Shark Fin Regulations in the United States: Animal Welfare, Cultural, and Policy Considerations

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ABSTRACT
Sharks play critical roles in the marine ecosystem, and they face serious threats due to overfishing. Conservation efforts have focused on the consumption of shark fins, especially the “finning” practice that removes the fins of a shark and discards the carcass at sea. This article reviews the shark fin legislation in the United States, including the “finning ban” which outlaws finning practices and the “fin ban” that prohibits the use of shark fins entirely. Our case study specifically focuses on the animal welfare, cultural, and policy debates surrounding these bans. We discuss how and why shark finning is regarded as a cruel practice and whether shark fin bans discriminate against Chinese Americans. At the policy level, there is an ongoing policy debate whether a ban on shark fins in the United States would lead to increased protection of sharks or it would have little effect on the global trade. Due to the lack of detailed information on shark fisheries, the policy discussion is likely to persist. Although this case study focuses only on regulations on shark fins, we would like to emphasize that shark fin industry is not the only threat to sharks. Conservationists also need to consider other issues such as bycatch, habitat destruction, and a wider array of policy tools to protect sharks.

INTRODUCTION
Due to global overfishing, exacerbated by their naturally slow growth rates, many shark populations are in decline. In 2014, the Food and Agriculture Organization (FAO) recorded 790,000 tons of global shark catch [1]. Such catch statistics is likely an underestimation. Worm et al. [2] estimated that 1.41 million tons of sharks were caught globally in 2010. As of 2014, one-quarter of all chondrichthyan species, including sharks, rays, chimeras, and skates, were estimated as threatened (i.e., vulnerable, endangered, and critically endangered) by the International Union for Conservation of Nature (IUCN) standards. Overall, only one-third of chondrichthyan species are considered “safe,” and this is the lowest fraction of all vertebrates groups [3]. Sharks structure marine ecosystems in crucial ways as top predators, and the declining shark populations would result in complex community changes to result in declines of some commercial fish [4].

Shark fishing is a lucrative business, and shark fins are the most valuable part of sharks, valuing over 10,000 dollars per ton [1]. Shark fins are mainly harvested for use in shark fin soup, a Chinese delicacy popular among the upper class for centuries [5, 6]. As shark population continued to decline, many recent conservation efforts have focused on the consumption of shark fins. Shark finning, the practice of removing the fins of a shark at sea and discarding the carcass at sea, gets the most attention. To save space on fishing boats, sharks are often thrown overboard alive after finning to drown, be eaten, or die of blood loss [7]. Although shark fin consumption has been decreasing in China due to international conservation campaigns, rising consumer awareness, and the Chinese government’s initiative to remove shark fins from official functions [8–10], the overall situation for sharks is still dire.

Although the United States plays only a minor role in the shark fin trade, its actions can have tremendous symbolic meanings to the rest of the world. As of 2019, there are multiple bills waiting for votes in the US Congress to ban possession and sale of shark fins altogether. In this case study, we review the animal welfare and cultural considerations as well as the debates on policy
effectiveness of shark “finning ban” which outlaws finning practices and the “fin ban” that prohibits the use of shark fins in the United States.

**SHARK FIN LEGISLATION IN THE UNITED STATES**

**The Shark Finning Bans**

Fishery activities were governed by the Magnuson-Stevens Fishery Conservation and Management Act established in 1976. Under the authority of this act, the National Marine Fisheries Service (NMFS) implemented the Fishery Management Plan (FMP) for Sharks of the Atlantic Ocean in 1993. This FMP included various conservation measures such as commercial quotas, trip limits, and mandatory reporting, as well as a ban on finning—defined as “removing the valuable fins and discarding the carcass.” [11] This is the first federal action against shark finning.

The Shark Finning Prohibition Act (SFPA) further extends shark finning ban to all US waters. This law defines shark finning as “the taking of a shark, removing the fin or fins (whether or not including the tail) of a shark, and returning the remainder of the shark to the sea.” Under its restrictions, US fishing vessels are not allowed to possess shark fins without keeping the rest of the shark. Fishing vessels can still keep shark fins on board if the total weight of the fins is less than 5% of the total weight of the shark carcasses. The SFPA also requires National Oceanic and Atmospheric Administration (NOAA) to provide a shark finning report to Congress every year. In practice, this legislation may not eliminate shark finning but restrict it to a limited capacity [12].

