



Queensland shark management plan

2025 to 2029

DELIVERING
FOR QUEENSLAND



Queensland
Government

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Executive Summary

This new shark management plan outlines the Queensland Government's clear and strong direction for the future management of the Shark Control Program, with human safety central to its operation.

The *Queensland Government's Shark Management Plan 2025 to 2029* sets out the overarching framework for the operation of the Queensland Shark Control Program, which is supported by an annual implementation plan.

This plan reaffirms the purpose of the Program – to reduce the risk of shark attacks at specific beaches across the state.

For the first time, the Queensland Government has approved 'guiding principles' for the development of the plan. These are to ensure the protection of human life guides the decisions and operation of the program. The guiding principles are:

1. The Shark Control Program will operate at all times throughout the year
2. Optimal location and configuration of gear
3. Continued use of traditional drumlines and mesh nets
4. Catch alert drumlines to only be used where required under Commonwealth legislation or approvals
5. Continued use of SharkSmart drones
6. Continued research and innovation in shark management

7. Research into whale deterrent technology and best practice marine animal release
8. Review shark management plans
9. Refresh the SharkSmart campaign.

This plan delivers a strengthened approach to reducing the risk of shark attacks through boosted investment in operations, research, trials and education.

Shark control equipment (shark nets and traditional drumlines) will be used all year round to support Queensland's beach culture. Equipment will be checked and re-baited every day (weather permitting), rather than every every second day on average under the previous plan. This is a significant increase in servicing to ensure equipment is working as effectively as possible. Expanding the program with new locations will ensure protective measures are deployed where they are needed most as our coastal population changes. The number of beaches with shark-spotting drones will be doubled, with drones becoming a permanent fixture of program operations.

Investment in research will position the program at the forefront of shark attack prevention science. Shark population assessments will be delivered for key target shark species to underpin management decisions. This research will improve our understanding of shark behaviour and risk factors, and will be used to inform program operations and education initiatives.

Investment in whale deterrent research and innovation, and best practice marine animal release aims to minimise environmental impacts of the program during the whale migration period.

Investment in innovation and science is at the heart of this program. It will guide the development and implementation of a framework for the systematic identification, trial and assessment of new technologies and management practices to ensure Queensland is leading the management of sharks to increase overall safety at our beaches.

The Queensland Government is doing its part, and water users are called upon to do their part and be SharkSmart every time they are on or in the water. The SharkSmart education program will be refreshed to ensure

it continues to drive awareness and behaviour change for all stakeholder groups. New strategies will be developed to address high-risk activities such as spearfishing and surfing.

Table 1: Summary of significant improvements incorporated in the *Queensland shark management plan: 2025 to 2029*

Focus Area	Priority Initiative	Previous plan	Queensland shark management plan: 2025 to 2029
Operations	Shark control equipment servicing	Equipment operated all year round and was checked and re-baited between 182 and 260 days per year depending on location	Equipment to operate all year round statewide and checked and re-baited daily.
	Shark Control Program location optimisation	86 beaches across 10 regions	New locations added to the program based on changes to increased populations of people and other key criteria.
	SharkSmart drones	Drones trialled at 10 locations	Drone program established at 20 beaches to complement other shark control measures.
Research	Shark population assessments	Last stock assessment for shark populations in Queensland conducted in 2015	Conduct shark population assessments for key target species and evaluate the impact of the program on their respective biomasses.
	Whale deterrent research and innovation	Not undertaken	Invest in whale deterrent research with the aim of reducing interactions with shark control equipment.
	Forensic shark attack analysis tools	Not undertaken	Deliver research to improve forensic shark attack methodologies used to investigate shark incidents and identify shark species involved.
Trials	Shark mitigation alternatives framework	Not undertaken	Develop and implement a framework for the systematic identification, trial and assessment of new technologies and management practices to achieve the purpose of the program.
	Catch alert drumline trial	Trials conducted in 3 regions within the Commonwealth Great Barrier Reef Marine Park	Catch alert drumlines only to be used where required under Commonwealth legislation or approvals.
Education	SharkSmart education program	SharkSmart education program commenced in 2020	The SharkSmart campaign will be refreshed with new strategies developed to reach key audiences and to address high-risk activities.

Not in previous plan
 Previous plan activities
 Significant improvements

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Introduction

The Shark Control Program started in 1962 following several fatal shark attacks across the state. The chief executive (Director-General of the Department of Primary Industries) is responsible for establishing and managing the program in accordance with the *Fisheries Act 1994*.

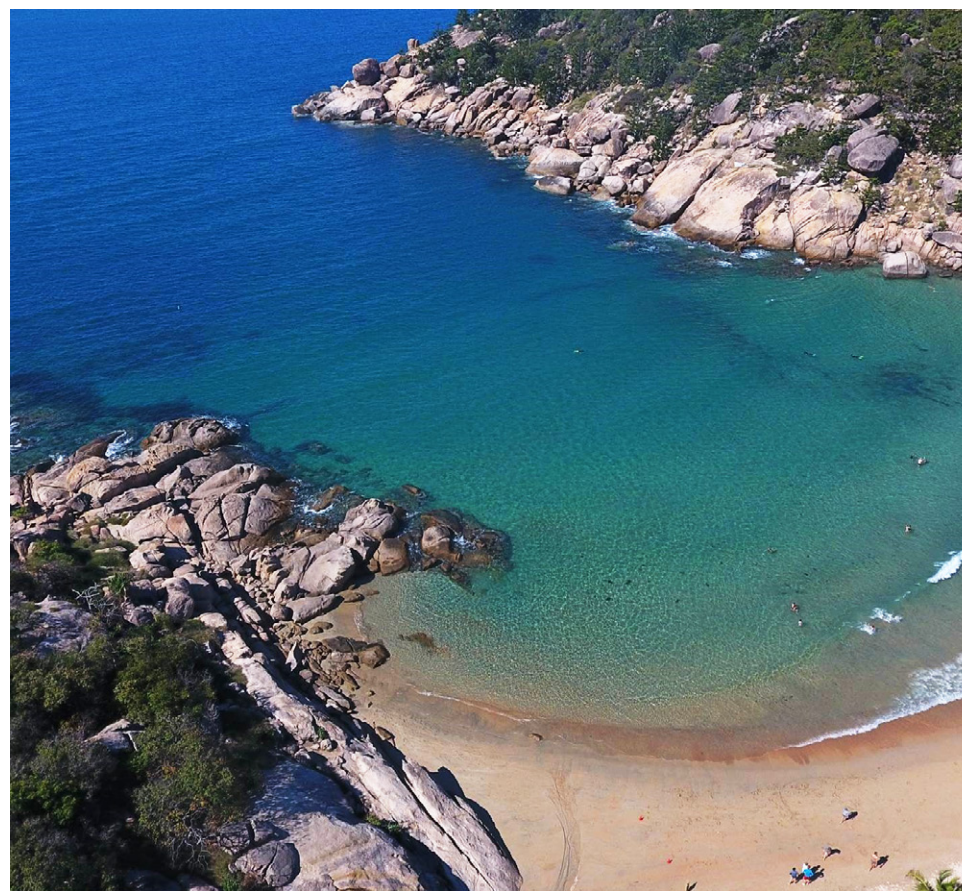
In 2024, The *Queensland shark management plan: 2021 to 2025* was reviewed by consultants KPMG Australia. Working with an expert panel and key stakeholders, KPMG provided the *Shark control program evaluation report* to the Department of Primary Industries (DPI) in November 2024 for consideration. The report provided several recommendations and concluded that there was an ongoing need for Queensland's Shark Control Program. The report also found that the implementation and operation of shark control equipment likely contributed to substantially lower shark attack incidences at those Queensland beaches where the gear is operational.

