



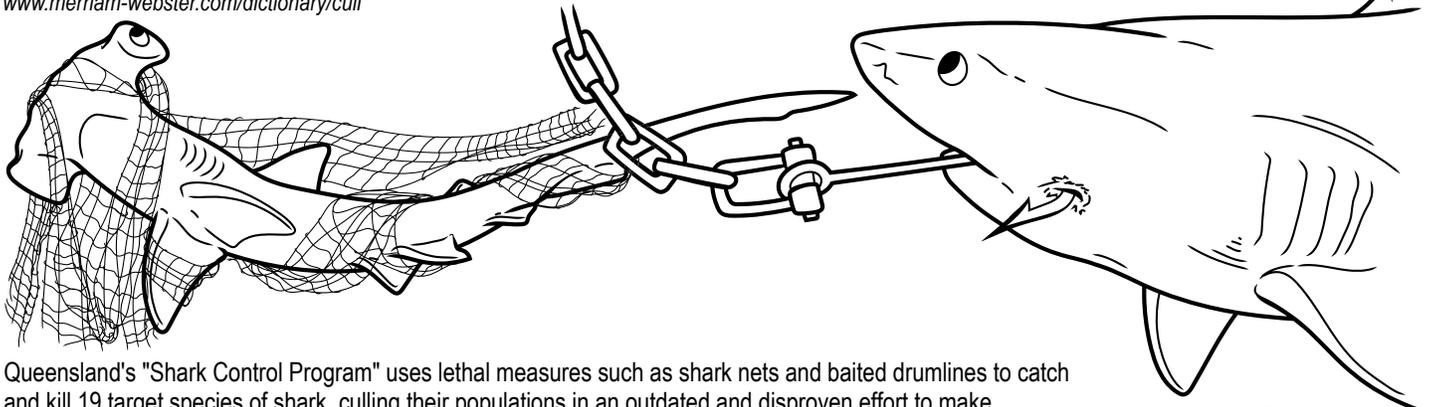
DID YOU KNOW that it's also home to the largest and most unselective shark culling program in the world, that has run since 1937 in New South Wales, and 1962 in Queensland?

Cull (verb)

1. To reduce or control the size of something (such as a herd of animals) by hunting or slaughter.
2. To reduce the population of (a wild animal) by selective slaughter.

Note: This sometimes pertains to weak or sick individuals, but the Australian shark culling programs that occur in the states of Queensland and New South Wales, do not specifically target the weak or sick, they are a mass approach to reducing populations.

www.merriam-webster.com/dictionary/cull



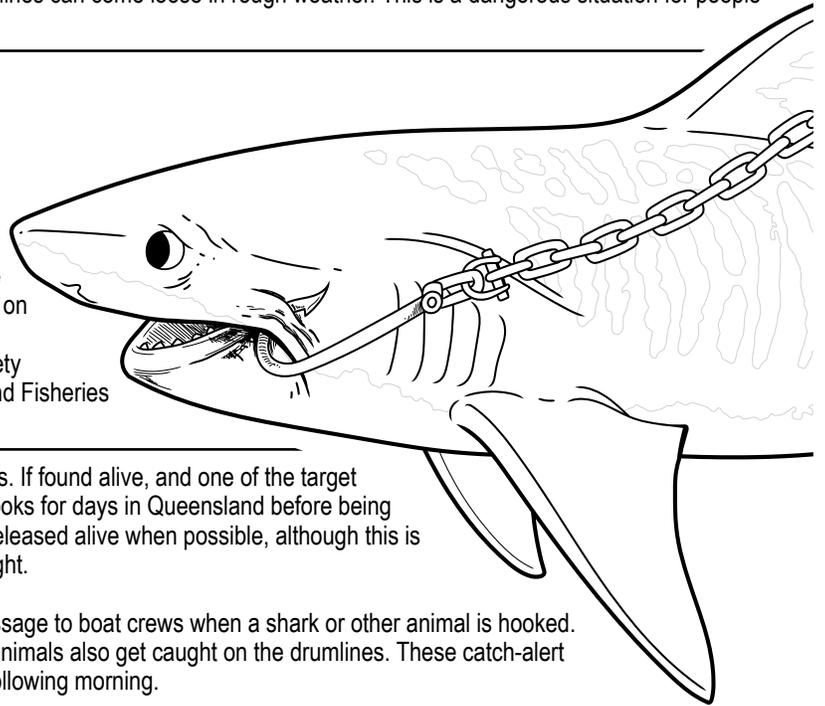
Queensland's "Shark Control Program" uses lethal measures such as shark nets and baited drumlines to catch and kill 19 target species of shark, culling their populations in an outdated and disproven effort to make beaches safer. New South Wales "Bather Protection Program" also uses shark nets and drumlines. New South Wales has 3 target species of shark instead of 19. Both of these unselective programs catch and kill many animals not on these "target" lists.



What are drumlines? A drumline is a baited shark fishing-hook, hanging from a buoy and anchored to the seabed that aims to attract and catch sharks. They are usually set approx 500m from shore. Drumlines are slightly more targeted than nets at catching sharks, however they still entangle or hook animals like whales, dolphins, turtles, harmless sharks, and many others. A loose drumline tragically drowned a 9 year old surfer on the Gold Coast in the 1990's. The fact that drumlines are baited and more effective at targeting sharks, means they have been the main contributor to brutally culling species like the tiger shark. Drumlines can come loose in rough weather. This is a dangerous situation for people and animals.

14,000

tiger sharks have been killed in Queensland thus far. Many of these were killed within the World Heritage listed Great Barrier Reef Marine Park. This number continues to increase as the drumlines are baited each day. The population impact on tiger sharks from culling was deemed to be significant by the Administrative Appeals Tribunal in the case of Humane Society International (Australia) and the Department of Agriculture and Fisheries (Queensland). *HSI v QDAT case AAT 617, 2019*



In Queensland drumlines are designed to catch and kill sharks. If found alive, and one of the target species, the shark will be killed. Animals can be hanging on hooks for days in Queensland before being attended to. Non-target shark species and other animals are released alive when possible, although this is rare. Drumlines in Queensland remain in the water day and night.

New South Wales uses catch-alert drumlines that send a message to boat crews when a shark or other animal is hooked. They attempt to tag and release the sharks if possible. Other animals also get caught on the drumlines. These catch-alert drumlines are collected at the end of each day and reset the following morning.

