

An aerial photograph of the Maroochy River Mouth in Australia. The river flows from the top right into the ocean, creating a large, shallow, light-colored sandbar. To the left of the river mouth is a long, sandy beach with waves breaking. Further left, the ocean extends to the horizon. In the background, a coastal town with various buildings and greenery is visible. The title 'Shifting Sands' is written in a large, white, cursive script across the middle of the image.

Shifting Sands

An historical perspective of a dynamic Maroochy River Mouth and
its impact on the Cottontree precinct and Maroochydore Beach



- My involvement with the issue of the river mouth began in the early 1990's
- The river mouth was moving south

Aerial 1992
(Source: courtesy of DMS)



- The northern Spit continues to grow south to the inside of Pincushion

Aerial 1994

(Source: courtesy of DMS)



- Note the erosion to the Pincushion Spit.

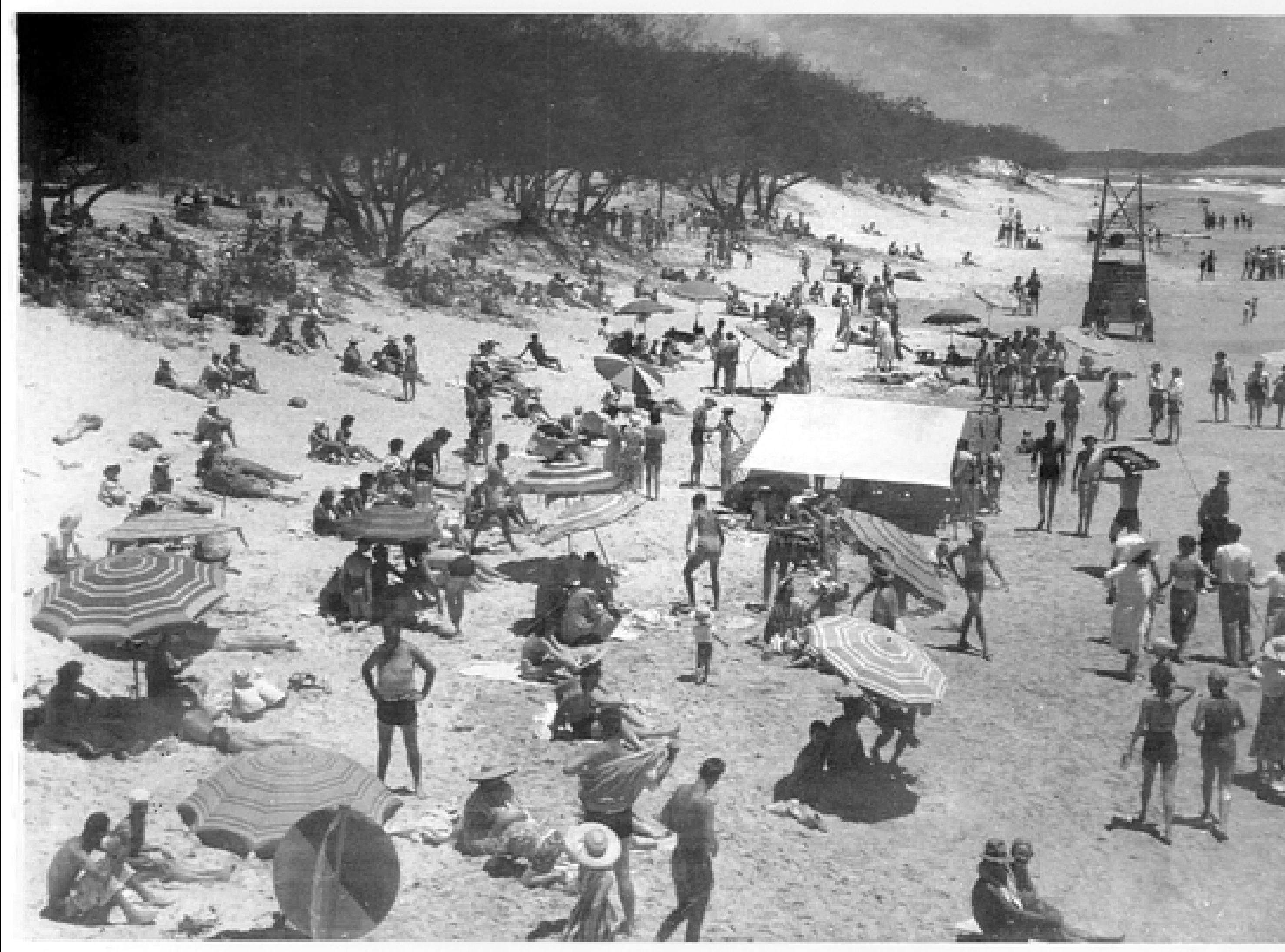
Aerial 1996

(Source: courtesy of DMS)



- My memory of the Maroochy River mouth as a kid in the late 1950's was that the Cotton Tree had not washed away.

Swimming platform at Cotton Tree basin in the 1950's (Source: courtesy of Pictures Sunshine Coast, Sunshine Coast Libraries (PSC))



- Again, Maroochydore beach had not washed away.
- So, I decided to do some historical research on the movement of the river mouth and its effect on The Cotton Tree and Maroochydore beach.

Maroochydore Beach in 1950's

(Source: courtesy of Pictures Sunshine Coast, Sunshine Coast Libraries (PSC))



I would like to dedicate my presentation today to Berenis “Bennie” Alcorn as she helped me to research a lot of what I will present today.

River mouth to South 2000’s

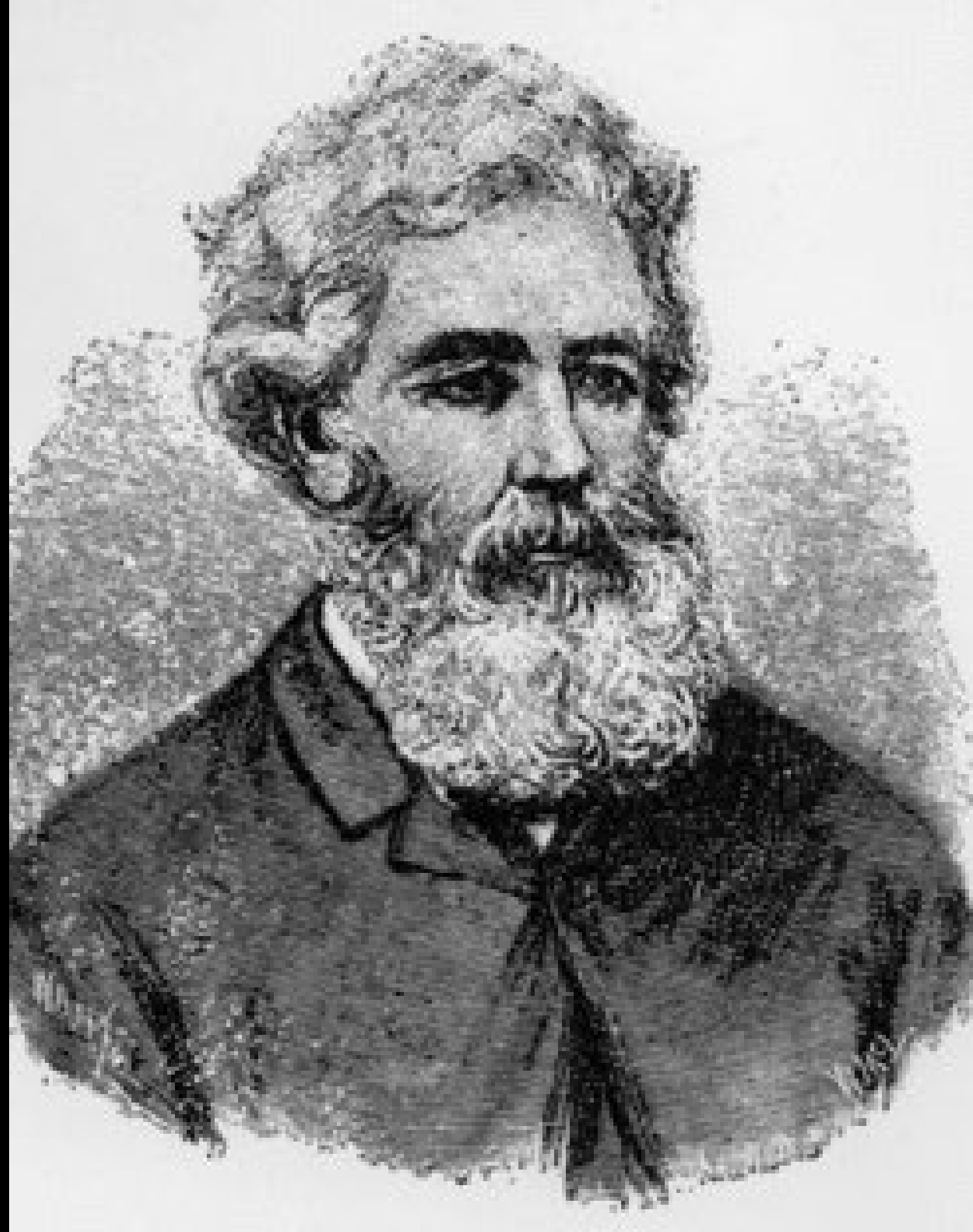
Today's presentation focuses on 4 issues:

1. River has had a restrictive entrance since European settlement
2. Timeline of the movement of river mouth about Pincushion Island
3. Position of river mouth and effect on the Cotton Tree precinct
4. Position of river mouth and its effect on Maroochydore Beach

1

RESTRICTED RIVER ENTRANCE FOR 175 YEARS OF EUROPEAN OBSERVATIONS

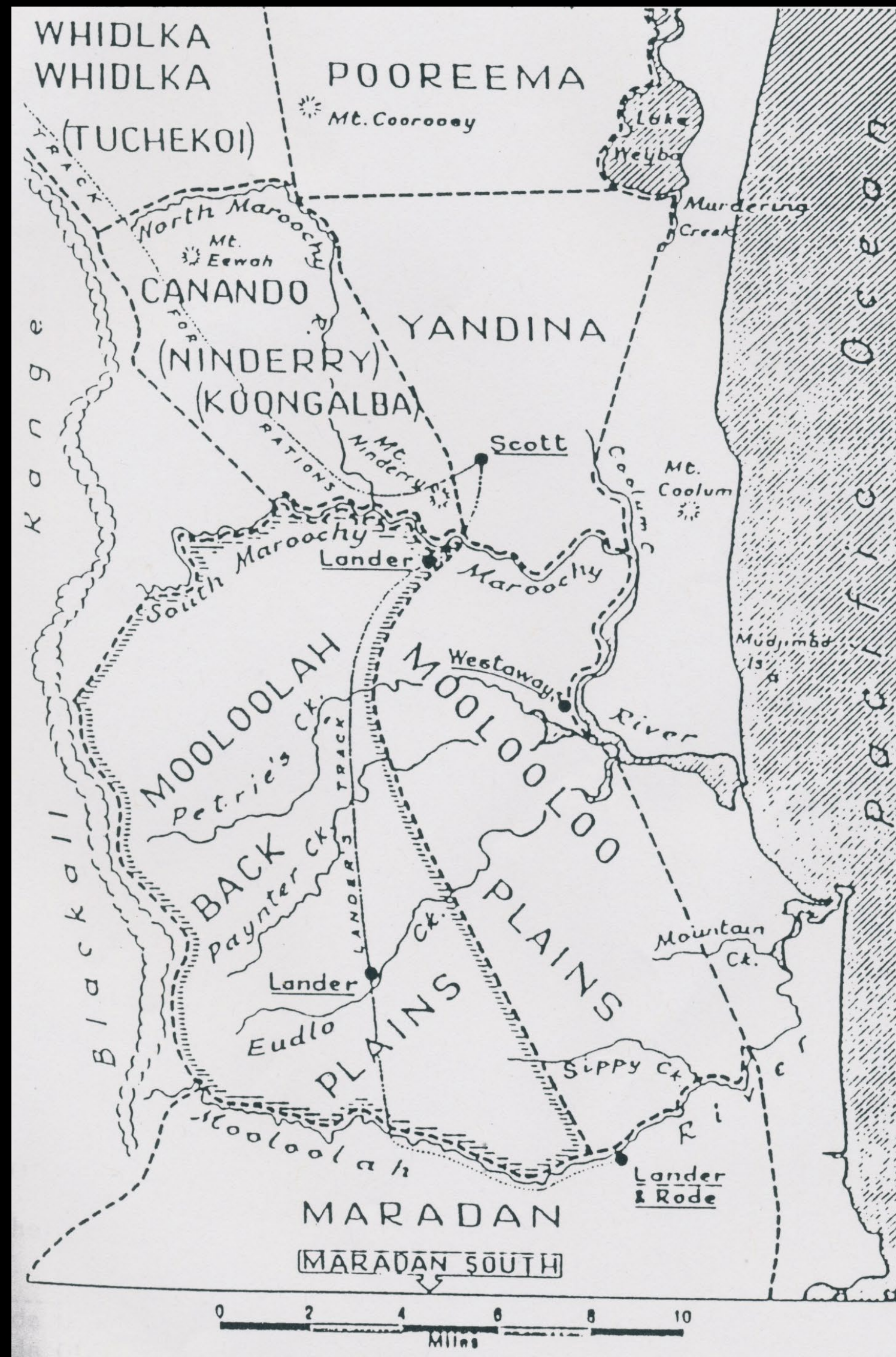
The early European history of the river clearly shows it had a restrictive entrance and this has been the case up until the present.



- In 1842 voyaged to Maroochy entrance in search of timber but unable to cross bar due to rough weather*2
- Reported “marouchidor” to be a “formidable bar of sand stretching across from head to head, on which a line of breakers gave no suspicion of a passage”*3

Photo of Andrew Petrie

(Source: courtesy of John Oxley Library (JOL))



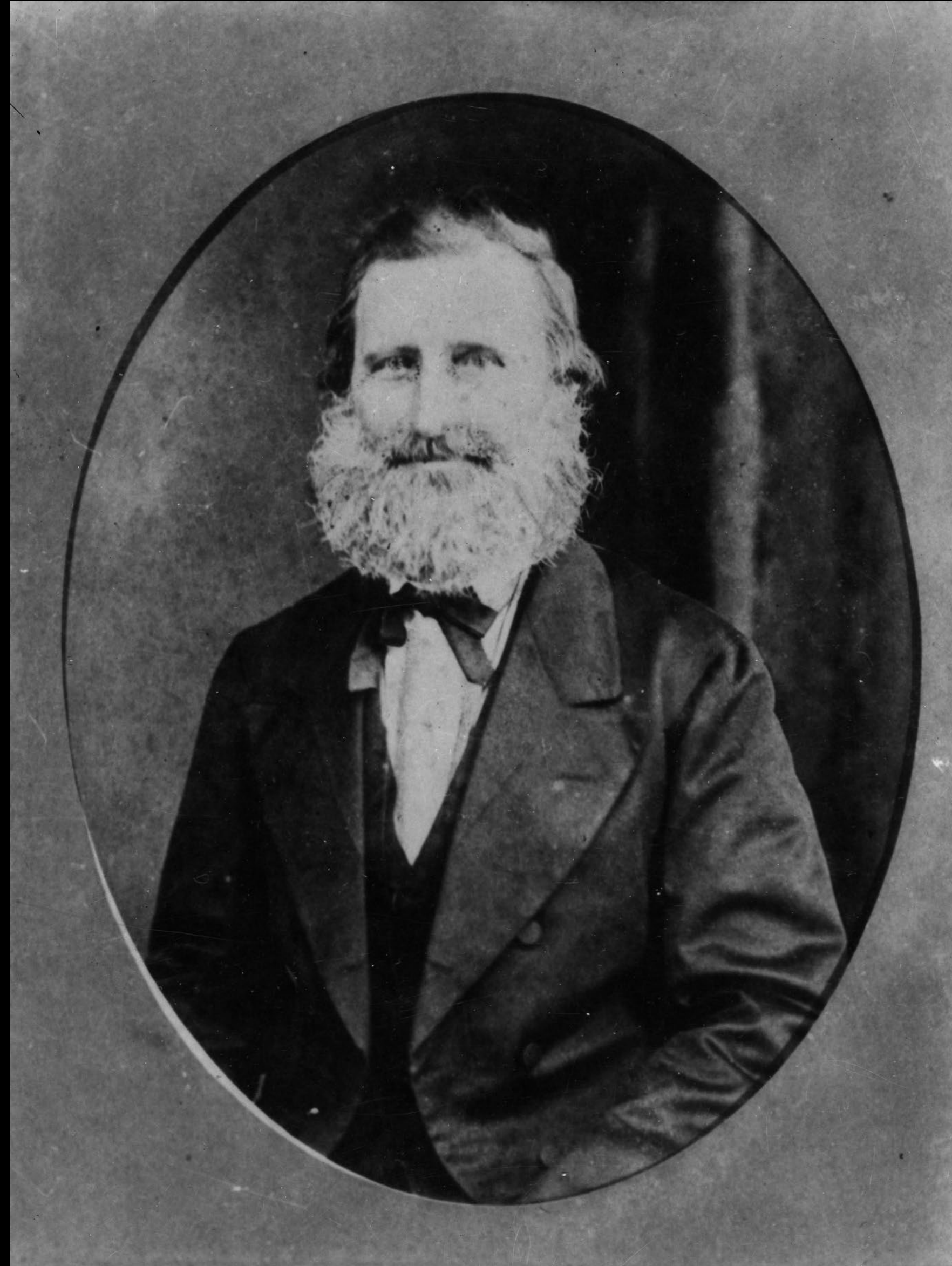
- Pastoralists had difficulty moving live cattle to Brisbane.
- “The risk of losing stock while crossing the bar were also high” *2
- This was one of the reasons they were not very successful
- Instead of live cattle their income was mainly made from tallow and hides.
- Brisbane merchant “Robert Syme Warry’s timbergetters”, including Dick Jones “floated timber down the river and out to sea during the mid 1850’s where passing steamers towed them to Brisbane as rafts many were lost” *2

