

Can you hear that? Can you feel it? These are the most powerful calls in the animal kingdom.

NARRATOR

Bellowed by the largest animal ever to have lived.

NARRATOR

Bigger than any dinosaur..... ...the blue whale.

NARRATOR

These gentle giants narrowly avoided extinction at our hands.

NARRATOR

Now, their numbers are on the rise… ...giving us new hope for the recovery of this iconic species.

NARRATOR

Blue whales are superbly adapted for their extraordinary lifestyles.

NARRATOR

These ocean nomads undertake epic migrations in search of food......

NARRATOR

Their streamlined bodies are powered by massive tail-flukes.



They can eat up to fifteen tons a day.

NARRATOR

It takes a lot to fuel an animal this size.

NARRATOR

Like us, they're intelligent and social mammals. Blues talk to each other across hundreds of miles of open sea.

NARRATOR

Scientists are just beginning to understand the vital role blue whales play in the health of our oceans.

NARRATOR

That's one big reason why it's so important to study and protect them.

NARRATOR

As many as three hundred thousand blue whales once thrived on the planet, most of them in Antarctic waters.

NARRATOR

But last century, commercial whalers hunted them relentlessly for their oil-rich blubber.



In a matter of decades, they'd wiped out ninety nine percent of all blue whales.

NARRATOR

One of the last populations to be hit was here, in the Indian Ocean.

NARRATOR

In 1964, Soviet whalers killed more than five hundred in a single month.

NARRATOR

Soon after, hunting blue whales was banned around the world. But many feared it was too little, too late.

NARRATOR

Blue whales haven't been seen in these waters for over fifty years.

NARRATOR

Recently, there have been whispers of a sighting off the Seychelles — a tropical paradise.



These rumours have drawn a team of scientists, for what they hope will be an historic expedition.

NARRATOR

Marine biologists Ladd Irvine, Kate Stafford and Jeremy Kiszka have come from the United States, joined by Ella Nancy, a grad student from the University of Seychelles.

NARRATOR

Their goal? To find out if blue whales really have returned to these waters.

NARRATOR

And to tag one, so they can figure out if the whales are locals, or just passing through.

JEREMY KISZKA

We need to really determine what's left of this population that has never been studied before.

NARRATOR

That's crucial data to help the whales' recovery....

KATE STAFFORD

I feel like you can see forever...



....and build a case for a marine protected area in these waters.

NARRATOR

The team has just twenty-one days to search ten thousand square miles of ocean.

NARRATOR

On the other side of the world is a unique place where blue whales are much easier to find.

Mexico's Gulf of California.

NARRATOR

These calm waters are incredibly rich and productive, supporting an abundance of marine life.

NARRATOR

The Gulf is a sanctuary for blue whales.

NARRATOR

They migrate here each winter from up and down the Eastern Pacific to find mates and raise their young.



Since whaling was banned, blue whale numbers have slowly increased, though the global population is only around fifteen thousand, just five percent of what it once was.

NARRATOR

This population is doing much better - they're nearly back to pre-whaling numbers, and scientists are following their recovery closely.

NARRATOR

Biologist Diane Gendron has been researching blue whales here for more than thirty years.

DIANE GENDRON

Our first whale of the day...very calm as the sea.

NARRATOR

Diane tracks the lives of all the individuals she observes, giving her valuable insights into the health of the population.

NARRATOR

She's spent more time in the company of these whales than anyone else.



DIANE GENDRON

I approach very slowly and there's a moment I know - I can't explain - but I know they accept us. It's something you can feel.

DIANE GENDRON

The size, the sound, the colour..... it's a magnificent animal.

DIANE GENDRON

It's like a blessing to be so in close contact with those giants.

DIANE GENDRON

The power of the blow tells you how large a whale is.

DIANE GENDRON

It's like the sea is breathing.

DIANE GENDRON

The gentle giant - I think that's the best characterization.

DIANE GENDRON

We have only a couple of minutes at surface then they're gone....so it's hard to track them.



Diane looks at two features of each whale. The shape of their dorsal fins, and the distinct markings on their backs.

