

Chapter 1 : What Is A Marine Mammal?

This breathtakingly beautiful book brings readers nose-to-nose with all of the world's marine mammals—a comprehensive line-up of remarkable whales, dolphins, porpoises, seals, walruses, otters, polar bears, dugongs, and manatees.

Whales, Dolphins, and Porpoises Marine mammals in the cetacean family include whales, dolphins, and porpoises. Although whales spend all their time in the oceans, they are mammals just like us. This means that they are warm blooded, give birth to live young, nurse their young, have traces of hair or fur, and must come to the surface to breathe air through their lungs. Millions of years ago, the ancestors of whales lived on land. Scientists believe these land ancestors looked like small dogs, but were probably more closely related to hippos and went into the ocean about 60 million years ago. Over time, these ancestors adapted to survive solely in the ocean environment. Their front legs turned into paddle-shaped flippers, they lost their back legs, their tails grew larger and widened to form flukes, and they developed a thick layer of fat, called blubber, to keep warm in the ocean. They developed a series of adaptations related to diving, which include the ability to store more oxygen in their blood and muscles and having more blood volume relative to their body size than land mammals. Classification Cetaceans are separated into two groups: As their name suggests, toothed whales or odontocetes have teeth. They also have one opening at their blowhole. There are over 73 species of toothed whales, including sperm and beaked whales, belugas and narwhals, porpoises and dolphins, and even fresh water dolphins that live in rivers. They range in size from the foot Some toothed whales are quite unusual. Some beaked whales are odd looking and often only the males will have teeth. The straptoothed whales have only two teeth, which wrap around the top of their jaws so they cannot fully open their mouths! Toothed whales tend to be social and live in groups. Like bats, they use echolocation or sonar to detect objects in their environment. They produce sounds in the air passages in their heads, which are then projected out in front of them. The sound bounces off solid objects and returns to them like an echo , so the animals are able to get a "picture" of what is around them. A lot of research is being done on whale sounds. Many species, such as the humpback and sperm whales, seem to have individually identifiable calls. Orcas killer whales live in groups or pods and each pod has a dialect or accent, just like we have accents depending upon which part of the world we are from. The baleen whales or mysticetes are the other group of cetaceans. This group includes 11 species ranging in length from the pygmy right whale at 21 feet 6. Baleen whales have two blowholes and instead of teeth, have hundreds of rows of baleen plates, which are made of keratin, a substance in our hair and fingernails. Most baleen whales eat krill shrimp-like animals or small fish. Right and bowhead whales are baleen whales that feed in a slightly different way called skimming. For instance, the blue whale is the largest animal on earth, weighing up to tons. Baby blue whales gain 10 pounds 4. Current Status Many whales are endangered, largely due to past hunting. Years ago, people used the oil from the blubber of whales for all sorts of items, including oil burned in lamps and ingredients for manufacturing lipstick. They also used whale meat to eat or make pet food, sinews for tennis racquet strings, and even used baleen as stays or supports in ladies underwear. Ambergris was very valuable and a large lump found by a beachgoer was worth a fortune. Since , there has been a ban or moratorium on hunting the large whales for commercial uses. However, some countries still kill whales for scientific purposes, and others have illegally resumed commercial whaling. This is controversial because the products from these whales are still used commercially. Many scientists question whether the whales really need to be killed to learn the sorts of things being studied. Certain Native American tribes are still allowed to hunt whales for subsistence. Many people are concerned about the fate of the small whales the dolphins and porpoises. Thousands die every year from getting caught in fishing nets and plastic trash. Toxins and pollution in the ocean are affecting the health of these animals and likely their ability to fight off diseases. Around the world, there has been an increase in reported strandings of marine mammals. Other species are suffering due to loss of their habitat. Sometimes even whale watching can interfere with and harass whales, if the boats venture too close to the whales or separate mothers from calves. Small whales are sometimes captured for display in aquaria and even hotels, and many people question the quality of life and health for these animals. In the recent past, popular movements helped to save the whales from hunting.

