
Whale Tails
& OTHER STORIES OF THE
Outer Bay of Fundy

Greg Trowse photo

Thank you to the people and businesses who contributed to this guide:

Photos:
Brier Island Whale & Seabird Cruises
Mariner Cruises
June Farnsworth
Robert J. Galbraith
Todd Sollows
Amanda Stark/Freeport Whale & Seabird Tours
Amy Tudor

Mi'kmaw Ecological Knowledge:
Robert McEwan
Sandy-Lynn Fisher
Lenley Melvin
Alanna Syliboy
Fred Phillips

Interviewees:
Frank Gillis
Penny Graham
Shelley Lonergan
Laurie and Tony Thurber
Amy Tudor

Artwork:
June Farnsworth
Gerald Gloade
Patricia Sollows
cover image by June Farnsworth

Greg Trowse photo

Contents

Greg Trowse photo

Prologue

With this guide we are looking to bring together traditional knowledge, scientific understanding, and the wealth of experience of local water users. When known we have listed the Mi'kmaw names for animals first, as those were the names first given by humans in these lands. We are deeply grateful to the Mi'kmaw knowledge keepers who have begun the sharing of their deep wisdom in this first draft and look forward to the continued growth of this connection.

The facts and statistics of science provide us with the basic information we need to identify species we have seen, but it is the depth of human experience that allows us to come into relationship with the incredible Bay of Fundy and her creatures. This is meant to be a living, growing document that will evolve alongside our understanding and as contributions are made. We are greatly appreciative to all those who have helped us bring this document to life thus far, your stories, wisdom, and love of the ocean is inspiring and it was truly a gift to get a chance to speak with you. It was both awe inspiring and deeply saddening to listen to local water people, men and women who have spent decades in close relation to the Bay of Fundy. They told me of times before, of a magical blue vastness of abundance, of the sounds of herring schools so thick they sounded like rainstorms pounding the ocean and looked like a writhing silver mat moving atop the water as they attempted to evade the predators diving through their plentiful masses. Laurie told us about looking over the edge of the boat into the ocean and seeing it red with krill, then darted with silver as the smaller schooling fish came in, then the larger mackerel, and the dolphins and whales, the dance of the ecosystem unfolding infront of her eyes, intense and vivacious, raw and powerful. The water rarely turns red now.

"Atlantic cod", by Gerald Gloade

Tony shared with us the promise of discovering local cod stocks begin to rebound

when given as little as two years time to recover, then within days seeing those same fish ravaged by draggers coming through and decimating the ocean in it's path. The heaviness of knowing that the Bay of Fundy fish biomass for many species, is specific to the Bay, and the uncertaintly of what may happen if the population is completely eradicated. The frustration of not being listened to by government and policy makers while watching life in the Bay of Fundy struggle for survival where once it was brimming with abundance.

Frank, a man who has fished these waters for over 60 years, first took to the ocean in a wooden dory as a 9 year old boy. He told me how he could row out into the passage and with another boy and a net, haul

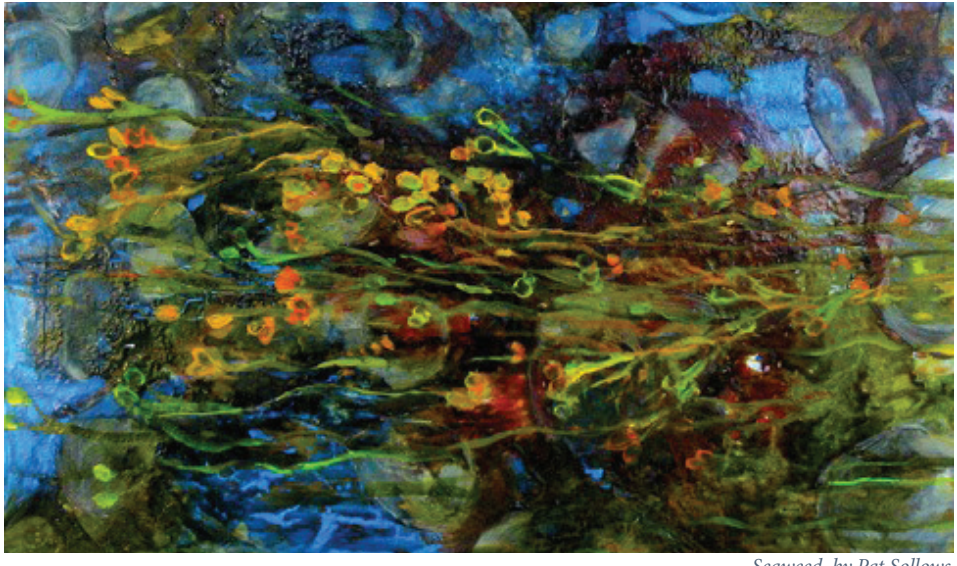
artwork by June Farnsworth

in enough fish to fill his boat to the gunwales. These days, catching a few small fish in Grand Passage is great cause for celebration for our young son. Frank used to take his lunch and sit along the coast, overlooking the Bay of Fundy, just to take in her wonders and abundance. To watch the whales and seabirds. But after a time it became less of joy and more like visiting a cemetery, empty and hollowed, a ghost of what once was. Life still clinging but no longer thriving. He, like so many who have been blessed to live with the ocean, to build a life from her gifts, wants his grandchildren to have a healthy ocean to live alongside too, they see that slipping away as more and more massive commercial vessels move in and take with reckless abandon and no thoughts of respectful stewardship.

Penny and Shelley have spent decades visiting and studying the whales of the Bay of Fundy, and I have been lucky enough to experience first hand their infectious joy and humility each and every time they see one of those majestic creatures. I have seen hearts

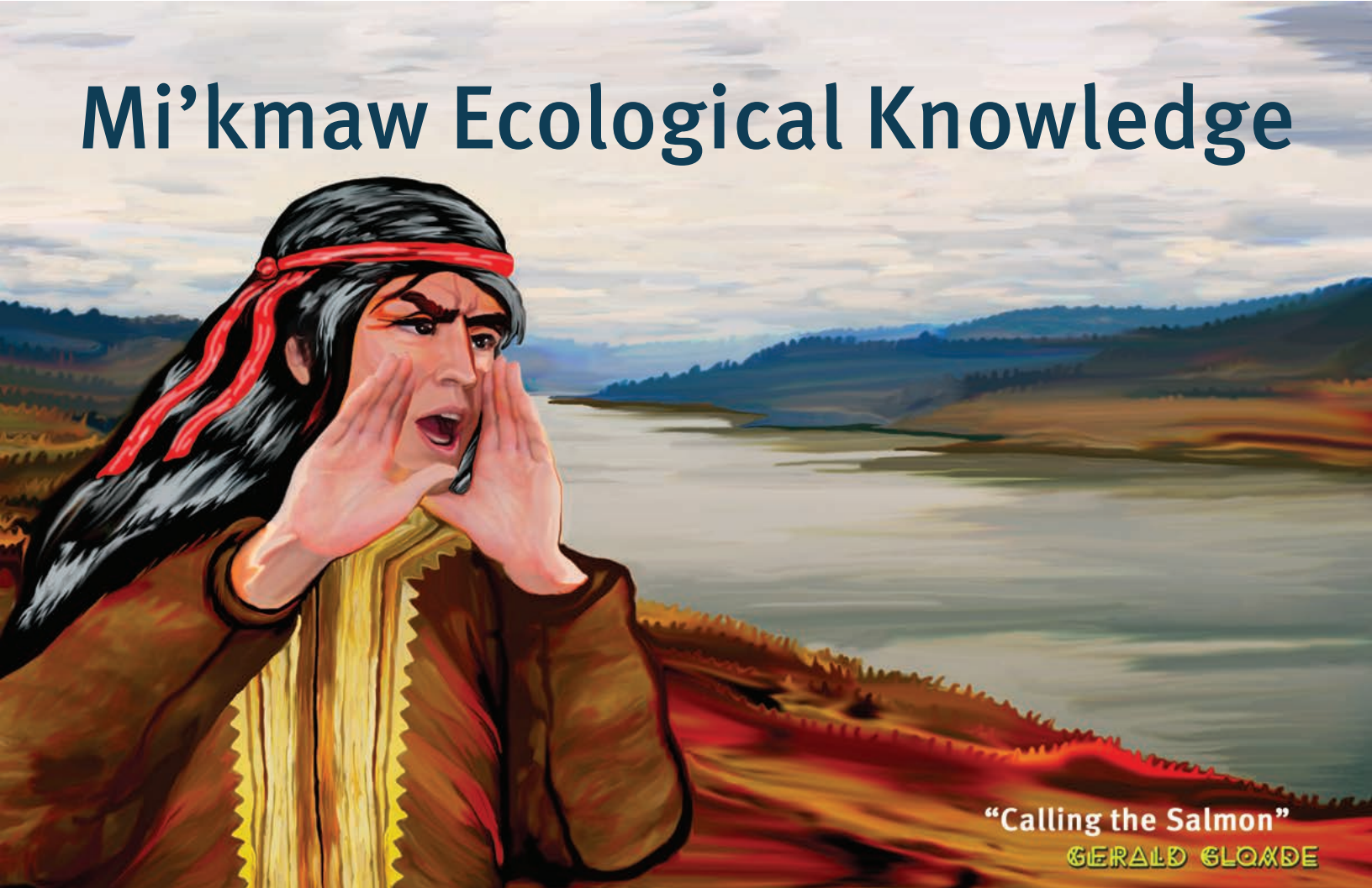
change in an instant on those whale tour boats as people encounter a whale for the very first time. These women have dedicated their lives to making the world a better place for humans and whales by bringing them together. Each is a mentor, bringing young scientists and naturalists into their fold of respectful wonder and appreciation, and people, such as Amy Tudor, have found a place to share their passion for education and wildlife, regalling visitors with exuberant sharing of facts and her own excitement. It is truly an honour to be aboard their vessel when a momma whale, known by crew, leaves her young calf to play near the boat as she dives deep in search of food. These whales and these people, they see each other, they know each other, they have formed bonds over these years in the Bay together. In a time when humans are becoming aware of their negative impacts on the Earth and her fellow creatures, it is especially powerful to witness humans forming these relationships.

Please contact
courtney.trowse@sustainableoceans.ca
to add to the story.



Seaweed, by Pat Sollows

Mi’kmaw Ecological Knowledge



Mi’kmaw Ecological Knowledge

With a two-eyed seeing approach, we learn to observe and interact with the world around us through a Western scientific lens and an Indigenous knowledge lens. The Indigenous knowledge lens is a way of knowing, and always being aware of the interconnectedness of all things.

The Bay of Fundy is a unique ecosystem and full of food for all living creatures. It sustains the food chain from the smallest living organism to the most massive whale. This bay is not only an excellent resource for all creatures, but it is also a place where Mi’kmaq came from; the bay is a sacred place for the Mi’kmaw people as it holds everything they need to sustain life.

The Mi’kmaq of the Outer Bay of Fundy region historically moved with the seasons. Summers would be spent at bays and inlets fishing and hunting marine mammals, moving inland to hunt through the winter.

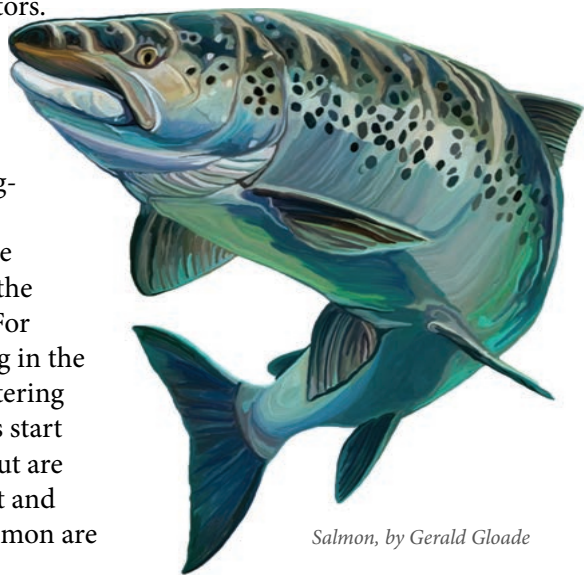
Ceremonies were performed to give thanks to species for the sacrifice of their lives to feed the Mi’kmaw.

Lobsters, by Gerald Gloade

All animals and fish had multiple uses. Small whales and porpoise were hunted by boat. Their meat was used for food, and their blubber was rendered into oil. Seal were hunted for food, and their fur was used for gloves and moccasins. American eel, striped bass, and Atlantic salmon were eaten at feasts, ceremonies, and funerals. Lobsters would be buried in the mud, and frost would keep the meat cold so if hunting was poor during the winter, there would still be food. Bones would be used for tools, such as needles, spears, buttons, ornaments (such as buttons), and instruments (such as rattles).

Over many years, the Mi'kmaq have observed that some species have decreased due to overfishing and climate change. The size and quality of some species have also gone down. For instance, Atlantic salmon numbers have dropped because of dams - it is said that the rivers used to be so thick with salmon that you couldn't get wet when you walked across the rivers. Now wild Atlantic salmon in the region are considered endangered almost to the point of extinction. Belugas once were resident in the Bay of Fundy, but now are rare visitors. Great white sharks were once infrequent in the bay and have now become more common.

As well as observations on long-term differences, the Mi'kmaq have experience and knowledge of seasonal changes that show the interconnectedness of things. For instance, when the peepers sing in the spring, that is a sign of bass entering the rivers. When pussy willows start to come out it is a sign that trout are good to fish. Rainfall in August and September is a sign that the salmon are running. When seawater temperature increases, there is an increase in the activity of various species. With warmer water, more baitfish move into the area, which draws predators, such as lobsters and sharks. More halibut are caught in the spring.



