

A Mariner's Guide to REPORTING WHALE ENTANGLEMENTS IN WESTERN CANADA



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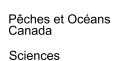
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Contents

- EXECUTIVE SUMMARY 5**
- CETACEAN ENTANGLEMENT 6**
 - The British Columbia Marine Mammal Response Network 6
 - Toothed Whales 7
 - Baleen Whales 7
- WHAT TO DO IF YOU SEE AN ENTANGLED CETACEAN 8**
- REPORTING AN ENTANGLEMENT 9**
- DOCUMENTING AN ENTANGLEMENT 10**
 - Photo-documentation 11
 - Camera Settings 12
- TERMINOLOGY13**
 - Parts of the Whale 13
 - Body Condition 13
 - Entanglement Configuration 14
 - Gear Type 15
- SPECIES ID GUIDE | TOOTHED WHALES..... 16**
 - Harbour Porpoise 16
 - Dall's Porpoise 16
 - Pacific White-Sided Dolphin 17
 - Killer Whale 17
- SPECIES ID GUIDE | BALEEN WHALES 18**
 - Minke Whale 18
 - Grey Whale 18
 - Humpback Whale 19
 - Fin Whale 19
- ADDITIONAL RESOURCES.....20**
- REPORT YOUR CETACEAN SIGHTINGS.....20**
- BE WHALE WISE GUIDELINES..... 21**
- BIBLIOGRAPHY..... 22**



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Executive Summary

British Columbia (B.C.)'s coastal waters are a place of astounding beauty and diversity. Not only are our waters well-known for their abundance of cetaceans (whales, dolphins, and porpoises), but they also offer west coast mariners a place to work and play. As the habitats of these cetaceans increasingly overlap with human activities, so do the safety concerns for a number of these at-risk cetacean species.

On April 6th, 2018, Ocean Wise convened a Whale Entanglement Workshop aimed to educate mariners about proper reporting and documentation of entangled cetaceans. Held at the Coast Bastion Hotel in Nanaimo, B.C., workshop attendees included researchers, NGOs, ecotourism operators, fishermen, and professional mariners – those perceived most likely to encounter an entangled cetacean. Marine mammal experts and disentanglement professionals from Fisheries and Oceans Canada, SR³ and Research, Cascadia Research Collective, the Marine Education and Research Society, and the Porpoise Conservation Society provided expertise on the issue of entanglement and the role of coastal mariners in helping to address this issue. The workshop aimed to encourage collaboration and communication within B.C.'s marine community to ensure a timely response to entanglement incidents leading to a swift and effective rescue, gather more information about the extent of the issue, and gain further understanding of the type of gear involved in order to help prevent future entanglements.

Entanglement refers to the wrapping of lines, netting, or other materials of anthropogenic origin around the body of an animal⁹. An entangled cetacean is at significant risk of injury and even death due to drowning, tissue damage and infection, or starvation from impaired foraging and swimming ability¹⁵. Entanglement can also lead to decreased reproductive success¹⁵. In B.C., the vast and largely unpopulated coastline means that many entanglements likely go undetected or unreported, and therefore understanding the scope of the issue is difficult. In 2017, 23 confirmed cetacean entanglements were reported to the B.C. Marine Mammal Response Network Incident Reporting Hotline – 22 of those reports being humpback whales⁴. This is the largest number of cetacean entanglement reports in a single year to date. Due to the remote nature of most of B.C.'s coast, mounting a quick response can be difficult; however, where a swift and appropriate response is initiated, there has been success.

The purpose of this guide is to provide a resource for mariners to follow if they should ever encounter an entangled cetacean. The information it provides will help mariners to properly report, document, and help assess entangled cetaceans to support authorized trained responders.

In this guide, the term cetacean will be used to describe whales, dolphins, and porpoises collectively.

Cetacean Entanglement

The coastal waters of British Columbia serve as a highway for vessel activity, supporting commerce, fisheries, and recreational and ecotourism activities. Increasingly, the habitats of cetaceans (whales, dolphins, and porpoises) overlap with human activities, with potentially harmful impacts on individual cetaceans and populations as a whole. One such impact is entanglement.

It is estimated that over 300,000 cetaceans worldwide die each year due to entanglement in fishing gear⁵. Entanglement refers to the wrapping of lines, netting, or other materials of anthropogenic origin around the body of an animal⁹, while bycatch refers to the unintentional capture of species such as small cetaceans in fishing nets. The most common source of entangling gear comes from commercial, recreational, or aquaculture fishing activities¹¹. This gear can cause substantial injury to cetaceans³. An entangled cetacean is at significant risk of tissue damage and infection from injury, and/or starvation from increased energy expenditure due to drag, and impaired foraging and swimming ability¹⁵. Heavy fishing gear such as crab and prawn traps and aquaculture gear can also weigh down a cetacean, in time even causing it to drown. The average time to death for right whales entangled in fishing gear is five months, ranging from immediately to several years¹⁰.