The KPMG review acknowledged that the Shark Control Program must respond to a variety of drivers, including, but not limited to:

- changing shark and human populations
- increasing urbanisation of the Queensland coastline
- increasing tourism activity and greater overlap between human activities and shark populations
- environmental variations.

The review also recognised that the program has evolved in recent years from the simple use of nets and drumlines, to being a science and education-based program run along Queensland's coastline (in conjunction with Surf Life Saving Queensland).

This new *Queensland shark management plan: 2025 to 2029* outlines the Queensland Government's plan to set a clear and strong direction for the future management of the Shark Control Program, with human safety central to its operation.



Purpose

The purpose of the Shark Control Program is set out in section 3 of the *Fisheries Act 1994*.

- (1) The main purpose of this Act is to provide for the use, conservation and enhancement of the community's fisheries resources and fish habitats in a way that seeks to:
 - (a) apply and balance the principles of ecologically sustainable development; and
 - (b) promote ecologically sustainable development.
- (2) In balancing the principles, each principle is to be given the relative emphasis appropriate in the circumstances, having regard to ensuring access to the fisheries resources is allocated in a way that maximises the potential economic, social and cultural benefits to the community.
- (3) **Despite the main purpose of this Act, a further purpose of this Act is to reduce the possibility of shark attacks on humans in coastal waters of the State adjacent to coastal beaches used for bathing.**
- (4) Subsections (1) and (3) do not limit the purposes of this Act.

Section 3A provides for how particular purposes are to be achieved:

3A(3) The further purpose of this Act under section 3(3) is to be primarily achieved by the chief executive establishing and managing a program for particular coastal waters of the State adjacent to coastal beaches used for bathing.

3A(4) The program is the shark control program.

To avoid doubt, the Queensland Government reaffirms that the purpose of the program is to reduce the risk of shark attacks at specific beaches across the state.

While the program will seek to minimise negative impacts on marine ecosystems, this is not a purpose of the program.

Scope

The Shark Control Program operates in coastal waters of the state in line with the *Fisheries Act 1994*.

The program currently operates at 86 beaches across Queensland's most popular coastal beaches from Cairns to the Gold Coast. Shark control equipment is maintained and serviced by expert contractors based at 10 locations – Cairns, Townsville, Mackay, Capricorn Coast, Tannum Sands, Bundaberg, Rainbow Beach, Sunshine Coast (including Bribie Island), North Stradbroke Island and the Gold Coast.

The Shark Control Program has operated at the existing locations for decades, with changes to equipment configurations only considered in necessary situations. Moving forward a more flexible science-based approach to the program will be adopted, including regular reviews of existing program equipment to ensure the program purpose is being achieved. Program locations will be reviewed to ensure it evolves and is operating where it is needed based on changing population and tourism trends.

Over the next 4 years, the Shark Control Program will expand to areas across the Queensland coast where it has not operated previously. This expansion will be based on selection criteria and consultation with Surf Life Saving Queensland, local governments and community members, and will be preferably located at patrolled beaches.

The program is driven by evidence, research and the exploration of new and emerging technologies, while also prioritising the continued implementation of proven solutions like drone surveillance.

In addition to deploying shark control equipment and technology, a key strategy to prevent shark attacks is through education. Education is critical to ensuring community awareness of shark attack risks and how human behaviour can play a key role in reducing shark interactions.

Sharks in Queensland

Over 100 species of sharks inhabit Queensland waters. Most species do not pose a significant risk to people. While there is a very low likelihood of shark attacks occurring, they can have catastrophic consequences.

Shark attack risks can be influenced by human behaviour and changes in the marine ecosystem (such as shark populations or a warming of marine waters). Based on research, the Shark Control Program identifies shark species that can have negative interactions with people. It is these sharks that the program aims to manage.

Target species

The Shark Control Program maintains a target shark species list, which includes species associated with unprovoked shark attacks in Australia causing serious injuries or death. The definition of a provoked and unprovoked shark incident is defined by the Australian Shark Incident Database at taronga.org.au.

An 'unprovoked' encounter between a human and a shark is defined as an incident where a shark is in its natural habitat and has made a determined attempt to bite a human where that person is not engaged in 'provocative' activities. A 'provoked' incident relates to circumstances where the person attracts or initiates physical contact with a shark (accidentally or on purpose) or was fishing for, stabbing, feeding, netting or handling a shark, or where the shark was attracted to the victim by activities such as fishing, spearfishing where a fish has already been speared and cleaning of captured fish.

Target sharks caught in state-controlled waters are euthanised. The Commonwealth Great Barrier Reef Marine Park Authority permit and conditions require target sharks caught in Commonwealth Great Barrier Reef Marine Park to be released and relocated if safe to do so.

The target shark list is reviewed periodically, is subject to change and currently includes the following species:

- bull shark (*Carcharhinus leucas*)
- tiger shark (*Galeocerdo cuvier*)
- white shark (*Carcharodon carcharias*)
- Australian blacktip shark (*Carcharhinus tilstoni*)
- common blacktip shark (*Carcharhinus limbatus*)
- dusky whaler shark (*Carcharhinus obscurus*)
- grey reef shark (*Carcharhinus amblyrhynchos*).

Legislative framework

The Shark Control Program operates in accordance with the following legislation.

Queensland Legislation

Fisheries Act 1994

The program is obligated to adhere to its legislative duty of safeguarding human life as stated by the Fisheries Act. The Act provides the head of power for the program. Further detail is provided in the 'Purpose' section of this plan.

