

Extinction



or a Billion-Dollar Future?

THE TRUE VALUE OF SHARKS BY STEFANIE BRENDL

Sharks are a big money-maker. That much is clear. Whether they are fished, viewed, fictionalized and written about, or exploited for their fear-inducing headlines, they make a lot of people a whole lot of money. Based on a brand-new analysis, the global entertainment industry and media has been bringing in profits that far outpace every other sector that is usually considered when we talk about shark economics.

Four decades of shark-specific TV programming, more than 75 big-screen movies and hundreds of documentaries later, the earnings

that have been generated are awe-inspiring.

Total disclosed earnings for 14 highlighted movies (including the *Jaws* franchise and *The Meg*) is \$2.9 billion. (Note: All monetary values listed are in USD.)

Sharknado is said to have a total franchise gross of \$4.5 billion.

Discovery Channel's Shark Week annual revenue is estimated at more than \$60 million. (National Geographic's Shark Fest earnings are undisclosed but are likely to be similar.)

Add to that the revenue from gaming, live entertainment, merchandising, magazines,

books and cartoons, and the numbers become mind-boggling.

Sheriff Brody from *Jaws* was right when he said, "We're gonna need a bigger boat," except that the sentence should continue with, "to make more shark movies!"

Moving on to the next powerhouse industry that benefits massively from sharks: dive tourism.

As determined by research papers in 2017, the global shark-diving industry is worth \$314 million per year and expected to double to \$780 million within the next 20 years. Sharks and rays in the Bahamas generate approximately

Stingrays are often seen during dives in the waters of the Bahamas. They are also the prey of some shark species, such as great hammerhead sharks.



\$113.8 million annually for the economy.

Sharks are likely the most bankable animal on the planet, contributing billions of dollars to economies just by being themselves. This should make us wonder about our current practices.

First, when it comes to the management and conservation of sharks, why are they currently valued only in terms of how many can be fished? Maximum utilization of a resource, as the Magnuson-Stevens Fishery Conservation and Management Act mandates, would lead us to make decisions based on how much can be earned. Surely, making money off one shark for decades is better than killing it and making money once.

And second, why are these billion-dollar industries so uninvolved when it comes to the conservation of sharks? As stakeholders, they could have a big influence on management and policy decisions if they were willing to engage. As funders, they could support the urgent work that needs to be done to protect the animals that fuel their businesses.

The answers probably have less to do with a lack of care and more with the fact that no one has questioned how business is done.

Before we go deeper into this somewhat absurd direction of talking about sharks as cash cows, it is important to note that threatened animals are usually protected only when humans can benefit directly. Instead of focusing only on money, we should recognize a shark's value to life in the ocean and our planet. Our oceans harbor 80 percent of our planet's life and generate 50 percent of our oxygen.



Sharks help keep oceans healthy in many ways and are important to food security. They keep fish populations healthy by making sure only the strongest and healthiest survive, and by keeping medium and smaller predators in check. In Australia, coral reefs were devastated after a reduction in shark populations led to other species eating more algae-eating fish, which led to an increase in algae, suffocating reefs. This effect is evident all over the world.

As predators at or near the top of the food chain, the presence of sharks affects how other

species behave. This is important, for example, to prevent the overgrazing of seagrass meadows and kelp forests, which capture carbon from the atmosphere 35 times faster than tropical rainforests.

Sharks are also directly linked to the carbon cycle of our planet. They migrate along coastlines and between islands, and help cycle the nutrients between ecosystems—laterally and vertically in the water column. This value is difficult to calculate because little research has been done on how much carbon sequestration

The Value of Living Sharks

INDIVIDUAL SPECIES VALUATIONS

(over next 30 years)

Guadalupe white sharks: \$123.1 million

Bahamas tiger sharks: \$33.1 million

Bahamas hammerhead sharks: \$14.6 million

South African white shark: \$241.7 million

TOURISM AND DIVE INDUSTRY STUDIES

Grand Cayman stingrays:

\$500,000 per animal, per year

(\$10 million to \$15 million over its live span)

Palau sharks:

\$18 million per year (Vianna et al., 2010)

Bahamas sharks and rays:

\$113.8 million per year (Haas et al., 2017)

Fiji sharks:

\$42 million per year (Vianna et al., 2011)

Global shark dive industry:

\$314 million per year; expected to double to \$780 million in next 20 years

(Cisneros-Montemayor et al., 2017)

happens via sharks or large predators in general. The International Monetary Fund says that whales collectively are worth an estimated \$1 trillion for their contributions to carbon capture and ecotourism. They bring nutrients back and make the plankton grow, which captures carbon and creates food. Sharks have not been researched to that degree, but it can be assumed it is similar in value.

