

SAVING SHARKS

Abstract:

Each year, more than 73 million sharks are killed for their fins. Shark removal and exploitation has increased globally due in large part to China's economic growth and the subsequent demand for shark products. Sadly, the Shark-finning Act of 2000 and the many campaigns launched by conservation groups have not made a significant impact. Shark populations are still rapidly plummeting. This report will show that the most efficient way to save sharks is to establish more no take marine protected areas, or MPAs, within U.S. waters. MPAs have the ability to not only protect sharks, but to also increase community wellbeing through ecotourism, and ensure long term survival of commercial fishing industries.

INTRODUCTION

Sharks are one of the earth's oldest creatures, swimming its oceans for more than 400 million years. While sharks can be affected by environmental degradation such as habitat loss, marine pollution and climate change like any other marine species, their populations are predominantly declining by overfishing and bycatch.¹ The growth in demand for shark products, such as fins, has led to increased profiteering of sharks.² According to the International Union for the Conservation of Nature, thirty percent of the world's shark species are now threatened with extinction.³ The United States has enacted several laws at both federal and state levels with the aim to protect sharks. However, loopholes and inconsistencies among these laws have rendered them ineffective. Conservation groups such as Oceana, WWF and Sea Shepherd have launched several campaigns to advocate for sharks. While they have made progress in areas of outreach and education, their efforts have simply not garnered the desired broad impact. This might be

¹ Lauren Latchford, "Conservation or Culture? An Analysis of Shark Finning in the United States," PhD diss., Duke University, 2013, 1.

² National Marine Fisheries Service, "2011 Shark Finning Report to Congress," (U.S. Department of Commerce and the National Oceanic and Atmospheric Administration, 2011), 1.

³ Elizabeth Neville, J.D., "Shark Finning: A Ban to Change the Tide of Extinction," (*Colo. Nat. Resources, Energy and Environmental L. Rev.*, Vol. 25:2, 2014 ED), 390.

due to the fact that conservation groups are constantly battling the image of sharks that has been portrayed by the media and the entertainment industry. News reports focus on rare instances of shark attacks rather than shining a light on their plummeting populations. Popular television programs, such as Discovery Channel's Shark Week have followed similar patterns by highlighting shows such as Ocean of Fear, Blood in the Water, and Sharkbite Summer. In order to help sharks, the public needs to be presented with videos of terror that expose the shocking truth behind the sharks' struggle for survival; not theatrical reports and shows. Once the facts are unveiled, hopefully enough support can be generated to begin a true movement to save sharks.

BACKGROUND

Shark removal and exploitation has increased globally due in large part to China's economic growth and the subsequent demand for shark products.⁴ Shark fins are viewed as a precious food in traditional Chinese cuisine.⁵ They are typically harvested for shark fin soup, a delicacy served at important occasions such as weddings and notable dinners.⁶ It remains one of the most expensive seafood items in the world, fetching at times more than \$1,300 per fin to be made into a soup that can cost up to \$100 per bowl.⁷ When the fins are cut off, the shark, whether dead or alive, is commonly discarded back into the water. The entire carcass is not needed as shark meat is not as profitable as the fin.⁸ This process is known as shark finning. Its practice is seen worldwide and it is considered wasteful, inhumane, and hazardous to the environment. Up to 73 million sharks a year are killed for their fins alone.⁹

⁴ Lauren Latchford, op. cit., 4.

⁵ Elizabeth Neville, op. cit., 388.

⁶ Ibid.

⁷ Ibid, 389.

⁸ Lauren Latchford, op. cit., 4.

⁹ "Shark Finning," *Animal Welfare Campaign*, Accessed October 23, 2015, <https://awionline.org/content/shark-finning>.

Finning occurs not only near the heart of shark fin soup consumption off the coasts of China, but all over the globe, including in United States waters. The U.S. is ranked eighth in the top twenty “shark catchers” in the world. From 1991 to 1998 alone, shark fishing in U.S. Pacific longline fisheries increased from three percent to sixty percent total catch. Drastic increases in shark fishing and the recognition of deteriorating shark populations has resulted in the creation of federal regulations to reduce commercial finning practices.¹⁰ President Bill Clinton signed the Shark-Finching Prohibition Act in 2000, in an effort to curb shark finning. This federal legislation made it unlawful to possess a shark fin in US waters without a corresponding carcass. Unfortunately, the ban did not require that carcasses be brought ashore with fins attached. Instead it relied on a fin-to-carcass ratio whereby the total weight of the fins must not exceed a certain percentage of the total weight of the carcass.¹¹ This allowed fisherman to defy the law by mixing and matching bodies and fins from various sharks. Moreover, enforcement proved to be very difficult since it is nearly impossible for officials to determine what species of shark the fins are taken from once they are removed from the body.

