INTRODUCTION

This is a review of the Nourlangie rock art restoration project in Kakadu National Park, the field work for which was carried out between 1-24 June 1989. The project is a result of a long-term policy of the ANPWS Cultural Resource Management group, on which we continuously build.

Previously, the conservation procedures for rock art protections were restricted to protection of the art surface from water damage, animal damage, visitor damage, graffiti etc. A handbook describing this practice has recently been published by AIS (Lambert 1989). Also a removal of recent painting has been carried out (A. Thorn, J. Clarke/personal communications). So far as I am aware, no direct interference with a paint layer to halt the deterioration of a rock painting had been carried out previously anywhere else in the world. This is an initial report on the project, on the preparations and field proceedings, together with an initial evaluation.

PREVIOUS RESEARCH AND WORK

The protection and management of rock art effectively began in the park when Kakadu National Park was established in 1979. Following trials, initial work was structured and organised towards immediate protective measures, with drip lines to reduce water damage and by fencing the art sites to reduce buffalo and visitors' damage (Gillespie 1983). A full-scale programme of rock art protection was initiated. Consultations began with an assessment of the significance of the rock paintings in the context of Arnhem land rock art. The consultant was Mr. George Chaloupka (1983). Other consultations included research into the causes of deterioration of rock art by Hughes (1983), mud wasp damage by I.D. Naumann (1983), and other research. Some initial recommendations formulated in these consultations were applied in an ongoing program (Gillespie 1983).

These two approaches were in train in 1983 when I joined the ANPWS as a Cultural Resource Manager. To my mind, drip lining, fencing, wasp nest removal, etc. are useful practices which minimise the macro-physical damage to the paintings. The next logical step was to look further on a finer level of resolution, for geo-chemical, microbiological and micro-physical causes of deterioration and how to minimise the damage. The distinction I made then was to call the existing practices preservation, as distinct from forward planned conservation which I saw as a direct interference with the painted layers and the rock substrata in order to slow down deterioration processes.

CONSERVATION RESEARCH

In 1985, when I was evaluating the results of my experiments with new conservation measure trials, I realised that I missed the rigour of scientific examinations by omitting the establishment of the initial base-line data. I also realised I lacked the necessary training to carry out the essential analytical chemical study for these base-line studies. I therefore applied myself to designing a project, which in logical steps analysed and defined the scope of the problem, identified experimental treatments and defined a methodology and sampling strategy in cooperation with the Traditional Owners.

The proposal was submitted to the Director, ANPWS for evaluation. The Director approved the proposed post-estuarine paint preservation project the very same year. The first phase of the project was an analysis of the paint, rock surface salts and the identification of the causes of paint deterioration as a necessary step prior to experiments with treatment. The co-operation of Mr. J. Clarke and Dr. N. North was obtained to carry out an examination of rock art sites and paintings and to report on the above points. The result is a monumental volume (1986) on identification of various paints in ethnographic use, as well as identification of paints from a number of sampled paintings. In additions, the volume identifies a number of causes of deterioration. In these, importantly, water is always present, either as a carrier of salts and other contaminants, as a dispersant, a catalyst, or simply as optimising the conditions for microbiological growth.

The second phase of the consultative process returned to my initial attempts to impregnate the paint with silicon water repellants and other preparations to minimise water access to the paint. Again, Messrs Clarke and North were consulted. However, this time we were immeasurably better equipped to understand the initial conditions, reactions and the processes associated with the experiments. This second phase (1987) trialed a number of silicones, silicates, silanes and other preparations to either consol­dated mineral paint or to improve water repellancy and cohesion of the paint and the substrata.

A third phase in 1988 was an evaluation of these experiments and a proposal for the application of the results. In addition, the sulphur content of the atmosphere gas is being continuously monitored at various locations. Sulphur dioxide appears to be a major factor of air pollution resulting in the formation of salts on rock and paint surfaces.
REASONS FOR THE PRESENT PROJECT

Concurrently, it was painfully obvious from our art monitoring programme that some paintings, Nourlangie paintings in particular, were fast deteriorating. The deterioration could not be assigned to any single cause particularly as some causes were not well understood. However, as the paint was flaking off after being detached from the rock and/or was pulverizing as a result of salt crystalline growth, we had to act.

