



CORONERS COURT OF QUEENSLAND

FINDINGS OF INVESTIGATION

CITATION: **Non-inquest findings into the death of Charlize Maree Zmuda**

TITLE OF COURT: Coroners Court

JURISDICTION: BRISBANE

DATE: 16/9/2026

FILE NO(s): 2025/575

FINDINGS OF: Carol Lee, Coroner

CATCHWORDS: CORONERS: Bull Shark Attack; Unpatrolled Beach; Shark Risk Mitigation Framework in Queensland Coastal Waters

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Introduction

Charlize Maree Zmuda (Charlize) was born on 15 October 2007 and died on 3 February 2025 at Ocean Beach Access Track, Woorim¹.

Queensland Police Service (Police) reported Charlize's death to the coroner because her death appeared to be a violent or unnatural death and fell within the definition of a reportable death in the *Coroners Act 2003* (CA).

The role of a coroner is to investigate reportable deaths to establish, if possible, the cause of death and how the person died. The purpose of a coronial investigation is to establish facts, not to cast blame or determine criminal or civil liability.

Circumstances

Charlize was a 17-year-old student who resided at Bongaree on Bribie Island with her family. She has no reported medical history nor was she taking regular prescribed medications. As a volunteer life saver, she was a competent swimmer.

Late afternoon of Monday 3 February 2025, Charlize went to an unpatrolled beach at Woorim with a friend. She decided to swim off the beach alone, whilst her friend waited on the beach. She was last seen alive at approximately 4:40pm. A short time after entering the water, her friend saw a commotion in the water and a quantity of blood and heard a scream. Charlize was then seen floating on her back with no further signs of movement. The alarm was raised and various first responders attended. First on the scene was a lifeguard who had been attending a patrolled beach some distance away, followed by Police and Queensland Ambulance Service. Charlize was retrieved from the water, but tragically the extent of her injuries was fatal, and she was declared life extinct at 5:07pm.

Autopsy

An autopsy was ordered and performed. It comprised an external and internal examination (to the extent an internal examination was required to determine the cause of death), imaging, document review and toxicology studies.

The opinion of the forensic pathologist as to the cause of death is based on consideration of the circumstances of death and an autopsy including associated imaging and testing (including DNA).

The forensic pathologist summarised the findings at autopsy as follows:

1. Scene photos showed:
 - a. Extensive injuries to the right upper arm.

¹ A coastal town and suburb on the southeastern side of Bribie Island in the Moreton Bay region of Queensland.

- b. White froth exuding from the mouth.
- 2. CT scans showed:
 - a. Complex right proximal arm wound with fractures of the right distal clavicle, right scapula and right proximal humerus.
 - b. Transection of the axillary artery and axillary vein with evidence of air embolism to the pulmonary arteries.
 - c. Features of drowning including fluid in the paranasal sinuses, pleural effusions and oedematous lungs.
- 3. External examination showed:
 - a. The body of an adolescent female (body mass index 20kg/m^2) dressed in a wet swimsuit.
 - b. A large amount of sand received with the body.
 - c. Near amputation of right arm at the glenohumeral joint, with multiple visible internal injuries including major vascular transection and open fracture. A shark tooth was embedded in the distal clavicle.
 - d. The skin and mucous membranes showed pallor.
 - e. There was froth exuding from the mouth and nostrils.
- 4. Internal examination showed:
 - a. Identification of axillary vein and artery as transected vessels.
 - b. Bilateral pleural effusions (total volume 250mL).
 - c. Hyperinflated, pale, mildly oedematous lungs.
- 5. Histology showed alveolar dilatation, oedema and thinning of the septa in the lungs.
- 6. Chemical pathology showed:
 - a. Elevated sodium and chloride concentrations in keeping with immersion in salt water.
 - b. Other results showed no abnormality in the post-mortem setting.
- 7. Toxicology testing on postmortem samples of femoral blood, vitreous and urine did not detect the presence of alcohol or drugs.
- 8. Animal science testing showed:
 - a. DNA analysis of wound swabs and shark teeth confirmed a bull shark as responsible for the wounds.
 - b. Attempts to amplify shark DNA from clothing were not successful.

- c. Shark tooth morphometric analysis showed that teeth fragments were consistent with those from a whaler shark of the genus *Carcharhinus leucas*.
- d. Injury analysis estimated the shark size to be between 2.5 to 2.9 metres in length.

In summary, the forensic pathologist opined that the appearance of the wound, as well as speciation testing confirmed a bull shark as being responsible for the right upper limb injuries. Two significant injuries occurred to the right upper limb: transection of the axillary artery and vein. Arterial transection resulted in major blood loss, evidenced by the pallor of the body and mucous membranes. However, the most fatal complication is transection of the axillary vein, which has allowed rapid air entry into the venous system, resulting in air embolism to the heart and pulmonary arteries as seen on postmortem imaging. This is a rapidly fatal event and is the most likely mechanism of death.

