Shark Focus

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THE MAGAZINE OF THE SHARK TRUST

Issue 43 March 2012

Demonised Darlings
Addressing the Plight of the Cownose Ray

A Most Peculiar Fish
Insights into the Rarely Encountered Sawfish

The Maldives
The Times They are a' Changing...

Continuing Threats
to South Africa's White Sharks

plus

all your Shark Trust and EEA news

SHARK TRUST

Supporting the European Elasmobranch Association

CAMPAIGN CORNER

Make the PUSH

Shark Trust and SEA LIFE London aquarium celebrate the fantastic British support for amending the EU finning ban. © Andre Camara.

As Europe debates the future of the European Shark Finning Regulation, the Shark Trust demonstrates the strength of support from the Great British Public to the UK Fisheries Minister.

Unmanaged exploitation of sharks is a matter of public concern, as clearly demonstrated by the tremendous support for European Shark Week events and activities. Across the UK, these were enthusiastically delivered by individuals, organisations and the network of UK aquariums.

In February, the Shark Trust met with UK Fisheries Minister Richard Benyon, a committed supporter of the fins naturally attached policy. Benyon received a presentation on behalf of over 60,000 British citizens who have joined the Shark Trust and UK Shark Alliance colleagues in calling for improved shark conservation measures. Benyon, who has led the UK in championing tighter shark finning regulations, has been vocal in his support throughout the campaign.

During European Shark Week a total of 164,404 signatures were collected across Europe with a staggering contribution from the UK. On top of the 60,060 British signatures included in this total, a further 6599 were collected on UK soil representing over 100 nationalities.

Thank you for all of your support and for signing the petition – see page 9 for the latest updates on the review of the finning regulation and watch this space for further results!

Housekeeping

"Some beans and some beans is four beans"
Baldrick.

Spring is nearly here according to the Met Office, but they want a super computer costing £14 million a year for the next 3 years, to ensure accuracy. Look out of the window it's cheaper! Lloyds Bank unveils £3.5 billion in losses but still pays out £375 million in bonuses. We are in the wrong business! The Olympics is going to cost the UK £24 billion, yes, £24 billion, originally the costs were estimated at £2.37 billion, obviously their abacus was missing a few beads when they worked it all out. I could drone on about financial incompetence and put my blood pressure through the roof. Instead I will spread good news about a shark charity that does exceptional work and whose financial control is as tight as a drum.

It is nearly the end of the financial year and despite the economy it has been a good one for the Shark Trust. We have secured new members, increased the adoption programme and benefitted hugely in donations and grants from many wonderful people. The Trust continues to be in the forefront of shark conservation and works very hard to achieve its aims.

This is all done on budget, within our means, utilising every penny donated, granted and procured, to the fullest. It did not require a super computer, huge salaries or bonuses, nor did the projections come in 10 times over budget. We watch every penny closely, not just because I am very mean, but because we appreciate donating to charity in the current economic climate requires serious thought. You support us generously to help shark conservation so the least we can do is ensure your money goes to the work it is intended for, helping sharks, and rest assured it does.

Once the audit is completed in April you are able to read the accounts through Companies House and Charities Commission web sites. Do take time to look at them as they highlight the serious work achieved over the year, shows clearly that the money you give is serving it's purpose and that the percentage used for governance and administration is very low.

Glenys Heafield,
Financial Administrator &
Company Secretary.

So from all of us here at the Trust, thank you for all your support, we are very grateful and we know we could not do it without you.

SHARK TRUST

European Elasmobranch Association

Supporting the European Elasmobranch Association

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Shark Focus

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Established in 1997, the Shark Trust works to advance the worldwide conservation of sharks through science, education, influence and action. The Trust is the UK member of the European Elasmobranch Association and currently provides the EEA's secretariat services.

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Photo. Cownose Rays schooling. © Sandra Critelli.

EDITORIAL

A recent visit to South Africa reminded me of the depressing reality that the struggle to ensure a future for wildlife on our planet will not and cannot ever end. We'll win a battle here and a skirmish there but the war will never be over. Twenty-one years ago South Africa passed a law protecting the White Shark. Despite this law, and despite the huge revenues generated by eco-tourism, the sharks now face increasing pressure from illegal targeted angling, and a possible nuclear power station development that activists fear will seriously degrade the marine environment in the Dyer Island area (see page 18).

The Shark Trust is celebrating its 15th anniversary this year, and more than ever we have a job to do, helping to secure a future for this vulnerable group of animals. This is underlined by the fact that China consumes 95% of the world's shark fin production, and by the time the Shark Trust is thirty years old there will be another 250 million Chinese middle class consumers! Throughout the year we will be publishing a number of reports, and in November there will be a special birthday issue of Shark Focus. We are also hosting various events and activities, so keep an eye on the website for updates.

Blue Shark angling catches crashed in recent years from a 1961 high of over 6,000 to a low of 86 in 2000. Anglers in Cornwall and Pembrokeshire recorded increasing numbers in 2011 for the second year. Fishing effort does not appear to have increased significantly so we're hopeful this apparent trend will continue and might mean something positive.

Our conservation team remain focused on the review of the EU shark finning regulations, and on the domestic front meetings with the Fisheries Minister enable the Trust to maintain pressure from the UK on EU policy.

At least two Basking Sharks were sighted on the south Devon coast in late December and early January. Readers will probably be aware that whilst winter sightings are not unprecedented they are very unusual.

The Queen named 1992 her *annus horribilis*, and from an attack and human fatality perspective 2011 was a shark *annus horribilis*. As far as we can determine a total of 75 attacks were recorded which resulted in 14 deaths; I won't say anymore in case I tempt fate, but a summary of 2011 by George Burgess of the International Shark Attack File can be found at **http://www.flmnh.ufl.edu/fish/sharks/isaf/2011summary.html**

An old Devon farmer friend informed me of a lunar (not lunatic) theory that has convinced him that summer 2012 will be as good as the still talked about record summer of 1976. I hope so because the recent unsettled years have seriously impeded my various British shark filming and photographic projects. If it happens and you come to Cornwall hoping to see sharks please look me up.

Go well,
Richard Peirce.

DEMONISED DARLINGS:

Addressing the Plight of the Cownose Ray

by Sonja Fordham
Shark Advocates International

No conservation group does more than the Shark Trust to remind us that the overfishing risks faced by sharks also threaten their cousins, the rays. Organisations like the Shark Trust and Shark Advocates International, working to conserve to conserve all elasmobranchs, try to balance the attention we give to the revered, charismatic sharks (such as White and Basking Sharks) with that we offer to the underappreciated species, too often deemed "pests" (including dogfish and skates). Perhaps no elasmobranch species fits into both categories better than the Cownose Ray *Rhinoptera bonasus*.

Contrasting perceptions

Few species engender such disparate reactions as the Cownose Ray. Children delight at watching their "smiley" faces in aquariums and petting their soft skin in touch tanks, while wildlife enthusiasts marvel at the beauty of their golden migrating schools. Many in the seafood industry, however, view them as an "under-utilised" scourge, disrupting watermen's pursuit and production of more commercially valuable species. As the industry's perception gains traction, more people are now thinking of Cownose Ray as the main ingredient in their new favorite bar food, and more conservationists are worried about the species' future.

For decades, U.S. Atlantic fishermen, particularly those working in the Chesapeake Bay, have sought to remove Cownose Rays and profit from the process, through derbies, bounties, or new markets. Their efforts got a boost a few years ago when a widely publicised, yet hotly disputed, scientific paper discussed the effects of Atlantic shark depletion. The authors claimed that, as a result, Cownose Rays had increased dramatically in number and were depleting, through predation, valuable scallop and other shellfish populations. Whereas the paper was focused on the negative impacts of overfishing sharks, its assertions about Cownose Rays have inadvertently served to paint them as an overly abundant nuisance. The conclusions have been used, ironically, to promote fisheries for a species which shares sharks' inherent vulnerability to overfishing and yet enjoys much less protection.

Eat a Ray, Save the Bay

Most notably, seafood interests from the state of Virginia have since developed a campaign called "Eat a Ray, Save the Bay" to promote new markets for what they now call the more palatable "Chesapeake" or "Sunshine" ray. The initiative, featured on CNN and in other major news outlets, not only promotes Cownose Rays as an exciting new seafood choice, but also asserts that eating the species is one's environmental responsibility, key to helping oyster restoration and thereby improving the health of Chesapeake Bay. Images of Cownose Rays as destructive animals have since been perpetuated through many channels, including state agencies and sustainable food groups as well as environmental organisations and wildlife societies. Reporters from all backgrounds suggest, without back-up, that Cownose fisheries are "sustainable," while some have gone as far as to label this native animal as an "invasive" species.

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Vulnerability

In actuality, Cownose Rays are among the oceans' most biologically vulnerable animals. Females reach sexual maturity at about age eight and usually produce just one baby (or pup) per year, after a gestation period of nearly a year. Leading shark and ray scientists up and down the U.S. East Coast dispute claims that the Cownose Ray population has dramatically increased in recent years; they argue instead that the species is biologically incapable of the reported population "explosions."

Clearly, such reproductively-challenged species are exceptionally vulnerable to overfishing and slow to recover once depleted. We already know that unregulated fishing of a similar South American ray species (*Rhinoptera brasiliensis*) led rapidly to depletion and an Endangered classification from the International Union for Conservation of Nature (IUCN). Despite these arguments for a particularly cautious management approach, U.S. Cownose Rays are not yet the subject of fishing limits or even a population assessment. At the same time, Mid-Atlantic landings of Cownose Rays have increased (already on par with those for large coastal sharks), East Coast supermarkets are now actively marketing "Chesapeake rays" in the summer months, and marketing to Asian buyers at international seafood shows continues.

This environment has left little room to consider the possible negative, indirect effects on shellfish caused by ray depletion. It is worth noting, however, that scientists found a Bat Ray eradication program aimed at helping the California oyster industry may have actually increased oyster mortality, as it turned out rays were not feeding on oysters but rather on oyster-associated species including oyster predators (such as crabs). Naturally, as ecosystems are quite complex, there could be a myriad of other unexpected, unwanted consequences from ray population reduction.

The next step...

All of this is not to say that Cownose Rays don't feed on the clams and oysters grown in aquaculture operations. They do. Promoting unregulated fishing of the species, however, is not a responsible response, nor will population depletion address this problem (as remaining rays would continue to be drawn to such high density prey). The good news is that most commercially valuable shellfish can outgrow the risk posed by Cownose Ray predation. Techniques involving delayed planting, decreased densities, and physical barriers to protect small clams and oysters are being studied and hold promise as alternatives to depleting the Cownose Ray population.

Meanwhile, the consequences of delaying limits on slow-growing elasmobranchs should be all too familiar to fishery managers around the world, including those in this region. In the U.S. Atlantic, fishing restrictions lagged behind development of fisheries for large coastal sharks and Spiny Dogfish. As the number of fishermen entering the new ventures grew, so did the obstacles to agreeing and imposing effective regulations. Population damage increased with management delays, creating the need for increasingly drastic action, and resulting in recovery periods that span decades. It is high time we learned the lessons from these experiences and ensured a more cautious approach to elasmobranch fisheries.

To that end, Shark Advocates International is working with elasmobranch scientists and concerned conservationists to educate the public about the other side of the Cownose Ray story. We're also appealing to fishery managers for population assessments and precautionary limits on catch, and asking seafood retailers to stop promoting consumption of the species until associated fisheries are limited and demonstrably sustainable. We're hopeful that these efforts, along with new findings from groundbreaking research, will result in more balanced messages and a brighter future for the Cownose Ray.

Main image:
Cownose Rays schooling. © Sandra Critelli.

Image 2:
Cownose Rays. © Sandra Critelli.

Image 3:
The Cownose Ray *Rhinoptera bonasus*. © Andy Murch.

