

This is the story of the biggest secret in the ocean.
It's about a fish.
It's an *old* fish, but not *any* old fish.
And it's a big fish. The biggest in the sea...



BIG FISH

True tales of high adventure in the quest to save the whale shark

1 x 52min documentary (HD) from:



In association with:



The BIG Story

In a world where we have told tall tales and true about fish for as long as humans have gazed at the sea, how could it be that we know almost nothing about the biggest fish swimming in it? Rarely encountered in the past and barely studied, even Jacques Cousteau only saw a couple of whale sharks in his lifetime.



There are no surprises about how the whale shark got its name: it *is* a shark, and it's *as big as a whale*. It even eats like a whale - a toothless wonder filtering the smallest seafood morsels on offer from the wide blue oceans.

In the last few decades, we have finally 'discovered' this majestic and enigmatic fish. Whole industries have sprung up to allow people to swim alongside a fish the size of a bus. But these brief encounters by tourist and scientist alike have only given us a snapshot of the secret lives of these ocean wanderers. Enough to appreciate them, enough to realise they are under threat, but not enough to answer the basic biological questions we need to ask if we have any hope of seeing them into the future.

BIG FISH and the scientists it showcases plan to change all that. Bringing together raw animal passion, the scientific commitment, the latest research break-throughs and technological innovations, this visually exquisite documentary will reveal to the world the secret life of the ocean's biggest, fishy secret. In so doing, it will help mark the time when humans stopped ignoring the decline in the ocean ecosystem and started to do something about it.

The BIG Mystery

We know it's big and we have some idea that it feeds on plankton like a baleen whale. From the hotspots where we've been running into these animals over the last few decades we are getting some idea of the critical food stops along the whale shark's ocean highways and byways.

But that's it. That's about all we've ever bothered to find out about this speckled giant...

"You'd think that being the biggest it would be the easiest to study but they do what so many other animals do. There's a lot of ocean. There's a lot of places that people don't go, can't go", says Rory Wilson, a scientist driven to developing new ways to spy on the shark's secretive habits.



Where do they come from? Where do they go? How and where do they have sex? Give birth? How old do they live – even how big do they really get? These are all secrets the Whale Shark keeps close to its pectorals – and away from the prying eyes of even the most curious humans. Until now...

The BIG Idea

BIG FISH is more than a documentary film, more than another adventure under the sea. For the first time, **BIG FISH** will bring the world's leading whale shark specialists together in a quest to solve the mysteries of this greatest of ocean wanderers. Research teams from Australia, Mexico, the United States, UK, India, East Africa and Asia are finally succeeding in getting up close and personal with whale sharks.

For the first time, revolutionary spy technology is revealing the private diaries of the day-to-day lifestyles of these gentle monsters:

“It doesn't matter how big your animal is, if they've got a secret side to their life then you need the daily diary to figure it out. It has 13 channels. And it records on each of those channels various things – temperature, light, acceleration, speed, depth, all those sort of things. And when we get the tag back we can see where the animal has been. We can see every step that it's taken, every beat of the tail, every flap of its wings.”

While Rory Wilson turns to technology for answers, Brad Norman has turned to the stars. Working with NASA, he's refocused star pattern recognition programmes used for pointing the Hubble Space telescope, into a method of recognising individual whale sharks from their own unique starry spots. It's a way of converting snapshots of sharks into the bigger picture of the movements and health of the global whale shark population:

“We've been able to expand that now into thirty eight countries around the world and engage members of the general public to become 'research scientists' in fact by taking photographs and sending them into our photo ID library.”

Shark by shark, these world travellers are being given names and numbers. The can now be measured by camera and their growth rates calculated as they swim from coast to coast.

Not all the research is in the ocean. Georgia Aquarium in Atlanta is one of the few where whale sharks are kept for public display. It's an enormous effort to keep such a big fish in captivity: not only do they need to ship in krill by the truckload, even a routine medical check-up becomes a military-style operation. We follow the team as they round up the temperamental 'Trixie' and accommodating 'Alice' for a heavy-duty medical assessment. Learning to keep them healthy is providing invaluable clues to how whale sharks survive in the wild. The aquarium team already had a suspicion that the sharks were growing pretty fast, but no-one was expecting them to put on nearly two metres in length in a year!

It wasn't long ago that the only time scientists were able to get this close to a whale shark was when it was lump of meat heading for market...

The BIG Threat

This is a story set against the ominous backdrop of a dwindling population. It seems that knowing almost nothing about the biggest fish in the sea hasn't stopped us from driving them towards extinction.