Features of drowning were present, including fluid in the paranasal sinuses, lungs and pleural cavities, hyperinflation of the lungs with expanded alveolar spaces, and the presence of frothy fluid in the upper airways and lungs. These findings can be non-specific but given the circumstances, the findings are consistent with the aspiration of water. However, given the evidence of upper limb injury and subsequent air embolism, it is not considered to be the direct cause of death in this case.

In the opinion of the forensic pathologist, the cause of death was:

- 1(a) Right upper limb injuries, *due to, or as a consequence of*
- 1(b) Bull shark attack

Investigation

During the course of the coronial investigation, information was obtained from various sources which is relevant to the findings I am required to make in accordance with Section 45(2) of the CA. This includes information from the Department of Primary Industries (DPI) on the issue of shark control measures applicable to the incident location and more broadly.

Key aspects of relevant information obtained is summarised below.

Location

At the time of the incident, Charlize was swimming where the cross and circle is indicated in the below image. She then drifted along the beach, moving towards the beach. The patrolled area is also identified.

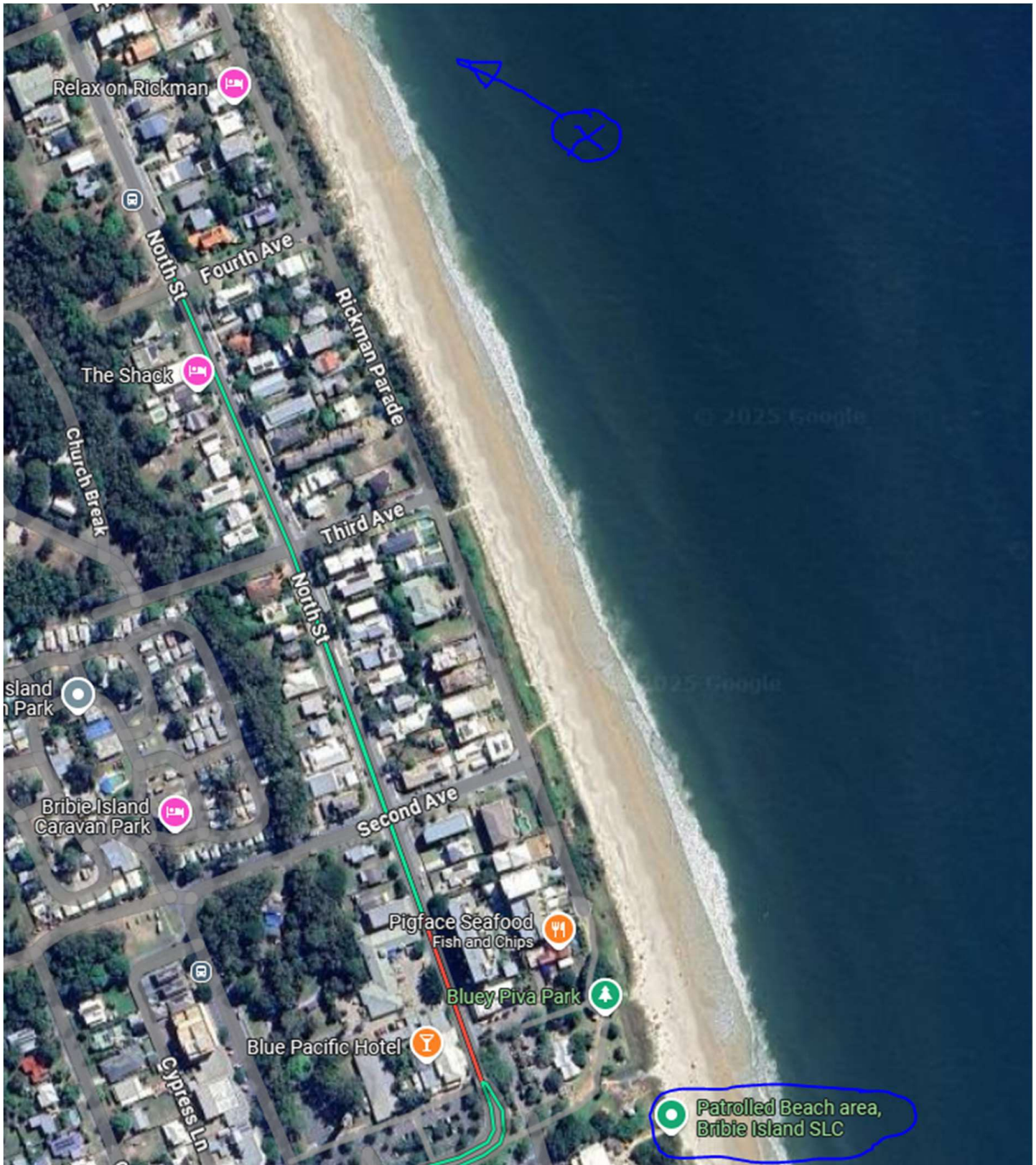




Image shows Beach Access 6 (where the incident occurred)