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A QUICK GUIDE TO MARINE ECOLOGY

by John Richardson

Sometimes viewed as monotonous and one-dimensional, the ocean is in fact a series of dynamic, incredibly varied ecosystems. Covering more than seventy per cent of the earth's surface, these distinct systems vary in temperature, depth, light availability, chemistry, currents and productivity. The result is an astonishing range of interconnected coastal, demersal, and pelagic habitats, each supporting an incredible diversity of marine organisms and communities.

Food-webs

Marine ecosystems function via an unimaginably complex network of interactions between the organisms and communities which call it home – this network is called the marine food-web. Forming the base of any marine food-web are drifting microscopic plants called phytoplankton. Via photosynthesis, phytoplankton use energy from the sun to convert dissolved carbon dioxide and nutrients into vital organic compounds such as proteins, lipids and starches, in a process called primary production. The energy is then transferred from one level of the food-web to another by the consumption of one organism by another. The position that an organism occupies in this transfer is referred to as its trophic level.

Trophic levels

As a primary producer, phytoplankton occupies the base, or first, trophic level of a marine food-web. Phytoplankton is consumed by herbivores, which make up the next trophic level, and include zooplankton as well as grazing, filter- and deposit-feeding fish, molluscs, worms, crabs, sponges and bivalves. Herbivores are in turn preyed on by organisms at higher trophic levels: the meso-predators – including small to medium-sized elasmobranchs, teleosts (bony fish) and cephalopods (squid, octopus), which actively hunt and eat herbivores, and in the process transfer the energy further up the food-web[1].

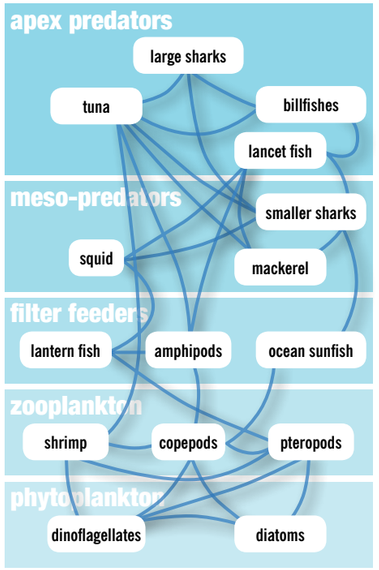
Apex predators

Occupying the uppermost trophic levels – and dominating the entire food-web – are the apex predators: large active teleosts (e.g. tuna and billfish), large powerful marine mammals and, of course, the large sharks. Apex predators play a critical role in maintaining the diversity, function and health of an ecosystem. They do this directly through predation on meso-predators, as well as indirectly through interactions between meso-predators and other members of the ecosystem[2].

Trophic cascades

The removal of apex predators can have complex and unpredictable ecological consequences, something researchers are only just beginning to understand, due to the difficulties in studying wild marine animals and their prey in their natural environments[3]. However, we do know that it can drive a rapid expansion in the abundance and distribution of smaller, more prolific species at lower trophic levels – the meso-predators and herbivores. The impact of increased predation and consumption by these 'uncontrolled' populations then cascades down to the base of the food-web, triggering a restructuring of whole ecosystems[4]. This process is known as a trophic cascade.

Perhaps the classic example of a marine trophic cascade is provided by sea otters, urchins and kelp in Aleutian Island waters, off the southeast coast of Alaska. Here, the removal of sea otters through commercial hunting 'released' urchin populations from predation[5]. Urchins are voracious grazers and, uncontrolled, they quickly reduced the size of kelp beds and associated communities, if not removing them all together, creating extensive 'urchin barrens'. Because kelp beds are an important primary producer in temperate nearshore waters (playing a similar role to phytoplankton), their destruction may have had far-reaching consequences in local and regional food-webs for species as diverse as Rock Greenling, Harbour Seals and Bald Eagles[5].



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SHARK HARD TALK

By Richard Peirce

Richard Peirce talks to Paul Trebilcock

Chief Executive of the Cornish Fish Producers Association (CFPO)

Paul Trebilcock. Image © Paul Trebilcock.

As CEO for one of the largest producer organisations in England, Wales and Northern Ireland, Paul is responsible for managing the majority of UK quota opportunities in the Western Approaches and Celtic Sea, as well as marketing catches.

RP What are the key elasmobranch species for Cornish commercial fishermen?

PT *The species which make up bycatch are Spurdog, skate, Porbeagle, and occasionally Tope.*

RP What are the economic values, number of jobs, and tonnes landed each year?

PT *For the last two years there has been a ban on landing Spurdog, Porbeagle and skate. Before the ban, 20 tonnes a year was enough to prevent Porbeagle discarding, so the value of 20 tonnes a year was the financial value of Porbeagle. With Spurdog it's a bit harder, but in 2009 it was 50 tonnes, which was less than two per cent of the total fish landed. The main fishing method producing this bycatch was gill netting.*

RP So with Spurdog representing only two per cent of the fish landed, what has been the economic impact of the ban?

PT *Although they are not targeted they are part of a boat's gross catch. Spurdog averaged £1 per kilogram, so 50 tonnes was £50,000 - £60,000. The ban wouldn't have impacted on jobs, but on particular trips. If fishing for hake was poor and all that came up was Spurdog, then on that trip they made a difference.*

RP You said £1 per kilogram for Spurdog, what was the value of Porbeagle?

PT *When we could land them it was £2.50 - £3.00 per kilogram.*

RP What about discarding, particularly Porbeagle?

PT *We've been working with CEFAS, Defra and the Shark Trust trying to find a way of dealing with Porbeagle which doesn't involve discarding the dead ones. We agree Porbeagle need careful management, but if you asked most fishermen they'd say there have been more around in the last couple of years than for a long time.*

We've agreed there would be no targeting of Spurdog and Porbeagle, but if they are bycatch we believe live ones should go back and dead ones come ashore. This would be sensible rather than this blanket ban which results in waste and is nonsensical.

RP Do you know how many fish, or what tonnage, was discarded in 2011?

PT *2009 was the last unrestricted year. The feeling is that there are more Porbeagle and Spurdog around now, so if we increase the 2009 figures to allow for stock improvement I would say maybe 70 – 80 tonnes of Spurdog and 30 tonnes of Porbeagle are being discarded.*

RP I heard of one or two quite large Porbeagle bycatches reported last summer by Padstow boats.

PT *There were sharks caught in tangle and drift nets.*

RP What are your thoughts on the health of Spurdog and Porbeagle stocks?

PT *As I said, there seem to be more around. There also seem to be more feed-fish around – herrings, pilchard and mackerel – so maybe that is helping the Porbeagle. If the stock is improving we need careful management that doesn't allow people to target them. I think it was primarily the French who targeted Porbeagle.*

RP Does the CFPO accept that serious declines have occurred in elasmobranch stocks?

PT *I don't think anyone could argue that everything was okay. If you go back to the 1980s there were no restrictions and Spurdog were targeted. Porbeagle were less targeted and I think the Porbeagle population question is not as clear cut as with Spurdog. I don't think they were overfished like Spurdog, it was up and down.*

RP If it's not fishing, what are the threats to sharks in our waters?

PT *Probably habitat degradation, pollution, food sources, temperature and other environmental conditions must all play a part.*

RP How has your industry reacted to the increasing interest in fisheries management in recent years?

PT *At first the attitude was 'why are these people interfering with what we do', but that has changed now and we at the CFPO have been involved in a lot of work with CEFAS, Defra, the Shark Trust and others. Our membership is keen to work with scientists and conservationists to understand the stocks, and if possible reduce discards based on improved knowledge.*

RP You mentioned scientists and conservationists. Where do politicians fit into this in your opinion?

PT *Politicians! Politicians could well be part of the problem. Where we are at the moment, with a ban on landing without understanding the underlying issues of stock, catching and discards, is a classic example of politicians being involved. Bycatch rates are unknown because there is a ban on landing. This hampers advancing scientific knowledge, and politicians tend to be interested in headline or cosmetic gestures. If they are seen to be doing something, they think their job is done rather than tackling the real issue, which is sensible management leading to healthy shark stocks. That is the objective of fishermen and shark conservationists alike; politicians are more interested in the media exposure than addressing the problem.*

RP On your website you note that the most disappointing outcome from the 2011 Fisheries Council was the continuation of a zero TAC* for Porbeagle, Spurdog and skate – particularly in relation to these lucrative, though critically endangered, species having to be discarded. Given that elasmobranchs demonstrate much higher discard survival rates than bony fish, how do you justify this position?

PT *I don't think we would ever say "lucrative" fishery on our website. Anyway I get the point; I think it's justified in the sense that simply having a zero TAC or a ban on landing does not materially affect how many sharks or skate are discarded dead, the ban on landing is why they are discarded. We agree the survival rate of elasmobranchs is better than that of bony fish, and our proposal would be to return the ones that are alive after measuring them and collecting any data required. Those that are dead we land and we make use of them. I don't see any contradiction between that position and wanting to understand and better manage our stocks.*

RP There have recently been a whole lot of celebrity TV programmes looking at fisheries issues. Do you believe that TV celebrity endorsement of fisheries management issues has been beneficial to addressing long standing and complex problems with the Common Fisheries Policy (CFP), or has it clouded things?

PT *I think a mixture of both, but I think one thing it does which is positive is raise the issue of fisheries management with the public as well as with people directly involved in it. The thing that doesn't make it complete is that nearly all of these programmes highlight problems but don't then move on to suggest how the problems can be tackled.*

We are ultimately governed by the CFP which is a bureaucratic politically-driven bit of regulation; what you or I would see as sensible and logical steps to improve never quite comes out like that. Once it goes through the Brussels machine it's very hard to recognise what comes out the other end as being sensible. So celebrity chefs raise important issues and put pressure on us all which is good, but it would be better if some answers were suggested.

RP Do you feel that fishing to maximum sustainable yield (MSY)* is appropriate for elasmobranchs?

PT *As a concept I think MSY is incredibly difficult to implement. It sounds good in principle, but in the Southwest we've got ultra-mixed fisheries with boats landing up to 30 – 40 species a trip. That makes it very difficult to get all species at MSY at the same time. We can aspire to it but one of the problems of the CFP is trying to manage things by species, whether it is elasmobranchs, cod, plaice or whatever.*

I think we need to look at fisheries as a whole and say 'is the fleet operating at a level which is sustainable?' One of the measures in that kind of approach could be monitoring how far we are from MSY. If we are moving in the right direction I think that's a measure of success. I think MSY targets on individual species tend to be a little artificial. You can end up getting one species to MSY to the detriment of others. So I'm not convinced that it's the best or only measure or objective of fisheries management but it's something to bear in mind.

RP What can fishermen do to help manage or possibly reverse the impacts of population declines? What strengths, skills and contributions can you bring to the table?

PT *We've got a fleet of boats working in the Southwest from the shore to 120 – 150 miles out so that's a good research platform to be used. The fishermen have a unique understanding of the movements of these fish, when and where they turn up, and reasons why they are not there. Ultimately it will be the fishing industry that will contribute most to improving the understanding of the stocks.*

Science is expensive at sea and our guys are there anyway. Even before the zero TAC on Spurdog it was our guys who were catching them, and if they didn't want them then they would shift four or five miles and try and get clear of them, and this responsible action by skippers has been underestimated. Cod is a good example. It was the fishing industry that proposed a seasonal closure to protect cod and it was us who persuaded the French, the Belgians and the Irish to sign up to it. That was six or seven years ago and this year we've seen an increase in the cod quota and the stock is improving.

RP It's estimated that, on an inshore basis, recreational angling is worth more than commercial fishing. Do you think commercial fishing is the most beneficial use of elasmobranch resources – how about the likes of catch and release angling, shark watching, cage diving and eco-tourism? Should these activities be encouraged inshore at the expense of commercial fishing?

