## *Professor Paul Taçon; One man's battle to save and document Australia’s heritage before it is lost forever*

For more than three decades Professor Paul S.C. Taçon has travelled extensively to remote areas of Australia to unravel the stories of our past in vast libraries that have no books.

The Griffith [Centre for Social and Cultural Research](https://www.griffith.edu.au/humanities-languages/centre-social-cultural-research) professor of anthropology and archaeology is helping to save a country’s heritage for future generations while raising the profile of Australian rock art and its importance to better understand human evolution.

Professor Taçon who is the Chair in Rock Art Research at Griffith University, is embarking on his biggest challenge – to document these libraries of rock art and develop a national strategy so that the Indigenous heritage of Australia is protected, as well as exploring its importance for Indigenous identity and well-being.

In 2016 he was awarded a highly prestigious ARC Australian Laureate Fellowship. The awards are made to researchers of outstanding international standing with Professor Taçon’s project “Australian rock art history, conservation and Indigenous well-being” receiving $2,553,690 over five years.

The funding will be used for research positions and a major research project.

“What really needs to be emphasised is rock art is not archaeology. You can study it from an archaeological perspective, but it’s part of living culture and is especially important to Indigenous Australians,” says Professor Taçon.

“This isn’t an artefact from the past. This is something really important for the people of today and will be really important for people living in the future.”

The Laureate is a reflection of his commitment to understanding and deciphering our history. Since 1980, Professor Taçon has spent the equivalent of more than seven years in field work, much of that living in tents in remote areas of the Australia and elsewhere in the world.

Professor Taçon’s softly spoken demeanour hides a burning passion to save and protect Australia’s Indigenous rock art, which is under threat from miners, developers and nature itself.

His Australian research has been critical for the understanding of the rock art of Arnhem Land, the East Kimberley, the Blue Mountains and Wollemi National Park.

However, he fears without direct action now half of Australia’s rock art could disappear within the next 50 years.

''Each year Australian rock art suffers from vandalism, industrial and urban development, climate change and inadequate protection measures,'' he says.

Unlike the works or Rembrandt, which are lovingly cared for by curators in temperature-controlled and secure buildings, the rock art that is Professor Taçon’s passion is subject to threats such as bushfires, graffiti, mud wasps, termites and other insects or being rubbed out by wild animals scratching their backs on the walls of these outdoor libraries.

### 100,000 rock art sites scattered across Australia

With more than 100,000 rock art sites believed scattered across Australia and the possibility of even more undiscovered treasures, Professor Taçon knows that time is running out to safeguard many of these ancient survivors.

In 2011, he launched a campaign for a national register of Australian rock art, which will also utilise 3D scanning technology. He has also been involved in many collaborative projects to raise public awareness of the importance of rock art as well as seeking government support for a national approach.

Professor Taçon also sees a need for change in the way our heritage is taught in schools.

“Certainly a lot more needs to be done in schools with the curriculum,” he says. With that in mind he gave a keynote address to educators from across Australia in May 2016, one that he hopes will now lead to new ways our rich and long heritage is taught in schools.

He also developed the Eagle and Owl Project, a network for Southeast Asia researchers and archaeologists to share their work on rock art preservation, culture contact, cultural change and adaptation to shifting climate.

However, one of the most important aspects of his research endeavours has been to consult with Indigenous people before attempting field research and respect for their beliefs and traditions.

“I work with Indigenous peoples and/or deal with Indigenous issues on a daily basis. My research is consistently collaborative in nature, with Indigenous peoples involved in every stage as research partners. A number of my joint-authored publications include Australian Aboriginal co-authors.”

Respect, he says is crucial, with so much to be learnt from the Indigenous oral history as well as their rock art libraries.

His passion and skill in the ethnographicstudy and protection of rock art has led to many countries seeking his expertise. He has mentored and provided training courses in China, India, Malaysia, Thailand, India and Cambodia, to assist researchers and communities protect and record their own individual heritage sites.

His research has been reported worldwide through radio and major publications across North America, Europe, UK and Asia, as well as parts of South America and Africa.

His work in China culminated with him being awarded an honorary professorship with the Yunnan Institute of Cultural Relics and Archaeology. Professor Taçon is one of the first two foreigners to receive this honour.

He was also awarded a Visiting Professorship in the International Centre of Rock Art Dating, Hebei Normal University, Shijiazhuang, China and is one of the first four foreigners to receive this honour.

When not in remote areas roughing it in tents or climbing through rugged bushland Professor Taçon has been at the frontline of media and public awareness campaigns.

He teamed up with Australian actor Jack Thompson and singer/songwriter John Williamson to launch the [Protecting Australia’s Spirit](http://www.protectaustraliasspirit.com.au/) campaign. This partnership of academics, researchers and celebrities sought to highlight rock art’s importance to the nation as well as seeking support from business and philanthropists.

### The importance of rock art

Professor Taçon describes rock art as crucial to our understanding of human evolution.

Australian rock art provides an extensive legacy and is one of the best on the planet.