Background

1. The Shark Control Program (SCP) was first introduced by the Queensland Government in 1962 after a series of fatal shark bites across Queensland and has continued in its current form in accordance with the *Fisheries Act 1994* (QLD). The SCP uses a wide range of equipment and measures to reduce the risk of shark bites in Queensland by:
 - a. installing and maintaining nets and drumlines at beaches while continually improving operations to minimise the impact on the environment. Nets and drumlines are used to catch and remove large potentially dangerous sharks from popular swimming beaches. The SCP primarily targets bull sharks, tiger sharks and white sharks as these species have been associated with the most shark bite incidents in Australia. An additional four species are included on the target species list and are euthanised if caught in the program outside of the Great Barrier Reef Marine Park;
 - b. investing in research to understand shark populations, movements and behaviour. This research underpins decision making in the SCP and informs the education and operational components;

- c. undertaking trials of alternative shark bite mitigation technologies to determine their suitability for Queensland conditions (such as the use of drones); and
 - d. educating the public to be "SharkSmart" every time they are on, or in, the water. The education campaign targets peak water use times around Queensland school holidays and provides practical tips to people on what they can do to reduce the risk of a shark interaction.
- 2. Shark control equipment remains in place throughout the year, weather permitting, as sharks are active along the Queensland coastline year-round, and Queensland's beaches are also a popular destination for swimmers even during winter.
- 3. The DPI says that it ensures that the SCP is regularly reviewed, to continuously assess if improvements are required and to ensure the most up-to-date and effective methods are being utilised by the SCP to achieve the SCP's purpose.

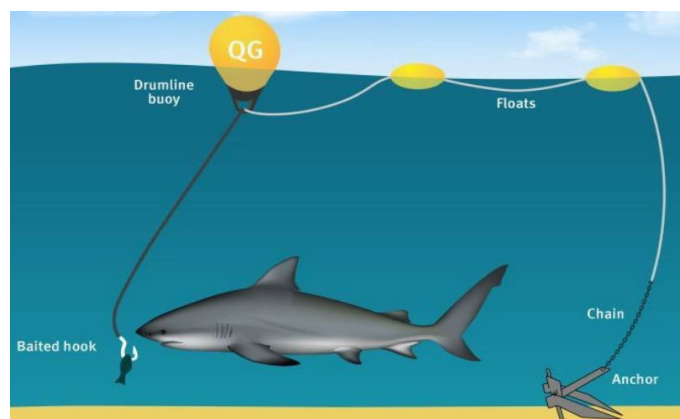
Contracts and partnerships

- 4. The SCP is administered by the DPI and is delivered in part by the DPI and through external contracts or partnerships.
- 5. In terms of the SCP equipment (i.e. nets and drumlines), SCP contractors service and maintain the SCP equipment in accordance with contract conditions.
- 6. Trials are conducted both internally and externally depending on the operational requirements of the trial. For example, the SharkSmart Drone Trial is delivered in partnership with Surf Life Saving Queensland (SLSQ). The trial was launched in September 2020 and as of March 2025, operates at 10 beaches from the Gold Coast to Townsville, including Bribie Island, with drones flying every weekend and public holidays, and/or every day during Queensland school holidays, subject to weather conditions.
- 7. The DPI delivers SharkSmart education (including through social media, radio, TV, YouTube and Spotify) and additionally partners with organisations such as Sea Word and SLSQ to disseminate SharkSmart information to school groups and tourists (including through SLSQ nipper programs, educational talks and display of DPI posters).