The SFPA, however, was found to have a significant loophole regarding its restriction only on “fishing vessels.” In the 2008 court decision “US v. Approximately 64,695 Pounds of Shark Fins,” the US Court of Appeals for the Ninth Circuit ruled that a US vessel that had bought shark fins at sea from a foreign ship could not be considered a “fishing vessel,” and so was within its legal rights to bring the unattached shark fins into the US for sale. This gap in the law was patched by the Shark Conservation Act (SCA) of 2010, which clarified that all sharks fished in US waters must be landed with their fins naturally attached [13]. The SCA also prohibits transferring shark fins from one vessel to another vessel at sea. The law provided an exception for the smooth dogfish fishery in recognition of its importance to certain fishermen.

**The Shark Fin Bans**

The federal shark finning ban only addresses “finning” practices and does not forbid shark fin consumption. At the landing sites, the sale of shark fins is still legal as long as the fins have corresponding bodies. Consumers can also import shark fins from other countries. As a result, many states have since instituted stricter bans on shark fins. As of early 2019, 12 states have passed complete bans on the sale and possession of shark fins. The first to do so was Hawaii in 2011. Despite its relatively small market, Hawaii has historically been on the front lines of shark protection, at least in part due to sharks’ significance in native Hawaiian culture [14]. Hawaii was joined later on by Washington, Oregon, California, Maryland, Massachusetts, Illinois, New York, Rhode Island, Delaware, Texas, and Nevada, as well as the territories of Guam, American Samoa, and the North Mariana Islands.

Such state-level bans were challenged by a litigation on the ground that, first, these bans are preempted by the Magnuson-Stevens Act, and second, they violate the dormant Commerce Clause by interfering interstate commerce. After consultation with state governments, NOAA clarified that these state shark fin bans do not conflict with the federal Magnuson-Stevens Act [15]. The court of appeals later dismissed this case, affirming the legality of these state actions.

Although these state bans prohibit the sale and possession of shark fins in their jurisdictions, many of them do not stop international fins from passing through their ports to other parts of the United States where shark fins remain legal. Additionally, as state bans come into effect, the shark fin trade reacts accordingly. Oceana [16], the international marine conservation organization, reports that Texas’s shark fin trade grew by “240% since 2010” after other states passed shark fin trade ban. Recent news shows that Miami is now the largest entry port of shark fins, as Florida has not joined the ban [17]. This mobility of the shark fin trade is one of the main reasons behind the call for a federal ban.

The years 2017–2018 saw a new wave of effort to pass a federal shark fin ban. The House bills “Shark Fin Sales Elimination Act” (H.R.1456 of the 115th Congress and H.R.737 of the 116th Congress) [18, 19] and the Senate variant “Shark Fin Trade Elimination Act” (S.793 of the 115th Congress) [20] would make it illegal to “possess, transport, offer for sale, sell, or purchase shark fins or products containing shark fins” in the United States,
Many studies have shown that the inaccurate stereotypes of sharks—often as cold-blooded killers—hinder corresponding conservation efforts [30, 31]. Although different from shark fishing and finning focused in this article, IUCN [32] notes that intentional killing of sharks also contributes to the threatened status of the species. Shark conservationists have struggled to overcome such false images through outreach and giving sharks a more appealing public image. Significant work has been done on understanding and countering fears of sharks [33, 34, 53], but challenges remain in convincing people that sharks are worth protecting.

The Cultural Clashes

Although the shark finning ban did not lead to much cultural controversy, the recent set of state shark fin bans, and the proposed national ones, has led to complaints that they unfairly discriminate against Chinese Americans. The debate was particularly intense when California attempted to ban shark fins in 2011. Then, California State Senator, Leland Yee, a Chinese American politician, described the bill as to ”limit our heritage and our culture.” A New York Times article reports that some even describe the ban as “a sort of Chinese Exclusion Act in a bowl” [35], and the San Francisco Chronicle ran a story on the front page [36]. Following California’s shark fin ban, the state was sued by both the Asian American Rights Committee of California and the Chinatown Neighborhood Association [37]. Although these challenges to the California law failed, their legacy is still visible.