Marine Parks Act 2004

The program operates under permits and conditions issued under this Act that allow the use of shark control equipment, research and trials within the state-controlled Great Barrier Reef Coast Marine Park, Great Sandy Marine Park and Moreton Bay Marine Park.

Commonwealth Legislation

Great Barrier Reef Marine Park Act 1975

In the Great Barrier Reef Marine Park, the program is required to adhere to the permit and conditions issued by the Great Barrier Reef Marine Park Authority (GBRMPA) issued under this Act. The permit is also a recognised approval under the *Environment Protection and Biodiversity Conservation Act 1999*.

Environment Protection and Biodiversity Conservation Act 1999

Outside the Great Barrier Reef Marine Park, the program operates under an exemption from this Act. This exemption applies to activities legally authorised prior to the commencement of the Act and allows the continuation of those activities. Any expansion of the program may require an environmental approval under this Act.

Civil Aviation Safety Regulations 1998

The SharkSmart drone operations must comply with Civil Aviation Safety Authority regulations and drone pilots must be suitably trained and qualified. Surf Life Saving Queensland are responsible for obtaining these approvals.

Key stakeholders

The Shark Control Program attracts significant attention from a range of stakeholders and stakeholder groups. At times, the views of different stakeholders can be conflicting and cause tension. All views are valued by DPI and considered when making decisions about the program, provided they do not conflict with the purpose of the program.

Key stakeholders include, but are not limited to:

- Australian Government (including the Great Barrier Reef Marine Park Authority)
- local governments
- traditional land and sea owners
- interstate shark programs
- Surf Life Saving Queensland
- Sea World Foundation
- tourism organisations
- conservation organisations
- universities and other research organisations
- water users (e.g. swimmers, surfers, divers, fishers and spearfishers)
- general public.



Guiding principles

Ensuring the protection of human life must guide the decisions and operations of the Shark Control Program. The following guiding principles were adopted to develop this plan.

1. The Shark Control Program will operate at all times throughout the year

Due to Queensland not having a true winter, locals and visitors use our coastal areas, beaches and waters all year round for activities such as swimming, fishing and surfing. It is imperative that the program reflects this core value of Queenslanders and their lifestyle. Removing gear for part of the year compromises the purpose of the program. Shark control gear will remain operational for the whole year, weather permitting.

2. Optimal location and configuration of gear

Queensland's population, urban settlement, recreational lifestyle and tourism industry has significantly changed and grown over the past 63 years. In contrast, the location and operation of the program has remained comparatively static. Optimal locations and configuration of gear based on analysis of the location and efficacy of existing gear is a key principle of the program.

3. Continued use of traditional drumlines and mesh nets

Until alternatives are proven effective at reducing the risk of shark attacks, the program will continue to use mesh nets and traditional drumlines. Research and trials into other mitigation devices or strategies are to continue.

4. Catch alert drumlines to only be used where required under Commonwealth legislation or approvals

The KPMG review found catch alert drumlines caught fewer target sharks compared to traditional drumlines (a 53% smaller target catch), and catch alert drumlines had a high frequency of false alerts and a high incidence (51.1%) of marine animals failing to activate the satellite buoy when hooked. The review also noted that it remains unclear whether catch alert drumlines maintain the same level of beach safety as traditional operations given the potential for released sharks – where required under the Commonwealth Great Barrier Reef Marine Park Authority (GBRMPA) conditions of approval – to return to the beach post-capture.

Catch alert drumlines operate only during daylight hours, leaving key times of day (dusk and dawn) without coverage, while traditional drumlines permanently fish 24 hours a day. Traditional drumlines are therefore considered more effective in meeting the purpose of the program and will be the preferred type of drumline used until alternatives are proven to be effective and do not compromise the purpose of the program.

Catch alert drumlines are required to be used in the Commonwealth Great Barrier Reef Marine Park as a condition of approval from the Commonwealth GBRMPA under the *Great Barrier Reef Marine Park Act 1975* (Cth).

5. Continued use of SharkSmart drones

SharkSmart drones are being trialled by Surf Life Saving Queensland (SLSQ) at 10 beaches across the state. In the 4 years that the trial has been running, more than 22,000 drone flights were conducted, more than 5,600 sharks detected, and 46 beach evacuations conducted in response to shark detections. There is significant scope for advancement in drone technology and artificial intelligence to aid better detection of sharks. Further, drones provide additional surveillance capabilities for SLSQ to detect swimmers in trouble and confirm possible marine animal entanglements in program gear.

Drones are a good augmentation of the program but cannot replace core program gear such as drumlines and nets. The program will continue the use and expansion of SharkSmart drones in partnership with SLSQ and in coordination with guiding principle 2 above.

6. Continued research and innovation in shark management

A framework for the systematic identification, trial and assessment of new technologies and management practices is to be developed and implemented to achieve the purpose of the program. No changes will be made to this plan until the new technology has been proven to be effective in Queensland coastal conditions and can be demonstrated to deliver improved outcomes in the achievement of the purpose of the program.

7. Research into whale deterrent technology and best practice marine animal release

Commercial whaling in Australia ceased in 1978 with the closure of Australia's last whaling station. In 1979, Australia adopted an anti-whaling policy, permanently ending whaling in Australian waters. The east coast population of humpback whales was estimated to be

a little over 100 individual animals at the time east coast whaling stopped in 1963. More than 40,000 whales are expected to migrate past the Queensland coastline this year.

Whale entanglements are rare. Over the past 5 years a median of 8 whales have been caught each year, **representing less than 0.02% of the migrating population**. To mitigate the risk of whale entanglement, DPI has 25 Marine Animal Release Team officers based at Mackay, the Sunshine Coast and the Gold Coast. These specially trained officers from the Queensland Boating and Fisheries Patrol are at the forefront of safe-release techniques and ready response to reports of whale entanglements.

Noting program gear will remain operational for the whole year, including during the winter whale migration period, the Queensland Government will invest in research into technology to better deter whales from interacting with program gear and continue our best practices in release of entangled marine animals.

8. Review shark management plans

Shark management plans are reviewed every 4 years, with the next review to be conducted in 2029. The review should ensure the program remains fit for purpose, reflects advances in science and technology, and strives to meet its purpose.

9. Refresh the SharkSmart campaign

The SharkSmart campaign seeks to educate the public about shark safety and encourage them to take responsibility for reducing the risk of shark attacks by changing their behaviour while in the water – primarily by raising awareness about safe swimming practices and understanding shark behaviour in Queensland coastal waters. The SharkSmart campaign is to be reviewed to ensure it continues to have impact.