Salmon, by Gerald Gloade

Species Names in Mi'kmaw
Marine Mammals

Beluga - wapinmew
Dolphin - mujpej
Porpoise - mujpe'j
Seal - waspu
Sperm whale - ded'-men-ak'-part
Whale - putup

Humpback whale, by Gerald Gloade

Species Names in Mi'kmaw

Fish

A fish - nume'j
Female fish - skwewmekw
Male fish - napeme'kw

Bass - ji'kaw
Catfish - utkoqkwej
Chub - munapskwes
Cod - peju
Conger eel - katnoksu
Devil fish - kloq
Dogfish - sikilati
Eel - katew
Large eels - pwa'saq
Elvers - katel
Flounder - anakwe'j
Gaspereau - kaspalew
Young gaspereau - utke'suk
Gudgeon - soqumu'jj

Haddock - putumkunej
Hake - naka'pitulaw
Halibut - msanuk
Herring - alanj
Lake Trout - mtasu'njj
Lamprey - kopskwetum
Lumpfish - kumekwsis
Mackerel - amalamek (singular)
amalmaq (plural)
Mud catfish - mtape'sk
Perch - ajoqlue'j
Pollock - pestumu
Razor fish - sasapekwit
Rock eel - panoqopsknow
Salmon - plamu
A Male Salmon - napetule'j
Sculpin - kuloqaq
Shad - msamu

Shark - wipitomaw
Skate - kekunaluej
Smelt - kaqpesaw
Striped bass - chegaoo
Sturgeon - komkutamu
Sunfish - epma'jit
Swordfish - kinisku'nej
Toad fish - aputlawajit
Tomcod - punamuj
Trout - atoqwa'su
Wake fish - alitqwajit

Brook trout, by Gerald Gloade

Species Names in Mi'kmaw

Aquatic Invertebrates

Clam - e's
Crab - nmijnike'j
Jellyfish - sa'sap
Leech - usku'k
Lobster - jakej
Lobster that has shed its shell - nukiljuke'j
Mussel - ankata'law (singular)
kata'law (plural)
Oyster - numtunu
Periwinkle - jikijij
Quahog - pukunuma'wasu
Scallop - sasqale's (singular)
saksale'sk (plural)
Sea urchin - gagwesu
Squid - sata'su
Starfish - kakwet

Reptiles

Turtle - mikjikj

Crab, mussel, and sea turtle, by Gerald Gloade

Mi'kmaw Ecological Knowledge

General Species Locations

Outer Bay of Fundy:
North Atlantic right whale, mako sharks, Atlantic tomcod, crabs, harbour seal, grey seal, harbour porpoise, sharks, sunfish, cusk, flounder, winter skate, smooth skate, tuna, mackerel, herring, Atlantic cod, pollock, wolffish, leatherback turtle.

Outer Bay of Fundy *(nearer to the shoreline)*:
Salmon, gaspereau, eel, smelt

Southern Nova Scotia (Digby to Barrington area):
Great white sharks, blue whales, seals, lamprey, gulls, blue sharks, dusky sharks, mako sharks, dogfish, sculpin, fin whales, sunfish, leatherback turtles, herring, halibut, killer whales, crabs, gaspereau, suckers, eel, mackerel, lobster, haddock, and redfish.

Digby Neck:
Harbour porpoise, shad, seals, clams, and pollack.

Area extending north of Digby Neck up to the inner Bay of Fundy:
Harbour porpoise, sunfish, wolffish, halibut, sturgeon, cusk, salmon, mackerel, eel, flounder, striped bass, dogfish, herring, skates, smelt, shad, squid, sea urchins, starfish, mussels, clams, crabs, and lobster.

St. Mary's Bay:
Many species are found here where there is good habitat/shelter, good food resources, and likely warmer waters. As well, this area gets "flushed" from tidal flow, which replenishes and cleans the bay. There are a lot of lobsters here that are fished in the fall; unsure what their numbers are like in the spring. It is said that lobsters caught in St. Mary's Bay taste sweeter.

Southeastern Nova Scotia *(Lockeport area)*: Cod, mackerel, lobster, and shad.

Annapolis Basin:
Many species are found here where there is good habitat/shelter, good food resources, and likely warmer waters. As well, this area gets "flushed" from tidal flow, which replenishes and cleans the basin. Clams and mussels (these are also found in Bear River), flounder, lobster, salmon, striped bass, shad, burbot, and trout (sea, brown, brook). There are a lot of striped bass in the Annapolis Basin. Striped Bass swim up into Bear River, Annapolis River, Cornwallis River, Stewiacke River, Shubenacadie River, and Avon River. Trout (sea, brown, brook) and salmon will also swim up the Annapolis River. Chain pickerel and smallmouth bass are also in the Annapolis River.

Striped bass, by Gerald Gloade

Common Cetacean Behaviours

Humpback breaching, by Patricia Sollows

Lunge Feeding

Truly a sight to behold, lunge feeding is a surface feeding technique that can occur individually or in groups. When seen in groups it is often preceeded by bubble clouds. This is a learned hunting strategy not seen in all populations, and involves the whales blowing either single or multiple bursts of tiny bubbles up from below before the whales lunge up through the school, massive mouths agape, pleated throat grooves expanding as they burst through the surface, fish spilling out the side of their mouths before they close. The Trowse family once witnessed an unwary gull scooped up at the surface by a humpback, while a second gull had it's toes trapped for a moment before popping free.

Amanda Stark photo

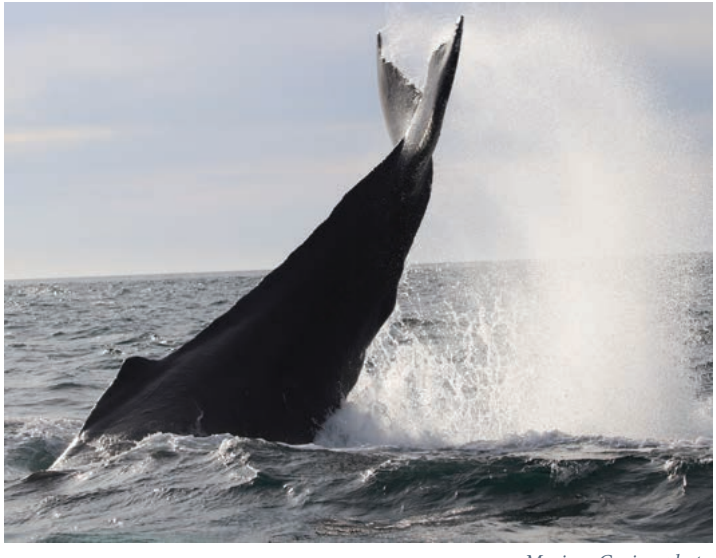
Breaching

This is what all visiting whale watchers hope to witness, one of the largest animals in the world leaping from the ocean and landing with a boat rocking splash. Humpback whales are the most common breachers, especially the youngsters. In the summer of 2018 the crew and passengers of Mariner Cruises were treated to a truly spectacular display when a calf breached over 60 times in the span of 3 hours! Certainly an experience that will never be forgotten. No one can say for certain why whales engage in behaviours such as breaching, flipper slapping, and tail lobing, but there are theories that they are used to remove parasites, communicate with other whales, and for the sheer joy of it.

Amy Tudor photo

Tail Lobbing

Another cetacean display of athleticism, tail lobbing is when the whale brings its back end out of the water and slaps the surface with its tail.



Mariner Cruises photo

Logging

Whales are mammals, and as such, they need to come to the surface to breathe, thankfully they are voluntary breathers and don't just gasp for breath at inpportune moments, like down in the deep, but this also means they can't sleep in the same way land mammals do, instead they rest at surface and sleep one half of their brain at a time, this also allows them to keep an awareness of their environment and any potential threats. It is balm for the soul to float alongside these gentle giants as they rest, the summer sun shining down, the boat bobbing on the slight swell, and the sound of the whales breathing mixing with the calls of pelagic birds.

Amanda Stark photo

Flipper slapping

The resounding slap of a 15 foot pectoral fin crashing against the water can be heard for miles. When flipper slapping, whales have been know to barrel roll, or backstroke, resulting in a graceful, albeit noisy, water ballet. Again, this behaviour is thought to dislodge irritating parasites such as acorn barnacles, communicate with other whales, and used as a feeding strategy, regardless of purpose they certainly seem to enjoy themselves.

Mariner Cruises photo

Spyhopping

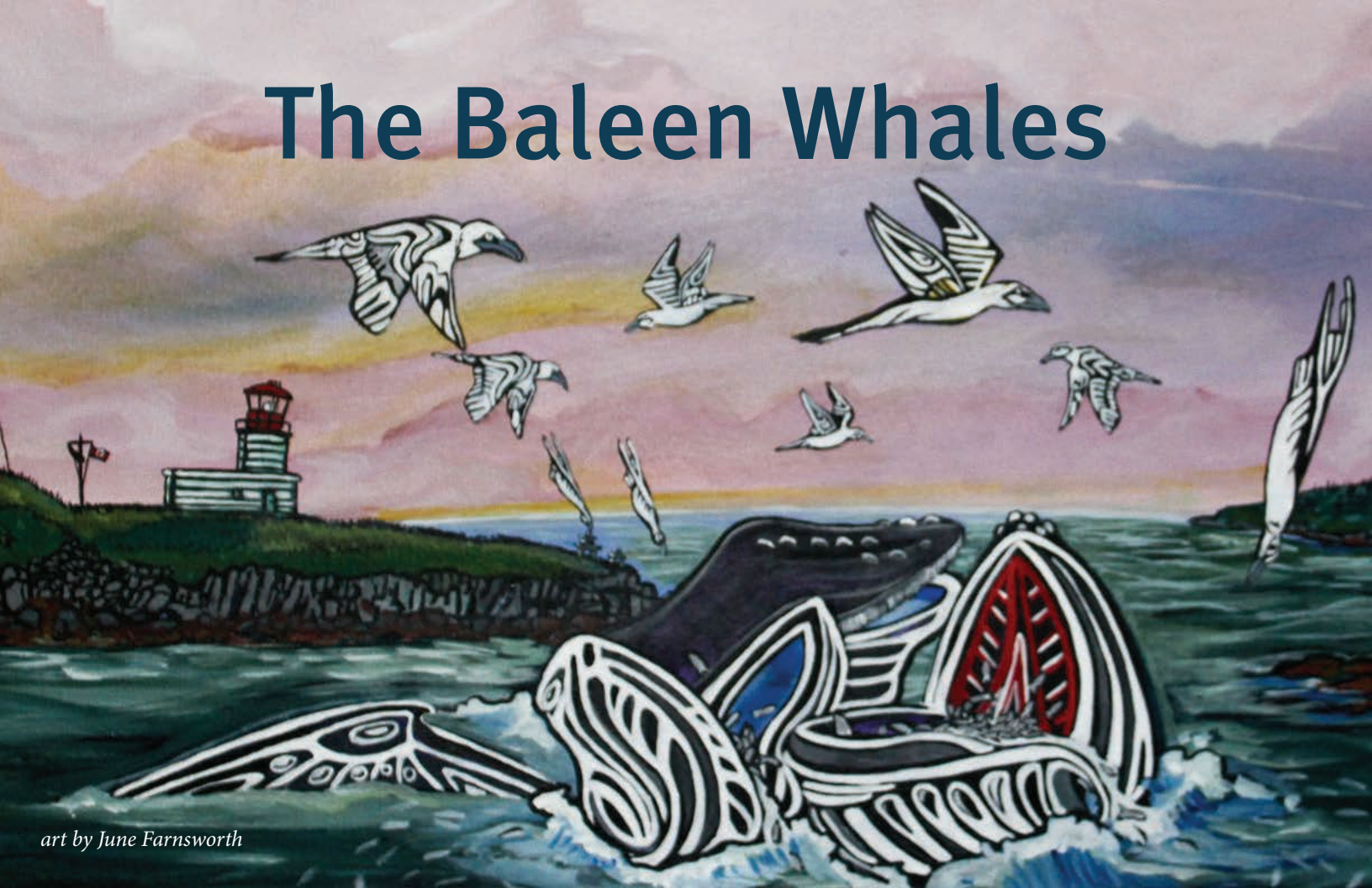
This is when the whale pokes its head out of the water to take a look around. While breaching is truly awe inspiring to see, eye contact with one of these incredible beings is incredibly humbling and has left a deep and lasting mark on many hearts. Even with all her years of experience working with these beings, Shelley Lonergan counts her eye to eye experience with Splash, one of her favourite whales, as one of her most fond memories.

Whales can be quite engaging around boats they know, and some individuals love to play to the crowd and seem to feed off the squeals of delight.

They'll swim back and forth under the boat, spyhopping on either side, then popping up at the stern while the humans frantically search the water on the port and starboard wondering where the whale has gone.

