Of Fish Traps and Tidal Pools

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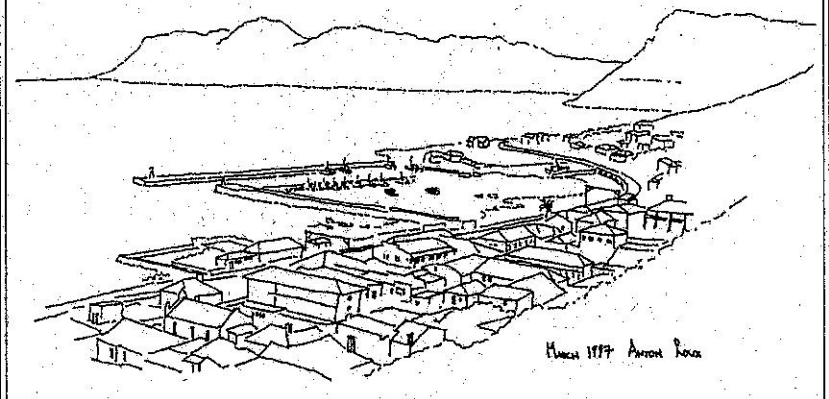

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Kalk Bay Historical Association

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Compiled and Edited by Barrie Gasson

This Bulletin contains the transcripts of the talks organized by
the Association during 2015 - 2016.
Its purpose is to disseminate information on and stimulate interest in
the history of the Kalk Bay area,
and the people who have lived and still live there.

Correspondence on any matters relating to the local history
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OF FISH TRAPS AND TIDAL POOLS

Graham Avery

Introduction

Systems using the tidal range to allow fish to enter pre-built enclosures and be trapped at low tide are widespread globally and South Africa is no exception (Goodwin 1946; Avery 1975; Hine et al. 2010). They vary in shape, size and spatial complexity and historic and on-going use has undoubtedly led to their preservation. (Figs 2.1 & 2.2).

Distribution

Tidal fish traps (*visvywers*) are found along the South African coast from St. Helena Bay to Mossel Bay, with an apparent gap in the Eastern Cape Province (Fig. 2.3). They extend from Kwa Zulu-Natal (Kosi Bay) into east Africa at least, where wooden poles or reeds form enclosures in sandy areas in mangrove channels and the Kosi Bay lakes.

That none are reported from the Eastern Cape, may reflect the non-fish eating tradition of some Nguni peoples. But E Cape and KZN people collect shellfish. (Bigalke 1973; Bigalke and Voigt 1973).

Stone walling was not confined to the coast; inland, in addition to the use of basket traps with stone walling, stone-barriers have been recorded along rivers, such as the Orange and its tributaries (Lichtenstein 1815; Smits 1967).

Construction and Fishing Method

The visvywers exhibit simple but clever engineering which required a ready source of suitable rocks (boulders) on a gently-sloping substrate with an off-shore break to minimize wave energy; open shores and gullies were enclosed and free-standing walls were built to create enclosures. To minimize wave energy seaward sides were sloped with steep internal sides of the walls, which, together with level tops, minimized the rough water that might alert

Fig. 2.1: Complex traps at Arniston. Here the walls are in excellent condition due to the cementing effect of coralliform masses of *Pomatoleios kraussii*, a marine worm (Photo B. Gasson.)

Fig. 2.2: Die Dam trap used by David Daniels. People wading provide scale (photo G. Avery, Iziko South African Museum).