PT *I wouldn't encourage it at the expense of inshore commercial fishing, but I do think that the two have co-existed and probably have benefitted both ways over many years. I'm from Newquay where an active recreational angling fleet co-exists beneficially side by side with an inshore fleet of netters and shell fishermen who do at times catch sharks, and within that port they all help each other, exchange information and work together for the common good. If the fishing industry, recreational angling and eco-tourism people can all work together and come up with things, maybe it will influence my least favourite people – the politicians and Brussels.*

The CFPO www.cfpo.org.uk began in 1976 as a non-profit making co-operative, and today consists of 210 vessel-owning members from all over Cornwall. Vessels range in size from a five metre single-handed cove boat to a 38 metre beam trawler, and use a diverse range of fishing techniques including trawling, beam trawling, crab/lobster potting, gill-netting, longlining, drift-netting, scallop dredging, ring-netting and handlining.

The objectives of the CFPO include:

Managing fish quota on behalf of its members in order to minimise the discarding of fish and to maximise profits by matching vessel catching opportunities to market demands.

To increase the unit value of its members' catches by researching new markets and promoting its members' produce.

To represent the views and opinions on a range of issues relating to fisheries management, conservation, training, grant-funding and sea safety.

***ACRONYMS**

TAC – Total Allowable Catch
The total catch allowed to be taken from a resource within a specified time period (usually a year) by all operators; designated by the regulatory authority. Usually allocated in the form of quotas[1].

MSY – Maximum Sustainable Yield
The largest theoretical average catch or yield that be continuously taken from a stock under existing environmental conditions, without significantly affecting the reproductive process[1].

1 Fowler *et al*. 2005. *Sharks, Rays and Chimaeras: The Status of the Chondrichthyan Fishes*. IUCN/SSC Specialist Shark Group.

SHARK TRUST NEWS & events

Shark Trust displays. © Shark Trust.

Shark Trust Displays

An eye-catching series of panels initially developed for the Selfridges 'Project Ocean' event have spent the winter on display in several high profile aquariums. After display in Bristol Blue Reef Aquarium, the panels have spent time at Living Coasts in Torquay, and are now being exhibited at Portsmouth Blue Reef Aquarium as part of their Shark Week. In addition, the National Marine Aquarium in Plymouth will be purchasing its own set of the panels for permanent display.

Blue Sound

In late November the Shark Trust again teamed up with the Marine Biological Association's Blue Sound Project, aimed at engaging Plymouth teenagers in hands-on marine science. The turnout was excellent, and a presentation titled 'Sharks…in England?' prompted lots of shark-related questions that kept Shark Trust staff on their toes. The Blue Sound Project was created to bring local people into contact with the marine environment, and encourage careers in marine science for kids with little or no exposure to this field.

National Aquarium Workshop

In November the Shark Trust attended the 14th National Aquarium Workshop (NAW) conference held at Living Coasts, Torquay. Over 100 delegates discussed the latest developments in husbandry, animal health and enrichment, as well as research and conservation projects. Ali and Cat presented an informative talk entitled 'Shark Conservation: Changing Times' which provided an update on all of the Shark Trust's latest policy work with a particular focus on the campaign to tighten European shark finning regulations, as well as resources available from the Trust to aid aquaria in their conservation and education goals.

Tavistock Group – Devon Wildlife Trust

In early February the Trust was invited up to Tavistock to speak to Wildlife Trust members, as part of their 2012 Wildlife Awareness program. As in previous years there was a good turnout to hear the Trust present 'Assessing the footprint of the UK over-10m fishing fleet' – based on analysis of 25 years of shark landings data supplied by Defra.

Citizen Science

Also in February, the Trust attended a workshop at the Linnaean Society, London entitled 'Citizen Science Engaging with Change in the Marine Environment'. A wide range of organisations attended the workshop – including the Marine Biological Association, National Oceanography Centre, Natural History Museum and Seasearch. Participants discussed the role of volunteers in gathering marine environmental data, including how greater involvement can be encouraged and data quality improved.

WORLD SHARK NEWS

Media stories since last Focus

OCTOBER

Shark Massacre Reported in Colombian Waters
Colombian environmental authorities reported a huge shark massacre in the Malpelo wildlife sanctuary, where as many as 2,000 hammerhead, Galápagos and Silky Sharks may have been slaughtered for their fins. Divers counted a total of ten fishing boats entering the zone illegally, all of which were flying the Costa Rican flag.

Conservationists Round on Chinese Whale Shark Aquarium
Since opening, over 30,000 visitors have flocked to the Whale Shark Aquarium in the northern Chinese city of Yantai. But conservationists have accused the aquarium of cramming the Whale Sharks into a tank that is far too small for them. When they reach maturity, each of the five Whale Sharks is likely to be 33ft long, while their tank measures just 88ft by 52ft.

Cull or be Killed: Is this Really the Solution to Stop Shark Attacks?
In Western Australia, politicians and members of the public are calling for a shark cull in response to the state's recent shark attack fatalities. But is this the best way to deal with an animal whose natural environment humans enter by the thousands every day? Although the Australian media continue to sensationalise the threat of shark attacks, statistics do not support these claims.

NOVEMBER

Stop Badmouthing Sharks that Bite People
Science should reconsider its use of the phrase "shark attack" on humans. Such language creates a one-dimensional perception of these events and makes protecting threatened sharks more difficult. Human-shark encounters are always called attacks even when there is no contact, artificially amplifying the numbers. What's more, no distinction is made for minor bites from non-threatening species.

Shark Dies after Release from Monterey Aquarium
A White Shark that had been on exhibit at the Monterey Bay Aquarium died soon after being released back into the wild. The young male shark – probably less than a year old and weighing about 50lb – had been brought to the aquarium on August 31st. It was the sixth White Shark exhibited since 2004, and the first to have died shortly after release.

DECEMBER

New Research Reveals Physics Behind White Shark Attacks
A paper in the latest Marine Biology Research Journal, reveals how the physics of light-scattering in ocean waters helps the White Shark maintain stealth as it hunts seals. Due to the physics of light-scattering in ocean waters, seeing seals from below is much easier than seeing sharks from above.

"Rapier Wielding" Shark Among New Species Found in 2011
Four new sharks – including a "rapier wielding" sawshark—are among 140 new species discovered by California Academy of Sciences researchers in 2011. The African Dwarf Sawshark is only the seventh species of sawshark known to science. Over the past decade, about 200 new species have been described, compared with fewer than 200 in the previous three decades combined.

JANUARY

Do Gulf Tiger Sharks Walk on Land?
Researchers from Alabama's Dauphin Island Sea Lab have published a new study examining the remains of land birds in the stomachs of Tiger Sharks. Researchers suspect the sharks may be moving closer to shore than previously thought, although strong winds may blow some birds offshore making them easy pickings for nearby sharks.

Basking Shark Spotted in South Devon…in January!
Walkers on Exmouth Beach were amazed to see a Basking Shark cruising just metres off the beach in early January. Although common around the Southwest between April and October, Basking Sharks are rarely seen in UK waters during winter months.

Decrease in Shark Numbers Poses Risk to Great Barrier Reef
Reef shark populations on the Great Barrier Reef are dropping at an alarming rate, posing a serious risk to the ecology of the reef. Research by James Cook University has found that some reef shark populations are decreasing by up to seventeen per-cent each year.

STRENGTHENING THE EU FINNING BAN

With the Shark Finning Regulation on the EU legislative agenda, the Shark Trust is working closely with the UK Government, Shark Alliance colleagues, and Members of the European Parliament (MEPs) and Council to secure a shark finning policy with no compromise or exceptions.

Action to date[1]:

2006: The European Parliament urged the European Commission to tighten the EU Finning Regulation.

2007/8: Options for amending the regulation were laid out by the European Commission and debated by stakeholders as part of the public consultation on the EU Plan of Action for Sharks.

2008: IUCN World Conservation Congress adopted a global policy on finning that amounts to a call on all States to ban at-sea fin removal.

2010: Members of the European Parliament launch a written declaration calling on the European Commission to deliver a proposal to prohibit the removal of shark fins on-board vessels. The written declaration was endorsed as a resolution of the Parliament in December 2010. In November 2010 the European Commission initiated a public consultation on options for amending the EU finning regulation, including a ban on at-sea fin removal.

2011: In November the EU Commission proposed the adoption of a fins naturally attached (FNA) policy.

2012: The Legislative Process. European Council and Parliament formulate their positions as part of the co-decision process.

The European Commission has proposed ending special fishing permits which allow fishermen to remove shark fins at sea and bring bodies and fins to port separately. As a direct result of Shark Trust campaigning, the UK ceased provision of these permits in 2009, whereas Spain and Portugal continue to issue them to their extensive long-line fleet. As expected, Spain is leading the opposition to the Commission's proposed improvements in the finning ban which would require all sharks to be landed with their fins 'naturally attached'.

In Shark Focus 40 and 41 the complex nature and extent of the fin trade and the associated attempts at regulation were discussed. In summary however, the Shark Trust believes that requiring sharks are landed FNA is by far the simplest and most reliable method to ensure an end to shark finning through:

- A reduced enforcement burden as there is no requirement for ensuring compliance with the fin:carcass ratio and the associated complicated conversion factor calculations.
- The ability to secure the species-specific landings data required for population monitoring and associated species specific management measures.
- The removal of the opportunity for 'high grading'.


UK Fisheries Minister Richard Benyon receives a presentation on behalf of over 60,000 British citizens (See page 2). © Shark Trust.

The Shark Trust continues to actively advocate for the adoption of FNA and strongly supports the Commission's proposal. The Trust is working closely with the UK Government and the Devolved Administrations to ensure strong UK support and leadership.

Following a recent meeting with the Shark Trust, the UK Fisheries Minister, Richard Benyon, reported in an article: "The UK has been successfully enforcing this best practice for sharks since 2009 and urges all Member States to adopt the Commission's proposals. As well as closing the loopholes in the EU shark finning regulation, it is essential that we ensure shark fisheries are sustainably managed, based on sound science, acting long before populations collapse, and that we provide special protections for endangered shark and ray species at national, EU and international levels."

In the same vein Scotland continues to call for a complete ban on the removal of shark fins at sea, and in a letter to the Trust stated: "We would like to see European legislation brought in line with Scottish policy and support the proposals for sharks to be landed with fins naturally attached."

The Shark Trust is supporting the UK Government in its efforts to engage other Member States in support of FNA.

Co-decision:

The Shark Finning Regulation will be the first experience that the European Parliament Fisheries Committee (PECH) has of 'co-decision'. As a result of co-decision, or the 'ordinary legislative procedure' as it is also known, the Commission now submits a legislative proposal to both the Council and Parliament, giving MEPs a new, and pivotal, role in the formulation of legislation.

Currently the Commission's proposal is being considered by the Council and Parliament and written reports and opinions are being compiled. However, it is inevitable that certain MEPs will act in opposition to the Commission's proposal for FNA, reflecting the views of the Spanish and Portuguese fishing industries, who are keen to retain the right to remove fins at sea. These will be a challenging few months and effective engagement of MEPs from all Member States and parties is essential.

The process for debate and possible amendment of this proposal will continue well into 2012. See the website for updates.

POLICY IN BRIEF

Convention on Migratory Species (CMS)

November 2011: The Giant Manta Ray *Manta birostris* is listed under CMS Appendix I and II, obligating CMS member countries to provide strict national protections for Giant Manta Rays and their key habitats, and encouraging concerted global and regional action among all Range States to conserve the iconic species. Manta rays are under increasing threat from East Asian demand for their gill rakers, used in Chinese medicine, which is driving targeted fisheries[2].


Giant Manta Ray. © Guy Stevens.

