DARK WATER · TEACHER PACK

Episode 1

The Calm Pool

Trigg, July 1947. A nun is swept out of a reef pool and the man who goes in after her drowns too. The episode explains rip currents and what to do if one catches you.

FOR
Marine and Maritime Studies ATAR Years 11 and 12

RUNNING TIME
13 min 27 sec

INSIDE
Teacher notes, listening guide, a rip current task, archive images, sources, answers

A PODCAST FROM scitech

Made for listeners 16 and over.

About this episode

On Saturday 19 July 1947 Sister Mary Chrysostom Kissane and Frederick Floyd drowned in the sea at Trigg, near the Blue Hole. The episode uses the 1947 newspaper reports to explain what a rip current is and why the calm water behind a reef can be the most dangerous water on the beach.

It also visits Mettams Pool, which a returned soldier carved out of the same limestone. It suits the water safety content in Unit 1, and the 1947 reports on Trove give students practice reading sources.

> **BEFORE YOU PLAY IT**
>
> Two people drown in this episode and a twelve-year-old boy sees his father drown. Nothing is described in detail. Preview it, and tell students what happens before you play it. Near the end it gives Lifeline's number, 13 11 14.

WHERE IT FITS

COURSE AND UNIT	SYLLABUS CONTENT	IN THE EPISODE
MMS ATAR Year 11, Unit 1	Trip planning. Components of weather, including seas and swell	4:45 to 6:55, how swell fills the reef pool and drives the rip
MMS ATAR Year 11, Unit 1	Rules and regulations. Survival in water	6:55 to 8:34, the reasoning behind float, signal and swim sideways
MMS ATAR Year 11, Unit 1	Trip planning. Marine forecasts	Task on page 5 uses a Bureau of Meteorology local waters forecast

References are to the SCSA Marine and Maritime Studies ATAR Year 11 syllabus for teaching from 2026. Check against the version your school is using.

Episode map

Times are from the start of the file. The show sting runs for the first ten seconds.

TIME	SECTION	WHAT HAPPENS
0:10	The pool	The nuns choose a reef pool near the Blue Hole because it looks safe.
1:07	Trigg and the rock	Aeolianite, the Blue Hole, earlier drownings and the Colreavy brothers.
2:49	19 July 1947	Sister Chrysostom is carried over the reef and Frederick Floyd goes in after her. What each newspaper reported.
4:45	Why undertow is the wrong word	How waves fill the pool, why the water level rises and how it drains through the gap as a rip.
6:55	Swim sideways	Why people swim straight at the beach and the reasoning behind float, signal and swim sideways.
8:34	What isn't known	Where the accounts disagree, and what the record does say about Floyd, Sister Chrysostom and the inquest.
9:46	Mettams Pool	Frank Mettam carves a swimming pool out of the reef from the 1930s to the 1960s.
11:38	What changed	The memorial, the surf club formed in 1953 and recent lifesaving figures.

START HERE

Show a photo of a calm reef pool next to a beach with breaking waves and ask which one students would swim in. Most pick the pool. Come back to it at 4:45.

TAKE IT FURTHER

Students find two Trove reports of the same 1947 drowning and compare them. Where do they agree and where do they differ? Which details would a historian trust? The episode does something similar with the two papers' use of "mountainous" at 8:36.

Listening guide

The time next to each question tells you roughly where to find it.

1 0:10 The nuns chose the reef pool because it looked safe. Describe the sea and the tide that morning. When did people say the pool wasn't safe?

2 1:07 What is aeolianite, and how did it form?

3 1:07 Give two earlier incidents the episode mentions at Trigg or the Blue Hole.

4 2:49 The Sunday Times blamed "a suddenly strengthening undertow". What did the Mirror say happened?

5 4:45 Explain how water gets into the reef pool and how it gets out again. Use the words reef, pool and gap.

6 4:45 When is the pool most dangerous, and why can it still look calm?

7 4:45 Using the 2013 figures in the episode, compare deaths from rips with deaths from bushfires, floods, cyclones and sharks.

8 6:55 Write down the four steps lifesavers teach, and the reason the episode gives for each one.

9 8:34 The newspapers that weekend and the inquest seven weeks later disagree about how far Floyd got. Find both. Which would a historian trust, and why?

10 11:38 What changed at Trigg because of the deaths in 1947?

Read the rip

The reef pool at Trigg works like a bath with the tap on and the plug out.

PART A. DRAW IT

Draw the reef pool from above and in cross-section. Label the reef, the pool, the gap, the breaking waves and the direction the water moves. Show where the water surface sits higher than the sea outside.

FROM ABOVE

CROSS-SECTION

PART B. DO THE NUMBERS

Rips can flow at up to 2 m/s. Most are no wider than about 15 metres. For these questions, take a strong rip of 1.0 m/s.

