend to a depth of more than 8 metres. Comprised from three distinct formations, this appears to represent a geomorphological sequence involving three as yet undated discrete events accumulated on an immense pavement of stable King Leopold Sandstone.

Profiles were prepared through the main sites to permit the creation of ‘pulls’, intended to provide a permanent stratigraphic reference to assist ongoing lab research dealing with the relativity of the sequence pertaining to environmental change. The uppermost section of one vertical pull preparation is visible in the central area of Plate 456. Detail of two team members working on this ‘pull’ of the mid section of the sequence, referred to as ‘Phase Two’ deposits, can be seen in Plate 457. Work on a ‘pull’ creation on the underlying terrace level, consisting of darker red and seemingly better bonded materials (referred to as ‘Phase One’ deposits) can be seen in Plate 458. As most of the larger, exposed red sand profiles have been located in extremely remote and inaccessible areas, helicopter assistance was required to lift compressors, research equipment and team members in to complete the field studies (Plate 459). The pulls were cut to one metre sections for transport in archive trunks specifically constructed for the purposes (Plate 460).

Summary of the Paleo-Environmental Study Situation

Findings revealed to date from this study support my original hypothesis, arguing that resource depletion resulting from climatic change
represents a key catalyst in ending the high culture and activities considered
synonymous with the Kimberley Erudite Epoch. Kimberley ‘classic’ Tassel
Bradshaw art graphically documents the appearance of a sophisticated culture,
but is even more remarkable for being in a fully developed form. Innumerable
panels portray a consistent theme. Mostly involving static scenes, the art is
invariably dominated by elaborately-dressed adult males, in rare instances
accompanied by a few females, but never children. Panels largely portray a
common theme which could be termed ‘passive beauty’. Small crescent-shaped
and angular boomerangs are omnipresent, but frequently held in passive rather
than aggressive modes. Multi-barb spears are rare, and seem to appear in this
era as hand thrown ‘javelin’ forms, while spear thrower technology is absent.
Artefact presence generally suggests their role to be one of ceremonial
accoutrements, rather than in a primary role as utilitarian hunting or fighting
weapons.

Years of persisting with refinement and modification of recording,
archiving and analysis processes have been rewarded with the development of a
recording and analysis system capable of coping with the diversity and
proportions arising from the Kimberley multi-disciplinary research approach.
The past five years have seen an exponential advance in identifying and seeking
experts and projects dealing with the diverse but pertinent elements of the
Kimberley prehistoric ‘big picture’. The ability to progressively piece together
the segments of this puzzle is challenging, and may best be regarded as the
incomplete and jumbled segments of a stratified mosaic. The surviving ‘pieces’
are many and clear, but determining the ‘strata’ to first group the ‘pieces’ is in
itself a monumental challenge. Without remaining subjective and constantly
reverting to a lateral thought pattern to addressing the three dimensional
dilemma, I believe it can never be satisfactorily resolved.

Following the ‘classic’ Bradshaw Figure forms is a little-known era of
remarkably detailed and superbly naturalistic forms known as the Elegant
Action Figures (EAF). The EAF mark the end of the era where ‘static beautiful
male’ themes dominated the art record. All elaborate costumes and appendages
are abandoned and males retain only modest forms of headdress, but still
primarily of Dunce Cap form. Panels are dominated by mixed-sex camp scenes, where females and children become common participants. Scenes frequently reflecting what may be considered current Western perceptions of a traditional hunter-gatherer lifestyle. Hand thrown ‘javelin’ type multi-barb spears become the standard artefact, but still with a total absence of spearthrower technology, and showing few boomerangs. Males are commonly depicted undertaking macropod hunts, with game occasionally including a thylacine, rarely a goanna, but a conspicuous dearth of emu, crocodile and fish. These are but some of the many subtle elements arguably indicating a change of environment, resources, lifestyle and culture. The pomp, paraphernalia and passiveness of the ‘classic’ Bradshaw times transform rapidly into records of less-bountiful times, with the dominance of macropods indicating the existence of a grassland environment, where heavy long-range spears are required. The abandoned adornment and appendages suggest a society preoccupied with basic issues such as ensuring the acquisition of food to support the increasingly important family unit.

Limited indication of group aggression commences in late EAF scenes, while increasing evidence suggests a developing trend involving a secondary (perhaps primary) role for adult cadavers. The distinctive ‘pineapple club’ appears, but only in scenes indicating use on humans, rather than animals.

Certain unresolved questions still surround artistic elements suggesting the possibility that at least two distinct groups may have coexisted briefly, contemporaneously but not necessarily harmoniously. These groups are the late EAF and the markedly-different culture of the early Clothes Peg Figures (CPF).

The ‘classic’ CPF art records a much different culture, retaining certain dress and paraphernalia of the preceding ‘classic’ Bradshaw culture, but almost invariably shown in aggressive plan view alignments, standing in challenging postures while heavily armed with bundles of huge, multi-barbed spears. Spear thrower technology appears, and develops through stages to huge forms. Aggression becomes the theme, with some large group conflict scenes. Many instances depict individuals with braces of spears impaling them from many angles (Plate 461), frequently showing dramatic ‘blood dots’ emanating from
the wounds. Instances of fine body-paint detail survives on some males.
Depictions of hunting scenes, camp life and children are absent, and rare
instances including fauna resources are restricted to an occasional individual
holding a 'dead' small macropod by the tail, now only small species, basically
of rock wallaby proportions.

I believe these summarised changing group-specific attributes, together
with many additional subtleties, indicate a changing environment with
increasing aridity, presumably associated with climatic change. The
appearance and subsequent disappearance of large macropod species in hunting
scenes arguably reflects the readily available species, which in turn indicates
the environment required for their survival. If this is accepted, then the
resources suggest the development of a grassland environment, giving way to
lesser environments - probably Spinifex and saltbush dominated. The
increasing stress associated with the quest for diminishing resources
implements the territorial imperative among surviving groups. The resulting
period of illustrated aggression and group conflict may, at best, be associated
with protection of territorial areas, but more probably recording responses to
resource motivated territorial invasions.

The proliferation of 'classic' CPF art seems to end abruptly, which may
initially reflect the end of that group as an organised and prolific society, not
necessarily their total extinction. The CPF art contains numerous detailed
depictions of sophisticated watercraft. Many appear to be high-prowed ocean-
going craft, such as Plate 462, while some proportionally huge examples are
shown carrying as many as 29 occupants, both male and female. Designs and
sizes of depicted watercraft indicate a society with a long history of marine
association. Considerable significance has recently been placed on the role of
this watercraft in assisting migrating waves and pulses reaching Kimberley;
however, I believe we should not overlook the possibility that this same
watercraft knowledge offers an explanation of how groups could have also
escaped an increasingly uninhabitable landscape.