“Aboriginal elders say these are our history books, really big sites are our libraries,” says Professor Taçon.

“They tell of individual and group experience through periods of climate change, a period of global warming a few thousand years ago. They’re like scientific documents as well as aesthetically powerful works of art.

“There are thousands of sites from the past 10,000 years and a few from further back and fragments that have been dated back to up to 39,000 years ago.

“These ancient artists had very refined skills. They were creative, skilful artists.

“Many of these places are very special for contemporary Aboriginal people today, not only because they are spiritual places but also because they record their history.

“Because we have so many sites governments have put it in the too hard basket.

“A lot of information is in personal archives, government archives, some national park and museum archives; some have suffered from technology change with a great loss of data.

“It’s as good if not better than the great rock art sites in France and South Africa. No one would let those disappear to industrial development. Millions of dollars is spent on single sites in southern France.

“Our rock art heritage is in a way our crown jewels and to simply leave them lying around for anyone to pick up and do what they like with is ludicrous.

“I’m angry there has been so much apathy in the past. There’s been a small group of academics that have studied certain areas, working closely with Aboriginal communities.

“Aboriginal communities often can’t even gain access to information about their own sites.”

Professor Taçon’s work has also changed the way we look at human evolution.

“The work that I began many years ago, which then increasingly became more collaborative has led to, through works of my own and other people, who I have mentored, a whole new way of thinking of who we are and where we came from in terms of the practice of art and symbol making.”

### Early discoveries, art and family

Canadian grown, Professor Taçon’s first encounters with Australia were from a school geography project and watching an iconic Australian TV series.

“When growing up in Canada one of the things that attracted me was watching *Skippy the Bush Kangaroo* and seeing this amazing creature and the Australian landscape,” says Professor Taçon.

That coupled with a geography class project on Australia peaked his interest in what would become a love affair of Australia’s vast remote landscape and unravelling the great stories, thousands of years old, that were hidden in its rock art.

“I grew up in a family of artists, doctors and researchers so I was in an environment that brought art and science together,” he says.

“I thought about becoming a medical doctor, but when I was at the University of Waterloo in Ontario I discovered that anthropology and archaeology interested me more.”

When Paul finished his honours degree at Waterloo he knew he ‘wanted to travel and Australia was the first place he wanted to go to’.

After volunteering at an archaeological excavation in Sydney in 1981 he asked around if anyone knew of a dig in remote NT.

Luck would have it that one of Australia’s leading archaeologists of the time, Professor Rhys Jones, was planning an expedition to the Northern Territory’s new national park, Kakadu. The rock art love affair had begun.

“In May of 1981 I went up to Darwin and out to Kakadu. Where we were excavating in the rock shelters there were lots of paintings on the wall,” he says.

“The Aboriginal elders could tell us what they were and what they meant, what the significance of the site was. That totally captured my imagination.”

The Northern Territory trek has been a regular occurrence for Professor Taçon with his research work on the Wellington Range in Arnhem Land and Kakadu National Park helping to rewrite popular Australian history and the first contact that Southeast Asian seafaring visitors had with Indigenous Australians.

While Professor Taçon is not alone in his quest to explore, protect and raise awareness of the value of Australian rock art, he has been one of the most influential and respected researchers. His lifetime of work has also led to him being made a Fellow of the Society of Antiquaries of London and the Australian Academy of the Humanities.

### Wollemi rock art sparks worldwide interest

Before joining Griffith University Professor Taçon worked at the Australian Museum from 1991-2005. As its principal research scientist in 2003 he co-led an expedition into the 500,000-hectare Wollemi National Park, just 65km from downtown Sydney.

What they found reverberated around the world. They had re-discovered a series of rock overhangs, including one later named Eagle’s Reach, which contained hundreds of paintings, some thousands of years old and right up until European settlement.

It had taken the team a day and half trek through almost impenetrable bushland to find the site and another two days to document and record the artworks.

As soon as NSW Premier Bob Carr heard of the discovery he summoned Professor Taçon and announced it in Parliament and then held a press conference to detail the exceptional find.

One of the most stunning aspects were galleries containing anthropomorphised eagles, the likes of which had never been recorded anywhere else.

Over the next three years Professor Taçon, and fellow archaeologists Wayne Brennan and Dr Matthew Kelleher found a series of dreaming tracks and songlines. Local Aboriginal people including Kamilaroi man Wayne Brennan, Dave Pross, a Darkinjung elder, Graham King, a Wiradjuiri man and Evan ‘ Yanna Muru’ Gallard, were part of the expedition teams and helped explain many of the artworks’ meanings.

More than 200 individual motifs and stencils believed to date back 2000 to 4000 years were found at Eagle’s Reach as well as charcoal drawings believed to be at least 1600 years old.

Research into Wollemi, which is part of the World Heritage listed Greater Blue Mountains area, has resulted in more than 120 Aboriginal sites being documented with many more still to be discovered.

Professor Taçon’s work in the East Kimberly region also drew praise and support from the local Indigenous community when he received the Kimberley Aboriginal Community award for contribution to knowledge of Aboriginal culture for his research efforts.