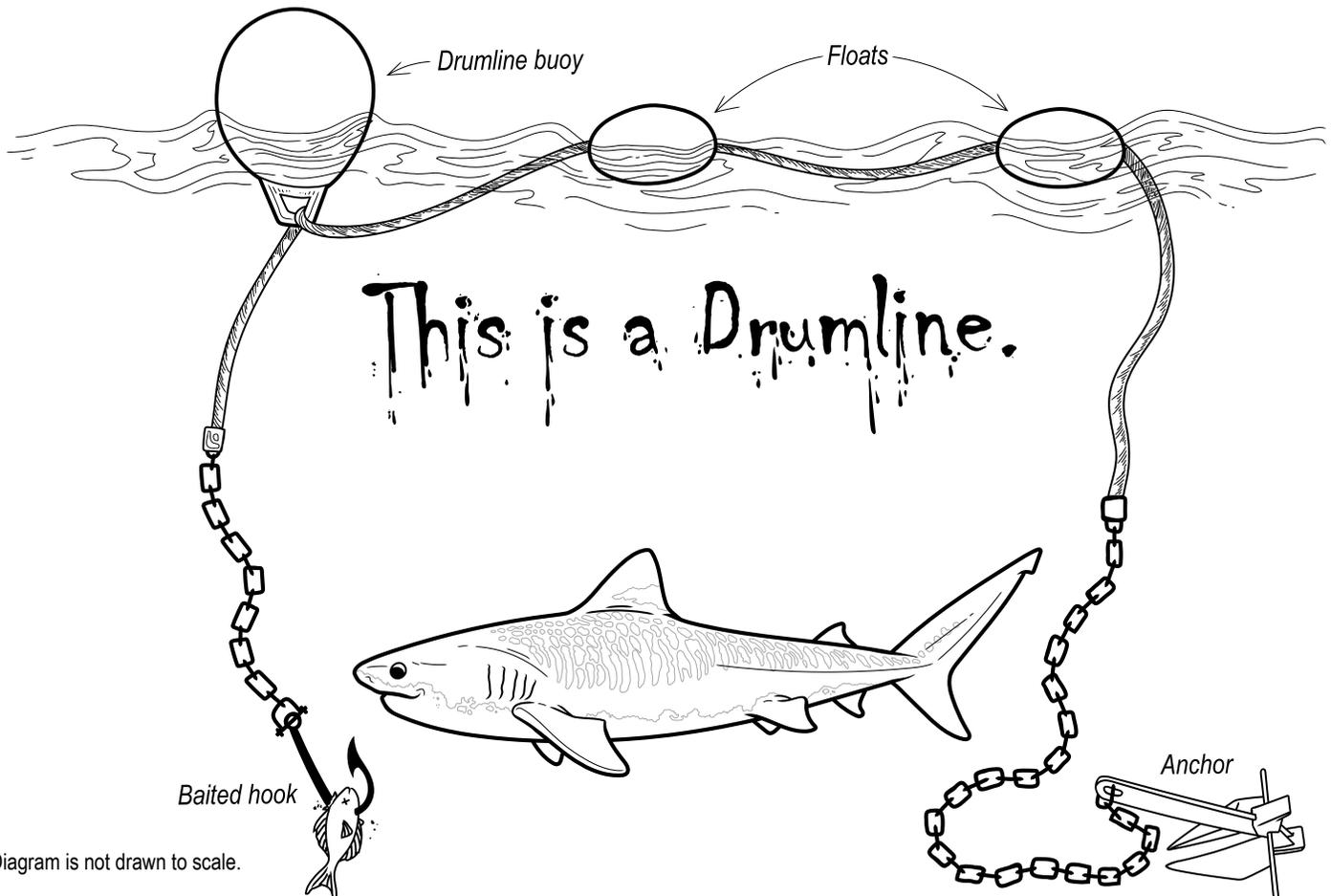


Diagram is not drawn to scale.

Sources:

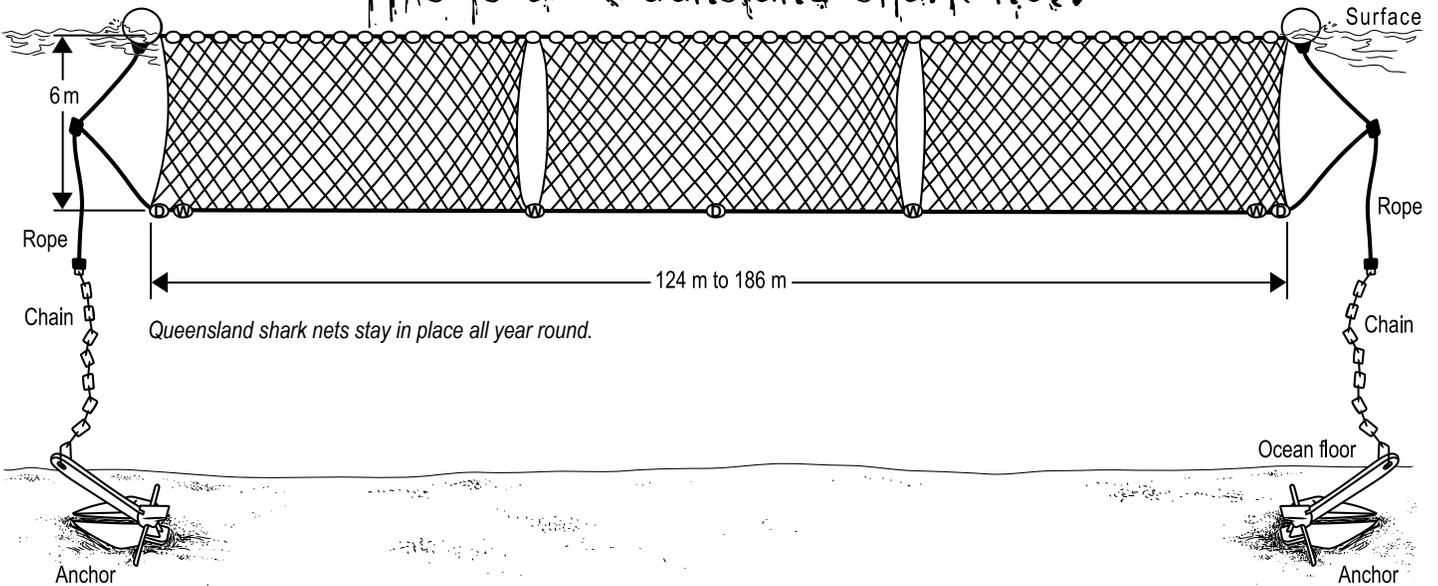
- <https://www.sharksmart.nsw.gov.au/technology-trials-and-research/smart-drumlines>
- <https://www.daf.qld.gov.au/business-priorities/fisheries/shark-control-program/shark-control-equipment/nets-drumlines>
- <https://hsi.org.au/blog/humane-society-international-vs-great-barrier-reef-marine-park-authority-and-queensland-department-of-agriculture-and-fisheries> (HSI v QDAT case AAT 617, 2019)



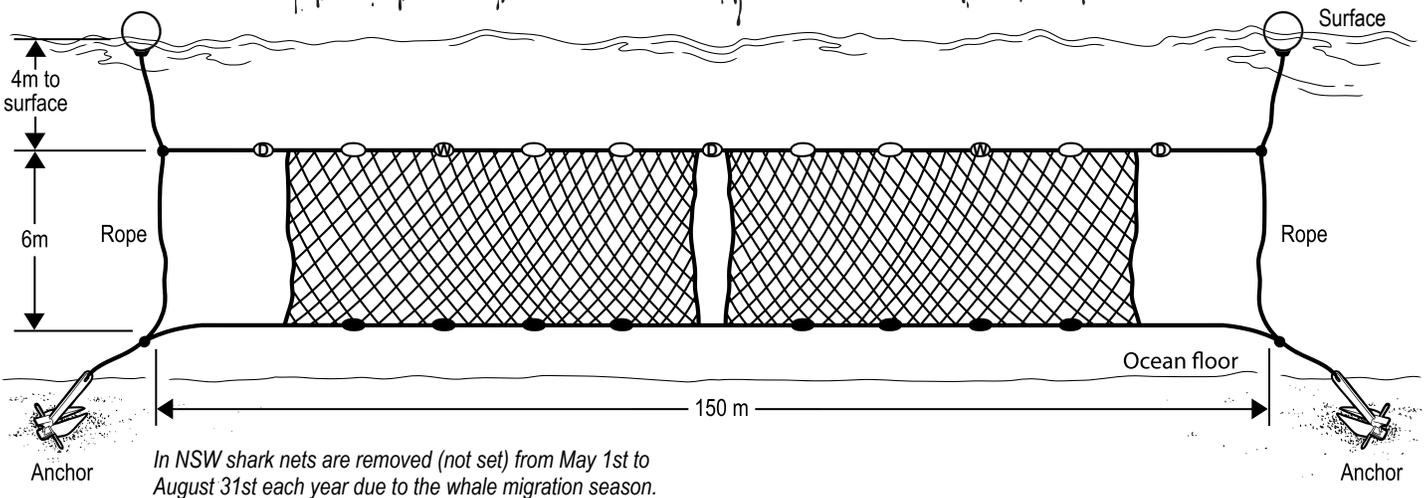
What are shark nets? A shark net is a fishing net between 124 to 186 metres long, 6 metres deep, and set in 12 metre deep water approximately 500 metres from shore. They are often used at beaches that are many kilometres long. These nets are not a barrier. They do not prevent sharks from swimming over, under, or around them.

In New South Wales, around 90% of animals caught in shark nets are non-target species. This includes humpback whales, manta rays, marine turtles, dolphins, sea birds, seals, and many others, plus harmless sharks like the grey nurse and hammerheads. Queensland also has a huge by-catch percentage due to the nets. Scientific studies have found them to be ineffective at protecting humans and extremely harmful to the environment.

This is a Queensland shark net.



This is a New South Wales shark net.