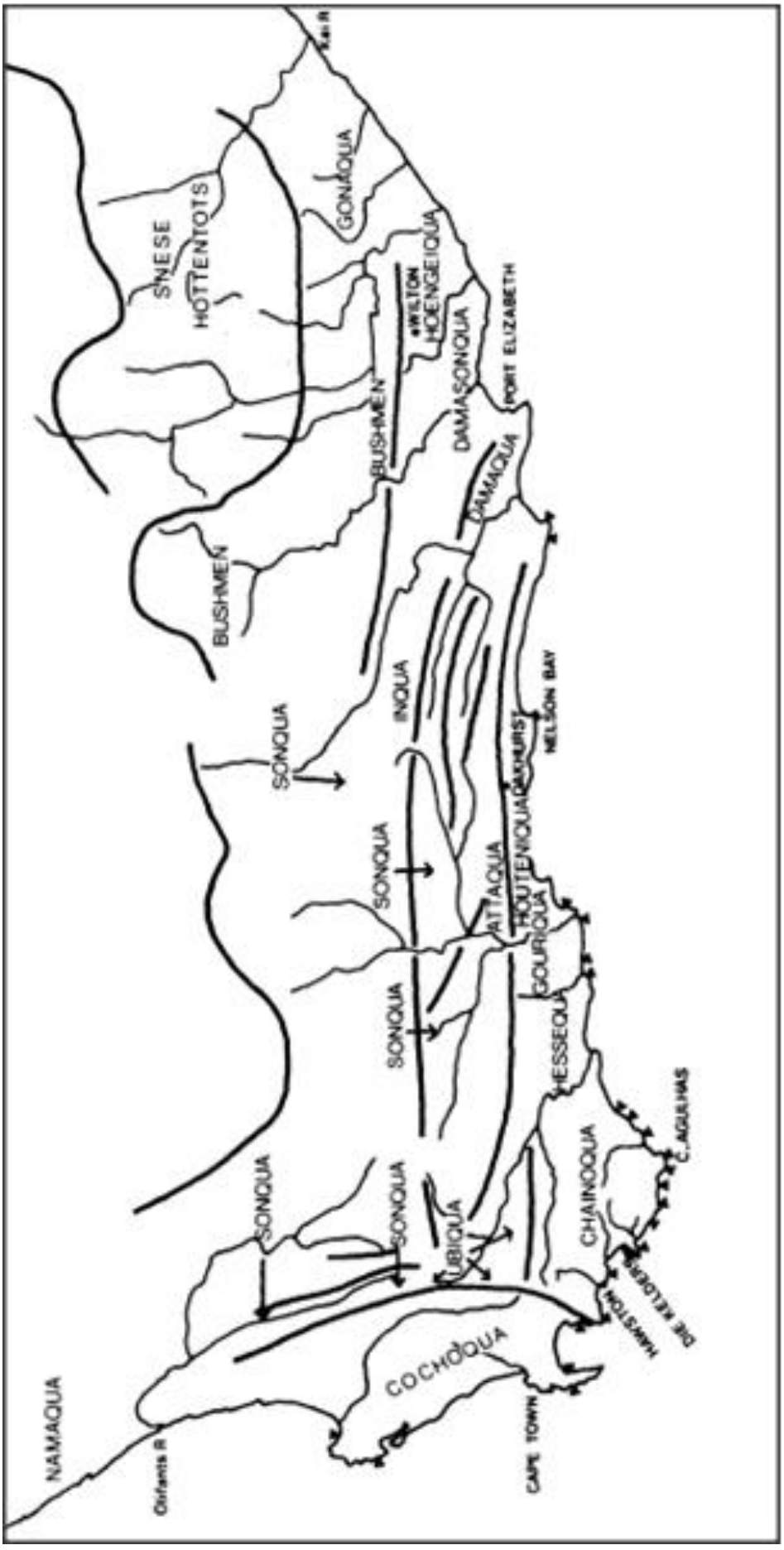

Fig. 2.3: Distribution of stone-walled traps along the western and southern Cape coasts from Avery (1975) and Goodwin (1946).

fish to the impending drop in water level. Essential maintenance between tides included re-packing of any displaced stones to re-establish level tops. Building and maintenance required a labour force. (Fig. 2.4.)

Spring Tides that occurred at night, especially during periods of New Moon during summer were best, although any time of the year was considered likely to be productive. In recent times scoop nets were used to harvest trapped fish. After use an opening ("rif") was created to allow fish to escape between uses. (It seems that this was not the normal practice of recent landowners.)