Convention on International Trade in Endangered Species (CITES)

After consultation with other interested CITES Parties, Denmark, as current holder of the Presidency of the Council of the European Union, has submitted a proposal for the inclusion of the Porbeagle *Lamna nasus* into Appendix III of the Convention. Appendix III includes those species that any Party has identified as being subject to regulation of exploitation within its jurisdiction and as needing the cooperation of other Parties to monitor international trade in the species[3]. Such cooperation is achieved primarily by the issuance of export permits by a state which has included the species in Appendix III. It is expected that Germany will champion Porbeagle for Appendix II listing at the 2013 Conference of Parties.


Porbeagle Shark. © Andy Murch.

References

1. Shark Alliance. 2011 EU Shark Conservation: recent progress and priorities for action.
2. Shark Advocates International Press release 25/11/11
3. www.cites.org

A Visit to the Maldivian Manta Ray Project Team

August 2011

Story and images © Paul Jackson

I have wanted to snorkel or dive with manta rays and Whales Sharks forever! I have also wanted to visit Hanifaru Bay in Baa Atoll, the Maldives, since it was recognised as the best place in the world for seeing aggregations of feeding manta rays. Having watched Martin Clunes in the 'Man to Manta' TV program in January 2011, I knew that I had to visit Hanifaru. I contacted Guy Stevens, founding director of the Maldivian Manta Ray Project who very kindly advised me of the best time to visit for manta rays, but was also able to tell me about Reethi Beach, a small island on which I had decided to stay, close to Hanifaru. The only time to see manta rays in numbers at Hanifaru is during the monsoon season between June and November and Guy informed me that August was a very good month to visit.

My arrival in the Maldives coincided with a tropical storm and I wondered if I had made the right decision to visit in late August. However when I rang Guy he was very relaxed about the weather and invited me to join his team on their research boat the next day. Things were looking up! Guy and his research team collected me from my resort the following morning. The weather had improved and Guy was heading for Hanifaru. Even the researchers are only allowed to visit the bay on every other day as their vessel was categorised as a resort boat. On the other days, liveaboard operators are permitted to visit, and, unlike resort boats, are still allowed to dive in the bay until the end of the year.

On arrival at Hanifaru, one of the researchers always notes the wind direction and speed and also records the amount/type of plankton in the water and the water temperature. The team continually monitor the boat traffic in and around the bay in order to report the numbers of boats in the area at any one time, and more importantly their behaviour whilst in this conservation zone. As I was to discover, despite the fact that Hanifaru is policed by a ranger, liveaboard operators especially, do not adhere to the voluntary code of practice for visitors to Hanifaru.

Unfortunately, on my first visit the wind direction was not conducive to plankton accumulating in the bay, so the team decided to search for manta rays on the reefs surrounding Hanifaru. Within an hour there was a shout that a manta ray was in front of the boat and a painstaking routine followed. A researcher dived off the boat with a camera in hand and snorkelled in the direction of the manta. I was allowed to follow Emily, from the research team. The researcher then free dived down, waited for the manta to pass then swam towards the surface and took a photo of the underside of the ray. Manta rays have unique spots on their underbelly, like human finger prints – the research team have over two thousand individual manta rays on their database. We snorkelled with a further five rays that afternoon.

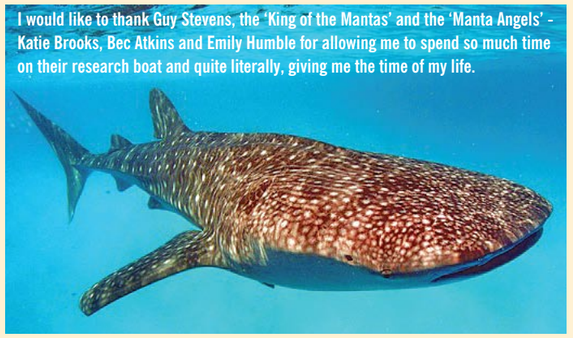
Two days later I went back to Hanifaru with the researchers, this time the wind direction was good for plankton in the bay. Five manta rays entered the bay and I spent a wonderful twenty minutes watching a manta ray being cleaned at a cleaning station. Unusually, for the Maldives, the manta had a missing tail and a shark bite wound which was being cleaned. On the return trip to Reethi Beach a sailfish jumped four feet out of the water in front of the boat and we were lucky enough to snorkel with Spinner Dolphins. The following day we found an aggregation of fifteen manta rays. It was the most amazing experience to see so many in one spot. At that time I thought this was the best experience of my life with marine animals – how wrong could I be!

My fourth day with the team was during the new moon and generally the best day for visiting Hanifaru. Guy Stevens was by this time advising a BBC film crew and the research boat was due to collect Guy and the crew to take them to Hanifaru. Then something quite remarkable happened: Katie, the lead researcher, took a call from the ranger at Hanifaru who told her that there was a Whale Shark in the bay. The ranger advised us to arrive quickly as dive operators were in the bay and, unfortunately, some individuals were harassing the shark.

The decision was made to go straight to Hanifaru and drop off one researcher, Bec, so she could ID the Whale Shark. I was allowed to join her. Unlike some operators, the research boat always enters the bay using the approved channel; this meant that there was a twenty minute snorkel to where the shark was last seen. When we arrived my heart sank as there was no sign of the shark and the dive operators were leaving. Bec reassured me that the shark might still be in the area. Sure enough, five minutes later, I heard Bec shouting "Whale Shark"!

I looked above the water to see a huge dorsal fin heading in my direction. Then under the water I saw a magnificent seventeen foot Whale Shark coming towards me. For the next two and half hours I snorkelled with a feeding Whale Shark and over forty mantas also feeding, barrel rolling and breaching. It was utterly incredible to see a Whale Shark feeding vertically in a water column, its giant gills moving in perfect rhythm. Guy said to me "Paul, experiences with marine megafuna don't get any better than this". I couldn't agree more - I can't imagine a better wildlife experience and it was definitely one of the best days of my life. When I returned to the boat deck there was Doug Allan, the marine photographer who filmed 'Ocean Giants', the recent wonderful BBC series. Doug was filming for a new Chris Packham show to be seen next year. He said he was confident that the footage he shot that day would be in the show. Doug said to me that "if everybody experienced five minutes in the bay then our conservation problems would be solved".

I sincerely hope that the proposed legislation to protect Hanifaru is passed and that Guy, who is so passionate about the bay, is involved in its conservation. Judging by my experience of a few days watching the bay, many dive boats especially liveaboard operators are abusing Hanifaru, whether that meant visiting the bay on resort days, entering the bay across the area where the animals feed at the surface, or simply cruising too fast. The sooner Hanifaru receives greater protection the better.



I would like to thank Guy Stevens, the 'King of the Mantas' and the 'Manta Angels' - Katie Brooks, Bec Atkins and Emily Humble for allowing me to spend so much time on their research boat and quite literally, giving me the time of my life.

Shark Fin Soup, Stirring It Up...

Nick Kenny

Peter Benchley once said that if he wrote the story of *Jaws* today, the victim would be the shark.

Ever said that at a party, only to be greeted by blank stares? I love that quote. For one thing, it demonstrates a man's eagerness to correct the possible destruction he has bestowed upon a species. It also allows me to enlighten the person standing in front of me with the blank stare: "Yes, in fact, some of my favourite dives have been with sharks". This often earns me the "you're mad" quote, but then allows me the chance to enthuse about one of my favourite subjects – sharks.

I saw my first shark (mechanical Jaws) at the age of fourteen at Universal Studios, USA and it both fascinated and frightened me. I began scuba diving in my twenties and from then developed a love and respect for the oceans. We, as divers, are a pretty informed lot, and are aware of the beauty of our beloved oceans and all that they contain. We are also largely aware of Man's part in the destruction of the very life they hold.

We have seen Man threaten species before. The plights of the tiger, elephant and rhinoceros, among others, are well known. Decades of intensive hunting has pushed certain species to the point of near extinction. We now know that the elephant is considered a keystone species in the African landscape. Tigers play an important part in being a 'top of the food chain' predator.

This is the backdrop to my passion. The shark is a vital component at the apex - or pinnacle - of the food chain and therefore essential to the harmonious existence of life on this planet. We are threatening that existence with the slaughter of tens of millions of sharks every year. This passion led me to visit one of the Chinese restaurants in Oxford which listed 'Shark Fin Soup' on its menu.

My first problem was trying to open up a discussion. Easier said than done, when you are faced with unfriendly, paranoid staff who can't decide whether the manager is available to talk to or not. Managers who were initially free to talk were, after I gave the staff details about what I wanted to discuss, subsequently unavailable. I returned a couple of days later, but was once again rebuffed. I decided that if they would not take notice of me, I would bring notice to them.

Now, believe it or not, standing on a public path outside a restaurant in broad daylight, dressed in full scuba kit – cylinder and all – holding a picture of a shark, does attract a certain amount of attention. As it happened, the first car that passed was a police car, but as I was not doing anything wrong, had to settle with driving slowly on – that suited me! Others walking by asked what on earth was I doing.

My local paper, the Oxford Mail, arrived to take photos and hear my story. The session was completed without any angry interruptions from Chinese chefs. Before the story was printed, the paper contacted the restaurant to get their side of the story. This proved difficult, but eventually, the restaurant claimed the shark meat wasn't real. I followed the article with a phone call, with the intention of reporting them to the trades description act on the grounds of misleading customers. They informed me they were taking it off the menu and were not prepared to talk about the matter any further.

A week after the article was published in the paper I was invited by BBC Radio Oxford to discuss shark-finning and the supply of shark fin soup in local restaurants. It seemed people were really interested to know more about it, and equally, were horrified to discover the facts behind the ruthless practice of finning sharks for soup. My little campaign was snowballing...

Nick Kenny outside the Oxford chinese restaurant. © Ben Mostyn.

The shark remains the anti-hero. You can bet your bottom dollar if these restaurants were selling panda soup, or tiger feet, there would be immediate uproar. Let's not forget, shark fin soup has no nutritional value, and no taste. The soup is often flavoured with pork, crab, or chicken.

In my unborn child's cot, there are cuddly sharks to snuggle up to. It remains my belief that education is the key to changing attitudes, and preserving the beautiful life upon our planet, and in turn preserving our very selves. The next time you see shark fin soup for sale in your local restaurant, speak up for the sharks, and speak up for our planet.

SPONSORED EVENTS and DONATIONS

The Shark Trust is very grateful to those who support shark conservation by giving generously. Over the past few months, we've continued to receive many donations, as well as money raised by people giving their time to fundraise for the charity and others giving in lieu of celebratory events. The Trust has also received many 'in memoriam' donations from friends and family of long-term supporters who have sadly passed away; our thanks to you all.

Fundraising events over the past few months have included: Andrew Verhoeven who raised £133 by designing and selling a sticker asking people not to eat shark fin soup; the Great North Swim team raised £2065.23 by completing the swim at Lake Windermere with fins attached to their backs; Kieran Pearson from Sub-Mission Dive School/npower organised a Fin4finning event raising £640.03 and Camel Dive Club raised £345 through t-shirt sales and a club event.

Thank you also to Makowhiteness Ltd who made an annual donation of £600 from sales and Baird Subsea Ltd who donated £500, as well as long standing supporter Mrs Du Preez and everyone else who has made a donation in the past few months.

As always, we appreciate your contributions and support which allows the Trust to continue its work in securing a better future for sharks.

The Deep Sea World Angelshark Breeding Project

by Chris Smith
Zoological Manager – Deep Sea World

This collaborative project between Deep Sea World Fife and Blue Reef Aquarium, Hastings involves the only captive, mature pair of Angelsharks *Squatina squatina** in the UK. The project was first conceived after a meeting at an aquarium workshop in 2001. There are believed to be only four adults of this species in captivity in the world (American Elasmobranch Survey 2008). This project was considered vital, given the status of Angelsharks in the wild, particularly in UK waters.