THE BRITISH COLUMBIA MARINE MAMMAL RESPONSE NETWORK

Cetacean entanglement in fishing gear is a global problem with minor to severe – and sometimes lethal – impacts to the animal. For most species of large whales entanglement is a major cause of injury and mortality. However, in B.C., the vast and largely unpopulated coastline means that many entanglements likely go undetected or unreported. In 2008, Fisheries and Oceans Canada formalized the B.C. Marine Mammal Response Network – a collaborative program between government agencies, research, conservation and outreach groups, wildlife rescue organizations, and B.C. citizens – to help collect information and respond to a variety of incidents, including entanglements, which affect local cetaceans and pinnipeds (seals and sea lions). In 2017, 750 incidents were reported to the Marine Mammal Response Network Incident Reporting Hotline⁴. Twenty-three of those reports were confirmed cetacean entanglements, in which 22 were humpback whales⁴. This is the largest number of cetacean entanglements reported in B.C. in a single year to date. Due to the vast and remote nature of most of B.C.'s coast, mounting a quick response can be difficult; however, where a swift and appropriate response is initiated, there has been success.





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TOOTHED WHALES

Cetaceans (whales, dolphins, and porpoises) are divided into toothed whales (Odonocetes) and baleen whales (Mysticetes). Toothed whales, as the name implies, have teeth which vary in shape and size depending on the species, and have highly developed biological sonar known as echolocation. More than 10 species of toothed whales – from harbour porpoise to killer whales – call the B.C. coast home.

In B.C., harbour porpoises are probably the most affected small cetacean. Hall and colleagues estimated that approximately 80 harbour porpoises died in the south coast salmon gillnet fishery in 2001⁷. Odonocete entanglements in B.C. are not limited to harbour porpoise. In May 2018, a Bigg's (transient) killer whale became anchored in place by crab traps near Saltspring Island¹³. Fortunately, concerned citizens quickly contacted the Marine Mammal Response Network Incident Reporting Hotline, and experts were able to free the killer whale before death or injury occurred.

Entanglement and bycatch in fisheries operations pose a major risk for 86% of the world's toothed whales⁵. Several toothed whale species are at high risk of extinction due to bycatch, including the vaquita in the Gulf of Mexico and Maui's dolphins in New Zealand.

BALEEN WHALES

Baleen whales (Mysticetes) have baleen in their mouth instead of teeth. Baleen is made up of keratin-based, comb-like plates that filter the water for food. Seven species of baleen whales – from minke whales to mighty blue whales – can be found in B.C.'s waters.

In B.C., humpback whales currently appear to be the most affected by entanglement. Humpbacks are especially prone to entanglement due to their coastal migration patterns and morphology⁶. Their rough skin with rigid protrusions, long pectoral fins, and comparatively inflexible bodies reduce their ability to maneuver around and free themselves of confinement¹. As humpback populations recover from historical whaling and their population grows in size, so has their overlap with human activity. Preliminary findings from the Marine Education and Research Society (MERS) and Fisheries and Oceans Canada suggest that 47% of humpbacks in B.C. have scarring on their tailstocks, indicating at least one previous entanglement incident¹⁴ – and this statistic gives us no indication of the numbers that may have drowned, succumbed to their injuries, or starved due to an inability to swim or forage effectively.

Entanglement in fishing gear is the leading cause of death for large whales in the western North Atlantic¹⁵. Over 80% of the North Atlantic Right Whale population has experienced entanglement in fishing gear, and entanglement-related mortalities appear to be on the rise⁹. Entanglement also appears to be on the rise for all Pacific and Atlantic humpback populations with 8-25% of individuals acquiring new entanglement scars every year^{2,12}. Scarring indicates that over three quarters of the North Atlantic humpback population has experienced at least one entanglement incident¹², and the same in over half of the Alaska humpback population¹¹.

What To Do If You See an Entangled Cetacean

It is illegal – and very dangerous – to try to disentangle a cetacean yourself. If you encounter an entangled cetacean, your main goal is to properly document and report the incident, while ensuring the safety of both you and the animal.