Driven by public concern, eight states and three U.S. territories imposed intrastate restrictions and bans on the sale and possession of shark fins. In 2010, Hawaii became the first state to pass a shark fin ban. In a relevant section, Hawaii’s law provides that: “[i]t shall be unlawful for any person to possess, sell, offer for sale, trade, or distribute shark fins.”¹² Subsequent to Hawaii’s law, California, Illinois, Maryland, Delaware, Oregon, Washington, New York, American Samoa, Guam, and the Northern Mariana Islands passed similar legislation. Although these bans are an important step in the right direction, significant change

¹⁰ Lauren, Latchford, op. cit., 4.

¹¹ "US Campaigns," *Animal Welfare Campaign*, Accessed October 23, 2015, <http://awionline.org/content/us-campaigns>.

¹² Elizabeth Neville, op. cit., 395.

will only take place if additional states follow suit and fill in the gaps where federal legislation falls short.

While sharks are often times the target species in many fishing pursuits, they also fall prey to being unintended catch through various means of commercial fishing. The incidental capture of non-target species is defined as bycatch. Approximately 50 million sharks die annually as a result of bycatch.¹³ Fishermen use a wide range of gear to land their catch. Examples include long lines, gillnets and trawls. While each method yields high amounts of bycatch, longlining is the main culprit in the decimation of shark populations. Longlines are commonly used for targeting swordfish, tuna and halibut. Hundreds or thousands of baited hooks hang at intervals along a single, central fishing line.¹⁴ The length of the central line can be anywhere from one to fifty miles in length. Longlines are generally deployed at sunset and left out overnight before hauling back in the following morning. This method is particularly indiscriminate, as the baited hooks attract a vast array of species that are not intentionally targeted. If an animal becomes hooked, it is often seriously injured or dead by the time the gear is retrieved.¹⁵

As apex predators, sharks directly limit the populations of their prey, which in turn affects the prey species of those animals, and so on.¹⁶ This cascade effect throughout the ecosystem ultimately influences community structure. By preventing one species from monopolizing a limited resource, sharks increase the species diversity of the ecosystem.

Numerous studies indicate what the oceans will look like without sharks: economically important

¹³ "Shark finning," op. cit.

¹⁴ "Bycatch," *World Wildlife Fund*, Accessed December 02, 2015, <http://www.worldwildlife.org/threats/bycatch>.

¹⁵ "Harmful Gear: Trawls, Longlines, & Gillnets," *Oceana*, Accessed December 02, 2015, <http://usa.oceana.org/harmful-gear-trawls-longlines-gillnets>.

¹⁶ E. Griffin, K.L. Miller, B. Freitas, and M. Hirshfield, "Predators as Prey: Why Healthy Oceans Need Sharks," *Oceana*, July 2008, 11.

fisheries shut down, coral reefs shift to algae dominated systems, seagrass beds in decline, ecological chain reactions set in motion, species diversity and abundance declines with the loss of habitats, and the list goes on.¹⁷ Appropriate measures need to be taken now to avoid catastrophic unintended consequences.

STEPS TO SAVING SHARKS

The first step in saving sharks involves gaining broad support. Conservation groups such as Oceana, WWF and Sea Shepherd have gone to great lengths to advocate for sharks. These organizations have done a tremendous job of providing background information, making the facts readily available, and implementing and enforcing legislation. Sea Shepard has gone as far as physically sinking ships that are found practicing shark finning. Sadly all of that effort simply has not been enough. Sharks populations are still rapidly plummeting.