1 A swimmer heads straight for the beach at 0.8 m/s against a rip flowing out at 1.0 m/s. Which way does the swimmer actually move, and how fast?

2 The same swimmer turns and swims sideways across a rip 15 metres wide at 0.8 m/s. How long does it take to get out of the rip, and how far out to sea will the rip have carried them in that time?

3 Use your answers to explain why lifesavers say not to swim straight back to the beach. Then say why Royal Life Saving WA tells most people to float and signal for help first.

PART C. PLAN THE SWIM

Open the Bureau of Meteorology's Perth Local Waters Forecast. Write down the forecast swell height and direction for tomorrow. Would you expect the Blue Hole rip to run harder or softer than usual, and why?

From the archive

These are records from the time or close to it. Each was made by someone with their own reasons, so treat them as sources. Both front pages are on Trove, where you can zoom in and read every column.



LAUBMAN & PANK (WA) LTD

THE MIRROR

Price 3d. Saturday Night, July 19, 1947. Vol. 25, No. 1313.

MOTORISTS SAVE TIME

UNITED MOTORS

PLUCKY RESCUE ATTEMPT IN TRAGIC DROWNING

Victims

Swimmers Swept Out To Sea Near Trigg Island

Two persons are believed to have been drowned in the sea near Trigg Island (between Scarborough and North Beach) this morning. It is feared one nun was swept to sea and drowned and a man was drowned in a dramatic rescue attempt.

A party of sisters went swimming in a reef-girt pool 50 yards from the "Blue Hole" where numerous drowning tragedies have occurred.

Heavy seas are believed to have swept them over the reefs and out to sea.

A man who saw their plight courageously attempted

"U.S. IN SIGHT OF SHOOTING WAR"

WASHINGTON, Today: "America is within sight of a shooting war this minute in Greece," declared Charles Eaton, New Jersey Republican and chairman of the House Foreign Affairs Committee.

TRADE PACT

The Mirror, front page

SATURDAY 19 JULY 1947

Printed the evening of the drownings, while police were still investigating. It says heavy seas "are believed to have swept them over the reefs and out to sea".

Detail. Mirror (Perth), 19 July 1947, page 1. National Library of Australia, Trove, nla.news-article76026835. Out of copyright.

This went to press the same day. Which details might a reporter still have wrong?



FOR YOUR EYES SEE Laubman & Pank

77 BARRACK STREET

"THE MAN WHO MADE THE BANK"—Victor Courtney, p.3, Mag.

The Sunday Times

Fortuna SUPERFINE fabrics

No. 2578. PERTH, WESTERN AUSTRALIA, JULY 20, 1947. PRICE 4d.

GIVES LIFE IN PLUCKY RESCUE ATTEMPT AT TRIGG ISL.

Man And Nun Drown

Gripped by a suddenly strengthening undertow a nun was swept into deep water near Trigg Island yesterday.

Going to the rescue, a man fought heroically with seething surf before both were drowned.

Grim shadow, cast by rapidly looming clouds yesterday morning over the ocean at Trigg Island—between Scarborough and North Beach—quickly proved one of tragedy.

When Frederick Floyd after going with magnificent courage to the rescue failed to fight through the mountainous line of breakers, Charles Albert Snow brought his body ashore, but it was some hours before the bather-clad body of the nun was washed up, 300 yards from the pool where she had gone swimming.

TRAGEDY VICTIMS

Victims of the double drowning tragedy at Trigg Island yesterday were:

Sisters Pray Over Body

"No War"—Bevin

The Sunday Times, front page

SUNDAY 20 JULY 1947

The next morning's paper blames "a suddenly strengthening undertow". The photo further down the page, not shown here, marks where it happened.

Detail. Sunday Times (Perth), 20 July 1947, page 1. National Library of Australia, Trove, nla.news-article59479039. Out of copyright.

Using the episode, what would you call it instead of an undertow, and why?



Trigg Island and the reef

MAY 2023

The same reef today, seen from the beach just north of the island.

Photo: Calistemon, 2023. CC BY-SA 4.0, via Wikimedia Commons.

Find the reef line. Where does water that comes over the reef have to go to get out?

Sources

Every source here is free to open. Trove articles are scans of the original papers, so give students time to read the column, not just the headline.

Sunday Times, 20 July 1947. Gives life in plucky rescue attempt at Trigg Isl.
trove.nla.gov.au/newspaper/article/59479039
One of the reports that uses the word undertow. Students find it and explain why the physics says it's the wrong word.

West Australian, 6 September 1947. Trigg Island tragedy: story of heroic rescue attempt
trove.nla.gov.au/newspaper/article/46338935
The inquest report, with Frank Leake's sworn account that Floyd reached her. It also gives Sister Chrysostom's full name and age.