- **Report the entanglement** as quickly as possible to the B.C. Marine Mammal Response Network Incident Reporting Hotline at 1.800.465.4336 or VHF Channel 16 (see page 9).
- **If possible, monitor the cetacean until responders arrive**, or until another standby vessel is able to take over.
- **Stay a safe distance away from the cetacean** following the marine mammal regulations and guidelines (see page 21; 400m for killer whales and 100m for all other cetaceans) – carefully avoiding the most dangerous positions directly ahead and behind the animal – to protect your vessel from becoming entangled in unseen gear attached to the cetacean. Never cross directly behind an entangled cetacean.
- **Keep your distance so as to not disturb the cetacean and cause it to change behaviour** – close approaches by a standby vessel will make the animal more difficult to approach for the response team.
- **Do not try to remove any gear yourself** – not only is it dangerous, but anchored animals are easier to find, and long trailing gear allows responders to grapple and attach telemetry gear – a satellite tag and buoy system used to track a whale’s location if disentanglement efforts are unable to be completed in a single day.
- **Continue to record and document information about the entangled cetacean** (see page 10). Entanglements do not often result in immediate death for large whales, so the best possible outcome for the whale is to document the entanglement and allow the response team to plan an effective response.



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Reporting an Entanglement

Fisheries and Oceans Canada is responsible for assisting marine mammals and sea turtles in distress. If you observe an entangled, sick, injured, or distressed marine mammal in B.C. waters, please contact the B.C. Marine Mammal Response Network Incident Reporting Hotline immediately:

1.800.465.4336 or VHF Channel 16

What to Report

YOUR NAME, VESSEL NAME, AND CONTACT INFORMATION

SPECIES

DATE AND TIME

LOCATION

Latitude/Longitude coordinates if possible

ANIMAL ALIVE/DEAD

NATURE OF INJURY

PICTURES/VIDEO TAKEN

DIRECTION OF ANIMAL'S TRAVEL

If the entangled cetacean is in the United States along the coast of Washington, Oregon, or California please contact the NOAA Fisheries Entanglement Reporting Hotline 1.877.767.9425.

Documenting an Entanglement

Importance of Documentation

The process of disentangling a whale is highly dangerous, and requires years of experience and expertise. Never try to remove gear yourself. If you encounter an entangled cetacean, your main goal is to properly document and report the incident, while ensuring the safety of both you and the animal.

Large whales can live for months or even years entangled. Proper documentation provides the best chance of survival by allowing researchers to:

1. Identify the individual cetacean for relocation and rescue efforts, and later track its survival;
2. Understand how the cetacean is entangled and if necessary form a plan to remove the gear; and
3. Gather information on the entangling gear to prevent future entanglements.

Documenting an Entanglement: A Step-by-Step Approach

Standby the cetacean at a safe distance and immediately report the entanglement to the B.C. Marine Mammal Response Network Incident Reporting Hotline at 1.800.465.4336 (Canada) or the NOAA Fisheries Entanglement Reporting Hotline 1.877.767.9425 (United States). **If possible, take photographs and stay with the animal until responders arrive, or until another standby vessel is able to take over.**

What to Record

YOUR LOCATION

Latitude/Longitude coordinates if possible

SPECIES

See pages 16-19

TYPE OF GEAR

See page 15

HOW AND WHERE THE CETACEAN IS ENTANGLED

See pages 13-14

CETACEAN'S BEHAVIOUR

CETACEAN'S BODY CONDITION

ANIMAL'S DIRECTION OF TRAVEL

NUMBER OF OTHER CETACEANS AND VESSELS IN THE AREA

BEHAVIOUR OF OTHER CETACEANS IN THE AREA

SEA CONDITION

TAKE PHOTOGRAPHS

See pages 11-12

What to Photograph

ENTANGLED CETACEAN AND GEAR

All in one frame

SPECIES ID

INDIVIDUAL ANIMAL ID

Including flukes, dorsal fin, saddle patch (for killer whales), and identifying scars

ENTIRE BODY OF THE ANIMAL

Even if there is no gear on parts of the cetacean

STANDBY VESSEL

CORRECT DATE AND TIME

Make sure camera's settings are correct



BREACH



FLUKE



PORPOISE



TRAVEL



TAIL/
PECTORAL SLAP



BOWRIDE



SPYHOP



FEED

PHOTO-DOCUMENTATION

Photographs are a key part of documenting an entangled cetacean. They allow researchers to individually identify the injured animal, assess its injuries and the gear involved, and form a plan of rescue. The individual cetacean can later be tracked over time to monitor its body condition, health, and survival.

If possible, the preferred camera type for documenting entanglement is a digital SLR with a 70-300mm zoom lens; however, any camera available that takes stills and video will do. Make sure the camera date and time settings are correct, and you know your camera settings.

