



WWF

REPORT

APRIL

2019



# Turning the tide:

50 years of collaboration for whale and dolphin conservation

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## Acknowledgment

The author would like to thank Randy Reeves and several current and former WWF staff for their help and support.

## Credits

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### WWF

WWF is one of the world's largest and most experienced independent conservation organizations, with over 5 million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

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### Citation

V. Papastavrou (2019). Turning the tide: 50 years of collaboration for whale and dolphin conservation. WWF. 48 pages.

Design and infographics by: Agenda28

Cover photograph:© Teo Lucas / Gigante Azul / WWF

ISBN No 978-2-940529-93-3

# Turning the tide:

## 50 years of collaboration for whale and dolphin conservation

## I FOREWORD

Cetacean conservation is a hard job. There is still so much we don't know about the world's whales, dolphins and porpoises and there is still so much to learn about how to best conserve them and ensure they continue to swim in our oceans and rivers for generations to come.

The challenges are endless – often these species swim the high seas, or cross national borders, thus requiring significant international cooperation and collaboration across a wide variety of cultural perspectives to secure their survival. The threats they face also know few bounds – climate change, shipping, oil and gas operations, bycatch and en-

tanglement in fishing gear, commercial whaling and other hunts, chemical pollution, marine debris, habitat degradation, and even poorly managed whale and dolphin watching operations.

The solutions to these problems are complicated, requiring cooperation and investment of resources from national governments, international bodies, local communities, industry and, of course, conservation groups like WWF. We remain committed to addressing these challenges, but let's be clear – it is a long and twisting path ahead. As the stories that follow demonstrate:

### SOMETIMES WE GET IT RIGHT

The commercial whaling moratorium of 1986 continues to allow for the recovery of numerous populations of great whales around the globe.

### SOMETIMES WE GET IT RIGHT, TEMPORARILY

Prior to new shipping lanes being secured in 2003 the main threat to the critically endangered North Atlantic right whale was ship strikes. The shifting of shipping traffic allowed for a change in population trajectory, with numbers increasing to 524 whales in 2015. Sadly, the population is again in decline, with estimates around 412 animals in 2018, driven by continued collisions resulting partially from climate-change driven changes to migration patterns as well as lethal entanglement in fishing gear.

### SOMETIMES SUCCESS REMAINS ELUSIVE

The decline of the vaquita porpoise, now numbering fewer than 30 individuals, has been driven by one single threat – bycatch in gillnets. Initially, the threat came from legal fisheries and WWF and others worked with fishers to develop safe fishing alternatives and premium markets for “vaquita friendly” products. As that work progressed, the threat shifted to a highly profitable illegal fishery that fed international demand for the totoaba fish. Despite significant commitment and investment from government and nongovernment partners across the globe, we have failed to eliminate the threat to this tiny porpoise, and it continues to teeter heartbreakingly on the edge of extinction.

**THE WORLD AND THE THREATS IT POSES CONTINUE TO EVOLVE, AND OUR CONSERVATION APPROACHES MUST CONTINUE TO EVOLVE WITH IT. WE ARE IN IT FOR THE LONG HAUL, AND WE WON'T GIVE UP. WE CAN'T GIVE UP. WE TAKE A DEEP BREATH AND WE CHARGE FORWARD.**



Maggie Kinnaird





© Jürgen Freund / WWF. Philippines Irrawady dolphin photo ID team, Malampaya sound, Philippines.

## INTRODUCTION

In 1961, the year that WWF was founded, large-scale commercial whaling was still in full swing, with 66,000 whales killed in the Antarctic that year alone, and active hunting ongoing in many other parts of the world. Hundreds of thousands of dolphins were killed in tuna fisheries, and

neither this, nor the ongoing whale hunts caused much public concern at the time. WWF and many other committed environmental organizations played a crucial role in turning the tide at that time- raising public awareness at all levels. Sir Peter Scott, WWF's founder boldly stated



**IF WE CANNOT SAVE THE WHALES FROM EXTINCTION WE HAVE LITTLE HOPE OF SAVING MANKIND AND THE LIFE-SUPPLYING BIOSPHERE.**

Sir Peter Scott, founder of WWF



And thus, saving the whales became one of the most prominent rallying causes for the foundation and early work of WWF.

Whale and dolphin conservation has come a long way since those times, and WWF has played a key role in that evolution over the past 50 years. WWF's work to protect and preserve whale and dolphin populations around the world has ranged from hands-on research and conservation efforts in their natural habitats, to work with communities and industries to reduce threats, awareness-raising and campaigning with the general public, and high-level lobbying and advocacy to change national and international regulations and policies for the benefit of whales and dolphins. These efforts have resulted in increased understanding of whales and dolphins and their habitats, the designation of marine protected areas or sanctuaries, and major shifts in international policy and practice.

This report highlights some of the important success stories in WWF's long history of whale and dolphin conservation over the years, as well as some of the difficult lessons learned when despite our best efforts population declines have continued to occur. A few common themes run through some of the successes that have been achieved: a foundation on good science, an open and collaborative approach, and a combination of passion and patience from those working on the front lines in the field, all the way to

those collaborating at the highest level of government or inter-governmental policy.

At times, WWF has collaborated with research institutions or other NGOs to provide essential funding to scientists, kickstarting innovative ideas in the field or providing important baseline data on whales and dolphins in previously unexplored areas. In other cases, WWF has worked with collaborators to amplify research results to influence change – connecting science to important global and regional policy outcomes – one of WWF's greatest strengths. Underpinning our advocacy work with innovative, peer-reviewed scientific advice means that governments, industries and intergovernmental bodies can action science-based solutions.

Many of the conservation successes are the result of WWF's international reach and effective partnerships with a range of stakeholders around the globe: the examples chosen for this report include the global moratorium on commercial whaling, multi-stakeholder conservation efforts for Western gray whales in the Sakhalin Islands in Russia, and the moving of a shipping lane in the Bay of Fundy in Canada. These efforts have all required extensive collaboration, ranging from local conservation organisations, to government departments, or other international non-governmental or intergovernmental organisations.

**REFLECTION HELPS US TO IDENTIFY THE ELEMENTS THAT HAVE SERVED WWF WELL IN TACKLING PAST CHALLENGES. IT SHOULD ALSO PROVIDE THE INSIGHT AND COURAGE TO TACKLE THE NEXT 50 YEARS OF WHALE AND DOLPHIN CONSERVATION.**

The most successful campaigns have also required the tenacity and persistence of an organisation that is prepared to take the long view and stick with the campaign for years. Some conservation successes, such as the moratorium on commercial whaling, can be a decade in the making. There are no shortcuts to the painstaking process of building the necessary partnerships and alliances, gathering the evidence to make a strong case for change, and then using that evidence in a careful balance of diplomacy and advocacy to achieve the change you seek.

Finally, success would not be possible without the extraordinary commitment and passion of WWF staff, scientists and collaborators. At times, those on the front line of whale and dolphin conservation must feel that they are fighting an uphill battle. The challenges are many, and they have all known the feeling of taking one step forward one day, only to take two steps back the next. It is for this reason that a retrospective look at our collective successes is so valuable. Taking the long view allows us to see how far we have come in the past 50 years.

Reflection on both the successes and the more difficult lessons learned, helps us to identify the elements that have served WWF well in tackling past challenges. It should also help to give us the courage and insight required to tackle the next 50 years of whale and dolphin conservation. New threats continue to endanger whale and dolphin populations around the globe. The list of problems is long and many of the threats are not easy to solve. Bycatch and entanglement kills hundreds of thousands of animals a year, habitat destruction, ship strikes on whales, underwater noise, ocean plastics and other forms of pollution, as well as climate change, all need to be addressed to secure the future of whales and dolphins.

While the examples highlighted in this report illustrate the breadth and depth of WWF's contribution to whale and dolphin conservation, they represent only a tiny fraction of what WWF is doing and has achieved for cetaceans. We hope you enjoy this retrospective, and that it inspires you to learn more about what WWF is currently doing for cetaceans.