Unfortunately, the whales are not completely safe. We need to understand and solve some of the problems currently threatening whales like climate change, boat strikes, entanglement in nets, and noise pollution. You can help by learning about the issues, letting others know what you have learned, and writing to lawmakers. Also, if you ever have the chance, try to see live whales in the wild. You will never forget it! Whale Alert

Among the many threats faced by whales today are ship strikes, which occur more and more in busy shipping lanes. A collaboration of government agencies, academic institutions, non-profit conservation groups and private sector companies have developed Whale Alert, an app that helps reduce the chance of fatal ship strikes by large vessels. The app can be used by anyone out on the water to report concentrations of cetaceans. It displays active whale management areas, required reporting areas, recommended routes, areas to be avoided and near real-time warnings in shipping lanes along the east and west coasts of the United States and Canada. This information allows vessel operators to avoid collision with whales by slowing down and heightening their visual awareness. Visit these websites to download the Whale Alert app and learn more:

The bottom line for all of us is the resolve to help extend the protections for the whales, dolphins and other marine mammals to their important habitats - their homes in the sea.

Why are whales mammals and not fish? What are the characteristics of mammals? Whales, dolphins, porpoises, seals, walruses, and many other marine animals are mammals, not fish. The marine mammals exist because about 50 to 60 millions of years ago, some mammals wandered off of the land and into the ocean, and there they evolved into different types of marine mammals. For whales and dolphins, their front legs turned into flippers. The whale is actually the closest living relative of the hippopotamus. Whales are mammals because they give birth to live young, they have fur although it is very sparse on their body , they have lungs and breath air and they provide milk for their young. You have a lot of interesting questions about marine mammals. Dolphins and other whales are all mammals called cetaceans. Mammals, and only mammals, have fur or hair and they feed their babies milk. Whales all feed their babies milk. You may be thinking that whales dont have any fur. You are mostly right. They have fur when they are fetuses, but lose it before they are born. A few species have whiskers as adults and whiskers are a type of hair. There are certain characteristics that all mammals have in common. Mammals all are warm-blooded animals, they breathe air, have hair, and moms feed their babies milk from mammary glands. Whales actually do all of these things! Whales are warm blooded, which means they keep a high body temperature that does not change in the cold water. Fish are cold-blooded, so their body temperature changes depending on the temperature of their environment. Whales actually breathe air with lungs using their blowholes to breath out! They come to the surface of the water so they can breathe just like you and me. Fish get oxygen directly from the water through their gills. Whales even have a little bit of hair on their smooth skin, usually on the top of their head. Whales even give birth to live baby whales that will get milk from their mom for food. Fish lay eggs, which must still grow into a baby fish. So whales are indeed mammals and not fish! Whales are mammals because they share the characteristics of other mammals like us! These characteristics include being able to regulate their own body temperature unlike cold-blooded animals, like lizards , growing hair and producing milk to feed their young who are born live, not in eggs. Because of all of these traits, even though whales live in the ocean and are generally much bigger than us, just like people, they are mammals. [Click Here](#) to return to the search form.

Chapter 3 : How Do Marine Mammals Avoid the Bends? : Woods Hole Oceanographic Institution

Marine mammal watching, also known as marine tourism, is becoming a very popular activity worldwide. Peru has a large variety of marine species living in the ocean as well as in rivers: whales, river dolphins, sperm whales, dolphins and porpoises, constitute 38% of all known species in the world.