Hunted for flesh, fins and even just for fun, whale sharks have always been an easy target. Pretty much anywhere that they came close enough to land to be within the reach of fishermen and boats they have been hunted. To western eyes it is a brutal, disturbing affair with the shark more often than not hacked to bits while still alive. After all, it's a shark. Who cares?

Gradually, the tide has turned in favour of whale shark conservation, especially now that foreign tourists will pay big money to swim with the big fish. It is now illegal to fish for whale sharks pretty much throughout the world, though that doesn't mean the meat doesn't still get to market or provide for a hungry village out of plain sight. To reduce the hunting pressure further requires viable economic alternatives, clever community education and a committed band of shark enthusiasts driven to spread the message to conserve rather than consume.

We meet these people everywhere we go, including India, Mexico and the coast of East Africa.

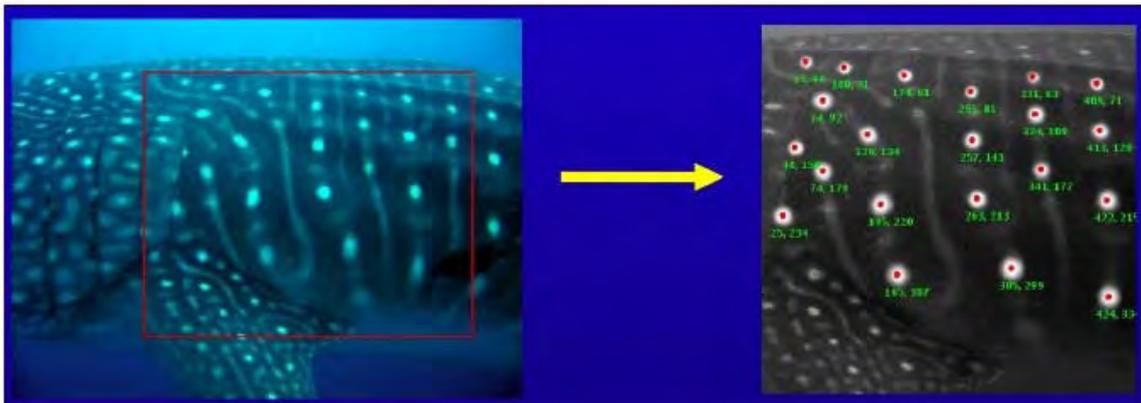
The BIG Effort

BIG FISH will profile the extraordinary research effort now underway around the globe, seeking to uncover the facts about these enormous animals. It involves marine biologists and conservationists, snorkelling tourists, Indian and African fishermen and even NASA space scientists. Among those **BIG FISH** will feature are two recent Rolex Awards for Enterprise winners, Australian marine biologist Brad Norman, a world leader in photo-identification research, and the UK's Professor Rory Wilson, a pioneer of a revolutionary wildlife monitor that hitches a ride into the deepest of whale shark secrets.

We also meet the team at the Georgia Aquarium who are learning – with the help of their captive charges and their gigantic mouths - just what it takes to keep whale sharks alive. Back in the field, we meet Belize-based whale shark expert Dr Rachel Graham, US-based Dr Robert Hueter and Mexican researcher Rafael de la Parra as well as other key researchers in Australia, East Africa and South East Asia. All will lead a journey to the lost corners of the Earth to unravel the mysteries of this giant but elusive fish.

The BIG Science

What is the connection between the Hubble Space Telescope and the spots on the back of a whale shark? Stars. **BIG FISH** will profile biologist **Brad Norman**, who has devoted his adult life to researching the world of whale sharks. In conjunction with US computer programmer, Jason Holmberg, and NASA scientist, Zorvan Arzourmanian, Brad has developed a breakthrough technique for whale shark identification by utilising software first developed to recognise star clusters for pointing the Hubble telescope to the correct part of deep space. By pointing a camera at the spot pattern on a whale shark in inner space, the unique 'fingerprint' pattern of each individual whale shark can be recognised. This invention earned him the Rolex Award for Enterprise.



Anyone who can point a camera at a whale shark and press the shutter can now become part of the research effort, simply by submitting images of whale sharks to be logged into the **Ecocean** database. Either your shark is a new record or it matches one already in the database. Shark by shark, these world travellers are being given names and numbers, and a valuable profile of the global whale shark population is being built up. This information is critical in determining the movements and viability of a true international species and therefore is a significant tool for conservation. Already over 1500 whale sharks have been identified.