### Wellington Range, Arnhem Land discoveries

In 2008, Professor Taçon was part of an expedition to the Djulirri rock shelter in Arnhem Land’s Wellington Range, which would also gain international attention.

Along with four other scientists and local Aboriginal elder, Ronald Lamilami, they embarked on what was the first full recording of Djulirri’s art.

The research funded under an Australian Research Council Project, *Picturing Change*, also utilized 2D and 3D scanning to record rock art that had previously been discovered but not digitally recorded.

However, while there the research team discovered even more unrecorded artwork, thousands of rock paintings previously unknown to science.

The finding was of international significance as it told a story that shattered the “accepted history” of contact between Indigenous people and seafarers.

It had been argued that Aboriginal Australians were cut off from the world and that the British were the first significant arrivals. However, the team’s discoveries told a much different story and that trading between the Macassans and Aborigines had begun centuries earlier.

Professor Taçon says ‘it is one of the most fantastic sites anywhere in the world’.

Unlike European rock art such as the famous sites of Chauvet and Lascaux, which stopped thousands of years ago, the Arnhem Land rock art was still being made in some locations until the second half of the 20th Century.

Djulirri contains images of 28 painted ships while in other areas in the Wellington Range they found more than 80 vessels depicted. The rock art depictions showed the Aborigines had an intimate knowledge of a range of foreign boats, including Sulawesi boats, which could have only been made from being passengers or workers on the boats.

“One of the amazing things about the paintings here is, especially the ships, people would have seen these tens of kilometres away, and days, weeks, months later they came into this shelter and reproduced what they saw in exquisite detail. They must have had incredible visual memories,” says Professor Taçon.

The galleries also contained a huge range of animals and encounters with other people, boxing scenes, sea captains, a priest with a clerical collar and depictions of warfare. Depictions of extinct Tasmanian tigers were recorded with one thylacine found in a style that is at least 15,000 years old. This was the first time such an ancient painting of a Thylacine had been found anywhere.

During the first three years of the research into Australia’s contact art Professor Taçon, elder Ronald Lamilami, Dr Sally May and Daryl Wesley found many thousands of individual paintings, stencils and beeswax figures.

Researchers are still documenting and recording finds, with the Djulirri site providing more than 3100 paintings, prints, stencils and beeswax figures, making it the largest pictograph (pigment-based) rock art site in Australia.

Another of the rare discoveries were stencils of whole birds, something not recorded anywhere else in the world.

Precise dating of the Djulirri birds is in progress but the team believe them to be at least 9000 years or older. Arnhem Land stencils of animals are the oldest surviving animal-related stencils from anywhere in the world.

### Cultural disconnect

Professor Taçon likens Australia’s remarkable rock art to the Sistine Chapel’s famous artwork, but one that has been largely ignored due to a disconnect with Indigenous peoples and their heritage.

“Indigenous heritage including rock art is not valued in the same way that it is in other parts of the world such as France and Spain where people are very nationalistic about their rock art,” says Professor Taçon.

“It’s a key part of their identity and a lot of money is spent to protect rock art sites, and to interpret them and to educate the general public about their significance.

“Lately that’s been increasing in South Africa, China and some other parts of the world, but Australia is still a bit behind and I think it’s partly because a lot of non-Indigenous Australian don’t feel they have a direct connection to Australian rock art.

“But it is there, it’s part of our national identity.

“There is this incredible volume of contact rock art that tells the story of encounter, contact, colonisation, invasion from an Indigenous perspective rather than the traditional history perspective of the colonisers.

“It’s only recently that we finally dismissed the concept of terra nullius (land without owners) while all along rock art invalidated terra nullius.

“In fact the tremendous amount of rock art across Australia shows that Aboriginal people have been here for many tens of thousands of years.

“The rock art is a wonderful Indigenous archive that tells a very different story than the prejudiced one that has long dominated in Australian history.

“I think some of the neglect or dismissal of the importance of rock art was bound up with this view that this was unoccupied land when Europeans arrived.”

### Neglect and dismissal

For too long many people have shown no respect or understanding of the importance of rock art to Indigenous well-being, says Professor Taçon.

As a result, vandalism and graffiti and other human-made interventions have occurred damaging these national treasures.

“What saddens me the most is that there is so much government lethargy in Australia when it comes to documenting and protecting Australia’s rock art,” he says.

Development and mining also pose threats to many sites. In one case more than 1,700 engraved boulders were removed to make way for the North West Shelf gas plant on Western Australia’s Burrup Peninsula in the early 1980s.

“They sat in a fenced compound for 30 years alongside others, damaged due to neglect. Although the original landscape context of the art was destroyed at least they are now out of what was called the ‘the graveyard’,” he says.

“Unfortunately, rock art conservation research has difficulty attracting Australian funding because many people do not see this as ‘sexy’ research or research at all.

“But rock art should never be destroyed or removed to compounds to make way for any new development.”