To fit this rock art-based summary into a broader overview of the multi-
disciplinary study, I draw attention to summarised evidence compiled from the
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limited, but immensely significant, archaeological excavations in Kimberley. Morwood’s compilation of data from a series of excavations is reproduced in Plate 463, where evidence of habitation was found to span at least 40,000 years. However, a more interesting revelation is the period of apparent absence of evidence of a human presence. This spans a significant period roughly commencing with the peak of the Glacial Maximum. I have long compared this evidence with that of the rock art sequence, where a long period of apparent discontinuity separates the end of the Clothes Peg Figure Period and Erudite Epoch from the first evidence of the Clawed Hand Period and the Aborigine Epoch (Plate 402).

From an environmental and resource perspective, some insight may be gained from the findings of O’Connell’s excavation at the Kimberley Carpenter’s Gap site (Plate 464). Organic material associated with human habitation has provided the first scientific indication of the extremes of environmental and resource change which humans have adapted to during Kimberley prehistory. O’Connell has arbitrarily divided the excavation evidence into four environmental phases, providing an associated general time frame. O’Connell identified peaks of aridity occurring at approximately 13,000, 16,000, 17,750, 20,250, 21,500 and 25,000 BP (Walsh 2000:384). Evidence of resources, theme and activity in the rock art sequence suggest as yet unconfirmed but strong correlations in the broadest terms of:

(a) the IIAP culture with O’Connell’s ‘Phase 1’
(b) the Bradshaw Period with ‘Phase 2’
(c) the period of apparent discontinuity between the Erudite Epoch and the Aborigine Epoch with ‘Phase 3’
(d) the Clawed Hand Period and Wandjina Period of the Aborigine Epoch with the more recent segments of ‘Phase 4’ (Plate 464).

As an extension of this, I believe a strong probability exists that the ‘Phase Two’ red sands of my arid sequence studies (Plate 457) may well coincide very broadly with the more recent segments of O’Connell’s ‘Phase 3’ botanical
sequence. While the actual aeolian deposits may represent the product of a long period of aridity, it may initially be more plausible to establish OSL dates relating to the latter periods of when dune movement stabilised. A far more difficult task will involve locating dateable evidence from the aeolian deposits to determine the actual peak periods of aridity, when major deposits may well have been transferred, but exposure during the period of ongoing mobility eliminates OSL potential.

Important discoveries in 2005 indicate that during the period of extreme aridity associated with the Phase Two red sands, the Kimberley was not devoid of a human presence. As there are few environments on earth which have remained so consistently arid over such a time frame that no evidence of at least a brief human presence can be discovered, one would anticipate at least sporadic use by small groups. A profile cut through a deep and pristinely intact deposit of Phase Two red sands in 2005 revealed the tip of an obviously introduced foreign stone, seemingly out of context, located midway down the deep deposit of wind-blown sand. Careful excavation revealed a large introduced stone, closely aligned to another, and another. Subsequently, eleven similar introduced large stones were revealed, arranged in an order and alignment that could only have been by human hand (Plate 465). The implications of making a chance discovery of an in situ stone arrangement is extremely significant, providing a unique opportunity to learn more of the ceremonial lifestyle of the culture which at least passed through this region during the end of arguably the most arid period of human presence in Kimberley. This important site was reburied as the most efficient measure of preserving its integrity for future periods with the availability of more advanced dating technology.

The potential of an expanded and focussed study of the aeolian sands and swamp deposits linked to the graphic records of the rock art sequence is limitless, and my developing database and GIS systems are increasingly offering the possibility of maximising the multiplicity of fine detail into a distilled and increasingly refined Kimberley Prehistory Big Picture.
Traditional Knowledge, Traditional Mythology and Contemporary Interpretation

Discussion has summarised the development and refinement of processes, as well as the ever-increasing potential offered by recording archiving and analysis processes. This highlights the potential a focussed direction towards clearly defined objectives can attain over a relatively short time frame. The opportunities created by exponential development of technology, and the portability of highly-specialist equipment and machinery is exciting. The advent of machinery to increase access mobility has also developed at a rate greater than even the most serious solo researcher could keep pace with. The new generation of researchers not only have the luxury of accessing technology and equipment of inestimable benefit to the recording and analysis objectives, but also, more importantly, have grown with the evolution of computer-based equipment as a way of life. The older generation of researchers are unlikely to ever adapt their mindset to utilise these new but invaluable tools with the same ease and confidence. However, the technological advantages available at the fingertips of the new generation of recorders can never turn back the clock. Privileges such as locating and studying fully intact and pristine settings and sites, or working with traditional people with first-hand intimate knowledge, represent priceless research opportunities. Rapid changes of development and access make it unlikely that few are now likely to either experience or apply these technological advantages to such intact resources.

This observation should never be construed as some form of peer group status issue, but a very important factor which should be considered when evaluating future sophisticated analysis resulting from new technology. There are factors which long experience acquired from working with intact settings, and experiencing traditional psyche, which are at times the very essence of a site, its art, and the essence of its purpose. Number-crunching analysis and the clinical dissection of data by current technological reassessments may not confirm these factors, but they may well be the very essence of the site. A wise researcher wishing to seriously understand the culture will bear this in mind.
The degree of sophistication associated with early documentation may be less than acceptable by the standards attainable by the speed and accuracy of today’s technology, but it will always remain unique and irreplaceable ‘primary data’. The reality is that environment has, in many cases, changed dramatically: much of the art has deteriorated, tourism driven human visitation has taken its toll, and much of the often-subtle but important peripheral portable material has gone forever. A daunting question confronting all searchers involves the form, extent and direction this escalating level of change will develop to, and the implications for confirming the validity of deductions from both past and present research.

Perhaps the greatest issue I perceive as confronting future researchers, archivists, conservators and resource managers involves matters of proprietorial claims: claims not only over land ownership, gaining access to the most ancient forms of art, but the very study of prehistoric art. Challenges to rights of photographing rock art images increasingly extend to even documenting stories, myths and concepts. These are but some of the dilemmas bound to increase in complexity as issues of power, control and more mercenary aspects intensify. The basic issue is unlikely to resolve itself, particularly in a society increasingly promoting the concept that ‘rights of the individual’ are sacrosanct. Historians and conservators must face the reality that they will be negotiating their right to work within an environment where there is an increasingly less clearly defined relationship between ‘rights and responsibilities’.