# The Launching of a New Ark

12/6

*First Report of the World Wildlife Fund*

Edited by  
Peter Scott



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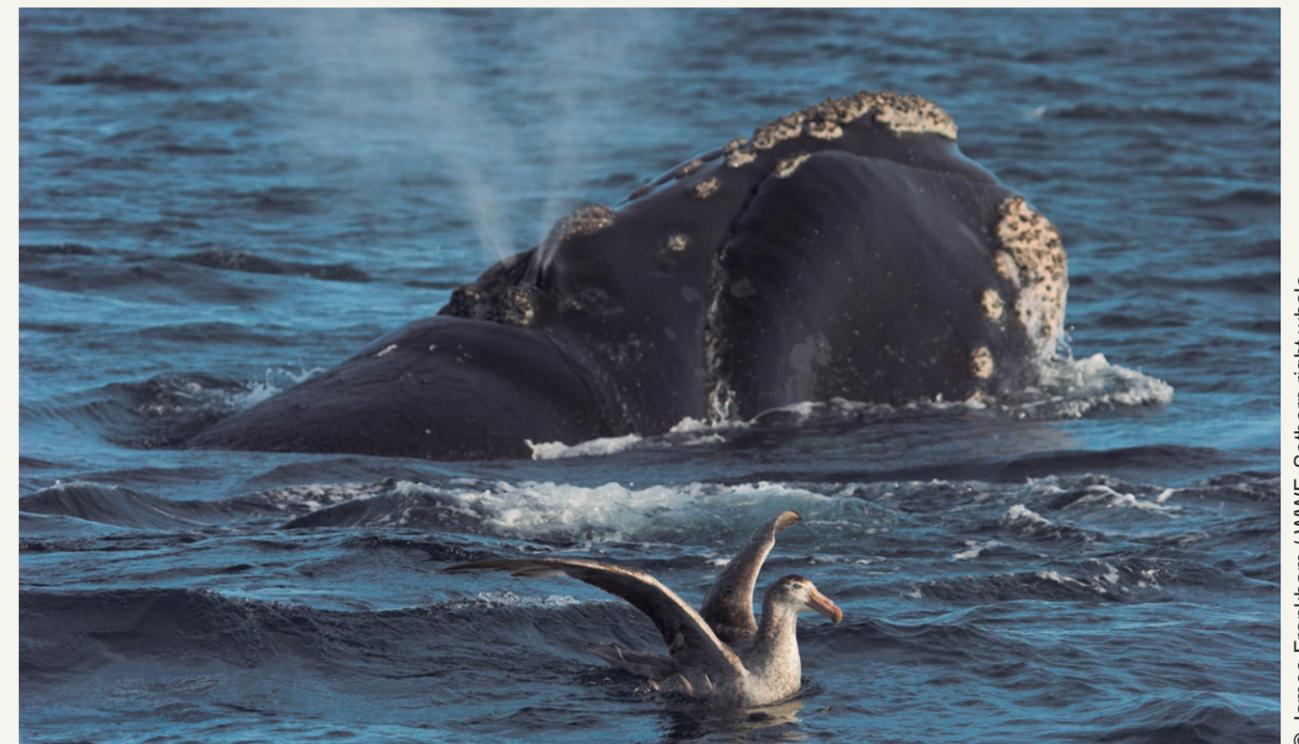
© Hal Whitehead / WWF. Whale sanctuary, WWF "Tulip" boat, Indian Ocean, Sri Lanka.

## NON-LETHAL WHALE RESEARCH: WWF HELPS PAVE THE WAY

WWF was founded in 1961, a bygone era when scientists who wanted to study whales killed them first. Studying live whales and dolphins in their natural marine habitats was felt to be impossible. In the age of commercial whaling, there were no shortage of scientists working on whaling vessels, engaged in the gruesome work of measuring, dismembering and dissecting whales to learn what they ate, whether they had reproduced, and whether they suffered

from any diseases or parasites. 'Discovery tags', each about 23cm long, were shot into free-swimming whales that were not killed on the spot, with the sole aim of marking the whale so that it could be recognised if it were killed at a future date. This was the only known means of tracking whales' seasonal and annual movements between feeding grounds and breeding grounds.

**IN THE 1970s, SEPARATE INITIATIVES AROUND THE GLOBE BEGAN TO OFFER NEW INSIGHT INTO LIVING WHALES AND THEIR BEHAVIOUR. WWF WAS ABLE TO FUND SOME OF THE FIRST RESEARCHERS TO DEVELOP TECHNIQUES TO STUDY LIVE WHALES, A TRUE GAME-CHANGER.**



© James Frankham / WWF. Sothorn right whale.

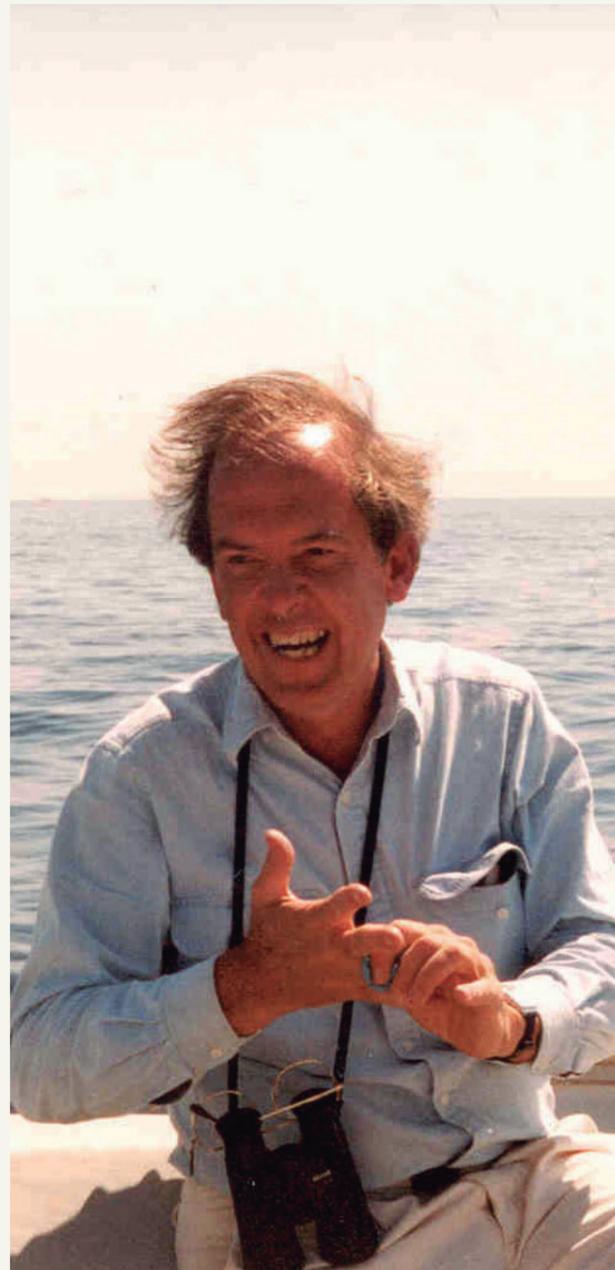
**RIGHT WHALES WERE SO NAMED BECAUSE FROM THE 1700s ONWARD THEY WERE CONSIDERED THE 'RIGHT' WHALE TO HUNT. IT IS PERHAPS NOT SURPRISING THAT THEY ALSO BECAME ONE OF THE FIRST SPECIES THAT WERE STUDIED LIVE IN THEIR NATURAL ENVIRONMENT.**

In the 1970s, separate initiatives around the globe began to offer new insight into living whales and their behaviour. WWF was able to fund some of the first researchers to develop techniques to study live whales, a true game-changer.

Right whales were so named because from the 1700s onward they were considered the 'right' whale to hunt – they were found close to shore, within easy reach of small whaling ships, and they floated when they were killed, making them easy to recover. It is perhaps not surprising that they also became one of the first species that were studied live in their natural environment. In the 1970s, researchers working on the remote Valdez Peninsula in Patagonia realized that they could tell individual right whales apart by the pattern of white markings (callosities) on their heads.

Dr. Roger Payne set up a "whale camp" on the remote Valdez Peninsula in Patagonia to study the right whales arriving each year to calve and breed in the protected cliff-lined bays. Females come to the region to give birth and nurse their young before returning to less sheltered and more productive feeding grounds further south. The whale research team, composed of Roger Payne and a band of young idealistic researchers willing to put up with the harsh conditions of the Patagonian coastline, spent many cold, windy days on the cliffs following known individuals through telescopes, recording their movements and behaviours and surveying them from a small plane to photo-identify individuals, record their locations and the presence of calves. Together with the National Geographic, the Wildlife Conservation Society (WCS), International Fund for Animal Welfare (IFAW), and the Whale and Dolphin Conservation Society (WDCS), WWF supported this early work that resulted in some of the first published papers on following the lives of known individual large whales to create more accurate estimates of population sizes and growth rates.

During roughly the same period, WWF funded Jim Darling's research on variation in the songs of individual humpback whales. Together Jim and Roger and Katy Payne introduced the world to the haunting songs of humpback whales. While the 1970s general public viewed these as good soundtracks for yoga and meditation sessions, researchers worked hard to untangle the structure and



© Ocean Alliance. Dr. Roger Payne.

<b>1961</b>	WWF was <b>founded</b> .
<b>1970s</b>	Roger Payne and his wife Katy were some of the first individuals to record whales' <b>underwater vocalizations</b> with funding from WWF.
<b>1980s</b>	<b>Photo identification</b> of individual whales revolutionized whale and dolphin research and now underpins hundreds of long-term studies of whale and dolphin populations around the globe.
<b>1990s</b>	Directional underwater microphones were used to <b>locate and track</b> whales and to <b>record</b> and describe their <b>vocalizations and songs</b> . This research was ground-breaking.
<b>1990s</b>	Similar projects were developed in in other parts of the world. The study of <b>cetacean culture</b> was born.
<b>1990s</b>	Results of long-term photo-identification studies allowed researchers to monitor individual whales over time and determine migration patterns, residency, and <b>'calving intervals'</b> which are critical for calculating population trends and health.



© Supplied by OneOcean Expeditions. Researchers attaching a 'whale cam' to an Antarctic minke whale.

meaning of these complex songs, and demonstrated that they are transmitted culturally between males within the same population. All males on the same breeding ground sing the same song, but gradually introduce new elements, which spread through the population, so that the song at the end of a breeding season is quite different from the song at the start of a season, but still shared by all the males who sing it.