Brier Island Whale & Seabird Cruises photo

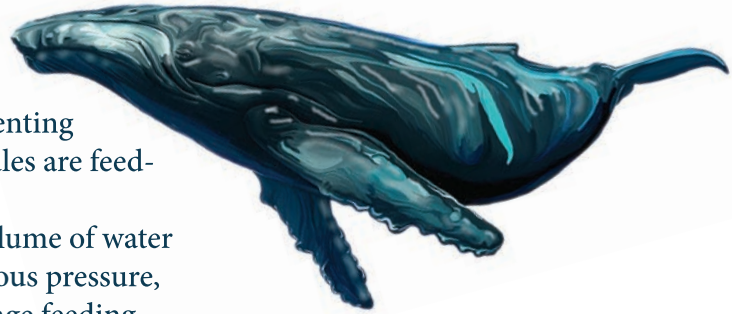
The Baleen Whales



art by June Farnsworth

All the whales in the following section are baleen whales. This means that they do not have teeth, instead they have hundreds of plates of baleen hanging from their top jaws which act as a sieve to filter their tiny feed from the gallons of water they gulp. These plates are made up of keratin, the same substance as fingernails. Though hard and stiff when dry, they are flexible and dynamic when wet. The outer edge is smooth, while the inner edge is lined with hair like structures that trap the feed in the animal's mouth so they can use their massive tongue to press the water out through the baleen. They then wipe the baleen plates clean with their tongue and swallow down their food.

Another structural adaptation needed for this style of feeding is pleated, highly expandable folds of skin that run ventrally from the whales' lower jaw back to the belly. When the whales open their specially hinged mouths to take in the school of fish/krill/plankton, these folds expand to accommodate the incredible volume of water, (often similar in volume to the size of the whale!) that comes with them. Located in the cartilage between their massive jawbones is an organ approximately the size of a grapefruit, that is thought to be responsible for preventing injury when the whales are feeding. As you can imagine, that volume of water would create enormous pressure, especially during lunge feeding, and could cause major damage if not managed properly. To prevent the whale actually swallowing all of that water their tongues invert.



Humpback whale, Gerald Gloade

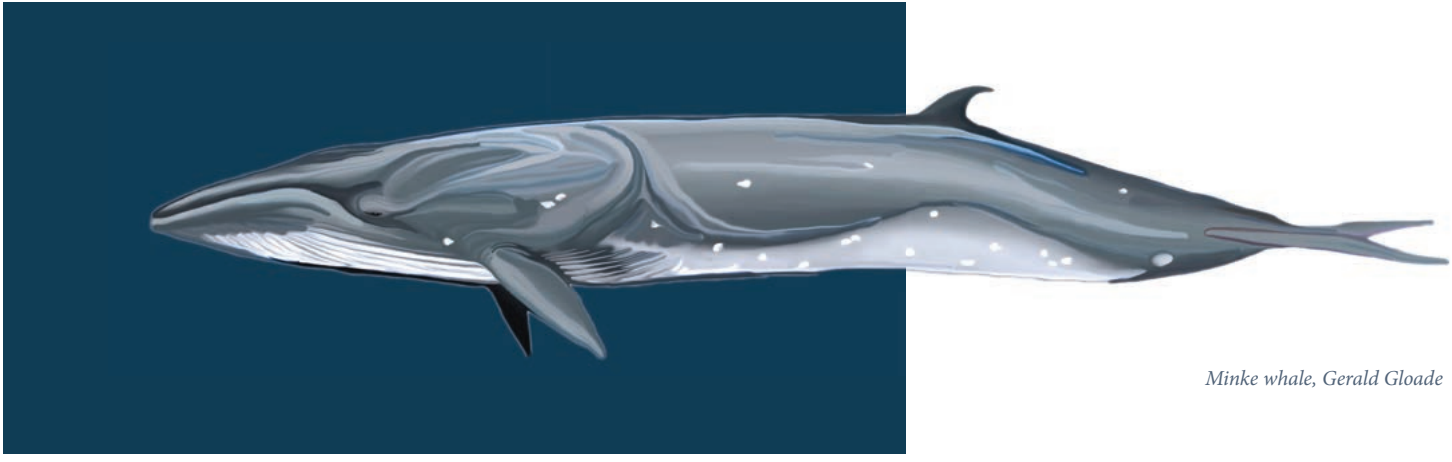
Minke whale
Balaenoptera acutorostrata

Amy Tudor photo

The minke whale is the smallest of the baleen whales sighted in the Bay of Fundy, and is a commonly seen species especially earlier in the spring before the humpback whales arrive in numbers. Some minkes do overwinter in the bay as well. These smaller cetaceans do breach, lunge feed, and use bubble feeding strategies, though as they are smaller and tend to be more shy than the humpbacks we do not get to witness these behaviours with as much regularity. They have not been reported to fluke their tails, even when taking a deep dive, instead they will be seen deeply arching and rolling their body into the water, giving a beautiful profile of their dark muscular bodies and relatively tall, hooked dorsal fin. A unique behaviour is their tendency to surface snout first, displaying the ridge that runs along the center of their head (pictured adjacent) and giving observers an early clue to identification.

While similar in dorsal colouration to humpbacks, they are adorned with subtle chevron patterning on the back behind the head and above the pectoral fins. Dark dorsal colour fades to a cleanly white underside, not possessing the distinctive individualization of tail and pectoral patterns of the humpbacks. They do however, have a pronounced white patch on the pectoral fins near to the body, this is a key identifying feature of the species. Their pectoral fins and flukes are smooth, the flukes having lifted corners, with a relatively straight middle section and a slight notch at center as seen on the breaching whale to the side.
Despite the many changes to the Bay of Fundy over the last 50-60 years, the minke whale population appears to be steady and healthy.

June Farnsworth photos

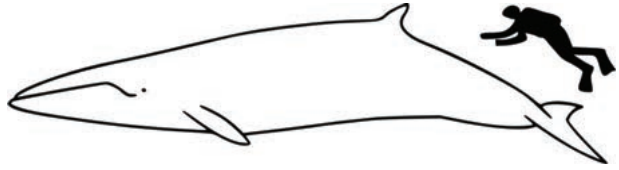


Minke whale, Gerald Gloade

Minke whale

key characteristics

Length : 7.5-9m (females usually slightly larger)
Weight : Up to 10 tonnes
Lifespan: Up to 50 years
Dorsal Colour: Dark grey-black



Brier Island Whale and Seabird Cruises photo

Does not raise fluke when diving, has a relatively tall, hooked dorsal fin.

Brier Island Whale and Seabird Cruises photo

Often surfaces snout first, if close enough you will be able to see the central ridge. Spout is low and bushy, though very rarely visible, but blow is certainly audible.

Mariner Cruises photo

When they surface at speed snout first they create a "roostertail" of spray as seen above. It is not uncommon to see both the blowholes and the dorsal fin.

Minkes are usually the first whale to show up to the area, often in May, although some individuals may stay through the winter.

Humpback whale

Megaptera novaengliae

Robert J. Galbraith photo

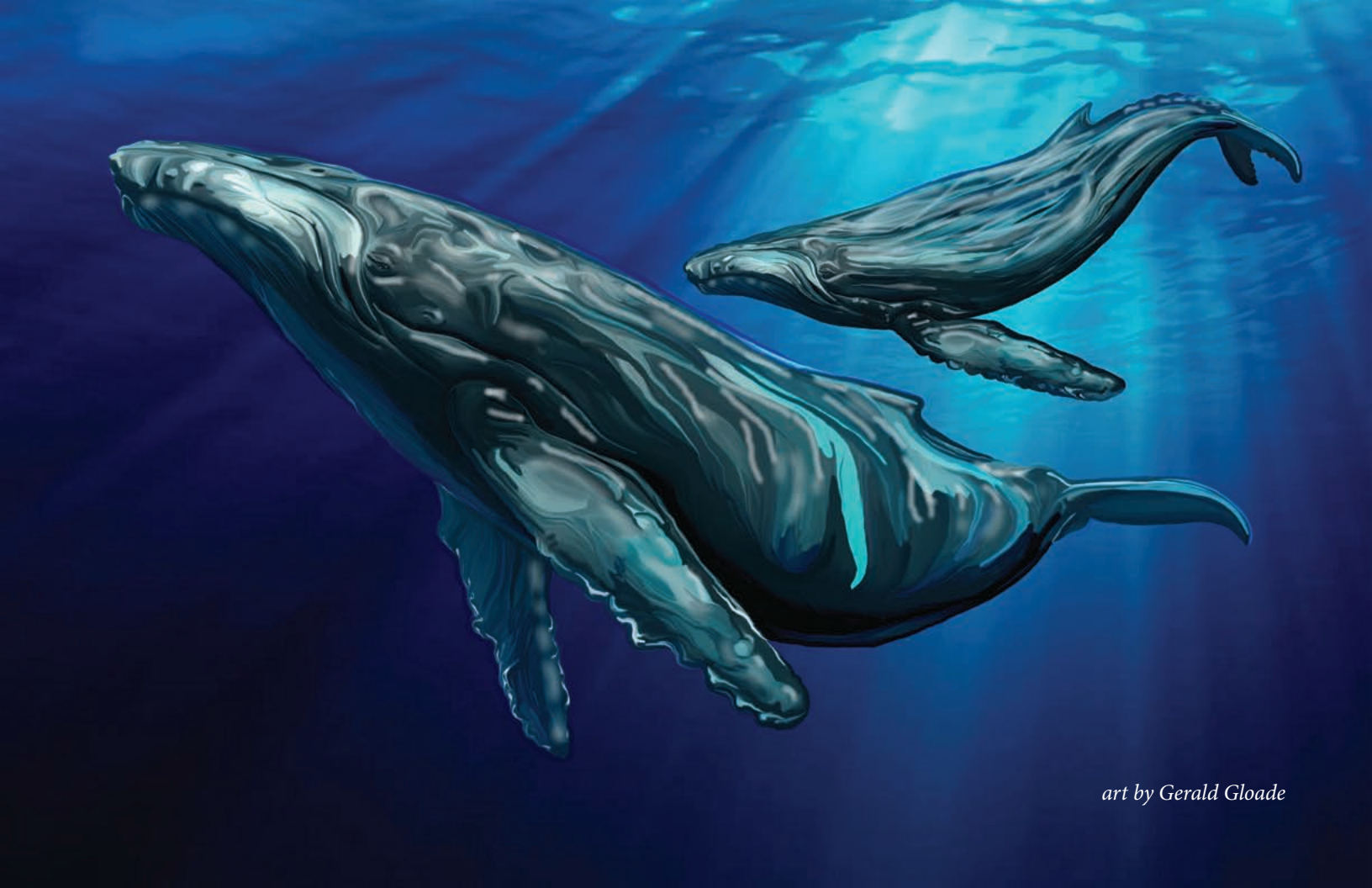
Humpback whales are commonly found in the Bay of Fundy from late June - November each year, though some individuals do appear to stay year round, and the highest numbers occur from early July through late September. The whales come here to feed and pack on the blubber that will sustain them during the second half of the year when they are fasting in warmer southern waters. It is in these warmer southern waters that the males sing their famous songs which can be heard up to 20 miles away. Typically, pregnant females tend to arrive in the Bay of Fundy first and leave last as they will soon be producing 100-130 gallons/day of rich fatty milk to sustain the calf during the first year of its life. However, their feedstocks are in steady decline and local whale scientists/enthusiasts, and water users are noticing changes in the whales. Bachelor males seem to be staying longer into the fall/winter. There are larger numbers of individual whales who seem to be in declining health, vertebral bumps behind the dorsal fin to the tail are still markedly visible late in the season instead of being covered by a thick layer of blubber. These are concerning changes and while the population as a whole seems to be doing well, if the feed continues to collapse the whales will pay dire consequences. Humpbacks are dark grey-black dorsally, with white markings on their undersides and pectoral fins, these

Amanda Stark photo

massive (12-15ft) long pectorals appear as teal/green when seen under the water. The pattern on each whale's tail is unique, it is catalogued and used, alongside any major physical anomalies, to identify the individuals. Over 65% of our local humpback population carries scars from either entaglement or ship strike. Their faces are bumped with tubercles which are large protective hair follicles, their throats grooved with pleats, and clusters of large acorn barnacles are often seen under the chin (as seen on the breaching whale in the photo), and along the edges of the pectorals and the tail. Even once removed the barnacles can leave ringed scars.

Generally, humpbacks are engaging and playful with humans, particularly when vessels are known to them. It is not uncommon for a mother whale to leave her calf to play with a trusted boat while she dives deep in search of food. These youngsters are often boisterous and clumsy, and absolutely delightful to watch. Perhaps encouraged by the cheers and claps of watching humans, these little ones have been known to put on quite the show, sometimes breaching over and over again alongside the boat, some of us have been lucky enough to see particularly athletic youngsters put on a marathon of 20 consecutive breaches!!

Bumpy, tubercle covered head.
Brier Island Whale and Seabird Cruises photo

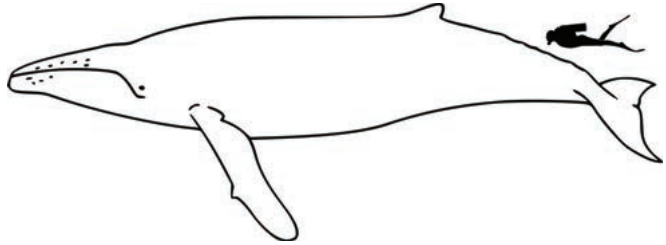


art by Gerald Gloade

Humpback Whale

key characteristics

Length : adults 12-18m (females are larger than males)
Weight: up to 40 tonnes
Lifespan: up to 90 years
Dorsal Colour: Dark grey-black



Robert J. Galbraith photo

Large tail with large serrated flukes, humpbacks will lift their tail when diving deep.

Brier Island Whale and Seabird Cruises photo

Large dark grey-black body, namesake hump located in front of dorsal fin.

Mariner Cruises photo

Large body 12-18m in length, "humped" back when diving. Small dorsal fin most visible when whale is diving.