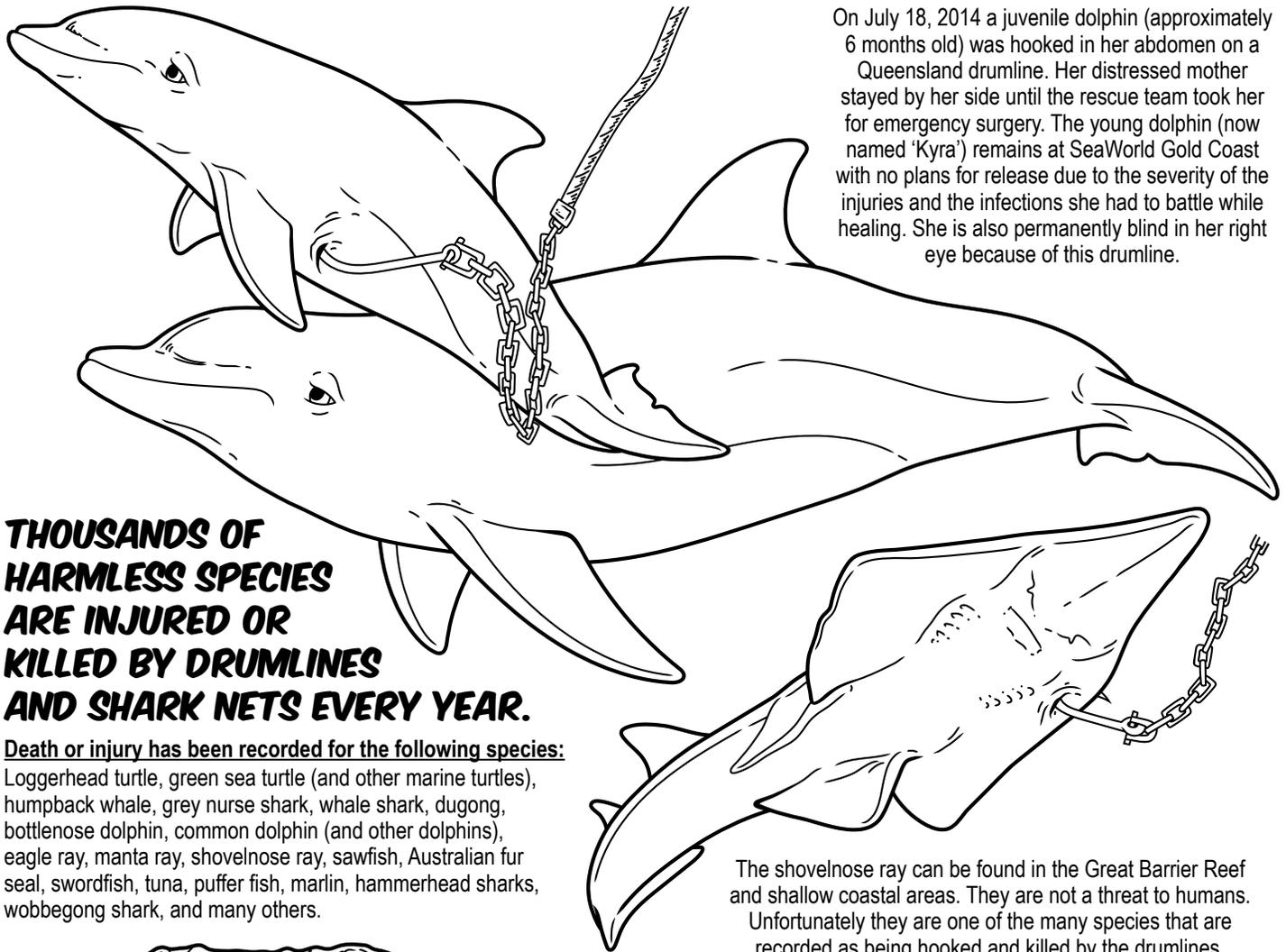
Diagrams are not drawn to scale.

Sources:

<https://www.sharksmart.nsw.gov.au/shark-nets>

<https://www.daf.qld.gov.au/business-priorities/fisheries/shark-control-program/shark-control-equipment/nets-drumlines>





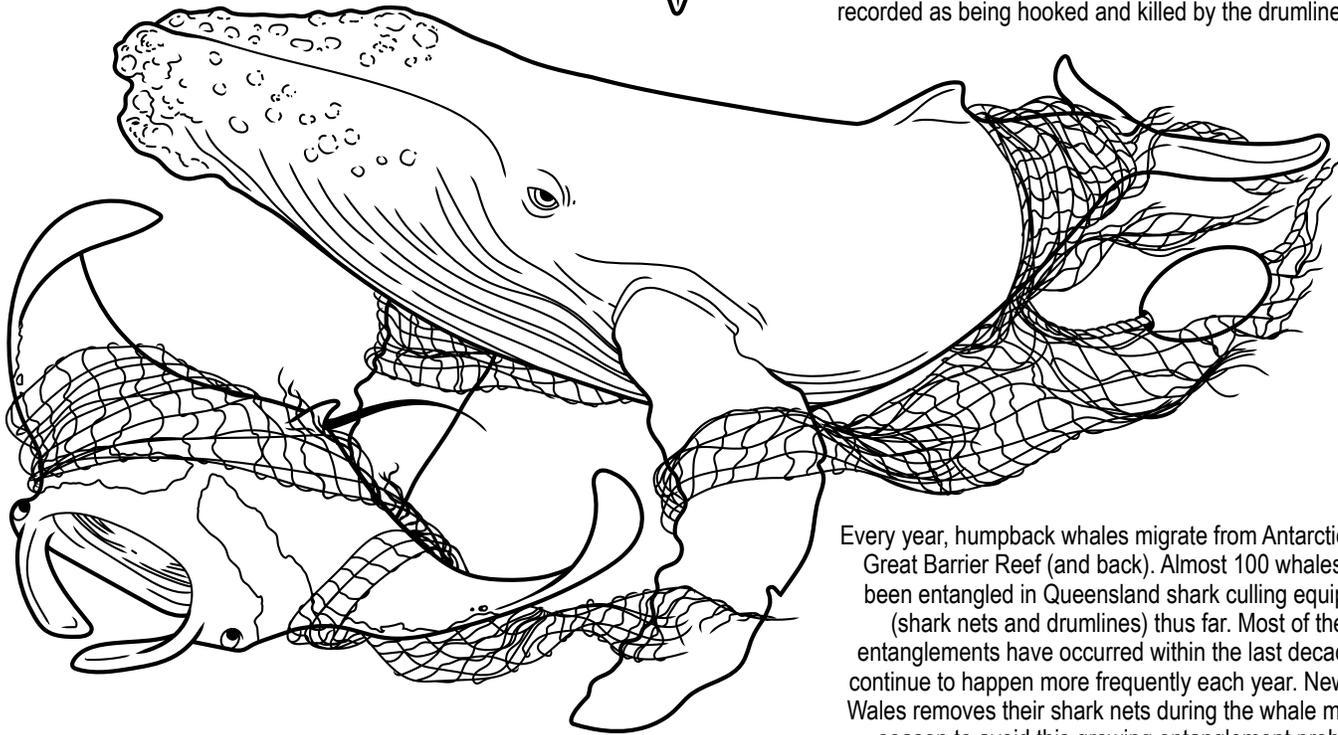
On July 18, 2014 a juvenile dolphin (approximately 6 months old) was hooked in her abdomen on a Queensland drumline. Her distressed mother stayed by her side until the rescue team took her for emergency surgery. The young dolphin (now named 'Kyra') remains at SeaWorld Gold Coast with no plans for release due to the severity of the injuries and the infections she had to battle while healing. She is also permanently blind in her right eye because of this drumline.

THOUSANDS OF HARMLESS SPECIES ARE INJURED OR KILLED BY DRUMLINES AND SHARK NETS EVERY YEAR.

Death or injury has been recorded for the following species:

Loggerhead turtle, green sea turtle (and other marine turtles), humpback whale, grey nurse shark, whale shark, dugong, bottlenose dolphin, common dolphin (and other dolphins), eagle ray, manta ray, shovelnose ray, sawfish, Australian fur seal, swordfish, tuna, puffer fish, marlin, hammerhead sharks, wobbegong shark, and many others.

The shovelnose ray can be found in the Great Barrier Reef and shallow coastal areas. They are not a threat to humans. Unfortunately they are one of the many species that are recorded as being hooked and killed by the drumlines.



Every year, humpback whales migrate from Antarctica to the Great Barrier Reef (and back). Almost 100 whales have been entangled in Queensland shark culling equipment (shark nets and drumlines) thus far. Most of these entanglements have occurred within the last decade and continue to happen more frequently each year. New South Wales removes their shark nets during the whale migration season to avoid this growing entanglement problem.