In this same era, boat-based studies of other coastal whale species, such as gray and humpback whales allowed researchers to approach and photograph whales from closer quarters. Distinctive patterning on the whales' tail flukes, flanks or heads allowed researchers to recognise individual whales, and thus follow their lives and migratory patterns without the aid of discovery tags and lethal research methods. The field of 'photo identification' revolutionized whale and dolphin research, and now underpins hundreds of long-term studies of whale and dolphin populations around the globe.

Returning to the right whales at Peninsula Valdez, by the 1990s, the long-term photo-identification studies allowed researchers to document how frequently known females returned to the area with new calves, and thus determine that females had calves an average of once every 3.6 years. This figure, known as the 'calving interval' is critical for calculating population trends and health, and has become increasingly important in assessing large whale response to changing habitat conditions resulting from climate change. In a recent publication, researchers were able document changes in Southern right whale calving success related to temperature anomalies at South Georgia, where the whales feed. Long-term data sets have also allowed evaluation of other threats, such as the wounding of right whale calves by kelp gulls, relative to unusual events such as a sharp increase in calf mortality in the past two decades. Now, in the words of Vicky Rowntree, current US director of this project, "we are following the lives of more than 3,000 known individuals and meeting our fourth generation of calves".

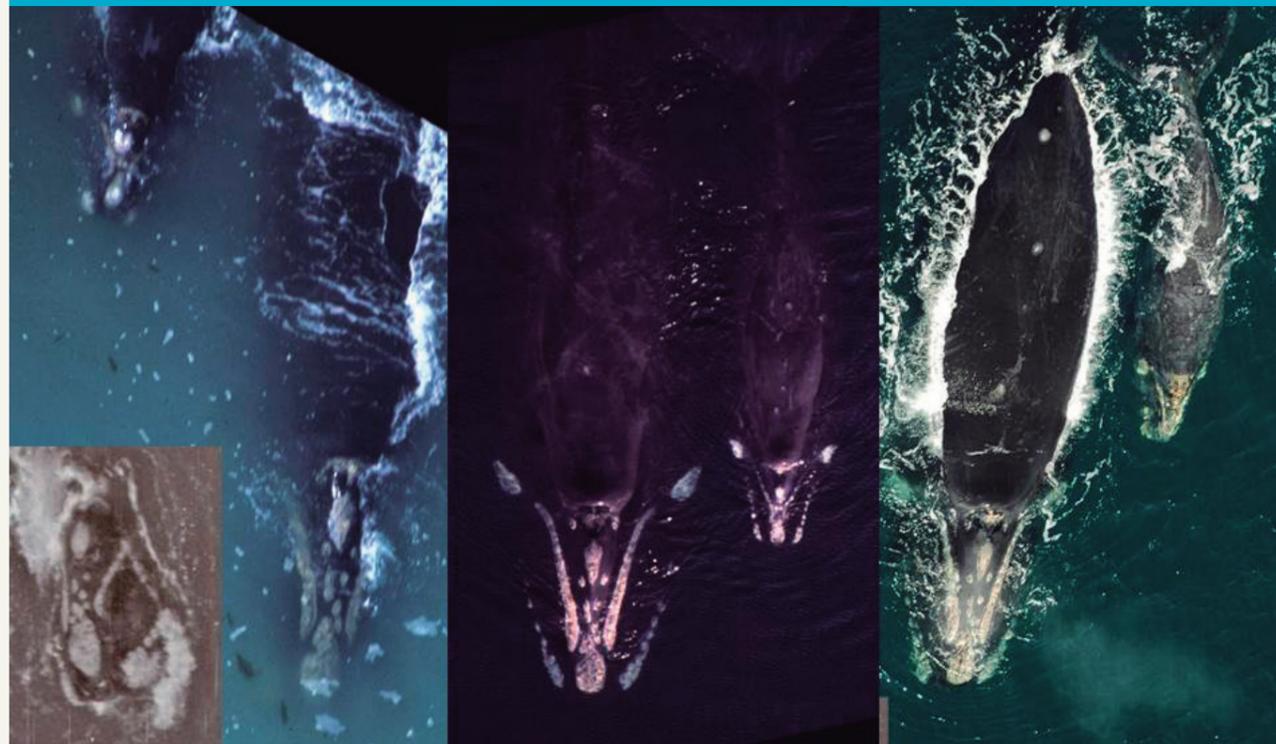


**“WE ARE FOLLOWING THE LIVES OF MORE THAN 3,000 KNOWN INDIVIDUALS AND MEETING OUR FOURTH GENERATION OF CALVES”.**

*Vicky Rowntree, current US director of this project*



**Whale 13-71 through four decades**



© Victoria Rowntree.

**Calf year**

**1984**

**1994**

**2008**



© Morten Lindhard / WWF. Researchers taking pictures of a sperm whale.

**WORKING WITH FISHERIES AND REGULATORS TO ADDRESS BYCATCH IN TUNA FISHERIES, AS WELL AS COUNTLESS OTHER FISHERIES FROM ARTISANAL TO COMMERCIAL, HAS TO BE ONE OF OUR HIGHEST PRIORITIES FOR CETACEAN CONSERVATION IN THE FUTURE.**

In 1982, WWF also supported the Indian Ocean Sperm Whale Project known as the Tulip Project, which was run by Jonathan Gordon and Hal Whitehead. Because sperm whales are found in deep offshore waters, it would not be possible to study their behaviour using day trips from shore. Instead, an ocean-going sailing yacht was chosen, so that pods of whales could be found and followed for extended periods of time while their natural behaviour was being studied. Sperm whales make very loud clicks that are used for echolocation to find their prey, but when groups of whales are socialising, patterned clicks, or codas are often heard. Directional underwater microphones were used to locate and then track these whales. Once again, this research was ground-breaking. The research, conducted over three years mainly in the waters off Sri Lanka, kick-started the careers of many whale researchers and opened up the study of sperm whales to these new techniques. Similar projects were developed in the Galapagos, the Azores and subsequently in other parts of the world. The study of cetacean culture was born.

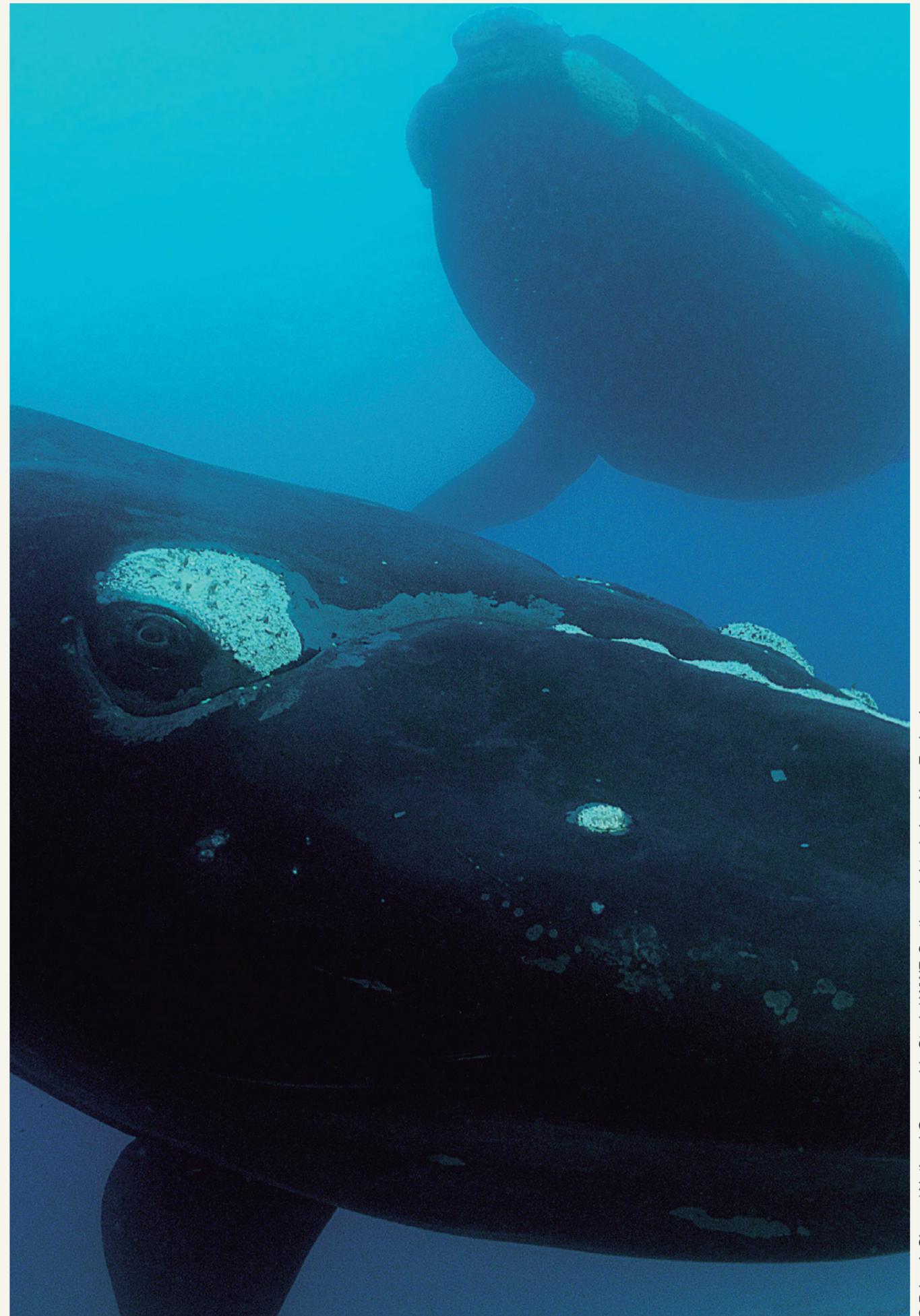
It was not only large whales that became the focus of research efforts in the 1970s. WWF also supported research into the tuna-dolphin problem in the Eastern Tropical Pa-

cific where purse seine fishing vessels were setting their nets around schools of tuna associated with dolphins, leading to tens of thousands of dolphin deaths every year. This early research was one of the first that targeted a conservation problem and served as a model for subsequent projects, where the motivation was not only to study the biology of the animals, but to develop solutions to address their threats. Through this research and collaboration with the fisherfolk themselves, the 'backdown' method was developed to allow dolphins to safely exit tuna purse seine nets. This method is now used all over the world to drastically reduce dolphin bycatch in tuna purse seine fisheries.

