

LARRY WELLS AND THE LOST TRIBE

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SUMMARY

In 1981 the author and friend sought to locate an explorers mark in the Great Victoria Desert of outback South Australia. This mark was a blaze in a kurrajong tree made by surveyor Larry Wells as part of the Elder Scientific Expedition of 1891. The blazed tree has been described as surely one the most remote explorers marks in the world. However during the attempt to find the explorers mark the adventure took an unusual turn after the discovery of an aboriginal artefact on a sand-hill.

On planning a second expedition to the same area in May 1986 the author joked so often that he was going to find “the lost tribe” that he actually believed he would.

In October of that year a last nomadic tribe of seven aboriginals walked out of the Great Victoria Desert. Successive harsh years made their old way of living now impossible and they surrendered to white “civilisation”. The tribal leader had deliberately steered his people away from white society for their entire lives.

In contrast the Elder Scientific Expedition of 1891 encountered totally different conditions in the Great Victoria Desert even experiencing rain, mists and fog for much of their journey. Even with those freak events they just managed to reach Victoria Springs with their camels nearly dead.

History has not been kind to either to either the nomadic aboriginals or Larry Wells. The nomads failed to adapt to their new confinement and they struggled to survive. The fate of Larry Wells was also sad as he died in unusual circumstances, despite nearly losing his life several times in the remote outback.

The author tells the story of both parties and how they become inevitably intertwined.

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1. INTRODUCTION – PURPOSE OF THE 1981 ELDER SCIENTIFIC EXPEDITION

The purpose of the expedition was to investigate the last unknown areas of the northeast part of South Australia. The journey was to cover the area between the routes taken by Giles, in his 1875 expedition from the north of the Nullarbor Plain to the north west of the Great Victoria Desert, and the area around Alice Springs which had been explored by Gosse and Forrest in the 1870's. Being a prominent and wealthy pastoralist Thomas Elder was keen to know whether the country in between was suitable for that purpose.

Surveyor L.A. Wells was sent on two "flying traverses" across the Great Victoria Desert from the major party, which travelled in a Westerly direction through the Mann Ranges, (Figure 1). This map is from the book by Wilfred and Christopher Steele, "Steele, 1978"

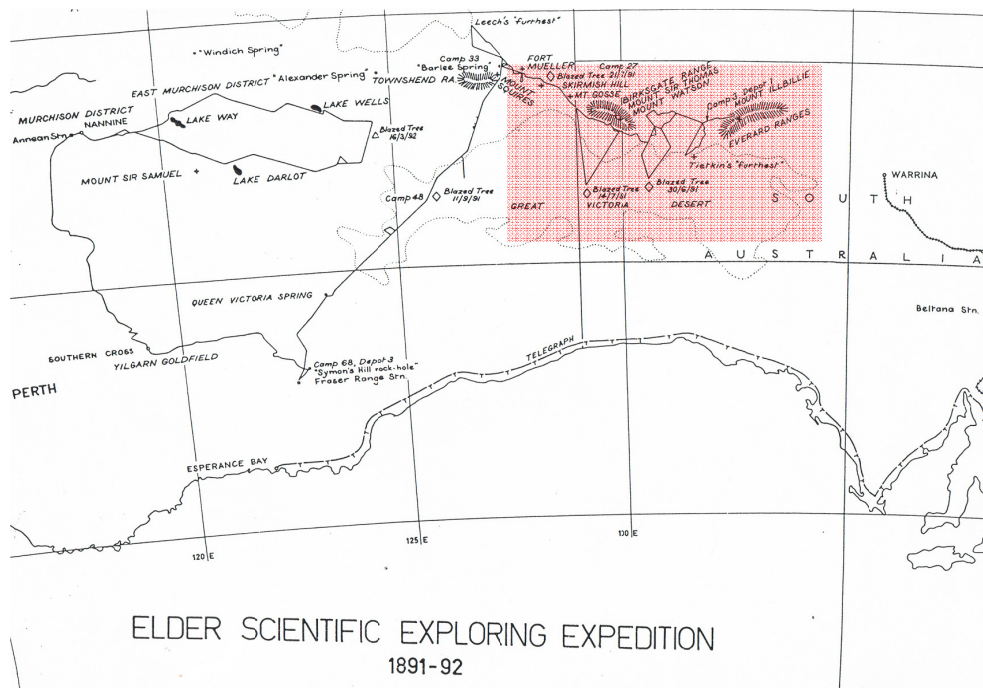


Figure 1: Showing the area of interest to Thomas Elder and Wells' traverses

On both of these journeys he headed generally on a southwest compass bearing to a fixed point and returned to join the main party on a north-west bearing until he came across their tracks. At the southern extremities of both traverses, the nadir points, Wells blazed a mark in a large tree and took latitude observation. In his book Christopher Steel, ("Steele,1978"),