But here comes the reality check: Policies and management decisions are overwhelmingly influenced by what a resource represents in terms of money and the economy. So, let's go there.

When you look at the numbers, it is clear that we are not protecting our investment. Fisheries management plans are predominantly based on how shark populations respond to fishing pressures. Those are extractive industries that

are, of course, important for our food supply. But how smart is it to base all decisions only on maximizing fisheries, particularly when it comes to sharks? We need to stop looking at sharks as simply a collection of body parts that can be chopped up and sold. It's the same as valuing big, old trees in the rainforest only for the wood that can be sold as lumber, or bees only for the honey they produce.

The path to a sustainable future requires us to be cognizant of all the stakeholders and of methods that will protect the resource.

WHAT IS THE TRUE VALUE OF A SHARK?

To fully evaluate the true value of a species, one has to look at the major industries that profit from sharks—now and in the decades to come. Sharks support livelihoods and careers for a wide array of people, from recreation and

Divers from around the world come to see Caribbean reef sharks in the waters of Florida and the Bahamas.



research to art and commerce, and they are powerful drivers of billion-dollar industries such as ecotourism, film production, and all forms of media. And best of all, sharks live a long time. Most species can make money for 20, 30 or even 40 years.

And consider this: Sharks provide all of these benefits in the most perfect manner—free of charge. Nothing we can build, no intervention we can come up with, and no technology anywhere in sight can do what sharks do. The good news

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THE GLOBAL SHARK SCUBA-DIVING INDUSTRY

Currently, sharks generate \$314 million per year, expected to double within the next 20 years to more than \$780 million per year. Sharks and rays in the Bahamas generate \$113.8 million annually for the economy.

GRAND CAYMAN STINGRAYS

It is estimated that each ray generates \$500,000 per year. Because they are long-living animals, each ray can generate about \$10 million to \$15 million over its life span.

FIJI SHARKS

In 2010, it was estimated that the shark-diving

industry contributed \$42 million to the Fijian economy.

REPUBLIC OF PALAU

The value of sharks to the Palauan economy is estimated to be \$18 million per year. An individual reef shark is estimated to have an annual value of \$179,000 and a lifetime value of \$1.9 million to the tourism industry.

FLORIDA

■ Fishing, tourism and ocean recreation on the Florida coastline contributes \$34.7 billion in GDP.

■ Diving and snorkeling bring in \$11 billion in GDP, and divers spend \$628 million annually.

■ One-third of all divers in

Florida seek experiences with the possibility of seeing sharks; one-fifth of all divers intentionally seek shark-encounter dives.

■ Coral reefs in the Caribbean (including Florida) generate \$2.1 billion in revenue a year.

■ Saltwater recreational fishing brings in \$9.2 billion in GDP.

These numbers represent dollars, jobs and livelihoods that, if managed correctly, can be evergreen. They are based on live sharks that continually make money for as long as they live. Continued earnings and future growth of these industries depend on healthy shark populations.



is all we have to do is not overfish them while protecting areas for them to live and recover.

HOW CAN WE MORE ACCURATELY DETERMINE THE VALUE OF A SPECIES?

This question has been answered. Resource valuations for products and markets have been a standard element in investment markets. More recently, this has also been applied to the value of individual species. Now we are applying this method to sharks.

Valuation reports are not scientific studies. Each report is an analysis generated by using a combination of recognized environmental, financial and statistical techniques that are widely accepted and used in academic and banking sectors.

Looking at one species in one area provides a much more accurate set of data. Assumptions about the species and international or national statistics do not enter the calculations. So, we are truly looking at what is earned and lost in

one specific region.

The reports have been generated by financial experts who specialize in the valuation of biodiversity and environmental-footprint calculations. The data collected can be referenced to the most current, peer-reviewed published scientific papers from statistical departments that use common financial algorithms, and has been reviewed and commented on by experts specific to the region.

The purpose of these reports is to have a tool

that can be continually updated with the newest data and information as it becomes available, and that can be utilized by anyone who works in shark conservation, advocacy and management agencies. Here are some of the first results.

The values are calculated to reflect a 30-year period, which is one human generation and is standardized for valuation methodology. This allows for comparability across species population groups.

GUADALUPE SHARKS

The baseline value of the white shark population in the Isla Guadalupe waters is \$123.1 million. Averaging that out over the 113 common individual white sharks interacting with dive boats, the value each shark earns is \$1,089,125. Total conservation value: \$123.1 million
Economic value alone: \$83.5 million

BAHAMAS TIGER SHARKS

Total conservation value: \$34.8 million
Economic value alone: \$31.4 million

Knowing all this, we have to question how we can continue justifying killing sharks for sport, or fishing them to be sold as low-quality meat.