### Picturing Change – putting the record straight

The Australian Research Council funded project ‘*Picturing Change: 21st Century perspectives on recent Australian rock art, especially that from the European contact period*’ allowed Professor Taçon to conduct multidisciplinary research with multicultural teams from 2008-2012 and to record the known rock art.

Many of the Wellington Range discoveries were made as a result of this ARC project. However, the project was not restricted to Arnhem Land and looked at Australian contact period rock art in the Pilbara (WA), central Australia and the Greater Blue Mountains World Heritage Area (NSW).

The Picturing Change project was a highly collaborative one and included chief investigators Dr Sally May (ANU), Dr Alistair Paterson (UWA) and Dr June Ross (UNE).

One of the collaborations that Professor Taçon highly cherished was that with Indigenous partners such as Wayne Brennan (Blue Mountains Aboriginal Community) and Ronald Lamilami (Namunidjbuk Estate, Arnhem Land), as well as PhD students such as Michelle Langley (Oxford), Adrian Strong (Griffith) and Daryl Wesley (ANU).

As a result, numerous collaborative rock art papers, web sites and a series of short films were produced, along with the recording of the oldest dates for both contact and contact paintings.

It included the Djulirri rock shelter gallery, which changed Australia’s Indigenous contact history forever.

Some of the motifs discovered in Arnhem Land are more than 15,000 years old. They tell of tell of interactions with different races, including Macassan sailor traders from Sulawesi, long before British settlement.

In one amazing site the rock art library is thousand of years old but still modern enough to include missionaries, World War II-era ships, biplane and a bicycle. Its artwork also depicts warfare, violence, and culture clashes.

As news of the early recorded contact art spread so to did the demand on Professor Taçon and his team. The success of the Picturing Change project has led to related research in Malaysia, Thailand and China.

### Australian rock art and Google

While Professor Taçon forged relations with overseas researchers he also was instrumental in a bold Google Global Art Project to showcase Australian rock art to the world in 2012.

“Google’s Art Project will give people virtual access to some of the best of Djulirri’s art while at the same time protecting it from the effects of physical visitation. It also is the only wholly Aboriginal art gallery featured in the Art Project,” says Professor Taçon.

[Google’s Australian Rock Art Display](https://www.google.com/culturalinstitute/beta/partner/australian-rock-art) showcases 70 images from the Djulirri site. They feature alongside some of the world’s most famous artworks by van Gogh, Rembrandt, Cezanne, Botticelli and da Vinci.

“This is an extraordinary result,” says Professor Taçon. It was the first rock art gallery to be displayed by Google and is one of only two rock art projects showcased by Google.

Google’s Art Project also allows free online access as well the ability to view the collections at incredibly high-resolution.

In another major success for Australian rock art Professor Taçon was asked to write the opening chapter for *The Cambridge Companion to Australian Art.*

“It was a bit of a coup,” he says. “Normally these things would focus on non-Indigenous art but this has a couple of chapters on historic and contemporary Indigenous Australian art and they asked me to write the first chapter which is on rock art.

“It’s very unusual to have rock art in a book like this.”

### PERAHU - Sharing the knowledge

The Place, Evolution and Rock Art Heritage Unit (PERAHU) was established at Griffith University in 2011 with Professor Taçon appointed as its director. It advocates a multidisciplinary, multicultural and scientific approach to rock art and cultural evolution research so that it can obtain a broader and deeper insight to the meaning and its place in the complex story of human evolution.

One of the fundamental tenants of PERAHU is close collaboration with Indigenous peoples wherever research is undertaken, a tenant close to the heart of Professor Taçon.

Professor Taçon says rock art is extremely important to Indigenous cultures and there was much to be learnt from the oral history when interpreting rock art.

PERAHU archaeologists have documented some of the Australia’s most significant rock art sites from Southeast Queensland to the Torres Strait, in Arnhem Land, Northern Territory and Wollemi National Park near Sydney so that future generations can learn from them.

“Australia needs a collective strategy, one that draws from industry, government, Aboriginal history and culture and groups like PERAHU, all geared towards compiling a thorough record of Australia’s rock art and then weighing up the best options for industry, development, tourism access and so on,” says Professor Taçon.

Like Professor Taçon, PERAHU has also been making headlines around the world. In 2014 PERAHU scientist Associate Professor Maxime Aubert and his Australian-Indonesian team published a history-shattering paper that quashed the Eurocentric view of rock art.

They found the world’s oldest hand stencil came not from Europe, but in fact from Indonesia from the rock art site of Leang Timpuseng on the island of Sulawesi.

Griffith researchers Associate Professor Aubert, Principal Research Fellow from the School of Humanities, Languages and Social Science and Dr Adam Brumm, from the [Environmental Futures Research Institute](http://www.griffith.edu.au/environment-planning-architecture/environmental-futures-research-institute), were lead authors on the research reporting the discovery of 40,000-year-old rock art on the Indonesian island of Sulawesi.

Their research was later named as one of the top 10 scientific achievements of 2014, an achievement Professor Taçon is proud of.