For the first time, the Ecocean **Photo Identification Library's** database is giving marine scientists a feel for the numbers, distribution and habits of the elusive fish. Ecocean supports and coordinates eight field stations around the world active in data collection, and this number is expected to grow to 20 by the end of 2008.

BIG FISH features the software's 3D technique development (Spot!) which allow for the exciting possibility to apply this unique technology in the conservation of other threatened species, such as cheetahs and marine turtles. New and visually obvious evidence of how new science can directly benefit our understanding of the natural world.

Similar new variations on existing scientific methods are now being deployed. One is a **stereo camera** system which provides an accurate measure of the length of these underwater giants.

It sounds obvious, but until now the only accurate way to measure the size of a whale shark in the ocean is to catch it and measure it dead. In conjunction with the photo identification library, this technology provides information on growth rates. Sharks can now be measured by camera and their growth rates calculated as they swim from coast to coast.



Prof. Rory Wilson



Dr. Rachel Graham



Brad Norman

DNA samples collected from whale sharks from different locations around the world are being analysed and compared as part of the international study on whale shark populations and genetic variation.

The documentary will show the **specialised tagging technique** of the whale sharks. It will compare all the **different types of tags** used and explains the challenges researchers face when studying marine species.

Scientist **Dr. Rachel Graham** will give an insight to her research where whale sharks are tagged and photographed worldwide to better understand their migration routes and distribution in the world's oceans. Tags range from simple 'cattle' style numbered tags through to sophisticated satellite tags that have enabled sharks to be tracked for thousands of kilometres within and between oceans.

BIG FISH will feature zoologist **Professor Rory Wilson**, whose latest invention is world's most advanced wildlife monitor, incorporating tiny motion sensors. He calls it "**The Daily Diary**" for obvious reasons: it records the activity of whatever animal it is fitted to around the clock and accurately estimate the energy expenditure on land, at sea and in the air. It does this by keeping a constant record of changes in acceleration which combined with compass information can determine the animal's speed, direction and position.

Rory won his Rolex Award for Enterprise for this remarkable invention.

In **BIG FISH** this pioneering technology will be put in practice as fifteen "Daily Diary" monitors will be implemented on whale sharks at the Ningaloo Reef, WA. Results from this experiment will reveal new scientific discoveries of whale



sharks as they can record much wider range of data compared to satellite-based tracking devices.

This device will enable a variety of behavioural studies and will help scientists to understand what is important to wild animals in order to make good conservation decisions.

Further to this technology, 3D computer graphics have been developed to visualise the data captured showing a complete image of the animal in its hidden environment.

BIG FISH is opening a window on the behaviour of one of the most mysterious species on the planet.

The BIG Shark

The whale shark, *Rhincodon typus*, is the largest fish in the world growing up to a reputed eighteen metres and twenty tonnes. They have the thickest skin of any animal on earth, measuring up to 10cm. They are found in tropical and temperate seas around the world and are one of only three filter feeding sharks, sucking thousands of litres of water per hour through their 1.5 metre-wide mouths to extract the plankton, krill and small fish that sustain them.



They are thought to live up to 150 years. Active fisheries existed until recently in many Asian countries and the whale shark is registered as Vulnerable to Extinction in the world Conservation Union (IUCN) Red List of Threatened Species.

The whale shark is highly migratory and can travel thousands of kilometres to follow the food pulses in different parts of the ocean, therefore protection in one country may be ineffective when they migrate to a country which permits hunting. Human impacts, through fisheries, increasing contact and changing food availability wrought by global warming are obvious threats for this rare species. Because it is slow to mature and very little is known about its breeding habits and numbers, international effort is needed to secure the population and protect it from potential extinction. Improved knowledge of the movement patterns of the whale sharks will form the basis of management and conservation.

They are harmless giants, and although they can dive to 1,500 metres, they spend significant time on the surface gliding slowly. Through their sheer magnificence, they have become an ecotourism operators dream come true.