A Critically Endangered shark

There are eighteen different species of angelshark found worldwide. Historically, the distribution of this particular species (*S. squatina*) included the temperate waters of the Northeast Atlantic: from southern Norway and Sweden to the Western Sahara and the Canary Islands, including around the British Isles and in the Mediterranean and Black Seas.

The International Union for the Conservation of Nature (IUCN) Redlist of Threatened Species first listed the Angelshark as 'Vulnerable' in 2000. In 2006 this was upgraded to 'Critically Endangered'; at the same time the species was declared extinct in the North Sea. In 2008, they were afforded additional protection within the Wildlife and Countryside Act (1981) – essentially prohibiting intentional capture, and making it mandatory that any bycatch be released without harm.

Angelsharks are highly vulnerable to being caught as bycatch in bottom trawls, set nets and bottom long-lines. Historically, they have been used for human consumption, both fresh and salted (dried), and in the production of oil and fishmeal. They grow very slowly and mature only at a large size, at around eight to twelve years of age. They can live for as long as thirty-five years and reach almost two metres in length. The result is that very few Angelsharks reach maturity and breed, leading to an ever-declining population.

* For the purpose of this article 'angelshark' (lower-case) refers to all eighteen species making up the angelshark genus. 'Angelshark' (upper-case) refers specifically to the Angelshark *Squatina squatina* – the species resident in UK and Northeast Atlantic waters.

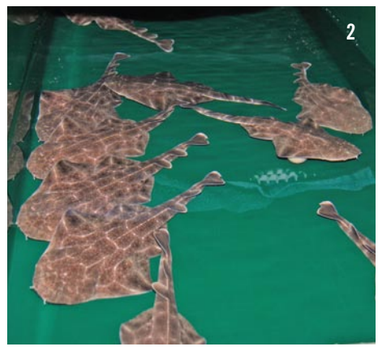
A glimmer of hope

In 2002, one of our male Angelsharks was transferred to Hastings, which at the time held the female. In 2004, by reciprocal agreement, the female shark was transferred to Deep Sea World where she was introduced to the second male within our 4.5 million litre shark tank. Since then both mating and breeding behaviour has been recorded. In April 2007, it was first suspected that the female may be pregnant, when she visibly changed shape underneath.

In July 2007, with two vets in attendance, we performed an ultrasound scan to confirm that she was pregnant. This was thought to be the first ultrasound scan of an angelshark. Initial estimates put the age of the pups at around four months. The pups are born after almost twelve months and are around twenty to thirty centimetres length at birth. Angelsharks have been known to give birth to between nine and twenty pups, although unfortunately for the female she later produced only three stillborn pups between September and November of that year. This species is thought to be unique amongst angelsharks, in having a two year breeding cycle. It wasn't until August 2011 that we again suspected the female may be pregnant. In November, following veterinary advice, the zoological team examined the female. During this examination a single premature (i.e. its egg sac still visible) pup was born. The female was removed from main display to an isolation tank to await the birth of her remaining pups.

Following several weeks of 'contracting', but with no pups born, it was decided that we would assist in the birth of the pups as by this time the female may have become weakened or distressed if left any longer. In early December, again with veterinary assistance, and with the use of a flexible endoscopic camera, a further fourteen pups were hand-delivered over two days. All the pups were measured at birth and photographed for identification. Following a month of recuperation the female shark has been returned to the main display. The pups continue to do well.

This, we believe, is yet another world first for this particular species – the world's first captive conceived pups. This is great news for these sharks as it follows captive breeding successes in America with the Pacific Angelshark. It, at the very least, highlights the potential to successfully breed pups within the captive environment.



Main image:
Deep Sea World staff taking careful measurements. © Deep Sea World.

Image 2:
Juvenile Angelsharks. © Deep Sea World.

Ask an Expert...

Leopard Shark v. Zebra Shark

As part of our Sightings Database project www.sharktrust.org/sd, divers often send the Shark Trust photos of sharks, skates and rays sighted on dives around the world. Most of the time their identification skills are spot-on, but occasionally confusion arises between some species. With this in mind the Shark Trust asked Chris Brown, Senior Curator for Sea Life Aquariums, to explain the confusion between the Zebra Shark and the Leopard Shark.

If you go scuba diving off California and see a group of spotted sharks it is more than likely that you have run into the aptly named Leopard Shark *Triakis semifasciata* (see image 1). These elegantly patterned sharks feed in shallow waters eating a variety of bottom dwelling creatures including crabs and shrimps.

However a long trip across the ocean to the warmer seas around Thailand could leave you a little confused when you find another very spotty, but much larger shark also known locally as the Leopard Shark (see image 2). This charismatic shark is yellow with brown spots and has a tail that is almost as long as the rest of its body. It spends large amounts of the day time resting on the sea floor and feeds on molluscs, crustaceans, small fishes and even sea snakes. Despite the shark's obvious spots and yellow-brown colouring, this is actually a Zebra Shark *Stegostoma fasciatum*, and the reason for its correct name becomes clear when you see a baby Zebra Shark (see image 3).

Last month, aquarists at Loch Lomond Sea Life were lucky enough to have one of these beautiful sharks emerge from an eggcase that has been its home for the last five months. It has a striking black and yellow pattern that resembles that of a zebra (see image 3). The shark will soon be moved to a nursery display at Scarborough Sea Life where its patterning will begin to give way to the spotted leopard-like print that is characteristic of the adults (see image 4).

Chris Brown
Senior Curator, Sea Life

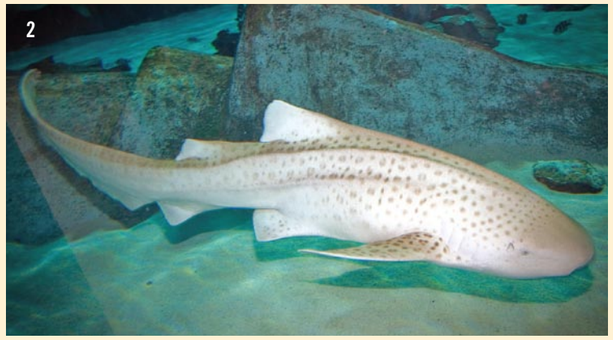


Image 1: The aptly-named Leopard Shark *Triakis semifasciata*. © Chris Brown.
Image 2: But this much larger shark *also* has spots and is *also* sometimes called a Leopard Shark… Despite this, marine biologists know this species as the Zebra Shark *Stegostoma fasciatum*. © Chris Brown.
Image 3: A juvenile Zebra Shark; it is from this stage of their lifecycle that Zebra Sharks are named. © Chris Brown.
Image 4: An adult Zebra Shark being carefully moved by Sea Life staff. © Chris Brown.

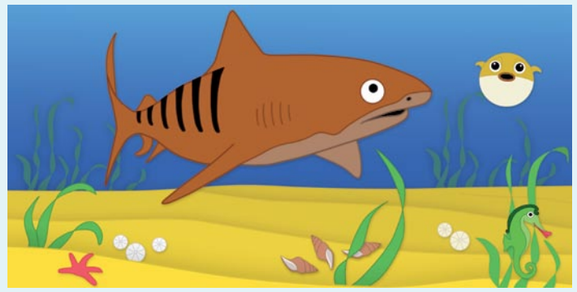
Spot the Difference

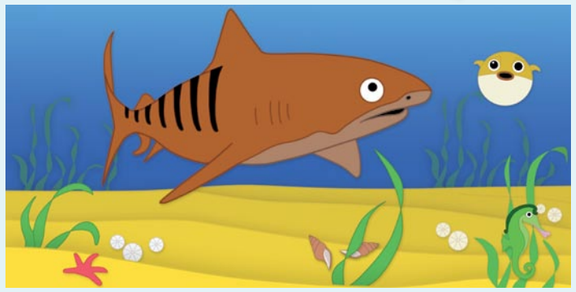
There are 8 differences between the first and second image below. Can you find them all? If so, circle the differences on the second image and post it to us, along with your name and address.

If you get all of the 8 differences correct, you'll be entered into a prize draw to win an Oscar the Basking Shark book. Please send us your answers by Monday 30th April 2012.

Send your entries to: The Shark Trust
4 Creykes Court, 5 Craigie Drive
The Millfields
Plymouth
PL1 3JB

Good luck!

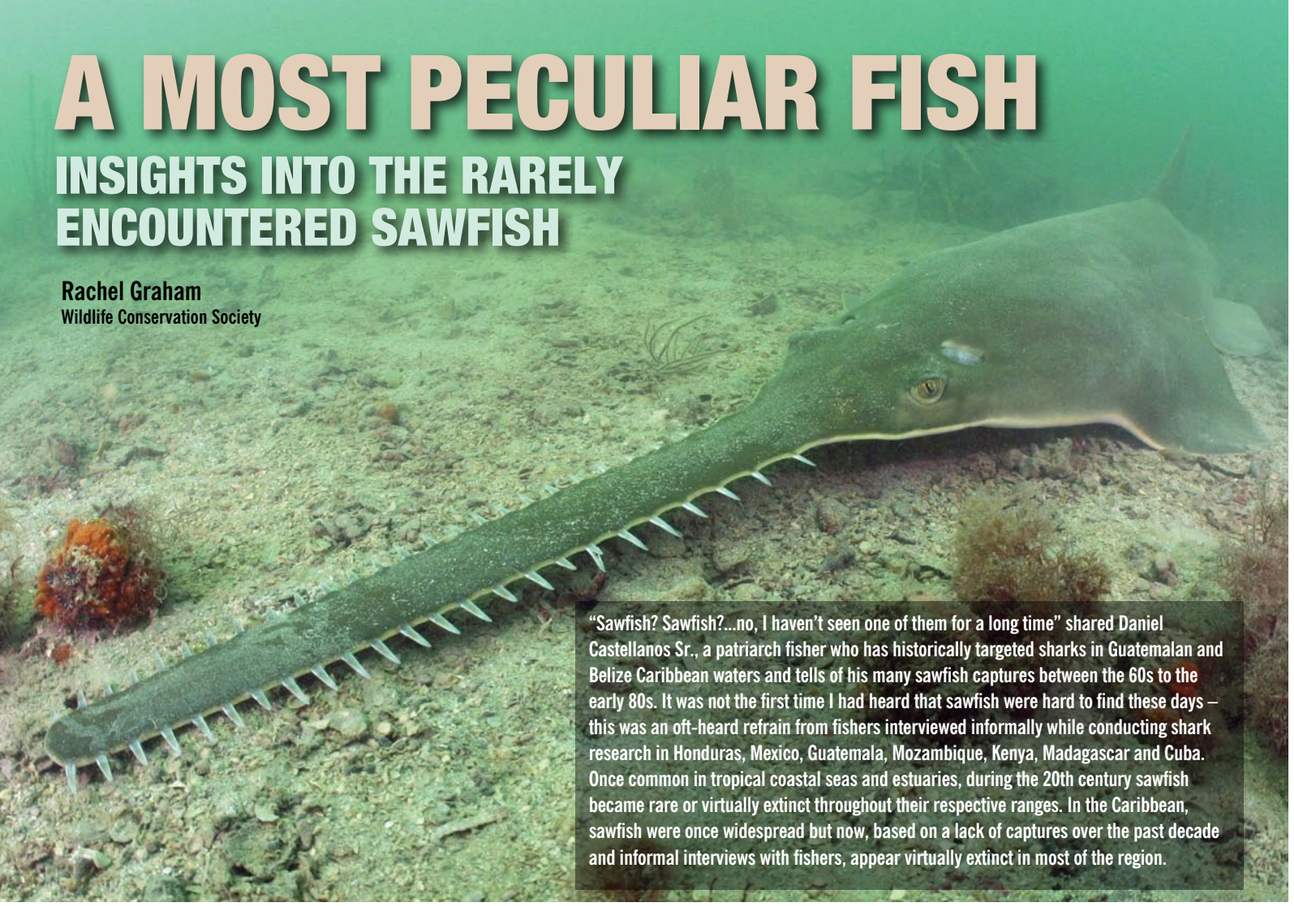




A MOST PECULIAR FISH

INSIGHTS INTO THE RARELY ENCOUNTERED SAWFISH

Rachel Graham
Wildlife Conservation Society



"Sawfish? Sawfish?...no, I haven't seen one of them for a long time" shared Daniel Castellanos Sr., a patriarch fisher who has historically targeted sharks in Guatemalan and Belize Caribbean waters and tells of his many sawfish captures between the 60s to the early 80s. It was not the first time I had heard that sawfish were hard to find these days – this was an oft-heard refrain from fishers interviewed informally while conducting shark research in Honduras, Mexico, Guatemala, Mozambique, Kenya, Madagascar and Cuba. Once common in tropical coastal seas and estuaries, during the 20th century sawfish became rare or virtually extinct throughout their respective ranges. In the Caribbean, sawfish were once widespread but now, based on a lack of captures over the past decade and informal interviews with fishers, appear virtually extinct in most of the region.