The ANPWS came to a conclusion, supported by a monitoring program and by finding in various consultations, that unless something was done within the next two years, the paintings would deteriorate beyond any hope of salvage.

I have previously contacted various conservators, as well as searched through a number of journals, in hope of finding some report of previous work on a restoration of a rock art. There is parallel research carried out in various countries, as well as elsewhere in Australia. However, nowhere else was the state reached when a full-scale restoration could be attempted, as our research was the most advanced. We were therefore put in a position, where we would be breaking new ground both ethically and technically, by attempting to restore a rock painting.

There are several deteriorating paintings in Kakadu. Obviously it would be better to start on a small and insignificant painting. Why did we concentrate on the Nourlangie paintings?

One reason, that of a unique and unusually fast deteriorating rock art was discussed earlier. The basic difference from other sites is that at this site, the paint was exfoliating en masse in addition to the usual paint pulverisation and slow optical obstruction by salt accumulation. Technically therefore the proposed restoration was justified as an urgent salvage work.

The Traditional Owners view the painting as the last painting by one of their best and most recent painters Najombolmi, to whom they had family ties. The painting is also historically important to Aboriginal people, as it marks and end of the buffalo-hide-processing period and marks also an advent of the tourism/mining period.

Paintings at Nourlangie became a symbol of the 'Top End' rock art, because of their quality and ease of access. This symbol of the Kakadu art is used by the tourist industry to attract visitors to Northern Territory.

The ANPWS, to meet the needs of tourism and to lessen the impact of tourism on rock art throughout the area, invested heavily in the development of the area. The development was initially structured in such a way that the viewing of the Nourlangie paintings was a highlight of the visit, and raison d’etre of all the local development - and justly so. We have now succeeded in somewhat diffusing this situation by offering additional points of interest. The ANPWS is quite involved in preservation of the paintings not only because of this development, but mainly because we are bound by various agreements with Gagudju Association, Northern Land Council, as well as by some international treaties to protect the World Heritage in our care.

The painting is also significant in an art historical sense. It is clear from research (Haskovec and Sullivan 1989) that his painting is quite important in the artist's development, being his last documented painting. It also features in the art history of Western Arnhem Land as one of the rare human compositions in x-ray II art style.

In summary there were a number of very good reasons to attempt the restoration of the painting.

ETHICAL CONSIDERATION

Could we, however, ethically justify such a large-scale intervention? Recent events in the field of rock art, when re-painting of Kimberly art caused a wave of strong opinions, forced us to carefully consider our ethical stands and options.

The option of doing nothing was excluded by all, including the Traditional Owners because in fact, this option would equal euthanasial destruction. Also the "holy stand of reversibility of restoration treatment" was viewed by us as impractical and dangerous, as reversible treatments will surely be reversed naturally in the hot and humid tropical conditions with unpredictable results. In the end, however, we decided on a slow, incremental process of restoration. At the moment all treatments are technically reversible. In all other aspects of the project we have followed the Burra Charter to the letter.

Traditional Owners of Kakadu National Park are well cognisant of our efforts in rock art protection, not only from the well entrenched consultative processes, but also from joint field work, which started with the establishment of the Park. In addition, the consultants explain the work, its possible outcome, methodology, and justification to the Traditional Owners at specially organised meetings. In this way the Traditional Owners have a chance to absorb and discuss what is happening step by step, year after year, so that not only are the work and the results under constant review, but also reasons for the work are under Aboriginal control. We see ourselves as developing technical options (screened by the professiona ethical codes), which are then presented to Aboriginal people to consider and to choose from. In this way we assure that the physical, historical and aesthetic integrity of the paintings is maintained. Restoration in common understanding is associated with re-painting. However, Burra Charter defines 'restoration' as a returning of an existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components without the introduction of new material. (Article 1.7). That is the sense in which I use the word 'restoration'.
ADMINISTRATIVE PREPARATIONS

The beginning of this project was marked by a number of queries from around the world with regard to previous work, experiences and suitable restorers. In this way I managed to contact most of the 10-12 active rock art conservators in Italy, Canada, France, U.S.A. and Chile as well as Australia and established a small network of rock art conservators whose assistance was quite influential. By this time both John Clarke and myself had a fairly clear idea on what the next step in conservation of the Nourlangie paintings should be, although the precise methodology would have to be worked out in a co-operation with the restorer. The next step was therefore to select a possible restorer and to secure funding. During the ICCROM triennale in Sydney in 1987 I discussed the project among others with Guy de Gochen from ICCROM, Rome, who tentatively offered financial and organisational assistance on behalf of the ICCROM. The Director, ANPWS also saw the need for the work and allocated funds to the project. The problem of a suitable restorer was more difficult as no one had previous experience. Since we had carried out prior analytical work, we did not look for an analyst, but a practitioner, someone who had (a) previous experience with rock as a substrate; (b) previous experience with mineral paints such as mural paintings.