While work with tuna fisheries in the Eastern Tropical Pacific represented a success in one specific fishery in one part of the ocean, bycatch in other tuna fisheries, as well as countless other fisheries from artisanal to commercial continues to pose the greatest threat to dolphins globally. Nothing demonstrates the grave nature of this threat better than the following example of the rapidly declining population of the vaquita porpoise. Working with fisheries and regulators to address these threats has to be one of our highest priorities for cetacean conservation in the future.



© William W. Rossiter / WWF. Pantropical spotted dolphin (*Stenella attenuata*); Bahamas.



© Brian J. Skerry / National Geographic Stock / WWF. Southern right whales, New Zealand.



© Chris Johnson. Fishermen use gillnets to fish for shrimp from traditional small boats (pangas). The vaquita population has been declining steadily due to accidental bycatch in gillnets.

## THE SOBERING TALE OF THE VAQUITA: LESSONS FOR THE FUTURE

The world's smallest porpoise, the vaquita, was only scientifically described 60 years ago. Restricted to a small area of relatively shallow water in the Upper Gulf of California, Mexico, the vaquita is now in imminent danger of extinction with fewer than 30 individuals remaining as of November 2016. It has been listed by the IUCN as critically endangered since 1997 when the population was estimated at 567 animals. Since then, the population has plummeted, with almost half of the remaining population lost between 2015 and 2016.

The vaquita has been reduced to such low numbers as a result of bycatch in gillnets. This long-running problem has been severely exacerbated in recent years by a resurgence in the illegal fishery for totoaba, an endemic species of fish, which, when full grown, is roughly the same size as the vaquita, and is itself endangered. Totoaba swim bladders are in high demand for Chinese traditional medicine, fetching up to \$10,000 per kg. In spite of national and international efforts, this trade continues to flourish.

WWF-Mexico has worked tirelessly for more than 20 years to try to save this species. During this time, WWF has

supported and actively participated in the International Committee for the Recovery of the Vaquita (CIRVA) and has collaborated closely with the Government of Mexico.

Additionally, WWF has collaborated with Mexico's national fisheries institute (INAPESCA) and local fishers to develop alternative fishing gears that could replace gillnets, resulting in the approval of a selective gear for brown shrimp in 2016. WWF has also made efforts to build a market for "vaquita-friendly" seafood, and delivered careful analyses of bio-economic trade-offs in vaquita conservation policies. WWF has also participated in the efforts to remove ghost gear, which poses a significant threat to the vaquita, and continues to work with key scientists and in collaboration with several other NGOs to remove this gear. Since 2012, WWF has supported the development and refinement of an acoustic monitoring program to assess the vaquita population; this information has been a key indicator of the effectiveness of current and past conservation measures.

Throughout all these years of policy and field efforts, WWF has always supported the Mexican government and encouraged it to take action. However, given that bycatch con-



© Thomas A. Jefferson / VIVA Vaquita.

tinued unabated, it became obvious that a ban on gillnet fishing was the only option to save the vaquita. Thanks, partly to strong public pressure led by NGOs including WWF, a two year temporary ban on gillnets was put in place in May 2015 throughout the vaquita's range. On June 30, 2017, following strong lobbying by WWF and other NGOs including the Leonardo DiCaprio and Carlos Slim Foundations, a permanent gillnet ban for the long-term protection of vaquita was issued. The Mexican government also launched an unprecedented effort to patrol the area with the support of the Mexican Navy.

While on paper, all of these measures should have been sufficient to halt the bycatch of Vaquita and support their recovery. The gains to be made from continued illegal fishing for totoaba have outweighed the risks for some fishermen, who continue to set the large-mesh gillnets that catch both totoaba and vaquita, and the poor vaquita continues to slide towards extinction.

Despite this sustained effort by WWF, other NGOs, scientists, the Mexican government and some members of the fishing communities, it remains to be seen whether the vaquita can still be saved at this very late stage. In late 2017 an international collaborative program (VaquitaCPR) attempted to capture vaquita in order that they

could be kept in a protected enclosure until such time as all gillnets had been removed from the Upper Gulf. This program was not successful and efforts must now focus on the effective implementation and enforcement of the gillnet ban in order to prevent the otherwise inevitable extinction of a species.

In July 2017, the US Court of International Trade called for an import ban of all seafood products caught with gillnets in the vaquita habitat. However, this measure will not address the greatest threat to the remaining vaquita – tangling and drowning in gillnets illegally set to catch totoaba. Therefore, WWF will continue working with fishing communities, the Mexican Government, and other conservation partners in the development of fishing gear that does not harm the vaquita. We will also continue working on the recovery of lost or abandoned “ghost nets” that continue to threaten vaquita, as well as monitoring the vaquita population to ensure the most effective conservation efforts.

There is a shrinking window of opportunity for the government of Mexico to enforce the gillnet ban and stop the illegal fishing. The US and China must also urgently play their part to dismantle existing trade routes and stop the demand for totoaba swim bladders respectively.

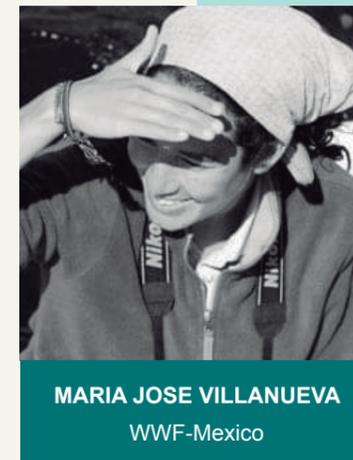
**WWF-MEXICO HAS WORKED TIRELESSLY FOR MORE THAN 20 YEARS TO TRY TO SAVE THIS SPECIES.**



© WWF-US / Eugene Lee. Activists bringing a dead vaquita to the third meeting of CIRVA in Ensenada, Baja California, Mexico.



© Chris Johnson. Researchers search for Vaquita using 'big-eyes'.



**MARIA JOSE VILLANUEVA**  
WWF-Mexico

We have failed the vaquita by not doing enough, but we still have hope. Society as a whole needs to demand the conservation of our natural resources. I strongly believe that if the Mexican government takes decisive action to enforce the current ban gillnets in the Upper Gulf of California, illegal fishing is eliminated, fishermen are committed and motivated to use vaquita safe alternative gear; and the US and China ensure that the illegal transport and sale of totoaba products is stopped, there is no reason why the vaquita population cannot rebound as long as a potential breeding population still exists. In spite of the dire situation the vaquita porpoise currently faces, I remain hopeful of its recovery. I'm convinced that the conservation of the Upper Gulf of California (UGC) has to go beyond vaquita: WWF is committed to ensure a healthy UGC where local fishing communities can thrive alongside its unique array of marine species and set an example to the world. We must learn from our mistakes and collectively work towards sustainable fishing alternatives – to avoid more biodiversity loss across the globe. We must not allow this to happen again.

**#NEVERAGAIN**



© Sylvia Earle / WWF. Sir Peter Scott at WWF whaling symposium, Oslo, Norway, 1985.

## TAKING THE LONG VIEW: NEGOTIATING AND RETAINING A MORATORIUM ON COMMERCIAL WHALING

At the time of WWF's foundation in 1961, whales were actively hunted by fleets from a number of countries around the world, despite growing evidence that many whale populations had been reduced to a fraction of their original number. By 1946, whaling nations were already alarmed by the sharp declines in many populations of whales that were targeted for hunting, and had joined to sign the International Convention for the Regulation of Whaling. The preamble to the Convention states that its purpose is 'to provide for the proper conservation of whale stocks and thus make possible the orderly development of the whaling industry'. Treating whale stocks much like fish stocks, signatories to the convention agreed to abide by catch quotas, but whaling continued in most parts of the world, and whale numbers continued to plummet. Extinction of one of the most targeted species, the Antarctic blue whale, seemed to be a very real possibility. As highly migratory species, whale populations cannot be managed by any single country

that wishes to hunt them, and are difficult to protect under international law.