The BIG Locations

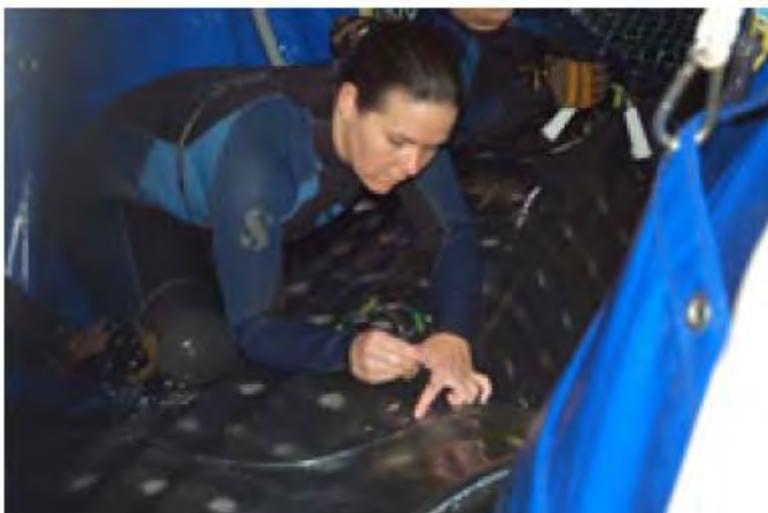
NINGALOO, AUSTRALIA

BIG FISH is in production and we have completed a successful first shoot at Ningaloo Reef in Western Australia. The priority here was to show how the new wildlife monitoring system known as “Daily Diaries” are being used to fill the gaps in our knowledge. On the strength of the results from this one trip, Professor Rory Wilson has already been able to add some key scientific papers to the now rapidly expanding literature.



GEORGIA AQUARIUM, USA

BIG FISH has also filmed with the four whale sharks kept in captivity at Georgia Aquarium in USA. Keeping large, deep diving animals in a tank is controversial, but the scientific team at the Aquarium are not just displaying these giant animals but also playing an active role in whale shark research. They make a convincing case that the sort of information they are gathering in the tank can make a real difference to the outcome for sharks in the ocean – as well as their bottom line.



The film will show how GA researchers complete a full physical examination in two of the whale sharks. The captive studies aim to provide understanding of whale shark growth rates, blood analysis and ultimately better understanding of the reproductive biology and therefore work towards the species long term survival in the oceans.

MEXICO AND BELIZE

BIG FISH will continue to join Mexican researchers from Project Domino, which is a collaboration of international researchers including researchers from Georgia Aquarium and partly funded by them, in their annual research trip to Gulf of Mexico. The ultimate goal for this team is to understand the science behind the marine fish mass spawning occurring in the area which brings in hundreds of whale sharks to feed on the plankton just for a couple of days. Why do they come? What are they feasting on? How do they know when and where to come? At the same time researchers are tagging whale sharks in an effort to expand the boundaries of a marine national park and taking samples of plankton to study its nutritional make up.

Other filming opportunities are being explored in nearby Belize and Honduras, as well as in Baja, California.

INDIA

BIG FISH has travelled to India and will review one of the most dramatic shark conservation stories of recent times and celebrates the success of **Whale Shark Campaign** in the annual Whale Shark Day in India/Gujarat, previously a centre for whale shark hunting.

We retrace the story of how the Mike Pandey film, *Shores of Silence* helped force the Indian Government to declare the whale shark a protected species and enforce a hunting ban. Now, the fisher folk of Gujarat officially celebrate the arrival of the shark into Indian waters, a remarkable change that has been instrumental for protection of the shark well beyond Indian waters. Such has been the turnaround that 2006 Gujarat government announced compensation for fishermen whose nets were destroyed during releases of whale shark trapped in their nets. The department of fisheries and the forest department are now actively involved in rescues and releases of whale sharks and now hundreds of releases have been recorded.

To add into the successful conservation story is the fact that the fish has achieved an iconic status as Vhali, 'the loved one', in Gujarat with thousands of schoolchildren painting it, celebrating its arrival with plays and street drama, and with five towns on the western coast of India declaring it their city's mascot.

However, the ban on whale shark hunting and trade is very recent development in many countries and the documentary will dive in the dark waters of South East Asia in order to investigate the illegal hunting and thriving black market trade.

KENYA

Getting caught in fishing nets is the single most serious threat to the whale shark population on the coast of Kenya. The drift nets traditionally used by the fishermen can be several hundred metres long and cause severe damage to the aquatic ecosystem. These nets also frequently become detached from their

marker buoys and become a “ghost net”, one of the most destructive weapons to be let loose on the oceans. These ghost nets continue to fish for several decades.

BIG FISH has already filmed conservation efforts of dedicated researchers and conservationists based on Diani Beach in Kenya who are raising awareness of the species in local schools and working hand in hand with the local fisherman, encouraging them to recognise the value of the whale shark alive and report whale shark sightings, produce whale shark carvings and other curios to illustrate the widespread benefits of conservation.