There are numerous myths and legends surrounding marine mammals. The Greeks believed that killing a dolphin was as bad as murdering a human. An Amazon legend said that river dolphins came to shore dressed as men to woo pretty girls during fiestas. Marine mammals evolved from their land dwelling ancestors over time by developing adaptations to life in the water. To aid swimming, the body has become streamlined and the number of body projections has been reduced. The ears have shrunk to small holes in size and shape. Mammary glands and sex organs are not part of the external physiology, and posterior hind limbs are no longer present. Mechanisms to prevent heat loss have also been developed. The cylindrical body shape with small appendages reduces the surface area to volume ratio of the body, which reduces heat loss. Marine mammals also have a counter current heat exchange mechanism created by convergent evolution where the heat from the arteries is transferred to the veins as they pass each other before getting to extremities, thus reducing heat loss. The blubber provides insulation, a food reserve, and aids with buoyancy. These heat loss adaptations can also lead to overheating for animals that spend time out of the water. To prevent overheating, seals or sea lions will swim close to the surface with their front flippers waving in the air. They also flick sand onto themselves to keep the sun from directly hitting their skin. Blood vessels can also be expanded to act as a sort of radiator. One of the major behavioral adaptations of marine mammals is their ability to swim and dive. Pinnipeds swim by paddling their flippers while sirenians and cetaceans move their tails or flukes up and down. Some marine mammals can swim at relatively high speeds. Sea lions swim up to 35 kph and orcas can reach 50 kph. The fastest marine mammal, however, is the common dolphin, which reaches speeds up to 64 kph. While swimming, these animals take very quick breaths. For example, fin whales can empty and refill their huge lungs in less than 2 seconds. Oxygen is stored in hemoglobin in the blood and in myoglobin in the muscles. The lungs are also collapsible so that air is pushed into the windpipe preventing excess nitrogen from being absorbed into the tissues. These adaptations allow sea otters to stay submerged for 4 to 5 minutes and dive to depths up to 55 m. Pinnipeds can often stay down for 30 minutes and reach average depths of m. One marine mammal with exceptional diving skills is the Weddell seal, which can stay submerged for at least 73 minutes at a time at depths up to m. The length and depth of whale dives depends on the species. Baleen whales feed on plankton near the surface of the water and have no need to dive deeply so they are rarely seen diving deeper than m. Toothed whales seek larger prey at deeper depths and some can stay down for hours at depths of up to 2, m. Marine mammals are often very social animals. Dolphins travel in pods schools and catch rides on the bow waves of boats. Marine mammals are also known to help each other when one member of the group is injured. There have been accounts of members of a pod refusing to leave the wounded or dying, a trait often exploited by whalers. Cetaceans whales and dolphins often hunt together, often with one leading the pod to act as a scout when entering unfamiliar territory. This close knit socialization is thought to be a factor in some whale strandings when a pod follows one or more members of the group that have become disoriented due to storm, illness, or injury. Many marine mammals also participate in yearly migrations, either in groups or individually. Toothed whales are an exception and only move about in search of food, but some baleen whales such as gray whales embark on extremely long migrations, moving from tropical breeding grounds in winter to feeding areas in colder waters during the summer. Communication Marine mammals are capable of sophisticated communications because they live in a world dominated by sound, which travels much more efficiently through water than through air. Dolphins communicate with sound to coordinate hunts; humpback whales sing to attract females. Whales have no vocal cords; they warble for up to 30 minutes between breaths just by recycling air. They also emit low frequency sounds that can be heard by humans such as grunts, barks, squeaks, chirps, or even moos. These noises are thought to be associated with different moods and are believed to be used as social or sexual cues during communication. They might also serve as a

signature to allow one animal to be recognized by another. Certain pods are known to even have dialects that can be distinguished from others. Echolocation is a skill that only toothed cetaceans, bats and a few birds have perfected. They send out rapid sound pulses and listen to their echo to find prey and determine their surroundings. It is thought that sperm whales also use echolocation to stun squid with loud clicks. Clicks can be repeated at different frequencies with low frequencies traveling long distances that are highly penetrating. Toothed whales have a structure called the melon on their forehead that focuses and directs the sound waves; incoming sounds are received primarily in the lower jaw, which is filled with fat or oil that transmits the sound to the inner ear.

Evolution About 65 million years ago mya when dinosaurs became mostly extinct, marine mammals began to evolve from their land-dwelling ancestors. Their evolution into sea-dwelling mammals is thought to be a result of the availability of new marine food sources and a way to escape from their terrestrial predators. The fossil record for whales is not as extensive as it is for other marine mammals such as otters and pinnipeds, therefore the transition period between land and water is unclear. These whale remains showed that the animal once had strong legs with long feet, similar to modern pinnipeds, that were functional both on land and in the sea. It retained a tail, but lacked flukes, however it is still thought that this animal swam like modern whales by moving the rear portion of its body up and down. In , other fossils were found that linked early cetaceans to hoofed animals ungulates. Whale teeth have rings, a new one for every year like trees. These rings can be examined to determine whether a whale was healthy and how long it lived. DNA fingerprinting can also be used by taking a small piece of skin or muscle to identify individuals. It can even be used to identify relatives. Humpbacks have unique black and white patterns on their tails used for identification. Whales and other marine mammals can also have telltale scratches and scars that can help in identifying individuals. Recent genetic analysis has led to new separations of species resulting in, for example, three species of right whales.