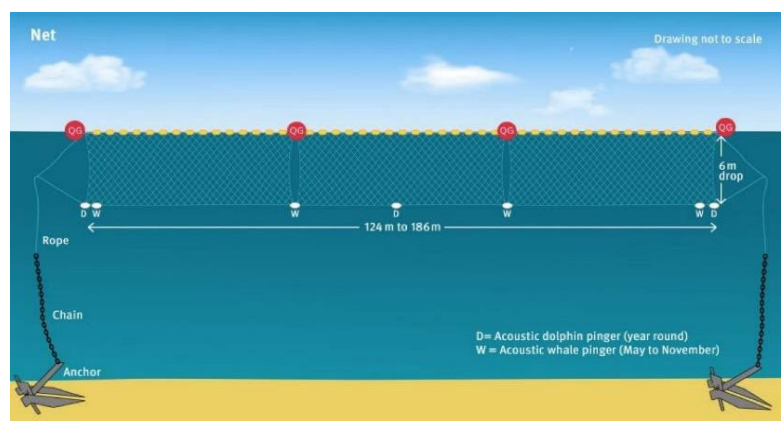
Overview of SCP equipment

- 8. As at March 2025, there were:
 - a. 383 drumlines; and

- b. 27 nets across 86 Queensland beaches to assist in protecting swimmers (the SCP Locations).
9. The nets and drumlines are strategically placed at offshore locations (determined by reference to factors such water depth, sea conditions, substrate, tide and current flows and the locations of the SLSQ flagged areas) approximately 300-500m from the beach, mostly near popular patrolled swimming beaches to minimise the possibility of shark attack on swimmers.
10. The DPI provides the SCP contractors with the shark catching equipment (drumlines, nets or a combination of both) and the contractors are required to service and maintain the equipment.
11. Drumlines consist of a baited hook which is attached to a buoy and floats, which is then attached to an anchor. Below is an image prepared by DPI demonstrating how drumlines work to catch actively feeding sharks:



12. The drumlines work by capturing feeding sharks within the immediate area of the drumline. Once the shark is captured on the hook, the contractor will either euthanise it and dispose of it 5km out to sea for target species or release it alive for non-target species.
13. Shark nets work by catching large sharks passing through an area that may not be actively feeding. It is fishing apparatus and is not designed to be a barrier. If a shark is caught in a shark net, the contractor will attend and deal with the shark as with drumlines.



14. While the SCP equipment reduces the risk of shark bites, shark nets and drumlines do not provide an impenetrable barrier.
15. As such, DPI utilises educational campaigns described earlier to encourage swimmers to adopt SharkSmart behaviours such as:
 - a. swim between the flags at patrolled beaches and check signage;
 - b. have a buddy and look out for each other;
 - c. avoid swimming at dawn or dusk;
 - d. reduce risk, avoid schools of bait fishing or diving birds;
 - e. keep fish waste and food scraps out of the water where people swim; and
 - f. swim in clear water away from people fishing.

Drumline Servicing

16. The drumlines are serviced by the relevant SCP contractor engaged for the contract area on a schedule. In south-east Queensland, that does not allow more than three days to pass without a service during the monthly cycle and provides for a minimum of 182 services in a calendar year. In addition, the contracts require that a service must occur on either a Saturday or a Sunday, and every public holiday except Christmas day.
17. In the event of dangerous weather conditions, the contractor must inform DPI and obtain consent to remove shark equipment and perform a land-based inspection as an alternative. Shark nets, and sometimes drumlines, are removed in severe weather to prevent them becoming dislodged and becoming a public safety hazard.
18. As part of the servicing, the contractor must:
 - a. bait the drumlines;
 - b. maintain all drumlines in good fishing order at all times;
 - c. where necessary, exchange with spare gear;
 - d. change all drumlines at least once every 21 days or sooner if they become worn, damaged, dirty or fouled with marine growth or debris (this requires the SCP contractor to pull up the equipment in order to clean and inspect the equipment in shore so that it can be ready for the rotational cycle every 21 days);
 - e. replace worn chain and shackles;
 - f. inspect any anchor rope at connection points to anchor;
 - g. inspect surface floats for wear and tear; and

- h. ensure hooks are sharp and replaced where excessive wear at the eyelet has occurred.
- 19. The SCP contractor is required to enter a monthly at sea work plan into a program called Envirocoms setting out the days they propose to perform the services.

Inspections

- 20. The SCP Operations Co-ordinator, assisted by 10 regionally based Shark Liaison Officer (SLO) undertake the following inspections of the SCP contractor's operations:
 - a. at sea inspections with contractor;
 - b. at sea inspections without contractor;
 - c. face to face meetings; and
 - d. depot inspections.
- 21. The SLO will review the SCP contractor's monthly at sea work plan and select a time to do an inspection. These inspections are done at least once per month. The SLO will arrange to meet the contractor and observe the contractor undertaking the services. The SLO records their observations and notes of the inspection for the Operations Co-Ordinator to review. During these inspections, the SLO is primarily checking whether the gear and equipment is in good working condition and free from marine growth (e.g. barnacles or weeds), and whether the SCP contractor is undertaking the services as required.
- 22. At sea inspections without contractors are done when the SLO pull up the drumlines to inspect the equipment while on boat patrols. The purpose is to check if the equipment has been serviced and freshly baited.
- 23. Depot inspections are done at least quarterly when the SLO undertakes a stocktake of the SCP contractor's gear and equipment.
- 24. Face to face meetings is undertaken at least six times per year, however this usually occurs more frequently.