Throughout my 29 year presence in Kimberley, I have maintained consistent, concerted attempts to identify any individual still retaining any vestige of traditional knowledge associated with rock art. I feel confident in stating that I have done my utmost to establish the truth in areas of verbal knowledge, documenting this in the most accurately and detailed form permitted by my resources. My personal interviews with Elders have been supplemented by ongoing quests to source recordings and publications by early researchers and, where possible, personally undertake interviews. This ongoing quest has taken me around the globe to work with recording legends such as Andreas Lommel, Norman Tindale and Howard Coate. I mention this to
support my belief that I am in a unique position to be able to make sound assessments and statements on the matters of accuracy pertaining to the above mentioned subjects. The political climate remains ever changing and the effects of political correctness take an increasing toll on our ability to accurately document truth. In such an environment a strong onus of responsibility rests on ‘those who were there’, and who were privileged to have the primary knowledge shared with them. This detail must be documented accurately and completely, followed by every effort to insure its survival for the benefit of all future generations. At present this represents an extremely difficult, challenging, and entirely thankless task; but history will not judge kindly those researchers who buckled beneath the interim pressures of a changing society.

Questions regarding the accuracy of rock art-associated stories, mythology and interpretation will always represent a sensitive issue. Nothing is ‘set in stone’, except the art itself, and the cultural aspects associated with its many forms have always, and will always, remain in a state of flux. While I feel sure that the verbal material I have recorded is from the most reliable and learned sources extant at that time, this information can at best represent an opportunity to appreciate a very specific ‘window in time’, acknowledging that values and stories would undoubtedly have differed in the past, as they will certainly differ in the future. It is extremely difficult to say that many interpretations are ‘wrong’, and it is really only possible to state that they are not consistent with the beliefs of a particular cultural group at a specific time in history. The significance surrounding the degrees of truth of mythology associated with rock art may diminish as future generations of more urbanised Aboriginals become further detached from the sites and their religious importance, but this was not the case with the last traditional custodians:

Some others [researchers] come along and offer money to get information on sites, and to get stories they talk to the wrong people and get the wrong stories. When the young people read us these stories from them, books, we don’t know them. They get them stories from people who call themselves lawmen, but they in missions and don’t know the proper country or the stories. We
hear *Ngarinyin* stories mixed up with *Worora* stories, all rubbish

(King in Walsh 2000:1)

In pursuit of the understanding of the purpose, procedures and role of traditional rock artists and custodians of mythology, I strived to pursue ever-available possibility. Some coverage of the last of these artists has been discussed earlier in this work.

One noteworthy instance of documenting a traditional owner creating a painting in the site for which he was the recognised *Yungkunjatjara* custodian involves *Djoonkadjie* (Pompey Douglas) at the Owalinja site in far northern South Australia in 1987. This unique opportunity permitted me to study the grinding preparation of ochres and the manufacture of brushes (*Plate 466*). The Owalinja site is a major regional gallery associated with the Dreaming of the *Kungkarungkara* women, or the Seven Sisters of the Pleiades (Walsh 1988:48-49) extending across the cave ceiling (*Plate 467*). The added painting was in the main panel area, but adjacent to the main depiction of the travels of the ancestral hero *Njiru* (*Plate 468*).

Pursuit of an understanding of the selection and training process of young Wandjina-Period artists in Kimberley was aided by Billy King, a senior Elder of the Kimberley Kupingarri Aboriginal Community. King willingly guided me to the remote Kimberley gorge setting where he was among a group of youths tested by traditional artists for their artistic abilities (*Plate 469*). An extract from his subsequent explanation of the previously-undocumented process was published in Walsh (1988:425):

When I was a young fella, we were not allowed near the rock paintings. Except with the old people. It was a big honour to be allowed to paint for these stories, and touch-up the old paintings, and you had to be trained the proper way. The old people decided who would be allowed to paint.

I remember eleven of us young fellas were taken by the old people into the bush, and they showed us the proper way and then
watched while we tried ourselves. After a while, they pulled out the people who weren’t good enough, including me, and told us we should do some other thing. We weren’t good enough to paint for the community, only for paint for ourselves, and then rub off... (King, 1988:425)

Billy King was a strong and respected lawman within the community, still retaining strong beliefs in the Wandjina and associated maintenance practices. The 1987 Kimberley Repaint Project had caused massive problems within the Aboriginal community, with concern and polarised opinions spreading Australia wide (Plate 470). Matters associated with Kimberley rock art became increasingly complicated when claims began to be made regarding ownership and cultural significance of the Bradshaw Figures. King summed up the situation in a preface to my Bradshaw Art of the Kimberley publication (Submitted Publication No 17):

There is too much politics in Aborigine business now, too much money, so maybe the truth is not good enough any more. It is sad because they are teaching young people this way, and the proper, true way will be lost. (King in Walsh 2000:1)

King remained a vocal advocate against claims of significance of Bradshaw paintings held by Kimberley Aborigines, arguing that Wandjina was their traditional religious belief, and the Bradshaws, which were before their time, had nothing to do with their belief systems. King’s feelings were sufficiently strong on these matters for him to request my assistance in arranging for him to go and tell the Elders’ story on these matters, to the people who may see justice done. This resulted in the Ngarinyin Elder travelling with me to the 1998 IRAC ‘98 International Rock Art Congress in Portugal (6-12 September 1998) where we presented five joint papers on the pertinent subjects associated with repaint and Bradshaw art.
King had not-surprisingly expressed reservations regarding travelling to a foreign land to stand and speak directly to hundreds of strangers. Wishing to maximise King's unique opportunity of presenting first hand the values and beliefs of a traditional Kimberley Elder to an audience of global rock art authorities, I developed a compromise. After speaking at length with King regarding the points he wished to convey to the international community, I drafted up a series of five presentation titles to cover these points, before we undertook a rather demanding preparation process. Using a helicopter to transport the frail Aboriginal elder to a series of remote art sites of his choosing, I undertook unprompted digital video recordings of King relating the arguments he wished to present in his own words. This was undertaken in the familiar atmosphere of his art sites, before a background of the art which he so passionately spoke about. Obtaining sufficient on-site footage to permit editing to a professional presentation of King’s argument resulted in unanticipated complications. During the first helicopter flight, a difficult lift-off procedure necessitated my running to a more suitable lift off point, during which I sustained a bad fall which resulted in a major dislocation of the left shoulder. A Flying Doctor medivac operation later transported me from the remote Kupingarri Aboriginal Community to Derby for emergency treatment. Ultimately I was forced to return to Queensland for a complete shoulder reconstruction operation before being physically able to return to Kimberley and complete the essential on-site interviews with King.