Otters and Polar Bears Sea otters are the smallest of all marine mammals. They lack a layer of blubber so they protect themselves from the cold by trapping air in their extremely dense fur. Polar bears are also considered marine mammals because they are semi-aquatic and rely entirely on the sea for food.

Pinnipeds There are three Families of pinnipeds. First are the earless, or true seals, Phocidae which consist of 19 species. Next are the eared seals Otariidae which has 14 species including sea lions and fur seals. Last are the walruses Odobenidae. Most of these animals are common in the Arctic and Antarctic because their primary prey is more available there than in warmer water. This is a diverse group despite its physiological similarities. Pinnipeds vary greatly in size and the way they utilize the marine environment. They consume a variety of different food sources, including fish and cephalopods squid, cuttlefishes and octopuses , and certain species have also been known to eat krill , crabs , and shellfish. Feeding behavior and diet may differ widely even within a specific population.

Cetaceans All cetaceans are marine except for a few species of freshwater dolphins. There are two different groups of cetaceans, toothed and baleen. The toothed whales sperm whales , beaked whales and dolphins hunt fish and have only one blow hole while the baleen whales have two blow holes and feed on plankton. There are a number of different subgroups in this category. The 26 species of oceangoing dolphins are in every ocean except the Arctic and Antarctic. Narwhals are unique in that the males have a tusk. There are 6 species of porpoises and 18 species of beaked cetaceans , at least one of which has never been seen alive and is only known from two washed up skulls. The sperm whales are the largest of toothed whales. Orca killer whales and pilot whales consist of 6 species and rorquals, the largest of the whales, are comprised of 6 species. Because of their physiological adaptations to the marine environment, cetaceans have been able to grow to enormous sizes. The biggest dinosaur was possibly 7 m longer but weighed about 70 tons less than that of a large blue whale.

Sirenians There are three species of manatees and only one species of dugong , which are the only vegetarian marine mammals. These animals are thought to be distantly related to elephants. They have only one pair of front flippers and no rear limbs.

Life History All mammals are viviparous, meaning that their eggs develop inside the female and the embryo derives nutrition from the mother. Whales and pinnipeds usually mate and give birth in the spring, with pregnancies lasting between months. Seals usually have a single pup each year. Whales, however reproduce more slowly and generally raise one calf every years. Cetacean calves are born tail first to keep them attached to the placenta as long as possible to avoid oxygen deprivation. Mating can be a social as well as functional activity with marine

mammals. With dolphins, sex is used to establish and maintain bonds among the group. Humpback and beluga whales both take part in group matings. Conservation Status Marine mammals are greatly influenced by their interactions with humans, either directly or indirectly. Fishing takes the lives of at least hundreds of whales, dolphins, and seals every year that drown when they become tangled in fishing nets.

Chapter 4 : Endangered dolphins, whales and other marine mammals

Blue whales are famously the largest animals to have ever lived, exceeding even the great beasts of the Cretaceous. Giant aquatic mammals make it easy to conclude that living in water allows.

