

CODES OF CONDUCT: SHARK ENCOUNTERS

BACKGROUND

Shark populations are generally vulnerable to the threat of fishing induced mortality, including incidental capture and entanglement. Life history characteristics such as longevity, late age-at-maturity and low fecundity make it difficult for shark populations to recover in abundance after depletion. Of the fourteen species of sharks that utilize Canadian Pacific waters, three are listed under the Canadian *Species at Risk Act*. The Basking Shark (*Cetorhinus maximus*) is listed as “Endangered”, and the Bluntnose Sixgill Shark (*Hexanchus griseus*) and Tope Shark (*Galeorhinus galeus*) (Figure 1) are listed as species of “Special Concern”. Note that *Species at Risk Act* prohibitions only apply to species listed as extirpated, endangered or threatened; thus, they do not apply to species of special concern. The primary threats to these shark species have been identified as bycatch and entanglement. The other eleven Canadian Pacific shark species are also vulnerable to these threats. In order to address the conservation concerns with shark species within Canadian Pacific waters, it is important that measures are taken to reduce the mortality of sharks resulting from bycatch and entanglement in Canadian waters.

Currently, there is no directed commercial fishery for shark species other than the North Pacific Spiny Dogfish (*Squalus suckleyi*) in Canadian Pacific waters, and only North Pacific Spiny Dogfish and Salmon Shark (*Lamna ditropis*) are permitted to be retained in the recreational fishery. Commercial fisheries are no longer permitted to retain *Species at Risk Act* listed shark species – all bycatch for these species is to be released at sea with the least possible harm. Catch limits for the recreational fishery have been reduced to “no fishing” for all species listed under the *Species at Risk Act*, and “zero retention” (catch and release) for all other shark species except Salmon Shark and North Pacific Spiny Dogfish¹.

This Code of Conduct for Shark Encounters has been developed to reduce the mortality of Canadian Pacific shark species, such as Bluntnose Sixgill and Tope Shark², as well as all other species resulting from entanglement and bycatch in commercial, aquaculture and recreational fisheries. However, it does not apply to Basking Shark, for which a separate Code of Conduct has been developed. Although the handling guidelines may be useful for fishers wishing to release Salmon Shark and North Pacific Spiny Dogfish, the Code of Conduct does not apply to the directed fisheries for those species.

¹ For further information regarding daily and current session limits for Salmon Sharks and Spiny Dogfish please refer to the current version of the *BC Tidal Waters Sport Fishing Guide* or visit the DFO website at <http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/index-eng.htm>.

² The Code of Conduct supports the SARA Management Plan for Bluntnose Sixgill Shark and Tope Shark in Canada, available on the SARA Public Registry at http://www.sararegistry.gc.ca/document/default_e.cfm?documentID=1569

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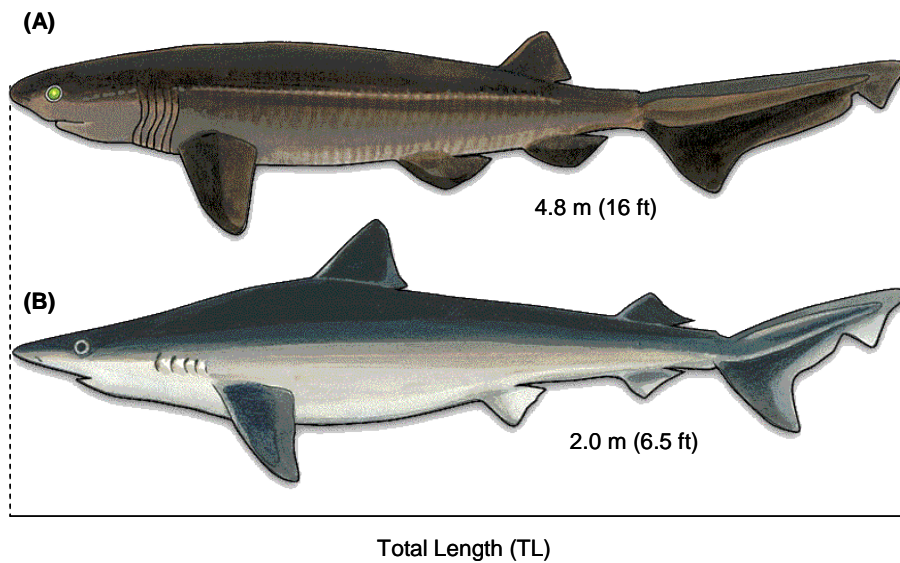


Figure 1. Diagram of a (A) Bluntnose Sixgill Shark (*Hexanchus griseus*) and (B) Topy Shark (*Galeorhinus galeus*). Total length is measured as a straight-line distance from the tip of the snout to the tip of the upper lobe of the caudal (tail) fin. Maximum total lengths for each species are indicated. Illustration by Jennifer Stone.