They determined the age of the Sulawesi paintings by measuring the ratio of uranium and thorium isotopes in small stalactite-like growths, called ‘cave popcorn’, which had formed over the rock art.

Using this high-precision method known as U-series dating, samples from 14 paintings at seven caves were shown to range in age from 39,900 to 17,400 years ago. However, as the cave popcorn grew on top of the paintings, the U-series dates only provide minimum ages for the art, and so the rock art paintings could be much older.

“This is really exciting stuff. This shows that people were making rock art in our part of the world at the same time, perhaps even earlier than in Europe, and that really changes debates about the origin of art” says Professor Taçon.

“That’s changed our view on the origin of art and that we shouldn’t have this Eurocentric view of human evolution and especially human symbolic evolution. What Maxime’s research has shown is that the origin of art was not in Europe

The use of uranium dating had earlier been used in 2011 on China’s rock art in mountainous northwest Yunnan. Professor Taçon and Dr Aubert (then at the ANU), in conjunction with Chinese researchers, were the first to use and publish Uranium-series to date some of China’s rock art.

### East Asia and China rock art discoveries

Professor Taçon’s research has not been restricted to Australia and nearby neighbours. A second discovery grant from the ARC to investigate *The Late Pleistocene Peopling of East Asia and Associated Climate Environment*

*History* has seen a major collaborative effort with major fieldwork at locations in Yunnan Province, China.

In 2008, Professor Taçon, Dr May and Dr Aubert were the first Westerners to visit Jinsha River sites as part of a long-term Australian-Chinese collaboration.

An extensive review also revealed naturalistic Jinsha River rock paintings to be unlike rock art from other parts of China, including Yunnan and Tibet, or countries nearby such as Vietnam, Thailand, Myanmar, India or Siberian Russia.

The research indicated that the rock art arose without direct influence or connection to other places adding further weight to the debate that rock art arose independently around the world.

The study found the Jinsha River sites to be of a high scientific and heritage priority and that they faced similar risks from nature and human activities to those problems experienced in Australia and other parts of the world. The Jinsha sites were threatened by a planned hydroelectric power plant.

The study also aims to provide information about the identity, affinities and origins of the earliest modern inhabitants of East Asia as well as major insights into the peopling of Australia.

Ongoing research aims to address crucial questions surrounding climate change from an historical perspective of a region that contains half the world’s population.

By uncovering information to add to the reconstruction of the long-term environmental history of the region it is hoped to better understand the human role and adaptation to climate change.

Between 2012 and 2016 Professor Taçon and a team of Australian and Chinese researchers made headlines around the world after publishing their discovery of the Red Deer People - a previously unknown form of early hominin.

While the fossils from the Red Deer Cave (Maludong) had been removed decades earlier their historical and evolutionary significance had not been explored.

The team, which included Associate Professor Darren Curnoe (UNSW) and Professor Ji Xueping (Yunnan Institute of Cultural Relics & Archaeology, Kunming, China) and others, revisited the Maludong cave in Yunnan as well another cave near Longlin.

They found the remains from the two caves matched each other—but failed to match any record of previously known ancestors of modern-day humans.

They ascertained the Red Deer Cave people had lived between 11,000 and 14,300 years ago, during a period of major ecological and climate change near the end of the Ice Age.

The findings were significant to the understanding of human evolution in East Asia, an area which has been scarce on reliably classified and accurately dated fossils.

Professor Taçon and his colleagues wrote a number of papers on their research concluding the fossils might represent a late-surviving archaic population.

The research analysed 15 traits of a partial thighbone from the Red Deer Cave and found that it was very different to modern humans and that it may have come from a pre-modern human, [Homo erectus](http://humanorigins.si.edu/evidence/human-fossils/species/homo-erectus) or [Homo habilis](http://humanorigins.si.edu/evidence/human-fossils/species/homo-habilis) that lived 1.5 million years ago.

The analysis suggested the Red Deer Cave people may have co-existed with modern humans in China for about 60,000 years.

### The Rainbow Serpent and climate change

While the importance of some discoveries is almost immediate others take years to be understood. And so it was for the many Rainbow Serpent depictions that appear in rock art across of Australia.

When Professor Taçon first encountered the Rainbow Serpent in the mid 1980’s in western Arnhem Land he was fascinated and intrigued by its prevalence and the numerous representations. It appeared in the most ancient of art works through to modern Aboriginal paintings on canvas.

Over the next decade he found the Rainbow Serpent at sites across Australia as well as learning of its importance through the oral history of many elders.

In 1994, with the approval and assistance of local Aboriginal people and the Northern Land Council, Professor Taçon, Dr Christopher Chippindale, of the Cambridge University Museum of Archaeology and Anthropology in Britain, and

then student research assistant Meredith Wilson, documented more images in western Arnhem Land in the hope of identifying key changes in the Rainbow Serpent and identify possible regional variations.