notes that the western most marked tree “is probably the most lonely marking of any explorer in Australia”. The eastern point is only marginally less remote. In his crossing of the country the Wells expedition party was fortunate to encounter light showers, misty conditions and many full water holes. They also frequently encountered tribes of aboriginals who had little trouble living in this then habitable area. Naturally the locals had never seen white people before.

While Wells went to some trouble to ensure all encounters were amicable there were initially some anxious moments. He records in his journal from July 14th 1891, (“Wells, 1892”)

“At half a mile came upon a temporary camp of natives and saw their hunting implements there and a fire burning. They had evidently gone out hunting. At one mile surprised a young lubra, who ran away. I called to her, but she would no stay. At a mile and a half came upon another temporary camp, where we surprised an old lubra who was cooking opossum. She cried out and ran away, with a wooden dish upon her head, setting up a most pitiful wail, which she kept up for some time. The other lubra answered her several times. We touched nothing in either camp, and kept on out bearing.”

The Wells expedition also benefitted from the wet winter finding full water holes, such as the rock hole in Figure 2, and adequate feed for their camels.



Figure 2: A typical rock hole of the Great Victoria Desert

However after travelling north to join the main expedition weeks later in the Mann Ranges the situation changed for the worse. From this time on they all encountered dry water holes and harsh conditions more typical of the region. The exhausted expedition crawled into Victoria springs, hundreds of kilometres to the southwest. The camels had not had water for more than a week.

Regardless of this Wells had fulfilled his role in the expedition, to traverse the Great Victoria Desert twice. Wells located both blazed trees at the southern end of the traverse points on high sand hills. From these points he noted that the country further to the south as being substantially the same as described by Ernest Giles in his 1875 expedition much further to the south. This most important part of the expedition was accomplished but the findings were disappointing.

2. THE WORK OF THE NATIONAL MAPPING COUNCIL (ICSM)

The next visitors to the area were those involved with developments of the Maralinga and Emu atomic bomb testing. On behalf of this organisation Len Beadell dozed many tracks in the area, later mischievously called highways. These were essential for later developments. In the post war era under the auspices of the Intergovernmental Committee on Surveying and Mapping (ICSM), (then the National Mapping Council), this area and the entire Australian continent was mapped at 1:250,000 scale. This work was carried out and overseen by the National Mapping Division. With regard to this work Dorothy Prescott ("Prescott, 2003), notes,

"The most important report material is to be found in the National Mapping Council of Australia's publications and those of its sub-committees which cover the period 1948-1986. There is much material here covering a long time span which encompasses the golden period of national topographic mapping."

And it was indeed a golden period that any young surveyor would be gladly involved in today. The early first series of the maps were produced before the advent of a comprehensive national trig network. In remote areas the map control had to be provided by astronomical observations stations for latitude and longitude, usually at the corners of the 1:250,000 map sheets. Reaching these 1° by 1½° points without any comprehensive maps, (merely uncontrolled aerial photographs dating from 1947), was the first adventure. Figure 3 shows the remoteness of such a map sheet corner.

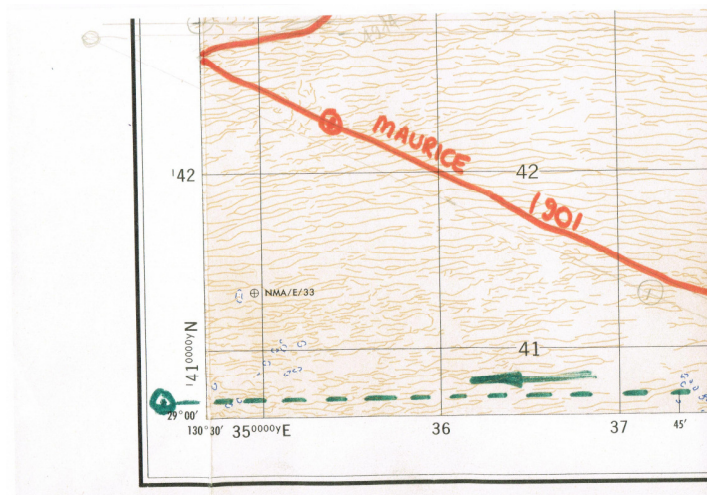


Figure 3: Showing the remote location of an astronomical control station

Thankfully the Anne Beadell highway was constructed in April-May 1962. This spanned from Voke's Hill corner to Laverton, in Western Australia. Thus some rudimentary access to the area was available in the form of a dozed track across the desert. This was far from being a highway.