Addressing the impacts of commercial hunting on whale populations around the world became an early priority for WWF. The *Launching of a New Ark*, WWF's first report in 1965, summarises the lobbying efforts at the International Whaling Commission (IWC) to successively reduce catch quotas and secure the complete protection of blue whales. A joint workshop on whale sanctuaries, held by IUCN, UNEP and WWF, also led to further partial protection of whales through the development of the Indian Ocean Whale Sanctuary in 1979. Another early success was gained through the personal initiative of General Charles Lindbergh, famous aviator and WWF board member, who convinced Peru's largest whaling firm to impose a voluntary ban on the killing of blue and humpback whales for an initial period of two years.



© Morten Lindhard / WWF. Whaler demonstrating a harpoon gun.

**RESEARCH DEMONSTRATING THAT WHALES HAD CULTURE, SONG, AND RECOGNISABLE INDIVIDUALS WITH FAMILY LIVES THAT INCLUDED MOTHER-CALF BONDS WERE USED TO SUPPORT A CAMPAIGN TO EDUCATE THE PUBLIC AND CONVINCED THEM THAT COMMERCIAL HUNTING OF WHALES WAS CRUEL AND UNNECESSARY.**

A decision such as a moratorium on whaling requires a three quarters majority vote in the IWC. WWF founder Sir Peter Scott, personally represented WWF at meetings of the International Whaling Commission, drawing on his high-level contacts, often speaking directly with heads of state to convince them of the grave problems that whales faced, and the tragedy that their extinction would present for future generations. Convincing heads of state and government representatives to side with conservationists in the IWC, required awareness-raising with the general public as well. Research demonstrating that whales had culture, song, and recognisable individuals with family lives that included mother-calf bonds were used to support a campaign to educate the public and convince them that commercial hunting of whales was cruel and unnecessary.

WWF and other NGOs worked to encourage conservation-minded countries to join the IWC so that their views could be represented too. In 1972 the UN Conference on the Human Environment called for a ten year moratorium on commercial whaling. A decade later, in 1982, the International Whaling Commission adopted a moratorium on commercial whaling that came into force in 1986.

Since the commercial whaling moratorium by the IWC, most Southern Ocean humpback whale populations are recovering at impressive rates, becoming one of this century's greatest conservation success stories. WWF has continued to attend every IWC commission meeting since the 1970s and has worked with a much bigger coalition of NGOs to achieve further successes, such as the creation of the Southern Ocean Whale Sanctuary in 1994. Current engagement at the IWC now goes far beyond whaling to encompass other threats to whales and small cetaceans such as climate change, ship strikes, pollution and entanglement in fishing gear; efforts to which WWF has made significant contributions. These new programmes of the International Whaling Commission usher in a new era with an emphasis on conservation, supported by 'like-minded' member countries. However, vigilance is required in light of the actions of some countries that undermine the conservation efforts of the IWC.



© Diego M. Garces / WWF. Humpback whales, *Megaptera novaeangliae*, mate and give birth in Colombia.

**Whales are Vital for Marine Ecosystem Health**

There has been an ongoing debate at the IWC focused on the role that large whales play in the ecosystem and whether they should be viewed as competitors for fisheries resources, a marine resource to be harvested, or essential elements of healthy marine ecosystems. Historical and cultural values will greatly influence perspectives on this, but modern science overwhelmingly supports the view that whales play an important regulatory function in marine ecosystems. While it is tempting for some to believe that whales eat fish, and therefore fewer whales will leave more fish for human consumption, several studies and multiple scientific meetings throughout the years have concluded that there is "no clear and direct relationship between marine mammal predation and the potential catch by fisheries". In fact, the IWC Scientific Committee in 2009 concluded that "no system at present are we in the position, in terms of data availability and model development, to provide quantitative management advice on the impact of cetaceans on fisheries".

Humans are solely responsible for the increasing scarcity of fisheries and other food resources. Whales have been shown to play an important role in the maintenance of healthy marine ecosystems. In addition to the various biological, bio-physical and bio-chemical contributions whales make, they have an inherent cultural and biodiversity value, and can render ecosystem services and strengthen economic security for coastal communities through their ecotourism potential.

**HUMANS ARE SOLELY RESPONSIBLE FOR THE INCREASING SCARCITY OF FISHERIES AND OTHER FOOD RESOURCES.**

**Factsheets**

WWF analyzes the important issues to be debated at each Commission meeting, and often prepares fact sheets to explain the benefits of a conservation-based approach. Drawing on robust science, but written in a style accessible to journalists and decision-makers, they provide important background for those trying to understand the complicated issues on the table.

**THE SCIENCE**

**Iron (Fe) & Nitrogen (N)**

**66% - 90% WHALES REMOVED FROM GLOBAL ECOSYSTEMS SINCE 1980s**

**REMOVING A TOP PREDATOR COULD POTENTIALLY DISRUPT THE FOOD WEB**

**ECOSYSTEMS EMERGING**

Recent evidence suggests that an increasing amount of iron is being released into the ocean from a range of sources and regions. This iron is then used by phytoplankton to produce phytoplankton biomass, which is then consumed by zooplankton and other organisms. This process is essential for the health of the ocean ecosystem. Whales are a key part of this process, as they release iron and nitrogen into the water through their feces and urine. This release is essential for the health of the ocean ecosystem. Whales are a key part of this process, as they release iron and nitrogen into the water through their feces and urine. This release is essential for the health of the ocean ecosystem.



**CASSANDRA PHILLIPS**  
WWF International co-ordinator for whales and Antarctica, 1981 to 2003

"...the feeling is now abroad that if we cannot save the largest animals in the world we have little chance of saving the biosphere itself and therefore of saving our own species." [Peter Scott, speech in the International Whaling Commission, 1972]

Sir Peter Scott, son of the Antarctic explorer Captain Scott, helped found WWF in 1961 and became its long-term Chairman. Amongst his many achievements, for nearly 30 years he was one of the most charismatic and influential leaders in the efforts to end whaling and tackle the other threats faced by cetaceans. In 1963, realising the great whales were in dire trouble, he established IUCN's Cetacean Specialist Group to give impartial scientific advice. Sir Peter was a brilliant radio and television broadcaster, inspiring many generations from the 1950s onwards with his love and knowledge of wildlife from all over the world. With his great charm and his many interests, he had a wide circle of highly influential friends from a wide variety of countries, and he didn't hesitate to ask them to help in his whale conservation efforts. I had the great good fortune to work on the conservation of whales and lobbying in the International Whaling Commission with Sir Peter for eight years up to his death in 1989, and I couldn't have had a more generous and inspiring model to follow.



© Damian Lidgard / WWF-Canada. A marine student wearing the WWF logo viewing a North Atlantic right whale, also known as a Northern right whale, in the Bay of Fundy, Nova Scotia, Canada.

## PROTECTING ENDANGERED NORTH ATLANTIC RIGHT WHALES FROM SHIP STRIKES

Right whales feed either at, or just below the water's surface, swimming with their mouths open to filter zooplankton from the water. They also sleep at the surface. This makes them especially vulnerable to being run over by fast-moving ships, especially in the hours of darkness. As a consequence, they suffer the highest per capita number of ship strikes of any species of great whale.

While Southern right whales off the coasts of Australia and South Africa have been recovering well since the moratorium on commercial whaling, The North Atlantic right whale is the most endangered species of whale in the world. Despite complete protection from commercial whaling since 1935, in 2001 the population was estimated to be fewer than 300 individuals. The combined threats of entanglement in fishing gear and ship strikes were identified as the two main threats preventing the species recovery. Ship strikes were recorded frequently for this species, and whales were especially at risk on their summer feeding ground in the Bay of Fundy, which overlapped with a main artery of North Atlantic shipping routes.

From 1997 onward, WWF and the Center for Coastal Studies worked in partnership to study these whales and the shipping patterns in the Bay of Fundy. By analyzing years' worth of whale distribution and behaviour data, and mapping this against shipping traffic data, the team gathered strong evidence that moving the shipping lane would decrease the risk of whales being struck by ships by 80%. However, moving a shipping lane is no small feat. It requires multiple stages of collaboration between national governments and the International Maritime Organization

(IMO), which is the UN agency with responsibility for the safety and security of shipping activities.

WWF worked with a coalition of NGOs and shipping industries to lobby for change. In 2003 Transport Canada made a proposal to the International Maritime Organization to move the shipping lane in order to avoid prime feeding grounds. When the new traffic separation scheme (TSS) was formally put in place in 1983, it represented the first time that a shipping lane had been moved to decrease the risk of ships colliding with whales.

The coastal waters which form the habitat for these animals are subject to such intense human interference that North Atlantic right whales have been dubbed "the urban whale". The work to decrease collision risk by ships in the Bay of Fundy was just one of a number of measures along the migratory route of these whales. Elsewhere on the east coast of North America, measures, including speed restrictions, were put in place in Boston harbour to decrease the risk of vessels colliding with whales. In addition, attempts are being made to try and address the problem of entanglement in fishing gear, which is the other main threat.