DIANE GENDRON

Every whale is different, so we take pictures to identify them.

DIANE GENDRON

It's like a fingerprint

NARRATOR

Diane's colleague, biologist Jasivi Arcos Diaz, compares the photo with their blue whale ID catalogue. She quickly finds a match.

DIANE GENDRON

Cool...This whale we're following is number two forty, he's a male that was photographed when he was a calf... he's 24 years old so that's a bit of his story.

NARRATOR

He's still in his prime - blue whales can live more than eighty years.



Diane's baseline data is their age, sex, and where possible, their family histories.

NARRATOR

Number two fifty was first seen in 1997 and she's had three calves.

NARRATOR

Whale sixty-seven: A male born in '94.

NARRATOR

Diane has gathered details on close to eight hundred blue whales.

DIANE GENDRON

....but what we want to do is go deeper. How is the variation of the feeding habit, the variation of the body condition... and that for many, many individuals through time.

NARRATOR

Many individuals over time' is the key. This allows Diane to pick up on changes within the population.

NARRATOR

And over the last few years, she's noticed a worrying trend.



DIANE GENDRON

We started to see that many whales look skinny.

NARRATOR

When food is scarce the whales tap into their fat reserves —their blubber - becoming thin like this one.

NARRATOR

Females may also delay having young - producing the milk to nurse requires a huge amount of energy.

DIANE GENDRON

In one season sometimes we see 1, 2, 3 mothers and calves, but we have seen none.

NARRATOR

In fact, Diane hasn't seen a baby blue for the last five years.

NARRATOR

If this baby drought continues it raises concerns that changes in the oceans could be affecting the whales' food supply.

DIANE GENDRON

This year I would like to see less skinny whales and more mothers with calves.



One way to track the whales' health is to measure their body condition....and they're using the latest tech.

JASIVI ARCOS DIAZ

OK, drone's ready.

NARRATOR

First, Jasivi takes a photo from a set height, so she can determine the whales' length.

NARRATOR

By combining that with his girth, she calculates his body index.

NARRATOR

Good news. He's healthy and fat...he must have been feeding well in recent months.

NARRATOR

Next, something a bit more....aromatic.

DIANE GENDRON

Phwaaaaa!! That smells so bad.



A seafood diet makes for stinky breath. But the whale's blow can provide valuable data.

NARRATOR

With a few modifications, Jasivi transforms the drone into her very own...flying....snot collector!

JASIVI ARCOS DIAZ

Three, two, one. Go.

NARRATOR

Jasivi must time her run carefully.

NARRATOR

A near miss…

NARRATOR

And then.....a face full of whale snot.

DIANE GENDRON

Hey hey!

NARRATOR

They'll analyse the sample for stress hormones, and signs of disease....



... if Diane can catch the drone...

DIANE GENDRON

Bravo.

NARRATOR

It's encouraging that the whales seem healthy this season, but still no sign of any calves.

NARRATOR

After a few months in the Gulf, some blues are leaving for their summer feeding grounds.

NARRATOR

This one gets a send-off from his dolphin cousins - they seem to enjoy surfing his bow wave.

NARRATOR

Away from the protection of the Gulf, blues must navigate modern day threats.

NARRATOR

One deadly hazard is being struck by one of the many giant ships that criss-cross our oceans.





And the noise from these ships, also disrupts the whales' ability to hear each other.

NARRATOR

It's why scientists are trying to figure out where the whales go, and why the team in the Seychelles is so determined to find them.

NARRATOR

They've had ideal conditions for two weeks, but still no blues...or much else...

NARRATOR

Then, their fortunes change ...

KATE STAFFORD AND JEREMY KISZKA

Jeremy, I've got some splashes or maybe a blow.

NARRATOR

A large pod of pilot whales - it's a good sign.

NARRATOR

Nearby, Risso's dolphins - like pilot whales, they hunt squid in the depths.



Then a sperm whale-the biggest squid hunter of them all-dives down into the abyss.

NARRATOR

And playful spinner dolphins put on a show.