In 1965 surveyors from the National Mapping Division created a traverse network across these huge expanses, thus joining the original trig networks of the colonies of South and Western Australia. Amazingly some of the traverse legs were up to 30 kilometres long, (see Figure 4).

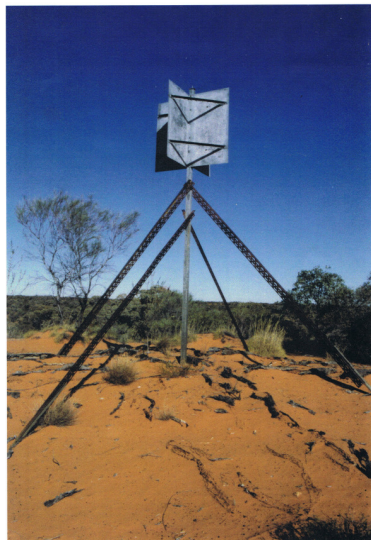


Figure 4: A trig point showing the distant horizon

The claim by Wells in 1891 to have seen 20 miles south from the sand hill on his eastern nadir point was vindicated.

One year later a run of bench marks along the same "highway" was leveled in both directions to the Western Australian border. This was part of an ambitious Australia-wide program, also

overseen by the National Mapping Council/ICSM. This was the creation of the Australian Height Datum (AHD), see Figure 5. These Bench Marks are spaced at 5 kilometres and most still exists today. Anne Beadell has recently sent the author GPS observations on these marks.

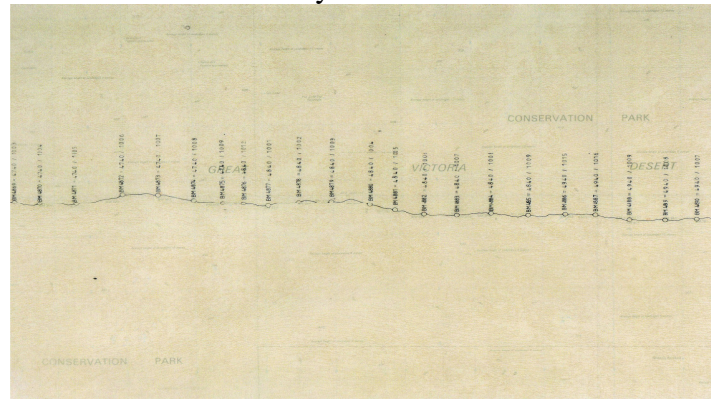


Figure 5: The Bench Mark run along the Anne Beadell Highway
The trig traverses ran parallel and a few kilometres to the north of the Anne Beadell Highway. They were used to create off-shoot traverses to upgrade the accuracy of the coordinates at map sheet corners, (see Figure 6)

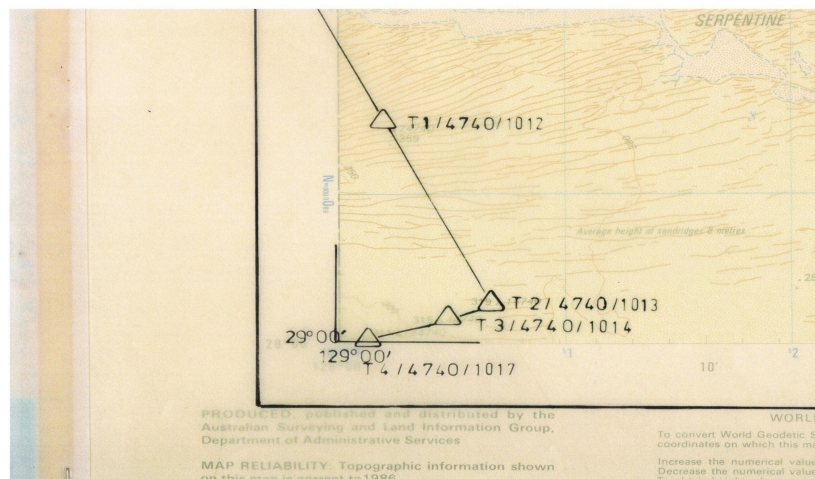


Figure 6: Showing the offshoot map control traverse

These map control traverses were carried out in the late 1960's by the various states and territories to enable Australia's map coverage to be upgraded to 1:100,000 scale. Once again this was an NMC/ICSM prerogative.