Map of pastoral leases in the early 1860’s *4



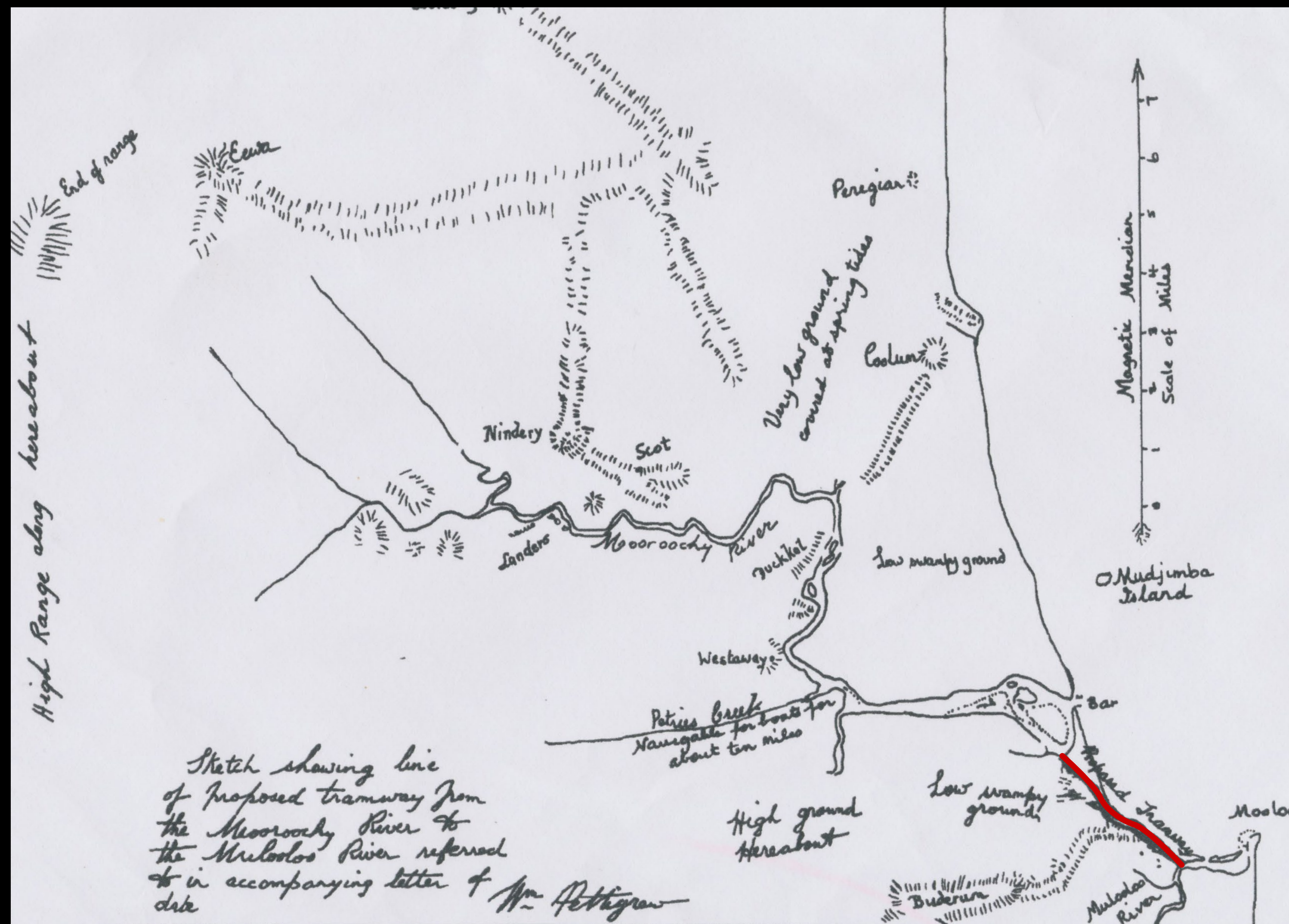
- Lt. George Poynter Heath, Brisbane Port Master, sent to report on likely ports north of Brisbane
- “encountered considerable difficulties in entering the Marruche Juar River.... Bar was too dangerous to cross should only be entered by boats intending to load timber upstream in windless conditions”
- Instead Heath found “a very snug, perfectly landlocked little harbour” inside the entrance to the nearby “Murrula river” *3
- It is still our harbour to this day

Photo of his house “Hanworth” in E Brisbane



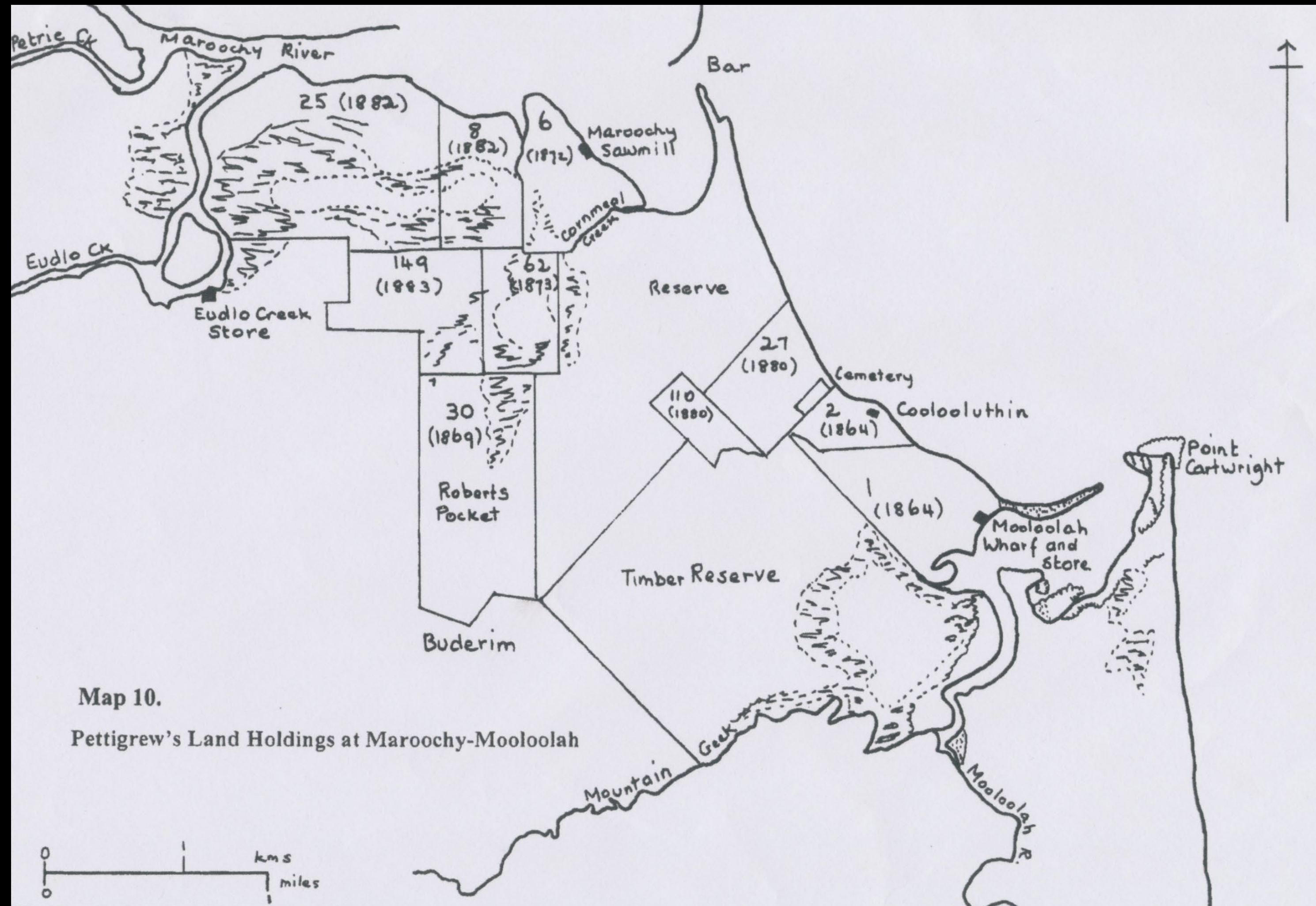
In 1862 William Pettigrew investigated the district's potential for a timber industry. It became clear to him the Petrie's and Heath's assessments were correct.*5

Photo of William Pettigrew



The conundrum Pettigrew faced was that the timber was in the Maroochy Catchment but The Mooloolah was a safer and more reliable harbour so “he established a base on the Mooloolo River and marked in red a tramline along the coast For transporting logs from the south bank of the Maroochy to the harbour at Mooloolo *6

Tracing of Pettigrew's Map of Mooloolah-Maroochy, 1862 *5



- Pettigrew ended up acquiring all the land between Maroochy and Mooloolah Heads

Map of Pettigrews holdings*5 by 1883



Tarshaw and Tadorna Rajah 1888

- Pettigrew had the Gneering adapted as a rear driven Paddle steamer in 1860, then designed and had built the Tadorna Rajah in 1866, as timber droghers, adapted to skim the shallow bars.
- He later designed and commissioned the Tarshaw in 1886 for the same purpose.*6
- finally closed Mooloolah base in 1888 and set up along Duport Ave.