Spectacular, endangered and poorly known

Sawfish (Family Pristidae) are among the most spectacular, endangered and poorly known cartilaginous fishes of the world. Contrary to popular belief, sawfish are not sharks and instead belong to the ray family, although sharks have evolved their own saw-bearing versions with the equally rare sawshark species (Pristiophoriformes). What makes a sawfish special? Their unique and bizarre appearance with famous toothed 'saw', or 'rostrum', has generated legends, and sawfish have been adopted as talismans and symbols by ancient cultures and modern organisations alike[1]. Even the ancient Maya of Central America kept rostra and buried them with their dead centuries ago.

Distributed globally in subtropical and tropical waters, sawfish are primarily linked to shallow sand and mud flats in estuaries and mangrove habitats where the waters are often turbid. These habitats are also often the most heavily fished thus bringing sawfish populations in contact with coastal communities. Their relatively rapid disappearance over the past 30 years has coincided with the increase in human coastal populations and concomitant fisheries, both targeted and as bycatch. Sawfish are threatened primarily by widespread use of nets in which they become entangled, but are also caught with harpoons, longlines and even shrimp trawlers. Fishers consider sawfish a nuisance because they destroy fishing gear and are even perceived by several people interviewed as a threat as they have been known to impale people and boats with their rostral "teeth". When captured, their meat is often sold as fillets, their fins are sold to Asian traders for fin soup, their livers are rendered for oil which contains high levels of Vitamin A and their saws are highly sought after by the curio trade. Unfortunately, the decline of sawfish has been compounded by their life history characteristics of longevity, late maturity and very low fecundity, held in common with other cartilaginous fishes. Coastal development has also led to widespread habitat loss and degradation through pollution and increased sedimentation from the erosion of watersheds.

Populations of six sawfish species are now at such critically low levels that they are listed under Appendix I of the Convention on International Trade in Endangered Species of Fauna and Flora (CITES), prohibiting all capture and trade; likewise, the Freshwater Sawfish *P. microdon* is listed under Appendix II, regulating continued trade, primarily for aquaria. Assessment by the International Union for the Conservation of Nature (IUCN) reached a similar conclusion, listing all sawfish species as Critically Endangered. This suggests that unless pressures on these species are significantly reduced and population trends reversed, they may well become extinct in this century.

Main image: A 2m long Smalltooth Sawfish *Pristis pectinata* lying in wait in the Everglades National Park, Florida, US. This species has benefited from protection under the United States Endangered Species Act since 2003 and is listed on the CITES Appendix I. Image © Doug Perrine.

2

Taxonomic confusion

The lack of scientific knowledge of sawfish reinforces their mystique. In fact, the number of species of sawfish extant is still unclear. Until recently this group was thought to comprise seven species, including the Smalltooth *Pristis pectinata* (main image), Largetooth *P. perotetti*, Common *Pristis pristis*, Freshwater *P. microdon*, Green or Narrowsnout *P. zijsron*, Dwarf *P. clavata* and Knifetooth *Anoxypristis cuspidate*. Yet recent genetic analyses may lead to a taxonomic revision of this family. A review of the '*Pristis pristis* complex', a grouping of three species that bear morphological similarities (*P. pristis*, *P. microdon* and *P. perotetti*), may indicate that *P. microdon* and *P. perotetti* are one and the same species[2]. However, occurrences of these two species are now so rare that it is difficult to find current samples, with recent genetic analyses relying on samples taken from historical blades.

Sawfish are dorso-ventrally flattened with two sets of gill slits positioned on the underside of the body. They can reach prodigious sizes with a recent specimen of Freshwater Sawfish caught in 2011 near Goa, India, measuring 5.6 m total length (image 3). Similarly, the Smalltooth Sawfish is known to grow very rapidly in its first two years of life (up to 85 cm in their first year) and may reach 6 m total length[3]. All species are believed to be ovoviviparous (pups develop in eggcases and born live) with female Smalltooth Sawfish reaching sexual maturity at 3.6 m in length[4]. Interestingly, different species have different number of "teeth" along their rostra and Largetooth Sawfish (image 2) even show sexual dimorphism with males possessing an average of 18 "teeth" along their rostrum compared to the female's average of 15 "teeth"[5]. The saw is in fact an extension of the cartilage from the head and was recently found to possess a multitude of gelled filled sacs (ampullae de Lorenzini) along the saw's surface, which enables the fish to sense and actively hunt nearby prey in turbid waters or in the sea-floor substrate[6].

Thomas B. Thorson is considered by most in the field of elasmobranch research as the patriarch of sawfish research. With a focus on Central America and Nicaragua in particular, Thorson published the first scientific papers revealing sexual dimorphism in rostral teeth counts, fisheries and habitat preferences of the sawfish and a host of other elasmobranch species in the 1970s and 1980s. Recent investigations conducted at three key sites in the United States and Australia, where sawfish are still encountered, has provided novel insights into the species' biology and spatial ecology. In Florida, research on a small population of Smalltooth Sawfish has elucidated patterns of abundance, seasonality and movements through field captures, acoustic and satellite tagging and a Florida-wide angler encounter program[7,8,9]. Studies conducted in Australia's northern and western coastal regions, the Fitzroy and Robinson Rivers in particular, have revealed relatively thriving populations of the Green, Dwarf, Knifetooth and Freshwater Sawfish. These studies are providing insights into populations, growth rates, behaviour, spatial ecology and the identification of critical nursery habitats[10,11,12,13]. Although insights gleaned from the rapidly expanding field of sawfish research is providing much needed data for their management and conservation, it is struggling to outpace these species' declining populations.

3

An uncertain future

Unfortunately, the future is not rosy for the sawfish: a lack of political will and local interest in curbing unsustainable fishing techniques such as the use of nets and longlines in most range countries is likely to block any conservation effectiveness. Outside of the USA and Australia, countries that have protected sawfish either through species-specific measures such as gear bans (Panama, Belize) and species bans (Honduras) have few, if any, recent records of capture due to low or extirpated populations. Complicating management measures further is the isolation of remaining populations – a situation that could contribute to local extinctions, as may have already occurred in Central America. Nevertheless, recent genetic analyses of samples taken from historic rostra and living Smalltooth Sawfish found that the relatively small extant population (250-350 animals constrained to southwest Florida) shows little evidence of inbreeding and may in fact retain the majority of its genetic diversity[14]; this bodes well for small isolated remnant populations if they are allowed to recover. As such, there is a continued and critical need for information on extant sawfish species, their distribution, populations and habitat in range states outside of the USA and Australia. This information can help in the implementation of conservation measures in other areas where sawfish still occur or could become re-established.

Admittedly, I have been looking for sawfish for 15 years while working with fishers in the Western Caribbean and Central America, and I have yet to see one of these curious and iconic animals in the wild. I stare at the sea in front of my house in Southern Belize and recall local fisher accounts of thriving sawfish populations up until the 1970s and wonder how two sawfish species once so abundant in these waters could have disappeared so quickly and with such finality. Although divers and dive guides interviewed would like to see the sawfish make a comeback, many fishers queried about their interest in seeing sawfish populations re-established in the Western Caribbean evinced little enthusiasm for the species or their reintroduction, even if alternatives were found for the use of nets. They admitted that sawfish would not be missed as they considered these fish dangerous, of relatively low value and a nuisance.

Now, every time I see a saw hanging in a restaurant I excitedly ask for the fish's history in the hope that it represents a recent capture and therefore a possibility of a remnant population. Unsurprisingly though, all of the fish were captured over 20 years ago. If we are unable to adequately protect remnant populations of sawfish and their habitats, all that will remain of these creatures by the end of this century are their rostra, hanging in the bars and restaurants of countries where they once thrived.

Rachel Graham is director of the Wildlife Conservation Society's 'Gulf and Caribbean Sharks and Rays' Program, and is currently based in Belize. In 2011 Rachel won the prestigious Whitley Gold Award for her conservation efforts (see Shark Focus 41).

4

Image 2: The rostrum of a Largetooth Sawfish *Pristis perotetti* near its capture site in the Sarstoon River on the border of Belize and Guatemala. The sawfish had been captured in the early 1980s. According to patriarch fishers interviewed, prior to 1975 the Sarstoon area used to host an abundant population of Largetooth Sawfish that were captured in nets usually targeting other species. The meat was salted and sold in Guatemala, the fins sold to Chinese restaurants and the saw was either given away or sold as in the curio trade. Image ©Rachel Graham.

Image 3: A recent net capture (18 January 2011) of an 18' 4" Indian Ocean Largetooth Sawfish *Pristis microdon* near Goa, India. This rare animal sold for 47000 Rs or 1,000 USD; the previous capture record for this species in this area dated over 30 years ago. Image © Unknown.

Image 4: Beau Yeiser, a researcher at the Mote Marine Laboratory, Florida, secures a Smalltooth Sawfish *Pristis pectinata*. This Critically Endangered species can reach a total length of 550 cm (possibly 760 cm), and has a maximum life span estimated to be between 40 and 70 years. Image © Colin Simpfendorfer.

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*View this issue online for full references: **www.sharktrust.org/members**.

The Times They Are A' Changing...

Darren Caple
Dive Centre Manager
Kuredu Prodivers, Maldives

The Maldives: 1,192 islands, strung like a necklace across the equator. Idyllic yes, but it's anything but peaceful! Stick your face under the water and the throb of life pulsating through the reefs and channels literally leaves you gasping for breath. Size matters in the Maldives, and what the diminutive islands lack in length and height, the fish more than make up for. Life underwater is magnified, with sharks being one of the larger than life creatures on show. It's an island chain full of superlatives.

2

The Maldives rank as one of the world's top destinations for seeing sharks in their natural habitat. The currents that run through the atolls provide an adrenaline rush that will satisfy the craving of the most addicted junkie, and it's these currents that bring the sharks in.

Twenty-nine species of shark have been recorded in Maldivian waters, ranging from the biggest fish in the water, the Whale Shark, right through to hammerheads, Oceanics, threshers and Tigers. The most commonly seen sharks while diving are the Grey Reefs and the Whitetips. Probably the most common shark in the Maldives though has to be the juvenile Blacktip Reef Sharks that have made countless islands their hunting grounds, patrolling the lagoons and perfecting their skills for later on in life. But the Blacktip's remain a mystery in the Maldives: encounters with adults are extremely rare, and nobody is quite sure where they go once they are large enough to fend for themselves.