As described in Avery (1975) the data collected by David Daniels at Die Dam (Fig. 2.5), and information from local fisherman W. J. Moolman of Gansbaai and A. Absolom of Elim, illustrate how productive the use of tidal fish traps can be.

Chronology

Goodwin (1946) suggested that the stone-walled traps might be indirectly associated with the shell midden sites immediately inland of them and that information on their age and potential as resources could be obtained from such sites. Based on evidence from Oakhurst Cave (near George), which he claimed demonstrated the beginning of inshore fishing during Wilton times, Goodwin (1938) estimated the fish traps to be of Wilton and post-Wilton date (between approx. 6,000 and 3,000 years ago.). He noted that some middens close to fish traps included fish bones and argued for dates for the fish traps of between 1,000 and 2,000 years. He also cites a report of a fibre fishing line with a gorge tucked into a crevice in the wall of a trap. However, (Avery 1976) and (Hine et al. 2010) were unable to confirm the association between middens and fish traps in their excavations. Apart from the high frequencies of a variety of fish species in sites like Eland's Bay Cave on the Cape west coast (Poggenpoel 1987), Die Kelders Cave 1 on the Cape south coast (Schweitzer 1979), Byneskranskop 1 (Schweitzer and Wilson 1982), and Nelson Bay Cave at Plettenberg Bay (Inskeep 1987) at none of which any traps exist, gorges (tiny double-pointed slivers of bone – tied in the middle and baited, they acted like stuck chicken bones when swallowed) and stone sinkers are

Fig. 2.4: Plan and cross-section of Die Dam (Cape Agulhas) traps. (Avery 1975.)