Graveyard rivers

Water traffic took its toll

BEFORE the Coast was linked to road and rail heads in the hinterland, its major rivers — the Maroochy River in particular — were its "highways".

Almost inevitably there were accidents and the Maroochy River bar claimed a fair toll, although many of the vessels which came to grief were salvaged. Some of the more notable wrecks included:

The Agnes. Built at Bli Bli, the Agnes was one of the first steamers to operate between Brisbane and the coastal ports of Maroochydore and Mooloolah (present day Mooloolaba).

In April or May 1880, the vessel struck a rock, later named Agnes Rock, just inside the Maroochy bar.

She sank but was refloated and towed to Cotton Tree where she was cut in half, lengthened with a 24.4 m keel cut from an ironbark tree on Buderim Road, rebuilt and renamed the Wawoon.

Later she was sold and operated between Bundaberg and Gladstone.

By STEPHEN LAMBLE

The Culgoa. A side-wheel paddle steamer, the Culgoa was built in Port Adelaide in 1865 for the Darling River trade.

Bought by McGhie Luya and Co in 1872, she made her first voyage to Tewantin in February 1873 and provided a regular passenger and cargo service between the Noosa River and Brisbane.

In May 1891, the Culgoa sailed from Tewantin with a cargo of timber. As she approached



Vera 1 and Vera 2 packed with picnickers at Maroochydore around 1916

- Lists 6 major incidents of wrecks on the bar from 1880 Agnes, Gneering 1891, Cato 1903, BP 1908, Vera 1920 and the Favourite 1926

Graveyard rivers *7

KEY POINTS

- Despite this history of a shallow, dangerous bar there are newspaper records over the decades calling for dredging of the river mouth based on the premise it is silting up.
- Informed observers realise that the mouth is dynamic over time with sand moving up into the estuary during calm periods and flushed out with flood events.

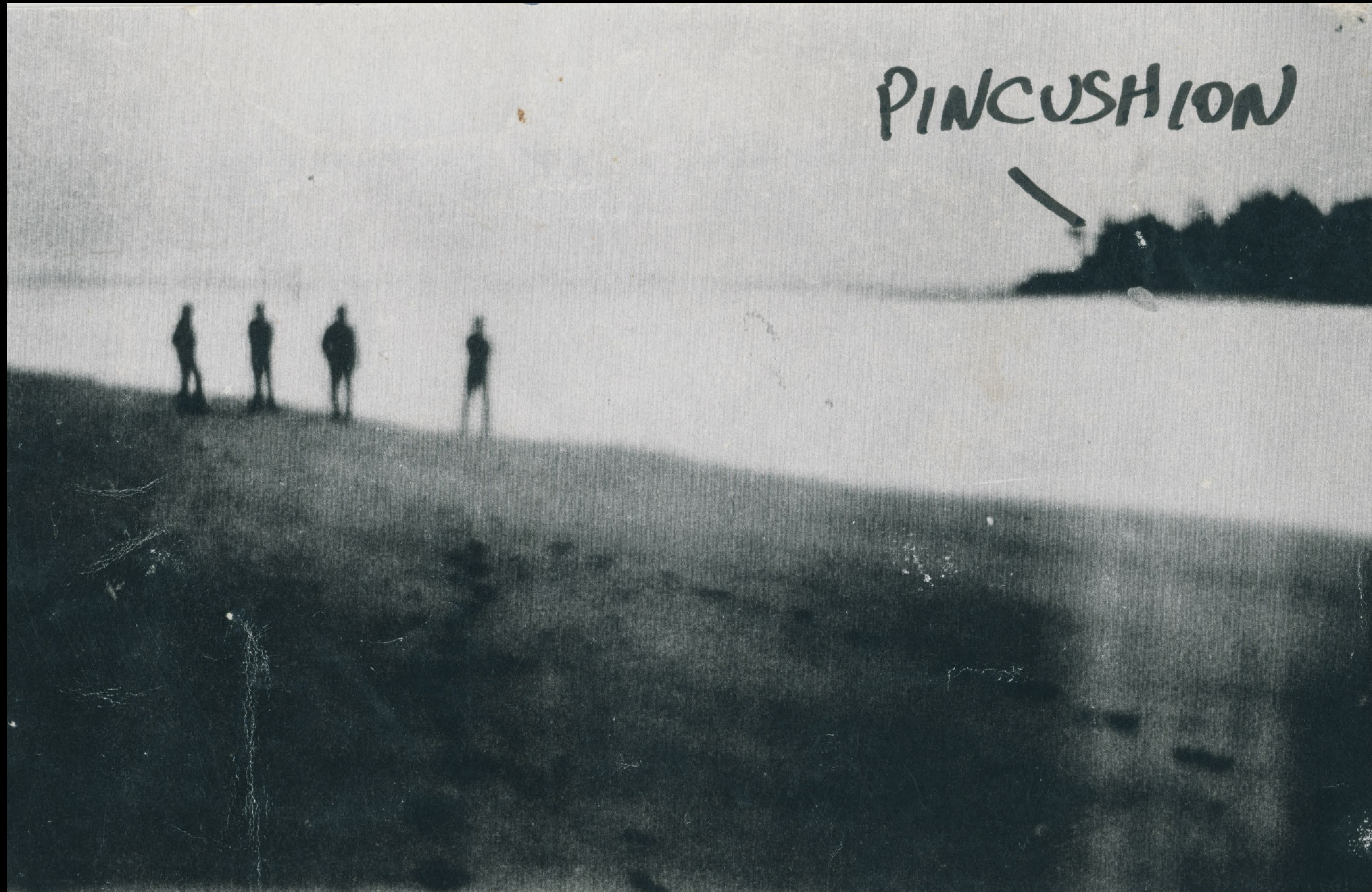
2

**TIMELINE: MOVEMENT OF THE RIVER
MOUTH ABOUT PINCUSHION ISLAND**

MID 1850's – MOUTH MOVED FROM SOUTH TO NORTH

George Heath's report on the new harbour
ordered by the Legislative Assembly 1861 stated:

“Since Mr. Warry's men have been working on the river, the bar has shifted from the south side to the north side. A short distance inside the river is an island, round which the river runs, forming 2 channels, of which I believe the one to the southward is the deeper” *8



River mouth to the North of Pincushion 1880 (Source: courtesy of Pettigrew)

1893 – MOUTH MOVED FROM NORTH TO SOUTH

“... played up with the Maroochy River for it washed away much property... .
Shipping men who knew the bar as well as their own backyards were
nonplussed when they found that the south head had become the
north head!” *9

Quote in The Chronicle 1908, referring to the flood of 1893



Boat at the mouth of the Maroochy 1906 (Source: courtesy of PSC)



1910'S mouth to the south (Source: courtesy of PSC)



1920's mouth to the south (Source: courtesy of PSC)



1931 – sometimes during this period the mouth was on both sides of Pincushion



1940's mouth to the south (Source: courtesy of Dept Mapping and Survey (DMS))



1950's mouth to the south



Pincushion Island

Matthew Watt

2000's – River mouth sometimes on both sides of Pincushion (Source: courtesy of Mathew Watt)

**1959 – MOUTH MOVED
FROM SOUTH TO NORTH**

Surfboat Caught in
Giant Whirlpool

Maroochy River Cuts New Mouth

The Maroochy River has cut a new mouth about 400 yards north of Pincushion Island, following a combination of a river fresh high tides and heavy surf.

The river first broke through late on Monday night.

Early on Tuesday morning the Maroochy river surfboat crew rowed to the new mouth, hoping to be the first to negotiate the bar. They found the surf extremely rough, and the boat became caught in a giant whirlpool which spun the boat like a top, at the same time sweeping it back into the river.