Sources:

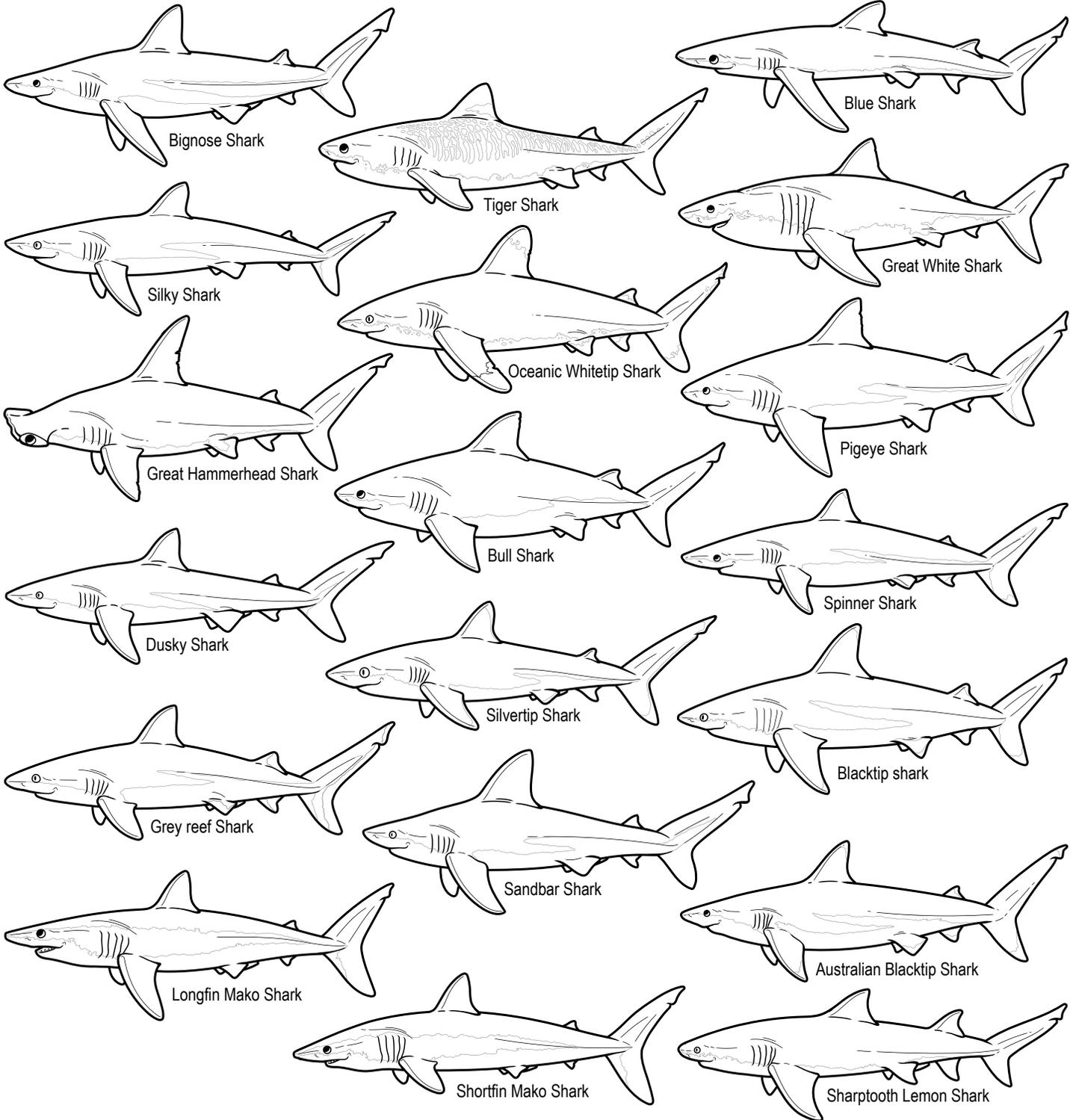
<https://qfish.fisheries.qld.gov.au/query/611dc91e-f57a-4db8-a76f-2d007b22e861/table?customise=True>
<https://www.awe.gov.au/environment/biodiversity/threatened/nominations/ineligible-ktp/death-or-injury-to-marine-species>



East coast Australia shark populations have declined by 74–92% for the hammerhead (Sphyrnidae), whaler (Carcharhinidae), tiger shark (Galeocerdo cuvier), and great white shark (Carcharodon carcharias) since the start of the Queensland shark control program in the 1960s.

In New South Wales, based on information from the shark meshing program, the grey nurse (Carcharias taurus) population on the east coast has declined by 90% over the last 40 years, despite being critically endangered and protected under Australian law.

This page shows the 19 target species that are ruthlessly killed in Queensland, most of which are not a threat to humans. Even those that could cause harm are killed for no reason since the program is scientifically disproven to keep beaches safe. The 3 target species in New South Wales are the bull shark (Carcharhinus leucas), great white shark (Carcharodon carcharias) and tiger shark (Galeocerdo cuvier).



Sources:
<https://www.uq.edu.au/news/node/123020> (The University of Queensland, Fifty years of decline in Queensland's coastal sharks)
<https://www.awe.gov.au/environment/biodiversity/threatened/conservation-advice/carcharias-taurus>
<https://www.daf.qld.gov.au/business-priorities/fisheries/shark-control-program/science-and-research/shark-species>
<https://www.sharksmart.nsw.gov.au/about-sharks>



SOLUTIONS:

Non-lethal solutions the Queensland and New South Wales governments should utilise for protecting beachgoers
More information: www.envoyfilm.com.au/solutions

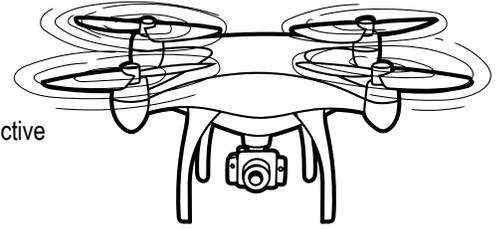
Queensland Modernisation Proposal

Together with leading organisations in this space, we have compiled a formal proposal to modernise the entire Queensland Shark Control Program with the latest non-lethal shark bite mitigation technologies. Published in October 2020, this report gives a detailed cost breakdown of how to update the program and for Queensland, Australia to become a global leader on this topic. *This proposal is available as a PDF download on the Envoy website: <https://www.envoyfilm.com.au/solutions>*

Hover UAV - Drone Technology

Shark detecting drones are being used on beaches in New South Wales by the Department of Primary Industries (with operations conducted by Hover UAV) as part of the NSW Government's \$16 million dollar Shark Management Strategy. These drones have proven to be remarkably effective at spotting sharks, identifying species, and clearing the water if it is a species of concern.