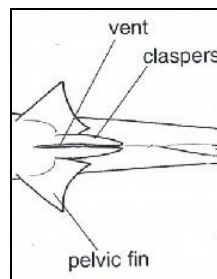


Figure 2. Diagram of the ventral side of a shark, showing the location of the paired claspers (reproductive organs) in male sharks.

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CODES OF CONDUCT

All aquaculture operators, recreational fishers, and commercial fishers that unintentionally encounter Bluntnose Sixgill Shark, Tope Shark, or any other shark species (with the exception of North Pacific Spiny Dogfish, Salmon Shark and Basking Shark) are encouraged to follow the steps listed below to reduce mortality or harm and increase the chances of survival of captured sharks.

Document and report all encounters.

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- 1) Document** **Document** as many details of the encounter as possible.
- **Photograph** the shark, where possible without negatively impacting the shark. Good quality photographs of dorsal fins can be used for species identification and identification of individual sharks.
 - If you are on a commercial vessel and there are Fisheries and Oceans Canada (DFO) staff or an observer onboard, inform them immediately of the interaction. They will assess whether biological samples can be safely taken and may attempt to take biological samples from the shark.

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- 2) Report** **Report** all Bluntnose Sixgill, Tope Shark, or other shark encounters with the following details:
- **Photograph(s)** or video of the shark, including the dorsal fin;
 - **Date** of the encounter and time of day;
 - **Location** (as specific as possible, e.g. positional GPS data);
 - **Estimates** of the total length and sex (males have claspers, see **Figure 2**) of the shark(s);
 - Any **distinguishing features** (e.g. colour, scars), behaviours, visible wounds, and the swimming ability of the shark post-release (see below for more details); and
 - Your name and contact information (voluntary).

Commercial fishers:

Report all shark encounters in your fishing logbook by species as per the commercial fishing conditions of license. Report the above-listed details in your logbook, where possible, for all sharks other than North Pacific Spiny Dogfish.

Recreational fishers and aquaculture operators:

Report all shark encounters (other than North Pacific Spiny Dogfish) to the local Fisheries Officer or e-mail your report to sharks@dfo-mpo.gc.ca with “shark encounter” in the subject heading. Please refer to above background section for catch restrictions and limits in recreational fisheries.

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IMPORTANT NOTES

Limit Encounters	<p>Avoid unintentional interactions with sharks by conducting fishing operations in areas and at times that minimize the chances of bycatch (e.g. avoid fishing in areas known to have high instances of shark interactions).</p> <p>Do not dispose of offal or bait in locations where gear is to be deployed.</p> <p>Suspend any fishing operation if there is a suspected (or confirmed) capture of a shark in order to minimize the duration of the interaction and allow for the safe release of the animal.</p>
Be Prepared	<p>Familiarize yourself and your crew with species of sharks in British Columbia waters.</p> <p>Ensure that appropriate gear is readily on hand to aid in de-hooking or disentangling captured sharks (e.g. needle-nosed pliers, wire cutters, bolt cutters; see Appendix 1).</p>
Assess the Situation	<p>Remain calm. Safety comes first. Under NO circumstances should you enter the water. Do not attempt to bring a shark onboard if doing so pose danger to you, the crew or the shark. Use common sense and caution. Stay clear of the shark's mouth and strong caudal (tail) fin.</p>
Take Action	<p>Time is a vital factor. Minimizing capture and handling times will decrease the chances of injury to the shark, and increase the likelihood of post-release survival (e.g. limit air exposure to 3-5 minutes if the shark is completely removed from the water; any longer and the gills may become damaged).</p> <p>For all encounters, record any visible wounds and the shark's swimming ability post-release (e.g. active with a strong caudal (tail) fin thrust, slow glide with some fin movement, no fin movement and shark inverted).</p>

1) HANDLING GUIDELINES FOR RECREATIONAL FISHERS

Please refer to the [BC Tidal Waters Sport Fishing Guide](#) for catch restrictions and limits in recreational fisheries. In the event of an accidental capture, proper handling and release procedures for sharks caught by recreational fishing gear vary with life state.