Shark heaven

The incredible opportunities to see sharks are numerous, and there are not many divers that leave the Maldives without having had their hit of the action. Indeed, *Prodivers*, based in Kuredu Island Resort, and the largest diving centre in the Maldives, boasts regular shark sightings on over half of the sixty dive sites it frequently visits.

Top of the list includes Kuredu Express, a dive site that certainly lives up to its name, with the chance to drift along and hold on in-current and enjoy the action. Although the resident population of sharks do not compete in terms of numbers with some other dive sites, what makes Express incredible is how curious the Grey Reef Sharks are and how close they can often come to divers.

Fushivaru and Felivaru Kandu's, on the other hand, often throw up huge numbers of Grey Reefs. Fifty to sixty sightings on a forty minute dive are not uncommon, together with schooling eagle rays, barracudas, jacks and stingrays. Its adrenaline central, and its dives like this that have embossed the Maldives in the hearts of all big fish fans.

A recent discovery two hours away from Kuredu is rapidly becoming a firm favourite with the divers visiting the resort. With a resident population of twenty to twenty-five Grey Reef Sharks, Orimas Thila triples up as breeding ground, nursery and cleaning station for the locals. Regular sightings of guitarfish are also made throughout the year and the mating behaviour and technique of this elusive fish has been witnessed there.

Reality check

Although this sounds impressive and suggests that the Maldives has a healthy shark population, the reality is that the numbers in the water declined enormously between 2000 and 2010. The Maldives were an active player in the supply of shark related products around the world and exported approximately 2.6 million kilos of shark meat and fins between 2001 and 2010. Sri Lanka was the largest customer, purchasing over two million kilos alone.

Whereas previously Whitetip Reef Sharks were abundant across the whole atoll chain, sightings over the past twenty years have plummeted to lone-rangers, seen occasionally at sites where they were once almost guaranteed. Divers throughout the years have been shocked as prime shark spots were devastated by the shark fishing industry. Indeed, 'Shark Head', located in the Ari Atoll and one of the most famous shark sites in the Maldives, quickly lost its reputation following the witnessed removal of approximately twenty Grey Reef Sharks. Kuredu Express, another one of the 'guaranteed' encounter spots was dry for well over a year in 2009/2010 following the slaughter and dumping of nine Grey Reef Shark heads on the outer reef next to the dive site.

First steps

The Maldives has, however, been very proactive in protecting one of its greatest natural attractions and resources. The first visitors to the Maldives arrived in the 1970's, and in 1993 the government took its first steps in protecting some of its rarer species. As more and more visitors arrived, the country was very quick to realise the attraction and the importance of the underwater world. The first species to be protected include whales, dolphins, berried female lobsters, Giant Clams and Titan Shells.

In 1995 the list of protected species was extended to include Napoleon Wrasse and Black Coral. The former was being caught to exploit not only its abundant flesh, but also its huge lips (reaching up to $400 a pair) which are regarded as a delicacy in China. While farming of the latter, to feed the jewellery boom arising from the influx of tourists, was proving to have a devastating impact on the growth and coverage of the species.

Also in 1995, Whale Sharks became the first species of shark to be actively protected. Whale Shark liver oil was commonly used by Maldivians as a way of treating the wood that would later be used to build their 'dhoni' hulls (traditional style of boat). The oil offered both water protection and was used as a sealant to help prevent parasites. As stinky as the substance is, it was also used as a traditional treatment for muscle and joint aches and pains!

Next on the list came the five different species of turtles that can be found in the Maldives. A ten year ban on killing Green, Hawksbill, Loggerhead, Olive Ridley and Leatherback Turtles came into effect in June 1995, and was later renewed for another ten year period in 2005.

Live value

It was starting to look like the shark was not a priority, but in 1998 a regulation was implemented prohibiting shark fishing within a twelve mile radius of atolls involved in the tourism industry. This was due to growing concern amongst divers and tourists that shark populations were already starting to decline.

Nevertheless, the drop in numbers continued as enforcement of this regulation was extremely difficult. When a country is geographically spread over a staggering ninety-thousand square kilometres, and over eighty per-cent of it lies beneath the surface of the water, the enforcement of any regulation is sure to throw up considerable problems. As such, shark fishing in the tourist atolls continued and populations continued to decline.

A single shark is estimated to be worth $32 to the individual Maldivian fisherman. Revenue coming in from divers keen to experience these sharks in one of the best spots in the world is estimated to be over $7 million per year – putting the revenue generated by a single live shark somewhere around the $60,000 mark. Clearly the financial benefits of keeping the fish alive far outweigh the dead alternative. Convincing local fishermen of this is another story.

As the local fishermen depleted shark populations across the atolls, it was becoming more noticeable that sharks were disappearing. Divers were seeing less and less, but at the same time, Maldivian shark fishermen were also reporting smaller catches. Numerous theories have been bandied around to try and explain why – including one that claims global warming and rising sea temperatures are forcing the sharks into deeper, cooler water. However, the harsh reality for all parties was the fact that shark populations were in severe decline. This was reflected in export figures which almost halved between 2004 and 2007.

Shark-safe sanctuary

With pressure mounting, the government announced in 2009 that the ban on shark fishing would be extended to include all atolls during 2010. They simultaneously announced to the world that the Maldives would also phase out the export of all shark-related products, making it extremely difficult for local Maldivian fishermen to continue making a living this way. Sensitive to the plight of the shark fishermen, the government did buy back shark fishing equipment to the value of over $450,000, as a form of compensation. Support is also being offered in the form of further training to ensure employment can be found for those looking for a new profession.

Tourist numbers have continued to increase and in 2012, the Maldives expects to receive over one million visitors for the first time in its history. With resort prices increasing in parallel to the demand, the value of the shark diving industry is becoming even more important as greater numbers of expectant divers arrive at Male International Airport. The results of the ban are already evident. The message that the Maldives is now a 'Shark-Safe Sanctuary' looks like it has even made it to the sharks themselves. Sightings appear to be up, and even sharks that haven't been seen on some sites for a number of years have started to reappear.

With data on shark numbers and locations very thin on the ground, it is incredibly important for divers and dive centres to help out wherever possible by logging their sightings of sharks and rays. By monitoring what is happening on a day-to-day basis at each resort or dive site, divers are providing invaluable data on the health of the wider Maldives shark population.

As the Maldives prepares to go public with the announcement that it is now a 'Shark-Safe Sanctuary', divers, dive centres, and even the local communities are optimistic of a bright shark future. As the great Bob Dylan once sang "*The Times They Are A' Changing*".

Editors comment: With effective enforcement, the shark conservation measures of the Maldives should provide a haven in the midst of the Indian Ocean. The Maldives can also influence far beyond their territorial waters through positive engagement with the Indian Ocean Tuna Commission, Parties to which have the opportunity to adopt a range of conservation and management measures including improved data collection.

Main image
Blotched Fantail Ray *Taeniura meyeni*. © Ray van Eeden.
Image 2
Giant Guitarfish *Rhynchobatus djiddensis,* locally known as the Shovelnosed Guitarfish. © Ray van Eeden.
Images 3 to 5
Blacktip Reef Sharks *Carcharhinus melanopterus*.
© Ray van Eeden.


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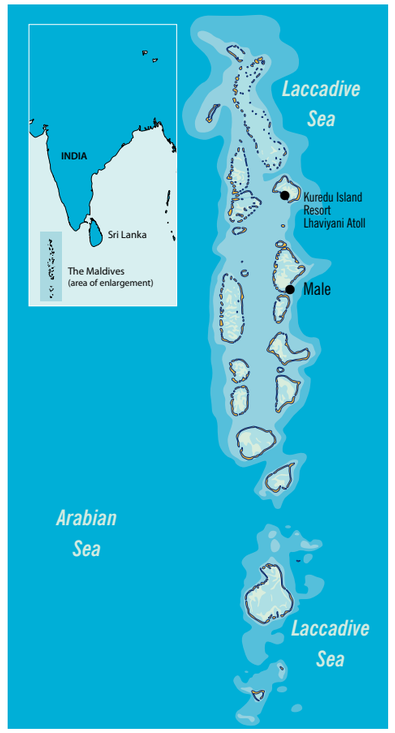


Map of the Maldives

CONTINUING THREATS TO SOUTH AFRICA'S WHITE SHARKS

by Richard Peirce

In April 1991 the White Shark *Carcharodon carcharias* was granted protection by the South African government. The move was welcomed and applauded all over the world by those interested in marine conservation. Soon after this cage diving took off and the White Shark established itself as an increasingly valuable eco-tourism asset for the Western Cape.

According to Lesley Rochat this type of photo alone (taken in South Africa) is not grounds to prosecute. © Ryan Johnson.

The economic fortunes of the small town of Gansbaai and its neighbour Kleinbaai were transformed, as poachers turned gamekeeper and yesterday's fishermen became today's cage diving operators, and the power of money turned a whole community into shark wardens. On the surface this looks like a classic wildlife success story, yet evidence is mounting that the White Shark is again being targeted by 'sportsmen' and trophy hunters, with the authorities making little or no attempt to enforce the protection granted 21 years ago.

'Shark Warrior' Lesley Rochat, through her organisation AfriOceans, is running a campaign 'WANTED! DEAD OR ALIVE?' to increase public awareness and encourage the authorities to act. Lesley's campaign has already attracted the support of Chris and Monique Fallows, Wilfred Chivel of the Dyer Island Conservation Trust and the UK-based Shark Conservation Society. I interviewed Rochat and Fallows and according to them White Sharks are being targeted and caught by anglers fishing off the beach in False Bay, in Mossel Bay on the Hartenbos beaches, and an area called the Points.

Fallows noted "The guys know exactly where to expect the Great Whites and they slide out very large baits specifically for them. If you speak to them they'll tell you they are trying to catch a Great White, but if they become suspicious they'll tell you they are after Bronze Whalers." He continued, "Even if we accept that catching a Great White is a mistake, the fact that they are using gaff hooks to land the animals is completely against the law which says that you may not 'harm, kill, or disturb' Great White Sharks".

Neither Fallows nor Rochat believe the authorities are acting effectively to stop this law-breaking. Rochat said "I contacted our fisheries department and was asked not to do anything as the issue was under investigation and action would be taken. I was told if I let the cat out of the bag and publicised the issue it could jeopardise their chances of catching the perpetrators. Now months later it's still going on and from what I can see nothing is being done to stop it. Photographs of guys on beaches with Great Whites they have caught is apparently not evidence enough, witness statements are also needed."

Chris Fallows had a view on photographic evidence, "It's a mockery. The camera doesn't lie. How can you not be able to take action when the guy has physically beached the animal and the photo clearly shows him and the shark?" Lesley added "I was told that photographic evidence alone would not stand in a court of law. Maybe intent has to be proved." Chris continued "Intent shouldn't need proving because the very fact they have landed the animal is a clear breach of the law. If you claimed to be after other shark species, and realised you had caught a Great White by mistake and cut it loose in the surf, you could claim it wasn't deliberate, but the law is clear on gaffing and dragging them up beaches, and as far as I know ignorance of the law is no defence. You don't catch Great Whites on little Mickey Mouse rods, you use robust equipment in specific ways."

I asked Chris to explain what fishing gear was being used and how. "They have come up with an ingenious way of catching large sharks. They use a device called a slider which is a one way swivel that clips onto your line. First they throw out the sinker which negates having to cast a heavy bait which would cut down the distance. Then they clip on the slider and, with an up and down motion, send the bait down the line to where the sinker is. This gives tremendous casting distance. In Mossel Bay I have even heard of them using remote controlled model boats to take baits far out."

South Africa's laws protecting White Sharks have been flouted before when angling skippers were able to obtain permits to catch them for 'research' purposes. Those caught breaking the law risked fines of 50,000 rand (£4,100) and Fallows believes the law now allows for fines of up to 200,000 rand (£16,300). The government departments concerned are the Department of Environmental Affairs and the Department of Agriculture & Fisheries. Despite evidence having been presented to both departments who promised follow up action, no prosecutions have yet resulted.