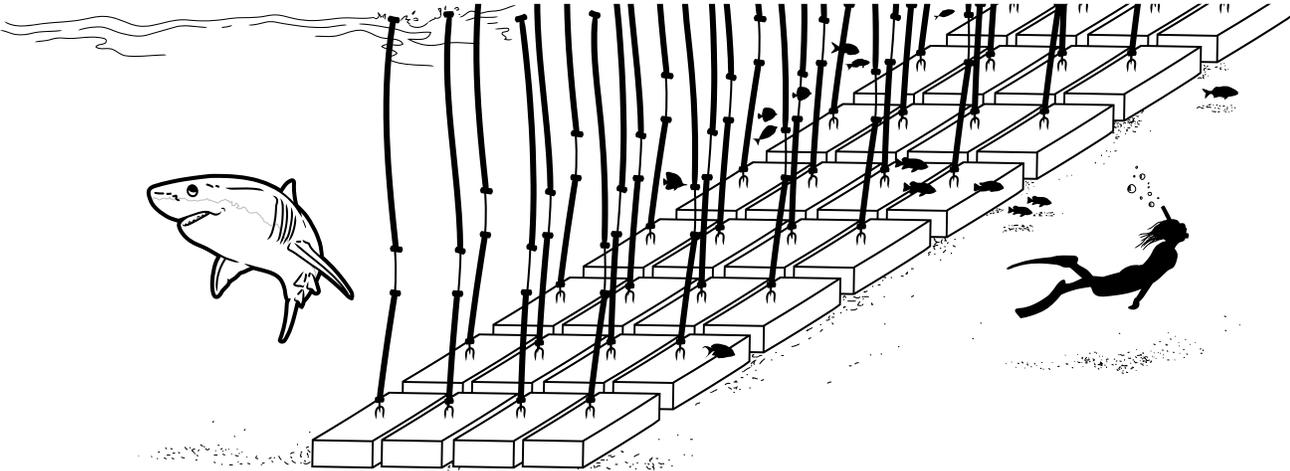
More info: www.hoveruav.com.au



SharkSafe Barrier

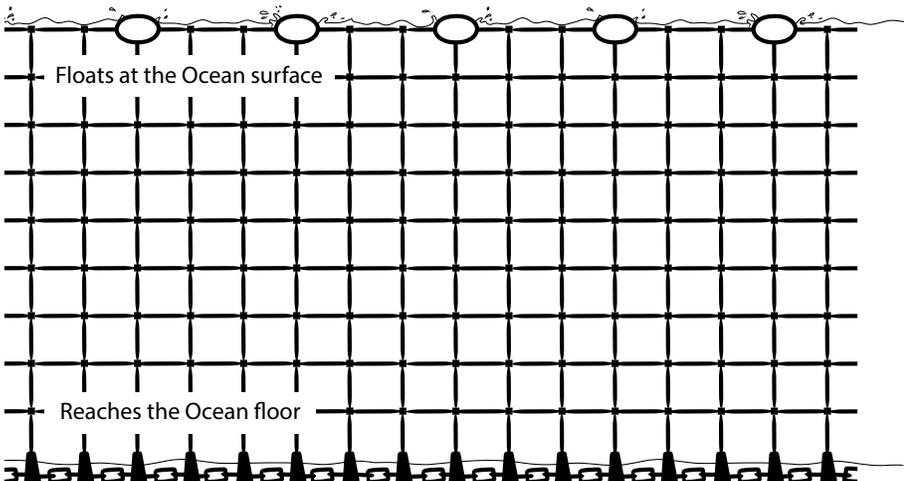
The SharkSafe Barrier bio-mimics the visual effects of a kelp forest and combines this with a series of permanent magnetic stimuli to form a barrier that dissuades sharks from passing through. Prototypes deployed in South Africa and the Bahamas were tested by attracting the sharks with chum (chopped/smashed fish) to motivate them to go through the barrier. 84 great white sharks and 41 bull sharks were observed during the tests and none of them swam through the barrier to reach the chum. Testing has shown that this option is approximately 97% effective for small-scale swimming areas. More research and adjustment to this barrier is needed, but we look forward to seeing what the future holds for this option.

More info: www.sharksafesolution.com

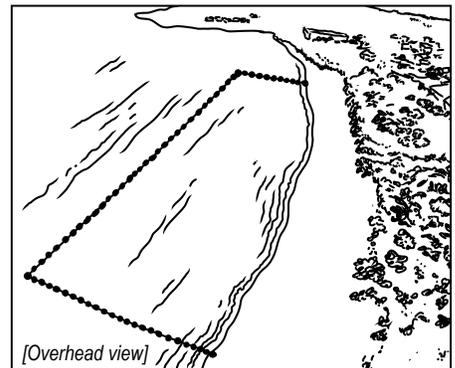


Eco-Shark Barrier: Marine-life friendly swimming enclosures

The Eco Shark Barrier consists of a network of durable components that are able to withstand the forces of nature. It is flexible enough to allow the passage of small marine life and rigid enough to prevent the entry or entanglement of large marine animals, including sharks. It can be installed in shallow or deep waters with the ability to be secured to a range of different surfaces including sandy seabeds, reefs, and groynes. This barrier forms a complete enclosure, from seabed to surface, which creates a safe swimming area. *More info: www.ecosharkbarrier.com.au*



Eco-Shark Barrier at Coogee Beach in Perth, Australia

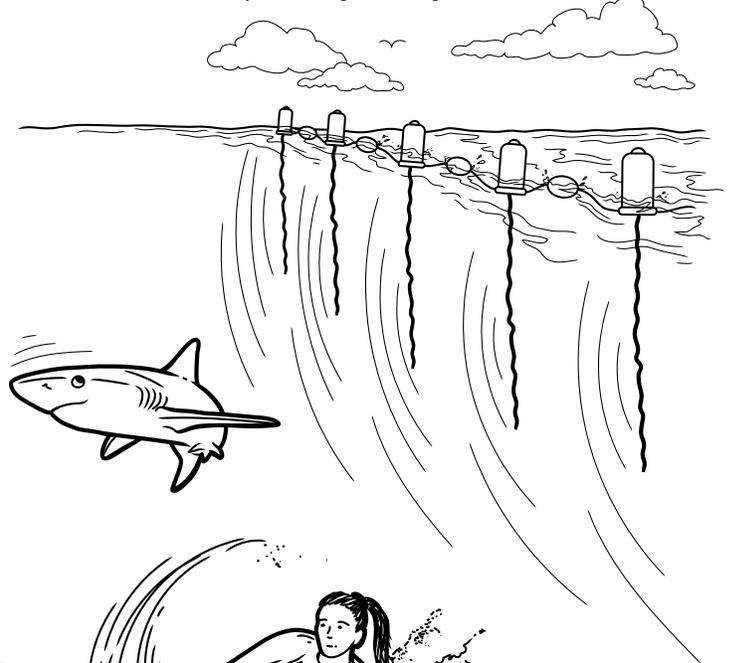


SOLUTIONS:

Non-lethal solutions the Queensland and New South Wales governments should utilise for protecting beach goers
More information: www.envoyfilm.com.au/solutions

Electrical Shark Deterrents

Sharks have short-range electrical receptors in their snouts called the "Ampullae of Lorenzini". Ocean Guardian's patented Shark Shield Technology has been developed to specifically take advantage of these highly sensitive receptors, creating a powerful three-dimensional electrical field which causes sharks to swim away from the source (device). This technology has also been adapted into barrier technology for installation at beaches to create safe enclosures. The LR1000 (shark barrier) can be installed in sections up to 400 metres in length with multiples of this possible to cover larger areas. The system consists of a network of buoys with antenna cables that are attached and reach a depth of 12 metres. The antennas are not a threat to wildlife (no risk of entanglement). This shark barrier is also able to withstand ocean elements (swells, currents, etc.).
More info: <https://ocean-guardian.com/pages/barrier-series>



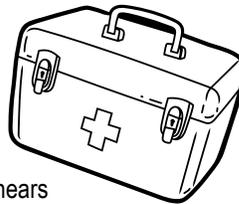
Education: An Australian guide to surfing with sharks

There is an unfortunate lack of education within the general public in Australia on how to avoid human shark interactions. The 'Australian Guide to Surfing with Sharks' was written by filmmaker and conservationist Madison Stewart (Envoy: Shark Cull cast member). This is an important and comprehensive guide on shark behaviours, environmental conditions that create risk for humans, post-incident medical response, and much more. This should be a go-to information packet for every beachgoer and something the Governments should help spread to the public (informative signs on the beaches, print-outs available at beaches, the guide should be added to school curriculum, etc.).
More info: <https://www.surfingguidetosharks.com/the-guide>



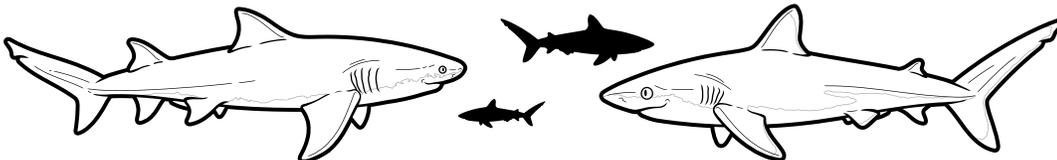
Trauma Kits

The Acute Shark Attack Pack (ASAP) can save lives and should be widely adopted across all beaches. This medical kit is designed to be taken to the beach or kept at marked beachside locations. The ASAP includes medical shears to cut through neoprene, trauma bandages, emergency blankets, tourniquets to minimise blood loss, plus an important instruction card.
More info: <https://theadvocate.org.au/news/sea-shepherd-launches-first-aid-shark-response-video>



Shark Tourism

Sharks and rays in The Bahamas generate \$113.8 million USD annually for the economy. Most of that revenue is from the shark diving industry. Fiji has a similar success story around positive and sizeable economic benefits from the protection of sharks and focus on a local diving industry. Queensland and New South Wales should utilise this revenue source instead of culling the animals that would create an economic boost.
More info: https://www.aims.gov.au/docs/media/latest-releases/-/asset_publisher/8Kfw/content/study-uncovers-value-of-shark-dive-tourism



SOLUTIONS:

Non-lethal solutions that you can personally use to reduce human shark interactions
More information: www.envoyfilm.com.au/solutions



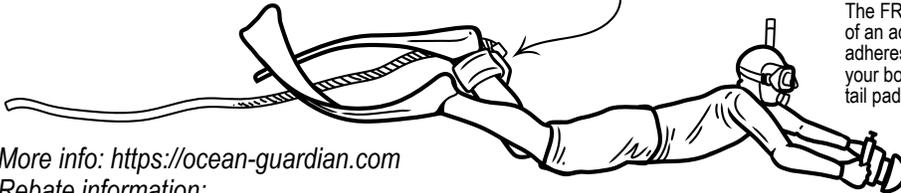
Information that can save lives!