Assess the life state (alive/dead) and condition of the shark (good/poor) and proceed accordingly:

1. Alive in good condition (e.g. active swimming, minimal wounds)

- a) Treat the shark as gently as possible. All sharks are highly susceptible to injury.
 - Use your line or a dip net to manoeuvre the shark alongside the boat.
 - Avoid the use of restraining devices such as straps, tail ropes, or gaffs.
 - Do NOT hold the shark by its gills. This may cause serious injury.

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- b) Evaluate whether the hook can be successfully removed with the shark in the water. Keeping the shark in the water will minimize stress to the shark.
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- c) Attempt to remove the hook.
- If the shark has been hooked through the mouth with a barbed hook and the hook is visible and easily reached, invert and pull on the bend of the hook with a gaff while pulling on the fishing line simultaneously. This action should safely dislodge the shark.
 - Alternatively, attempt to cut the hook below the barb with bolt cutters, so that the hook will slide out with minimal damage to the shark.
 - If the shark has swallowed the hook or has been “foul hooked” (i.e. hooked any place but the jaw), do not try to retrieve the hook. Cut the leader as close to the shark as possible.
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- d) If the hook cannot be successfully removed with the shark in the water, bring the shark onboard (this may not be possible with a large shark).
- Use a dip net for smaller sharks.
 - If the shark is larger, make an attempt to support the shark’s weight by at least two points when lifting from the water (one point of contact being the line, and the other being a hand under the abdomen, posterior end of the body, or caudal fin).
 - Lifting using only the line or tail can cause further injury to the shark.
 - Bring the shark up and onto the boat in as horizontal a position as possible.
 - Follow hook removal procedures in step C noted above.
 - Lower the shark back into the water.
 - Maintain two-point contact until release.

2. *Alive in poor condition (e.g. sluggish, visibly wounded)*

- a) The shark should be detached from the gear without being brought on board, if possible. Keeping the shark in the water will decrease the likelihood of further injury and stress to the shark.
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- b) Evaluate whether the hook is visible and can be removed. Holding the shark carefully at the surface, use pliers, bolt cutters or a long handled knife to twist the hook out or cut the hook or leader as close to the mouth as possible without further injuring the shark.

3. *Dead*

- a) Dead Bluntnose Sixgill and Tope Sharks cannot be retained by recreational fishers, and should be disposed of as with other shark species not listed under the *Species at Risk Act*.
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- b) Contact the local Fisheries Officer or e-mail your report to sharks@dfo-mpo.gc.ca with “**shark encounter**” in the subject heading.
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2) HANDLING GUIDELINES FOR COMMERCIAL FISHERS AND AQUACULTURE OPERATORS

The procedures to be followed for the proper handling and release of sharks caught in commercial fishing gear vary with gear type (e.g. hook-and-line, line, trawl net, gillnet, seine net, or aquaculture net).

- For all captures, the life state (alive versus dead) and condition (good versus poor) of the shark should be assessed first.
- If assessed as alive, the shark should be handled and returned to the water as gently and efficiently as possible, as all sharks are highly susceptible to injury.
- Detailed handling and release procedures for live sharks for each gear type are described below.
- Dead Bluntnose Sixgill Shark and Tope Shark cannot be retained by commercial fishers, and should be disposed of as with other shark species not listed under the *Species at Risk Act*. If an on-board observer has taken samples, please contact the local Fisheries Officer or e-mail your report to sharks@dfo-mpo.gc.ca with “shark for sampling” in the subject heading.