Since , the MMPA has protected and helped recover marine mammals, and not a single marine mammal species has gone extinct in U. Was the first law to consider an ecosystem approach to conservation, recognizing that habitats were vital to the survival of the life living in them. Protects marine mammals while resolving conflicts with human use of the oceans. Requires action to rebuild at-risk groups or populations. Created the Marine Mammal Commission, an independent government agency that oversees the conservation and protection of marine mammals. Some, like North Atlantic right whales and Southern Resident orcas, are still just hanging on by a thread. They need all the help they can get. Sadly, the MMPA is now facing an unprecedented number of attacks, and the current administration is trying everything in its power to roll back the protections of the MMPA. How it affects whales and dolphins: They can cause temporary or permanent hearing loss in whales and dolphins, displacement from preferred habitat, disrupt foraging and socialization, and even cause stranding or death. What the bill does: You probably saw the news stories, heard about the protests, or maybe even attended a rally yourself. In response to an April Executive Order, in January the Interior Department announced a plan to allow drilling in nearly all U. Public comment period closed on March 9th; next opportunity to weigh in will be on the Draft Environmental Impact Statement. Currently, these reviews must occur every five years; the change extends the time to seven years. The original proposal would have extended the review period to ten years. The Navy does a lot of dangerous things in its training and testing activities, including sonar use and explosives, that can directly harm or kill marine mammals, drive them out of preferred habitat, interrupt foraging and socializing, harm prey, and degrade habitat. Currently, they have to re-assess the impacts of these actions on marine mammals every 5 years. This review period is especially important for small and vulnerable populations whose circumstances can change quickly, like the Southern Resident orcas. The MMC is an independent governmental body created by the MMPA to provide oversight of marine mammal conservation policies and programs carried out by federal agencies. It is the only US agency providing unbiased oversight on the science, policies, and management of marine mammals in the US - but is has twice been targeted for elimination by the Administration. So what do all these proposals have in common? This is bad news for whales and dolphins, their homes, and ultimately for us. We need your voice to speak up for whales and dolphins and the vital laws that protect them. You can find everything you need to know about your elected officials at the House and Senate websites. Be a voice for whales and dolphins! Give them a call! Use the links above to find their contact information, and call directly. Find a petition and sign it. Fight alongside us to protect the laws that protect marine mammals, and make a world where every whale and dolphin is safe and free.

Chapter 5 : Marine Mammals - calendrierdelascience.com

Marine biologists have just completed a pioneering research effort in Hawaii to measure the biology and behavior of some of the most poorly understood whales on Earth. During the study, for the.

They are also unified by their reliance on the marine environment for feeding. For example, dolphins and whales are completely dependent on the marine environment for all stages of their life; seals feed in the ocean but breed on land; and polar bears must feed on land. The term was coined by merging the name for the two orders, Cetacea and Artiodactyla, into a single word. Under this definition, the closest living land relative of the whales and dolphins is thought to be the hippopotamuses. The first appearance of sirenians in the fossil record was during the early Eocene, and by the late Eocene, sirenians had significantly diversified. Inhabitants of rivers, estuaries, and nearshore marine waters, they were able to spread rapidly. In comparison to cetaceans, sirenians, and pinnipeds, which entered the water approximately 50, 40, and 20 mya, respectively, the sea otter is a relative newcomer to marine life. In some respects though, the sea otter is more fully adapted to water than pinnipeds, which must haul out on land or ice to give birth. Factors contributing to this trend include the increasing productivity of near-shore marine environments, and the role of endothermy in facilitating this transition. This corresponds to the highest levels of primary production around North and South America , Africa , Asia and Australia. Total species range is highly variable for marine mammal species. On average most marine mammals have ranges which are equivalent or smaller than one-fifth of the Indian Ocean. The high degree of overlap between marine mammal species richness and areas of human impact on the environment is of concern. Seals, however, also use a number of terrestrial habitats, both continental and island. In temperate and tropical areas, they haul-out on to sandy and pebble beaches, rocky shores , shoals , mud flats , tide pools and in sea caves. Some species also rest on man-made structures, like piers , jetties , buoys and oil platforms. Seals may move further inland and rest in sand dunes or vegetation, and may even climb cliffs. Annual ice contains areas of water that appear and disappear throughout the year as the weather changes, and seals migrate in response to these changes. In turn, polar bears must follow their prey. In Hudson Bay , James Bay , and some other areas, the ice melts completely each summer an event often referred to as "ice-floe breakup" , forcing polar bears to go onto land and wait through the months until the next freeze-up. In the Chukchi and Beaufort seas, polar bears retreat each summer to the ice further north that remains frozen year-round. Aquatic locomotion The anatomy of a dolphin showing its skeleton, major organs, and body shape Marine mammals have a number of physiological and anatomical features to overcome the unique challenges associated with aquatic living. Some of these features are very species specific. Marine mammals have developed a number of features for efficient locomotion such as torpedo shaped bodies to reduce drag; modified limbs for propulsion and steering ; tail flukes and dorsal fins for propulsion and balance. Both pinnipeds and cetaceans have large and complex blood vessel systems which serve to store oxygen to support deep diving. Other important reservoirs include muscles , blood , and the spleen which all have the capacity to hold a high concentration of oxygen. They are also capable of bradycardia reduced heart rate , and vasoconstriction shunting most of the oxygen to vital organs such as the brain and heart to allow extended diving times and cope with oxygen deprivation. Sounds are generated by passing air from the bony nares through the phonic lips. This acts like an acoustic lens because it is composed of lipids of differing densities. For example, the cheek teeth of pinnipeds and odontocetes are specifically adapted to capture fish and squid. In contrast, baleen whales have evolved baleen plates to filter feed plankton and small fish from the water. In contrast, other marine mammals " such as whales, dolphins, porpoises, manatees, dugongs, and walruses " have lost long fur in favor of a thick, dense epidermis and a thickened fat layer blubber in response to hydrodynamic requirements. Wading and bottom-feeding animals such as manatees need to be heavier than water in order to keep contact with the floor or to stay submerged. Surface-living animals such as sea otters need the opposite, and free-swimming animals living in open waters such as dolphins need to be neutrally buoyant in order to be able to swim up and down the water column. Typically, thick and dense bone is found in bottom feeders and low bone density is associated with mammals living in deep water. Some marine