We mentioned the 'Australian Guide to Surfing with Sharks' on the previous page and have added it here as well (it's that important!). You can read this guide online and share it with friends/family. Even if you don't surf, you'll gain important insight for emergency situations and how to help quickly if it's needed. This is an excellent resource for all beach goers.
More info: <https://www.surfingguidetosharks.com/the-guide>

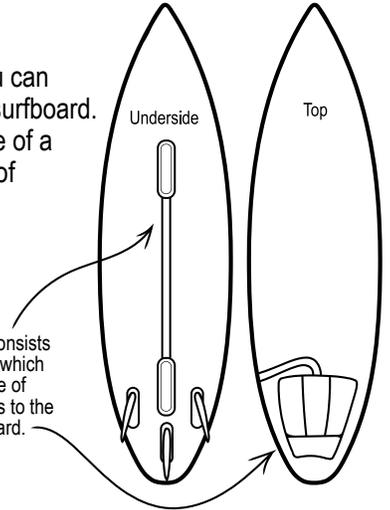
Small/personal devices

In addition to their 'shark barrier' technology, Ocean Guardian has personal devices available. You can purchase a small device to wear on your ankle or one that can be attached to the bottom of your surfboard. This technology is so effective that Western Australia has a \$200 rebate available for the purchase of a FREEDOM+ Surf device and FREEDOM7 personal deterrent device. This is the perfect example of personal responsibility meeting government incentives to make the technology more accessible.

The FREEDOM7 consists of a 2.2 m trailing antenna which creates an electrical field. The antenna is connected to small power module housed in a pouch attached to a velcro strap worn on the ankle.



The FREEDOM+ Surf consists of an adhesive antenna which adheres to the underside of your board and connects to the tail pad on top of the board.



More info: <https://ocean-guardian.com>

Rebate information:

<https://ocean-guardian.com/blogs/ocean-guardian-dive-community/wa-government-implement-200-rebate-on-shark-shield-freedom7>

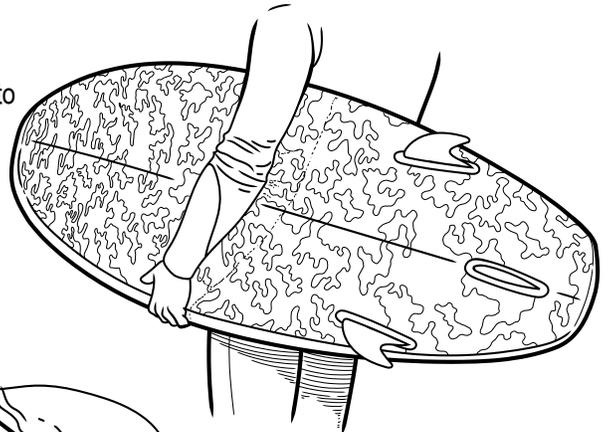
Wetsuit Technology

Independent scientists tested nine different fabrics to establish the effectiveness of incorporating UHMWPE nanofibres into wetsuits. The results showed the average depth of a bite from a great white shark on these composite fabrics (made by SharkStop and ActionTX) was considerably less than the bite depth on standard neoprene. This important wetsuit technology can help reduce extreme blood loss and can save your life. More info: <https://sharkstop.co>
<https://researchnow.flinders.edu.au/en/publications/effectiveness-of-novel-fabrics-to-resist-punctures-and-laceration>



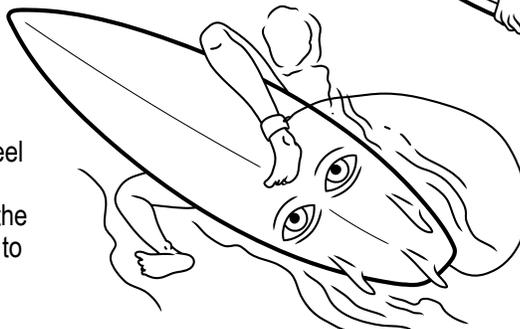
Camouflage + Reflective

Fader has developed camouflage wetsuits and reflective/camouflage decals to apply to the bottom of your surfboard. These products allow surfers to blend in with the surface when viewed from below. The wetsuits and decals are designed to hide surfers or other water users from ever being seen. These products adapt to changing light levels and function at all times (passive technology) whether a shark's presence is known or not.
More info: <https://faderwetsuits.com>



I see you!

'Shark Eyes' is a sticker product designed to mimic human eye contact, making a shark feel like it has been spotted. This can potentially remove the element of surprise and reduce the risk of an incident. More research is needed to assess how effective this product is.
More info: www.sharkeyesusa.com

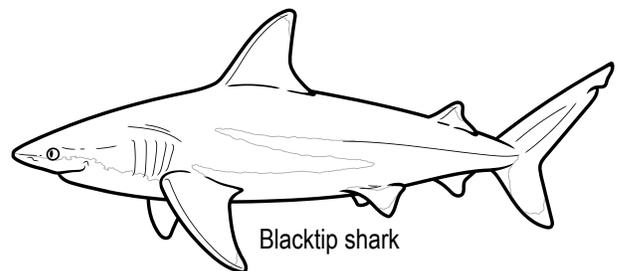
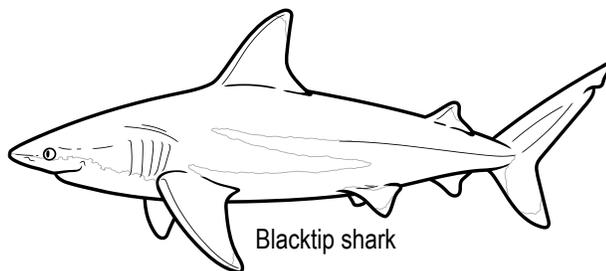
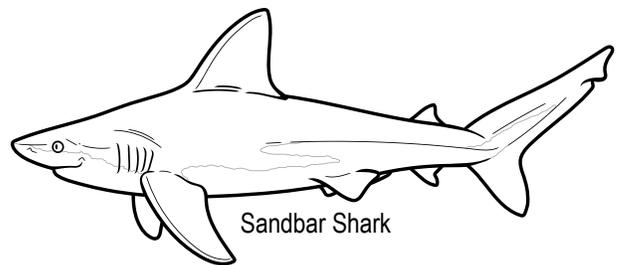
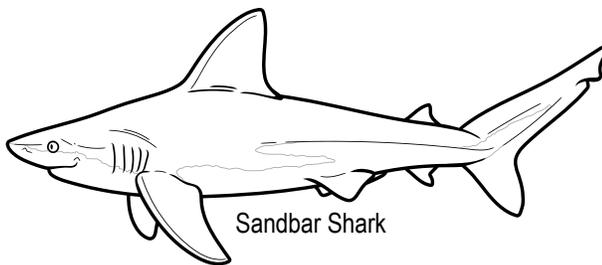
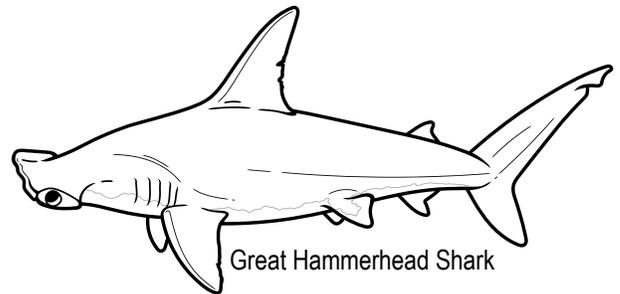
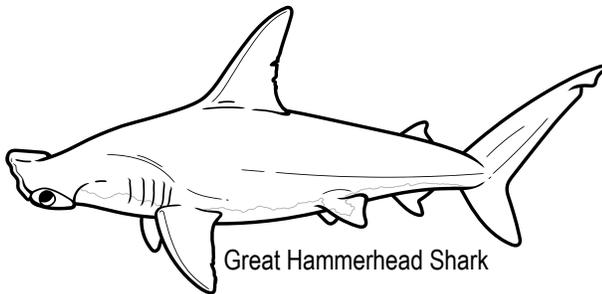
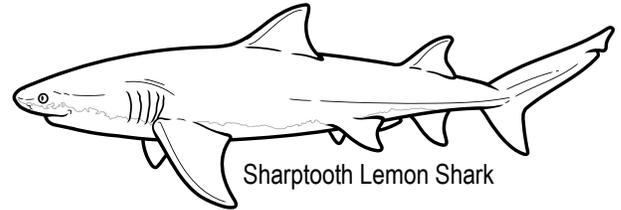
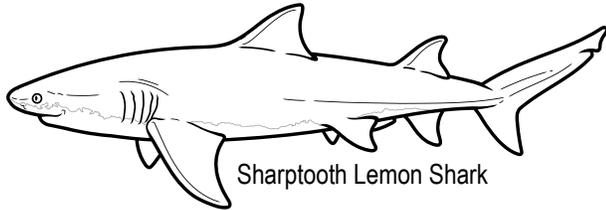