City of Stirling. Photograph of the original Floyd memorial (unveiled 1948)
collections.stirling.wa.gov.au/nodes/view/6240
The council's record of the first memorial. Compare its account of the rescue with the Sunday Times.

Sisters of St John of God. In memory
ssjg.org/in-memory
The order's own list, which gives her surname, Kissane. The 1947 papers print it too, and the inquest gives her first name, Hannah.

Trigg Island Surf Life Saving Club. The story of Frederick Charles Floyd, and club history
triggisland.com/rescues/did-you-know-the-story-of-frederick-charles-floyd
triggisland.com/our-club/club-history
The club's account of 1947 and why the club was formed in October 1953. Compare what it says about Don Floyd with the 1947 reports.

Royal Life Saving WA. Rip currents
royallifesavingwa.com.au/staying-safe/safety-advice/risk-factors/rip-currents
How to spot a rip and what to do if you're caught in one. Use it to check the episode's advice.

Pitman, Gallop and Brander (2019). Staying safe on a surf beach. What are rip currents?
kids.frontiersin.org/articles/10.3389/frym.2019.00033
A short science article co-written by Brander, whose study the episode cites. Gives rip speeds and widths.

WHERE THE SOURCES DISAGREE

They make a good exercise in reading sources.

- The surf club's page says 12-year-old Don helped pull his father's body to shore. The 1947 reports say he had been left in the car, and at the inquest Charles Snow said the boy showed him where his father went under. Students compare the club's page with the West Australian's inquest report.
- The first newspaper reports say Floyd never got past the breakers. At the inquest an eyewitness said he reached her. Students compare the Mirror or Sunday Times with the West Australian's inquest report of 6 September 1947.

Answers

Suggested answers. Accept anything that shows the same understanding.

LISTENING GUIDE

1. The sea was up and the tide was high, though the sun was out. Everyone said the pool was safe except at high tide. Later the episode adds that the sea was rough, a storm blew in while they were swimming and a big wave knocked one of the sisters over.
2. An old sand dune piled up by wind in the Pleistocene and cemented into limestone by rain over time.
3. Any two of: the first recorded drowning in 1907, the boat that capsized in 1931 and the Colreavy brothers drowning at Trigg earlier in 1947.
4. That heavy seas "are believed to have swept them over the reefs and out to sea".
5. Waves break on the reef and the water runs over it into the pool. The pool fills and sits a little higher than the sea outside. It can't drain back over the reef because waves keep breaking there, so it runs out through the deepest gap, the Blue Hole, as a narrow fast jet.
6. When the tide is high and the rollers are coming over the wall. A bigger swell pushes more water over the reef, so the jet through the gap runs harder. The reef breaks up the waves, so the surface of the pool can still look calm while the whole pool drains.
7. Rips about 21 deaths a year. Bushfires about 6, floods about 4, cyclones about 7.5 and sharks 1, which is about 18.5 together, so rips kill more than all four combined.
8. Don't fight it, because a rip can be faster than you and doesn't tire. Float, because the rip won't pull you under and floating saves your strength until help gets there. Signal, because on a patrolled beach a raised arm brings help. Then, if you're a strong swimmer and not worn out, swim sideways along the beach, because the jet is narrow and a few metres either side the water is just water. Keep going until it lets go and the waves push you in.
9. The Mirror and the Sunday Times say he never got past the breakers. At the inquest (West Australian, 6 September 1947) his friend Frank Leake, who saw it, said Floyd reached her, held her and tried to bring her in before she slipped from his grasp. A sworn eyewitness account given weeks later is stronger than reports written that weekend, while police were still investigating.
10. In November 1948 a memorial was unveiled on the beach: a concrete block with a lifesaving line mounted on it, so the next person in trouble there would have something to grab. The Trigg Island Surf Life Saving Club was formed in 1953, and the club names the drownings of that time as one of its reasons. There is also a plaque for Frederick Floyd on the beach path. Students may also mention the 1949 Royal Humane Society awards: a certificate for Floyd after his death and a bronze medal for Charles Snow.

TASK

PART A

Sketches should show waves breaking on the reef, the pool surface sitting a little higher than the sea outside and a narrow outflow through the gap.

PART B

1. Out to sea at 0.2 m/s, because the rip at 1.0 m/s beats the swimmer's 0.8 m/s.
2. 15 ÷ 0.8 = about 19 seconds. In that time the rip carries them about 19 metres out (1.0 × 19).
3. Swimming at the beach means fighting a current that can be faster than you. Floating costs no energy and a raised arm brings help, and only a strong, rested swimmer should try to swim across the rip.

PART C

Bigger swell pushes more water over the reef, so the rip runs harder.