I received a small number of replies to my calls for expressions of interest. Only four people were involved in active rock art protection, particularly in the U.S.A. and France. One name, that of Isabelle Dangas can up several times, as a restorer with experience in mural restorations and some knowledge and experience of rock art conservation.

I contacted I. Dangas who gladly accepted the opportunity to work on the restoration of the paintings. We sent her all the documentation of the site at our disposal, including a sealed relief plan of the rock surface with plotted outline of the paintings, analysis of the the paints, description of deterioration etc. to study the problem.

At the same time the aims of the project were formulated in accordance with our needs and technical and ethical limitations of restoration. It took some time before a final version of the project aims was agreed.

It was quite clear, that a number of basic steps had to be achieved before further conservation work could be considered. These steps were articulated in the terms of a consultancy agreement between ANPWS and ICCROM, who appointed on our recommendation of I. Dangas as the Chief Investigator and J. Clarke as the Assistant Investigator. I was to supervise the project. The aims of the project were formulated as follows:
1. Inspect the Anbangbang rock art site at Nourlangie Rock to determine what restoration work is needed.
2. Develop a methodology for the restoration of the art works for consideration by the Traditional Owners.
3. Demonstrate and carry out to the fullest extent possible within the limit of field investigations:
   (a) repositioning of peeled paint back onto the original substrata;
   (b) other restoration and conservation procedures as deemed necessary at the site.
4. Demonstrate and carry out to the fullest extent possible within the limit of field investigations cleaning of embedded dust from the art surfaces at the site.
5. Provide detailed documentation of the restoration techniques used.
6. Conduct a workshop to demonstrate rock art conservation techniques for selected Australian conservators and restorers.
7. Provide recommendations for the future preservation of the Nourlangie rock art sites.

It occurred to me, that we would be wasting the opportunity, if we did not invite some Australian restorers to participate in the workshop aimed at gaining skills in rock art conservation. I wrote invitations to every state organisations concerned with rock art, conservation and land management, and also to the art galleries and museums in every state and territory. In response, twelve Australian restorers from 4 states accepted our invitation and participated later in the workshop.

TECHNICAL PREPARATIONS

Knowing exactly what we wanted to achieve, we could then concentrate on technical preparations of the project.

The preparatory work on analysis of the paintings, rocks and causes of deterioration was carried out as a part of the previous consultancy between ANPWS and CORLAB (i.e. John Clarke and Dr. N. North for CORLAB and myself for ANPWS).

To improve the documentation of the site I secured the services of AUSLIG (Australian Survey Office) to prepare a plan of the rock face, where the main features of the painted surface were plotted photogrammetrically in three dimensions, together with 5cm contours. A scale plan of the site (1:5 and 1:10) was used. Looking back, I should have requested a plan for all the rock face, as geological features potentially affecting the preservation of the paintings, extended some distance beyond the art surface. We solved the problem by extending a grid and plotting the features individually by hand. Naturally photographs were obtained both in black and white and in colour. Isabelle Dangas sent us a list of tools and consumables she would require at the site. However, a small number of these were omitted and/or not specified and we had to improvise on some occasions during the project. In addition housing for the consultants and their families and later for workshop participants had to be organised and prepared. It did take a considerable amount of organisational and manual work, but everything was in place prior to the commencement of the field work.
A two-page "Park Note" was prepared and distributed during the work to the Park visitors. The "Note" informed briefly of the history of the paintings, aims and methodology of the restoration. 2500 copies were distributed in three weeks of the proceedings.