Yes, whales fart! And yes, it is as loud and stinky as you'd imagine it to be! Shelley was once on board a zodiak when a whale rolled belly up and let loose a giant fart, needless to say, much laughter ensued. They also poop, a lot! And it just so happens to be a vital part of the marine ecosystem.

Sei whale

Balaenoptera borealis

Brier Island Whale & Seabird Cruises photo

Rarely seen in the Bay of Fundy, the Sei Whale is another long, sleek, fast moving whale. They are slate grey-bluish black dorsally, which can be mottled or have discoloured patches, and are light (white-cream-light grey coloured) ventrally. Oval shaped scars are common on the body and are thought to be caused by creatures such as lamprey or cookie cutter sharks. Like other baleen whales they have pleated throat grooves. They will skim feed or gulp and are known to spend large amounts of time near the surface, making them vulerable to ship strike.

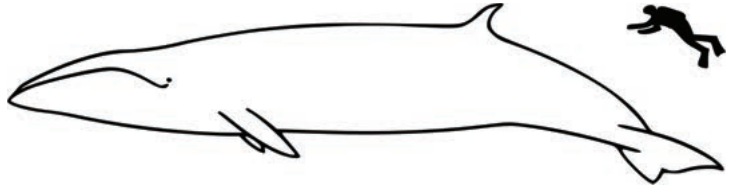
Their large heads make up approximately 1/4 of their overall length and have a prominent ridge. The blowholes and tall hooked dorsal fin are often seen above water at the same time as the animal surfaces. When diving Sei whales do not arch their bodies or show their flukes, instead they appear to just sink into the water and often leave a "footprint" a flat, circular spot on the surface of the water caused by the underwater upward movement of the fluke.

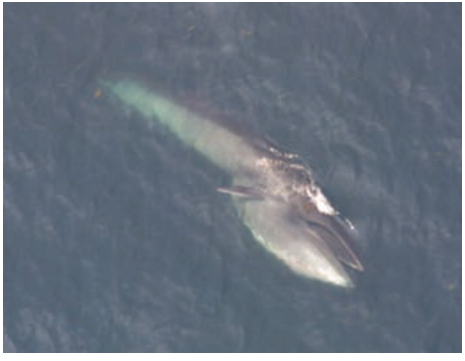
Christin Khan, NOAA photo

Sei Whale

key characteristics

Length: 12-19m
Weight: up to 50 tonnes
Lifespan: 50-70 years
Dorsal Colour: Slate grey-bluish black





Sei whale feeding at the surface.

Brier Island Whale and Seabird Cruises photo

Relatively tall, hooked dorsal fin, often seen at the same time as the blowholes when surfacing.

Mariner Cruises photo

Blow shape is columnar-bushy, less dense than that of the fin whale

Sei whales can easily be mistaken for fin whales - however both sides of the sei whale's head are uniformly colored, whereas the right side of a fin whale's head is white. Sei whales are infrequent visitors to the bay, preferring deeper water offshore.

North Atlantic right whale

Eubalaena glacialis

Brier Island Whale & Seabird Cruises photo

The large, broad black body, thick paddle shaped, smooth edged pectoral fins,and lack of dorsal fin makes the North Atlantic Right Whale one of the most easily identified species. They may have irregularly shaped white patches on their belly or chest, but all black is possible as well. Their flukes are broad and smooth with a deep v notch in the center. Their large, distinctly shaped heads with a sharply downward curving mouth are covered in callosities, which occur in patterns unique to the individual whale and are used by scientists as a means of identification. These callosities appear white due to the presence of whale lice on the mounds.

These magestic creatures were hunted to the brink of extinction by extensive commercial whaling and their population continues to teeter on the brink of collapse with approximately 400 individuals remaining. These docile creatures are relatively slow moving and spend lots of time at the surface near the coast, they float after they die, and produce large volumes of harvestable oil, making them the "right whale" to hunt. In more modern times they are at great risk for ship strike and entaglement, with over 80% of the population bearing evidence of being entagled at least once. Sightings in the Bay of Fundy are now rare and greatly celebrated when they occur. When moving through the passages they are always seen travelling with the tide.

Brier Island Whale & Seabird Cruises photo

Todd Sollows photo

When Right Whales were more common in the Bay of Fundy, they engaged in mating frenzies over near Grand Manan. The males would thrash about in the water and the females (cows) would sound like a herd of cattle! Right whales regularly engage in social gatherings not just for mating. These whales are surface active and display a wide variety of behaviours including breaching and spy hopping, though they are most often observed skim feeding.

Right whales, June Farnsworth

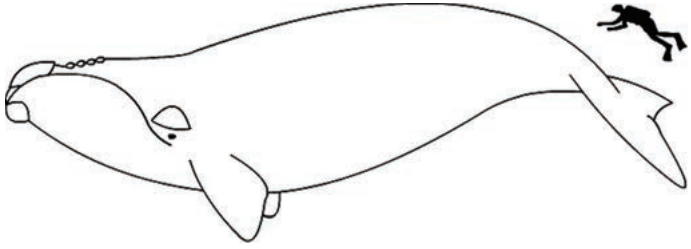
NARW appear to be migrating out of the Bay of Fundy as they follow their main food source, the tiny krill and copepods. Unfortunately, regulations and restrictions to vessels sharing their newly frequented waters have been slower in coming than the animals new patterns and we lost a devastating 21 whales in Canadian waters in 2017-2019.

But not all is lost, there are those, such as Dr. Moira Brown, who have dedicated their life's work to preserving these incredible, resilient beings and a promising 10 calves have already been born as of May 2020. The preservation of the North Atlantic Right Whale presents humans with the opportunity to use the vastness of our resourcefulness, creativity, and compassion to give a fighting chance to a species that we have almost obliterated. This effort requires coordination between scientists, government, and corporations.
Please call 1-844-800-8586 to report a right whale sighting or email XMAR-WhaleSightings@dfo-mpo.gc.ca

North Atlantic Right Whale

key characteristics

Length: 13-16m
Weight: Up to 70 tonnes
Lifespan: Up to 70 years
Dorsal Colour: Black



Robert J. Galbraith photo

Distinctive v-Shaped spout, approximately 5m in height caused by wide spaced blow-holes

Brier Island Whale and Seabird Cruises photo

Broad back lacking dorsal fin, note the scars along the back towards the tail. Many NARW suffer ship strikes and entanglement in fishing gear.

Mariner Cruises photo

Flukes are broad, smooth, and deeply notched at center. Will usually raise flukes when diving.

Another Right Whale fact can go here.

Fin whale

Balaenoptera physalus

Amanda Stark photo

Second in size only to the blue whale, the fin whales that frequent our Bay of Fundy waters measure upwards of 24 m in length, with their Southern cousins being even bigger! Their large but sleek size, impressive speed, and unique colouration make them readily identifiable and a wonder to see. Nicknamed the greyhounds of the sea, these speedy giants have been recorded in bursts as fast as 37 km/hr! Fin whales are frequently spotted here in the Bay of Fundy, with some individuals overwintering. While usually solitary, it is not unusual to see them travelling or feeding in small social groups or even with other species of cetacean.

Fin whales can be black to greyish brown dorsally and white on the underside. The distinctive asymetrical colouration of their long, single ridged, v-shaped head is dark on the left side of the jaw and light cream or white on the right. Behind their heads they have chevron blaze patterning, the exact variations unique to individual whales and a catalogue is curated by Allied Whale in Bar Harbour, ME, and is used by scientists for indentification. The patterning on the underside of their flukes may also be used for identfying individuals. The edges of flukes and pectoral fins is smooth. Despite their formidable size, Fin whales have been know to occasionally breach, surely a breathraking sight. They rarely lift their flukes when diving, and are known most notably for their speed. It is believed that the chevron blaze patterning may be used by a circling whale to help school their prey into tighter groups before they gulp. Laurie told us about a time that a whale tour boat was lucky enough to be "schooled", the boat being circled round and round by a playful youngster while mom took a rest nearby.

Amy Tudor photo

Fin whale

key characteristics

Length: 22-26m (females slightly larger than males)
Weight: 50-70 tonnes
Lifespan: 80-90 years
Dorsal Colour: Black-greyish brown

Mariner Cruises photo

Variable dorsal fin, often curved. Fin whales rarely lift their tails when diving.

Mariner Cruises photo

Tall, single columnar spout, approximately 6m in height.

Amy Tudor photo

Fin whales have a long, narrow v -shaped head with a single central ridge. The lower jaw extends beyond the top when the mouth is closed. The distinctive light coloured patch is readily visible on the right hand side.

The asymetrical colouration of the head extends to the colouration of the baleen plates and is reversed on the tongue! The front 1/3 of their baleen plates on the right hand side are cream coloured, while the rest are bluish-grey.

Blue whale

Balaenoptera musculus

Brier Island Whale & Seabird Cruises photo

A graceful ribbon of blue life, a slip in the vastness, so massive in form.
An eye that sees deeply, taking you in.
Breathes the same air, then sliding away.
A homecoming to wonder and humility.
The largest creature this world has ever known, disappears into the sea.

The largest animal to have ever existed, the blue whale elicits awe and wonder though precious little is actually known about them. Sightings are exceptionally rare in the waters of the Bay of Fundy, and those who have been blessed to see one of these magnificent creatures will carry the gift of that memory with them for a lifetime. The last recorded blue whale sighting near the islands was in 1999 off Northern Point. Anything you want to share about your experience?

Their measurements are staggering, in southern waters they measure up to 110 feet in length and weigh nearly 150 tonnes, though in northern waters they tend to be smaller, closer to 90 feet as a maximum length. They are aptly named as when seen underwater, they truly do appear light blue dorsally with lighter ventral colouration. Like other baleen whales, these giants feed on some of the oceans tiniest organisms, krill.

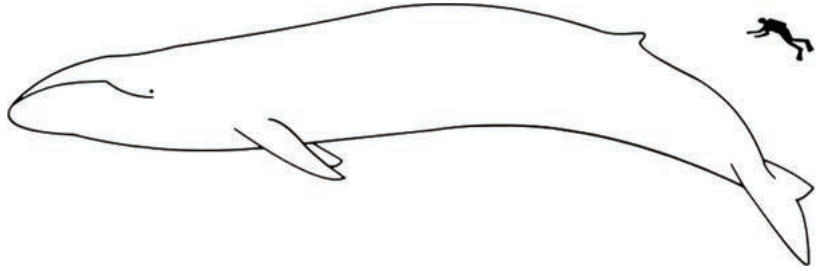
Along with being the largest creatures in the world they are also one of the loudest. They vocalize frequently and can emit sounds at up to 200 decibles, it is thought that they can hear each other from as far as 1000 miles away in ideal conditions. These moans, groans, and pulses are thought to function both as communication and navigation.

NOAA Photo Library [CC BY 2.0]

Blue whale

key characteristics

Length: up to 32m, but more commonly 25-27m (females are larger than males)
Weight: up to 150 tonnes
Lifespan: 80-90 years
Dorsal Colour: Blue grey



Brier Island Whale and Seabird Cruises photo

Large u-shaped head, large blowholes produce a 9m columnar spray.

Brier Island Whale and Seabird Cruises photo

Wide tail, raised when diving.

Mariner Cruises photo

Small dorsal fin, set far back towards tail.

The last blue whale seen in the bay was in 1999!

Toothed Whales & Dolphins

art by Gerald Gloade

The cetaceans on the following pages all have teeth rather than baleen. They typically hunt in groups to catch their prey of fish, squid, and in the case of the orca, seals and smaller whales. Many species of toothed whales live in tightly knit family groups, raising their young together, hunting together, and travelling together. Most of the toothed cetaceans use echolocation, and as a result have large bulbous mounds on their heads, called melons which focus their emitted sounds. Echolocation works by the animal sending out a blast of frequencies/sounds which then bounce off the various elements of the environment and the returning "echos" are used by the animal to create an image of it's surroundings. The full extent and mechanisms of their echolocation abilities are not known, although some scientists feel it may be so sensitive that it provides a three dimensional view of the environment. There is also some evidence to suggest that the super high frequency sounds often emitted when hunting may stun or disorient prey.

Amanda Stark photo

mujpe'j
Harbour porpoise
Phocoena phocoena

Robert J. Galbraith photo

Harbour porpoises are common in the Bay of Fundy, and though they remain in our waters throughout the year they are generally quite shy of humans and boats.

They are dark grey-black dorsally and transition to light grey sides and white belly. They have a smaller triangular fin located mid-point on the body. Their beak is more rounded and less defined than that of a dolphins. On quiet days you can hear the gentle puff of their exhale as they surface, but the blow is not usually visible.

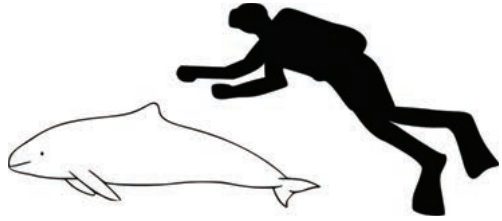
Harbour porpoises travel in small pods usually 2-3 individuals, and are most often spotted quickly rolling in and out along the surface of the water as they travel, this makes them hard to photograph as much more than a blur.

Robert J. Galbraith photo

Harbour porpoise

key characteristics

Length: 5-5.5ft (females slightly larger)
Weight: 135-170lbs
Lifespan: about 24 years
Dorsal Colour: Grey-dark grey



Brier Island Whale and Seabird Cruises photo

Short head with poorly distinguishable beak visible.

Amy Tudor photo

A shoal of Harbour porpoise surfacing briefly.

Brier Island Whale and Seabird Cruises photo

Distinctive triangular dorsal fin. Grey coloration visible.