Drone trial

- 25. Since September 2020, the SCP has also been trialling the use of drones with SLSQ drone pilots. Depending on the location, the drones operate on public holidays, weekends and/or in school holidays, being the most populated beach times. As at March 2025, the drone trial operated at the following locations (selected on the basis of key factors including the presence of SCP gear, SLSQ

lifeguard presence at beaches, levels of beach usage, historical catch of potentially dangerous sharks and proximity to river mouths):

- a. Kurrawa Beach, Gold Coast;
 - b. Main Beach, Gold Coast;
 - c. Burleigh Beach, Gold Coast;
 - d. Minjerribah (Main Beach), North Stradbroke Island;
 - e. Woorim Beach, Bribie Island;
 - f. Alexandra Headland, Sunshine Coast;
 - g. Coolum North, Sunshine Coast;
 - h. Noosa Main Beach, Sunshine Coast;
 - i. Rainbow Beach, Cooloola Coast; and
 - j. Alma Bay, Magnetic Island.
26. The hours of operation vary depending on weather conditions, but usually drone flights start when beach patrol opens in the morning, and drones fly twice every hour, until around midday (as wind normally increases in the afternoons making drones less effective due to lost visibility from chop in the water. Additionally, drones are unable to operate if wind speed is in excess of 20 knots). Each flight is approximately 25 minutes. If a drone is in operation, there is signage, and a landing/take-off zone marked out on the beach.
27. If a potentially dangerous shark is spotted by the SLSQ pilot, the drone flies lower and follows the shark. Lifesavers and lifeguards can evacuate the water and temporarily close the beach if required.
28. Drones provide a bird's-eye view of the ocean and what's happening beneath the surface. This is compared to traditional monitoring by lifesavers and lifeguards from beach towers or watercraft. They are more cost effective than other beach aerial monitoring, such as helicopter flights, have negligible impact on marine life and provide real-time monitoring. This collectively means lifesavers and lifeguards can respond rapidly if a shark or other marine risk is spotted. The use of drones improves overall beach safety through monitoring marine threats or assisting with rescues.
29. However, there are certain limitations observed with the use of drones as noted above. Drones cannot operate in poor weather (strong winds, rain or storms), cannot be operated in restricted airspace—this impacts some beaches near airports, require highly skilled operators and is labour-intensive. Also, drones are less effective in areas with murky waters, such as some North Queensland beaches or after heavy rainfall.

30. The Queensland SharkSmart Drone Trial- Final Report, February 2022² evaluated the use of drones at the initial trial locations before the trial was further extended.

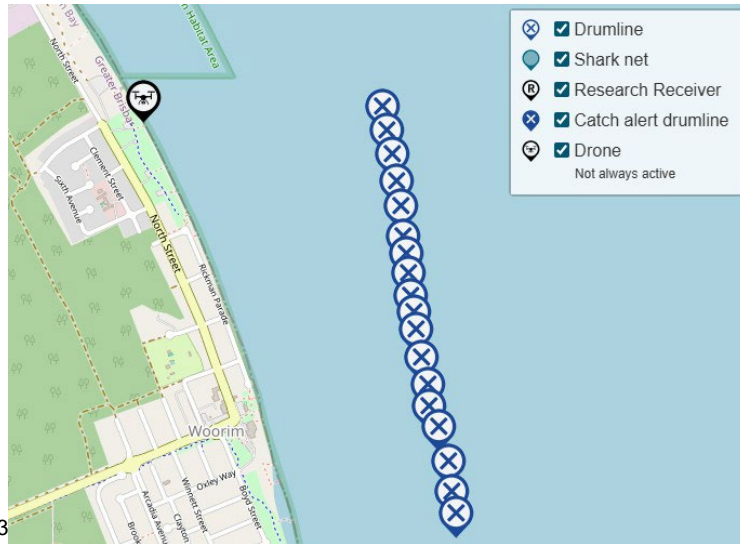
Shark Incidents

31. Not including this incident, since the SCP's inception, there have been two fatalities at SCP Locations as of March 2025, namely:
- a. on 7 January 2006, at approximately 5:10pm, a 21-year-old woman was fatally bitten by a shark while swimming at dusk at Amity Point, North Stradbroke Island approximately 15 meters from the shoreline; and
 - b. on 8 September 2020, a 46-year-old man was fatally bitten by a white shark while surfing at Greenmount Beach on the Gold Coast in the late afternoon.
32. While there have been 4 recorded shark bites (which did not result in a fatalities) on the Queensland coastline in the 12-month period preceding March 2025, only one attack occurred at an SCP Location, namely:
- a. On 15 March 2024, a 13-year-old girl was bitten on the torso by an unknown shark species at Bargara near Bundaberg. She suffered non-life-threatening injuries to her abdomen, back and legs.