Camera Use

When taking pictures of wildlife, if familiar with your camera, it is preferable to operate the camera in manual mode. The shutter speed, ISO, and aperture can start at a recommended setting and be adjusted for current light and weather conditions. However, shutter priority or sport mode are also effective camera settings for less familiar camera users. The recommended camera setting for cetacean photography is:

- Start with a camera set up of **Shutter Speed=1000, ISO=400, and Aperture=9.**
- **Always review your pictures in the field.** If the image is good (i.e. right amount of light and detail for photo ID shots), this will be your setting to which you will return. If the image is not good, adjust the aperture until you are satisfied.
- **Increase the aperture** to a higher number (creating a darker image) when needing to block out some of the glare on the water – such as to capture images of gear and wounds beneath the water surface, or when shooting with the sun behind your back.
- **Lower the aperture** to a smaller number (brighter image) when you are trying to capture rope above the waterline on the whale, or when shooting into the sun. This will leave the whale properly exposed, but the rest of the frame, such as glare on the water, overexposed.
- The **shutter speed** should always stay at **1000**, but if you are working in low light conditions and are on the lowest aperture, change the ISO to 640 or 800, and reset the aperture to f-8.
- If in **fog**, select for darker images rather than lighter ones. The details of a dark image can sometimes be pulled out during post editing, but a light image has no information to be pulled out (the slate is washed clean).



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CAMERA SETTINGS

Shutter Speed

Shutter speed controls the ability to capture a moving image and controls how blurry that object will appear in the photo. On a moving vessel, when trying to capture images in focus on a moving cetacean, the shutter speed should be **1/1000 of a second**. A shutter speed slower than 1000 (such as 1/500) can result in a blurry image where details are lost; and faster shutter speeds (over 1/1200) can unnecessarily restrict the amount you can lighten the image by changing the aperture and ISO. In very low light situations, you may need to select a slower shutter speed (down to 1/750).

ISO

ISO (International Organization Standardization) represents the light sensitivity of the CCD (charged coupling device) in the camera – the electronic version of film. A higher ISO has a higher sensitivity and therefore creates a brighter picture, the same being true in reverse. However, a higher ISO also creates a grainier image which can lose image quality and detail in the picture.

A safe ISO to use in most conditions is **400**. If however it is too dark outside, such as at dawn or dusk or rainy days, and after adjusting the aperture to the lowest setting the image is still too dark, the ISO can be increased to 640, 800, or even 1000 and the aperture set back to f-8 again.

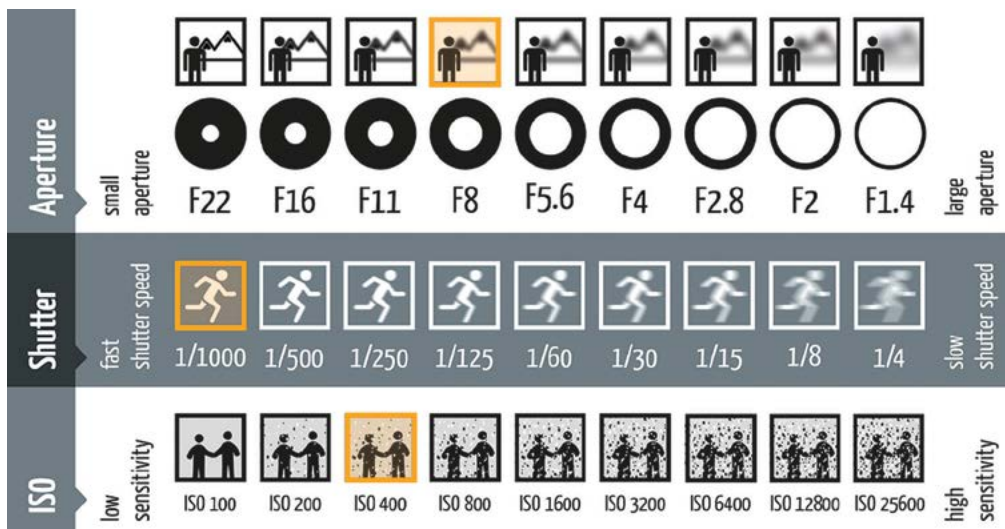
Aperture

Aperture controls the amount of light let into the camera, and works much like the pupil in a human eye. The f-stop or f-number is the ratio of the system's focal length to diameter of the aperture and is the reciprocal of the relative aperture. The f-number gets lower as the aperture opens (more light in) and gets higher as the aperture closes (less light in). The f-number on most lenses range from f-22 (very small hole) to f-2.8 (very large hole).

Aperture also controls how much of the image is in focus (depth-of-field). At lower f-stops (closer to f-2.8) only objects at the focus distance will appear in focus. At higher f-stops (closer to f-22), objects both closer and further from the focus distance will appear in focus.

A recommended starting point for photographing entangled cetaceans is aperture **f-8** or **f-9**.

In order to bring out features on the cetacean, entangling line and other gear, it can be very useful to vary the exposure to one or two stops above and one or two stops below the zero mark. Keep in mind that responders are interested in seeing the details of the ropes and buoys of the gear, injuries, and identifying features of the animal, not the attractiveness of the image.