Harbour porpoises are usually found closer to shore as they prefer shallower waters such as bays, inlets, and harbours. They are social creatures and are often found in small groups, they have been known to gather in aggregates of around 100 individuals. A group of porpoise is known as a shoal.

mujpej
Atlantic white-sided dolphin
Lagenorhynchus acutus

Brier Island Whale & Seabird Cruises photo

The North Atlantic white sided dolphin is engaging and acrobatic and is commonly found playing in the wake of boats much to the delight of the humans aboard. Other than their outgoing nature, they can be distinguished from harbour porpoises by their larger size, their namesake stripes of white and tan extending along the sides of their bodies, their taller, sickle shaped fin, and their black, pointed snout. They are quite social and seeing a solitary dolphin is quite rare.

They are abundant in the Bay of Fundy. It is not unusual to find them in the same waters as whales, feeding on the same fish and even engaging playfully with each other.

Robert J. Galbraith photo

Greg Trowse photo

They are an absolute delight to watch. They frequently breach, often getting their entire bodies into the air. Seeing them dive and criss cross over one another with precision and joy is really quite something to witness, as if they were dancing in the water. What exactly causes the love of dolphins in humans, I can't say, but the reaction is nearly universal, squeals of delight, huge smiles, and a sense of kinship.

North Atlantic white sided dolphin

key characteristics

Length: up to 2.7m
Weight: 400-500lbs
Lifespan: about 25 years
Dorsal Colouration: Dark grey-black

Atlantic white sided dolphin, Gerald Gloade

Robert J. Galbraith photo

Often seen traveling in groups.

Mariner Cruises photo

Sickle-shaped dorsal fin.

Amy Tudor photo

White and tan colouration on both sides of the animal, with black beak.

While numbers of individuals in the Bay of Fundy seem to be fairly steady, it is getting less common to see large aggregations of dolphins.

wapinmew
Beluga whale
Delphinapterus leucas

These beautiful white whales are highly social, spend copious amounts of time singing and communicating using a wide variety of sounds earning themselves the nickname “canaries of the sea”, and rather endearingly, have the appearance of smiling. They are very rarely seen in the Bay of Fundy with the last recorded sighting in 1999. They are incredibly easy to identify.. They have large rounded melons used in echolocation and also to help focus their vocalizations. Flippers are short and paddle shaped, and they do not have a dorsal fin. The lack of dorsal fin makes it easier for these whales to swim under ice as they navigate the frigid ocean waters they prefer.

NOAA photo [public domain]

Ansgar Walk photo [CC BY-SA]

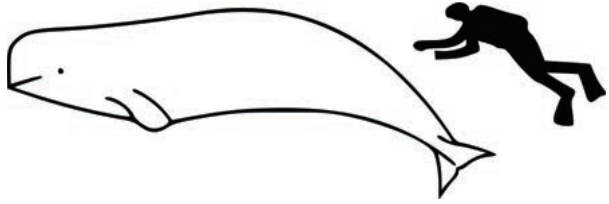
A thick layer of blubber, which can make up to 40 percent of their body weight, keeps them warm. They move between fresh water and salt water which allows them to also move into river systems at times. Contrary to the popular song, the babies are not white, but dark grey and lighten to white with sexual maturity.

The lifespan of belugas is thought to be around 80 years, however it is worth noting that a deceased 70 year old female was found to be carrying a nearly full term, healthy calf, so perhaps lifespan is much longer than known.

Beluga whale

key characteristics

Length: Average 4m, but up to 5m
Weight: average 3,150lbs
Lifespan: up to 80 years
Dorsal Colour: White



Robert J. Galbraith photo

Large "melon" on head. Upward turned mouth.

Robert J. Galbraith photo

Absence of dorsal fin, however slight hump is visible.

premier.gov.ru photo [CC BY]

Paddle-shaped flippers. Often seen in pods.

Unlike most whales the beluga does not have fused cervical vertebrae so it can turn its head by moving its neck. Their teeth have growth rings, similar to that of tree trunks that can be used to determine age. Their scientific name delphinapterus means "dolphin without a fin".

Long-finned pilot whale

Globicephala melas

ahisgett photo [CC BY-2.0]

Though rarely seen in the Bay of Fundy recently, pilot whales used to be commonly seen below "The Rip" in early 1996-1998, with the last recorded sighting in 2010. They are playful, social whales who travel in maternal based pods. They display many surface active behaviours such as spy hopping and tail lobbing, they also rest by logging at surface.

ahisgett photo, licensing by CC BY 2.0

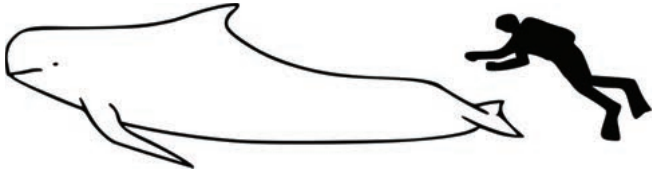
June Farnsworth photo

As a toothed whale their appearance differs significantly from the baleen species. They have large rounded heads, called melons which house their echolocation structures, and an almost beak shaped mouth. Their muscular, thick bodies are mostly black-dark grey dorsally, though they may have lighter grey saddles behind their dorsal fins. The underside is characterised by a light coloured anchor shape marking that starts at the throat. Their dorsal fins are located closer to the head than that of the baleen whales, approximately 1/3rd of the body length from the head. The dorsal fin actually changes shape as the whale matures, becoming more broad and round. They have long, sickle shaped pectoral fins, hence the common name.

Long-finned pilot whale

key characteristics

Length: 5.5-7.5m
Weight: 0.95-2.5 tonnes
Lifespan: 35-60 years
Dorsal Colour: Dark grey-black



Brier Island Whale & Seabird Cruises photo

Curved/hooked dorsal fin. Barely visible blow.

Elizabeth Zwamborn photo, licensing by CC BY-SA

Anchor shaped patch on underside. Bulbous head shape.

Brier Island Whale & Seabird photo

A pod of pilot whales.

Echolocation is a form of imaging that uses a click sent out into the environment, then using the "echo" (what bounces back at different speeds/angles) to create an exceptionally accurete image of the surroundings. This means that even in complete darkness, these animals have a complete "picture" of their environment! Echolocation is also what makes these creatures so suceptible to interference from human made devices that mimic this sense.

Orca “Old Thom”

Orcinus orca

Brier Island Whale & Seabird Cruises photo

Old Thom is currently the only orca known to frequent the Bay of Fundy, he causes quite a stir when his massive dorsal fin is spotted out on the water. Coming back year after year like an old tomcat, he is most commonly seen travelling with dolphins, most unusual behaviour for an orca! One theory is that his mother was killed when he was a young calf and he was kicked out of his pod, at which point he was adopted by a pod of dolphins.

The orca, also known as the killer whale, is actually the largest member of the dolphin family. These formidable hunters typically live in tightly bonded matriarchal family pods, and though there are populations in the North Atlantic, sightings in the Bay of Fundy are rare.

Brier Island Whale & Seabird Cruises photo

Brier Island Whale & Seabird Cruises photo

Orcas have jet black bodies with white undersides and eyespots, and a grey "saddle"behind their tall, vertical dorsal fin. This massive fin is a key identifying feature, reaching heights of up to 6 feet in males they can be seen at quite a distance. In males the dorsal fin is larger and more triangular in shape, while those of the females are smaller and slightly hook shaped.

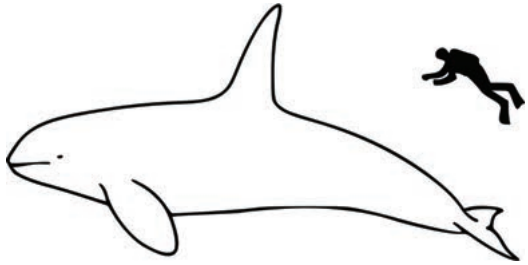
Orcas are highly social creatures, they communicate constantly among their pod, working together to capture prey such as fish, seals, porpoises, and occasionally small whales. They are also quite playful, frequently spy hopping, breaching, and tail-lobbing.

Orca, Gerald Gloade

Orca

key characteristics

Length: 5-9.75m (males larger)
Weight: up to 11 tonnes
Life span: 30-90 years
Dorsal Colour: Black with grey saddle behind dorsal fin



Robert J. Galbraith photo

Brilliant white underside.

Brier Island Whale & Seabird Cruises photo

Large paddle-shaped flippers.

Brier Island Whale & Seabird Cruises photo

Large pointed dorsal fin. Blow also visible.

A pod of 8 orcas was seen in the Bay of Fundy in 1999, since then only Old Thom has been seen, researchers are currently working to determine is he was part of that pod. He travels without any other orcas and is considered a “transitory pod”.

ded'-men-ak'-pat
Sperm whale
Physeter macrocephalus

Gabriel Barathieu photo [CC BY-SA]

Occasionally seen in the Bay of Fundy, these easily identifiable whales are grey-dark grey in colour, have a very large head, and flattened nose. They have a single blowhole situated to the left of the head which produces a low bushy blow. Just behind their head, the skin is often wrinkled. They have relatively small, paddle shaped flippers, and triangular flukes with serated edges. Their dorsal fins are perhaps better described as a hump as they are low and rouded in shape, this is followed by a series of smaller dorsal bumps.

Sperm whales are quite social, females tend to live in strongly bonded family groups, while young bachelors live together, though eventually, the largest, oldest males are often solitary. They do hunt in groups, and find their food at depth. The battle between giant squid and sperm whale is the stuff of legend, many whales bearing scars upon their bodies from fights in the deep. Sperm whales also eat other species of squid, sharks, fish, and skates. But the biology of these deep water, long breath predators who regulary dive at depths of 600-1000m, is truly beyond what scientist expected.

Bernard Spragg photo [CC 0 1.0]

Brier Island Whale & Seabird Cruises photo

Firstly, their ribcages are flexible enough to allow the lungs to collapse, which prevents the lungs from rupturing as well as prevents any exchange between the blood and alveoli (wee little sacs in the lungs). This lack of gaseous exchange prevents "the bends" which is caused by nitrogen absorbtion at depth. Lining any air-containing spaces they have tissues designed to essentially swell when diving, which squeezes out the air pockets as the animal dives. Also, their blood volume to size ratio is significantly larger than that of non-deep diving animals and is extra rich in hemoglobin, which is what carries oxygen through the blood to tissues. And last, but certainly not least, their muscles are chock full of myoglobin, a protein which stores oxygen within the tissue. Once they surface from extended time at depth it takes several minutes to recover.

Sperm whale

key characteristics

Length: females up to 12m, males up to 16m
Weight: females up to 15 tonnes, males up to 45 tonnes
Lifespan: Up to 60 years
Dorsal Colour: Grey-dark grey

Brier Island Whale & Seabird Cruises photo

Dorsal hump, followed by a ridge of bumps.

Brier Island Whale & Seabird Cruises photo

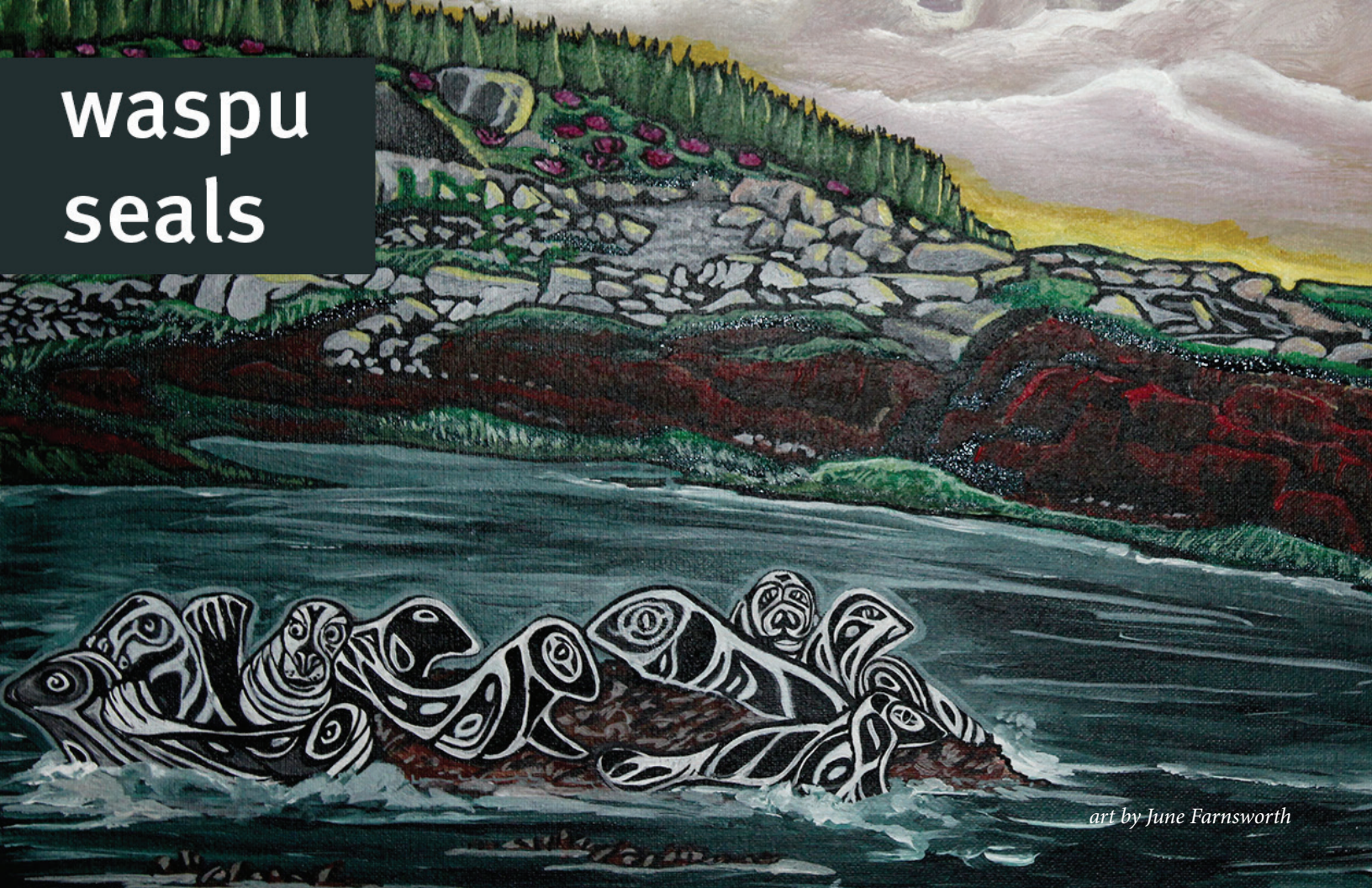
Tail with wide flukes, serrated edges. Raises tail when diving.