1. *Hook-and-line caught*

Alive in good condition (e.g. active swimming, minimal wounds)

- a) Use the line and leader to maneuver the shark alongside the boat.
 - Assess whether the hook can be successfully removed with the shark in the water. Keeping the shark in the water will minimize further stress and injury to the shark.
 - Avoid the use of restraining devices such as straps, tail ropes, or gaffs.
 - Do NOT hold the shark by its gills. This may cause serious injury.
- b) Attempt to remove the hook.
 - If the shark has been hooked through the mouth with a barbed hook and the hook is visible and easily reached, it can safely be dislodged by engaging the bend of the hook with a gaff, and inverting the hook with a simultaneous pull on the gaff and fishing line.
 - Alternatively, attempt to cut the hook below the barb with bolt cutters, so that the hook will slide out with minimal damage to the shark.
 - If the shark has swallowed the hook or has been “foul hooked” (i.e. hooked any place but the jaw), do not try to retrieve the hook. Cut the leader as close to the shark as possible.

Alive in poor condition (e.g. sluggish, visibly wounded)

- a) Keep the shark in the water and attempt to remove the hook (using the procedure described above).
- b) If the shark must be lifted onboard to successfully remove the hook or cut the leader, and the shark is small enough to be lifted onboard, do so carefully.
 - Do not lift the shark in the air by the line, as this will further tear the shark’s flesh and might result in fatal injuries.
 - Make an attempt to support the shark’s weight by at least two points when lifting from the water (one point of contact being the line, and the other being a hand under the abdomen, posterior end of the body, or caudal fin).

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- Lifting using only the line or tail can cause further injury to the shark. Bring the shark up and on the boat in as horizontal a position as possible. Lower the shark back into the water.
- Maintain two-point contact until release.

2. *Entangled in a crab pot or other line (e.g. long-, trap- or troll- line)*

- a) For sharks in good or poor condition, maneuver your boat as close to the shark as possible without causing further injury or entanglement.
 - Turn off your engine (if possible) or switch the engine into neutral.
- b) Grapple the anchor line and bring the shark as close to the side of the boat as possible.
- c) Pull the line to restrict the shark's movements, without further injuring the shark. Hold the shark firmly against the side of the boat.
 - Avoid the use of restraining devices such as straps, tail ropes, gaffs etc.
 - Do NOT hold the shark by its gills. This may cause serious injury.
- d) Try to unwind the line without cutting it.
 - If you cannot untangle the line from the shark without cutting it, use a gaff to pull the line away from the shark before cutting the line free.
 - Before cutting the anchor line, make sure there is no other gear attached to the shark.
 - Note any visible wounds from the line, and the shark's swimming ability post-release (e.g. active with a strong tail thrust, slow glide with some fin movement, no fin movement and shark inverted).

3. *Net-caught*

Disentangling a shark in good or poor from a net requires **extreme caution**. Proceed with safety of yourself and any crew as the main priority.

Trawl net

- a) Once onboard, do NOT attempt to move the shark by the caudal (tail) fin as this can result in injury to the shark's vertebrae.
- b) Avoid the use of potentially harmful gear such as gaffs or tail ropes when moving the shark.
 - If the shark is small, make an attempt to support its weight by at least two points (i.e. one point of contact being the midsection, and the other being the posterior end of the body, or caudal fin).
 - If the shark is large, place it on a tarp to move it.
- c) Attempt to free the shark. This will be much easier with long bolt cutters onboard.
 - Use a gaff to pull the net as far as possible from the points of contact with the shark, carefully cutting the net using the bolt cutters.
 - It will likely take many cuts before the shark will be free of the net.
- d) When freed of the net, release the shark down the stern ramp, maintaining the two-point contact or pulling to the ramp on the tarp.



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Gillnet, seine, or aquaculture net

- a) Maneuver your boat as close to the shark as possible without causing further injury or entanglement. Turn off your engine (if possible) or switch it into neutral.
- b) Attempt to free the shark. This will be much easier with long bolt cutters onboard.
 - Use a gaff to pull the net as far as possible from the points of contact with the shark, carefully cutting the net using the bolt cutters.
 - It will likely take many cuts before the shark will be able to swim free.

DISCLAIMER

Although every effort has been made to prepare these instructions in a manner that takes into account the safety of the fish harvesters, the circumstances surrounding any disentanglement or de-hooking operation are variable. Thus, harvesters are encouraged to vary these instructions so as to take into account the factors present during any disentanglement or de-hooking operation, including (but not limited to) weather conditions, sea conditions, and the size of the vessel. The Government of Canada, the federal Minister of Fisheries and Oceans, and/or any of their employees shall not be liable for any loss or damages suffered as a result of any reliance upon the information contained this document.