APERTURE

Controls how much light is let into the camera and how much of the frame is in focus. A higher ISO, means more light, and more of the frame is in focus.

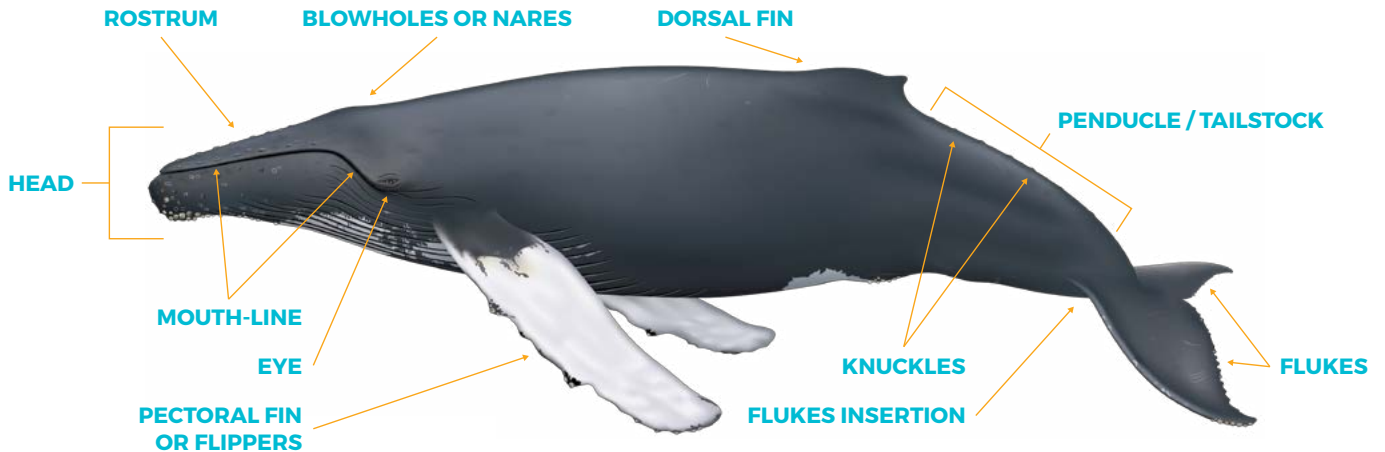
ISO

How sensitive the light is to the sensor. A higher ISO, means more sensitive, and a brighter image.

Terminology

It is important to identify, as best as possible, the placement of entangled gear. The location of the gear impacts the cetacean differently and affects the difficulty of removal. The use of proper, consistent vocabulary when describing an entanglement will ensure that everyone is communicating efficiently and effectively.

PARTS OF THE WHALE



BODY CONDITION

Body condition is an indicator of a cetacean's health. Large whales can live for months or even years entangled, thus identifying and monitoring body condition will help determine if and how a whale's health changes throughout its entanglement and after.



A healthy whale should have a round appearance, like a barrel. A depression behind the blowhole, visible knobs of bone, and a protruding dorsal ridge are signs of malnutrition.

Depending on the species, some louse or barnacle growth (cyamid coverage) is normal for most baleen whales. A heavy infestation on a whale's body, especially orange in colour, is an indicator of poor health.

ENTANGLEMENT CONFIGURATION

Identifying the configuration and complexity of an entangled line helps responders formulate a rescue plan. As best as possible note: the number of wrap lines around the cetacean, whether the line in each location is tight (constricting) or loose, and if the animal is swimming freely or anchored in one place.



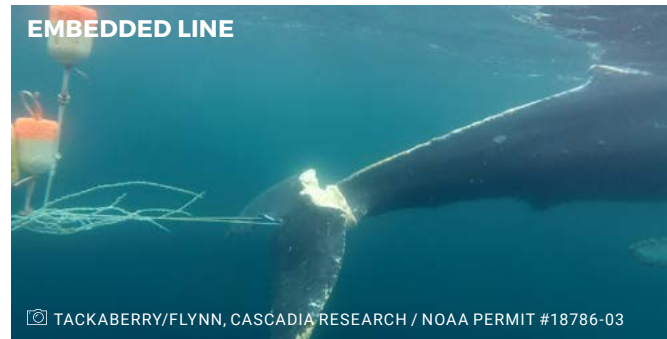
A line that completely encircles a body part.



There is no movement in the line.



The line appears to be able to move.



The line has cut deep enough into the tissue of the animal that it may be hard to see all of it.



Line or gear that trails off the cetacean.

GEAR TYPE

Fishing gear is typically made of heavy, strong material designed to last years. Identify and describe the gear as much as possible – including colour, size, and identifying marks. Understanding the type of gear entangling a cetacean not only helps responders form a successful recovery plan, but also helps researchers learn and hopefully prevent future entanglements.