Brier Island Whale & Seabird Cruises photo

Bushy, left facing blow, 2m in height. they are the only living whale to have a single, assymetric blowhole.

Sperm whales are the largest toothed predators on earth and also have the largest brains! They are named after the waxy substace, spermaceti, that is found in their heads.

waspu seals



art by June Farnsworth

Harbour seal

Phoca vitulina

Brier Island Whale & Seabird Cruises photo

Like the much larger grey seal, harbour seals are commonly sighted in the Bay of Fundy, and both species are increasing in population size. The harbour seal bears a strong resemblance to the wide broad head of a labrador retriever, this has earned them the nicknames of "dog of the sea". They range widely in colour from light tan to black, with many individuals having spots of speckles. Like the larger grey seal, they too haul up on the rocks to sunbath, but they tend to be more more social about it, and it is not uncommon for indivuals to the be in close contact with one another. And they are often seen in a "banana" shape when out sunning. They have lithe, muscular bodies, and short flippers.

Robert J. Galbraith photo

Harbour seal
key characteristics

Length: 5-6 feet
Weight: 180-285 lbs
Lifespan: 25-30 years
Dorsal Colour: Varies from light tan-black

Seal, by Gerald Gloade

Brier Island Whale & Seabird Cruises photo

Fusiform body.

Robert J. Galbraith photo

A group of seals basking on exposed rocks, it is not unisual for grey selas to be present as species will intermingle. Notice the "banana" shape of the seal in the back.

Brier Island Whale & Seabird Cruises photo

Fur colour varies, spotting present on this specimen. Also note the "dog-like" appearance of facial structures.

Harbour seals have been known to travel more than 160km up fresh water rivers chasing after migratory fish like salmon. Pups are born on land in the spring. Harbour seals can stay under-water for up to a half hour.

Grey seal

Halichoerus grypus

Brier Island Whale & Seabird photo

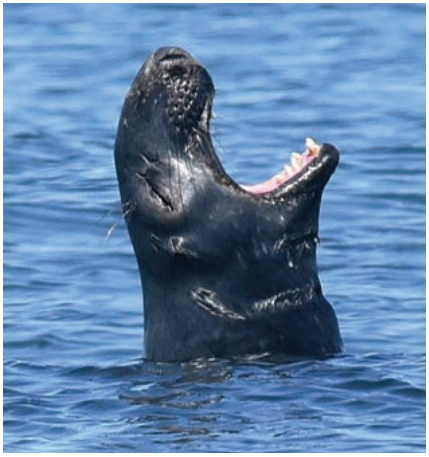
Grey seals are commonly sighted in the Bay of Fundy

Length: 2.6 m in length

Colouration: Males have dark fur, while females have light fur with dark spots.

Behaviour: Grey seals often spend time basking on rocks after feeding. When surfaced, their head is visible for a few minutes before diving.

Other distinguishing features: Grey seals have larger snouts than harbour seals. Snout length differs in males and females; males have a longer snout with wider nostrils, while females have a much smaller snout. Grey seals have a large tapered body with short and thick flippers.

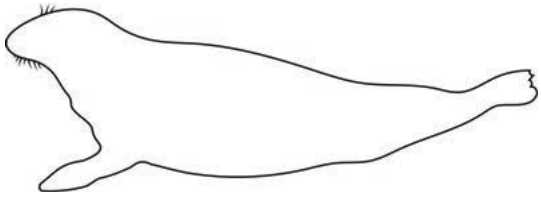


Robert J. Galbraith photos

Grey seal

key characteristics

Length: 6-7 feet
Weight: 370-680 lbs (males are much larger than females)
Lifespan: 30-40 years
Dorsal Colour: Varies - brown, silver, to dark grey



Amy Tudor photo

Long snout, spotted colouration visible.

Robert J. Galbraith photo

Fusiform (torpedo-shaped) body tapering towards flippers, as seen in this photo of a grey seal pup.

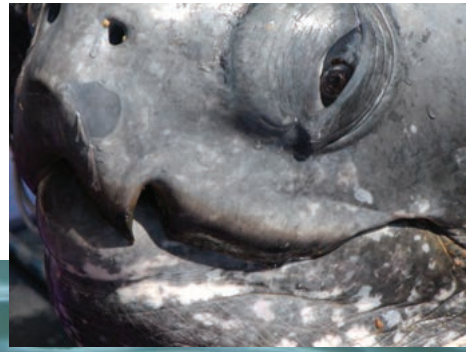
Brier Island Whale & Seabird Cruises photo

Colony of grey seals, often seen along the shore at low-mid tide basking on rocks.

The scientific name for the grey seal is Halichoerus grypus, which translates to "hook-nosed sea pig"! Males are generally much larger than females. Pups are born on land in the spring, and enter the ocean for the first time at around one month old.


mikjikj
Leatherback turtle
Dermochelys coriacea
Gerald Gloade art

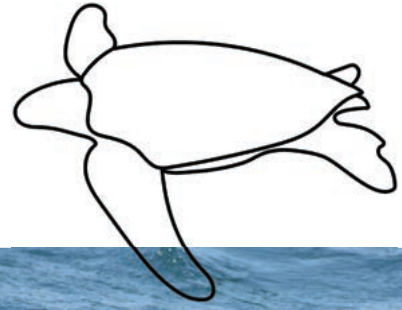
The leatherback sea turtle is a living fossil, it has been travelling the Earth's oceans since the time of the dinosaurs and is the largest living species of sea turtle, known to have shell lengths of up to 5.5 feet and weighing up to 2200lbs. Named for it's unique leathery carapace which is made up of 1.5 inches of oily connective tissue over dermal plates with 7 distinct ridges that come to a blunt end at the tail. They have notably long front flippers and back flippers are paddle shaped, the leatherback is designed for extensive open ocean travel and they have the longest migrations of any turtle species, some individual travel up to 18,000km yearly. Leatherbacks are also the deepest diving of the sea turle species, researchers have recorded dive depths of up to 1200m and durations of up to 1.5 hours. They feed on gelatinous sea creatures such as jellyfish and salps, and have backward pointing spines in the back of their mouth and going down their throat to keep their squishy prey from sliding back out. Sightings used to be more common in the Bay of Fundy, though now they are rare and people are asked to report any sightings and keep a substantial distance as a vessel strike can seriously injure or kill a turtle. They are also challenging to spot as they are dark grey-brown or bluish-black and don't tend to spend much time at surface around boats. Please call 1-888-729-4667 or email info@seaturtle.ca to report any sightings.



Scott R. Benson photos [Public domain]

Leatherback turtle
key characteristics

Length: 4.5-5.5 feet average of 5 feet in Atlantic waters
Weight: up to 2200lbs
Lifespan: unkown, but thought to be long lived



Amy Tudor photo

Ridges in the carapace visible.

Robert J. Galbraith photo

Dark brown coloration with lighter speckles on head.

Brier Island Whale & Seabird Cruises photo

Bony lower lip visible, as well as the ridges on carapace.

Leatherbacks are also able to thermoregulate and keep their bodies warmer than the surrounding sea water. Scientists still do not fully understand how they are able to do so.

wipitomaw sharks

art by Pat Sollows

The Bay of Fundy is regularly home to 6 species of large sharks and local fishermen say that sightings are becoming more common in recent years, perhaps in response to increasing water temperatures and the growing seal population in the area. Recent developments in tagging and tracking have also allowed humans greater insight into the movements and locations of shark species, including great whites, who have likely been frequenting our waters for ages, but we are now becoming more aware of them.

Art by Gerald Gloade

Sharks, a group of fish, are among the most incredible, ancient, and feared creatures in nature. Many species are apex predators and play a key role in maintaining balanced and healthy marine ecosystems.

Sharks have varied reproductive strategies,oviparity, ovoviviparity, viviparity, and even parthenogensis. Oviparity refers to the laying of eggs. Developing young are encased by a preotevtive shell and are nourished by a yolk sac within the egg. The egg casing can be a wide array of shapes and sizes, and can be found washed ashore, we call them "mermaids purses". Ovoviviparity involves eggs developing and hatching within the mother. In some species, the young are not born imediately after hatching and they continue to develop within the uterus where they may feed on unfertilized eggs (oophagy), uterine milk, or even their siblings (intrauterine cannabalism). Viviparous sharks also hatch the pups from eggs within the uterus but they are nourished via an umbilical cord attached to a yolk placenta. Parthenogenesis has rarely been observed when a male is not present to fertilize the eggs.

Some quick and amazing facts about sharks:

They have no bones, their skeletons are made up entirely of cartiledge, one of the reasons sharks are able to move with such grace and agility. As most sharks age however, they fortify their cartiledge with calcium salts, meaning that it is possible for sharks to fossilize.

Sharks have 7 senses!! They have the same 5 as humans, sight, taste, smell, touch, and hearing, but on top of that they have pit organs (thought to assists in registering stimuli such as currents, though exact function is still unknown so this may be an 8th sense), lateral lines (pressure sensors, feels vibrations), and the ampullae of Lorenzini (electroreception).

Their skin feels smooth or velvety when stroked from head to tail, but rough like sandpaper when stroked tail to head because it is made up of tiny tooth like scales called denticles. These scales don't get parasites like barnacles, and they help reduce friction when swimming.

Their physicality is varied and often incredibly adapted to specific hunting conditions and prey species. Some are massive, powerful predators, some are no longer than 8 inches long and glow, some are over 50 feet long and feed on krill, while others can live to be over 400 years old, and still others lay flat in wait on the ocean floor!

Porbeagle shark

Lamna nasus

Doug Perrine / Alamy stock photo

Sometimes mistaken for a small great white, the porbeagle shark has a stocky muscular body which is blue-grey dorsally and white on the underside. The tall triangular dorsal fin has a white patch on the base of the trailing edge, pectoral fins are also large. They do have a much smaller second dorsal fin, pelvic fins, and anal fins. It has a pointed snout, large black eyes, and sharp, blade like teeth. They have 5 gill slits.

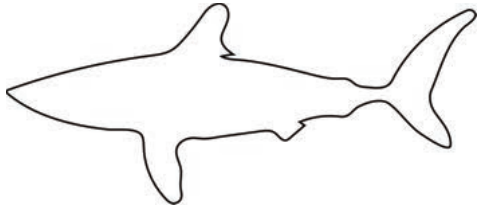
These sharks do enter coastal waters but are pelagic and have been known to dive at depth. They have been described as exhibiting playful behaviour, and we can corroborate this! We were lucky enough to record one chasing a shackle on a structure we were lifting and dropping through the water column for an experiment, you can see the picutre we got of "Petunia" off our underwater camera in the photo.

Greg Trowse photo

Porbeagle shark

key characteristics

Length: up to 2.5m(males) up to 3m(females)
Weight: up to 300lbs
Lifespan: about 30 years



Greg Trowse photo

Porbeagle swimming.

NOAA photo [public domain]

Greyish blue colouration, white marking on dorsal fin.

NOAA photo [public domain]

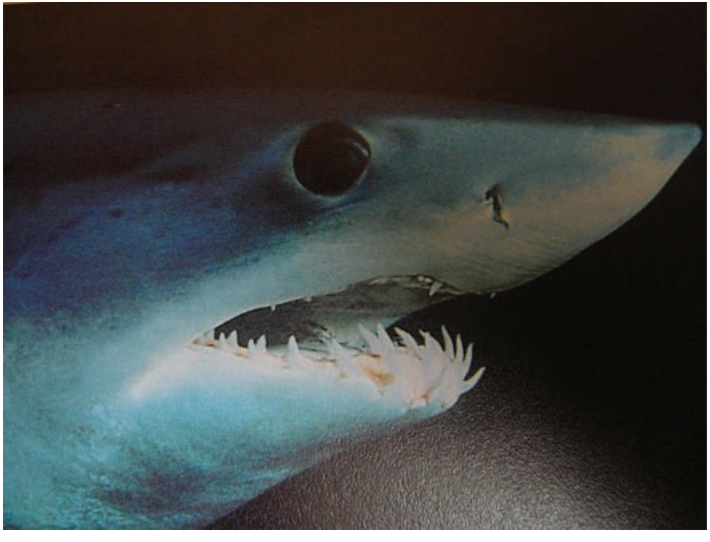
Pointed snout. Triangular dorsal fin.

Porbeagles must swim constantly in order to breathe. In the North Atlantic, females grow larger than males, with lengths over 3m possible. While hunting, porbeagles will dive from the surface to the bottom, then repeat this cycle.

