

# The Science Observer

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## Clue to Extinction Puzzle? the Salted Seal Skin

A recent find of two fragments of salted seal skin in a Macquarie Island cave in 1999 may yield clues about the original species of fur seal that lived on Macquarie Island before fur seals were driven to extinction by sealers in 1815.



Sue Robinson (left) and Louise Wynan (right) studying fur seals on Macquarie Island. Photo courtesy Louise Wynan.

### *An interesting note at Caroline Cove*

Zoologist, Sue Robinson, was researching seals on Macquarie Island in 1998 when she found an interesting entry in the log book in a hut at Caroline Cove. This entry, by Peter Hill, dated 10 August 1973, told of a salted seal skin he found in a cave at Waterfall Bay:

*'Brief note for ardent treasure trove seekers such as Bob and myself. Searched the west coast from just north of Mt Fletcher to C.C. for the fabled M.I. treasure, but did not even find any figureheads. Fair amount of driftwood (wrecked Spanish galleons?) etc. Cave at Waterfall Lake creek outflow into sea, shows evidence of habitation (found pieces of salted seal skin and 3 long rusted iron bolts, but again no jewels, doubloons or silver) - probably by sealers and poor unfortunate ANARE men 'temporarily disoriented' on this weathered island.'*



Caroline Cove, photo Geof Copson

*Peter Hill* wrote this entry in the Caroline Cove log book a few months after he had discovered a headless female figurehead at Sellick Bay. At the time he was on the look-out for other pieces of wreckage from the vessel that had carried the figurehead.

When Sue Robinson returned from Caroline Cove to the Macquarie Island station, she rang her colleague, Louise Wynen, at the University of Tasmania. She told Louise about the entry in the log book. Both of them realized that it might be possible to extract some DNA from the skin and identify its species. The seal skin would be an exciting find because

*no-one really knows which species of fur seal lived on Macquarie Island before the sealers killed all the fur seals on the island in 1815.*

The original fur seal species might have been unique to Macquarie Island or it might have been one of the three species found on the island today: the Antarctic fur seal, the subantarctic fur seal or the New Zealand fur seal.

Sue Robinson knew the Waterfall Bay area and went in search of the cave. She found the cave, but saw that its roof had collapsed. She crawled as far as she could go into the cave and saw that the last bit was very low and narrow and could only be seen under torch light. She couldn't see much inside the cave apart from dead sea birds and rocks.

*She realised that she would have to excavate the rubble if she had any hope at all of finding the seal skin.*

This would need special permission from the Tasmanian Parks and Wildlife Service.

Sue also needed to find someone on the island to help her with the excavation. Jane McKenzie, another zoologist and PhD student at the University of Tasmania, willingly agreed to help out.

The Tasmanian Parks and Wildlife Service granted Sue and Jane a permit to excavate the cave. They met at Waterfall Lake, above the cave on a wet misty day in March 1999, carrying two shovels, one large and one small, some plastic bags and a camera.



The Cave at Waterfall Bay. Photo Jane McKenzie.

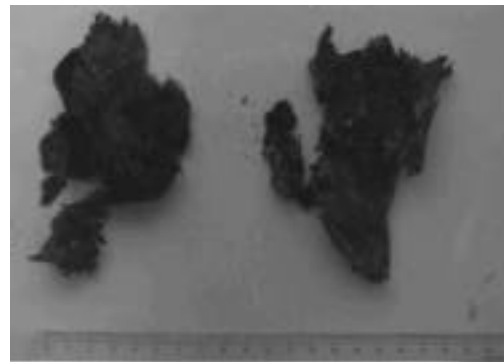
After digging for some time they found some iron spikes, wood, rope, small sections of lead and charcoal, as well as some dead seabirds, a dead cat and a dead rabbit. Jane took photos each time they found something interesting.

*They had been digging and photographing for about three hours before they found two ancient fragments of seal skin.*

The skin fragments had been pressed between two large rocks and some dried tussock grass that would have helped keep the skin safe from rain and mist. The fragments looked like rough strips and the longer of the two was folded over.

The seal skin fragments were brought back to Hobart where Louise Wynen has carried out tests on some DNA she extracted from the skin.

It has been difficult to come to any conclusion as yet about its species. The skin is old and the DNA is degraded. However, the skin is still ‘too young’ to be dated using other techniques such as radio-carbon dating. Another way of dating the seal skin is to assess the age of the artefacts found with it. Louise Wynen intends to speak to archaeologists and try to discover what the other artefacts were used for, and when they would have been used. This might provide a broad idea as to the age of the skin.



The seal skin fragments. Photo Jane McKenzie

The skin fragments are now kept at the Tasmanian Museum and Art Gallery because they know how to best to preserve them and protect them from further degradation.



### **References**

McKenzie, J, Wynen L and Robinson, S, 1999, *Excavation Report of a Cave on the South West coast of Macquarie Island*, Draft report to Tasmanian Parks and Wildlife Service.

Interview with Louise Wynen and Sue Robinson, August 1999

### **Further Reading**

This story of the figurehead found by Peter Hill and Bob Thompson is told in:

'Captain Angel's Daughter?'

### **Mystery**

At this stage, the origin of the salted seal skin still remains a mystery. Zoologists may require more funding to establish the precise species of the skin, and/or wait for new dating and species identification techniques to emerge.