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A GUIDE TO LANDING SHARK SPECIES WITH FINS NATURALLY ATTACHED

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Introduction

The practice of finning, defined as the removal of the fin or fins from a shark and discarding the remainder of the shark at sea, was first addressed in the United States of America (U.S.) in 1993. The 1993 Fishery Management Plan (FMP) for Sharks of the Atlantic Ocean introduced the requirement that fishermen could only land shark fins and carcasses where the maximum weight of fins did not exceed 5 percent of the dressed carcass weights (NMFS, 1993). This 5 percent fin-to-carcass ratio applied to all managed shark species in the Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea. In the 1999 FMP for Atlantic Tunas, Swordfish, and Sharks, NMFS prohibited finning of all shark species, including those that were not otherwise managed, and required recreational shark fishermen to land all sharks whole (although the sharks could be eviscerated) (NMFS, 1999).

The Shark Finning Prohibition Act (H.R. 5461 (106th)) of 2000 amended the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1857(1)) to extend the prohibition of finning to the entire U.S. Exclusive Economic Zone (EEZ) and U.S. flagged vessels in international waters. This Act also aimed to address shark finning at an international level by urging other governments to collect biological and trade data on sharks and shark products, and calling for international finning bans. As a result, a number of Regional Fishery Management Organizations began to implement fin-to-carcass ratios similar to the 5 percent fin-to-carcass ratio implemented in the United States. For example, in 2004, the International Commission for the Conservation of Atlantic Tunas (ICCAT) implemented a 5 percent fin-to-carcass ratio and required shark information be reported (ICCAT Recommendation 04-10).

Regardless of numerous international fin-to-carcass ratio restrictions, the possibility remained that fins could be landed alongside non-corresponding carcasses (e.g., fins from a species with more desirable fins, but less desirable carcass, could be claimed to belong to the carcasses of species with more valuable meat). To avoid this issue, Costa Rica passed regulations that required sharks to be landed with their fins attached; however, after reports surfaced of fishermen artificially tying non-corresponding fins to shark carcasses, the law was amended to “naturally attached” (Ley de Pesca y Acuicultura #8436, Pretoma, 2005). Within the United States, the 2006 Atlantic Consolidated Highly Migratory Species (HMS) FMP (NMFS, 2006) required the second dorsal and anal fins to remain naturally attached through landing to aid species identification by fish dealers and law enforcement officers. Later, in 2008, the United States implemented regulations requiring sharks be landed with all fins naturally attached as part of Amendment 2 to the 2006 Consolidated HMS FMP (NMFS, 2007). In early 2011, the Shark Conservation Act of 2010 (H.R. 81 (111th)) was signed by the President. This Act extended the fins-naturally attached requirement to the entire U.S. EEZ and U.S. flagged vessels fishing in international waters for all shark species, with a limited exception for smooth dogfish, *Mustelus canis*.

As directed by the Shark Finning Prohibition Act (H.R. 5461 (106th)), the United States continues to work with countries from across the globe to encourage a fins-attached approach to shark fisheries. To help promote adoption of these regulations, this document provides details on the at-sea processing of sharks while maintaining their fins naturally attached.

At-sea processing description

Sharks are processed at sea by removing the head and entrails, while the fins remain naturally attached to the carcass. This process can be separated into four steps:

1. Head cut.
2. Belly cut.
3. Removal of head and entrails.
4. Half cut fins (optional).

1. Head cut

The processing of sharks at sea often commences with a deep cut made behind the head that severs the spinal column. On many vessels this is considered to be an important safety protocol, especially when dealing with live sharks. This cut is generally positioned just before the gills, on the dorsal side. Additional cuts are made along the top of the gills to the first cut and to where the pectoral fins attach (Figure 1a-d). Variation among fishing vessels is common and may occur in response to market prices and fish dealer preferences. The first cut may be made directly behind the cranium (Figure 2a) to retain a larger carcass for species with desirable meat, such as the shortfin mako shark, *Isurus oxyrinchus*, or common thresher shark, *Alopias vulpinus* (Figure 2c). In some cases such as hammerhead species, *Sphyrna* spp., the head may remain attached (Figure 2d).

2. Belly cut

The belly cut extends the head cut around the base of the pectoral fin, before continuing to the pelvic fins (Figure 3a, b). The same cut is performed on the other side of the body, releasing a

flap of belly that is attached to the head (Figure 3c, d). The most variation in the dressing of sharks occurs with the method of cutting the belly. Most cuts are made straight back from the pectoral fins (Figure 4a), but for aforementioned reasons, the belly may be cut high (removing more meat (Figure 4b) or left attached to the carcass (Figure 4c). Pelagic fishing vessels that remain at sea for weeks at a time utilize a dressing process similar to what is used for swordfish, *Xiphias gladius*, which allows ice to be packed into the carcass (Figure 4d) for long term storage.

3. Removal of head and entrails

The entrails are detached from the base of the spine (Figure 5a-c), taking care to scrape out the kidneys that are located at the end of the body cavity. The entrails remain attached to the head and (any included) belly, allowing for disposal of the unwanted tissue in one piece. Pelagic vessels may remove the head separately and push the entrails out of the available opening (Figure 5d).

4. Half cut fins

When storing processed sharks, the pectoral fins can usually be folded into the carcass. The dorsal fin, however, can be inconvenient and some fishing vessels will partially cut the fin base, allowing it to be folded against the body (Figure 6a). This “half cut” may also be applied to the pectoral fins and lower caudal fin (Figure 6b, c). The base of the tail may also be half cut, opening the vein and allowing the shark to bleed out (Figure 6d).

