

## Save the Vaquita

LEARN ABOUT A CRITICALLY ENDANGERED MARINE MAMMAL



### UPCOMING EVENTS

- National Polar Bear Day



3 CRITICALLY ENDANGERED SPECIES



GILL NETS THEIR THREATS TO MARINE WILDLIFE

# NEWS FOR THE DEDICATED ZOOLOGIST

## Save The Vaquita

The Vaquita (pronounced va- kee- ta) porpoise, better known as the vaquita, is a critically endangered marine mammal. The vaquita is an endemic species to the Sea of Cortez on the Gulf of California. Vaquita are shy and elusive creatures whose numbers are decreasing at a scary rate. They were discovered in 1958 because 1 was found washed up on a beach. Since 2007, they have been labeled as critically endangered on the IUCN red list. There is an estimated 18 left in the wild.

Why are they so endangered? Due to Gill nets and the fishing of the also critically endangered fish, the totoaba (pronounced to- twa- ba) fish. Gill



nets are the invisible killers. When the vaquita are swimming, they do not detect the gill nets, and swim right into the net. Though fishing of the totoaba fish is illegal, people still poach them for their swim bladders, believing that it serves medicinal properties in traditional Chinese medicine. It has not been proven that the swim bladders actually improve your health. Fishermen hunting the totoaba fish leave the gill nets that they use to capture the fish in the ocean. Due to ocean currents, the gill nets travel the world and take many marine animals with them.

So how can we protect them? Scientists have multiple ways to protect these fascinating animals. Some scientists are trying to bring the vaquita into captivity, but have not been successful. Others are trying to collect cells and DNA from the vaquita in hopes of breeding them. You can help save the vaquita by donating to conservation efforts, adopt a vaquita, spread awareness, and learn as much as you can about our jewels of the sea, the vaquita.

## Upcoming events

Mark these events on your calendar and spread awareness to celebrate these important events

Tuesday, February 27- International Polar Bear Day

March- Dolphin Awareness Month

Saturday, March 3- World Wildlife Day

Friday, March 16- National Panda Day

Wednesday, March 28- Manatee Appreciation Day

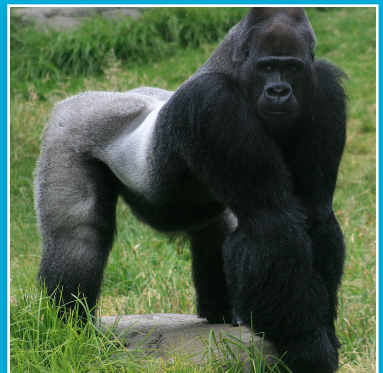
## Gill Nets

One of the many threats to marine wildlife is gill nets. Gill nets are a type of fishing net used to capture marine wildlife, usually for food. Many marine species such as dolphins, porpoises, sharks, rays, fish, sea turtles, birds, and many more get stuck in this invisible killer. Mammals who get trapped in gill nets, such as dolphins and porpoises need oxygen to breathe and therefore come to the surface of the water to inhale oxygen and

### 3 Critically Endangered Animals



Critically endangered due to poaching for their horns, the Javan rhino has a population of about 60 individuals.



Due to major habitat loss, poaching for their hands and meat, and illegal trade, the mountain gorilla has about 700 individuals left in the wild.



The spoon-billed sandpiper has a population of fewer than 2,500 individuals remaining in the wild. The loss of habitat has brought this sandpiper to the threat of extinction.

expel water. When they get trapped in gill nets, they can not come up for air and eventually die. As for sea turtles, fish, and rays, who have developed gills breath underwater, the nets suffocate them to death. Gill nets are hard to ban because fisherman use them to catch food. Without gill nets however, marine species would have a better chance of survival, and would prevent the extinction of so many species.

## Scientist Spotlight

### Rachel Carson, ecologist and biologist

Rachel Carson (1907- 1964) was a dedicated biologist, author, and ecologist. Rachel Carson warned people about the dangers of using a toxic chemical, DDT, on farms. Not only did she help ban DDT, she was also an accomplished author of four books, “Silent Spring”, “Under the Sea Wind”, “The Sea Around Us”, and “The Edge of the Sea”.

Rachel Carson was born in Springdale, Pennsylvania in 1907. As a young girl, she loved exploring the land around her home. Rachel Carson received her master’s degree from John Hopkins University in Baltimore, Maryland on June 14, 1932. She took a job at The Fish and Wildlife Service after graduating.

Rachel Carson’s efforts of public speaking helped start the Environmental Movement. This led to the ban of a harmful chemical known as DDT. She described how getting rid of one species in an ecosystem affects the entire food chain. Not only that, she described that when an animal eats another animal, the level of toxin increases as you go up the food chain. For example, a sparrow that ate a worm affected by DDT, would have consumed less toxin than a hawk consumed when it ate the bird.

Using her excellent writing skills, Rachel Carson wrote “Silent Spring” in 1962. “Silent Spring” raised awareness of the dangers to nature that humans have created. Her second book, “Under The Sea- Wind” published in 1941, captivated her readers with the threats the ocean faces. Her other two books, “The Sea Around Us” in 1951 and “The Edge of the Sea” in 1955 were loved by the readers. Carson’s ability to write science without it seeming too complex to understand to non- scientists was a huge hit and continues to inspire the reader. At age 56, Carson died of cancer on April 14, 1964, but she continues to inspire worldwide conservation movements. Rachel Carson was an inspiring and



# The Octopus

## Earth's Aliens

Perhaps the closest living organism on Earth to an alien is the octopus. Octopuses have some outrageously strange (yet awesome) features that help them survive in their marine habitat. Octopuses are amazing, and here's why.