A way to intensify the cause for saving sharks would be for these conservation groups to form coalitions with unconventional groups. Coalitions can provide groups or parties with ways to build their organizations and expand their base of support. While a coalition made up of groups with similar viewpoints is a natural strategy, it is much more effective to form a coalition of organizations with opposing viewpoints. This can strengthen the campaign by appealing to a wider population base with differing priorities and interests. It can also open new doors for an organization by providing contacts and resources that may have previously been unobtainable. In regards to the case of protecting sharks, potential suitors might be sport fishermen and hunters who want to preserve sharks for future recreational purposes.

¹⁷ E. Griffin, K.L. Miller, B. Freitas, and M. Hirshfield, *op. cit.*

Building coalitions does come with its hardships. By joining a coalition, a group or party loses some control over the message and tactical decisions. This can lead to disagreements or squabbling between the coalition members within the organization. A party could also be viewed as being associated with the negative aspects of the other group. Therefore, before establishing a coalition, the benefits and the consequences must be thoroughly considered.

A more effective approach in gaining support is to present a message directly to the public. Overwhelming public support or outcry can be a powerful force for change. Support is much easier to rally today with advancements in technology and increasing dependence of social media. News articles and videos can be uploaded and shared in seconds, spreading among the public like wildfire. Trending stories and videos take the media by storm, and before long, the entire nation is talking about the same topic. Today, something as simple as a video can trigger responsiveness and start a movement. For example, videos that highlight instances of police brutality are currently at the center of public scrutiny. These instances have been the focus of countless newscasts, the discussion topic of radio broadcasts, and have led to public protests and the formation of several groups of activism. What if a video could curb a similar response for sharks?

Fortunately, the right video is already in existence. In 2007, a young filmmaker named Rob Stewart made a documentary called Sharkwater. With his film, Stewart exposes viewers to the gruesome truth about shark finning in international waters. The film never shies away from the practice's graphic mechanics, which helps to emphasize its blatant cruelty. Its effects are both haunting and inspiring. It can leave one feeling completely horrified, yet full of promise that with the help of humanity, it is not yet too late for sharks. While Sharkwater is the recipient of several

dignified International Film Festival awards, it has received little to no media attention. In order to span a larger audience, Sharkwater needs the appropriate platform.

A viable option might be Discovery Channel's Shark Week. Shark Week originally premiered in 1988. Featured annually, in late July and/or early August, it was originally devoted to conservation efforts and correcting misconceptions about sharks. Over time it grew in popularity and became a hit. Now Shark Week is broadcasted in over 72 countries and is promoted heavily on social networks like Facebook and Twitter. Last year's Shark Week was the network's highest-rated ever, garnering 53.17 million total viewers.¹⁸ Since its early days, Shark Week is eschewing from its former focus on science in favor of fear-mongering and sensationalism. It has evolved into more entertainment-oriented and sometimes fictional programming. The opportunity to air Sharkwater during Shark Week would bring the programming back to its root objective. In the process, Sharkwater would reach the quantities it desperately needs to make a significant impact.

Once the public has been presented with the facts, the next step is to provide them with a solution that they can rally behind. A national injunction might appear to be the obvious answer. For instance, an effective way to eliminate shark bycatch on longlines would be to place a ban on longlining in United States waters. While outlawing longlining might appear to be a quick fix, the potentially negative outcomes of such a ban are far too great to ignore. All commercial fishers who use this technique as their primary resource to harvest fish would be in direct violation of the law. They would be required to find alternative methods, which could have a significant impact on the success of their company and the livelihood of their employees. Their

¹⁸ Matt Cohen, "The History of Shark Week: How the Discovery Channel Both Elevated and Degraded Sharks," *The Week*, August 14, 2014, Accessed December 02, 2015, <http://theweek.com/articles/444542/history-shark-week-how-discovery-channel-both-elevated-degraded-sharks>.

response may include massive protests and violence, as was seen during the enactment of the Turtle-Shrimp law in the 1990s. A national ban on longlining would also put American fishermen at a competitive disadvantage to foreign fleets. This could drive fishermen to work under foreign flags to avoid any gear restrictions, as seen the Dolphin/Tuna case of the 1980s.