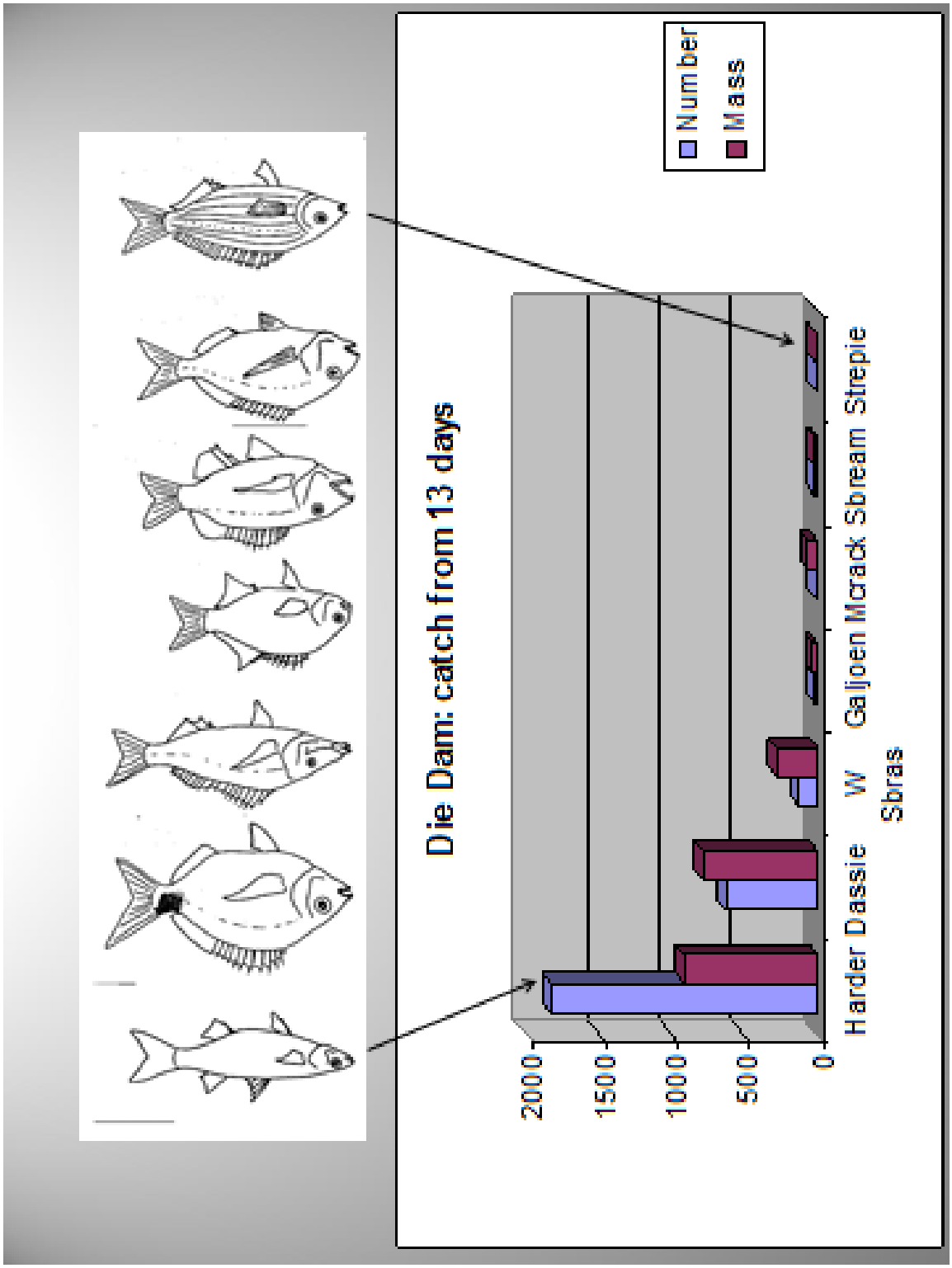

Fig. 2.5: Common species recorded by David Daniels at Die Dam fish trap. (See Avery (1975) for additional details). Fish illustrations from Day (1969).

probably the best evidence for technical fishing equipment in the Later Stone Age, which started between 40,000 and 30,000 years ago and continued until contact with European settlers.

However, rock art and other observations show that, in addition to spearing fish inland San used baskets, along with stones and reeds, as barriers for catching fish on spawning runs (Smits 1967; Vinnicombe 1960, 1961; Lichtenstein 1815). Recent dates for the San rock art (Bonneau et al. 2017) indicate a long history, perhaps as much as 5,000 years, in Botswana (the dated images included a fish), and 1,000 to 3,000 years in Lesotho and the Eastern Cape. This is in spite of some images being considered relatively recent (but at least as old as 1871 AD) when the last recorded artist was painting. In his seminal interpretation of the Linton rock painting panel, removed from the Eastern Cape to Iziko South African Museum, Lewis-Williams (1988) noted the symbolism of fish in trance. Challis, Mitchell, and Orton (2008) suggest a symbolic relationship of fish with rainmaking, as well as their use as food resources. When abundant, such as during spawning runs, it is clear that fish were important resources amongst the inland San (Plug, Mitchell, and Bailey 2010).

Avery (1975) suggested that their age in the western Cape was related to increased group size with the arrival of Khoekhoe herders, although (Hine 2008; Hine et al. 2010) suggested that European farmers introduced this practice historically. That European farmers have added to and maintained fish traps until the recent past is well known. The question, though, is whether fish trapping was an indigenous practice prior to their arrival and the written record. The above observations would suggest that indigenous people possessed an intimate knowledge of fish and fishing and the possibility that this extended to the use of stone-walled fish traps cannot be discounted. Indigenous people did not have written language thus no direct written record by the Khoekhoen can be expected, so observations by early explorers, farmers and archaeologists provide the limited record we have. So, in effect, historical records likely reflect conditions at the time farming was already established and the Khoekhoen had been displaced from their land. In the same vein, we named the passes, but routes and names were often learnt from Khoekhoen, e.g. Sir Lowry's Pass – the Pass of the Eland (Ross 2009).