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Literature Cited

H.R. 81 — 111th Congress: Shark Conservation Act of 2009.” www.GovTrack.us. 2009.

[Available at <https://www.govtrack.us/congress/bills/111/hr81>, accessed June 2017.]

H.R. 5461 — 106th Congress: Shark Finning Prohibition Act. www.GovTrack.us. 2000.

[Available at <https://www.govtrack.us/congress/bills/106/hr5461>, accessed June 2017.]

ICCAT Recommendation 04-10. 2004. Recommendation by ICCAT concerning the conservation of sharks caught in association with fisheries managed by ICCAT. [Available at

<https://iccat.int/Documents/Recs/compendiopdf-e/2004-10-e.pdf>, accessed July 2017.]

NMFS, 1993. Fishery Management Plan for Sharks of the Atlantic Ocean. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Sustainable Fisheries, Highly Migratory Species Management Division, Silver Spring, MD. Public Document. [Available at

http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/shk_fmp/shk_fmp_1993.pdf,

accessed June 2017.]

NMFS, 1999. Final Fishery Management Plan For Atlantic Tuna, Swordfish, and Sharks.

National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Sustainable Fisheries, Highly Migratory Species Management Division, Silver Spring, MD. Public Document. [Available at

http://www.fisheries.noaa.gov/sfa/hms/documents/fmp/tss_fmp/index.html, accessed June 2017.]

NMFS. 2006. Final Consolidated Atlantic Highly Migratory Species Fishery Management Plan. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Sustainable Fisheries, Highly Migratory Species Management Division, Silver Spring, MD. Public Document. pp. 1600. [Available at <http://www.nmfs.noaa.gov/sfa/hms/documents/fmp/consolidated/index.html>, accessed June 2017.]

NMFS, 2007. Final Amendment 2 to the Consolidated Atlantic Highly Migratory Species Fishery Management Plan. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Sustainable Fisheries, Highly Migratory Species Management Division, Silver Spring, MD. Public Document. pp. 726. [Available at http://www.fisheries.noaa.gov/sfa/hms/documents/fmp/am2/a2_feis/total.pdf, accessed June 2017.]

Pretoma, 2005. Press Release: Costa Rican Policy Permitting Shark Finning Overturned. August 3, 2005 – San Jose, Costa Rica. Programa restauración de Tortugas marinas (Program to restore seaturtles). [Available at <http://www.pretoma.org/costa-rican-policy-permitting-shark-finning-overturned/>, accessed June 2017.]

Figure 1. Demonstration of the first “head cuts” for processing sharks with fins naturally attached on sandbar shark, *Carcharhinus plumbeus*: a) just behind the cranium; b) from the 5th gill; c) forward to meet the first cut; d) down to the pectoral fins.

a)



b)



c)



d)



Figure 2. Variations in “head cuts” for processing sharks with fins naturally attached by species and vessel/dealer preferences: a) just behind the cranium; b) just before the dorsal fin; c) common thresher shark, *Alopias vulpinus*; d) scalloped hammerhead shark, *Sphyrna lewini*.

a)



b)



c)



d)



Figure 3. Demonstration of the “belly cuts” for processing sharks with fins naturally attached: a) around the pectoral fins; b) down the belly; c) repeat on the other side; d) cut in front of the pelvic fins.

a)



b)



c)



d)



Figure 4. Variations in “belly cuts” for processing sharks with fins naturally attached by species and vessel/dealer preferences: a) straight cut; b) high cut; c) belly left on (only cut on one side); d) center cut on a shortfin mako shark, *Isurus oxyrinchus*.

a)



b)



c)



d)

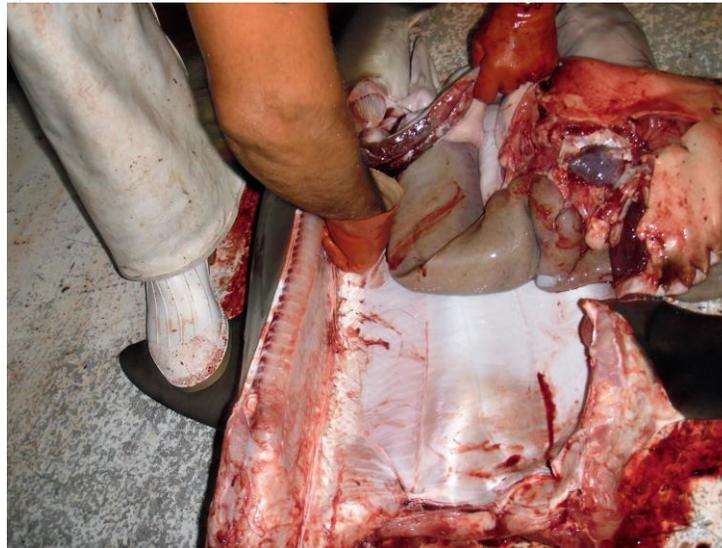


Figure 5. Demonstration of removal of head and entrails for processing sharks with fins naturally attached: a) remove tissue at base of spine; b) remove the kidneys; c) remove the head; d) heads of shortfin mako shark, *Isurus oxyrinchus*, completely removed.

a)



b)



c)



d)



Figure 6. Demonstration of the “half cut fins” for processing sharks with fins naturally attached: a) dorsal fin; b) pectoral fin; c) lower caudal fin; d) base of the tail.

a)



b)



c)



d)