Our plan

Based on the guiding principles above, this plan sets out 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



Education & engagement

The objectives of the 4 focus areas are clearly defined with priority initiatives identified for each focus area and clear linkages to the Shark Control Program's guiding principles. Under each focus area, actions are identified to demonstrate how the initiative will be delivered. The timing for delivering key initiatives is outlined in a separate implementation plan, which will be reviewed and updated annually. The implementation plan guides the Shark Control Program on an operational basis while the management plan provides the 4 year strategic objectives, governance and reporting requirements.



Focus area 1: Operations

Objective

Deliver an effective Shark Control Program that reduces the risk of shark attacks at specific locations.

Operating guidelines

- Operate in way that puts the safety of water users first.
- Continually improve and evolve to drive effectiveness and efficiency.
- Use science to inform changes to operations.
- Underpinned by safe work practices.
- Operate in a way that minimises the impact on the environment to the greatest extent possible without compromising the purpose of the program.

Approved shark control equipment

Since 1962, the Shark Control Program has used a mixed fishing strategy, with shark nets and drumlines across 10 regions from the Gold Coast to Cairns used to target potentially dangerous sharks. The previous *Queensland shark management plan: 2021 to 2025* saw additional investment in the program with the introduction of trials of alternative technology, dedicated research and education programs. Trials of drone technology, catch alert drumlines and an evaluation of beach-based shark barriers were undertaken between 2020 and 2024.

Shark nets

Shark nets have been used in the Shark Control Program since 1962 and are designed to catch sharks that pass through the area. They do not create a barrier between water users and sharks and do not prevent sharks from entering an area. Shark nets are set parallel to the beach and are 124–186 m long. Currently, 27 nets are used primarily in southeast Queensland (Gold Coast, Sunshine Coast and Rainbow Beach), with 2 nets at Mackay.

Due to the use of shark nets, there is an ongoing need to maintain a Marine Animal Release Team, which is made up of Queensland Boating and Fisheries Patrol officers who undergo specialist training to release entangled animals such as humpback whales.

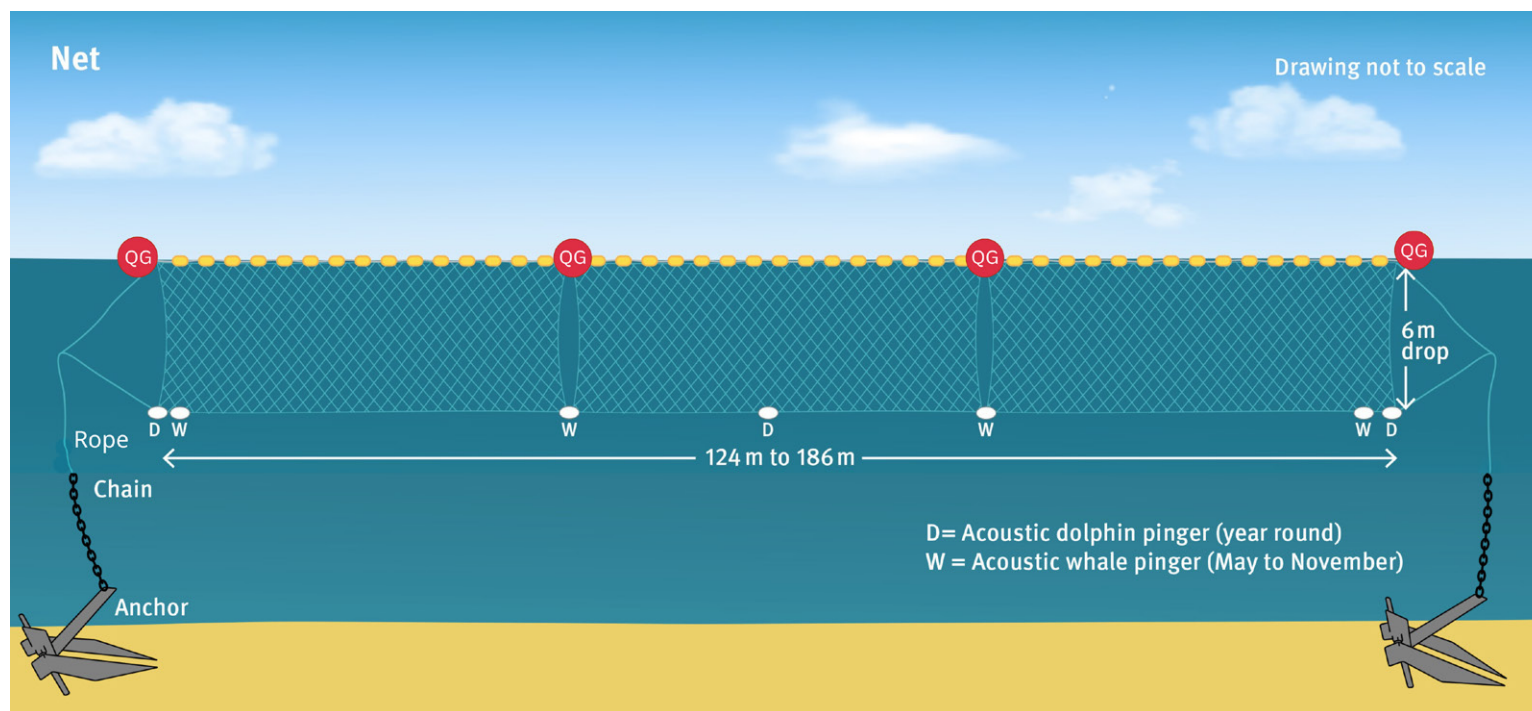


Figure 1: Shark nets used in the Shark Control Program

Drumlines

Drumlines are used across the Queensland coastline, including in the the Commonwealth Great Barrier Reef Marine Park. Currently, 383 drumlines are installed offshore away from water users. Drumlines consist of a baited hook attached to a buoy and floats, which are anchored to the sea floor. They aim to catch actively feeding sharks in the immediate vicinity.