The result stunned them, and was far more than they had ever anticipated. After comparing and coding 107 paintings they then cross-referenced each image across 137 attributes for computer analysis. They looked at attributes such as body shape, type of tail, edge type etc. and compared these to animals such as seahorses, crocodiles, snakes and kangaroos.

The answer they found was that the Rainbow Serpent was inspired by a pipefish, an animal related to the seahorse and one that would have been unfamiliar to landlocked people in Arnhem Land.

The impact of climate change 6000 years ago was dramatic, especially in Arnhem Land and Northern Australia where the continental shelf slopes very gradually.

Seas levels rose about 150 metres and because of the topography it meant up to 2 million square kilometres of land was lost to the sea.

And with the rising sea levels came the pipe fish. For Aboriginal people the pipe fish was synonymous with the huge upheaval that the rising waters of climate change had caused.

It was not only loss of land but also larger battles involving dozens of fighters, as opposed to one-off skirmishes, as clans fought for ever-shrinking resources, such as hunting grounds.

The pipe fish inspired the first drawings of the Rainbow Serpent and was interwoven with the history of turmoil and change that followed.

The Rainbow Serpent today is among the most powerful and widespread Ancestral Beings of contemporary Aboriginal culture and the stories and teaching from the Dreamtime.

“We have a major creation Being regarded as extremely important for four to six millennia," says Professor Taçon.

He and his research colleagues say it is the world's oldest continuous religious tradition, one backed up by scientific data and dating technology.

"In that sense the major component of this spiritual belief system is much older than the major components of religions and spiritual belief systems found elsewhere in the world,” he says.

“Aboriginal creation stories reveal in great detail how the world was created by the Rainbow Serpent at a time of great transformations.”

### Technology – Saving and unraveling rock art’s hidden stories

While studying the past Professor Taçon has been using the latest technology to record and document rock art in case it is damaged.

As well as heading the Google Art project for Australian Rock art he has also helped develop an interactive digital rock art exhibit for Griffith University’s Red Zone Visitor Centres.

He has experimented with and utilises digital imaging technology, both 2D and 3D, to record rock art sites as well as drones to gain an aerial perspective of the sites and their surrounding environment.

He readily admits technology has revolutionised his work.

“When I began doing my fieldwork in the 1980’s I had these basic cameras with colour film, colour slides and I had to be careful that my film canisters did not overheat or were exposed to the direct sun. I had a map and a compass to guide. If I got into trouble I had no contact with the outside world.

“But when recording today people use different sorts of devices or database systems. We record rock art sites with iPads and Galaxy devices and a GPS for our own records. In the field our team members keep in touch with two-way radios.

“Instead of the old way of paper forms and a whole lot of colours slides or digital photographs being dumped on a computer and then spending weeks cataloguing and naming them, now it is all done at the end of the day automatically.

“The digital technology is revolutionising the way we work. We have GPS, mobile phones, satellite phones these amazing 2D and 3D digital cameras, various types of scanners and drones.”

However, he still uses a field book and ink-based pen for his own notes as a non-digital backup, which ironically is later digitally scanned to create a digital workbook with full search capacity.

Digital imaging has also allowed researchers to “see” hidden layers of artwork through special image filtering technology.

Digital recording and archiving is one of the most important aspects for not only scientific researchers but also Indigenous people.

“In rock art research we need to embrace changing technology, “ says Professor Taçon.

“All of the Aboriginal people I have worked with embrace technology and are really interested in 3D recording and new ways of recording and preserving their sites.

“They thought the use drones to record the area from above was great as it put the rock art in context with the surrounding environment.”

Professor Taçon is also in discussion with the National Museum of Australia and others to develop a rock art exhibition component of the new Indigenous Australians gallery.

“One of the key things we’re looking at is having 3D replicas and experiences for people.”

There have been preliminary discussions about the development of a virtual reality rock art film shot at a number of different key rock art sites. It could involve local Aboriginal people and archaeologists as virtual guides explaining the meaning and relevance of the sites.

“The stories associated with these places are very important for the traditional owners, but also important for learning about the significance of the images and why these places are so special,” he says.

“At lots of places around the world people are making 3D recordings of heritage sites so that if something is destroyed through an earthquake, some natural disaster, long-term weathering, human vandalism, development or destruction we will have these records and will be able to use better and better 3D printers to reproduce or reconstruct what was once there.”

### Digital rock art and accessibility

Professor Taçon says many Indigenous elders support the recording of their rock art in case something ever happens to the original. Earthquakes, bushfires and graffiti are all potential risks that could damage the rock art sites.

However, not all artwork digitised will be accessible by all people.

It is an issue of respect for sacred Aboriginal sites where the Indigenous custodians do not want their sites violated.

“There are some communities that want digital archives, others that don’t. There are some people who just want a community-based archive. What many Indigenous people fear is a government control of their heritage.

“So it may not be possible to have a truly national database of all rock art sites but certainly we can create a database of what is known and what is permissible to include.

“So instead, what is happening is different groups of archaeologists are working with various communities across the country to record rock art using digital technology and then to produce online databases that are password protected so that community members or others that are given permission, such as certain archaeologists, can access them but the general public can’t.