At low tide on Tuesday morning, the new mouth was about 200 feet wide, and was shallow enough for people to wade across. Tide levels are at present rising, reaching a

The advisory committee represents numerous Nambour and district organisations, including the Nambour Amateur Theatrical Society, Nambour Chamber of Commerce and Industry, Great North Coast Show Society, Rotary Club, R.S.S.A.I.L.A., Catholic Church, Church of England, Ministers' Fraternal, C.W.A., North Coast Friendly Societies, Business and Professional Women's Club, State High and Intermediate School Committee, Nambour State School Committee, Jaycees, Maroochy District Band, North Coast Caledonian and Burns Club, Red Cross Society, National Fitness Club, Boy Scouts, Lions Club and Apex Club.

COUNTER - CAMPAIGN

It was stated at the meeting that after only a day and a half of counter-campaigning by supporters of the hall proposal, al-

peak of seven feet seven inches next Monday.

Great interest has been caused by the new development, which may result in a build-up of sand at the Cotton Tree camping reserve and the main surfing beach.

Another possibility is that the Picnic Point area may suffer some erosion during heavy weather, as it is directly opposite the new mouth.

On Wednesday morning our Maroochy river correspondent reported that the new mouth, although still shallow, was about 100 yards wide.

At high tide, waves were also sweeping over the sand spit near the Cotton Tree camping reserve into the old south channel.

CHADWICKS

**1999 – MOUTH MOVES
BACK TO THE SOUTH**



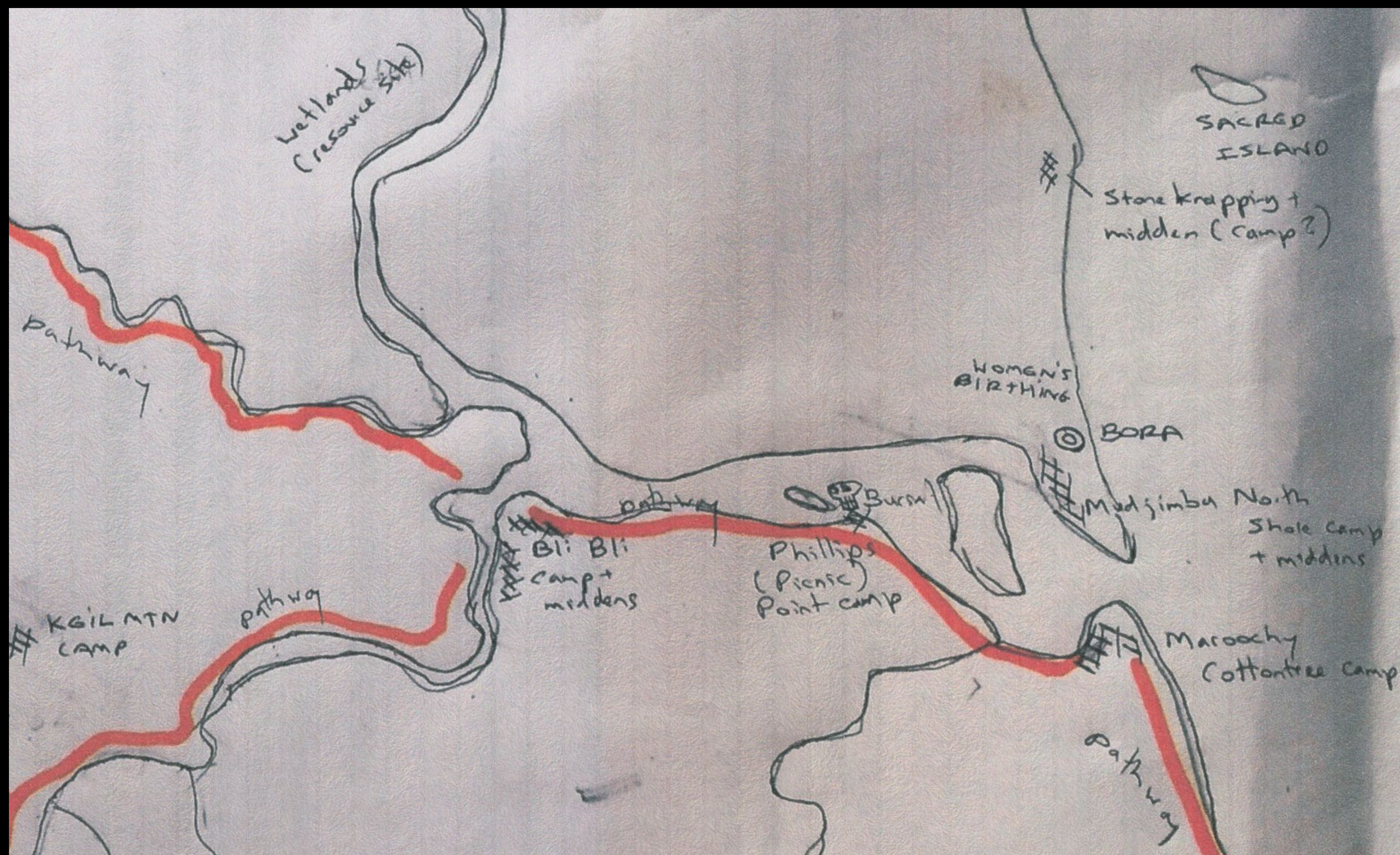
For more than a year the Coast has been watching to see if Pincushion would become an island during the bouts of bad weather. Now, after the latest pounding, a channel runs between it and Cotton Tree. But as **MARCO MONTEVERDE** reports, it is nothing new for the Maroochy River to change its course.

Newspaper clipping 1999 *11

3

**COTTONTREE PRECINCT AND
POSITION OF RIVER MOUTH**

Camping Ground



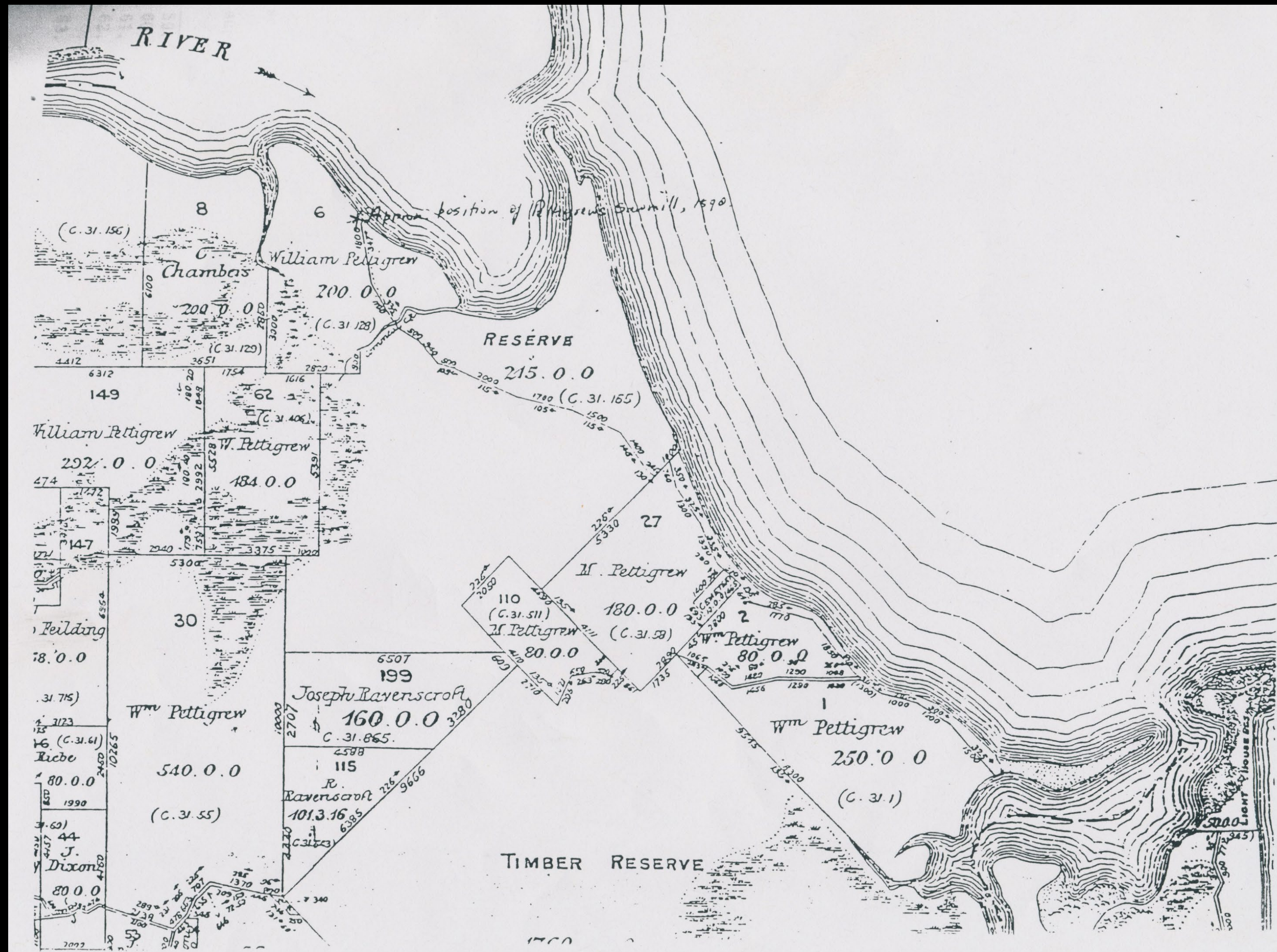
Before European settlement the Toombra clan of aborigines had a camp site near where the swimming pool is.