The claim of discrimination is fueled by the fact that only shark fins have been banned, while shark meat is still allowed to be sold. “If sharks can be turned into wallets, steaks, and liver oil, it should not be illegal to turn them into fin soup” argued California state senator Ted Lieu [38]. In other words, if the goal is to protect sharks, why there is only a focus on their fins? In response to the newer proposed federal bans on shark fins, now Congressman Lieu proposed his own bill, the “Shark Sales Elimination Act” to ban sales of all shark parts, thus avoiding discrimination.

The symbolism of shark fin soup in Chinese American culture might be in decline. The soup is a luxury item, not eaten on a day-to-day basis, and younger Asian Americans especially are moving away from its use because of shark conservation awareness [14, 39]. Celebrities such as Yao Ming have partnered with WildAid and other organizations to encourage individuals to become better consumers and refuse to eat shark fin soup [10]. Even in

Animal Welfare Concerns

Although some argue against shark finning based on a utility standpoint—that it is wasteful to only keep the fins and throw away other body parts [23]—the more common argument is that shark finning is morally repulsive. For example, Oceana, one of the prime drivers behind the new shark fin ban proposals, calls finning “inhumane,” and another conservation group Animal Welfare Institute calls the practice “appalling.” Even the proposed bills recognize the welfare dimension of this debate by saying that shark finning is a “cruel practice.”

The cruelty concern comes partly from the assumption that sharks suffer unnecessarily during the process of suffocation and drowning with fatal wounds. But do sharks feel pain? How much? Some scholars claim that fishes are “far smarter and more cognitively aware than we have previously accepted” [24] and show cognitive and emotional capacity [15]. Many show otherwise. Recent reviews of literature [26, 27] show that shark species “have also been found to lack a key region of the spinal dorsal horn known in mammals to be critical for transmitting nociceptive activity to the brain” and can be behaviorally unaffected by severe wounds. Fish, in general, are said to lack the phenomenal consciousness to subjectively feel pain. Based on this argument, many researchers call for a more pragmatic approach to fish welfare rather than based on anthropomorphic projections [28, 29].

In a different vein, the broader shark conservation debate is also swayed by people’s subjective feelings about sharks. Many studies have shown that the inaccurate stereotypes of sharks. In March 2018, a competing bill called the “Sustainable Shark Fisheries and Trade Act” (H.R.5248 of the 115th Congress) [21] was introduced in the House. Instead of banning the possession or trading shark fins, it would require all countries importing shark products to obtain certifications confirming their products adhere to standards for conservation and management. There is also a proposed “Shark Sales Elimination Act” (H.R.614 of the 116th Congress) [22] which would ban the sale of all shark parts. The shark fin ban debate is still ongoing.

Animal Welfare Concerns

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California, 70% of Asian Americans support banning the sale of shark fins, on par with three-quarters of Californians overall that support the bans [40].

The Policy Effectiveness Debate
The scientific community is divided on their opinion of the most effective policy measures to protect shark populations. As shark finning bans become widely adopted around the world, concerns have arisen that they only address how many sharks gets killed, not the number of sharks being killed. The statistics show that the worldwide market for shark, skate, and ray meat may have increased by as much as 42% between 2000 and 2011, despite shark finning bans around the world [41]. There is also a worrying possibility that finning bans may encourage fishermen to expand markets for shark meat to make “landing” the entire shark profitable [42]. It is also hard to gage how effectively the current legislation really deters finning. NOAA’s report shows that finning occurs in some circumstances [1], but many more cases can go undetected.

The current discussion on the shark fin bans—banning the sale of shark fins altogether—is even more controversial. According to a survey of members of shark research societies, scientists are more in favor of target-based management tools (e.g., fisheries quotas and gear restriction) than shark fin bans [43]. Although 61% strongly agree or agree with shark fin bans, these bans have more disagreements than other policies. The survey shows that the majority of respondents agree on the goal of sustainable shark fisheries rather than zero exploitation of sharks implied in such bans.