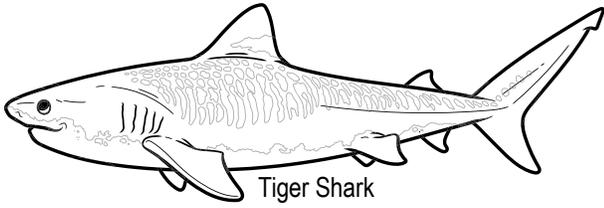
LET'S PLAY A MEMORY-MATCHING GAME!

The 19 target species of sharks can be found on this page (and following pages). Colour the pairs of sharks and cut along the borders (keep them all the same size). If your paper is thin (and you can see the shark when the paper is flipped over) you can glue each shark to a piece of cardstock, cardboard, construction paper, newspaper, etc. This will keep the game challenging!

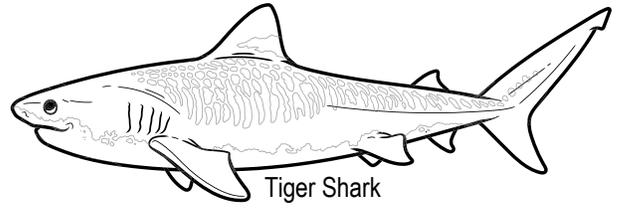
Shuffle (mix) your cards and keep them face down so you can't see the sharks. Place the cards face down in rows (on your table or floor, etc). Flip over one card. Flip over another card. If the cards are a match, set that pair aside. If the cards are not a match, try to remember the species and where the cards are located. Keeping the cards where they are, flip them over (face down) so the sharks are no longer visible. Try again - flip over one card and then another. Repeat until you've found all of the matching pairs!

*If playing this game with another person: Take turns flipping over two cards to see if you get a matching pair. If you get a match, you can take another turn. If you don't get a match - it's the next player's turn.