Map of aboriginal camp sites*12



- Escaped convicts John Graham (1827) and Bracewell (1844) stated Aborigines using Cotton Tree as a camp* 12

Aborigines fishing in the Maroochy



- Originally the area was designated a Water and wharf reserve in 1873.
- Europeans from the district used it for camping in an informal way. *14

Water and Wharf Reserve map *13
(Source: courtesy of DMS)



Salvo Marquee 1903

- Salvation Army set up a formal camp “Maroochy Heads encampment” between Christmas and new year. The first reported camp was in 1896.
- It was set up to cater for local settlers and the South Sea Islander families. It broadened to cater for all religious denominations with the proviso that there was no gambling, no drinking and no dancing! *14



Private camping also occurred - 1906



Camp in 1910's mouth to the south (Source: courtesy of Bobby Collins)

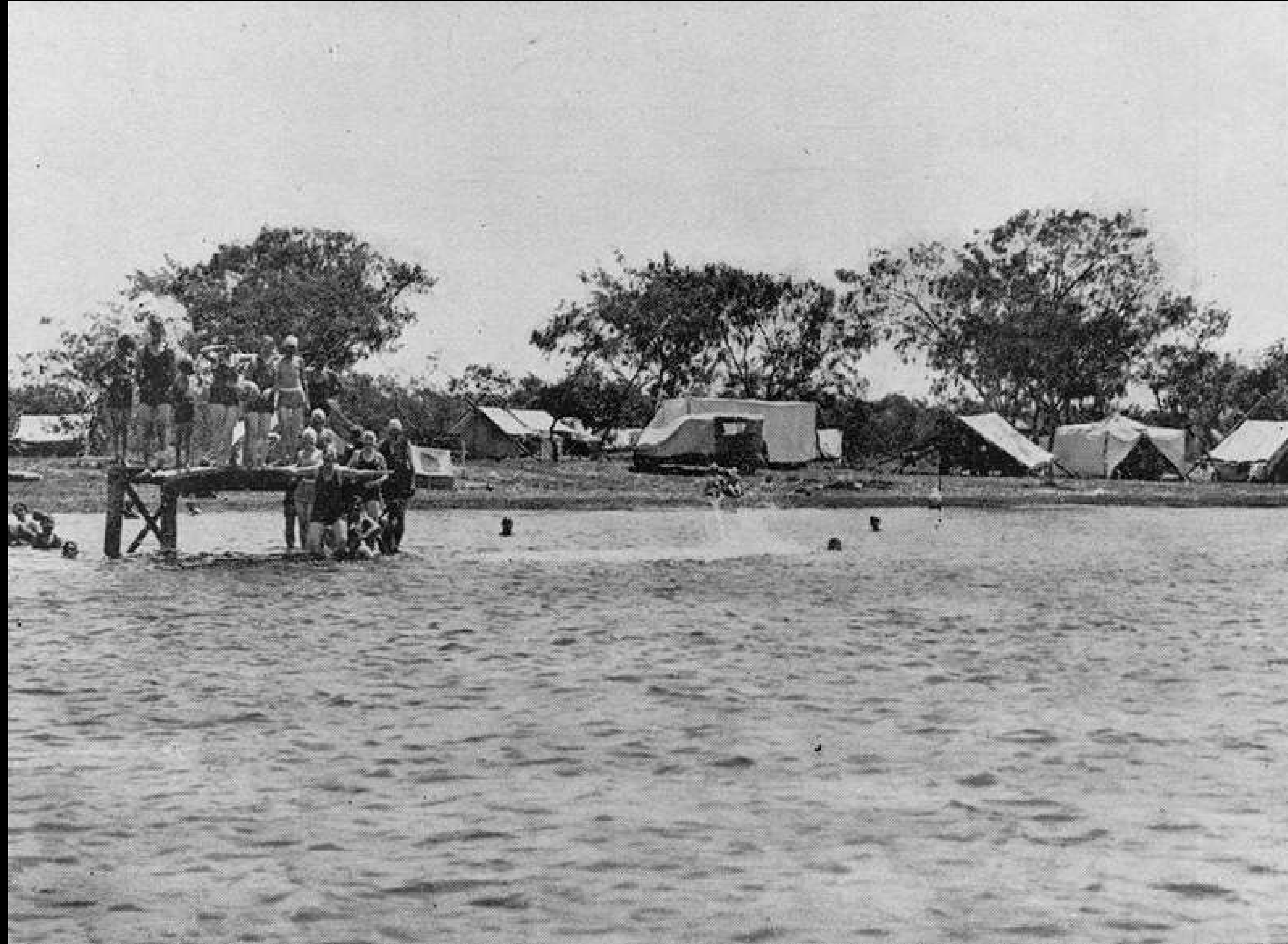
- By 1913 Collin's Kiosk was operating in competition with the Salvos.
- A reduced area of 17 acres (7.8 Ha.) of the reserve was set aside officially for camping purposes in 1916. It was considered tidal and so was not part of the government subdivision sell off in 1915 *14



1918 camp at Cotton Tree (Source: courtesy of Bobby Collins)



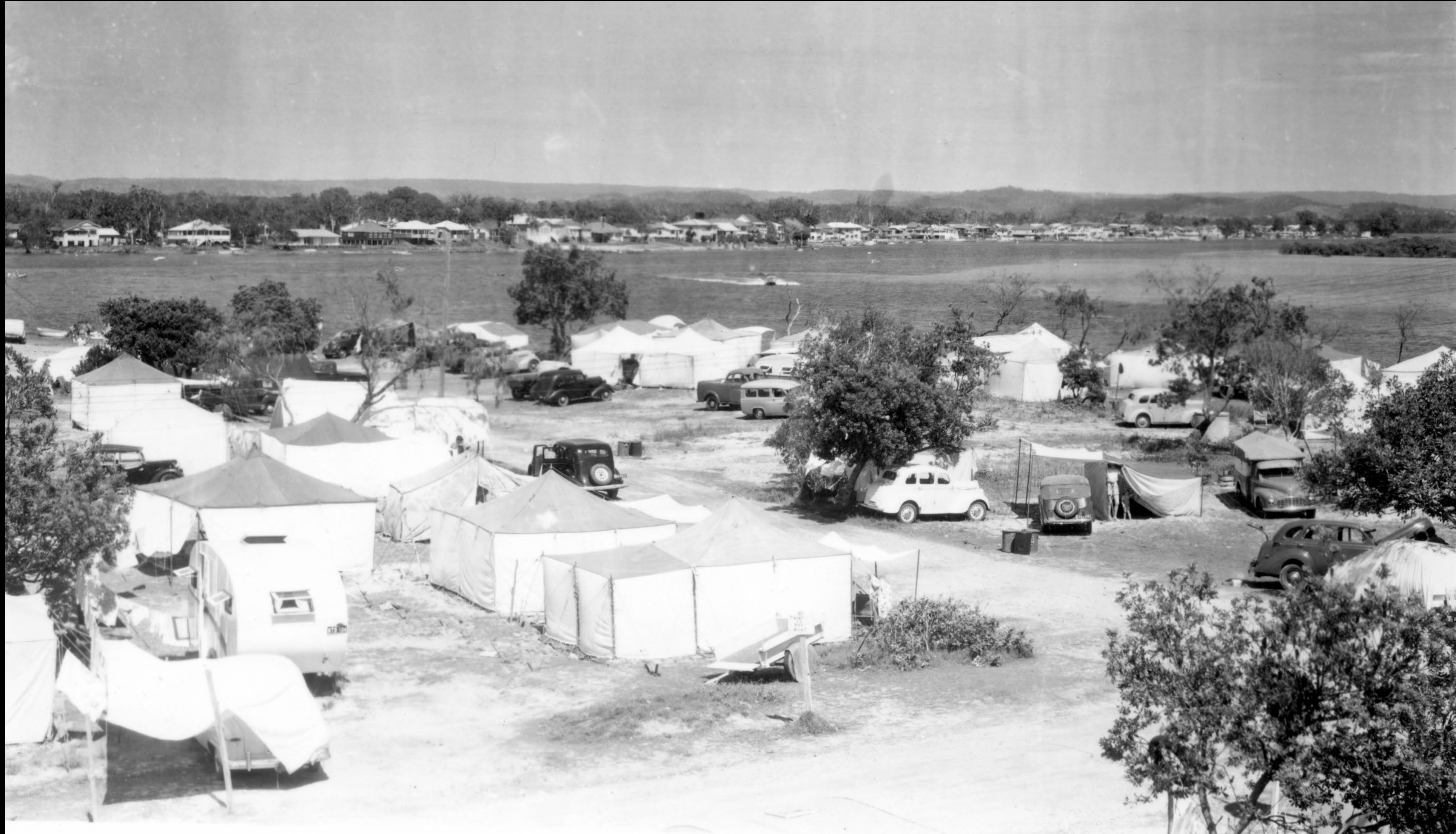
Cotton Tree 1920's mouth to the south (Source: courtesy of PSC)