The time and technology required at this time to edit these presentations was frustrating, but the concept of using edited on-site clips was well received by the Congress, requiring King to then only respond to questions directed from an enthusiastic international audience. This provided King with the exposure opportunity he had sought, permitting the presentation of his concerns and arguments regarding the Kimberley rock art dilemma, not only as a traditional custodian, but arguably as the world’s last traditional rock artist (Plate 471). The list of the papers I presented and co-presented at the Congress were as follows:
‘1’ ‘Kimberley wildlife depictions: a record of extinction, mythology and deification’ (Walsh)

‘2’ Wallanganda, Kiara and the basic sky hero theme’ (Walsh & King)

‘3’ ‘Dating beeswax figures and the recent art of the Kimberley region. Western Australia’ (Walsh, Morwood, Watchman & Tuniz)

‘4’ Significance of rock outcrops and associated features in Wandjina rock art of Western Australia’s Kimberley Region’. (Walsh & King)

‘5’ The 1987 Repaint Program and its effects on Kimberley Wandjina cultural sites, Northwest Australia’ (Walsh & King)

‘6’ ‘Charlarlar standing stones, sneezing heaps, stone monuments and arrangements of the Kimberley, Western Australia’ (Walsh & King)

‘7’ Bradshaw rock art: its scientific and ethnographic history’ (Walsh & King)

‘8’ ‘Symbolism, semiotics and cognitive theory’ (Walsh)

King had also requested me to organise a joint meeting and presentation at UNESCO in Paris, where he wished to clarify the Ngarinyin Elders’ stance regarding the growing dilemma over claimed ownership of Bradshaw art (Plate 472). King’s objective was to respond on behalf of the Ngarinyin Elders’ claims made in a preceding June 1997 deputation. This had involved anthropologist Tony Redmond accompanying four Aboriginals to UNESCO to gain support for their claims regarding Kimberley rock art ownership. King and other Ngarinyin Elders claimed this deputation had not consulted them, and claims of representing the voice of the Ngarinyin people on rock art matters were totally untrue. On 15 September 1998 we met with Ms Josée Theil, as head of the UNESCO Division of Cultural Heritage (Plate 473). We provided the gathered group with a presentation on the Bradshaw art, accompanied by King’s explanation and vocal disassociation of the contemporary Wandjina belief systems with the Bradshaw art, which had originated ‘before our time’.
Further opportunities for the Ngarinyin Elder to present his viewpoint to a broad readership was made available in my 2000 publication *Bradshaw Art of the Kimberley*, where his dictated summary commented:

We would like to know the truth of where the Bradshaws came from, all of us old people, so we are very happy that Grahame and his people are finding out. We don't go near them ourselves. It does not break our law, because the Bradshaws are not part of our law, we don't know nothing about them, so he can find out more about the paintings and tell us. We don't look for money or anything for this.

We just want to be told while we are still alive, because when us old people are gone, then others will change the stories to suit themselves, We want people to know the truth. (Billy King in Walsh 2000:1) (Plate 474)

The important component of my Kimberley research involving the documentation of mythology and interpretation of sites has already been mentioned. I have utilised every opportunity to transport the Aboriginal Elders personally to the sites, hoping that presence may assist accurate and full recall, and thus maximise these last opportunities to record first-hand documentation. Factors such as the age and health of many Elders, combined with the logistics associated with mostly remote and largely inaccessible site locations, have made this an extremely difficult and expensive project. Fortunately, the assistance of patrons has, over the years, made it possible to opportunistically undertake brief but highly organised documentation forays. In some instances health and community commitments required attempts spanning four consecutive years before we were able to transport frail Elders to specific remote locations, and such helicopter trips with Elders continued as recently as 2005. Although limited in its productivity, I believe it has been essential and timely to record first-hand the last traditional knowledge of the last Elders with 'bush' backgrounds. This represented another brief window of opportunity which I seized and strived to maximise. Irrespective of current negativity
regarding Europeans dealing directly with Elders, I feel sure that history will judge these projects worthy of the time and expenditure required. Some of the natural geological formations featuring in Wandjina mythology include the remarkable formations of Langgi (Plate 475), interpreted by Woolagoodja (snr.) as metamorphosed Wandjinjas. An extension of this mythology involves a spectacular geological formation on this off-shore island (Plate 476) which represents the ghandri, or burial platform, of the region’s leading Wandjina hero.

One of the most common and consistent themes of mythology recurring through the three linguistic groups associated with Wandjina rock art (Ngarinyin, Unambal and Worora) involves a ‘Great Flood’ theme, particularly detailed in the coastal-dominated traditional lands of the Worora. While many historians argue that ‘Great Flood’ stories occur in many areas of the world, my years of researching associated sites, art, mythology and associated geological formations lead me to believe that the Kimberley mythology is based on some real event. Our dating of Wandjina-Period rock art suggests that this ‘cult’ and presumably associated mythology, are of relatively recent origin. This additionally increases the possibility of handed-down accounts surviving in a preliterate society and to have adopted mythical connotations, while retaining a thread linking it to a real event. Assessing known incidents of natural phenomena and cataclysmic events affecting this area of the world over the past 1,000 years repeatedly draws attention to the possibility of tsunami-associated events.

After some years of follow up research, and canvassing this hypothesis, I was fortunate in arranging a meeting with Professor Ted Bryant of Wollongong University, a renowned authority on tsunami activity affecting Australia, and author of the 2001 book Tsunami: the Underrated Hazard. Bryant’s ongoing research had already determined that “signatures for both historical and paleo-tsunami exist along the coast of north-west Australia” Bryant (2001:120). Bryant had undertaken tsunami research over many areas of Australia, but logistics associated with the extreme inaccessibility of the Kimberley coastline had thwarted attempts to extend even preliminary surveys in this important
region, so close to the often referred 'ring of fire'.