Heese (c 1930) notes “Dat die vywers in Stilbaai oud is, word geboekstaaf deur die eerste Duinevoortrekker na Stilbaai, wat dit aan sy kinders vertel het dat hy die vywers daar gekry het, t.w. in 1810-20. In dié dae het daar ook nog wilde Boesmans by Windvoëlspunt (wat later deur Engelse seevaarders verdoop is met “Morris Point”) gehou het en al langs die kus oor na Jongensgat “Caves”, Groot-, Kleinjongensfontein na Duiwenhoks Rivier toe. Of hulle aan die Hessequa of aan die Attaqua stam behoort het, kan slegs deur die taalgeleerdes vasgestel word, wanneer ons daartoe oorgegaan het om die ou plaasname soos Wankoes, Kragga ens te versamel en vir ons nageslagte op te bewaar – ipv om hulle te verdoop”. In addition to his implication that indigenous people were responsible for the traps he also mentions the possibility that Middle and Early Stone Age remains in traps indicate an even earlier origin for visvywers. This latter seems unlikely, however, given the long-term effects of sea level fluctuations. It should also be noted that prior to the early 19th century, stock farmers were in the Agulhas region in 1710.

Avery (1975) records an oral tradition among Elim people who visited the coast periodically and used the Die Dam fish traps. Meij (c 2014) includes a tantalizing drawing describing Khoekhoen people spearing fish in a fish trap attributed to Kolben (1738) with Europeans looking on, although I’ve not seen the primary source for this. Iron Age people were well-versed in the use of stone for walling.

Farmers moved into the Orange basin by 1690 and Lichtenstein who visited the area between 1803 and 1806 mentioned the presence of stone-weirs used to catch fish (Lichtenstein 1815).

Hine et al (2010) argued, on the grounds of not finding a link between the Cape south coast fish traps and the contents of middens and historical records, that European farmers, from about AD 1892, and not the Khoekhoen, were responsible for introducing the use of stone-walled fish traps.

Although Avery (1975) and Hine et al. (2010) found no evidence of fish trapping in midden assemblages, this may not be unequivocal as this activity may not be reflected in the

archaeology of the immediate coast; large habitations to which fish may have been transported, existed further inland, e.g. the *Senhora de los Milagros* (1686) survivor account of meeting with Khoekoen at an inland village comprising some 40 huts and many people (Strangman 1936). Avery (1976) noted the almost complete lack of cultural material other than *Haliotis midae* shells in Pearly Beach and Danger Point middens dominated by this species. It is therefore entirely possible that fish and shucked shellfish were transported inland to large Khoekhoen encampments.

Nevertheless, in spite of the dating problem, the use of tidal fish traps was one of South Africa's earliest engineering works.

Damage, Destruction and Preservation

Natural processes quickly damage traps through wave energy if traps are not maintained (see images in Goodwin (1946); traps and areas changed. Moreover, if traps were in use earlier than the advent of herders the mid-Holocene high sea level around 6,000 to 5,000 years ago would have destroyed any that were not maintained as the coastline changed. Ongoing use and maintenance by farmers and local communities undoubtedly helped to preserve traps, many of which are now being destroyed through lack of maintenance. Elsewhere, the practice of displacing rocks harbouring worms prized by bait collectors damages the stone-walls and has led to the complete obliteration of the Kruismansbaai trap on Danger Point reported on by Mr W. J. Moolman.

Recreational Pools

Construction of tidal pools on the Cape Peninsula coast dates back to the 1890s when the first one was built by a private company in a rock gulley at Sea Point in 1895. More were built during ensuing years along the rocky parts of this coast as far as Camps Bay. During the first decades of the 20th century pools were built along the False Bay coast at St. James – Kalk Bay, and later on in the 1930s farther south at Glencairn, in the 1960s at Miller's Point and Buffels Bay in the Cape of Good Hope Nature Reserve. In the 1970s pools were built on the

Atlantic coast at Soetwater, and in the 1960s the inner part of the Kom at Kommetjie was enclosed by a wall that was demolished some years ago.