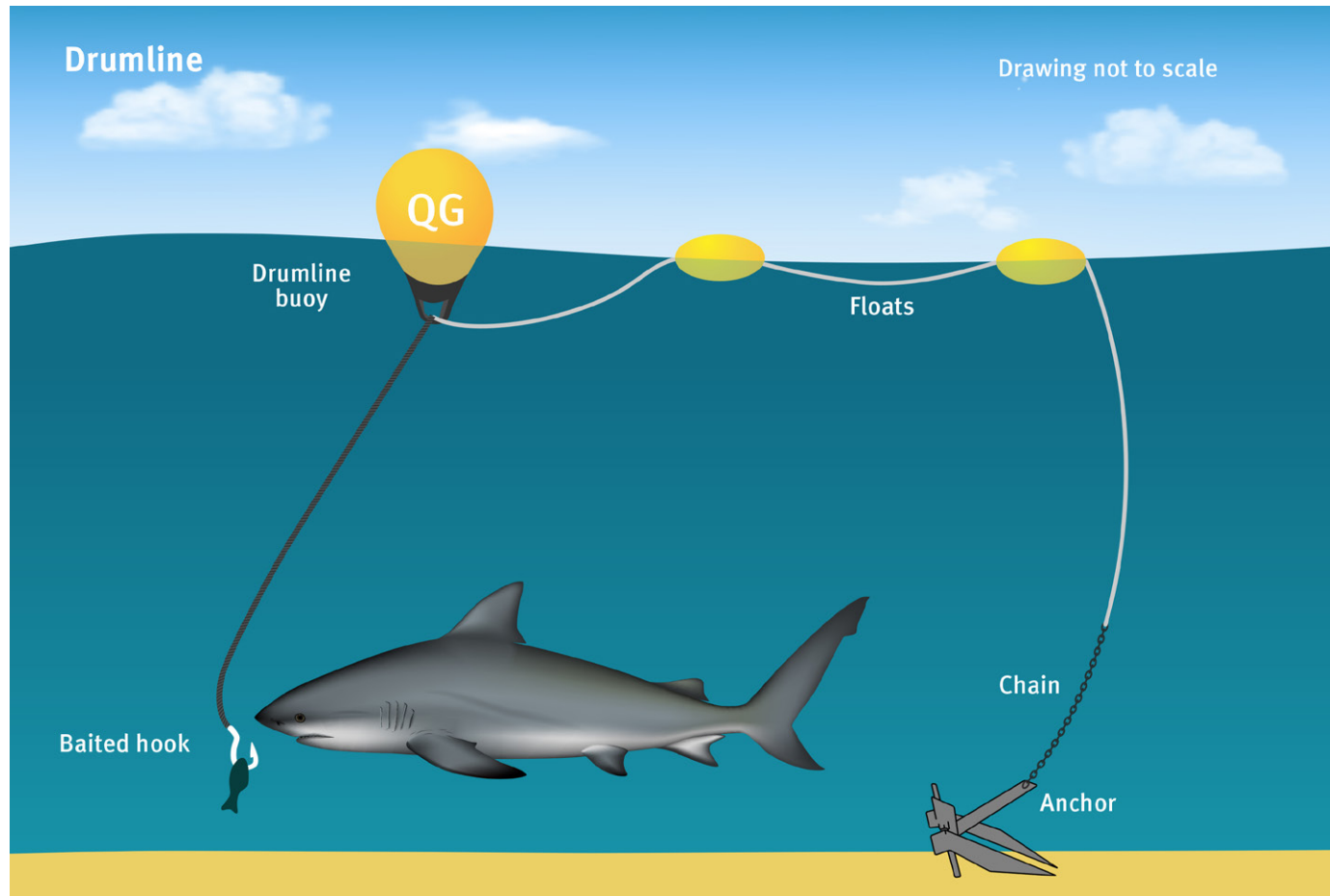


Figure 2: Drumlines used in the Shark Control Program

Drones

In partnership with Surf Life Saving Queensland, drones are used to monitor Queensland beaches to detect sharks and gather data on shark movements and behaviour. Drones currently operate on weekends, public holidays and every day on Queensland school holidays at 10 beaches, mainly in South East Queensland. The hours of operation vary depending on weather conditions.

Drones provide a bird's-eye view of the ocean and what's happening beneath the surface and have negligible impact on marine life. Real-time monitoring means lifesavers and lifeguards can respond rapidly if a shark or other

marine risk is spotted. Drones can assist with overall beach safety through monitoring marine threats or assisting with rescues.

However, drones are less effective in areas with murky waters (such as some North Queensland beaches), cannot operate in poor weather (strong winds, rain or storms), cannot operate in restricted airspace near airports without special permissions and are not a suitable replacement for core program gear such as nets and drumlines. Drone monitoring is also labour-intensive and requires highly skilled operators.



Figure 3: Drones used in the Shark Control Program

Table 2: Priority operations initiatives

Priority initiative	Description	Actions
Shark control equipment (nets and drumlines) to be operated throughout the year	Shark control equipment (shark nets and drumlines) will remain operational all year round. Currently shark equipment is serviced either 182 days or 260 days per year depending on the location. Implementing daily servicing will ensure equipment is operating more effectively, particularly for drumlines that will be baited more often. It is anticipated that the increase in servicing will correspond to an increase in shark catch. Servicing will be dependent on safe work conditions (e.g. weather). Safety is central to all operations.	1. Implement daily servicing 2. Maintain safe work practices for contractors
Shark control equipment optimisation	The location and configuration of shark control equipment will be optimised, taking into consideration the distribution of Queensland's population, beach visitation and tourism activity, as well as historic shark catch and knowledge of target shark distributions. Based on this review, potential new locations suitable for the program will be identified. Consultation with key stakeholders (such as Surf Life Saving Queensland, local governments, regulatory agencies) and relevant permissions will be required before new locations are confirmed. An operational model will be developed to determine the optimal locations and configuration for equipment deployment that maximises human safety. This model should guide the consolidation of shark control equipment by removing or relocating gear found to be ineffective.	3. Identify new locations for the expansion of the program 4. Review and optimise existing equipment
Marine Animal Release Team	Maintain a world-class Marine Animal Release Team (MART) to respond to marine animal entanglements in shark control equipment. Continue to ensure that the MART remains at the forefront of safe-release techniques.	5. Undertake review of MART processes 6. Maintain safe work practices for MART
SharkSmart Drone Program	The SharkSmart Drone Program will operate in partnership with Surf Life Saving Queensland (SLSQ). SharkSmart drones will complement other shark mitigation measures. The SharkSmart Drone Program will continue to investigate opportunities to extend coverage and improve the effectiveness of drones for shark-spotting through innovation. Additional locations will be identified in consultation with SLSQ under a new service delivery agreement.	7. Expand the use of SharkSmart drones to 15 beaches in 2025–26 and 20 beaches from 2026–27 onwards
Develop performance measures	Establish a program monitoring framework to systematically assess performance. Develop key performance measures to monitor program operations and priority initiatives.	8. Deliver a performance monitoring framework



Focus area 2: Research

Objective

Deliver research that is focused on achieving the purpose of the Shark Control Program.

Operating guidelines

- Informs how operations are continually improved to ensure the program achieves its purpose.
- Informs the SharkSmart education program.
- Underpins the scientific basis for trials.
- Findings and trial results are shared with the scientific community to continually improve understanding of shark mitigation options.
- Investment is leveraged through strategic partnerships with other organisations.