KATE STAFFORD

There's some right in front, some right here, they're everywhere.

NARRATOR

Over the next two days, the team records twenty species of whales and dolphins.

KATE STAFFORD

Look they're coming from far.

ELLA NANCY

I think they're bottlenose dolphins.

NARRATOR

Upwellings of nutrients around an underwater mountain have created an oasis of life.

NARRATOR

Suddenly, the party's over.



It doesn't take long to realise why ...

NARRATOR

A pod of orcas, or killer whales, is on the prowl.

CREW

Yep they're right in front of the boat, right in front of the boat

JEREMY KISZKA

It's a very special moment particularly since killer whales in the tropics are so rare.

NARRATOR

Though exciting to see, the orcas are a setback in the team's search for blue whales.

NARRATOR

Orcas are the ocean's top predators - other species clear out when they're on the hunt.

KATE STAFFORD

There are known attacks of killer whales on blue whales and they would certainly take calves. The fact that we've got killer whales in this area suggests that we might have a harder time finding blue whales.



With only a week left in the expedition, the clock is ticking...

NARRATOR

Dawn in the Gulf of California.

NARRATOR

This morning's mission is to listen in to the underwater world using a state-of-the-art hydrophone.

DIANE GENDRON

Well, these are perfect conditions - no wind, no swell.

DIANE GENDRON

Silent everyone.

NARRATOR

Crustaceans rustle and pop.

NARRATOR

Fish grunt ...

NARRATOR

Dolphins use echolocation to scan for food.

NARRATOR And then.....





DIANE GENDRON AND JASIVI ARCOS DIAZ

Wow...

DIANE GENDRON AND JASIVI ARCOS DIAZ

It's amazing...it's really amazing. Yes

NARRATOR

This is the blue whale's courtship song, thought to be sung only by males.

DIANE GENDRON

That's so powerful.

NARRATOR

These booming calls can be heard by other blues hundreds of miles away.

NARRATOR

Long-distance communication is the only way for the whales to stay in touch with each other across the vast ocean.

NARRATOR

It's why noise pollution from boats and other human sources is such a concern.



DIANE GENDRON

This is the best sound I've ever heard of a blue whale.

NARRATOR

Then, they hear a different sound.

NARRATOR

Blues use this call when they find food, inviting others to join the feast.

NARRATOR

And this is what they feed on.

NARRATOR

Tiny shrimp-like crustaceans krill...one of the most plentiful creatures on earth.

DIANE GENDRON

Oh my goodness there's so many....wow....I'm sure we're going to see surface feeding today.

DIANE GENDRON

They might be tiny but they're so abundant they make like a big cloud.

DIANE GENDRON

It's quite amazing that the largest animal in the world eat those little things.



Krill spend most of their time in deeper water - it's rare to see them swarming at the surface like this.

NARRATOR

But today, the table is set for one of nature's greatest spectacles.

NARRATOR

The blue whale's lunge feed.

NARRATOR

It takes in so much water and krill, this giant doubles in size.

NARRATOR

Using its massive tongue, the whale squeezes the water out, filtering the krill through a network of hairy bristles, called baleen.

NARRATOR

Each lunge takes a huge amount of energy.

NARRATOR

So blues only go after the densest patches of krill.

NARRATOR

Gorging like this, they can eat as many as forty million krill a day.



If you're counting calories, that's about the same as eighty thousand hamburgers.

NARRATOR

When you eat that much krill, the inevitable is going to happen.

NARRATOR

This is the world's biggest poop - fifty gallons worth!

DIANE GENDRON

This faeces, this poop, that's the best gift the whale can give us.

NARRATOR

Diane has a thing for whale poop.

DIANE GENDRON

I just need a little bit. It doesn't smell bad really, compared to other mammals...like humans.

NARRATOR

From this sample, she can analyse the whale's digestive system...and there's something else surprising about whale poop.

NARRATOR

It fertilizes the ocean.





Blue whales usually feed deep and poop shallow, bringing nutrients up to the sunlit surface.