Although the number of right whales had increased to at least 465 whales by 2011 and further still to 524 individuals in 2015, the population is once again in decline. By autumn 2018 the population count was 412. A considerable portions of the population now have shifted their summer feeding grounds in search of sufficient quality food. This shift is likely due to impacts of climate change on zooplankton quantity and energy content. In the summer of

**WHILE SOUTHERN RIGHT WHALES OFF THE COASTS OF AUSTRALIA AND SOUTH AFRICA HAVE BEEN RECOVERING WELL SINCE THE MORATORIUM ON COMMERCIAL WHALING, THE NORTH ATLANTIC RIGHT WHALE IS THE MOST ENDANGERED SPECIES OF WHALE IN THE WORLD.**

2017 at least 12 dead right whales were found in the Gulf of St. Lawrence. Some dead whales showed signs of collision injuries and others had died as a result of chronic entanglement in fishing gear. Food stress, and the likely influence of rapid climatic changes are also thought to be factors affecting these whales at the population level.

This first re-routing of a shipping lane paved the way for a number of subsequent proposals to the IMO to move shipping lanes to better protect whales where they congregate. This included two further proposals for North Atlantic right whales in US waters, as well as a proposal in Sri Lanka, where a proposal to move a shipping lane a few miles further offshore would decrease the risk of ship strikes to blue whales by 95%. Such measures are more likely to be successful because of the pioneering work in the Bay of Fundy.

**THIS FIRST RE-ROUTING OF A SHIPPING LANE PAVED THE WAY FOR A NUMBER OF SUBSEQUENT PROPOSALS TO THE IMO TO MOVE SHIPPING LANES TO BETTER PROTECT WHALES WHERE THEY CONGREGATE.**



© Brian J. Skerry / National Geographic Stock / WWF. Northern right whale mother & calf (*Eubalaena glacialis*) off the Atlantic coast of Florida.



**AURELIE COSANDEY-GODIN**  
WWF Canada

WWF-Canada worked alongside many partners to establish voluntary measures and best practices to reduce the impacts of fishing and shipping on the endangered population of North Atlantic right whales. But, sadly, it took an unprecedented mortality event in the summer of 2017, representing three per cent of the world's population, for the Canadian government to establish concrete actions and to fully apply existing policies and tools that would reduce mortality risks. A 2018 report from the Canadian federal environment commissioner heavily criticized the failure of the government to implement the mandatory actions required under the Canadian Species at Risk Act to protect endangered whales in the country – doing too little, too late. The species has been listed as Endangered in Canada since 2005, a Recovery Strategy for this species was not produced until three years past its legal deadline, and the Action Plan was another two years late and has still not been finalized. Nonetheless, the tragedy of 2017, created a sense of urgency which prompted new collaborations and research and I am hopeful that we will remain visionary and proactive in our collective actions to protect successfully the North Atlantic right whale.



© Brian J. Skerry / National Geographic Stock / WWF. Southern right whale *Eubalaena australis* underwater.



© Craig Hayslip / WGW-IUCN / Oregon State University.

## SAKHALIN: REDUCING THE IMPACT OF OIL AND GAS DEVELOPMENT ON AN ENDANGERED POPULATION OF GRAY WHALES

While North Atlantic right whales represent the most endangered species of whale on the planet, the Western Gray whales that feed around Russia's Sakhalin Islands, may represent one of the most critically endangered small populations of whales. In 2004 the population numbered around 115 individuals. The species feeds during the summer months in the productive waters off Sakhalin Island in the Okhotsk Sea to prepare for its long migrations south to breeding grounds. Satellite tracking studies show that some individuals migrate to the Eastern Pacific breeding grounds off the coast of Mexico, but others are thought to travel south and breed in as yet unidentified areas in the waters of the Republic of Korea, China or Japan.

Given the small and isolated nature of this population, researchers and conservationists naturally were alarmed when a consortium of oil companies announced their plans to expand offshore oil and gas facilities on the whales' primary feeding ground off of Sakhalin Island. Sakhalin is a hostile environment with extremely low temperatures and only a short ice-free period when construction and prospecting work can be done. The proposed expansion would include the construction of underwater pipelines and platforms, with a high level of associated vessel traffic and underwater noise, known to disturb feeding whales and their prey. This small vulnerable population could not afford to lose important feeding opportunities during the few short months when the sea ice melts and their small shrimp-like prey of amphipods is abundant.

WWF collaborated closely with the IWC and the IUCN to devise a strategy to limit the potential impact of this project on the whales. Together they approached the financial lenders to the project, who could apply pressure on the oil companies to comply with international standards that require industrial projects to respect and conserve biodiversity. The power of WWF's international approach was leveraged through WWF's offices in Russia, the UK and Germany, as well as its International office in Switzerland, in collaboration with other NGOs. WWF had successfully argued in high-level meetings with UK ministers that



© Sakhalin Energy: Piltun-Astokskoye-B platform, Sakhalin-2 project.



© Greg Armfield / WWF-UK.

## WGWAP IS COMPRISED OF NGOS, IGO'S INDUSTRY AND SCIENTISTS TO IMPLEMENT MITIGATION MEASURES.

the government's Export Credit Guarantee Department should only assist the project if high environmental standards were met.

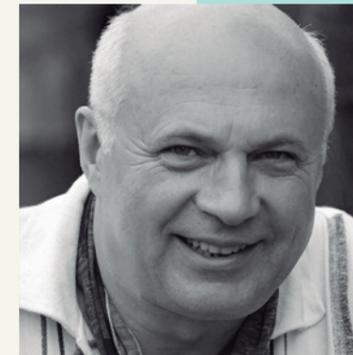
The banks collaborated, and placed unprecedented conditions on the loans they extended for the work: The oil companies would have to work with, and follow advice from an independent expert panel of scientists with experience in whale conservation and mitigation of the impacts of oil and gas exploration and production as well as coastal construction. Thus, the Western Gray Whale Advisory Panel (WGWAP) was formed. Convened and coordinated by the World Conservation Union (IUCN), it includes scientists and industry representatives, as well as NGOs such as WWF, who have attended all the meetings since its formation. The consortium of oil companies operating in Sakhalin, working together as Sakhalin Energy, agreed to abide by the recommendations of the panel.

The panel has influenced the way a variety of Sakhalin Energy's activities are carried out: In 2005 Sakhalin energy changed the routing of a planned pipeline following a recommendation by the panel to minimize disturbance to

feeding whales; the panel helped to draft one of the most comprehensive oil spill response plans ever written, along with a monitoring and mitigation plan that has formed the template for subsequent oil and gas projects around the world. Sakhalin energy deferred a potentially disruptive seismic survey by a year, following advice from the panel, and, together with WWF and other NGOs has funded research that has allowed the photo-identification of every individual on the feeding ground, and extensive monitoring of the population's numbers, distribution and behaviour over the years. This research has shown that the Sakhalin whale feeding population has increased from 115 individuals in 2004 to 174 in 2015.

The work of the Western Gray Whale Advisory Panel will continue into the future and provides an early warning mechanism for detecting problems and securing a future for this endangered population of whales.

Read more about the work of the Western Gray Whale Advisory Panel, in which WWF plays a critical role in this report: [Stories of Influence](#).



ALEXEY KNIZHNIKOV  
WWF Russia

Long term interaction between scientists, oil companies and NGOs under the IUCN's WGWAP is a good example of what an effective tool for proper mitigation measures can look like. This experience was presented by WWF, IFAW and IUCN at the 2016 World Conservation Congress for replication in other regions of the world. WWF-Russia also used this approach to develop a similar tool to protect "ice whales" as off shore oil & gas projects and shipping threats are increasing in the Russian Arctic.