During the 2003 field season Bryant was able to visit our field research camp for a week, and with the assistance of a patron's helicopter support, we were able to traverse the north-west Kimberley coast from Admiralty Gulf as far south as Walcott Inlet. This preliminary survey had been planned to investigate my hypothesis regarding possible tsunami activity in association with the strong Kimberley traditional mythology of the Great Flood, which had recurred frequently during my documentation of art-site and Dreaming mythology. Two areas were identified by Bryant as classic signatures of tsunami activity, the most northerly at Cape Voltaire (Plate 477) and the other at Cambridge Gulf (Plate 478). Preliminary dating from shell material places these events within the believed time frame of Wandjina mythology, and they appear to indicate two separate events. The preliminary findings of our joint project were subsequently made available in a joint presentation at a scientific congress in Florence in August 2004, under the title of "Cosmogenic Mega-Tsunami within the Australia Region: Authenticating Aboriginal and Maori Legends" by Bryant, Walsh and Abbott (2004).

Insufficient time was available to undertake detailed studies and tests during this pilot survey, but Kimberley coastal logistics associated with moving this research to the next level are prohibitive, and would require major funding for a task-specific proposal. Bryant's earlier discovery of fascinating evidence indicating major tsunami devastation further south along the Western Australian coast was encouraging with regard to justifying further research into my arguably-controversial rock art mythology origins hypothesis:

By far the most dramatic evidence of tsunami occurs at Point Sampson. Here waves have impinged upon the coast from the Indian Ocean to the northwest. Shell deposits were deposited above the limits of storm surge and on top of hills 15 m above sea level. In one extreme case, three layers of sand with a total thickness of 30 m were deposited in the lee of a hill more than five hundred metres inland and over 60 m high. The sands contain boulder floaters, coral pieces, and shell. Each layer
appears to represent an individual wave in a tsunami wave train. Dating of shell deposits in the region indicates that the tsunami occurred around A.D.1080, before European discovery. In a valley leading back from the coast, large megaripples with a waveledge approaching 1,000m and consisting of cross-bedded gravels, have been deposited up to 5 km inland. (Bryant 2001 121-22)

Further research is ongoing in this area as part of the multi-disciplinary research approach I have systematically developed around the primary focus of rock art recording and analysis.

Future Directions and Conclusions

Future Directions and Conclusions

Some final summary of the present status of recording and analysis development follows, linked to the more obvious needs and directions to maintain the momentum of this expanded and diversified approach. The basic perceived relationships of immediately-identifiable elements of the proposed multi-disciplinary approach to Kimberley research was published in the 2000 Bradshaw Art of the Kimberley (Plate 479). This model has been pursued, with a major expansion of directions evolving from pursuit of the original CQSB mud wasp nest studies. I still maintain that it is only through the ongoing development of continually refined and specialised recording and archiving procedures, extending to all involved ancillary projects, that we will ever make the cohesive advances essential to attain this understanding in our working lifetimes.

The need for a focussed and cohesive multi-disciplinary approach becomes increasingly obvious and urgent, as does the need for a central focussing and distilling of findings from the multiplicity of inter-related projects which are developing. The lack of a unified common goal and ongoing interactions of researchers, regular ‘brainstorming meetings’ and cohesive ‘big
picture' planning and administration are the greatest enemies we now have, and possibly the most difficult to triumph over.

It remains my unshaken belief that our understanding of the 'Kimberley Big Picture' involves understanding of human adaptation and cognitive development within the ever-changing climatic conditions. This understanding will only be attained from focussing on the rock art sequence as a base line linking all ancillary studies. There must be a greater sharing of findings from studies, hypotheses of researchers, and regular discussions on how involved researchers and disciplines may assist one another, and contribute to each-others' projects within the common goal. This remains a seemingly insurmountable hurdle, where politics, peer group antagonism and personality clashes remain far greater detractors than the tasks of locating primary sites, recording subject matter and even overcoming logistical support constraints.

I believe there will always remain an urgent need for the presence of a central individual to 'drive' these projects, to maintain ongoing inspiration for researchers, and to be able to promote the collective findings and needs to the interested public. A major problem will always involve assisting in the most difficult task: site location and logistical assistance during specialist researcher-limited field time. Most experienced scientists with the essential access to top laboratory facilities have neither the time, experience nor the desire to deal with the logistics associated with undertaking endless primary search and survey field-work. If collective research is to advance in its most productive form, there is a need to develop a system where the time and associated resources obtained for specialist research projects is used to its maximum level of efficiency and effectiveness. This would, in the most basic form, involve a modest but permanent Kimberley Field Base, seasonally supported by an efficient and highly mobile Field Survey Camp operation. As this represents the collective experience of a lifetime spent developing systems of survey, recording archiving and analysis, a few comments are offered to share these now-well-proven approaches with future researchers.

Years of lengthy field survey work involving almost every environment in Australia have provided me with the practical experience and opportunity to
have developed, tested, modified and refined many approaches to field survey and recording. The history of experimentation with efficient field mobility has already been touched upon, advancing from extended backpacking forays to carefully planned helicopter surveys. My 1989 introduction of quad four wheel-drive motorbikes for field-work soon proved highly successful. They remain the most efficient and reliable process to facilitate not only traversing extremely rugged terrain, but permit the transporting of essential photographic and supporting electronic equipment for forays extending over three or more days. The initial stages of developing the mobile survey camp system was to support the opportunistic survey process which was proving to be the most feasible approach to sampling the immense areas of Kimberley in one lifetime.

The Toyota Land Cruiser served as a mobile field base to which the extended quad forays returned to replenish stores and undertake mechanical maintenance. A range of spare parts, maintenance tools and emergency manufacturing requirements was developed to cope with the emergencies associated with three-month field trips. The dust and unavoidably demanding treatment continually took a high toll on recording equipment, and my field stock of five Nikon F3 cameras and three Metz 45CtT1 electronic flash guns would seldom see a season end with more than two cameras and one flash gun operational. However, as recording processes adapted to the increasingly sophisticated technology, there was a rapidly increasing need for including facilities normally associated with office environments. The process of my adapting to digital photographic technology commenced in 2001, effectively forcing a dramatic reassessment of the mobile field-survey camp concept, which now required digital downloading facilities.

Laptop computers were soon found to be an essential field requirement, not only for downloading and storing digital images, but permitting daily image conversion and confirming operation of the increasingly sensitive and fragile recording equipment. The dust that plagued the digital photographic equipment proved an even greater menace to the computers, CD burners and support equipment in the basic camp conditions, and major problems began to develop. The data-gathering efficiency of the digital approach, together with the ongoing
adaptation of recording systems, made it impossible to turn back the clock on technology, and major and immediate changes to field operations were essential. I believe this forced rapid transformation from an almost 'luddite to technocrat' approach marks the way serious 'Kimberley Big Picture' multidisciplinary research must head in the immediate future.