SOUTH EAST ASIA: TAIWAN, THE PHILIPPINES & INDONESIA

Nearly everything we know about the reproduction of whale sharks comes from a single pregnant female cut open by fishermen in Taiwan while fishing was still legal (this is where the Georgia Aquarium’s whale sharks came from – they were purchased alive as part of the legal catch). The researchers here are the experts on baby whale sharks and preserved many of the tiny pups.



There is a strong possibility that the South China Sea triangle north from Indonesia, and between the Philippines and Taiwan is one of the most important areas for whale shark reproduction. Until recently, it has also been the most dangerous place for a whale shark to swim, with both legal and illegal fishing seriously impacting shark numbers. Has the

threat really diminished? Is whale shark tourism going to provide the long-term alternatives to the artisanal fishers?

GALAPAGOS ISLANDS

Finally **BIG FISH** hopes to follow the whale sharks migration routes to the mysterious islands of Galapagos. These remote Ecuadorian islands are thought to be one of the last frontiers where whale sharks can breed in an isolated and now fully protected area. Sightings of pregnant females are rare but have been recorded here with some consistency. Is this one of the mysterious pupping areas for whale sharks? Will the first ever recorded birth of whale sharks be captured here? There are certainly surprises to be had in the Galapagos where whale sharks cruise through vast schools of hammerheads and the only known albino whale shark has been spotted.

INVESTMENT & BUDGET

BIG FISH is a high definition 52 minute production for worldwide distribution. It is budgeted at \$AUD650,000. 6 units of \$100,000 and 1 unit of \$50,000 have been created to underwrite the project. For Australian investors, investment attracts 20% rebate underwritten by the Australian government on completion.

Investment in **BIG FISH** is based on a number of undertakings and expectations:

- (i) The project is commercially orientated so the probability of return of investment is very high;
- (ii) A highly regarded international natural history distribution company have already provided a US\$50,000 Distribution Guarantee;
- (iii) There is a 20% rebate (maximum) expected on completion;
- (iv) There is an element of excitement being involved in such a fascinating project, and;
- (v) There is great worthiness in supporting a programme that can help save a remarkable endangered animal and our marine ecosystem generally.

Investors will also have the opportunity to join our expert scientists and the **BIG FISH** crew in location anywhere in the world. This is a once in a lifetime opportunity that money almost can't buy!

THE TEAM

BIG FISH will be made by Dr. Stephen Van Mil of Animal Media Australia and Dr Richard Smith.

In conjunction with Fork Films, Stephen recently completed *The Last Trimate*, narrated by Mel Gibson – the world's first high definition documentary on legendary primatologist, Dr Briuté Galdikas and the diminishing habitat of Indonesia's orangutans. At the 2008 IWFF, *The Last Trimate* was awarded the Special Jury Prize, Best Newcomer, Merit for Editing and Merit for Best Conservation Message. The Last Trimate has now been sold by Off The Fence and has screened worldwide.

Richard Smith is a producer, writer and director of the documentary series *A Traveller's Guide to the Planets*, a travel guide-styled show about our solar system. A dedicated ecologist, he also wrote, produced, directed and starred in the feature-length documentary *Crude: The Incredible Journey of Oil*. In 2008 he received the Walter Sullivan Award for Excellence in Science Journalism for *Crude*.

Executive Producer: Dr. Stephen Van Mil

Producer/Director: Dr. Richard Smith

Director of Photography: Dr Richard Smith

Production Manager: Katherine Nash

Principal Talent: Brad Norman, Prof. Rory Wilson, Dr. Rachel Graham

FORMAT & SCHEDULE

BIG FISH will be filmed using the latest technology cameras delivering at full **High Definition 1080i**.

Apr 11 – Oct 11	Fund raising & Pre-production
May 12– Mar 13	Principal filming
Apr 13	Offline edit
Jun 13	Online, Audio Post & Delivery

Stephen Van Mil
Animal Media Australia
Level 1, 45 Murray Street
Perth WA 6000
Mob: +61 (0)418 294 993
steve@animalmedia.com.au
www.animalmedia.com.au

Richard Smith
Blue Planet Productions
6 Melbourne Street
Fairlight NSW 2094
Mob: +61 (0)419 242 749
Ph: +61 (0)2 9949 2814
stegostoma@yahoo.com.au

Katherine Nash
Animal Media Australia
Level 1, 45 Murray Street
Perth WA 6000
Ph: +61 (0)8 9221 8628
katherine@animalmedia.com.au
www.animalmedia.com.au

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