mammals, such as polar bears and otters, have retained four weight-bearing limbs and can walk on land like fully terrestrial animals.

Chapter 6 : Whales, dolphins, and other marine mammals of the world / |

Gillnetting and Seine netting is a significant cause of mortality in whales and other marine mammals. Species commonly entangled include beaked whales.

Mysticeti Mysticetes are also known as baleen whales. They have a pair of blowholes side-by-side and lack teeth; instead they have baleen plates which form a sieve-like structure in the upper jaw made of keratin, which they use to filter plankton from the water. Some whales, such as the humpback, reside in the polar regions where they feed on a reliable source of schooling fish and krill. Whale ribs loosely articulate with their thoracic vertebrae at the proximal end, but do not form a rigid rib cage. This adaptation allows the chest to compress during deep dives as the pressure increases. The main difference between each family of mysticete is in their feeding adaptations and subsequent behaviour. Balaenopterids are the rorquals. These animals, along with the cetotheriids, rely on their throat pleats to gulp large amounts of water while feeding. The throat pleats extend from the mouth to the navel and allow the mouth to expand to a large volume for more efficient capture of the small animals they feed on. Balaenopterids consist of two genera and eight species. This allows them to take in large amounts of water into their mouths, letting them feed more effectively. They are bottom feeders, mainly eating crustaceans and benthic invertebrates. They feed by turning on their sides and taking in water mixed with sediment, which is then expelled through the baleen, leaving their prey trapped inside. This is an efficient method of hunting, in which the whale has no major competitors. Odontoceti Odontocetes are known as toothed whales; they have teeth and only one blowhole. They rely on their well-developed sonar to find their way in the water. Toothed whales send out ultrasonic clicks using the melon. Sound waves travel through the water. Upon striking an object in the water, the sound waves bounce back at the whale. These vibrations are received through fatty tissues in the jaw, which is then rerouted into the ear-bone and into the brain where the vibrations are interpreted. These animals rely on their well-developed flippers and tail fin to propel themselves through the water; they swim by moving their fore-flippers and tail fin up and down. Whale ribs loosely articulate with their thoracic vertebrae at the proximal end, but they do not form a rigid rib cage. This adaptation allows the chest to compress during deep dives as opposed to resisting the force of water pressure. There are six species, sometimes referred to as "blackfish", that are dolphins commonly misconceived as whales: Monodontids consist of two species: They both reside in the frigid arctic and both have large amounts of blubber. Belugas, being white, hunt in large pods near the surface and around pack ice, their coloration acting as camouflage. Narwhals, being black, hunt in large pods in the aphotic zone, but their underbelly still remains white to remain camouflaged when something is looking directly up or down at them. They have no dorsal fin to prevent collision with pack ice. Sperm whales consist the largest and smallest odontocetes, and spend a large portion of their life hunting squid. The behaviour of Kogiids remains largely unknown, but, due to their small lungs, they are thought to hunt in the photic zone. These vary from size, to coloration, to distribution, but they all share a similar hunting style. They use a suction technique, aided by a pair of grooves on the underside of their head, not unlike the throat pleats on the rorquals, to feed. Evolution of cetaceans Whales are descendants of land-dwelling mammals of the artiodactyl order even-toed ungulates. They are related to the Indohyus, an extinct chevrotain-like ungulate, from which they split approximately 48 million years ago. What defines an archaeocete is the presence of anatomical features exclusive to cetaceans, alongside other primitive features not found in modern cetaceans, such as visible legs or asymmetrical teeth. Major anatomical changes included their hearing set-up that channeled vibrations from the jaw to the earbone Ambulocetus 49 mya, a streamlined body and the growth of flukes on the tail Protocetus 43 mya, the migration of the nostrils toward the top of the cranium blowholes, and the modification of the forelimbs into flippers Basilosaurus 35 mya, and the shrinking and eventual disappearance of the hind limbs the first odontocetes and mysticetes 34 mya.