Shortfin mako

Isurus oxyrinchus

The shortfin mako is a beautiful and extraordinary predator built for speed and athleticism. They have a lithe, streamlined body capable of reaching speeds of up to 74km/h, making them the fastest of all sharks and among the fastest of all fish in the oceans. This strength and speed also gives them the ability to breach, launching themselves from the water when hunting. They are dark blue-gray dorsally with metallic blue sides and white ventrally. They are shaped like a torpedo with long pointed snouts, large eyes, long gill slits, and short pectoral fins. Their teeth are very pointed.



Mark Conlin, SWFSC Large Pelagics Program [Public domain]

Mark Conlin, SWFSC Large Pelagics Program [Public domain]

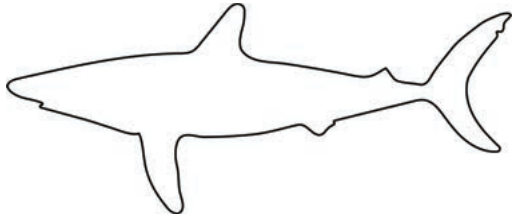
As an apex predator adults have no known predators other than man, though juveniles face predation by other large sharks, possibly even adult makos. The young are ovoviviparous, meaning they are born live after being hatched from eggs carried within the mother. The pups are relatively large at birth (approximately 2 feet in length), giving them a stronger chance of survival.

Once Laurie was out on a whale tour, and the group of minkes they had been watching started acting very strangely, when she searched the water she saw that a mako was the reason for the disturbance!

Shortfin mako shark

key characteristics

Length: up to 13 feet
Weight: 1200lbs and up
Lifespan: over 30 years



Mark Conlin photo [Public domain]

Rounded dorsal fin.

Mark Conlin photo [Public domain]

Torpedo-shaped body, long pointed nose.

SWFSC/NOAA photo [Public domain]

Metallic-indigo blue colouration, white belly.

Like the great white shark, the mako has specialized blood vessel structure that allows them to maintain their body temperature higher than that of the surrounding water. This gives them a distinct advantage as a predator especially in cold waters. The mako makes long migrations each year and lives in a large variation of water temperatures in it's travels.

Blue shark
Prionace glauca

NOAA photo [CC BY-SA-2.0]

Truly a gorgeous metallic indigo blue in colour dorsally, moving through vibrant blue on the sides before fading to white ventrally, these sleek, agile predators are a pelagic species who roam great distances over their life times. They have long conical snouts, long, pointed pectoral fins, and their body is streamlined and designed for ocean travel, they are a high;y migtatory species.

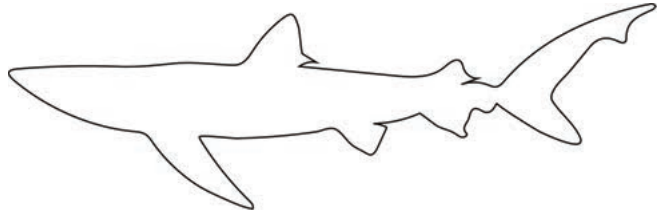
They do not typically hunt marine mammals, but rather eat smaller schooling fish, squid, cuttlefish, and octopi. They will also opportunistically scavenge carcasses. It is not uncommon for them to aggregate to feed on schools.

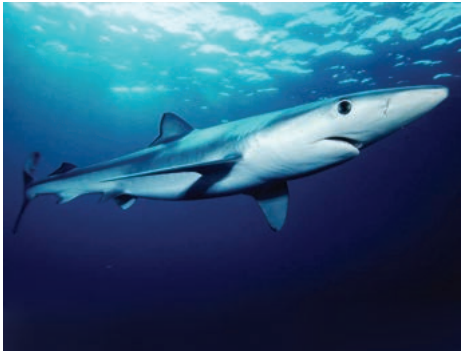
Shane Anderson, NOAA photo [public domain]

Blue shark

key characteristics

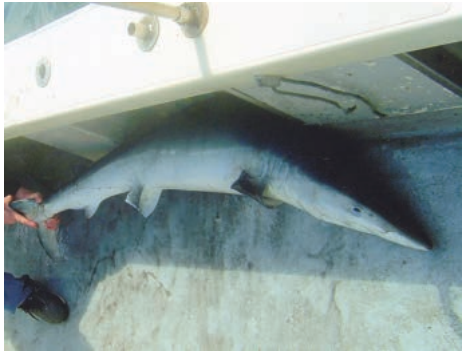
Length: up to 3.3m
Weight: 30-52kg
Lifespan: At least 20 years





Mark Conlin photo [Public domain]

Long slender, flexible body.



Peter van der Sluijs photo [CC BY-SA]

Dark blue on top, transitioning to lighter blue and white on sides and belly

Large upper lobe on caudal fin. Large triangular dorsal.

The blue shark is easy to recognize by its deep blue color, and also by its long, slender form. When removed from the water, they turn grey. Females are larger than males. Blue sharks give birth to large litters of 25 to over 100 pups, unlike most other species of shark.

Thresher shark

Alopias vulpinus

Thomas Alexander photo [CC BY-SA]

The thresher shark is the most easily recognizable of the shark species due to it's incredibly long caudal fin which may make up to 50% of the creature's overall length. The tail is flexible and whip like and highly adapted for hunting schooling fish. Commonly, the shark first uses its tail to slap the surface of the water to cause it's prey to gather together more tightly, it may then use the tail below surface to incapacitate the fish.

It is variable in colour, ranging from brown to black with metallic hues dorsally, and irregular white markings ventrally. The large eyes are placed forward on the head. The dorsal fin is rounded and the pectoral fins are large and paddle shaped.

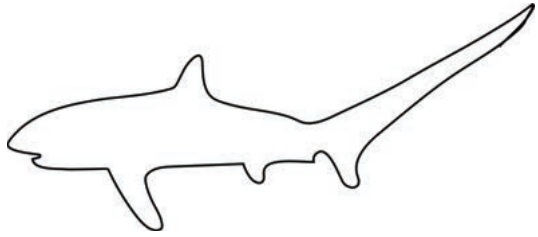
Thresher sharks are generally solitary and are occassionally sighted during the summer in the Bay of Fundy. When in coastal waters they are known to spend quite a bit of time near surface and are even known to breach.

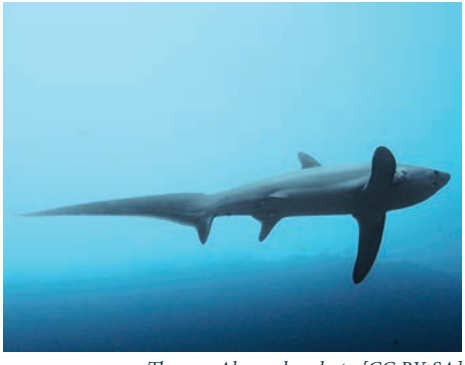
Petter Lindgren photo [CC BY-SA]

Thresher shark

key characteristics

Length: 3.3-5.5m
Weight: 600 kg
Lifespan: 45-50 years





Thomas Alexander photo [CC BY-SA]

Long whip-like tail, length of the sharks body.

NOAA photo [public domain]

Grey/blue colouration, fusiform body.

NMFS/PRIO Observer Program photo [Public domain]

Long, paddle-shaped pectoral fins.

The thresher shark is ovoviviparous and gives live birth to 2-6 pups. These sharks use inshore areas as nursery grounds.

Great white shark

Carcharodon carcharias

Elias Levy photo [CC BY-3.0]

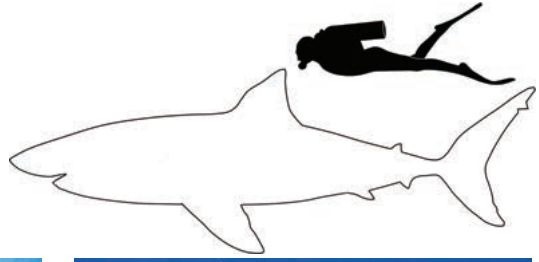
The great white shark is one of the most formidable predators in the world. Powerful, large, and athletic these beautiful creatures play a vital role in the health of our oceans. Though not as fast as the mako the great white is also capable of breaching. They feed on schooling fish and commonly hunt larger prey such as seals, dolphins, young whales, and even smaller sharks. Warming waters and increased seal populations may be contributing to an increase in sightings in the Bay of Fundy. Recent tagging of these sharks ahas also been offering more insight on their locations and vast ranges.

Elias Levy photo [CC BY-3.0]

Olga Ernst photo [CC BY-SA]

Dorsally the great white is grey-brown-black depending on the individual. Ventrally they are very light-white and the transition between the two colours is very defined. They have a large pointed dorsal fin, the caudal (tail) fin is crescent shaped with the top half being larger than the bottom. The body is stocky and muscular, the snout conical and fairly short with the dark eyes set slightly back. The teeth are triangular and serrated.
White sharks are ovoviviparous which means that the pups hatch within the mothers body. The developing young are fed, not via an umbilical cord, but by eating unfertilized eggs, this is known as oophagy. When born the pups are between 3.5-5 feet long.

White shark
key characteristics
Length: 6.1m
Weight: 1900-2200kg
Lifespan: 70 years



Brocken Inaglory photo [CC BY-SA]

Brown/grey colouration.

Sharkcrew photo [CC BY-SA]

White belly.

Elias Levy photo [CC BY]

Triangular dorsal din, with distinct apex. Large pectoral fins.

As an apex predator, the white shark is one of the only predators of large whales, and its only predator is sometimes orca. In recent years, waters in the Bay of Fundy area have warmed enough that these once rare visitors have become more common.

Basking shark

Cetorhinus maximus

Greg Skomal photo / NOAA Fisheries Service [Public domain]

The massive basking shark is the largest fish to visit the Bay of Fundy. Measuring in at lengths close to a school bus these gentle giants feed on plankton by swimming with their huge mouths (up to 3m across!) open and allowing the water to pass over their gill rakers (located in their gill slits) and trap their feed. When feeding the water causes their bodies to swell and take on a very unique shape and make the gill slits, which nearly circle the head, highly visible. They are brown-grey in colouration and are often mottled.

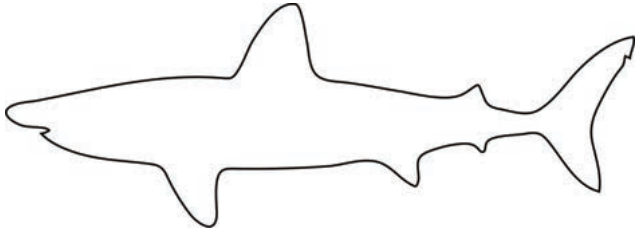
Chris Gotschalk photo {Public domain}

rossbeane photo [CC BY-SA]

When not feeding they have been mistaken for great white sharks as they have similar colouration and body shape. However, they have a large rounded dorsal fin which seems to flop from side to side when at surface as the creature travels back and forth to feed. They are also capable of breaching, and scientists feel that it is likely a way of removing parasites from their rough skin. In the summer of 2015 or 2016 there was a basking shark seen in Grand Passage, I was lucky enough to be aboard with Mariner Cruises and moving through the passage at the same time. It was quite exciting as we all went from "what on earth is that?" to "Whoa!! it's a basking shark!!!" Despite spending large quatitites of time at surface, relatively little is known about basking sharks. They have huge ranges and travel extensively.

Basking shark
key characteristics

Length: up to 12m
Weight: up to 4.5 tonnes
Lifespan: Approx. 50 years



Amanda Stark photo

Brown/grey colouration, large head.

Amanda Stark photo

Rounded dorsal fin.

Des Colhoun photo [CC BY-SA-3.0]

When the gill slits visible and mouth is open, the fish is feeding.

Basking sharks have giant livers that make up close to 25% of their body weight. Females have an extensive gestation, research indicating upwards of 3 years long, and the 4-6ft long newborn sharks are believed to be the largest young of any fish species.

epma'jit
Ocean sunfish
Mola mola

Amanda Stark photo

Reminscent of a young child's drawing, the unusually shaped and curious ocean sunfish is frequently seen in Bay of Fundy waters. When swimming at surface the large, flexible dorsal fin can be seen flopping side to side, and can be mistaken for a shark, particulary a basking shark, whose dorsal fin may also have a similar movement. They spend time at the surface on their sides soaking up the sun, this helps raise their body temperature after deep dives, and also allows birds and fish access to it's sides to remove parasites.

Brier Island Whale & Seabird Cruises photo

Robert J. Galbraith photo

These massive creatures have even been known to breach, this is thought to be an effort to dislodge parasites. Instead of a caudal fin like most fish species, sunfish have a large rounded rudder on the back called a clavus. They are brown-grey dorsally, fading to lighter tones ventrally. They are the largest of the bony fish. Their teeth are fused into a beak like structure which can't actually fully close. Sunfish feed primarily on jellyfish and zooplankton, but will also eat small fish and algae.

Ocean sunfish

key characteristics

Length: up to 10 feet long and 14 feet vertically
Weight: Up to 5000 lbs
Lifespan: unknown, but thought to be at least 20 years

Brier Island Whale & Seabird photo

Grey colouration, with white belly.

Brier Island Whale & Seabird photo

Flat disk-shaped body. Flexible dorsal fin also visible

Robert Galbraith photo

The dorsal fin of the sunfish can be confused for that of a shark, however the sunfish exhibits distinct side to side movement of its flexible dorsal fin.

Sunfish can often be found basking on the surface of the water, but are capable of diving deeply after their preferred food: jellyfish. They are the heaviest bony fish - the largest ever caught weighed 2300 kg.