Placing limitations on longlining may serve as a more practical alternative. In 2010, the NMFS Southeast Fisheries Science Center conducted an experiment to determine the average amount of time that sharks spend on long lines and the state that they are in once the lines are retrieved. Hook timers were attached to every fourth hook. Hook timers were set out at a time of zero and became activated when a shark bit the hook, thereby activating the digital clock.¹⁹ It was determined that soak time averaged between ten and fifteen hours. During that time, a total of one hundred and twenty one sharks were caught on the longline. When the line was reeled in, forty four percent of the sharks caught were found dead. Data is still being collected as a part of this program to determine if reduced soak time contributes to the reduction of mortality in overfished sharks. If the data can prove the worth of reduced soak times, perhaps implementing national limitations on longlining would be a persuasive solution. This agreement could be mutually beneficial to both fisherman and sharks. Fishers would still be able to utilize long lines at their preferred times and in their preferred locations. They would simply be required by law to pull in the lines after a certain amount of time. The law would have minimal impact on fishermen's livelihood while potentially preserving hundreds of shark lives. It might also create jobs within both the Coast Guard and the NOAA, as these organizations are responsible for enforcing our nations fishing regulations.

¹⁹ "Annual Report to Congress on the Bycatch Reduction Engineering Program," Report, *National Oceanic and Atmospheric Administration*, 2011, 49.

The most significant hurdle with enacting any kind of new legislation is that it is a lengthy process. The framers of our nation's government tactfully designed the process in such a way that legislation implementation is slow and deliberate. When a bill is proposed into Congress, it requires a two thirds majority vote from both the House of Representatives and the Senate in order to become a law. Getting the two thirds vote from both the House of Representatives and the Senate that would be necessary to implement new legislation is no easy task. Of the almost twelve thousand bills introduced in Congress in one recent session, less than five hundred were enacted into law.²⁰ Passing a law is a process that can take years. Unfortunately, sharks cannot afford to wait. Experts estimate that within a decade, most species of sharks will be lost.

As such, the most efficient way to save sharks is to establish more no-take Marine Protected Areas, or MPAs, throughout U.S. waters. A no-take zone is an area set aside by the government that provides the strongest level of protection, and safeguards marine life from the harmful effects of fishing and other extractive uses, such as drilling for oil and gas. As of 2015, only 1.03% of the ocean is protected in no-take reserves.²¹ Currently, 13.47% of US waters are protected at this level. However, this no-take area is almost entirely remotely concentrated in the US Pacific Islands region, as seen in Figure 1.²²

²⁰ "Congress for Kids: [Legislative Branch]: Making Laws," *Congress for Kids*, Accessed December 02, 2015, http://www.congressforkids.net/Legislativebranch_makinglaws.htm.

²¹ "MPAtlas » No-Take Marine Reserves," *MPAtlas*, Accessed December 02, 2015, <http://www.mpatlas.org/learn/what-are-mpas/no-take-marine-reserves/>.

²² "SeaStates US 2015: How Much of Your Ocean Is Your State Protecting?" *Marine Conservation Institute*, Accessed December 02, 2105, <https://marine-conservation.org/seastates/us/2015/>.

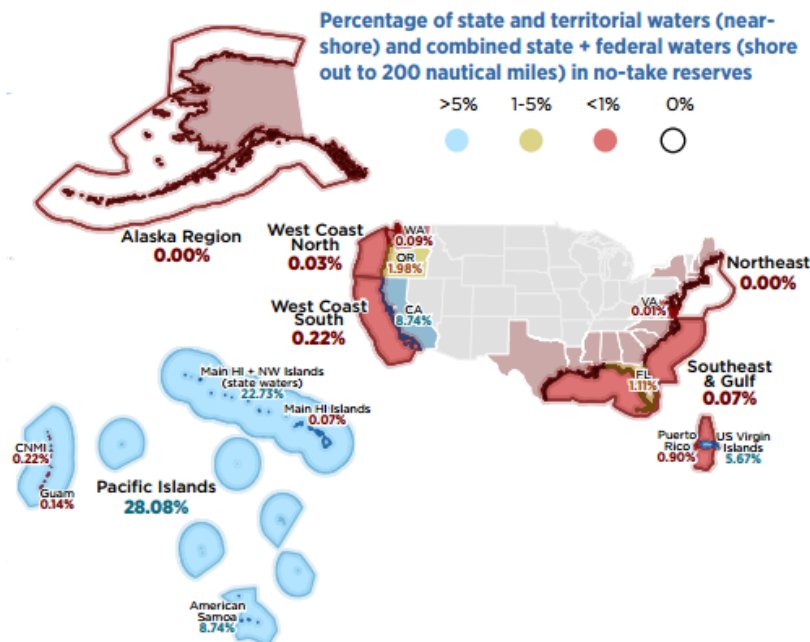


Figure 1. “SeaStates US 2015: How Much of Your Ocean Is Your State Protecting?” Marine Conservation Institute, Accessed December 02, 2105, <https://marine-conservation.org/seastates/us/2015/>.