Table 3: Priority research initiatives

Priority initiative	Description	Actions
Shark Control Program research strategy	Review the <i>Shark Control Program research strategy</i> with consideration given to the KPMG report, the guiding principles and the key research initiatives identified in this plan.	9. Deliver new research strategy in 2025–26
Shark population studies	Conduct shark population assessments for key target species and scientifically evaluate the potential impact of the program on their respective biomass.	10. Conduct population assessments for key target species
Whale deterrent technology	Deliver research into the effectiveness of acoustic whale deterrents and invest in innovation to develop and test new technologies.	11. Implement latest technology in whale deterrents
Forensic shark attack analysis tools	Deliver research to improve forensic shark attack methodologies used to investigate shark incidents and identify shark species involved.	12. Improve forensic shark attack methodologies
Shark tagging and tracking	Where required under the Commonwealth Great Barrier Reef Marine Park Authority permit, continue to tag and track target shark species to improve understanding of risk and inform education initiatives. Provide support for the Integrated Marine Observing System Queensland Acoustic Telemetry Array through the deployment of acoustic receivers to detect tagged sharks and other marine life.	13. Collect information that improves understanding of shark behaviour



Focus area 3: Trials

Objective

Conduct scientific trials to improve effectiveness and efficiency of operations, and trial alternatives to currently approved shark control equipment to determine suitability for Queensland conditions.

Operating guidelines

- Delivered in accordance with the Shark Mitigation Alternatives Framework.
- Promotes innovation and continually monitors emerging technologies and strategies.
- Underpinned by science.
- Conducted in accordance with applicable regulations and legislation.
- Conducted with consideration for community and stakeholder expectations.
- Take account of local environmental conditions.
- Take account of commercial availability and proven effectiveness of equipment.

Alternative shark control equipment

Catch alert drumlines

Catch alert drumlines use the same configuration as a drumline, with the addition of satellite technology to notify contractors and program staff when an animal is caught. Contractors aim to respond to caught animals within an hour.

Catch alert drumlines have been trialled in the Commonwealth Great Barrier Reef Marine Park as a non-lethal alternative to traditional drumlines (a condition of approval from the Commonwealth Great Barrier Reef Marine Park Authority). A scientific evaluation of the catch alert drumline trial in Queensland found that while they are effective at improving mortality outcomes for animals caught, they caught fewer target sharks compared to traditional drumlines (53% decrease), had a high frequency of false alerts and a high incidence (51.1%) of marine animals failing to activate the satellite buoy when hooked.

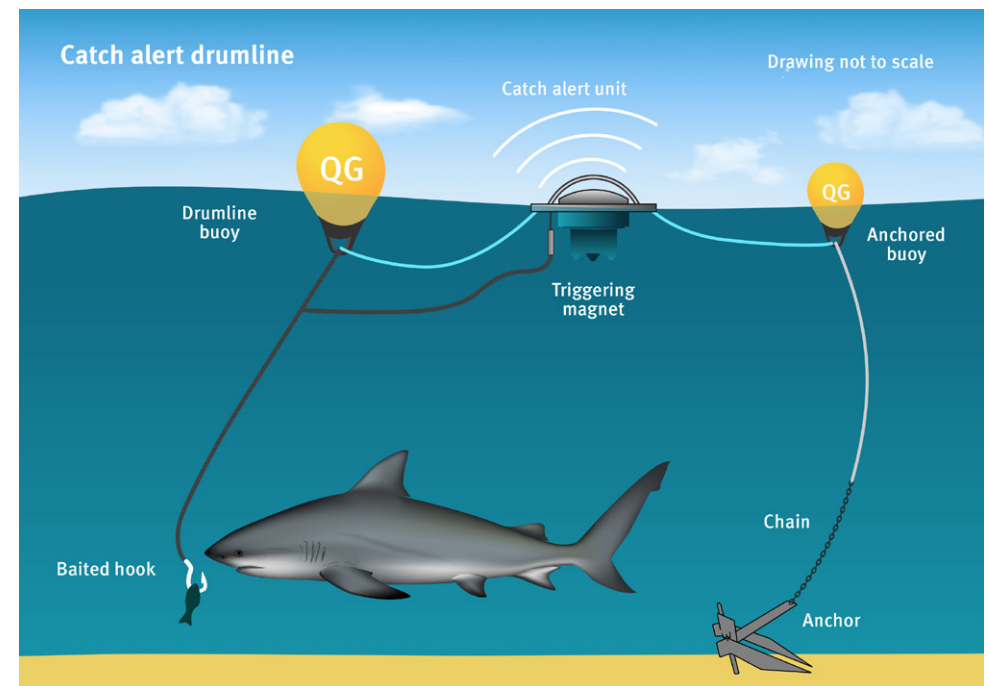


Figure 4: Catch alert drumlines being trialled in the Shark Control Program

Table 4: Priority trials initiatives

Priority initiative	Description	Actions
Shark mitigation alternatives framework	Develop and implement a framework for the systematic identification, trial and assessment of new technologies and management practices to achieve the purpose of the program.	14. Develop a shark mitigation alternative framework
Catch alert drumline trial	Implement catch alert drumlines only in areas where legally required. Trials at Cairns, Mackay and the Capricorn Coast will continue and expansion to other areas in the Commonwealth Great Barrier Reef Marine Park as per permit requirements.	15. Catch alert drumlines are only used where required under Commonwealth legislation or approvals
Improving the effectiveness of shark control equipment	Deliver research to improve the effectiveness of shark control equipment by investigating equipment configurations, alternative baits and hook types. Develop a detailed project plan for each trial, which includes monitoring parameters, key performance indicators and review process. Obtain relevant approvals as required.	16. Implement successful trials into the program





Focus area 4: Education & engagement

Objective

Deliver an education program that empowers the community to make informed decisions about shark attack risks.

Operating guidelines

- Provides practical tips to help water users reduce their risk based on the activity.
- Encourages water users to take personal responsibility for their actions and the safety of others every time they undertake water-based activities.
- Encourages water users to adopt SharkSmart behaviours to reduce the risk of shark attack.
- Underpinned by science.
- Investment is leveraged through strategic partnerships with other organisations.
- Communicate outcomes of this plan to Queenslanders in an accessible and transparent way.
- Engage with key stakeholders and the community.