“There may be some sites that are only for men and sites that are only for women.

“There are lots of different cultural protocols that differ across the country and have to be taken into consideration when managing rock art sites.

“In northern Australia Traditional Owners introduce visitors to rock art sites by talking to their ancestors and the other spirits that reside in these rocky landscapes, using smoke to drive away bad spirits from people who were visiting.

“We need to be respectful of their culture.”

Professor Taçon says one of the major concerns of Indigenous people is the human threat.

“Indigenous Australians realise there is not much we can do about many of the forms of natural deterioration such as termites or mud wasps making nests over the top of the art,” he says.

“In the past one way of combating it was to add new paintings to rock art sites, or to remark or touch up older art but that is not done much due to various reasons.

“But what they’re most concerned about is the human threats, including feral animals. Often its pigs, buffalos or donkeys getting into rock art sites and rubbing their flanks and backs on the works.

“Graffiti and vandalism are the biggest concern as they show utter disrespect. It’s desecration.

“One of the concerns of archaeologists is that we should never publish the exact location of any rock art sites for fear that we expose them to vandalism.

“We need to develop new forms of awareness to get people interested and excited about rock art so the sites are better protected.

### Dating research leads to robust debate

Dating of rock art findings has been a hot topic. Professor Taçon and the research team at PERAHU have challenged and rewritten the ‘accepted version of history’.

Professor Taçon and his teams have helped pioneer new dating systems that are more accurate and give a clearer time frame of when rock art was created including carbon dating of wax rock art. He also has encouraged younger scholars to develop other methods, such as Uranium-series dating for rock art.

“I’m fortunate enough to have made a number of exciting discoveries in many parts of Australia, especially remote parts remote parts of the Northern Territory and Wollemi National Park,” says Professor Taçon.

“But at the same time I have been really pushing for new ways to use technology in rock art documentation as well as rock art dating, conservation and management.

“I was involved with some pioneering rock art dating work in early 1990s where we sampled figures made out of beeswax and got very precise and direct radio carbon dates for those figures and then minimum and maximum ages for paintings that are under or over the beeswax figures.

“In 2008, we sampled a beeswax snake over the top of a painting of a prau, an Indonesian sailing vessel, and we got a minimum age of the early to mid-1600s.

“That means the painting of the prau is even older and that upset quite a few of historians who had argued people from Macassar did not arrive until at the earliest in the mid 1700s but more likely the late 1700s.

“So we had some robust debate but eventually we reconfirmed that date and some colleagues working at a site nearby in Arnhem Land excavated a burial not of an Aboriginal person but a South-East Asian person, someone from Macassar, which was dated to 1637.”

That coupled with colleagues Associate Professor Maxime Aubert and Dr Adam Brumm’s dating of Sulawesi rock art at least 40,000 years old has changed views of both human history and human evolution.

Their discovery of the world’s oldest hand stencil in Sulawesi added to the growing weight of evidence challenging the Eurocentric view of human evolution.

One of the Sulawesi hand stencils was dated to at least 40 thousand years ago while a large painting of a female babirusa also yielded a minimum age of 35.4 thousand years—making it one of the earliest known figurative depictions in the world, if not the earliest.

“What Maxime Aubert’s work shows is that the origin of art was not in Europe. A lot of people had argued there was suddenly a symbolic revolution, perhaps changes to the brain that led to the first art in Europe and eventually that practice spread to others parts of the world,” says Professor Taçon.

“That has completely changed now It’s changed our whole view of the origins of art.

“That’s something I’ve been striving for many years with many different colleagues.

“Trying to put the art of northern Australia and Southeast Asia on the map; showing the rock art of these areas has significant antiquity and that we should not have this Eurocentric view of human evolution and especially human cultural symbolic evolution.”

### Tourism, mining and development

One of the challenges facing Professor Taçon is that unlike other historical and culturally significant items, rock art cannot be housed and protected in climate-controlled museums or art galleries that celebrate human ambition and evolution.

So, 3D scanning technology is being used on site to record these works should the unthinkable happen and they are destroyed or damaged. However that is only part of complexity needed to safeguard and tell the story that lies in the images.

As Professor Taçon has found out through years of talking to Aboriginal elders, the context of the site is inextricably linked to the meaning of the rock art itself.

“In the Wellington Range in Arnhem land there are various proposals for mining. The Indigenous community is thinking of developing a sustainable tourism business but what they want is all their rock art sites documented and all that geology off-limit to development.

“There may be some guided tours to key sites so that people can appreciate why that geological area is being protected and learn from the wisdom encapsulated in the images.

“In terms of mining that is a no-go area. If mining is to occur it is out in the plains area.”

He has also developed a Rock Art Ethics Resource Kit for Indigenous peoples, academics, consulting archaeologists and the general public intending to visit, record, manage, conserve or interact with rock art sites.

While tourism is acknowledged by some Indigenous people as a way to raise awareness of the importance of rock art, provide employment and protect their heritage it is an option that does not suit all Indigenous people.