FLOATING LINE

Poly-line that is usually brightly coloured. Line that appears to be floating at the surface and is positively buoyant.



SINKING LINE

A polyester line that is usually white in colour. Line that is negatively buoyant and is usually trailing at depth.



LEAD LINE

A poly-line with a lead core that is heavily weighted and less flexible. Usually multi-coloured.



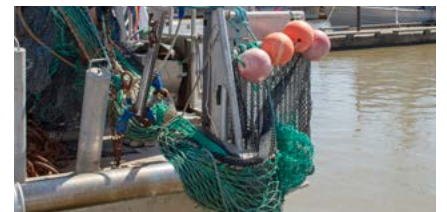
FLOAT LINE

A line feeding through one or many small oval buoys (cork floats). Often used to supplement floatation of gillnets.



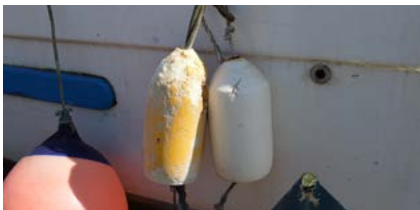
GILLNET

Monofilament netting usually green or red in colour.



SEINE NET

A knotted nylon netting with floats on the top and weighted on the bottom edge.



POT/BULLET BUOY

An oval shaped buoy that may or may not have a stick and or flag attached to it. Varies in size and colour.



NORWEGIAN BUOY/SCOTCHMAN

A circular buoy usually with no stick or flag attached. Varies in size and colour, but orange is most common.



HIGHFLYER

A longer pole usually with a reflector on top and a flag.



SHRIMP/PRAWN TRAP

Cylindrical in shape with nylon and poly-blend mesh netting that opens with a drawstring on the bottom.



CRAB TRAP

A trap made mainly of metal. Usually cylindrical or rectangular in shape with wire mesh.

Species ID Guide | Toothed Whales

HARBOUR PORPOISE

Phocoena phocoena



LENGTH

1.5 m / 5 ft

DORSAL FIN

Dark, triangular

APPEARANCE

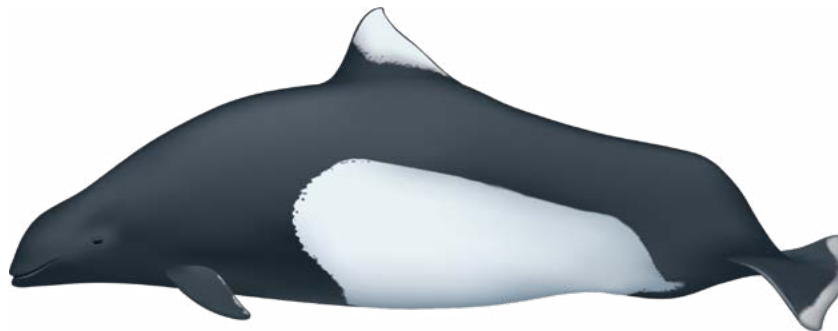
Dark grey back with lighter underside

BEHAVIOUR

Inconspicuous, travels slowly; generally alone or in groups of 2-5

DALL'S PORPOISE

Phocoenoides dalli



LENGTH

2 m / 6.5 ft

DORSAL FIN

Triangular with white trailing edge

APPEARANCE

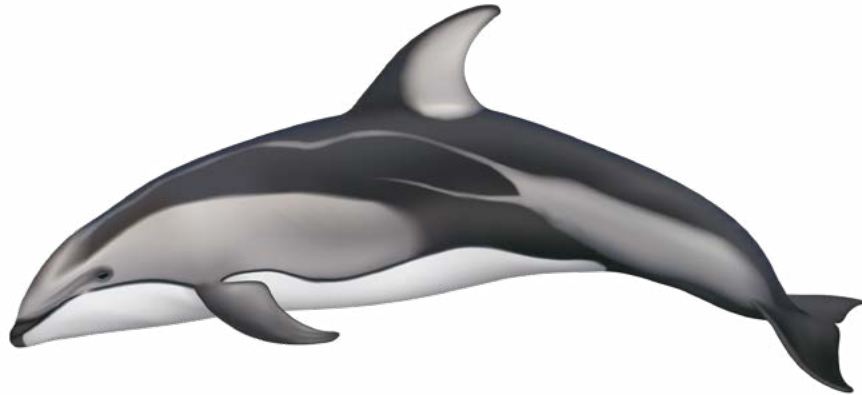
Black, with large white flanks; small hump on back before tail flukes

BEHAVIOUR

Usually in groups of 2-10; creates "rooster-tail" of spray when swimming quickly

PACIFIC WHITE-SIDED DOLPHIN

Lagenorhynchus obliquidens



LENGTH

2.5 m / 8 ft

DORSAL FIN

Sharply curved, bi-coloured

APPEARANCE

Dark back, white underside, grey side streaks

BEHAVIOUR

Only small, local cetacean that leaps completely clear of water; usually in groups of 50+