Establishing MPA’s at locations that are well-known for shark activity would be a crucial step in restoring shark populations. These locations could include hot spots for shark socialization, reproduction and feeding. For example, the New York Bight has long been known to be a nursery area for great white sharks based on historic incidental catches of young pups. An MPA could be established to encompass the majority of the Bight, giving great white mothers protection for the birthing process and giving great white pups protection to grow and mature.

The protection that MPA’s provide would not be limited to just the shark population. Entire ecosystems would also be given a chance to thrive. Preserving complete ecosystems allows animals to reach their maximum reproductive potential which ultimately increases the

population size. Healthy populations can spread out into adjacent waters, increasing the biomass surrounding those protected areas and bolstering local fisheries. Research suggests that strategically created networks of marine protected areas can help valuable ocean systems survive the uncertainty of global climate change by alleviating additional stress from overfishing, habitat destruction, or marine pollution.²³

Examples of immediate and long term benefits of MPAs are detailed in Figure 2.

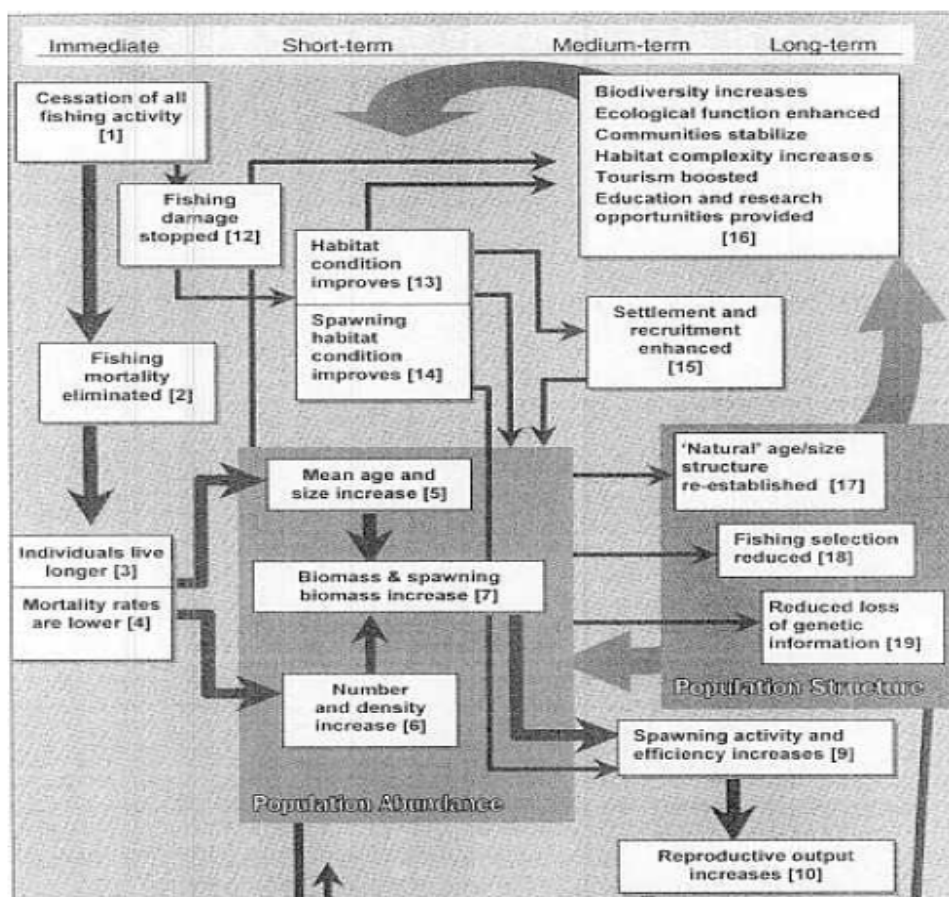


Figure 2. Keith Sainsbury and Rashid Sumaila, "Incorporating Ecosystem Objectives into Management of Sustainable Marine Fisheries, Including 'Best Practice' Reference Points and Use of Marine Protected Areas," *FAO, ResearchGate, 2003, Accessed December 7, 2015, <http://www.researchgate.net/publication/237442593>*.