SCP at Woorim Beach

33. Woorim is within the Sunshine Coast contract area.
34. At Woorim Beach as at the date of the incident, the drone trial was in its first phase and conducted over the summer school holiday periods until further evaluation of its success. Given the availability of funding remaining in the budget from days lost due to bad weather, SLSQ were additionally flying drones on weekends up to and including 2 February 2025, the day before the Incident.
35. Shark nets are not suitable at the Woorim beach location due to the high tidal currents experienced in this area which tend to twist the nets or drag it off station which would render it ineffective.
36. As at March 2025, there were 18 shark control drumlines located off Woorim. Below is an equipment map, prepared by DPI, showing the drumlines. The location of these drumlines follows a depth contour to ensure they are positioned approximately 300-350m from the beach.

² Queensland SharkSmart Drone Trial Final Report can be accessed [here](#)



37. Between 1 January 2024 and March 2025, only four sharks have been caught in the Woorim Beach drumlines, being.
- on 25 October 2024, one Bull Whaler Shark;
 - on 16 November 2024, one Blacktip Whaler Shark;
 - on 3 December 2024, one Tiger Shark; and
 - on 6 February 2025, one Bull Shark.
38. In accordance with standard servicing protocols and timeframes, the Woorim Beach drumlines were serviced by a SCP contractor on 1 February 2025, namely 2 days before the incident. All drumlines were baited and found to be operational.
39. After the incident, the Woorim Beach drumlines were subsequently inspected again on 4 February 2025 in accordance with standard servicing procedures.
40. Since the SCP commenced, there has been one other reported shark incident at Woorim Beach as of March 2025, being in October 2019 where a 17-year-old male was knocked off his surfboard – no injuries were sustained.

Immediate response taken following the Incident

41. The Woorim Beach was closed the week of the incident and reopened on 7 February 2025.
42. The drumlines at Woorim beach were inspected on 4 February 2025.

43. DPI says it also understands that drones were flown by SLSQ following the incident however no sharks were located.
44. On 6 February 2025, a bull shark was caught on a drumline at Woorim Beach, however there is no evidence that the particular shark was responsible for the incident.

Review of SCP

45. In 2021, the DPI implemented the Queensland Shark Management Plan 2021-2025 which provided strategic direction on how the DPI would continue work to reduce the risk of shark bites through the traditional program of nets and drumlines, while researching and trialling new shark bite mitigation technologies. This plan also identified a review of the SCP would be undertaken during 2024.
46. In early 2024, the DPI engaged KPMG Australia (KPMG) to undertake a detailed independent review of the SCP and provide recommendations to government on the future state of the program beyond June 2025. It was proposed that a new shark management plan would be developed and commenced in July 2025, incorporating the review recommendations where appropriate.
47. As part of the review undertaken by KPMG, a key stakeholder engagement process was included. This was to gain a range of stakeholder views and included DPI staff and SCP contractors, the then Department of the Environment, Science and Innovation, the Department of Tourism and Sport, Local Governments, the Great Barrier Reef Marine Park Authority, SLSQ, Sea World, Humane Society International and interstate shark program staff.
48. The SCP Scientific Working Group and independent experts from Bond University and Flinders University provided guidance and input into the KPMG review.
49. Following finalisation of the KPMG report and consideration by the Queensland Government, the Shark Control Program⁴ was publicly released on 25 May 2025.
50. As a result, Queensland Government developed and approved a set of guiding principles for the DPI to consider in developing the Shark Management Plan 2025-2029 (the Plan)⁵, which sets out the overarching framework for the operation of the SCP in Queensland.
51. These principles included:

⁴ KPMG Shark Control Program Evaluation Report can be accessed [here](#)

⁵ Queensland Shark Management Plan can be accessed [here](#).

- a. that the SCP will operate at all times throughout the year;
- b. optimal location and configuration of gear;
- c. continued use of traditional drumlines and mesh nets;
- d. catch alert drumlines to only be used where required under Commonwealth legislation or approvals;
- e. continued use of SharkSmart drones;
- f. continued research and innovation in shark management;
- g. research into whale deterrent technology and best practice marine animal release;
- h. review shark management plans; and
- i. refresh the SharkSmart program to deliver a strengthened approach to reducing the risk of shark attacks through boosted investment in operations, research, trials and education.

52. Following public release of the Plan in May 2025, an increased investment of an additional \$88.2 million into the SCP was announced.

53. The Plan reaffirms the purpose of the SCP is to protect human life from the risk of shark attack and combines existing safety measures like shark nets and drumlines, whilst prioritising research, education and innovative technologies like drone surveillance at more beaches.

54. The DPI is responsible for delivering the Plan through a four-pillar approach, comprising operations, research, trials, and education and engagement. The Shark Management Implementation Plan 2025-29⁶ outlines schedules for the delivery of those focus areas under the Plan.

Priority Initiatives

55. The Plan outlines Queensland Government's direction for the future management of the SCP, with human safety central to its operation. Based on the guiding principles, the Plan sets out specifically how the Queensland Government will reduce the risk of shark attacks in Queensland coastal waters. This is achieved through key initiatives under 4 focus areas – operations, research, trials and education and engagement.