Octopuses, are part of the phylum Mollusca, meaning they are mollusks, a group of invertebrates (animals with no backbone) that have a soft, unsegmented body. Other than octopuses, mollusks include snails, slugs, and mussels.

Now for an octopus's "alien features". An octopus has 3 hearts, 2 pump blood to it's gills and the other circulates blood to the rest of it's body. Octopuses also have 9 brains, 1 central brain located near the mantle and an individual brain in each of the octopus's arms. Does this mean octopuses are very intelligent creatures? Yes! Octopuses are among one of the smartest animals on Earth. Not only that, but an octopus can regrow any of it's arms if it gets ripped off by a predator. Also, octopuses can change colors based on their surroundings. An octopus's mouth is also on it's underside, so when it catches its prey, it brings up to it's beak or mouth and then eats it.

What's more, an octopus has blue colored blood due to the copper based blood called hemocyanin. This ingredient in the blood gives it a blue color. The blue blood is more efficient for transporting oxygen throughout the octopus's body in very low temperatures. Still not impressed with the octopus? Think again when you read this fact! A 50 pound octopus can squeeze through a hole that is 2 inches in diameter. Maybe we have already discovered our extra- terrestrials?

dedicated environmentalist who changed our country and made the environment a safer place for future generations to come.

## The Spirit Bear

At a glance, the spirit bear, also known as the Kermode bear looks like it is albino. Albinism is rare genetic disorder where the fur and eyes have no color pigment. However, the spirit bear is not albino. About 100 spirit bears exist.

So what is a spirit bear?

A spirit bear is a black bear with white or tan fur. Unlike albino animals, being a spirit bear is actually an advantage! When a spirit bear is hunting for salmon, the white fur provides counter-shading, therefore, the salmon do not see the bear hovering over it. Most commonly, a spirit bear can catch more salmon than regular black bears. Spirit bears are some fascinating creatures.



## Global Warming's Effect on Polar Bears

Global Warming is the release of the green house gases (CO<sub>2</sub>) into the atmosphere. These gases are released by cars, trucks, planes, etc. These gases warm the atmosphere and Earth's temperature increases. This is called the Greenhouse Effect because heat gets trapped in.

Global Warming is taking effect on a lot of ecosystems. The Arctic is one of them. Due to increasingly warm temperatures, sea ice is melting, and this is effecting its inhabitants. The polar bear, for example, is labeled as vulnerable with 22,000 to 31,000 in the wild. Scientists predict a 30% population decrease by 2050. The ice flows melt and the polar bears have no place to hunt. This leads to starvation and the death of the polar bear.

# Dinosaur of the issue: Archelon

## The all mighty ancestor of today's sea turtles

The Archelon was a prehistoric dinosaur similar to present day sea turtles, only way bigger! It had an enormous head, measuring up to 3 feet in length and a 10 foot long body and weighing as much as an elephant, and to think that there were dinosaurs bigger than Archelon! The first Archelon fossil was found in the USA. It lived in the late Cretaceous period. Archelon lived in the ocean, where it ate squid and jellyfish using its sharp and powerful beak. Archelon also had huge oar- like flippers that helped it propel through the water. Similar to present day sea turtles, Archelon had a tough shell that protected it from ferocious predators such as mosaurus, sharks, and crocodiles. Also similar to modern day sea turtles, Archelon laid its eggs by burying them at night on a beach.



## Games

### Endangered Animal Word Search

P Z C U H A R T D S H A R K S Y U J K M P M  
 G E O P Y T R T H D S A Y E A Y E U I P K I  
 K L N F I S H I N G C A T K V X Q G A H Y P  
 U L B G D H O L E F E W G J K B Y P L G D T  
 T U J Y U J L T I G E R H W Y I O P L M G Y  
 B L U E F I N T U N A Y J K L A N B E E K C  
 G A H G E T N K D Z Q T Y U G D A R P T F G  
 I G U A N E T I F G S G T V A Q U I T A B G  
 C A T H G F D V N J K O P Y T R P L G E W Q  
 K O S E A T U R T L E K L F V X T D J K P T

Word Bank

Sharks  
 Aye Aye  
 Bee  
 Bluefin Tuna  
 Vaquita  
 Fishing Cat  
 Penguin  
 Tiger  
 Dhole  
 Sea Turtle

# Reptile of the Issue- Leatherback Sea Turtle

**Anatomy-** The leatherback sea turtle is the largest of seven species of sea turtle. They grow up to be about 6 feet long and can weigh up to 1,100 pounds. The leatherback sea turtle has a distinctive black and white shell.

**Diet and Hunting-** The leatherback sea turtle has scissor- like beaks that help them eat soft-bodied animals such as jellyfish.

**Habitat/ Range-** Leatherback sea turtles are primarily found in the open ocean, as far north as Alaska and as far south as the southern tip of Africa. They are known to be active in water below 40 degrees Fahrenheit, the only reptile known to remain active at such a low temperature.

**Status-**The Leatherback sea turtle is an endangered species. This is because of human caused threats that include: oil spills, urban runoff from chemicals, fertilizers, and petroleum that increase toxins in the ocean, marine pollution that kills of their main prey, disease caused by pollution, climate change that affects nesting beaches by melting ice caps that rise sea levels and cause beaches to disappear, storms that increase temperatures and erode costal habitats, an increase in female sea turtles due to higher temperatures which reduces reproductive opportunities and less genetic diversity, artificial lighting that confuses the female during nesting, human use of nesting beaches, trash that sea turtles accidentally eat, and invasive species such as domestic cats and dogs devour eggs and hatchlings and even attack nesting turtles.