## THE SAKHALIN WHALE FEEDING POPULATION INCREASED THANKS TO THE WGWAP

2004

115 GRAY WHALES



2015

174 GRAY WHALES



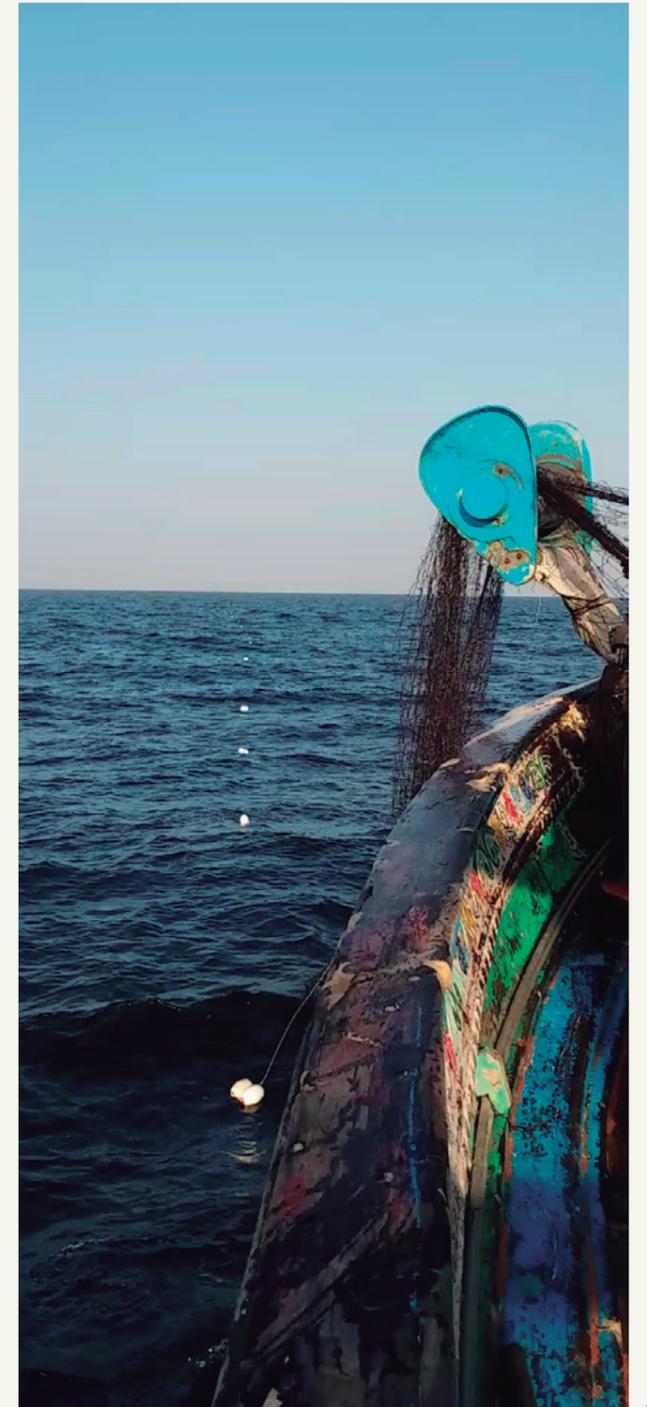
## CHANGE ON THE WATER: A PARTICIPATORY APPROACH IN PAKISTAN

In 2011 The Indian Ocean Tuna Commission (IOTC) passed a resolution requiring all of its contracting parties to ensure that 5% of their tuna fleets with vessels over 24 meters in length were monitored by on-board observers. In 2012 WWF Pakistan identified this resolution as an opportunity for its newly formed marine programme to help Pakistan's fisheries and government to comply with this requirement, and to collect some extremely useful conservation data along the way. Initially, academically-trained observers were placed on the fishing dhows that sailed from Karachi into the deep blue in search of tuna. Armed with data sheets and clipboards, these 'soft city types' were not well suited to sleeping on the decks of boats, among piles of damp gillnets, with rats, cockroaches and scorpions scuttling around them. It quickly became evident that another approach was required.

Since its inception in 1970, WWF-Pakistan has worked with a community-based and participatory focus, involving resource users at the grass-root level for conservation of biodiversity. This experience led the team to trial a similar approach with fishing vessel captains – enlisting them as observers for their own operations. Initially, four captains were trained in the collection of data on their target catches of tuna, as well as the documentation, handling and release of endangered, threatened and protected species accidentally caught in their nets, such as, sharks, rays, sea turtles and cetaceans. In Pakistan, little was known about the whales and dolphins hosted in their waters, and even less was known about entanglements and mortality of cetaceans in pelagic fisheries. Knowing that Pakistan's waters were still likely to serve as habitat for the endemic and endangered Arabian Sea humpback whale lent a sense of urgency to learning more about whale distribution and interactions with fisheries.

WWF-Pakistan trained crew-based observers started providing regular information on the target and non-target catch of tuna fisheries. Their data indicates that dolphins are the second most frequently by-caught group of species, after marine turtles. Analysis of data collected between 2013 and 2017 includes records of 203 observed dolphin entanglements, which, if extrapolated to the whole fleet could represent thousands of dolphins per year. However, during 2016 the fleet shifted to a new method of deploying their nets, resulting in a significant reduction of the number of dolphins caught. WWF-Pakistan is working with international experts to determine whether this change in fishing method could be used to reduce bycatch in similar fisheries throughout the world.

© Jürgen Freund / WWF. Humpback Whales, *Megaptera novaeangliae*. Hervey Bay, Queensland, Australia.



WWF-PAKISTAN

Founded in **1970**.

Works with a **community-based** participatory focus.

Involves resource users at the **grass-root** level.

Enlists fishing vessel **captains as observers**.

Trained **crew-based observers** are also documenting observations of free swimming whales.



© F. Bassemayousse / WWF France. Cap Cetaces Pelagos 2017 - Risso's Dolphin.



**RAB NAWAZ**  
WWF Pakistan

WWF Pakistan's crew based voluntary observer programme really shows how one small effort can lead to big change on the water. When we started this we struggled to convince two boats to be part of the observer programmes. There was a lot of distrust and suspicion on why we needed to start collecting data and taking photographs. Now we have more than seventy gillnet boats involved and the awareness about the need to conserve the whales and dolphins is widespread. Recently our efforts were recognised by the Indian Ocean Tuna Commission and hopefully our results will influence policy across the entire Indian Ocean. From two boats to an entire ocean is quite an achievement.

Another enormously valuable outcome of this project has been the collection of sightings data for various whale species in Pakistan's waters. Whaling records from the Soviet Union released in 1997 showed that two soviet whaling ships had illegally hunted several hundred whales off Pakistan's coast between 1964 and 1966. However, since then only a handful of strandings and opportunistic whale sightings have been recorded in Pakistan. WWF trained crew-based observers were also encouraged to document observations of free-swimming and entangled whales. Reported baleen whale observations have been increasing every year since the start of the programme, which involved 85 participating vessels as of 2018. In 2017 observers reported a total of 95 whale sightings, including 42 sightings of Arabian Sea humpback whales, an endangered subpopulation that does not migrate, but remains in the Arabian Sea year-round.

These sightings have been plotted along with those recorded in previous years to provide enormously valuable insight into the continued presence and current distribution of

endangered whales that were feared to have been hunted to near-extinction in the 1960s. The sightings have been used to support the designation of two new marine protected areas off the coast of Pakistan, and will be used to direct future research efforts that can include photo-identification and other methods to determine the health of the endangered Arabian Sea humpback whales and other species that are observed.

WWF Pakistan also contributes significantly to the Arabian Sea Whale Network, an informal network of individuals and organisations focused on research and conservation of Arabian Sea humpback whales throughout their range. By collaborating with researchers from Oman, India, Iran, the UAE, and Sri Lanka, WWF Pakistan is helping to develop regional conservation initiatives for an Endangered population of whales that does not respect national boundaries.

Read more about this exciting work on the WWF Pakistan website as well as the Arabian Sea Whale Network Website.



© WWF-Aus / Chris Johnson. WWF Antarctic Program Manager, Chris Johnson testing WWF new citizen science app – Wildcrowd – recording sightings of marine species.

## PROTECTING CRITICAL WHALE HABITAT IN THE SOUTHERN OCEAN: MULTILATERAL COLLABORATION

During the 20th century, more than 2 million whales were hunted to near-extinction in the southern hemisphere, including blue, fin, right, humpback, sei, minke and sperm whales. Throughout the Southern Ocean, more than 725,000 fin, 400,000 sperm, 360,000 blue, 200,000 sei and 200,000 humpback whales were killed during this time.

Whales are drawn to the Antarctic by the abundance of food that is available during the ice-free months of the Southern Hemisphere summer. Their main prey in this region is Antarctic krill - small, semi-transparent shrimp-like crustaceans, the keystone species of the Antarctic marine food chain. There are around 380 million tonnes krill in the ocean, similar to the total weight of human life on the planet. A single humpback whale may consume between 1 and 1.5 tonnes of krill a day during the foraging season.

But whales are not the only krill-lovers. In the Southern Ocean, Antarctic krill are harvested commercially for use by aquaculture feed, pet food and omega-3 health supplements for humans. The fishery is regulated by an inter-governmental treaty called The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Unlike most of the world's large fisheries it has scope to expand and could become the largest fishery of any type.

WWF is a member of the Antarctic and Southern Ocean Coalition (ASOC), a union of 17 non-government groups dedicated to Antarctic conservation. This body funds research and provides CCAMLR with advice on a number of issues related to limiting the impact of krill fisheries on whales and other wildlife dependent on Antarctic feeding habitats. In 2016, WWF with many NGOs and government partners successfully campaigned to create the Ross Sea



© WWF-Aus / Chris Johnson. The research ship Akademik Ioffe makes its way towards the Lemaire Channel, Antarctic Peninsula, Antarctica.

<b>WHALES KILLED THROUGHOUT THE SOUTHERN OCEAN TO NEAR-EXTINCTION DURING THE 20TH CENTURY</b>	725,000	FIN WHALES
	400,000	SPERM WHALES
	360,000	BLUE WHALES
	200,000	SEI WHALES
	200,000	HUMPBACK WHALES
	+ 2 MILLION	TOTAL

**IN 2016, WWF WITH MANY NGOS AND GOVERNMENT PARTNERS SUCCESSFULLY CAMPAIGNED TO CREATE THE ROSS SEA MARINE SANCTUARY - THE LARGEST PROTECTED AREA ON EARTH, COVERING 2.06 MILLION SQUARE KILOMETERS.**

Marine Sanctuary – the largest protected area on Earth. The sanctuary formally came into force in December 2017 – covering 2.06 million square kilometers.

This huge conservation win is only the first step in a long-term commitment by CCAMLR to implement a comprehensive network of marine protected areas surrounding the continent. This network will better protect a range of krill predators - including whales - and their prey in some of the most important feeding ground in the world.

To better understand and protect these crucial habitats for whales, WWF works closely with researchers such as Ari Friedlaender of the University of California Santa Cruz and David Johnston of Duke University to support innovation in whale research and bring field-based results to international policy outcomes.