“Tourism has its pros and cons. The key thing in terms of rock art sites is when they are opened up to visitation you have to have a certain amount of infrastructure. You have to maintain that infrastructure and have to put the right type of infrastructure in,” he says.

“What has occurred in a number of parks in Australia is people have put in wooden boardwalks and viewing platforms. When a bushfire has come through it has burnt them to the ground and damaged the art in the process, or people have not been going back to look after the infrastructure so vegetation has been allowed to grow over it causing a fire risk.

“Or it’s been rotting and interpretation signs have not been replaced when they have faded. People visiting get frustrated and think this can’t be very important, so that frustration can lead to graffiti, vandalism and certainly a general lack of respect.

“There are big pushes to develop northern Australia through mining, agriculture and tourism. All three have a huge impact on the land and will have huge impact on rock art sites.

“That’s where we need to develop new strategies to minimise the risk when undoubtedly development will occur because it is being pushed for from so many different government angles.”

Even in tourism there were different strategies, adopted by different communities.

“You have five-star resorts and people stay in this amazing landscape and they get spoilt rotten, go fishing out at a billabong and go out to a few rock art sites,” he says.

“Then there are more authentic Aboriginal experiences that some people are trying to develop, where people go out and camp in tents on Indigenous land and Traditional Owners take them to sites, cook their meals over a campfire and sit around and tell the stories of the Dreamtime.

“Those are the two extremes people are grappling with. Both extremes require a certain amount of initial funding to get them off the ground.”

### The ARC Laureate and the strategy ahead

The [ARC Laureate Fellowship](https://app.secure.griffith.edu.au/news/2016/05/06/arc-australian-laureate-fellowship-honours-rock-art-expert/) is an important step in moving Australian rock art from the “too hard basket” says Professor Taçon.

“The Laureate is very significant in that the Federal Government has taken the first steps by awarding this Laureate, they have put some funding on the table and see this as important, something that is of benefit to all Australians.

“We will use this money to mentor other people to pass on skills, to increase awareness of the importance of rock art, to work with Indigenous Australians. We hope by the end of it we will be attracting funding from lots of different sources.”

For too long many people showed no respect or understanding of the importance of rock art to Indigenous peoples, says Professor Taçon.

“There has never been a government rock art strategy in Australia and even the general heritage strategy in Australia, especially the Indigenous side, is not very well developed or very strong.

“One of the things we will be doing through the Laureate, working with many people, Indigenous and non-Indigenous, is we will develop a national rock art strategy. We have already started that process with workshops and getting ideas from people.

“Another thing we want to do as part of the Laureate, which is also in its early stages, is to have a national Australian rock art institute.

“This would be a bit different from other institutes. It would not be one big building in one city, but rather a virtual institute that would have a major web presence and facilities in a number of different places, such as the National Museum, Griffith University, other universities, AIATSIS **(**[Australian Institute of Aboriginal and Torres Strait Islander Studies](http://aiatsis.gov.au/)), Aboriginal land councils and Aboriginal communities.

 “They would all be linked together so they could share information with each other.

“We could put up all sorts of resources, for increasing the awareness of the importance of rock art and how to better respect rock art and we could tell the story of rock art and everything we could learn from it.

“We could put up lots of advice. In the last few cases of extreme vandalism of sites in Australia, communities have been having trouble finding experts who can assess the damage and repair the damage. As part of this institute all that information would be there.

“There is a lot we can do. We can have components that are password protected so that community members can use them amongst themselves. There are lots of different levels to this, so it’s not seen as something that is dominated by the government or dominated by non-Indigenous people.

“It’s an institute that has sharing and respect at its core, virtual meeting places for Indigenous people.”

The Laureate provides $2,553,690 in funding over five years and will be

used for two PhD scholarships and as well as two post doctorate-positions. Griffith University has provided matching funds for a senior research fellow and a half-time research assistant.

Professor Taçon hopes the Laureate work will lead to a commitment from governments on the importance of rock art to our national heritage and the introduction of protection measures.

As part of the Laureate, Professor Taçon will explore the relationship between Australian rock art and Indigenous heritage and Indigenous well-being.

“Rock art is very important for contemporary Indigenous well-being and in many parts of Australia Traditional Owners experience both physical and psychological pain if their rock art sites are damaged and will get upset if they are threatened,” he says.

“So rock art has contemporary social value, sometimes it can have economic value with sustainable tourism businesses, although generally there are lots of expectations around that and it is rare that a lot of money can be generated from rock art tourism.”

“What would really help would be a commitment and statement from our Federal government, our state and territory governments that this is a keystone of our national identity and we need to work with Indigenous Australians to make sure rock art is available to future generations.”

Professor Taçon hopes his Laureate work will also deliver on a promise he made to the late Big Bill Neidjie (also known as Kakadu Man) that he would do everything in his power to ensure Indigenous communities could share in his research.

“I told Bill I would work hard to protect Australian rock art for future generations. The Laureate Fellowship will enable me to achieve this in a huge way.”