Survey teams from the National Mapping Division also upgraded wells in the area. The best example of this is shown in Figure 7 below. Unfortunately the carved inscription "National Mapping" is hidden in the shadows.



Figure 7: A native well shored up and rehabilitated by National Mapping (ICSM)

As a consequence of this pioneering work carried out by NMC/ICS the Coxon and Sandford expeditions of 1981 and 1986 could be planned down to the nearest sand hill prior to leaving the office. Finding the two blazed trees would become an interactive shuffle between map, photograph and historical journal.

Our biggest problem was how accurate were the locations of the marked trees?
Our estimate of the precision of the latitude observations done by Wells was $\pm 20''$ of arc. He used a vernier theodolite and observed only to one star. The author assumes he took considerable care and used a circum-meridian method to find both true north and latitude. Wells was known to be a good observer. His bearing control relied solely on a compass. At the top of prominent sand hills an observation was taken and projected towards an object on the horizon. From the nature of the country, and the distance that subsequent trigonometric traverses spanned, the conservative estimate of one kilometer per compass leg was assumed. For the distances covered in the flying traverses of around 130 kilometres, and assuming the accuracy of maintaining this bearing is around $\pm \frac{1}{2}^\circ$, a propagating random error of several hundred metres is possible. A more approximate method of assuming a 1° error over these distances would give an east-west error of around 2 kilometres. This all assumes that the back calculation of the magnetic variation to the year 1891 was correct. Explorers were known to have counted the number of paces their camels took and converted this to chains. They consequently derived the running distance and that between successive sand hills. Wells carried out several latitude observations on his flying traverses. Because the traverse bearings were close to north-south the accuracy of the camel pace distance can be calculated. Over the four traverses the surprising result is $\pm 2-5\%$. Consequently when Wells states the distance between sand hills in his journal his measurements could be used to find the actual sand hill patterns on the 1:250,000 map.

3. EXPEDITIONS OF REDISCOVERY BY COXON AND SANDFORD

Wells commenced his flying traverses from what are now accurate trig points, such as Mount Watson and Mount Agnes. Therefore the observations and positions could be recomputed on the Australian Map Grid, (AMG66/84). The resulting coordinates could then be plotted on the current 1:250,000 scale topographic maps of the area.

These maps could then be matched to the latest aerial photography in the area and the individual sand hill pattern could be related to the journal descriptions from Wells. It was then a matter of “bush-bashing” into the area of the computed coordinate and examining each kurrajong tree in the area.

Our nearest navigable road was the Anne Beadell Highway, created by husband Len Beadell in the 1950’s. This took us to within 50 kilometres or so of our 1st blazed tree. Fortunately aerial photography revealed a seismic line bearing north from this highway passing ten kilometres west of our tree.

The aerial photography was taken several years prior to the expedition, 1974, at a photo scale of 1:82,000. The photography was enlarged several times over the area of interest so that individual large trees could be identified. Fortunately the kurrajongs bear heavy leaf coverage and stand out in the aerial photography. Therefore many target trees were identified prior to the field trip.

Once camped on the approximate site communications were established through the flying doctor radio network and our search for the Eastern blazed tree commenced.

Naturally the most effective way of finding Wells’ tree was to repeat his latitude observations. An examination of a clearly identifiable hill to the north where Wells took a latitude observation was identified on the map. This was also checked against the journal records of the sand hill spacing. The latitude was found to be correct to around 20”, (deflections of the vertical being taken into account).

It was with great appreciation that Trevor Ley, (of then Wild Leitz Aust P/L), loaned the expedition the latest Wild T2. The automatic pendulum levelling and self-illuminating plate bubble were two welcome features that enabled latitude to be determined with comfort. The instrument also remained in excellent adjustment considering the rough travelling it had endured for several days.

Selection of one of the stars from the Southern Cross, (Number 399 = γ Triangulum Australis), enabled the determination of true north from calculating its time of transit. Next day a forward and back compass bearing was taken along this line in order to determine the deflection of the needle.

Owing to an oversight the author’s latitude observations were carried out minus the use of a thermometer and barometer, (the author completely forgot them). Therefore enough north and south stars were observed to enable empirical computation of the atmospheric refraction correcting factor “*f*” for the epoch of observation, (see calculation sheet). The position we had navigated to was 25”, (approximately 750 metres), away from Wells’ derived latitude. This was a combination of the errors in the two sets of observed latitudes and the neglect of the deflection of the vertical.