The new generation of Kimberley field survey camps has been argued by some casual observers as having become too decadent, but the quantum leap in productivity and efficiency speak for themselves. The roll of efficient field survey camps, together with their requirements and equipment, is largely dictated by the recording processes of the time, and a summarised history of these developments is graphically shown in illustration III 01. This illustrates the progressive experimentation with various forms of manual, graphic and voice recording systems, the adaptation of processes to suit the appearance of increasingly efficient new technology, as well as the preparedness to abandon old procedures when they prove superfluous in the direction of similarly developing analysis processes. An associated simplified graphic illustrating the development and adaptation of photographic recording is shown in illustration III 02. Appropriate discussion covering the problems, advantages and disadvantages of these varied systems and technology justifies a separate publication. However, these summaries illustrate that processes adapting to developing technology require corresponding changes to support facilities, maintenance and recharging equipment, the provision of which requires an increasingly sophisticated mobile field base.

Ongoing analysis of recorded data allowed refinement of the hypothetical Kimberley rock art sequence, and importantly identified 'grey areas' of transition and possible contemporariness which required more data to clarify. The location of associated sites to suit the requirements of involved experts from supporting disciplines also required greater man hours of field time than the long-favoured two person field team could produce. As the rock art and associated studies became more focussed and specialised, there followed a greater productivity of survey and site location processes to provide the 'quantity' from which the 'quality' could be extracted for specialist focus.
Even the most optimistic increases in field efficiency of the present field system could not fill the growing need, and a process involving additional man hours remained the only alternative. Capabilities and integrity of volunteers represented a significant concern, but developing the essential field-survey camp system to cope remained an even greater challenge.

During 2002, the field survey system commenced in limited form, operating largely from a fixed base, but with the early forms of digital recording and communications systems. The successful productivity confirmed the validity of the concept, and inspired a manufacturing of prefabricated field-survey camp equipment in my Brisbane workshops. Two Toyota Landcruisers and trailers transported the now highly-mobile camp on the five day trek from Brisbane to Kimberley, where a modified, ancient single-axle caravan was added to the camp inventory.

The field survey camp set-up was moved to three separate locations during the season, permitting volunteer teams to radiate out to prescribed survey areas, and return nightly to download data. Volunteers were designated into two-person teams, with each team allotted one of the five quad four-wheel-drive motorbikes (Plate 480). The modified caravan served only as a mobile office in an attempt to reduce the dust problems now inherently plaguing the developing digital processing and storage systems. The caravan-office visible to the rear of Plate 480 was a refinement of the original mobile field office concept developed in 1974 to service the CQSB surveys (Plate 30). The 2003 field office was set up with two computer areas: one for daily downloading and preliminary archiving of daily volunteer data; the other (Plate 481) dealing with downloading and conversion of my secondary field recordings as well as burning all files to backup media. Although this may appear excessive for a field camp, it actually proved inadequate, and the conditions and economics associated with backup media resulted in ongoing problems with dust and heat, resulting in an average of 10% failing of the CD backup disk system.

Field survey groups departed camp daily at 7am and returned by 4.30pm, being responsible for fuelling and pre-departure checks of their quads, and charging of camera and radio batteries. In order to maintain this
demanding maximising of real field-time productivity in the limited time available, it was essential to provide facilities to make personal non-field requirements as easy as possible for the volunteers. Every reasonable effort was made to provide this efficient camp environment, and adapt as deficiencies manifested themselves. The design and prefabrication of a collapsible field camp ablation block had been part of my Brisbane workshop project. The collapsible steel tank stand which supported a lightweight 500 l plastic overhead tank double as a plastic surrounded shower cubicle, with the connected ‘donkey’ hot water system manufactured from a 200 litre fuel drum (Plate 482). This provided abundant hot water for a shower area and for the adjacent small washing machine. A modified trailer with dustproof compartments and storage racks, served as a chuck wagon and kitchen hub (Plate 483). Without the support of patrons, the resourcing of the camp consumables and cook would not have been possible, but collectively permitted an extremely efficient and highly productive Field Survey Camp.

The proven Field Survey Camp process was continued in 2004, moving to a further three widely-distanced locations. The ageing quad motorbikes began to suffer increasing problems, making them unreliable for the non-mechanically-oriented field volunteers. A temporary field workshop was set up on the side of the Toyota, where the efficient field camp manager Toby Ware dealt with the problems (Plate 484). The ageing quads’ mechanical problems increased in magnitude, necessitating major stripping-down work which would normally be undertaken only in properly-resourced workshops (Plate 485). These problems are raised to highlight the support issues associated with the mechanised elements under remote survey conditions, and must be considered and catered for by future field research teams planning similar operations.

An incident involving total mechanical failure of a quad in an extremely remote and inaccessible location resulted in facing the reality of having to abandon the machine completely. With the assistance of a patron’s helicopter fitted with formal lift equipment it was possible to salvage the quad with its seized engine (Plate 486), and fly it to a station base (Plate 487). The 2005 field season was assisted with the use of three new station quads (Plate 488),
and the reliability and associated operator confidence resulted in the most productive ever Kimberley field season.

Lack of unified focus, ageing and collapsed field equipment and conflict between key project personnel has effectively brought an end to the highly successful and extremely efficient Field Survey Camp composition and operation which was developed. Cessation of this approach bears no reflection on the proven concept, and I would urge future serious proponents of the Kimberley Big Picture multi-disciplinary approach to use this model and modify it to suits their needs and the ever-changing technology.

Final Evaluation

My lifetime involvement in the recording, analysis and presentation of cultural resources has effectively chronicled the history of modern recording and research into rock art, in which Australia has played a very significant leadership role. I believe my concepts, processes, pro formas and archiving systems have made a significant contribution to this field. I would also hope that this work may have, in the most modest way, contributed to the larger understanding of human cognitive development within the changing environments of the driest continent on earth. I have attempted to introduce future researchers not only to the positive achievements of this journey, but also to the failings, the ineffective and the inefficient. The quest for understanding the truth of humankind’s development in Australia remains a thankless one, and the few committed researchers who dare to take up the challenge require every assistance to make their limited resources count, and avoid ‘reinventing the wheel’. Hopefully, my personal observations and experiences, coupled with the profusely illustrated history of experimentation, will spare the enthusiastic new generation of researchers from at least the avoidable pitfalls of frustration and unnecessary expense.