Table 5: Priority education and engagement initiatives

Priority initiative	Description	Actions
SharkSmart education program	Review the SharkSmart education program (content, target groups, channels of advertising) to ensure it continues to have impact. Develop education and engagement strategies to address higher risk activities. Apply behaviour change methodologies to encourage the adoption of SharkSmart behaviours. Incorporate information about shark species and their behaviour into the SharkSmart education program.	17. Improve water users' understanding of how to reduce the risk of shark attack 18. Improve water users' adoption of SharkSmart behaviours
SharkSmart education and extension delivery	Deliver the SharkSmart campaign through effective channels targeted to user groups and investigate new channels. Develop SharkSmart education partnerships to extend SharkSmart messages to key audiences. Develop a SharkSmart extension program for fishers about SharkSmart fishing practices to ensure fishing activities do not increase the risk of shark attacks.	19. Improve reach of education to key audiences

Relationship between focus areas

The 4 focus areas are closely interrelated. The relationship matrix below demonstrates how the 4 focus areas complement each other in the delivery of the objectives.

Table 6: Relationship matrix of the 4 focus areas

	Operations	Research	Trials	Education & engagement
 Operations		Operations support research by providing data, samples and operational support.	Operations provide a baseline for evaluating trials and some trials are delivered by operations.	Operational data, including catch data and gear locations, is provided for the public to make informed decisions.
 Research	Research informs improvements to operations.		Research provides the foundation on which trials are designed and conducted.	Research underpins the content and delivery of the education program.
 Trials	Trials validate the effectiveness of alternatives for potential implementation into operations.	Trials are a type of research and further contribute to science through data, samples and other research.		Trial outcomes are communicated to the public.
 Education & engagement	Educating the public supports the delivery of operations, trials and research by keeping the community informed about the program's actions and progress of focus areas.			

Monitoring and evaluation

Key initiatives are shaped by science and ongoing input from the Shark Control Program Scientific Working Group, shark control contractors and key operational stakeholders such as Surf Life Saving Queensland. Community and stakeholder expectations and feedback will be considered throughout the planning, implementation and evaluation of each key initiative. DPI will actively seek feedback from communities in locations where the program operates.

Monitoring

Each key initiative is governed by a detailed project plan, which includes monitoring parameters, key performance indicators and evaluation process.

One priority initiative under this plan is the delivery of a performance and monitoring framework, which aims to ensure the program continues to deliver its purpose. This framework will be developed and reviewed regularly by the DPI in consultation with the Shark Control Program Scientific Working Group.

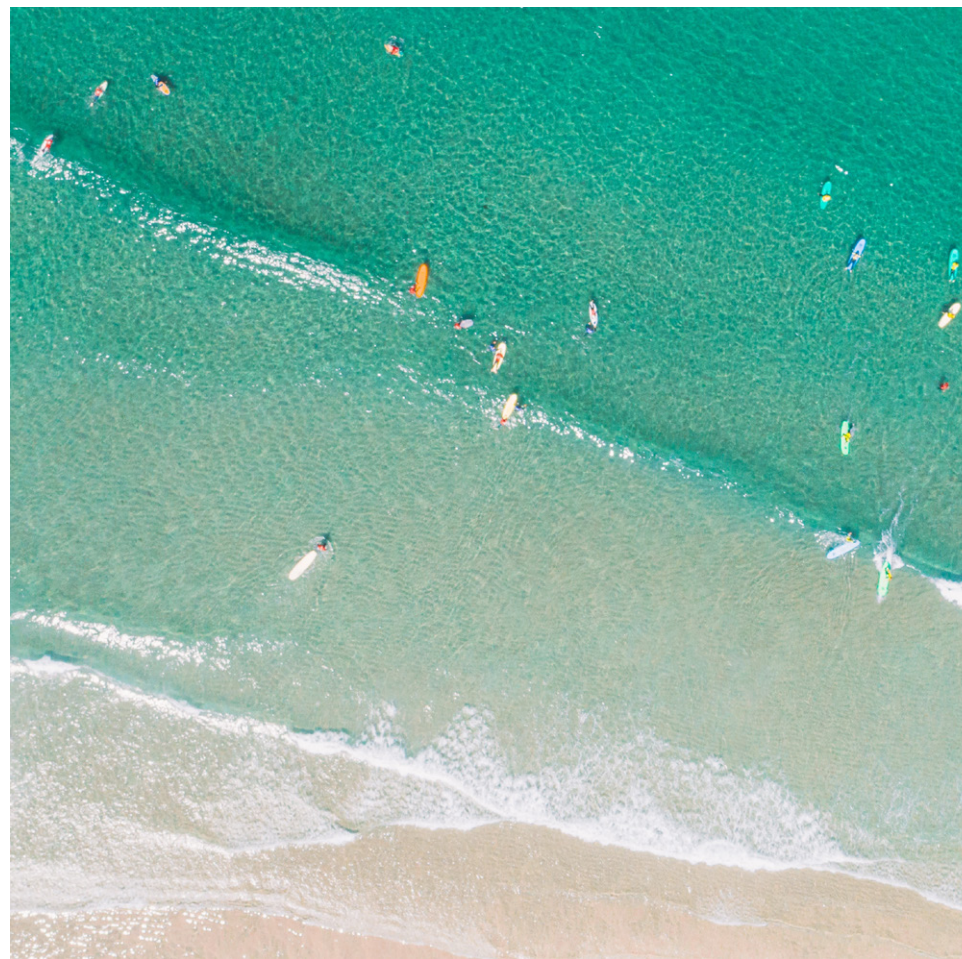
Evaluation

A progress report on this plan will be released annually, reporting on how key initiatives are tracking against the implementation schedule.

An evaluation report will be prepared at the completion of each initiative. Each report will include the initiative outcomes and recommendations.

A comprehensive review of the Shark Control Program and outcomes of all initiatives delivered in this plan will be conducted from 2028 to 2029. This review will inform recommendations to government on future shark management options for Queensland, which will be included in a new shark management plan proposed to commence in 2029 (guiding principle 8).

See Figure 5 on the next page for an outline of the monitoring and evaluation process.