PROCEEDINGS OF THE RESTORATION FIELD PHASE

The proceeding of the restoration were recorded on the video, which can be seen in a poster session and obtained from ANPWS. In summary, we proceeded as follows:

1. Examination of previous conservation trials and general causes of rock art deterioration through the region.
2. Examination of the site, determination of the causes of deterioration at the site, evaluation of the extent of rock restoration and possible methodology (through small experiments).
3. Classification and plotting of geological and geomorphological features, classification and plotting of painted surfaces, classification and plotting of possible microbiological growth.
5. Presentation of the proposed methodology to Traditional Owners for consideration - consent was given. (Previously a permit to carry out the restoration had been given by the Association in writing.)
6. Cleaning of accretions, such as insect nests, mud deposited on the rock by buffalos, termite nests.
7. Initial cleaning of the painted surface of foreign surface material.
8. Individual repositioning of peeled paint back on the rock.
9. More cleaning of the paint 'menage' with a special sponge.
10. First application of a fixative to consolidate the pulversied paint.
12. Introduction of additional fixative into selected areas to balance the treatment.
13. Removing embedded dust particles and salts from the paint.
14. Reinforcing selected painted areas by injecting an adhesive.
15. Closure of rock fractures with specially prepared grout.
16. Reinforcing adhesive property of the paint by compresses.
17. Securing dangerous exfoliated rock and accretion areas to the substrata with a special, dimensionally stable grout.
18. Yet more paint clearing.
20. Returning the site to previous conditions.

EVALUATION OF THE PROJECT

It is too early to say anything about how well the restored painting will last. Obviously only a time-lapse camera can be used to monitor the value of the work. However, a couple of months after the project's field work has finished it is time to look back to see if things could have been done in a better way.

Now, when all anxiety and passions have subsided it is possible to stand back and ponder the aims, goals, achievement, results, and organisation. It took four years to prepare the project. Although technically this preparatory period could have been shortened, time is necessary to discuss and evaluate the rationale of the project, particularly if the final decision lies with the Traditional Owners. One must constantly re-appraise one's basic assumptions about conservation to be able to answer deceptively simple and fundamental questions such as 'why are we trying to conserve these paintings?' The way an answer to our request for permission to restore the painting by the Traditional Owners would be formulated was always in balance. However our previous conservation trials and joint field work gave us the necessary credentials and confidence to propose this project and then proceed with the work. We did not hide the fact that a work of the kind had never been done before, and therefore the results could not be predicted with any certainty. It is the continuity of the very close cooperation between the Traditional Owners and ourselves, which in the end, I hope, gives the Traditional Owners the confidence in our intentions.

Although it was necessary for such a pioneering work to obtain the service of the very best available restorer, the workshop carried out during the project gave opportunities to twelve Australian restorers to familiarise themselves with rock art restoration. The basic procedural difference between the restoration of rock paintings and other paintings appeared to be in the treatment of rock substrata and accounting for various geological phenomena. I believe that a co-operative effort between the Australian restorers who participated in the workshop and ANPWS will produce the same excellent results in future.

After organising and managing this international project, I would not recommend a repetition of it unless a longer period of familiarisation with local conditions and discussion among the project participants is allowed for. The Australian outback is indeed very idiosyncratic, to Parisians in particular. The tension created by different experiences, different expectations, work habits and living requirements, would be diffused in this preparatory period. Since none of these difficulties arose with Australian restorers participating in the workshop, I believe that the anxiety we all experienced was partially due to the novelty of the project and partially due to different cultural backgrounds. If we again proceed with a restoration project we would definitely choose one or more of the workshop participants. It must be said, however, that as the project was the first of its kind, the choice of both the Chief and the Assistant Investigators was the best possible.
In terms of work-load and technical proceedings, the restoration as outlined was carried out in 100 hours (19 working-days), about five-and-a-half hours a day for the restorer. Daily preparations, assistance and supplementary work for additional persons of about 12 hours a day added 456 hours.

ICROM's assistance was valuable both in providing some of the finance and securing the services of I. Dangas.

Finally, the true results of the work will be seen on the painting itself in some time to come. The project was an ANPWS initiative and responsibility. Despite some minor peripheral difficulties (which could have been expected), it is an exciting breakthrough which succeeded in all its objectives. I am glad that I was a part of it, glad that it happened in Kakadu, glad that it happened in Australia.

BIBLIOGRAPHY