It appears that some pools may have been associated with pre-colonial fish traps. Goodwin (1946: 3) observed "……. a shelter above Kalk Bay (Cape Peninsula) shows abundant shell-fish associated with a few Wilton tools, but few vertebrate fish and no pottery. This is curious, as I remember a *vywer* a mile or so along the coast 35 years ago, [c. 1911] since converted into a swimming pool." He was most likely referring to one at St. James where in the 1890s an informal pool had been created.

The Cape Town Guide, 1897: 43.

At St. James there is no beach worth mentioning, a pool intended exclusively for ladies' use has been formed by clearing the rocks away so as to leave a circular space with a sand bottom, girdled round by protecting rocks. There are many other nooks and crannies available for a dip, but the rough rocky bed beneath the bathers' feet, makes the exercise fatiguing and disagreeable. The same remarks in a measure apply to Kalk Bay.

Early photographs from around this time show the regular outlines of heaped rock walls, but whether these amounted to *de novo* constructions, or simply the re-building and re-configuring of structures that had been started by indigenous people, is unknown. Certainly, Goodwin believed it to be a genuine *vywer*.

By degrees a formal pool was constructed. In 1911 W. P. Schreiner and 60 other residents petitioned the KB-MM to construct a proper pool and Charles McGhie was contracted to do this. Initially, he built a stone and cement north wall, the east and south walls remaining rubble constructions. Later, in 1913, the south wall was constructed and the north wall was raised by adding a sandstone coping to give a water depth of 5 ft. at the deep end, and an area of 13,000 sq ft. The Mayor's Minute concluded that it was "now one of the finest pools of the premier seaside resort."

However, the beach was being scoured of sand due, apparently, to current action channelled by the two walls and exiting through the rock barrier at the sea end. So this was converted into a proper concrete wall, and it was reinforced again in 1923. (Figs. 2.6 – 2.11.)

At Kalk Bay what appears to have been a natural gulley, that became known as Bishop's Pool (named after Bishop Robert Gray who bathed there during the 1860s – 70s when holidaying at Kalk Bay), was a popular informal pool that may conceivably also have been an old *visvywer*. Like St. James pool it was formalised in 1911 when Charles McGhie was contracted by the KB-MM. A long rectangular pool was created that one walked into over a sloping sand beach that ran down from the rail embankment – as at St. James. In 1913 a wall was built across this end of the pool to prevent sand from silting the pool. A diving board was considered at the deep end but never installed. (Figs. 2.12 – 2.15.)

At Buffels Bay the construction of a small-boat slipway obliterated a fish trap there, while at Soetwater the construction of the southern tidal pool had the same result. (Figs. 2.16 & 2.17.)

Conclusion

Kemp (2006) and (Anon 2014) summarize the current status of stone-walled fish traps:

The stone built structures in the intertidal zone, at Noorkappers point (Skulpiesbaai), some 2 km from the Stilbaai harbour, represent a legacy of the early inhabitants of the southern Cape coast, who built and used the enclosures as tidal fish traps (now a National Monument). For many thousands of years these people lived on this coast, but the traps are probably not older than 2 – 3000 years, as sea levels before then were different to the present. When the first white colonists arrived in the late 1700's and early 1800's, the indigenous Khoekhoen were still working the fish traps, and the new settlers quickly adopted their ingenious techniques. Later operation of the fish traps required a permit to be obtained from the local magistrate.

Until recently, Still Bay fishermen and farmers maintained the walls of the Noorkappers point tidal fish traps (23 in all) to preserve them against the destructive action of the waves. Each trap has its own folk name, such as Elmboog (Elbow) and Krom Knie (Crooked knee).
The declaration of this area as a Marine Protected Area in 2008, with the fish traps being included in the Restricted Zone, has brought the maintenance and use of this ancient technology to an end.
It is believed that it is of the utmost importance that a solution is found that will allow these fish traps at Noorkappers point to continue to be preserved as an example of the oldest working technology in Southern Africa.

Fig. 2.6: Possibly the earliest photo, c. 1899, showing the rubble walls of what could have been a *visvywer* at St. James. Note no bathing boxes. (W Cape Archives, AG 1788.)