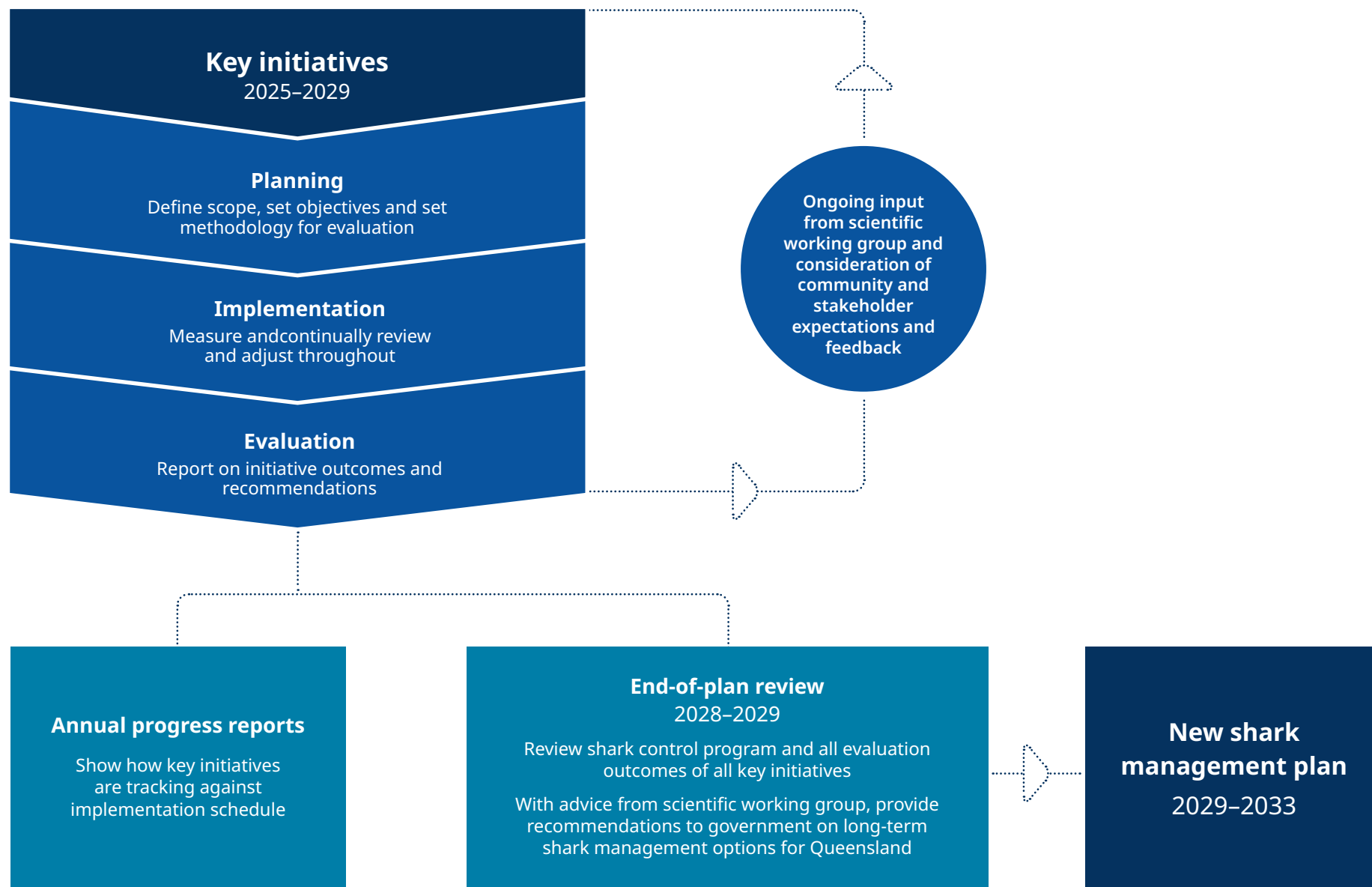


Figure 5: Monitoring and evaluation process for the *Queensland shark management plan: 2025 to 2029*

Governance

Best practice governance is achieved by robust, well-documented processes for decision-making and risk management.

The Shark Control Program is a core service undertaken by DPI and this new plan is supported by a significant boost in investment from the Queensland Government. It is important that the program has a comprehensive governance structure with a clear allocation of roles and responsibilities.

The program has adopted a RACI governance framework. The RACI model is a widely used responsibility assignment matrix that clarifies and defines roles and responsibilities. It ensures that everyone involved understands their specific role in delivering this management plan and the implementation plan.



The RACI model

Responsible

The person (or people) who do the work to complete the task. They are responsible for getting the work done or making decisions. Each task should have at least one person responsible.

Accountable

The person who is ultimately answerable for the correct and thorough completion of the task. They ensure the work is properly completed and approved. There should only be one accountable person per task.

Consulted

People who provide input, expertise or advice before the work is completed. These stakeholders are consulted, and their opinions are considered during the process.

Informed

People who are kept up to date on progress and decisions but do not have a direct role in the task. They are informed after decisions are made or work is completed.

Table 7: RACI model showing roles and responsibilities for the Shark Control Program

Shark Control Program						
Project task or deliverable	Scientific working group	Key operational stakeholders*	Shark Control Program Manager/team	Fisheries Queensland Executive	Department of Primary Industries chief executive or delegate	Minister for Primary Industries
Set policy direction for the program	I	I	I/C	I/C	I/C	R/A
Approve shark management plan	I	I	I/C	I/C	R/A	R/A
Approve significant changes to the program	I	I	I/C	I/C	R/A	I/C
Operational day-to-day changes or decisions	I	I/C	R	R/A	A	I
Delivery of program initiatives	I	I/C	R	R/A	A	I
Provide expert advice	R	I/C	C	C	I	I
Develop the implementation plan	I/C	I/C	R	R	R	I/C
Implement plan delivery	I/C	I/C	R	R/A	A	I/C
Communication and engagement	I/C	I/C	R	A	I/C	I/C
Shark management plan implementation reports	I	I	A	R	I	I/C

*Stakeholders such as Surf Life Saving Queensland, shark control contractors and community groups

Public reporting

Transparency is key to building public awareness and trust in the activities conducted by the Shark Control Program and its contractors.

For this reason, the program is committed to public reporting:

- The KPMG evaluation report used to inform the development of this plan is available on the DPI website at fisheries.qld.gov.au.
- Up-to-date Information about the program, including operations, trials, research and education is available on the DPI website at fisheries.qld.gov.au.
- Program catch data is published on QFish at qfish.fisheries.qld.gov.au.
- Shark attack data can be found on the Australian Shark Incident Database at taronga.org.au.
- A shark management plan implementation report and an updated implementation plan will be prepared annually and published on the DPI website at fisheries.qld.gov.au.
- Initiatives under the plan that involve the development of new frameworks and decision-making tools will be made available on the DPI website at fisheries.qld.gov.au.

References

Queensland Government (2021) *Queensland Shark Management Plan 2021 to 2025*. 13 pp. <https://www.publications.qld.gov.au/dataset/queensland-shark-control-program/resource/2879505f-f118-481c-aac5-38b952945851>

KPMG Australia (2024) *Shark Control Program Evaluation Report*. 138 pp. <https://www.daf.qld.gov.au/news-media/campaigns/sharksmart/program/about>

Queensland Government (2019) *Shark Control Program research strategy*, 7 pp. <https://www.publications.qld.gov.au/dataset/queensland-shark-control-program/resource/3b1aacab-69aa-4569-a40e-fcaf3ef722c9>