Cotton Tree camp and swimming basin 1932 - mouth to the south



Camp in the 1949 - mouth to the south



Camp in ca 1955 - mouth to the south

Maroochydoore 1958 Courier Mail photo



- Between 1948 and 1957 there were 11 major flood/cyclone events in the Maroochy district; 3x 1948, 1949, 2X 1950, 2x1951, 2x1954, 1955 and 1956/57 which led to erosion of the Camping ground and beach.*15

Aerial of the camping ground showing river mouth at its southernmost - 1958

(Source: courtesy of Glen (Googs) Eglington)

TO STOP EROSION AT MAROOCHYDORE

Maroochy Shire Council has plans to prevent further erosion at the Cotton Tree and River Esplanade, Maroochydores, and will take up the work initiated by the Maroochydores Beautification Committee.

Early this year a rock wall will be constructed from the swimming pool (Cotton Tree) to Salt Water Creek (near White House), and from this creek to Cornmeal Creek, the bridge girders now lying at all angles will be placed in position. This was stated by the shire engineer (Mr. Les Fraser), on Tuesday. In the meantime, dangerous spikes protruding 12 inches above the girders, some of which are submerged at high water and present a serious hazard to

young children, will be flattened.

The reclaiming of several acres of camping reserve washed out by the last cyclone is steadily taking shape. A pumping plant operating near the long sandspit is pumping sand at the rate of 150 to 200 cubic yards per day. This is being piled up along the foreshores and will be spread by a bulldozer adjacent to the rocks placed along the edge of the camping reserve.

Changes At Mouth Of Maroochy

A Maroochydores man believes that the Maroochy River may open a new mouth, resulting in the saving from erosion of the Cotton Tree Reserve.

He is Mr. P. Allen, who writes:-

Last week I paid another visit to the north shore and what a surprise awaited me. When Bob Attenborough and I went over there last February we measured the distance from the sand cliffs on the river banks to high water mark on the beach. We found it then to be two chains (132 feet). On stretching out the tape I put a peg in the ground before moving forward. That peg was abreast of two shrubs about 10 or 12 feet high, one chain from the sand cliffs. Last week I found those two shrubs hanging down the cliffs and used them to pull myself to the top of the river bank. I again measured the distance from the sand cliffs across to the high water mark and found that the river waters had "eaten away" over one chain of the distance named.

I had my mask and snorkel with me and went into the water which was then running very strongly on an ebb tide. I could not see more than two or three feet under water owing to the terrific amount of sand being swirled away from the banks and carried down to the point jutting west from Pincushion.

Years ago Pincushion was a mere rock standing up almost out of water. To-day there is a sand spit running west for a distance of about 150 yards while the channel between that spit and the sand bank jutting out from the Cotton Tree Reserve is now only about three chains wide.

There is no doubt in my mind that had we enjoyed heavy rains during 1957 the river waters would have opened a new mouth to the river at the point where Bob and I made our measurements.

Discussing this with the "old hands" here, I find there is a consensus of opinion that if the river does open a new mouth near the Black Bank, it will automatically mean the saving of the Cotton Tree Reserve, as the southern branch of the river will then deepen the channel it is now following and which flows towards the spot referred to above.

When the rains do come again it will be interesting to watch the rate of erosion in the north channel bank.

It required remedial work to sustain the camping ground and esplanade, including sand pumping and dumping of rocks.

Nambour Chronicle article 3/1/58
Erosion at Maroochydores.*16



- Despite, or because of, all these flood events, in Jan 1959 mouth cuts through neck of northern spit near twin waters.

1961 Aerial
(Source: courtesy of DMS)



- Shows the camping ground being extended out to the east of the alignment of Alexandra parade.
- This is essentially the area being protected by the geotextile groynes we have had in place since 2003.

1973 aerial of camping ground



ca 1980's aerial looking south

- 1987 Council makes application to extend camping ground out onto the Pincushion Spit.*17
- The secretary of the LAC responds. In part it reads:
- “...Council be given control of the area by way of a permit to occupy with conditions” – These included;
 - a) No structural improvements of a permanent nature are to be located in the permit area
 - b) Council is prohibited from protecting the area from erosion.*17
- This was done because the BPA pointed out the area was entirely within a designated erosion prone area. The prediction was the area would be eroded away.



Council forms 2 camp grounds:

- Pincushion Camping Ground and Cotton Tree Camping Ground.
- The irony was, within 5 years, the Pincushion began to erode and the Council “screamed blue murder” demanding they be allowed to protect it and a lot of the public followed their lead!

1992 aerial showing camp ground extended out onto the Pincushion. (Source: courtesy of DMS)

KEY POINTS

- The Cotton Tree precinct, consisting of the camping ground and town area, developed at the very time the mouth was to the south of Pincushion just as it is today.
- It has remained intact for the last 100 + years

3

COTTONTREE PRECINCT AND POSITION OF RIVER MOUTH

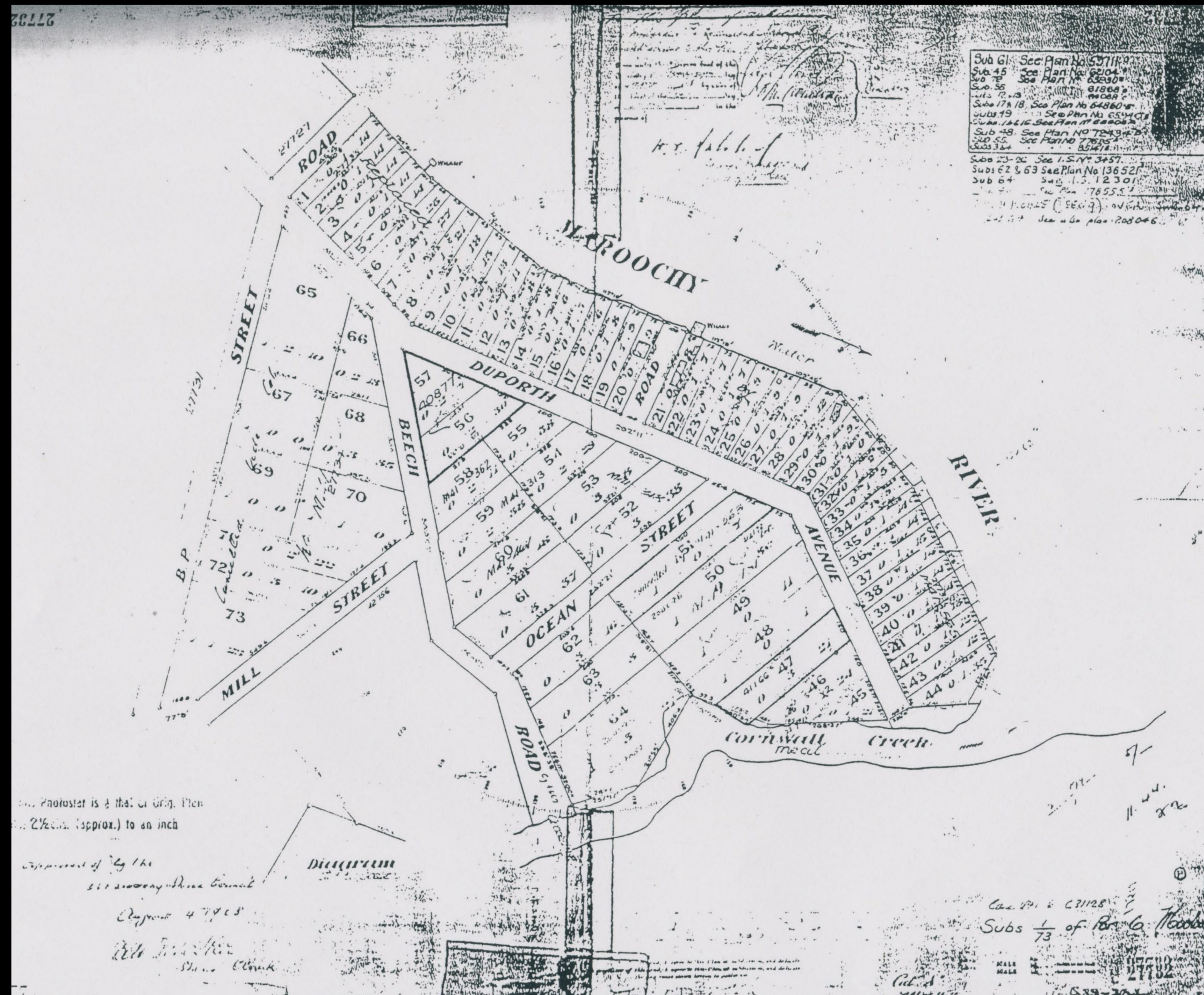
Cotton Tree Town and Esplanade Park



State Library of Queensland
John Oxley Library

Tommy acquired all the
land holdings that previously
had been owned by William
Pettigrew in 1903