Fig. 2.7: Perhaps 10 years later, c. 1905, and the rubble walls of the pool have been made more regular. Numerous bathing boxes line the beach. (Cape Town Guide, 1907.)

Fig. 2.8: A later photo showing a considerable increase in bathing boxes. (M. Deeks.)

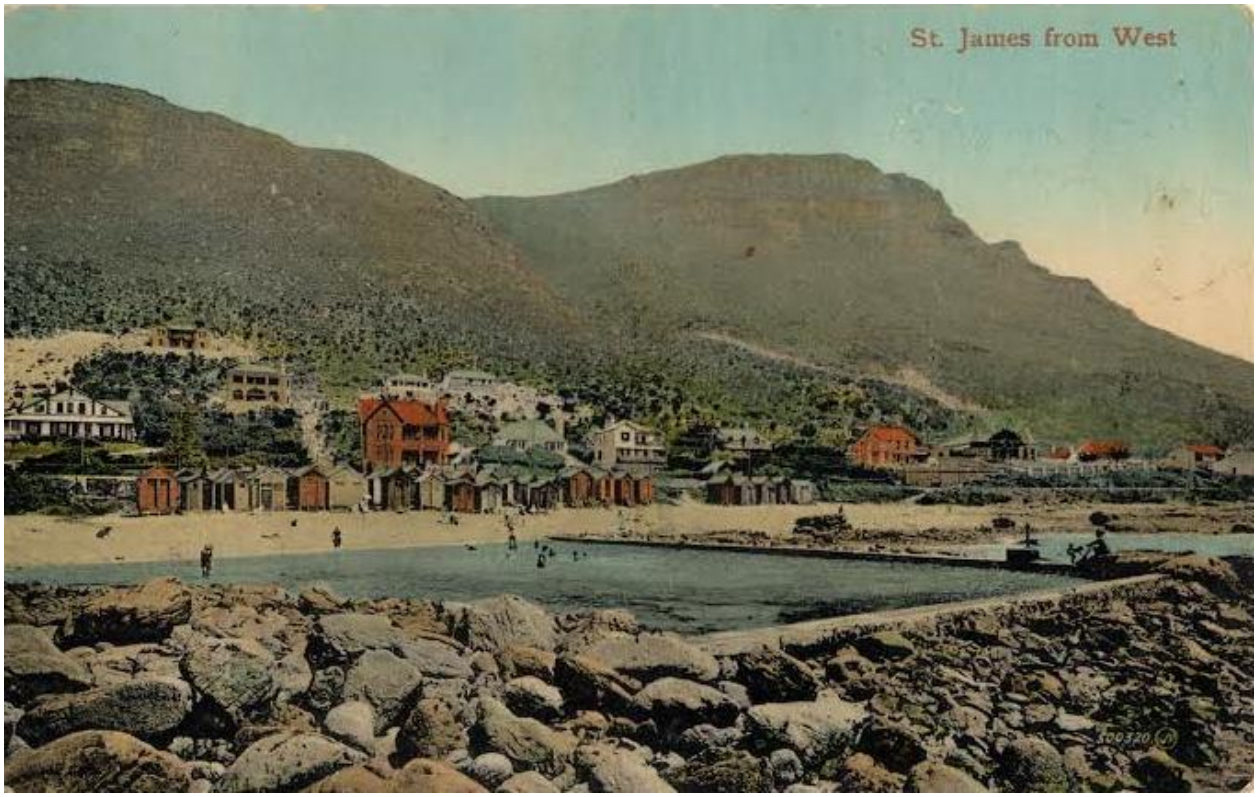

Fig. 2.9: The first phase of formally walling the pool c. 1913. Any signs of the stone-walled fish trap have been obliterated. (M. Walker.)

Fig. 2.10: St. James beach and pool in December 1949. (Nat. Lib. South Africa.)

Fig. 2.11: Air photo showing outlines of two small rock-excavated pools in the mid-foreground – possibly small *visvywers* constructed at the same time as the large one that became St. James pool. (The Argus.)