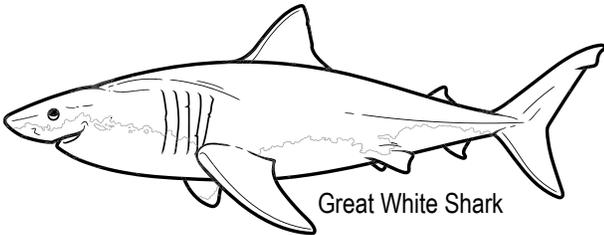




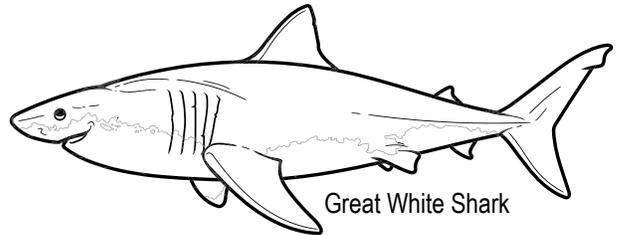
Tiger Shark



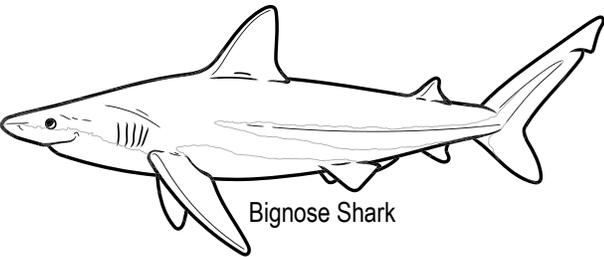
Tiger Shark



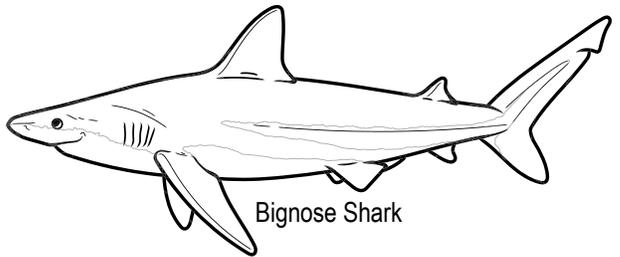
Great White Shark



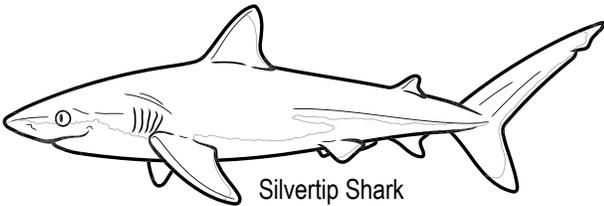
Great White Shark



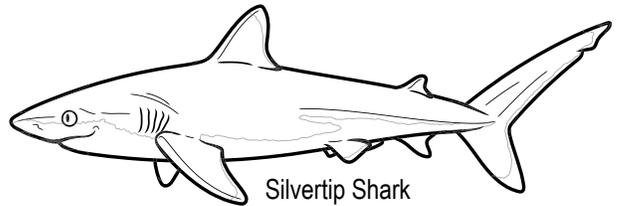
Bignose Shark



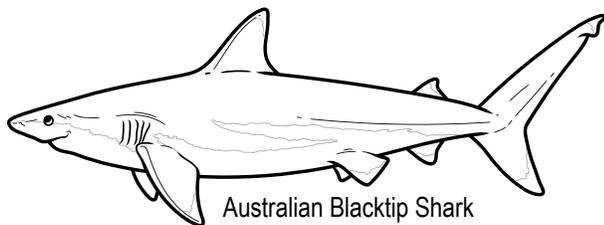
Bignose Shark



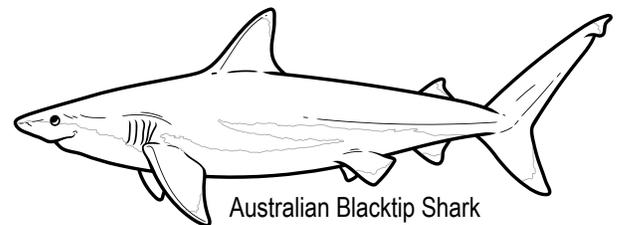
Silvertip Shark



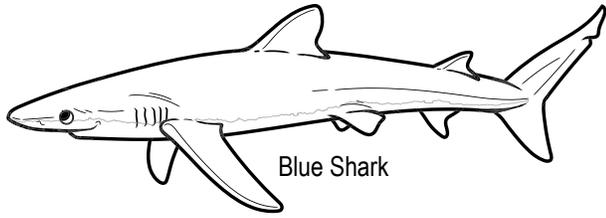
Silvertip Shark



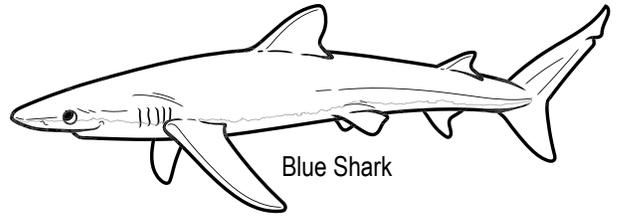
Australian Blacktip Shark



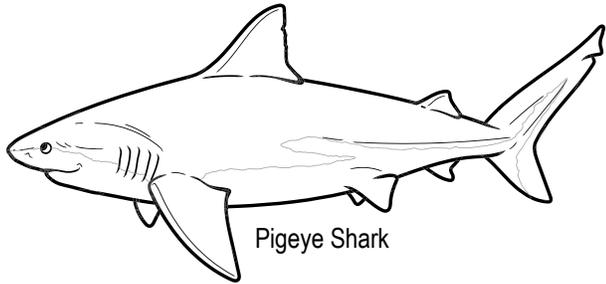
Australian Blacktip Shark



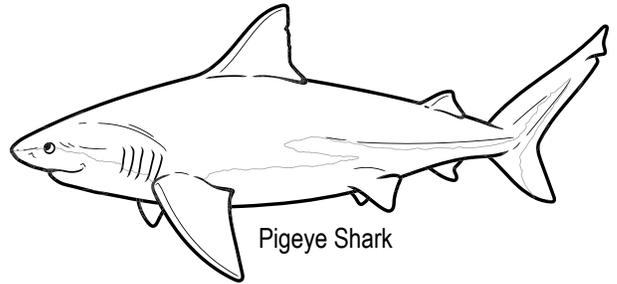
Blue Shark



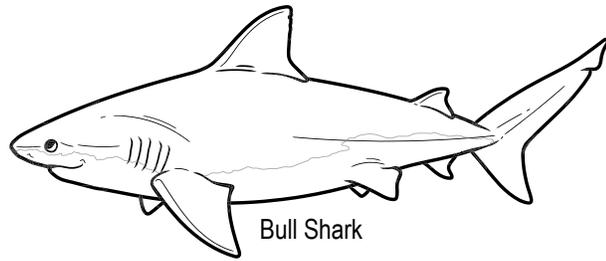
Blue Shark



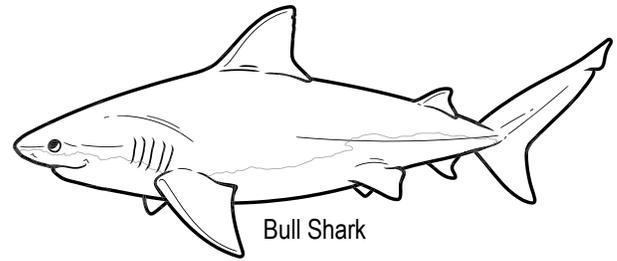
Pigeye Shark



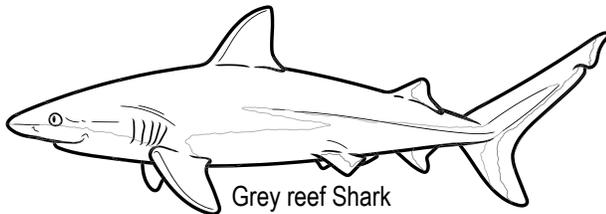
Pigeye Shark



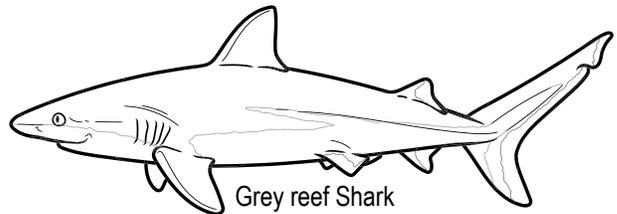
Bull Shark



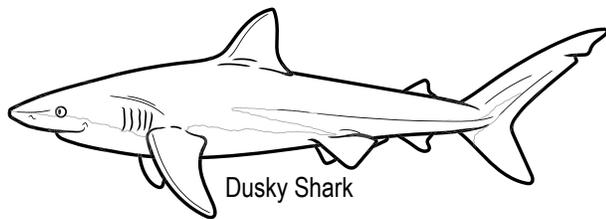
Bull Shark



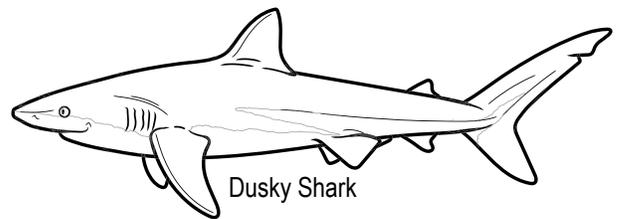
Grey reef Shark



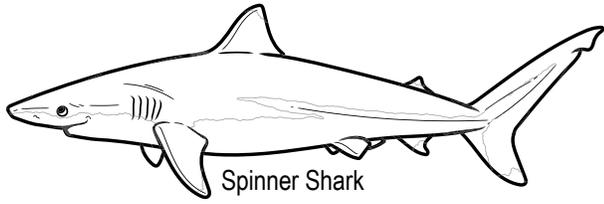
Grey reef Shark



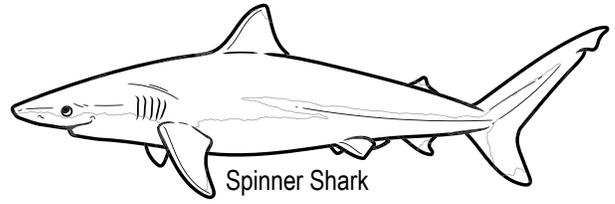
Dusky Shark



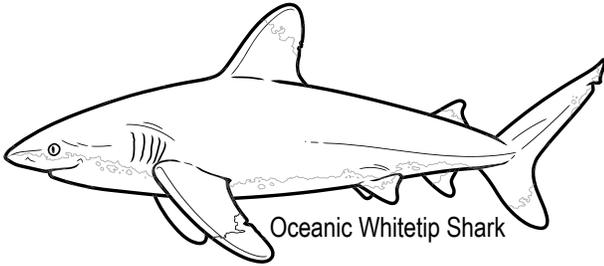
Dusky Shark



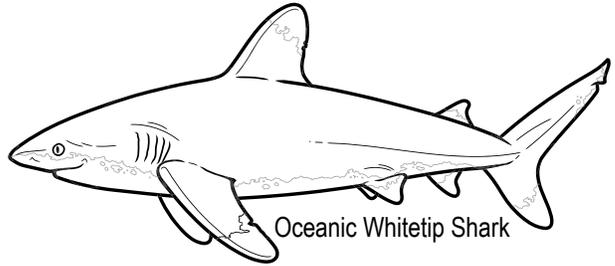
Spinner Shark



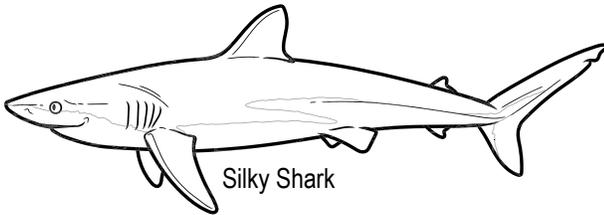
Spinner Shark



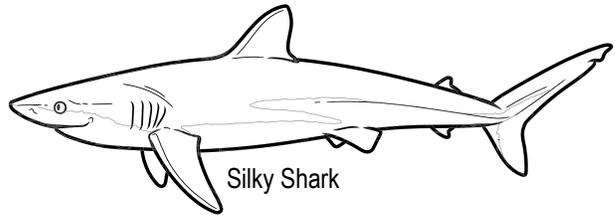
Oceanic Whitetip Shark



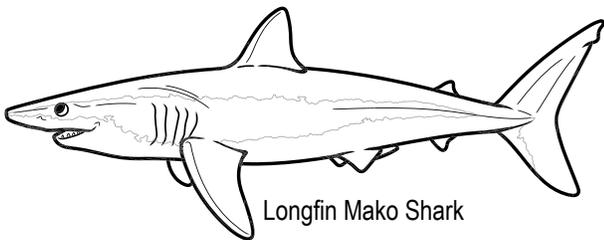
Oceanic Whitetip Shark



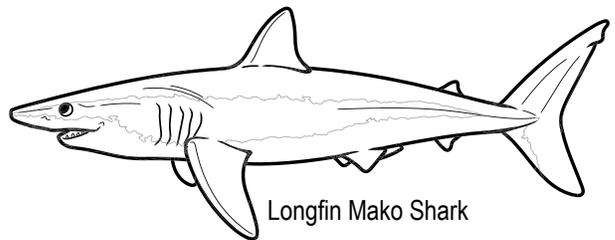
Silky Shark



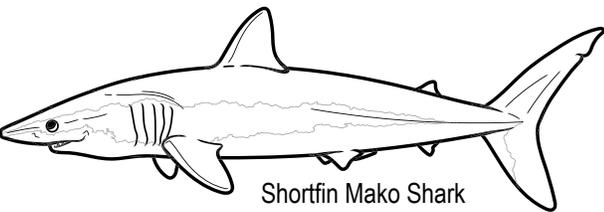
Silky Shark



Longfin Mako Shark



Longfin Mako Shark



Shortfin Mako Shark



Shortfin Mako Shark