More recently, Shiffman and Hueter [44] claimed that as the “finning” practice is already banned under SFPA and SCA in US waters, further withdrawal from the global market for shark products would only penalize shark fisheries in the United States, which are more sustainable than those in many other places [45]. They also argue that as the United States exports approximately 1% of the shark fins traded globally, it is unlikely that any ban would have a sizeable impact on the global market. Demand for shark fins will still remain, and a ban will actually create more market share for countries that are not practicing legal and sustainable shark fishing. Shark expert, Shelley Clarke, said that she would rather focus on controlling the number of sharks killed every year [46]. More broadly speaking, scientists are concerned that the often emotionally charged focus on shark fins masks other serious challenges such as bycatch or transshipment [47]. As Shiffman said to the Guardian, “there is a persistent belief among many well-intentioned folks that the only threat sharks have ever faced, or are currently facing, is shark finning” [48].

Nevertheless, many conservationists insist that banning fin consumption entirely is a key method of decreasing the shark trade [55]. In 2017, 150 advocates signed a letter of support for the proposed Shark Fin Trade Elimination Act [54]. Moreover, Porcher et al. [49] issued a rebuttal to the aforementioned Shiffman and Hueter’s [44] article. They question the evidence of sustainable shark fisheries and contend that no large-scale shark fishery will be sustainable in the long term. The critique also argues that global markets for shark meat and shark fins are essentially separated from each other [50], and the shark industries commonly cited as sustainable are types generally fished for their meat instead of for their fins. In other words, the current level of regulation is not enough, and thus a fin ban is required. The authors also disagree that a focus on shark fin consumption leads to misconception in conservation.

The policy debate is also seriously hampered by the large data gap. For example, the sum of shark fin recorded as “export” from major countries are seven times higher in volume, three times higher in value, than that reported as “import” by the US custom. Rough classification is another issue. As for meat and fins, the statistics are often aggregated, and information is often unavailable on species, types (e.g., dried vs. frozen, processed or not), prices, and origins. The data paucity significantly limits our understanding of the world market for shark products [50].

DISCUSSION
We offer a few lessons in this case study. First, ethical considerations abound of whether sharks feel pain and what is cruel, and whether this proposed ban discriminates against Chinese Americans. At the policy level, it is unclear whether a ban on shark fins would lead to increased protection of sharks, or if it would have effects on the global trade. Due to the lack of detailed information on shark fisheries, the policy discussion is likely to persist.

We want to conclude with the key message that the shark fin industry is not the only threat that sharks encounter. Overfishing, bycatch, and habitat destruction
are major threats to sharks, and a vast array of policy tools, such as permits, quotas, trip limits, gear restrictions, reserves, and sanctuaries [51] should also be considered to mitigate those threats. Regardless of the intense debate, most people agree that sharks deserve more holistic protection than a narrow focus on their fins.

As we touched upon three different dimensions in the shark fin debate, we hope to demonstrate the need of an interdisciplinary approach. To fully understand shark conservation, one need to consider the cultural, social, and economic drivers, as well as the biological responses in the marine ecosystem. As the current literature comes mostly from biophysical sciences, we echo the call to foreground the social dimensions in future research and policy efforts [52].

**CASE STUDY QUESTIONS**

1. Is shark finning a “cruel” practice? What are your reasons for such judgment?
2. How do common stereotypes of sharks impact conservation work?
3. Do shark fin bans discriminate against Chinese Americans, the primary consumer of the fins?
4. What are the differences between the current “finning ban” and “fin ban” under discussion?
5. Besides the shark fin bans, what are some other policy tools to protect shark populations? What are their strengths and weaknesses?

**AUTHOR CONTRIBUTIONS**

John Chung-En Liu conceptualized the case study. John Chung-En Liu, Brandon Gertz, and Naomi Newman contributed to reviewing the literature and preparing the original draft. John Chung-En Liu revised and edited the final manuscript.

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The authors have declared that no competing interests exist.

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