Access to the Antarctic is expensive. However, scientists are now collaborating with Antarctic tour operators to conduct research and share their experiences with passengers. These platforms offer direct access to whales and the ability to

deploy satellite tags, collect biopsy samples or collect data on individual animals using drones – tools that are being used to better understand the behaviour of whales, their health and population growth, and how their body condition changes over time. As well as funding tools such as digital tags and drones to map these critical feeding areas, WWF staff often work side by side with teams in the field. In 2018, WWF Antarctic Programme Lead, Chris Johnson worked with researchers along the Antarctic Peninsula deploying digital cameras and satellite tags on humpback and minke whales to discover where and how these Antarctic giants feed on krill.

All this information is critical to evaluate the impacts of human activities in the Antarctic and better understand these whales so that we can generate more appropriate and effective conservation strategies in a changing climate. Close collaborations with researchers from academic institutions, private industry, and governmental and inter-governmental organisations has been a hallmark of WWF’s successful work in the region’. Keep up to date about this exciting work.



**HAL WHITEHEAD**  
Dalhousie University

**A curious whale, a canyon and WWF**

The Gully, one hundred miles off Nova Scotia, is a deep, steep canyon—about as deep and wide and long as the Grand Canyon, but all underwater. It is home to 140 friendly, deep-diving bottlenose whales, the survivors of intense whaling in the 1960s. I started studying the whales in 1988 and longed to protect them, and their canyon. There was fishing and oil & gas development all around. WWF-Canada funded our studies but also launched a comprehensive campaign to protect the Gully, educating schoolchildren, lobbying politicians and publicizing the canyon and the whales. Despite intense opposition, huge delays, and bureaucratic inertia, WWF persisted, and in 2004 the Gully became Canada’s first proper marine protected area. Now when I sail those waters and study the whales there are no whale-snaring fishing lines, and no booming seismic boats. The MPA designation led to a raft of broader research so we now know that the Gully is much more than a home to bottlenose whales. It has extraordinary oceanography that nourishes diverse life, including deep-water corals—all now protected.



© WWF-Aus / Chris Johnson. Antarctic minke whale (*Balaenoptera bonaerensis*) with a 'whale cam' or a CATS suction cup video tag.

## IN CONCLUSION

These stories are just some examples of the work WWF has done to help conserve cetaceans over the last 50 years. They demonstrate the passion and commitment of WWF staff around the world and the impact that can be achieved when people come together as NGOs, governments, and civil society. But they also demonstrate that successes don't come easily, and perseverance and collaboration are required to tackle the challenges of cetacean conservation in the coming years.

New threats emerge on a regular basis, including illegal and unreported fishing that leads to devastating bycatch

and exponentially increasing shipping and maritime transport, causing high levels of underwater noise pollution and carrying the risk of ship strikes for whales. Critical habitats used by whales for feeding, resting, mating, or nursing young are under assault by fishing, shipping, and coastal development and construction. Addressing bycatch, shipping, and the need to protect critical habitat form the three pillars of a new WWF Cetacean Global Initiative, intended to inspire WWF and its partners around the globe to collaborate and to use all the tools and technology available to build on and expand the efforts of the past 50 years.

### ADDRESSING BYCATCH, SHIPPING, AND THE NEED TO PROTECT CRITICAL HABITAT FORM THE THREE PILLARS OF A NEW WWF CETACEAN GLOBAL INITIATIVE



© naturepl.com / Luis Quinta / WWF. Fin whale (*Balaenoptera physalus*) near surface. Pico Island, Azores, Portugal.

© Brian J. Skerry / National Geographic Stock / WWF.

As we have in the past, we must promote good science and foster the development of new technologies and innovations, such as the use of drones, electronic monitoring, satellite telemetry, citizen science Apps and computer-assisted photo-identification to better understand and protect whale and dolphin populations. We must continue to collaborate with a wide range of stakeholders, including communities, fishers, industry, other NGOs, governments and intergovernmental organisations, and seek solutions for the best conservation outcomes. And finally, we must retain the vision and passion that has fueled our work over

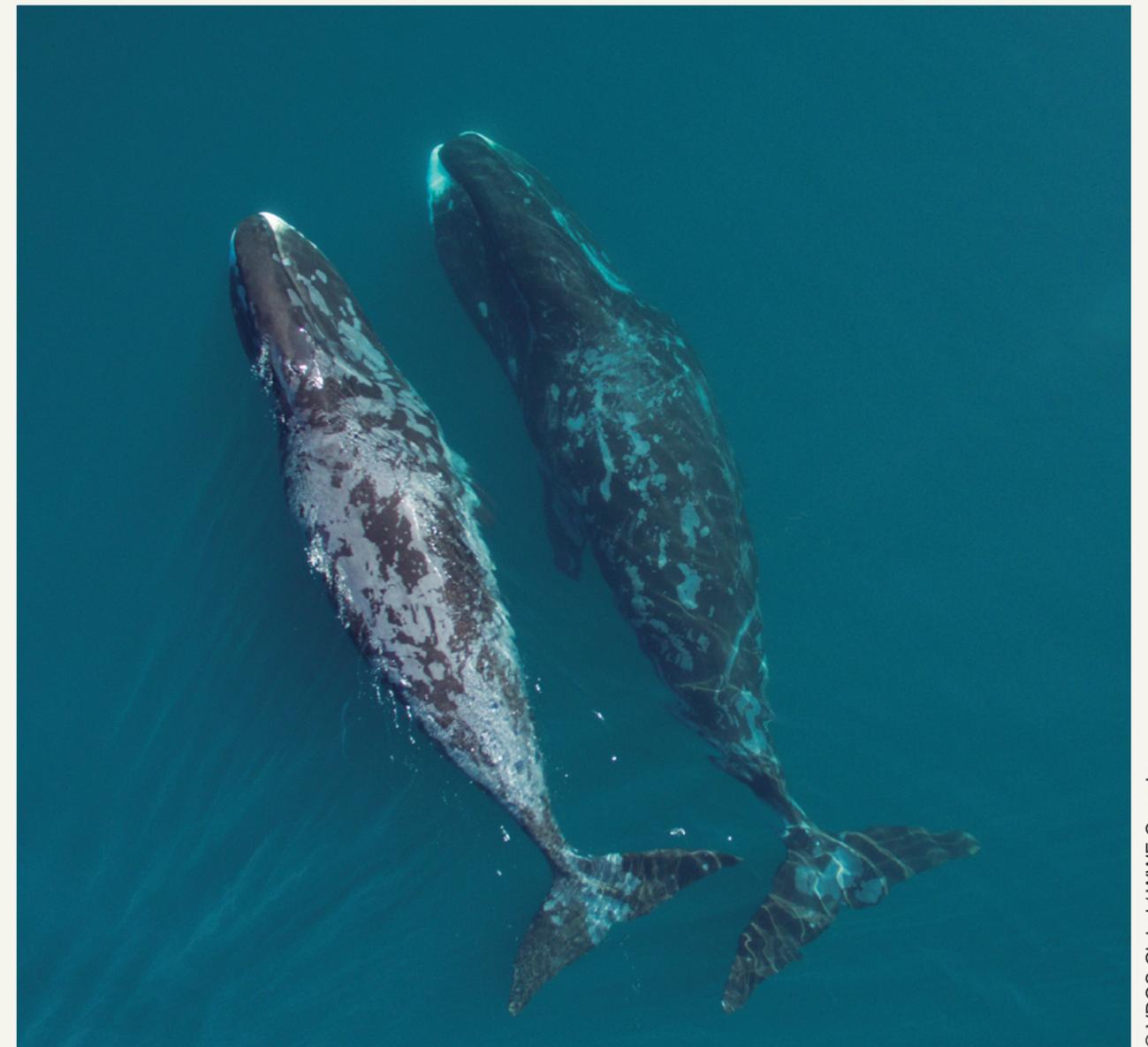
the past 50 years, and will be desperately needed to face the challenges ahead.

By protecting cetaceans we are not only conserving these marvelous creatures for the enjoyment of future generations, we are preserving their habitats which are shared by many other species, from the tiniest zooplankton to turtles and sharks. Whether in shallow coastal waters or deep oceans, whales have proven to be ecosystem engineers, cycling nutrients from one place to another. Even their carcasses become mini-ecosystems that can be inhabited by up to 200 different species.

**WE ARE NOT ONLY CONSERVING THESE MARVELOUS CREATURES FOR THE ENJOYMENT OF FUTURE GENERATIONS, WE ARE PRESERVING THEIR HABITATS WHICH ARE SHARED BY MANY OTHER SPECIES, FROM THE TINIEST ZOOPLANKTON TO TURTLES AND SHARKS.**



© Renee DeMartin. Humpback whale (*Megaptera novaeangliae*).



© VDOS Global / WWF-Canada.

**MAY THEY CONTINUE TO FREELY SWIM OUR OCEANS, AND BY DOING SO, KEEPING THE MARINE ENVIRONMENT HEALTHY FOR ALL OF US TO ENJOY.**

# 50 years of whale and dolphin conservation

3,000

WWF and partners are following the lives of more than 3,000 known whales and meeting their fourth generation of calves.

1961

WWF was founded.



174

Western gray whales increased from 115 in 2004 to 174 individuals in 2015 thanks to collaborative implementation of protective measures.

20

WWF-Mexico has worked tirelessly for more than 20 years to try to save the vaquita from extinction.



**Why we are here**

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.