Chapter 7 : The Marine Mammal Center : Cetaceans

Whales, dolphins and other marine mammals. likes. This page is all about marine life! So if you wanna learn, you've come to the right place!

One scientist talked about seeing a sea full of fin whales around the Antarctic peninsula “so many that it challenged the current population estimates for fin whales all around Antarctica. Of course, we heard the usual amazing orca stories of them working together to wash seals off ice floes or poking heads up through an ice hole right beside you, eyeball to eyeball. And so many seal stories. Most seals are central place feeders “they like to have their dinner in one main spot. Turns out elephant seals feed all over the place “meals on the run. I can identify with that. All of the large whale populations were dramatically cut down by whaling mainly in the 20th Century, yet, in other ways, Antarctica remains one of the least altered marine ecosystems on Earth. Because protection is granted and enforced by individual countries, the sites that are protected are areas that fall under national jurisdiction. What if you are a whale who lives in the Southern Ocean in Antarctica “who protects your home? Small Type B Antarctic orca Sue McGowan The first step for protection is identifying the most important areas, or habitats, used by the whales for feeding, breeding, resting and socializing. We knew that there was a lot of information on where whales and other marine mammals are found, but no standardized scientific way of presenting this information to help make conservation happen. Fish, squid and other animals in the sea are largely invisible at the surface but whales and dolphins, tethered to the surface by the need to breathe, can reveal secrets about the health of the ocean, the diversity of species and potentially the effects of climate change, all by monitoring their habitats and movements in the sea. Whales and dolphins are also iconic ocean residents with the power to move scientists as well as policy makers to make positive conservation changes. In the international waters of Antarctica, a special commission has been set up to create marine protected areas. They will now be able to draw upon our IMMAs for the region in their efforts. In all, we proposed 15 new candidate IMMAs. These include vital habitats for humpback , minke , blue , southern right and fin whales as well as crabeater, leopard, Weddell, Ross, southern fur and southern elephant seals, New Zealand sea lions and orcas. One huge area that the Antarctic scientists feel passionately about and has been made a candidate IMMA is the circumpolar ice edge which serves as a magnet for feeding and breeding marine mammals all around Antarctica. The next step is for these 15 new candidate IMMA from the Southern Ocean s to go to an independent review panel and, once approved, they will join more than more IMMAs that have been identified in the Pacific and Indian oceans and in the Mediterranean. Over the next few years we will extend our IMMA work to every corner of the ocean. The Antarctic scientists I met are dedicated, but also fun to work with. We laughed and told stories and we all worked hard on our IMMA submissions “even though we would rather be out photographing dorsal fins, riding the waves, or even just standing on an ice floe waiting for an orca to pop up. The bottom line for all of us is the resolve to help extend the protections for the whales, dolphins and other marine mammals to their important habitats “their homes in the sea.

Chapter 8 : Protect Whales and Other Marine Mammals from Big Oil | NRDC

Deep-diving whales and other marine mammals like these Pacific white-sided dolphins can get the bends“the same painful and potentially life-threatening decompression sickness that strikes scuba divers who surface too quickly.

Chapter 9 : Whale - Wikipedia

I'd use Whales, Dolphins, and Other Marine Mammals of the World (Princeton Field Guides) by Hadoram Shirihai & Brett Jarrett which is up-to-date as of and small enough to function well as a field guide.