We tried to imagine the difficulty Wells would have endured carrying out the same observations ninety years earlier, (e.g. lamp lighting, lack of simplified star almanac, vernier theodolite etc).

Armed with a multitude of ‘all things surveying’ we paced 750 metres northwards along the meridian and placed a survey picket. From this picket the approximate directions east and west were marked frequently with pink flagging tied to trees and bushes. Identification of the site of the picket was done on the aerial photographic enlargement. Neither of us had ever carried out a “photo-ident” in such a remote area. The importance of keeping count of the sand hills on the fifty kilometre trip from the Anne Beadell Highway along the seismic line was of paramount importance. In this country everything looks the same for hundreds of kilometres around.

Now the important job of checking each kurrajong in the area for the blaze, and marking them on the aerial photograph commenced.

Next day Simon searched to the north of the marked line and the author to the south. At the end of the day we returned to camp without any luck. We wondered whether the one metre diameter kurrajong had been burnt down in a bush fire or that Wells had wandered off his compass bearing much further than we thought. Around the camp fire that night we discussed that day’s events such as the abundant bird life, which clearly meant the presence of a permanent water supply somewhere in the area. We were also amazed at the size of the huge silver gum trees and large kurrajongs in an area known as a desert. We found Wells’ description as “miserable country” puzzling.

The author casually mentioned a yellow rock spotted on the top of a sand hill some two kilometres to the south. Simon commented that we had not seen any rock, gravel or stone since fifty kilometres south. During the next day the rock was retrieved from the sand hill where there also appeared evidence of recent foot prints. We agreed that there had not been tribal aboriginals in this area for fifty years and forgot about the matter. However on the next day the author again passed the sand hill and collected the strange yellow rock then continued the search for the blazed tree.

On this trip we did not find the tree and decided to return to Cook so Geoff could return home and Simon could meet with his arriving family. Our search would wait for another year or so.

A second trip was planned in May 1986, during which we hoped to find the blazed trees at both the east and west nadir points. Unfortunately we did not yet have the advantage of the GPS navigation system so traditional methods were again used. This time two vehicles and families were involved.

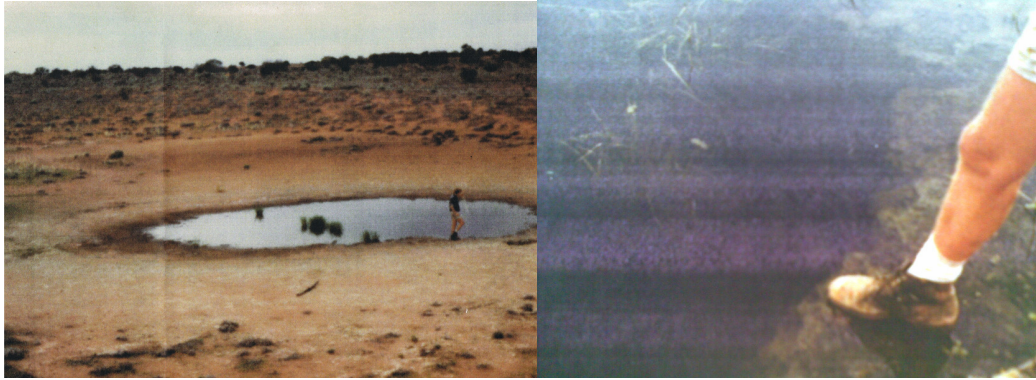
However a curiosity about the yellow rock found in 1981 had built up a latent excitement inside the author over the intervening years. The item was identified by aboriginal friends where Geoff worked as a broken portion of a nadoo stone, see Figure 8.



Figure 8: A nadoo stone, this one damaged by digger, ours was half of broken stone

This stone was used aboriginals for crushing seeds, berrys and nuts. It was made clear at the time of identification that the object should be returned to its original location as soon as possible. This was done as promised on the next trip. But the thought that tribal aboriginals were still in this area remained with the author despite the misgivings of all who heard the story. Thus to save further embarassment the subject was dropped in all further conversations. New legislation was about to be passed which would allow only approved journeys into the Great Victoria Desert. It was almost closed to the public. However the “highways” were now frequently used. So busy that we nearly collided with another vehicle at the junction of the seismic line and Anne Beadell Highway. Having unsuccessfully searched for the eastern blazed tree again we turned our attention to search for the western tree.