KILLER WHALE

Orcinus orca



LENGTH

6–8 m / 20–26 ft

DORSAL FIN

Black, triangular in females and calves; tall, distinctive in adult males

APPEARANCE

Black body with white underside; grey saddle patch behind dorsal fin; white eye patch

BEHAVIOUR

Usually in groups of 3–25; bushy blows visible in cold weather

Species ID Guide | Baleen Whales

MINKE WHALE

Balaenoptera acutorostrata



LENGTH

7-10 m / 23-33 ft

DORSAL FIN

Curved, far back on body

APPEARANCE

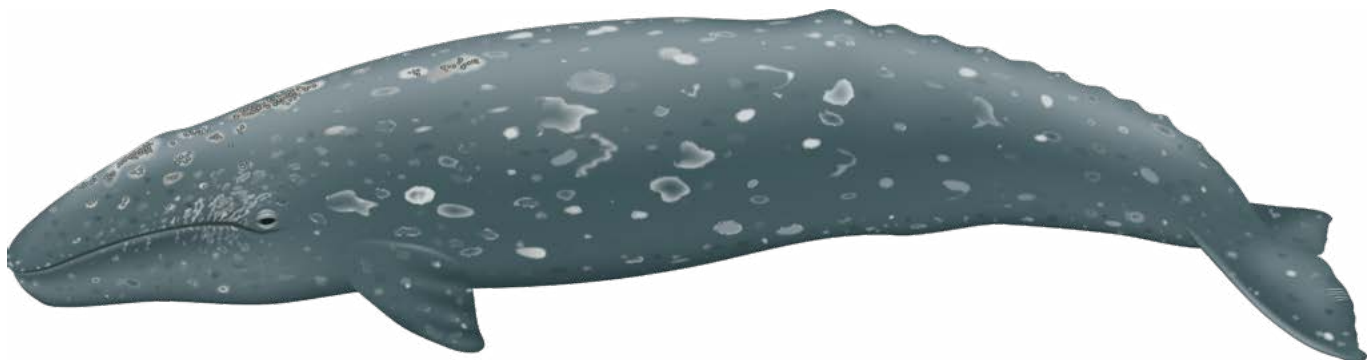
Dark grey to black colouration; white band on top side of pectoral fins; pointed head with prominent noseridge

BEHAVIOUR

Usually solitary; blows rarely visible; surfaces 1-2 times between dives; elusive

GREY WHALE

Eschrichtius robustus



LENGTH

11-12 m / 36-40 ft

DORSAL FIN

None; knuckle-like bumps on lower back

APPEARANCE

Mottled grey colour; patches of barnacles

BEHAVIOUR

Low, bushy, heart- or v-shaped blow; occasionally lifts tail flukes when diving; often feeds close to shore

HUMPBACK WHALE

Megaptera novaeangliae



LENGTH

12-15 m / 39-49 ft

DORSAL FIN

Small, nubby fin with broad base

APPEARANCE

Black body; bumps or knobs on head; long pectoral fins with white underside

BEHAVIOUR

Medium-sized, bushy blow; usually surfaces 2-5 times between deep dives; often raises tail flukes on final dive

FIN WHALE

Balaenoptera physalus



LENGTH

17-18 m / 56-59 ft

DORSAL FIN

Sickle-shaped; relatively large; very far back on body

APPEARANCE

Right lower lip is white, while left is dark; Blowhole and dorsal fin not visible simultaneously when surfacing

BEHAVIOUR

Tall, narrow blow; rarely lifts tail flukes when diving

Additional Resources

HOW TO SAVE A WHALE VIDEO

<https://mersociety.wordpress.com/2017/09/27/how-to-save-a-whale/>

FIXED GEAR GUIDE: CALIFORNIA, OREGON, AND WASHINGTON COMMERCIAL FISHERIES

https://media.fisheries.noaa.gov/dam-migration/fixed_gear_guide_final_121411.pdf

MARINE MAMMALS OF BRITISH COLUMBIA

Ford, John. K. (2014) Marine Mammals of British Columbia. Victoria, B.C.: Royal B.C. Museum.

OCEAN WISE SIGHTINGS NETWORK

<http://wildwhales.org/>

CANADA'S MARINE MAMMAL REGULATIONS

<https://www.dfo-mpo.gc.ca/about-notre-sujet/publications/infographics-infographies/marine-mammals-regs-mammiferes-marins-eng.html>

BE WHALE WISE GUIDELINES

<http://bewhalewise.org>

Report Your Cetacean Sightings

Many populations of cetaceans are at risk in B.C. Report your sightings to help provide valuable information. By reporting your sightings, you are helping researchers better understand the distribution and abundance of these species.