56. These priority initiatives include:

⁶ Queensland Shark Management Implementation Plan 2025–2029 can be accessed [here](#).

- a. **Shark nets and drumlines to be serviced daily (weather permitting) all year round** – this investment in the SCP will ensure equipment is working as effectively as possible and as intended. It is also anticipated this increase in servicing will correspond to an increase in shark catch efficiency and will improve identification of, and response times for, non-target species caught in this equipment. This expansion is subject to detailed assessments against federal environmental laws under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).
- b. **Shark control equipment optimisation** – the location and configuration of shark control equipment will be optimised to expand to new locations, ensuring protective measures are deployed across more locations in Queensland. The expansion of the program is subject to further detailed assessment, including under the EPBC Act, as well as consultation with stakeholders before new locations and equipment is confirmed.
- c. **SharkSmart drone program** – shark-spotting drones will be rolled out to more beaches, becoming a permanent fixture of SCP operations, complementing the more traditional measures such as nets and drumlines. In collaboration with SLSQ, the current trial at 10 beaches will be expanded to 20 beaches by 2026–27, with an ongoing commitment to explore innovative solutions to assess and improve, where required, the effectiveness of the drone program.
- d. **Research** – population assessments will be delivered for key target shark species. Research into improved whale deterrent technologies and best practice marine animal release practices will minimise environmental impacts of the SCP during the whale migration period. The tagging and tracking of target sharks will continue through key research collaborations to further enhance the DPI's understanding of shark behaviour.
- e. **Shark mitigation framework** – the SCP will develop and implement a framework for the systematic identification, trial and assessment of new technologies and management practices. These technologies will require independent investigation regarding their effectiveness on Queensland's target species, and suitability for our unique environmental conditions before they will be considered as part of the SCP. This process will be undertaken with consultation with relevant stakeholders. For example, catch alert drumlines will be used where required under Commonwealth legislation or approvals. Current trials at Cairns, Mackay, and the Capricorn Coast will continue and expand to other areas within the Great Barrier Reef Marine Park in accordance with permit requirements.
- f. **SharkSmart Education Program** – public education will continue through a refreshed SharkSmart program with new strategies to address

high-risk activities, including refreshed material published on the SharkSmart website in December 2025.

Shark nets and drumlines

57. As outlined in the Plan, the DPI says it intends on:

- a. increasing the frequency in which shark nets and drumlines are serviced; and
- b. increasing the number of equipment locations. As of July 2026, the DPI has identified 6 proposed new locations which are currently being assessed in terms of approval and equipment requirements.

58. The expansion of the SCP in the manner outlined in the Plan is subject to any necessary approvals. As of July 2026, the DPI says it is seeking specialist expert advice for its self-assessment under the EPBC Act and that work is in progress.

59. In the meantime, the DPI says:

- a. in response to an increase in shark bites occurring in NSW, increased, on a temporary basis, its servicing of all drumlines to 22 days per month outside of the Great Barrier Reef Marine Park;
- b. proposes to roll out daily servicing for all shark nets and drumlines, weather permitting;
- c. has commenced further catch alert drumline trials at locations across the Great Barrier Reef Marine Park; and
- d. has procured its SCP contractors to continue further optimisation techniques, such as the use of stainless steel hooks and traces, using circle hooks and improving bait quality.

SharkSmart drone program

60. In addition to the locations outlined above, six new beaches for drone surveillance commenced in late 2025 as part of the SharkSmart drone program. These additional locations are:

- a. Kirra Beach, Gold Coast;
- b. Cylinder Beach, North Stradbroke Island;
- c. (Kings Beach, Sunshine Coast;
- d. Kelly's Beach, Bundaberg;
- e. Agnes Water, Main Beach; and

- f. Tangalooma, Moreton Island, and were chosen in partnership with SLSQ on the basis of key factors including SLSQ lifeguard presence at beaches and levels of beach usage.
61. A further 5 beaches have been agreed between the DPI and SLSQ for drone surveillance, which the DPI says will be operational by the end of 2026.
62. Due to strategic positioning of drone locations, additional beaches will be covered at some locations, such that by the end of 2026, the DPI is projecting that 30 beaches will be covered once the expansion is implemented. For example, the drone stationed at Coolum will be able to monitor both Coolum main beach, as well as Coolum North beach flagged areas.
63. The SharkSmart drone program currently operates within "Visual Line of Sight" in accordance with Civil Aviation Safety Authority requirements. This means that the drone must be able to be seen with the operator's eyes at all times, and as a result, drones only operate in the near-shore waters in close proximity to swimmers and surfers.
64. SLSQ has obtained Civil Aviation Safety Authority approval for Extended Visual Line of Sight operations. This is where remote pilots are able to operate drones from further distances with certain conditions (such as, a trained observer to observe the airspace and related risks, and a maximum distance between the drone and the observer). The DPI understands that SLSQ is currently conducting testing of a long-range drone within the limits of their Extended Visual Line of Sight approval at Noosa, extending north towards Teewah Beach.
65. SLSQ is working with the Civil Aviation Safety Authority on approvals for Beyond Visual Line of Sight operations. Beyond Visual Line of Sight operation relies on reliable technology: telemetry, detect-and-avoid systems, reliable command and control links, and detailed pre-flight planning and will allow for longer flights with long-range drones.
66. SLSQ is currently fitting out its remote operating centre to support Beyond Visual Line of Sight operations. The remote operating centre will also accommodate testing of automated drone-in-a-box operations in the future, reducing the need for pilots on the beach.