A chart illustrating the progression of my knowledge and understanding of the subject of gathering and analysing massive amounts of diverse data is shown in illustration III 03, pertaining to the key publications listed as
submissions in this work. The culmination of this systematic process has been the ability to produce the book *Bradshaw Art of the Kimberley*, regarded in some areas as a landmark publication in this field. Recognition of its literary contribution was forthcoming in the prestigious 2001 Awards for Excellence in Educational Publishing, where The Australian Publishers Association awarded it joint “Overall Winner” (Plate 489), and also outright winner in the “Tertiary Scholarly Reference” section (Plate 490). As this represents the first of a series of similar publications planned to cover the full sequence of Kimberley rock art, the continual refinement of these data-handling systems continue to make publications of otherwise impossible complexity become a reality.

An accompanying chart presented in illustration III 04 shows the overlap and progression of developments and controlling factors, assisting to place the recording and analysis developments within a time line of related events.

**The Future**

The future of discovering truthful answers for the many lingering Kimberley mysteries does not appear bright, particularly for questions pertaining to the fascinating presence and adaptation of the apparent waves and pulses within an equally unknown paleo-environmental history. Without the invaluable enthusiasm, public interest and private patronage of the recent past, our knowledge of Kimberley prehistory would still remain very basic. Accordingly, in spite of the at times scathing attacks of a few detractors, I believe enormous advances have been achieved in the quest for understanding. When assessing pertinent scientific publications, I believe they can be divided into three broad categories:

(1) those whose publications deal largely with personal research and associated hypothesis

(2) those whose publications are based largely on library research of others' primary work and who provide conservative hypothesis based on a collective distillation

(3) those whose publications attack existing primary work publications,
using controversy to veil personal lack of practical research on which to base a personal hypothesis.

Sadly the inherent difficulties associated with politics, logistics, commitment and resources make primary research in Kimberley all too difficult for most 'would-be researchers', and the spate of recent publications indicates that Category 3 of the above is being increasingly reverted to. I see no way of changing this trend in the foreseeable future, and I believe the window of opportunity has now almost closed, at least for serious researchers to develop and implement any worthwhile hands-on study of a broad cross section of Kimberley art sites. One may anticipate a progressive increase in attack-based publications involving presentations based largely on usurped material—a research approach which frequently conveys incorrect connotations when used out of context to assess or argue. With authors having no fear of challenge originating from a sound experience base, one may expect hypotheses to become increasingly wild, unfounded, and 'popularist'. Such a trend can easily become tolerated (if not accepted) as proponents seek politically correct acceptance, until ultimately the lack of rigorous challenge sees academic mediocrity become the accepted norm.

The rapid escalation of tourism in Kimberley follows a long-established global trend, and non-revenue generation research and conservation ethics can never hope to keep pace with the lure of limitless revenue generating potential. Tourism represents an essential and invaluable component of most modern societies, and, in an honourable and monitored form, represents an invaluable national resource, all too often branded in a totally negative fashion. My lifetime experience working in cultural resource management, which in historic time is constantly on a parallel course with commercial tourism, has made me acceptant and supportive of the basic concept, but seldom its final implementation. Most wilderness-based aspects of tourism can benefit greatly from a cultural and historical component, and wise entrepreneurs planning on the basis of long-term involvement are mostly sufficiently astute to recognise and seek amicable working arrangements. Unfortunately, it tends to be the
short-term exploiters and mediocre operators who frequently cause many of the problems. This ultimately attracts bad media portrayal and results in unnecessary conflict between long-term entrepreneurs, resource managers and researchers.

One frequently-touted argument advocates the basic concept that most natural and cultural resources are the property of all humankind. However, there can be no consideration that this could automatically attribute any proprietor right for any individual to do as they wish with any resource of their choosing. Many argue consideration to such concepts could only gain consideration in a world where the relationship between ‘rights and responsibilities’ has become blurred. Management decisions must ultimately be negotiated on the premise that the majority of individuals who will benefit from the preservation and understanding of humankind’s cultural heritage are not yet born. Unfortunately, this is the environment in which those genuinely concerned with issues of study and conservation of non-renewable resources must attempt to develop a workable strategy.

The Kimberley currently represents a classic example of the ‘all too big’ management dilemma. Responsible authorities understandably tend to lack commitment and objectivity as political and radical groups assure disharmony resulting from overly-vocal reiteration of unrealistic claims. On a parallel front, the locals remain the unwilling and mostly unheard ‘meat in the sandwich’, while the developers opportunistically make the most of the ensuing chaos. Researchers tend to be generally perceived as potential protagonists by all parties, and only the most naive researcher would risk their future and reputation by becoming involved until some sanity prevails. Perhaps it is the time for those capable of making a contribution to the understanding of Kimberley to pause and reflect: are we doing it right, or are we doing the right thing?

Should agreement be reached through collective compromises to establish an agreed interim Kimberley management policy, there is a great urgency to identify the immediate areas of concern and seek realistic management strategies. As my thesis has shown my objectives are to focus on
developing recording methodologies for rock art for the purposes of interpretation, it is of value to highlight the most obvious of future problems directly associated with these objectives. I believe it is fair to say that there is really no effective management policy or feasible site protection plan yet developed for Kimberley, and that the only protection remaining involves the anonymity of location, where it still exists. Murmurs of 'World Wilderness Areas' and 'control by Aboriginal custodians' are, in the harshest reality, little more than well-intended fobs by inexperienced individuals who seemingly choose to relive history because they do not take the time to learn from it. Whatever grand plans may ultimately develop, the reality is here and now, and I would argue that control over confidentiality of location of the art and associated sites is the urgent and primary controversy which must be immediately addressed, with a realistic solution resolved.

Until recent times the immensity of the largely trackless Kimberley region, together with difficulty gaining either entry or access from station lessees, effectively restricted public penetration to a very few more accessible areas. Those choosing not to seek permission had to be fit, experienced and determined to cope with the extreme demands of long distances and Kimberley environment, but such enthusiasts tended to be responsible individuals. The environment, and not the authorities, thus maintained very effective self-protecting conservation measures. Public availability of an unexpectedly simple but significant technological development effectively changed the world of conservation and management forever: the Global Positioning System (GPS). Developed in response to military needs, these hand-held devices use satellite communication to provide very accurate and constantly upgraded location information.