Fig. 2.12: The gulley in front of Kalk Bay station was probably a natural feature that may also have been used as *visvywer*, c. 1905. (Souvenir of United South Africa, c. 1910.)

Fig. 2.13: Bishop's Pool, c. 1905.

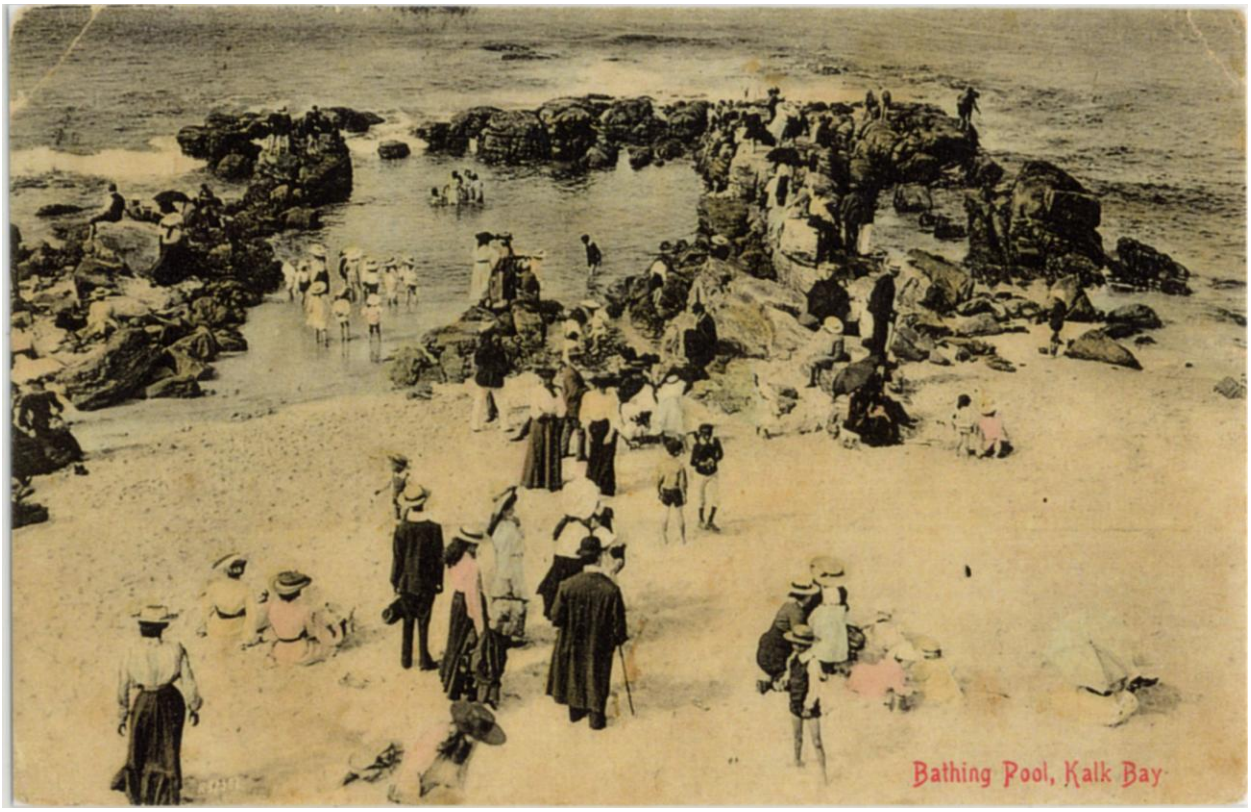

Fig. 2.14: Bishop's Pool viewed from the station platform, c. 1905. (M. Walker.)

Fig. 2.15: Bishop's Pool formalised in 1913; square pool to left was built in 1922. (M. Deeks.)

Fig. 2.16: Soetwater pool built on site of an old *visvywer*. Note the calming effect of the offshore break.

Fig. 2.17: Soetwater northern pool built into the foreshore zone.

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