Research

67. Under the Plan, the DPI says it will continue to deliver research that is focused on achieving the purpose of the SCP.
68. This research includes:
- a. groundbreaking research into the general population and population growth of 12 shark species using novel genetic techniques, 7 of which are target species under the SCP. The DPI is partnering with external

experts to deliver this research using cutting-edge techniques, including whole genome sequencing;

- b. tagging and tracking of target sharks is also continuing through key research collaborations to further improve the DPI's understanding of shark behaviour; and
- c. DPI, in collaboration with the University of Queensland, assessed the effectiveness of acoustic alarms used in the SCP to reduce humpback whale entanglement. The study found the alarms were unlikely to significantly mitigate entanglement risks. A trial of modified acoustic alarms is in development and will be trialled for a five-week period at Noosa, during the southern whale migration from September to October 2026.

Commercial Fishing

69. Separate to the SCP, Queensland's commercial shark fisheries remain open, with an annual east coast catch limit of 400 tonnes.

70. The DPI has assessed that this catch limit is currently underutilised by the fishing industry, and DPI says it is reviewing management arrangements around sustainable shark harvest to determine if supply markets can be developed to support the commercial fishing industry and better utilise this resource.

Conclusions

After considering the material obtained during the coronial investigation, I consider that I have sufficient information to make the necessary findings in relation to Charlize's death.

Consistent with the investigation and the forensic pathologist's opinion, I find that the cause of Charlize's death was right upper limb injuries due to a bull shark attack.

Relevant to this incident, the DPI has confirmed that Woorim Beach was an established SCP Location equipped with 18 drumlines positioned approximately 300–350 metres offshore. Nets were not used due to strong tidal currents. The drumlines had been serviced two days before the incident, on 1 February 2025, and were found to be fully operational. The DPI noted that while the SCP reduces risk, "*shark nets and drumlines do not provide an impenetrable barrier.*" Additionally, there was also a broader SCP framework, including regular servicing schedules, contractor oversight, and the SharkSmart drone trial, which operated at Woorim during peak periods. Only four sharks had been caught at Woorim in the preceding year and that a post-incident inspection on 4 February 2025 confirmed the equipment remained in working order.

At the time of Charlize's death, an independent review of the SCP had already been commissioned, and substantial reforms are now underway by means of Queensland

Shark Management Plan 2025-2029 and the Shark Management Implementation Plan 2025-29, with a significant funding investment.

This demonstrates an evolution of Queensland's shark mitigation approach, from the operational status at the time of Charlize's death to an enhanced, technology-enabled, research driven program designed to reduce risk across the State's coastline.

Having considered information from the DPI, together with Queensland Government's response to shark control measures based on an independent and comprehensive analysis, I am satisfied that an appropriate shark risk mitigation framework is in place in an attempt to reduce the occurrence of shark attack risk at our coastline in the future, with the aim of protection of human life whilst maintaining environmental stewardship.

Against that background, I am not satisfied that it is in the public interest to hold an Inquest as, I am of the view that publishing these findings on the Coroners Court of Queensland website may be a sufficient mechanism to draw attention to the circumstances of this death so as to prevent deaths in similar circumstances happening in the future. There is also no uncertainty or conflict of evidence as to justify the use of the judicial forensic process and no suspicious circumstances that have not been resolved or resulted in criminal charges. On that basis I have determined that an Inquest is not required.

I extend my condolences to Charlize's family and friends for their loss.

Findings required by s.45

Identity of the deceased – Charlize Maree Zmuda

How she died – Whilst swimming at an unpatrolled beach by herself in the late afternoon on 3 February 2025, Charlize was attacked by a bull shark and suffered fatal injuries.

Place of death – Ocean Beach Access Track WOORIM QLD 4507 AUSTRALIA

Date of death– 03/02/2025

Cause of death – 1(a) Right upper limb injuries, *due to, or as a consequence of*
1(b) Bull shark attack

I close the investigations.

Carol Lee
Coroner

CORONERS COURT OF QUEENSLAND – SOUTH EAST QUEENSLAND
16 September 2026