²³ "MPAtlas » No-Take Marine Reserves," op. cit.

MPA's may prove to be essential tools in preserving the commercial fishing industry.

According to the Pacific Coast Federation of Fishermen's Association,

“The idea of marine protected areas has some sound support in science as a way to protect and sustain commercial fishing. At present, only 1/4th of one percent of the ocean environment is protected from exploitation. Many scientists say that is just too little to assure stable populations of many species. In that context, marine protected areas could (if properly placed) be used to protect essential nursery and rearing areas for juvenile fish so that long-term sustainable populations of these fish are always maintained. Since most fish are going to eventually wander outside those areas as adults, such reserves may actually help commercial fishermen in the long run, rather than hinder them, by always maintaining a steady adult population for harvest.”²⁴

No-take marine reserve coverage varies by nation and across the globe.²⁵ Most no-take zones are often part of multiple-use MPAs, where different levels of activity are allowed in different zones.²⁶ For example, in the Great Barrier Reef, no-take areas are also known as Green Zones. Within Green Zones, recreational activities such as boating, snorkeling, and diving are allowed. However, fishing and coral collecting are entirely prohibited.²⁷

Areas such as the Great Barrier Reef's Green Zones have created large industries of ecotourism. A recent USAID evaluation has identified ecotourism as an enterprise with potential positive contributions to the conservation of endangered biological resources and the livelihood of surrounding communities. Contributions of ecotourism include raising local awareness about the value of biological resources, increasing local participation in the benefits of biodiversity

²⁴ Zeke Grader, Spain, Glen, "MARINE RESERVES: FRIEND OR FOE? What Marine Reserves May Mean to You," *The Pacific Coast Federation of Fishermen's Associations*, Accessed December 02, 2015, http://www.cosee-west.org/May09-2012/MPA%20lecture/PDFs%20for%20the%20web/Background/reserves_friend_foe.pdf.

²⁵ "MPAtlas » No-Take Marine Reserves," op. cit.

²⁶ "No-take Zone," *National Geographic Education*, March 29, 2011, Accessed December 02, 2015, <http://education.nationalgeographic.org/encyclopedia/no-take-zone/>.

²⁷ Ibid.

conservation (through new sources of jobs and incomes), and generating revenues toward conservation of biologically rich areas.²⁸

The World Tourism Organization (WTO) estimates that there were more than 663 million international travelers in 1999. Spending by these tourists was estimated at more than US \$453 billion.²⁹ That money creates jobs and incomes for households and communities in and around national parks and other protected areas. Ecotourism enterprises, tour agencies, lodges, transportation and food services also generate revenues and foreign exchange. Governments can use this income in operating and protecting natural habitats.³⁰

CONCLUSION

The Ocean is the planet's most important ecosystem, regulating the climate and feeding the planet. Every ocean inhabitant plays a role that contributes to the overall health of the ecosystem. As apex predators, sharks help enhance biodiversity by maintaining certain populations of fish. If millions of sharks continue to be extracted from the ocean, the entire ecosystem will drastically change. Once the oceans change, life on earth will change with them.

The patchwork of United States shark fin laws have proven to be ineffective. The current regulatory scheme is insufficient to meaningfully conserve sharks to the best of our ability as a nation and to set a good example in the global community.³¹ A better solution lies in establishing more no take marine protected areas throughout United States. MPAs have the ability to protect sharks, increase community wellbeing through ecotourism, and ensure long term survival of

²⁸ "Benefits of Ecotourism," *Untamed Path: Active Adventures in South America*, Accessed December 02, 2015, <http://untamedpath.com/eco-tours/benefits-of-ecotourism.shtml>.