We were amazed how the country had deteriorated over the five years. In 1974 exceptional rainfall filled Lake Eyre, a once in a lifetime happening. The effects of these good seasons on the Great Victoria Desert were still being felt in 1978 as was shown on our colour aerial photography of that date, there was green everywhere. The benefits from 1974 and some good following seasons seem to have lasted until 1981 as we found full water holes and lush vegetation, as did Wells in 1891. Wells even records in his journal that he saw the tracks of a bullock made a few weeks prior to his blazing of the eastern tree. But in 1986 there was a marked difference in the countryside which was exemplified by the dry water hole near the border of South and Western Australia. Anecdotal evidence from aboriginals elders maintained this hole had never dried up. Our pictures, Figures 9 and 10, from 1981 were typical of the good years.



Figures 9 & 10: The border water hole in May 1981

On the 1986 trip this water hole was completely dry and two 44 gallon drums of water had been left for those that might be in need. But this desert was uninhabited, who might need this water?

Hardly any signs of activity around this water hole showed that few new of its existence. On this day we shared the spot with a near dead camel and a burrowing lizard. These above clues would later add up to a surprising conclusion to our story. We saw that this country was habitable in good conditions. But we could not have imagined that aborigines could still be here one hundred years later. Figures 11 and 12 show typical Great Victoria Desert scenes.



Figures 11 & 12; Showing typical Great Victoria Desert scenery

4. THE DISCOVERY OF OCTOBER 1986

We left the country and returned home very disappointed at the state of the country and our failure to find either blazed tree. Our memories always return to this beautiful country that has now been appropriately returned to the aboriginals

However the story had not finished. Back at the coal mine some months later the author received a phone call from Simon,

“Did you see today’s Advertiser, there’s an article that might interest you?”

Our morning paper did not arrive until the next day. At breakfast the next day I saw the article “Aborigines see “White ghosts”” (“Hewett, 1986”). Then I read:

“Seven people – four men (three bothers), two women and a little boy – have lived in the desert for 25 year. In that time, they have had no contact with the outside world.... The women seem happy staying relatives, most of who originally fled from Maralinga and other parts of the Great Victoria Desert when Britain conducted nuclear tests in the 1950’s”

When they talked to one of the women, through an interpreter, it was revealed they moved around from rockhole to rockhole but eventually the water all dried out. Also they were unable to find any kangaroos and other game left to eat.

They emerged 100 about kilometres north from our search area near the Western Australian and South Australian border. The author was correct; there had been a nomadic tribe still in the desert - the last of them all!

5. THE UNFORTUNATE SEQUEL

Larry Wells has been justifiably recognized as one of Australia’s most brilliant latter day explorers. His Great Victoria Desert trip was an introduction to a highly successful and long career of surveying and exploration.



Figure 13: A plaque commemorating Larry Wells on North Terrace, Adelaide

Larry Wells was still actively involved in exploration when he was unfortunately killed by a train at the Blackwood railway station in the Adelaide Hills in 1938.

Of the nomadic aborigines only a few of them have survived since they surrendered from the desert. The old man who kept the tribe away from civilization left the resettlement a few weeks arriving after a went bush again. Searchers were sent out to find him without success. Recent articles revealed others also wandered off while some fell ill and died.

Out of respect for aboriginal culture I am not permitted to show pictures of the seven nomads who bravely survived in one of the most harsh and remote places in the world. They have the utmost respect from all of us that have visited this great open space. Appropriately most of The Great Victoria Desert is now closed to the public as it is now an aboriginal reserve.

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BIOGRAPHICAL NOTES

The author spent eight years in geodetic and cadastral surveying with the Department of Lands in South Australia before undertaking thirteen years in the coal mining and construction industry in the far north of South Australia. In 1991 the author returned to the government to work as the Regional Surveyor at the Berri country office of the department of Lands. Three years later he took on the job of Supervising Geodetic Surveyor with the government in 1994. From 2001 the author has also been a lecturer in Geodesy and supervisor of Honours Theses at the University of South Australia. The author holds an undergraduate degree in Surveying from the University of Adelaide and a Master of Science in Surveying and Geodesy from the University of Oxford. Publications include those in Geodetic datum issues, accuracy of Digital elevation Models, Precise earth movement studies, transference of heights by flat river levels and re-interpretation of Murray River Flood levels. Research topics include the creation of a geometrically determined geoid-spheroid template over metropolitan Adelaide. Memberships: SSSI (South Australian Division).

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