Tommy O'Connor in boat 1908
(Source: courtesy of PSC)



- Thomas O'Connor does first subdivision along Duport Avenue, called the Private town.
- While State Government backs off doing subdivision of water and wharf Reserve due to public opposition. *14

map of subdivision 1908 *13
 (Source: courtesy of DMS)



- In 1915 New TJ Ryan Government ignores public rally of 500 people with objectors criticising the “bartering of peoples heritage for money” and subdivides Water and wharf reserve and creates Cotton Tree Camping ground.
- The camping ground was seen as subject to flooding and so was left as camp ground.*14

map of Water and Wharf reserve subdivision 1915 (Source: courtesy of DMS)



- Becomes a tale of two towns, the public town at the Cotton Tree and the private town along Duporth Avenue separated by Cornmeal Creek.
- The bridge across Cornmeal Creek was built in 1924 connecting the 2 towns.*2

Maroochydoore early 1920's



- A rock wall was built in the late 1950's. *16

Esplanade in 1935
(Source: courtesy of PSC)



- Shows swimming pool constructed in early 1980's — more reclamation.

Aerial photos 1982
(Source: courtesy of DMS)



Aerial photo of 2 river geotextile sausage bags 1994
(Source: courtesy of DMS)

- Significant erosion of the southern bank of the Maroochy also occurred while the Maroochy was to the north of the Maroochy.
- In 1986, a rock revetment wall was built along the Cotton Tree Esplanade park.
- And dredging carried out to try and move the fast-flowing current away from the southern river bank.*18
- Eventually in 1994 the 2 river sausage groynes were built to push the fast-flowing current away from the southern bank adjacent to the camp ground. These proved a great success.*19

KEY POINTS

- Erosion of the esplanade and camping ground occurred when the river mouth was to the south in the 1950's and when the river mouth was to the north in the 1980's and 1990's. It does not matter which side of Pincushion the mouth is.
- The community of the first half of the 20th century coexisted with a mouth to the south.
- There is no reason why the community of the first half of the 21st century cannot coexist with a mouth to the south.



Aerial photo of river mouth (Source: courtesy Don't Rock Maroochy Group)

4

**MAROOCHYDORE BEACH AND
POSITION OF RIVER MOUTH**



- Mouth to the south.
- Clearly shows a wide sandy beach. The surf club was established in 1916 *20 in response to the growth in the popularity of beach swimming.

surf carnival 1916

(Source: courtesy Bobby Collins)



- Mouth to the south.
- Plenty of sand – Maroochydore beach becomes first airport in Central sunshine coast until the building of aerodrome plains in the late 1920's.

First plane lands on Maroochydore beach 1922



- Aerodrome plains constructed in 1929, now called Aerodrome Road.

Aerial of Aerodrome plains 1929
(Source: courtesy of PSC)



- Note the wide sandy beach with mouth to the south.

Maroochydore beach in the 1935 looking south to Pt. Cartwright



- Again, a wide sandy beach with the Mouth to the south.

Maroochydore beach 1949



- Mouth to the south.
- During the 1950's the series of high energy weather events led to erosion events along the Alex/Maroochy stretch of beach.

Beach before cyclone 1950
(Source: courtesy of PSC)



- Sand is stripped off and exposing coffee rock and forms banks offshore.

Beach after cyclone 1950
(Source: courtesy of PSC)



- In calm weather the sand makes its way back onto beach.
- A recovering Maroochydore beach in 1950's after cyclone mouth to the south.

A recovering Maroochydore beach 1950's



- Note the extensive beach berm in front of the Primary dune — a sure sign of a healthy beach and all while the mouth is to the south!

A fully recovered Maroochydore beach after cyclone



- Mouth to the north.
- Shows a wide sandy beach. People forget that this was not always the case when the mouth was to the north.

Aerial photo of 1982 looking south



- Here we see a breakthrough of Pincushion Sandspit south of the Pincushion when the mouth is to the North of Pincushion.

Effect of cyclone Glenda 1967 from Pincushion looking south



- Clearly shows another highly erosive event with river mouth to north. Note the old skate bowl and sand stripped off beach.

Slide of beach adjacent to skate park
at Alexandra headlands 1990

KEY POINTS

- It does not matter which side of Pincushion The river mouth is, when there is a high-energy weather event there is significant erosion of the Alex/ Maroochydore beach.
- Anecdotal evidence suggests the Alex/Maroochy beach does not have the capacity to recover as fast as it used to in times past as illustrated by the photos of the 1950's when the mouth was to the south.
- I contend that history shows that we should not be blaming the Maroochy river for this slower recovery and that we should be looking to the south for answers given that this is the direction that the sand comes from.

IN CONCLUSION...



- The Awaroa inlet is a world class destination with international travellers flocking there from all over the world. It can only be reached by trekking or boat.

Photo of Awaroa inlet Abel Tasman National Park, NZ



Photo of river mouth 2010's

- Compare the Awaroa estuary with the Maroochy River Estuary.
- With its sandy connectivity around to Maroochy beach, the Maroochy is a world class recreational facility, by any standard, right on the doorstep of our city.
- It is has been attracting people for recreation since the 1870's.
- In my opinion we should **retain rather than train.**



- I hope that this presentation has demonstrated some of the false premises made about the river mouth to the south.
- These echoes from our past demonstrate how important it is for people, especially the decision makers, to have some knowledge of the history of the river mouth to help them make informed and reasoned decisions.

Aerial of Kite Surfers

BIBLIOGRAPHY

1. Sunshine Coast Daily headlines through the 1990's
2. Berenis Alcorn "Maroochy Towns. A study of factors contributing to the formation and growth of Towns in a Queensland District" Thesis on Maroochy towns submitted to Department of History, University of Qld.
3. Helen Gregory (1991) "Making Maroochy _ a History of the Land the People and the Shire" Boolarong Publications
4. E. G. Heap " In The Wake of the Raftsmen"
5. William Pettigrew's diary (11/6/1862)
6. Elaine Rosemary Brown (13/2/2005) Thesis title "William Pettigrew, 1825- 1906: Sawmiller, Surveyor, Shipowner and citizen: An Immigrant's life in colonial Queensland."
7. Sunday Mail Newspaper clipping (12/7/1972) titled "Graveyard Rivers"
8. George Heath's report to the State Legislative Assembly on a new harbour (1861)
9. Nambour Chronicle newspaper clipping (1908) commenting on the effect the 1893 floods had on the Maroochy River mouth.
10. Nambour Chronicle Newspaper clipping (January, 1959) reporting river mouth moves to the north.
11. Sunshine Coast Daily newspaper clipping (June, 1999) reporting river mouth moves to the south of Pincushion.
12. Dr. Ray Kerkhove (March 2016) "Aboriginal Cultural Sites, Lower Maroochy & Mooloolah Rivers: Some Research Findings"
13. Department of Mapping and Surveys: Cadastral map of Land between the Maroochy and Mooloolah Estuaries.
14. Queensland Heritage Register; "Caravan Parks in Queensland."
15. Di Warner and Amanda Wilson "Cyclone and Flood Summary S.E. QLD., 1800"s-2006"
16. Nambour Chronicle newspaper clipping commenting on erosion at Maroochydoore (3/1/1958)
17. Letter from the Secretary of the LAC, dated 1987, sent to Council giving them a licence to occupy the Pincushion Spit with conditions.
18. Nambour Chronicle newspaper clipping ,1986 reporting dredging by Council of the Southern channel of the Maroochy Estuary.
19. Thackoor Mootoo & Paul Coughlan, Coastal Management Branch Queensland Department of Environment and Heritage. "The mitigation of Bank Erosion within The Maroochy River Estuary, Sunshine Coast, QLD.
20. MAROOCHYDORE S.L.S.C. Home of The Black Swan 100 years 1916- 2016 Volume 1 1916-1960. Compiled by Ralph Devlin et al

**DON'T ROCK
THE MAROOCHY**