If the argument is to provide food fish for the market, then the damage we are doing to future food security by destroying a key element in the food chain is far greater than the gains made by selling sharks as cheap meat now.

So, where do we go from here? What is the point of knowing the true value of sharks?

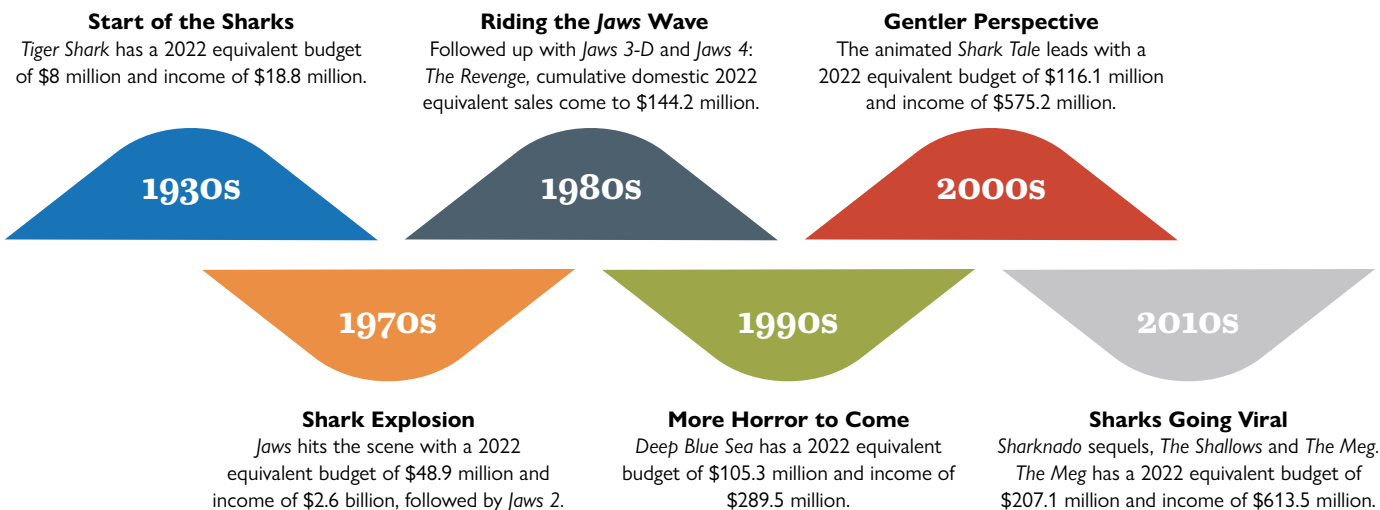


Our hope is that these numbers inspire substantial changes. Below are some thoughts to get the ball rolling.

The major players in the entertainment industry could and should become more involved in shark conservation. Yes, some of the programs promote the beauty of sharks and inspire people to pursue careers in shark research and conservation, but unfortunately, sharks need more help than that. If networks and media would weigh in when it comes to saving sharks, advocacy would gain a powerful ally—not only as a

funding source, but also as the biggest influencer of public opinion and support.

The tourism industry needs to step up to the plate. The desire to protect nature is inherent in ecotourism, and the message is mostly positive. But when it comes to policy decisions, there is little presence from that sector, save the same few divers who are always out there fighting for sharks. Conservation needs representation from everyone who benefits. Getting involved is the only way to take part in protecting the future of the industry.





Lemon sharks (opposite) are one of the easiest sharks to swim with because they often rest on the sandy bottom and are docile around divers.

The most important change would be that our policymakers and management agencies recognize that they must broaden their view to consider all the stakeholders more equally than they have in the past. The years of fishing and hunting being the sole masters of wildlife management decisions are over. It has been done that way because decades ago, the only ones who cared about what was in the ocean were people who went fishing. But times have changed, and we have to evolve to accommodate a different type of economy. If the agencies can't adapt and lead, then the situation

will devolve, and people will take matters into their own hands. That usually doesn't make for a good outcome.

We should also take a careful look at stock assessments. If they were to include all of the non-extractive industries, the standards of what is considered a healthy or recovering population might look a bit different. So often, the recovery level is based on whether there seems to be enough sharks so that fishing can resume.

Ask anyone who has fished, spearfished or gone diving on a truly healthy reef, and they will tell you that seeing more sharks than 10

years ago isn't the measure of recovery. Seeing sharks on every reef, dive or fishing trip is what we should aim for. That's the true indication of a system that is intact.

With millions of ocean users, it is easy to see why the limits of what the ocean can provide have been reached. We cannot continue business as usual. The decisions we make now are critical in creating restoration or further destruction. Acknowledging the true value of biodiversity is an important element in changing the way we look at resource use and conservation.