²⁹ "Ecotourism Statistical Fact Sheet," *The International Ecotourism Society*, 2000, Accessed March 09, 2016, <http://www.active-tourism.com/factsEcotourism1.pdf>

³⁰ "Benefits of Ecotourism," *op. cit.*

³¹ Elizabeth Neville, *op. cit.*, 417.

commercial fishing industries. No take reserves would ban any sort of extractive activities within their borders. This would help dilute the numbers sharks that fall prey to shark finning and bycatch. With the presence of more sharks, oceanic ecosystems will be more diverse and have the ability to thrive. The healthy populations found in MPAs will spread out into adjacent waters, increasing the biomass surrounding those protected areas. This may actually help commercial fishermen in the long run, because fish will eventually wander outside of the areas. Lastly, areas of healthy biodiversity are popular destinations for ecotourism. Ecotourism has proven to provide jobs and income to its surrounding communities.

Bibliography:

“Annual Report to Congress on the Bycatch Reduction Engineering Program.” Report. *National Oceanic and Atmospheric Administration*, 2011.

"Benefits of Ecotourism." *Untamed Path: Active Adventures in South America*. Accessed December 02, 2015. <http://untamedpath.com/eco-tours/benefits-of-ecotourism.shtml>.

"Bycatch." *World Wildlife Fund*. Accessed December 02, 2015.
<http://www.worldwildlife.org/threats/bycatch>.

Cohen, Matt. "The History of Shark Week: How the Discovery Channel Both Elevated and Degraded Sharks." *The Week*. August 14, 2014. Accessed December 02, 2015.
<http://theweek.com/articles/444542/history-shark-week-how-discovery-channel-both-elevated-degraded-sharks>.

"Congress for Kids: [Legislative Branch]: Making Laws." *Congress for Kids*. Accessed December 02, 2015. http://www.congressforkids.net/Legislativebranch_makinglaws.htm.

“Ecotourism Statistical Fact Sheet.” *The International Ecotourism Society*. 2000. Accessed March 09, 2016. <http://www.active-tourism.com/factsEcotourism1.pdf>

"Harmful Gear: Trawls, Longlines, & Gillnets." *Oceana*. Accessed December 02, 2015.
<http://usa.oceana.org/harmful-gear-trawls-longlines-gillnets>.

Grader, Zeke, Spain, Glen, "MARINE RESERVES: FRIEND OR FOE? What Marine Reserves May Mean to You," *The Pacific Coast Federation of Fishermen's Associations*, Accessed December 02, 2015, http://www.cosee-west.org/May09-2012/MPA%20lecture/PDFs%20for%20the%20web/Background/reserves_friend_foe.pdf.

Griffin, E., Miller, K.L., Freitas, B. and Hirshfield, M. "Predators as Prey: Why Healthy Oceans Need Sharks." *Oceana*. July 2008.

Latchford, Lauren. "Conservation or Culture? An Analysis of Shark Finning in the United States." PhD diss. Duke University. 2013.

"MPAtlas » No-Take Marine Reserves." *MPAtlas*. Accessed December 02, 2015. <http://www.mpatlas.org/learn/what-are-mpas/no-take-marine-reserves/>.

National Marine Fisheries Service. "2011 Shark Finning Report to Congress." *U.S. Department of Commerce and the National Oceanic and Atmospheric Administration*. 2011.

Neville, J.D., Elizabeth. "Shark Finning: A Ban to Change the Tide of Extinction." *Colo. Nat. Resources, Energy and Environmental L. Rev.* Vol. 25:2. 2014 ED.

"No-take Zone." *National Geographic Education*. March 29, 2011. Accessed December 02, 2015. <http://education.nationalgeographic.org/encyclopedia/no-take-zone/>.

Sainsbury, Keith, and Rashid Sumaila. "Incorporating Ecosystem Objectives into Management of Sustainable Marine Fisheries, Including 'Best Practice' Reference Points and Use of Marine Protected Areas". *FAO*. ResearchGate. 2003. Accessed December 7, 2015. <http://www.researchgate.net/publication/237442593>.

"SeaStates US 2015: How Much of Your Ocean Is Your State Protecting?" Marine Conservation Institute. Accessed December 02, 2105. <https://marine-conservation.org/seastates/us/2015/>.

"Shark Finning." *Animal Welfare Campaign*. Accessed October 23, 2015. <https://awionline.org/content/shark-finning>.

"US Campaigns." *Animal Welfare Campaign*. Accessed October 23, 2015. <http://awionline.org/content/us-campaigns>.