Mike Meyers of the Department of Environmental Affairs confirmed "…they are aware of the issue and a prosecution in Mossel Bay is being considered. They have been in contact with angling clubs advising on good practice and ensuring the law is understood, and are considering banning the use of the slider devices which enable large baits to be taken out long distances. They do not believe the number of White Sharks being caught each year is anything like the 50-100 suspected by Fallows and Rochat."

Fallows has recorded the deaths of over twenty White Sharks and believes that between 50 and 100 sharks are being caught illegally each year by anglers. He has taken Great White carcasses to Marine & Coastal Management on two occasions asking for action. In both cases the heads had been removed so the teeth or whole jaws could be sold. However in most cases the sharks are being targeted for 'sport' and are being released by the anglers; even so, Fallows and Rochat believe that mortality is high among sharks that have been released. Many are released with hooks still inside them, others are gaffed and dragged up the beach for photography before being dragged back into the water, and some are landed onto rocks.

White Shark history may eventually show that they have yet to survive their biggest challenge. Bantamsklip Farm is less than five miles across the water from Dyer Island, which is home to what is arguably the world's largest concentration of White Sharks. The site has been earmarked for the possible development of a massive 10,000 megawatt nuclear power station which many scientists, conservationists, and activists believe will have a major negative impact on the Dyer Island shark sanctuary.

Despite being the most feared fish in the ocean, and despite its much vaunted protection in South Africa, the White Shark still clearly has more to fear from man than man from sharks.

Support Chris and Lesley's efforts and sign the petition:
WANTED! DEAD or ALIVE?
http://aoca.org.za/pages/2896/wanted-dead-or-alive

WEB NEWS

New Shark Trust Website

We are very excited to announce that we're currently working on a new Shark Trust website, to be launched later this year, as part of our 15th anniversary celebrations. Over the past couple of months we've been revising content and liaising with a number of website developers and designers to bring you a new and improved website that will reflect the Shark Trust as it exists today. We have combined your feedback with results from the website questionnaire to create a more dynamic and engaging website; the new site will feature an exciting contemporary design, fresh new content, updated resources and additional interactive features.

Other features will include: a new state-of-the-art Shark Shop; an enhanced press area, providing readily available factual information about sharks, as well as position statements from the Trust; updated campaign and project areas; a revamped menu bar to provide easy access to all information on the site and improved subscription facility where supporters can sign up to receive our new e-newsletter, which will deliver all the latest campaign and shark research news directly to your inbox.

Juniors Section

We're also working on developing the current juniors section and can't wait to give our younger members a fun and creative space to explore the fascinating world of sharks. This area will include lots of interactive online games, as well as downloadable resources and interesting shark facts. You'll also be able to meet an array of shark characters, including: Wendy the Whale Shark, who loves to travel to tropical and exotic locations; Eagle Eye Ray, the astute young Spotted Eagle Ray with excellent vision; Chloe, the mysterious and shy chimaera and finally Berty the Basking Shark, the vegetarian philosopher!

Whilst an official launch date for the new website has not yet been set, these shark characters, along with their friends, will be making an appearance on the current Shark Trust website soon…

Members AREA Login Details

Username: Nervous, Password: Shark
Please Note: These membership login details are shared by all Shark Trust members, therefore when logged in under these details no items should be purchased from the Shark Shop, username and password details should not be changed, and the shark forum shouldn't be used.
(Please note the Shark Trust takes no responsibility for the content of third party blogs.)

EEA NEWS

The EEA Scientific Committee is Born!

Since the European Elasmobranch Association (EEA) was formed in 1996 I have been its scientific chair, providing advice and promoting scientific actions within EEA activities. The recent growth in research into chondrichthyan fishes all around the world, along with the implementation of the European Plan of Action for Sharks, is creating new opportunities and perspectives for the EEA, while highlighting the need to strengthen the EEA's scientific core.

At the last EEA meeting held in Berlin (November 2011), the board entrusted me to set up an EEA scientific committee (EEA-SC). As a result of the consultations, the EEA-SC is composed of the following members: Paddy Walker from Nederlandse Elasmobranchen Vereniging (Netherlands), Claudia Junge from Hai Norge (Norway), Fabrizio Serena from Gruppo Ricercatori Italiani sugli Squali, Razze e Chimere (Italy), Edward Farrell from the Irish Elasmobranch Group, and Michael George from Deutsche Elasmobranchier-Gesellschaft e.V. (Germany).

The main function of the EEA-SC is to propose scientific actions to be undertaken under the EEA umbrella. These actions could be related to sustainable management of shark fisheries, the conservation of chondrichthyan species and populations, and to educational projects. Some ideas have already been proposed – including the production of an educational kit on sharks in the main European languages and the creation of a bibliographic database on all chondrichthyan fishes occurring in European waters. Other research projects – including field work – are also planned. For these actions the EEA-SC will look for public financial support as well as private funding.

In the next issue of Shark Focus, the EEA-SC hopes to inform you of the projects and research to be carried out in the forthcoming months!

B. Séret
EEA Scientific Chair
On behalf of the EEA-SC
Contact: seret@mnhn.fr

Upcoming Events

15th Anniversary

This year is the 15th anniversary of the founding of the Shark Trust. We're looking forward to celebrating this at the November 2012 NEC Dive Show in Birmingham, as well as producing a series of reports highlighting just how far the Trust – and shark conservation – has come during this time.

- **On 2nd March** Conservation Assistant Cat Gordon will be presenting her work on the Basking Shark Photo-ID Database at the Southwest Marine Ecosystems Conference, at the Marine Biological Association, Plymouth.
- **On 7th June** the Shark Trust will be attending the Polzeath Marine Discovery Day, run by the Cornwall Wildlife Trust. Attendance last year was massive, so if you're in Cornwall it's worth a look.
- **On 27th July** the Trust will again be joining the Cornwall Wildlife Trust for their Shark Day at Polzeath – including an eggcase hunt, as well as presentations on sharks, skates and rays by marine biologists and other activities.

Basking Shark Code of Conduct

KAYAKERS

The following guidelines have been designed to help kayakers reduce the risk of injuring or harassing Basking Sharks, as well as for your own safety.

Do not approach within 100m of Basking Sharks – but if you do find yourself close to Basking Sharks:

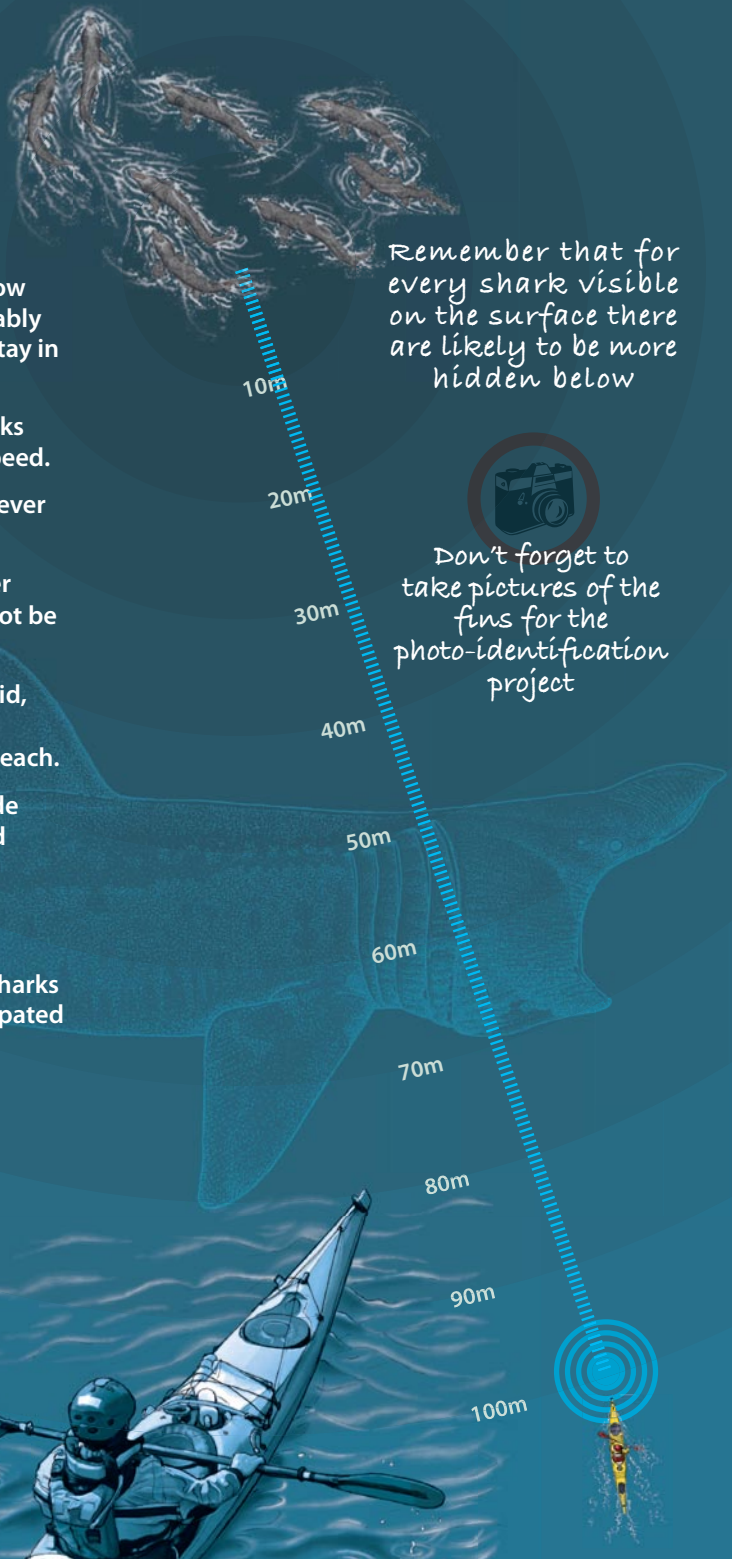
- Remain calm and quiet.
- Never paddle your kayak directly towards the sharks or allow several kayaks to surround them, as such actions will probably frighten them and make them dive or act unpredictably. Stay in a group, rather than stringing out around the sharks.
- Kayakers should not cross the path of the shark so the sharks can maintain their course without changing direction or speed.
- Avoid sudden movements which will disturb the sharks. Never use your paddle or kayak to touch a shark.
- Avoid pairs or large numbers of sharks following each other closely. This may be courting behaviour and they should not be disturbed.
- Although Basking Sharks are filter-feeders and mostly placid, they can startle if disturbed, often thrashing their tail with enormous power. Also be aware that Basking Sharks **do** breach.
- Sharks appear attracted to kayaks and often swim alongside and below, very close to the hulls. If you stay calm, still, and observe, there is a good chance they will come to you .

Tips

- Take time to observe the direction(s) of movement of the sharks and then quietly position your kayak alongside their anticipated course for a safe and enjoyable view.
  Wait for them to come to you.
- Don't forget to take pictures of the fins for the photo-identification project.

As a kakayer, you should also be aware that Basking Sharks are legally protected under Schedule 5 of the Wildlife and Countryside Act 1981, the Nature Conservation (Scotland) Act 2004 and the Northern Ireland Wildlife Order 1985, making it illegal to kill, injure or recklessly disturb Basking Sharks in British waters. Further protection against disturbance and harassment is provided by the Countryside and Rights of Way Act 2000. Any person committing such an offence could face up to 6 months in prison and a large fine.

Internationally, Basking Sharks are listed under CITES Appendix II, CMS Appendix I and II and UNCLOS Annex I.



www.baskingsharks.org

Illustrations by Marc Dando www.wildlifeillustrator.com