NARRATOR

These nutrients fuel massive blooms of tiny plants called phytoplankton...

NARRATOR

these feed krill... which in turn feed blue whales...

NARRATOR

...and lots of other creatures, like this mobula ray.

NARRATOR

More whales means more poop, which means even more phytoplankton and krill.

NARRATOR

This cycle is called the 'whale pump.'

NARRATOR

It helps make the Gulf such a hotspot of life.



Imagine, back when three hundred thousand blues were roaming the oceans, the whale pump circulated nutrients on a massive scale.

NARRATOR

And as whale numbers rebound, this self-sustaining cycle can help rejuvenate our oceans.

NARRATOR

In the Seychelles, since the team's run-in with the orcas, the ocean has been quiet.

CREW

Right here next to us, 100 yards, (91.4m) maybe less. Fluke, fluke, fluke, fluke, fluke!! Oh, oh yes. Oh Beautiful.

KATE STAFFORD

....really, very, very, very exciting.

NARRATOR

After more than fifty years, the first official sighting of blue whales in the Seychelles.



And it gets even better!

CREW

There's a second one....Well, we have two blue whales. That's huge, twice as much excitement. One on either side of the boat.

NARRATOR

Now it's time to push for more.

LADD IRVINE

Alright let's go.

NARRATOR

Ladd hopes to attach a small GPS tag that can track the whales' for up to a year.Success could reveal where these whales go and whether they cross paths with other known populations.

LADD IRVINE

About 300 yards (274m) NARRATOR

The whale isn't surfacing for long.

LADD IRVINE

That might be all.

LADD IRVINE

Down, down, down



KATE STAFFORD

The whale is up behind you. The whale is up behind you.

LADD IRVINE

Oh, behind us. 5 O'clock. Got it, up ahead...here we go. It's picking up the pace.

LADD IRVINE

On the whale's right side. Squeeze in, squeeze in... Right up there, pick it up.

LADD IRVINE Ah, man that was close.

NARRATOR

Ladd didn't have a safe shot but overall, it's been a successful mission.

NARRATOR

They've confirmed that blue whales are once again cruising the seas around the Seychelles.

NARRATOR

This discovery merits further research, which could make a case for protecting these waters.

NARRATOR

In the Gulf of California, Diane is having one of her best seasons.





In the Gulf of California, Diane is having one of her best seasons. She's seen plenty of fat, healthy blues whales.

NARRATOR

A relief after the past few years.

NARRATOR

And then, the icing on the cake.

DIANE GENDRON

Hey! Ah estan, estan (English translation: There they are, there they are.)

DIANE GENDRON

That's the mum....and that's the calf.

NARRATOR

Meet the world's biggest newborn......a baby blue.

DIANE GENDRON

They're very precious, very rare.

NARRATOR

Feeding on mom's rich milk, the calf will grow a whopping two hundred pounds every day! And will nurse for up to seven months before heading off on its own.



Diane identifies mom and knew the calf's grandmother as well.

NARRATOR

Three generations of the same family.

DIANE GENDRON

The mother was born in 2001. Never seen with a calf but had a calf this year.

DIANE GENDRON

Seeing animals you've seen for so many years touches you because they're like friends.

DIANE GENDRON AND JASIVI ARCOS DIAZ

Well we have to give it a name. It's your first calf. So Esperanza in Spanish? Wow, that's a good idea. Esperanza -Hope.

NARRATOR

And Esperanza isn't the only calf born here this year.



By the end of the season, Diane sees four more - each calf is a precious addition to the rebounding blue whale population.

NARRATOR

Their return from the brink of extinction shows that if we protect them even the rarest and largest of species can bounce back.

NARRATOR

And as we are still discovering the blue whales' resurgence is about so much more.The return of these giants is vital to the health of our oceans.

HUGH PEARSON

It's so great to see the blues... I mean after twelve days I was very worried but to see whales is fantastic!

ELLA NANCY

I'm so happy.....my heart is racing.

JEREMY KISZKA

To be so close to these animals glowing next to you is.....(look of awe and disbelief).