What to Report

YOUR NAME AND CONTACT INFORMATION

SPECIES

DATE AND TIME

LOCATION

Latitude/Longitude coordinates if available

NUMBER OF ANIMALS

ANIMAL'S DIRECTION OF TRAVEL

BEHAVIOUR OF ANIMALS

Report your Sightings

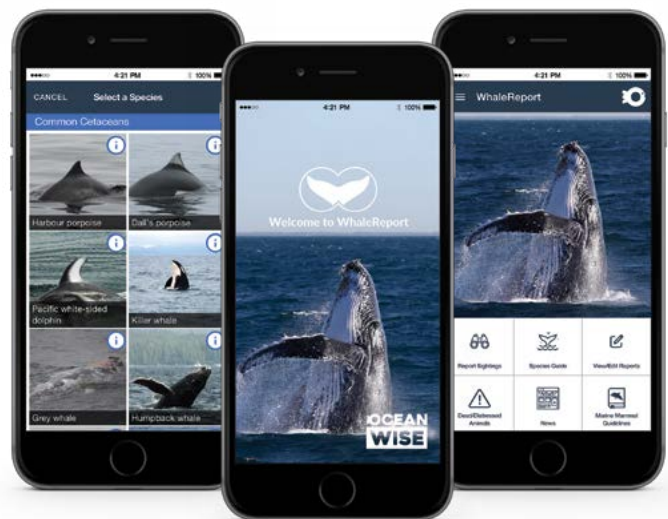
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Be Whale Wise Guidelines

MARINE WILDLIFE LAWS AND GUIDELINES FOR BOATERS, PADDLERS, AND VIEWERS (2022)*

1. Boats must stay **400 metres** from killer whales in all southern BC coastal waters. Boats must stay **200 metres** from all killer whales in other Canadian Pacific waters and from all whales, dolphins or porpoises if they are resting or with a calf. Boats must stay **100 metres** from all other whales, dolphins and porpoises in Canadian Pacific waters. For detailed maps visit bewhalewise.org
2. BE CAUTIOUS, COURTEOUS, and QUIET when around areas of known or suspected marine wildlife activity, in the water or at haul-outs and bird colonies on land; especially from May to September during breeding, nesting, and seal pupping seasons.
3. LOOK in all directions before planning your approach or departure from viewing wildlife.
4. SLOW DOWN: reduce speed to less than 7 knots when within 1000 metres/yards of the nearest marine mammal to reduce your engine's noise and wake. Vessels must slow down to maximum 10 knots or less in **Seasonal Slowdown Areas**.
5. ALWAYS approach and depart from the side, moving parallel to the animal's direction of travel. If the animal(s) are approaching you, cautiously move out of the way and avoid abrupt course changes. DO NOT approach from the front or from behind.
6. PLACE ENGINE IN NEUTRAL and allow animals to pass if your vessel is not in compliance with the approach regulation (1). Turn off echo sounders when not in use or within 400 metres of a cetacean.
7. PAY ATTENTION and move away, slowly and cautiously, at the first sign of disturbance or agitation.
8. STAY on the OFFSHORE side of whales when they are travelling close to shore.
9. ALWAYS avoid going through groups of porpoises or dolphins and hold course and reduce speed gradually to discourage bow or stern-riding.
10. LIMIT your viewing time to 30 minutes or less. This will reduce the cumulative impact of all vessels and give consideration to other viewers.
11. DO NOT disturb, swim with, move, feed, or touch any marine wildlife. If you are concerned about a potentially sick, stranded, or entangled animal, contact your local stranding network at 1.800.465.4336 or on VHF Channel 16.
12. Area-based fishing closures are in effect for recreational and commercial salmon in key Southern Resident killer whale foraging areas in Swiftsure Bank, Strait of Juan de Fuca, southern Gulf Islands and mouth of the Fraser River. **Map of current closures**.



DRONES/UNMANNED AIRCRAFT VEHICLE OR SYSTEM (UAV/UAS) GUIDANCE

It is illegal to harm or disturb wildlife. To prevent disturbance from an unmanned aerial vehicle (UAV/drone) operators must use extreme caution. UAV/drones may interfere with an animal's ability to hunt, feed, communicate, socialize, rest, breed, or care for its young. Fly during daylight hours, keep your drone in sight and limit your viewing time to reduce the cumulative impact.

Marine Protected Areas, Wildlife Refuges, Ecological Reserves and Parks

1. CHECK your nautical charts for the location of various protected areas.
2. ABIDE by posted restrictions or contact local authority for further information.

* Updated in 2022. For the most recent guidelines, please visit bewhalewise.org

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PROJECT ADVISORS



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