Technology advances fuelled by commercial demand for the GPS capabilities rapidly reduced the unit price, making private ownership possible for the equivalent of a couple of gas tank refills. Few enthusiasts visiting Kimberley would now consider being without them, and they have become a 'must have' item. The GPS offers undeniable personal safety factors, assisting the inexperienced operator to avoid becoming lost in the bush. However, the
extremely negative side of their capabilities involves the ability to provide an exact location reference, readily recorded and transferable to anyone at any future point in time. Transfer of this reference to another GPS is then capable of guiding a recipient with no map reading or bush skills to the given location with an error factor of only metres. Once any site has been located and its details logged by the GPS, the last level of protection by way of anonymity is effectively lost. Integrity is claimed by many of the individuals now annually trekking across Kimberley, but the diligent logging of art sites and portable relic locations is increasingly seen as adding a certain touch of pioneering romance to the now trendy personal ‘field journals’. The assemblage of location details is increasingly attaining peer group status, not unlike the collecting of souvenir teaspoons among earlier generations. If matters remained at this level they would not pose the immeasurable conservation and management problems they present. As with collecting postage stamps, a ‘sharing and exchanging’ mentality quickly developed, where the visual impact or scientific significance determines ratings for location detail exchange negotiations. The practice of swapping location details is now rampant, and arguably already out of control. Each GPS reference effectively means that its associated site has now lost its last level of protection, and nobody can ever ascertain how many times these simple but crucial details have been duplicated. Where they are now stored around the globe, what purpose the will ever be used for, by what sort of unscrupulous individuals, and when, remains to be seen. I believe it is already too late to protect the majority of unique and non-renewable Kimberley resources, and the short-sighted pontification of responsible authorities over the past three years of technological development has seen the opportunity of real resource management lost forever.

While many may argue that the trackless distances still deter access to all but the fit and committed of the new breed of GPS-guided enthusiasts, this is not the case. The ‘exploratory trek’ trend of Kimberley wilderness use is not the domain of the young and fit, as true bushwalking once was, and this generation tends to seek its ‘experiences’ in areas of technology and mechanisation. The ‘exploratory trek’ is an option increasingly sought by more mature individuals, admittedly less physically capable of the traditional
approaches, but also the generation with sufficient disposable income to cushion the pain of the environment's last level of protection-logistics.

The increasingly-frequent portrayal of the Kimberley as the 'Last Wilderness' has proven to be an incredibly successful promotional ploy. The process of targeting eastern and overseas markets with a theme of enticing a once-off visit has frequently portrayed Kimberley with the romantic image of a mysterious and exotic destination, best appreciated by assisted air, sea and safari packages. Marketing portrays this as an opportunity available to a select few, with no indication that this privilege will be cheap, but a truly memorable experience. While costs may currently preclude visitation by a large sector of the general public, current levels of global affluence insure an ongoing flow of willing participants, particularly the more up-market and exclusive tours. The marketability of a 'unique experience' is very 'in', and is rapidly developing as a global management concern.

The once-in-a-lifetime marketing approach has been remarkably effective in programming prospective visitors, as most now expect and accept the often-prohibitive cost associated with the technology which will make this dream opportunity become a reality. First light aircraft and then small helicopters became increasingly available for short charter flights, strategically stationed at tourist gathering places during the dry months of the tourist season. Associated costs would rule out consideration of such a luxury in the budget of the average tourist planning their annual eastern-state escape, and economics alone would soon see the availability of such services vanish. However, the 'Kimberley experience' promotion has amazingly overruled economic conservatism among many Kimberley tourists. Increasing demand resulted in more commercial operators increasing the numbers and capacity of available aircraft. Commercial helicopter charter services are now available in Kimberley from Kununurra, Derby, Broome, Fitzroy Crossing and Mitchell Plateau.

These widely-separated bases have minimised ferrying costs for specific charter requests, making it temptingly economic for less-fit individuals with disposable income to justify helicopter use to transport their groups and
associated comforts in (and frequently out) of the most remote locations.
Requiring neither roads nor troublesome traverse permission, it takes but a
discrete monetary transaction to be in any requested location in less than an
hour. With judicious trading on the GPS site location swap basis, in it is now
possible to plan, access, and do as one pleases in almost any site at any time,
while recording it all on a home movie.

Issues of topography, land ownership and distance from helicopter bases
insured some protection for some areas of the far western coastal hinterland for
a time. However, the spectacular Kimberley coastline has, not surprisingly,
attacted another sphere of management concerns. An exploding industry of
tourist cruise boats, increasing in size and degrees of luxury, has blossomed to
fill demands at an alarming rate. In 2005 there were at least seven cruise ships
operating the Kimberley coast, collectively capable of hosting at least 434
passengers on any day. The never-ending quest to present a bigger, better and
more exclusive ‘Kimberley experience’ has added yet another dimension to the
dilemma of site conservation. The demand for optional helicopter flights
ultimately led to operators transporting a servicing helicopter on board the
larger cruise boats as an added attraction.

Now that commercial helicopter hire is additionally available from the
mobile platform of cruise boats, even the logistics and economic difficulties
associated with establishing remote fuel dumps have been removed. This has
brought a sudden end to the factor of remoteness and inaccessibility which has
afforded protection to many Kimberley sites. Tourists, backpackers and anyone
with a specific quest may now hire a helicopter at short notice, and with no
questions asked, be ferried quickly and economically from any one of a number
of locations to any point of their choosing.

In the vastness of Kimberley, station owners, management authorities or
Aboriginal groups have little chance of becoming aware of the presence of
unsanctioned trespassers, and in reality have lost control of access over their
areas or responsibility. Individuals with special interests and bushwalkers
regularly use the economical ready availability of commercial helicopters to get
ferried into remote areas to do as they wish for as long as they wish.
Challenges of to the validity of this situation ultimately revert to the ‘right of the individual’.

I can no longer see any ray of hope for the cultural heritage of Kimberley. While officialdom remained cautious, the minority groups obstructive, and with the locals attempting to survive, time, tide, technology and the holly dollar have seized the moment. As the loss of even discrete fishing points are no longer protected by the anonymity of the vast ocean surround, the double-edged sword of GPS technology has cut away the last protection from some of the world’s most remarkable and ancient art works, and the priceless portable relics such as the art mobiles in Plate 491.

As has been the case in so many other Australian ‘once-wilderness’ areas, I believe that the detailed records derived from the long process of refinement discussed in this work will, in a very short time, stand as unique records of ‘what was’. Sadly, in many instances these records will remain as the only surviving evidence marking the passing of one of humankind’s great periods of cognitive development. Only then may history judge whether the time, resources and procedures dealt with in this discussion were in fact justified.
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