Some fish of the outer Bay of Fundy

with artwork by Gerald Gloade

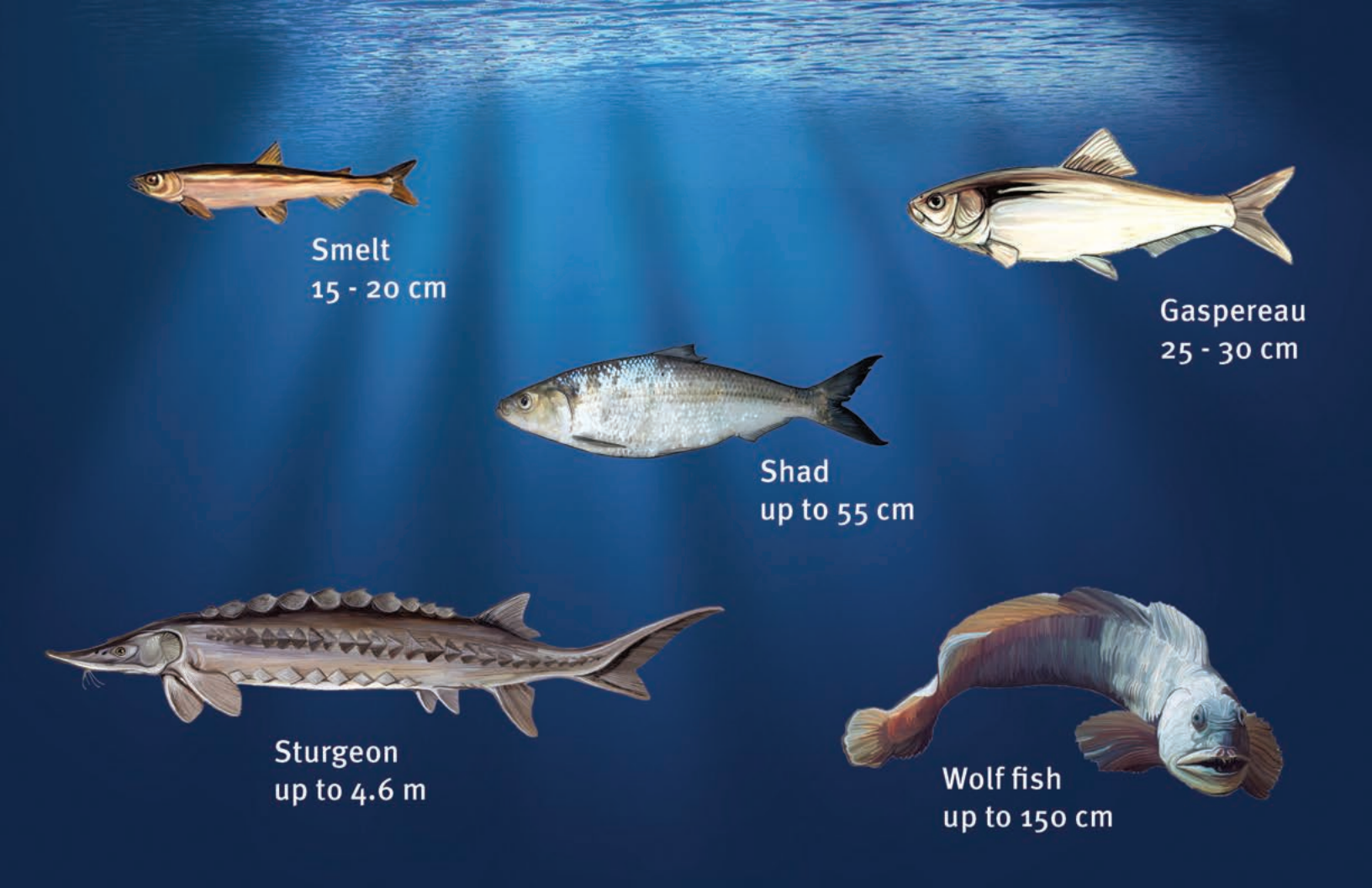
Mackerel
up to 53 cm

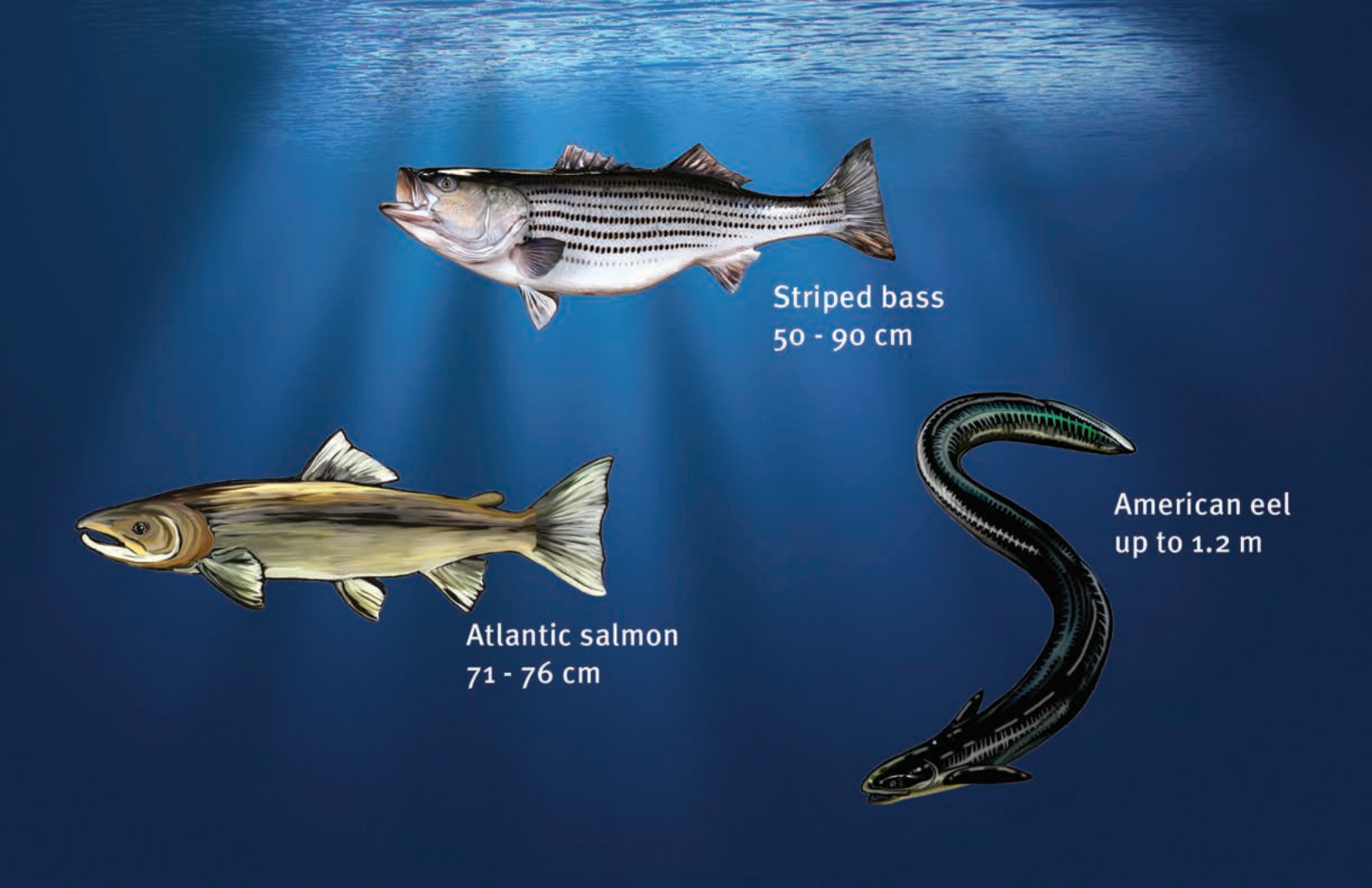
Herring
up to 43 cm

Cod
61 - 120cm

Halibut
up to 4.7 m

Skate
up to 53 cm


Smelt
15 - 20 cm
Gaspereau
25 - 30 cm
Shad
up to 55 cm
Sturgeon
up to 4.6 m
Wolf fish
up to 150 cm


Striped bass
50 - 90 cm
Atlantic salmon
71 - 76 cm
American eel
up to 1.2 m

Artist Profiles

June Farnsworth

As an avid hiker, June fell in love with Nova Scotia & Newfoundland's rugged beauty, geology, wildlife, and history. Capturing these images through the lens of her camera has been the inspiration for her paintings.

Her new collection for 2020 will feature original paintings and art prints depicting a living art story that creates an emotional attachment to a people and a place infused with a brilliant colour palette, line work, and movement.

You can contact her at jmfnewfoundlandart@gmail.com
Facebook page: JMF Artwork

Gerald Gloade

Gerald Gloade is an artist and educator who is currently the Program Development Officer for the Mi'kmawey Debert Cultural Centre. Gerald started his career working as a graphic designer for the Nova Scotia Department of Natural Resources' Communications and Education Branch more than 25 years ago. The focus of his work with the Province moved from forestry education and graphic art to sharing his culture and history in the landscape and environment of Mi'kma'ki with audiences of all ages. As an artist, educator and Mi'kmaw storyteller, Gerald guides the development of visitor and educational programs for the centre. His stories and interpretations of the Kluskap legends in particular have captured many audiences. Gerald is a key member of the curatorial group, growing our understandings of collections, places, people, practices and events for the future Centre. Gerald was brought up and lives in the community of Millbrook with his wife Natalie and their two sons, Gerald D. and Kyle. (from https://www.mikmaweydebert.ca/staff/gerald-gloade)

Patricia Sollows

Pat Sollows was born Halifax, Nova Scotia, 1950. One of her earliest memories is from Yarmouth, N.S., sitting on a fisherman's cot in the kitchen with a wooden box filled with her mother's artist oil paints. "The smell and texture of the paint as I painted myself, the walls and blankets, is still with me today each time I begin a painting." So the art began. She received her BFA in 1971 from the Nova Scotia College of Art & Design, BA in Anthropology from Mount St. Vincent University, 1973 and a MFA from Nova Scotia College of Art & Design University in 1993. She spent childhood summers and holidays in Tiverton, Long Island, at her grandparents home. The Islands have been a constant source of inspiration for her art practice. She has been informed by literally spending time with her uncle Elverton Sollows in his boat as often as possible. There were many more and much larger specimens of fish and marine life then. " I have had blue shark travel beside us for hours as they glowed electric blue in the water." The whales spoke to us out in the Bay, my Uncle would translate! " I moved to Tiverton permanently 15 years ago to be inspired by the marine life." She has had her work shown internationally and received many awards including the prestigious Established Artist Recognition Award of Nova Scotia. Patricia's commitment to her vocation is unwavering. She is immersed in her craft in much the same way that she finds herself within the natural universe and its more widely shared experience. She questions all of this. There appear recurrent concerns in Ms. Sollows' painting regarding our place within a cosmos largely unknown to us. Patricia is particularly adept at finding subjects and motifs through which to raise these questions, without resorting to tired analogues or dead metaphors.

References

Department of Fisheries and Oceans, Canada, 2020, accessed May 2020,
<https://dfo-mpo.gc.ca/species-especes/identify-eng.html >

National Oceanic and Atmospheric Administration (NOAA)Fisheries, United States of America, 2020, accessed May 2020,
<https://www.fisheries.noaa.gov/species-directory>
< https://www.fisheries.noaa.gov/national/science-data/sounds-ocean >

The Shark Foundation - Hai Stiftung, 2020, Switzerland, accessed May 2020,
< https://www.shark.ch/Information/Senses/index.html >

Oceana, United States of America, accessed May 2020,
< https://oceana.org/marine-life >

Shark Sider, 2020,accessed May 2020
<https://www.sharksider.com/four-unique-ways-sharks-reproduce>

American Cetacean Society, 2018, United States of America, accessed May 2020,
< https://www.acsonline.org/fin-whale>

Ponganis and Kooyman, *'How do deep-diving sea creatures withstand huge pressure changes?'* *Scientific American*, August 21, 2006, accessed May 2020
< https://www.scientificamerican.com/article/how-do-deep-diving-sea-cr/ >

Welsh, *'Special organ in jaw helps whales take big gulps.' NBC News - Live Science*, May 23, 2012, accessed May 2020
< http://www.nbcnews.com/id/47538973/ns/technology_and_science-science/t/special-organ-jaw-helps-whales-take-big-gulps/ >

Bradford, *'Facts about humpback whales' Live Science*, 2017, accessed May 2020
<http: www.livescience.com/amp/58464-humpback-whale-facts.html >

Keiichi Sato, Masaru Nakamura, Taketeru Tomita, Minoru Toda, Kei Miyamoto, Ryo Nozu, (2016), Biology Open 2016 *'How great white sharks nourish their embryos to a large size: evidence of lipid histotrophy in lamnoid shark reproduction'*, accessed May 2020 from Biology Open 2016 5:1211-1215; doi: 10.1242/bio.017939

Phone Numbers and Emails for Reporting Sightings and Animals in Distress

To report an injured or distressed marine animal
please call 1-866-567-6277 or put out a call on VHF channel 16

This is the 24 hour hotline for the Marine Animal Response Society (MARS)
this number can also be used to report a dead animal.

To report a morbidity you can also email mars@marineanimals.ca

Leatherback Sea Turtle
1-888-729-4667 or email info@seaturtle.ca
North Atlantic Right Whale
1-844-800-8568 or email XMARWhaleSightings@dfo-mpo.gc.ca