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United States
SHARK SANCTUARIES
The Unintended Consequence from Underfishing and Overregulation
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I am Rusty Hudson, a shark specialist and reasons provided below show the reality about the United States (US) federal shark fishing management. My personal US Atlantic shark fishing history exists since the 1960's, while my Florida ancestors were watermen and date back generations on this Atlantic coast. The facts show why **US shark attacks have increased**.[1]

During the late 1970's the US federal government began a preliminary shark fishery management plan (FMP) by the US Department of Commerce (DOC), the National Oceanic and Atmospheric Administration (NOAA), through the agency called the National Marine Fisheries Service (NMFS) that promoted ideas encouraging fishermen to use under-utilized marine species, (i.e. sharks), for food. The US commercial fishing interests followed the US government's advice during the 1980's to catch, land sharks and develop seafood marketing, domestically and internationally. The public demand for sharks increased in the US at this stage, but the NMFS failed to monitor the **commercial coastal shark landings averaging up to fifteen millions pounds** in the US exclusive economic zone (EEZ).

In the last part of the 1980's, China, during Deng Xiaoping's[2] reformation period the economic growth saw an increased demand from their new affluent populations for shark fin soup, one of eight traditional Chinese culinary treasures. Shark's fin values, and shark harvests worldwide began to increase significantly into the 1990's due to the publicity. Shark fishing began to be negatively publicized in the news, on television with science style documentaries, and with anti-shark fishing media campaigns by environmental non-governmental organizations seeking membership funding.

About 1989 the US DOC NOAA NMFS staff began an effort to develop an Atlantic Shark FMP involving the US exclusive economic zone (EEZ) area from Maine to Texas, and included the Caribbean Sea region around the US Territories of Puerto Rico, St. Croix and the US Virgin Islands. On April 26, 1993 the Atlantic Shark FMP final rule was published and the NMFS Highly Migratory Species (HMS) Management Division closed US Atlantic shark fishing on May 15, 1993.

Around the early 1990's **some scientists** influenced the state of Florida to consider a mercury warning about eating shark meat. Overnight, nationwide the sale of shark meat fell dramatically, (same as a similar mercury media scare over swordfish consumption during the 1970's). After much media hype, the state of Florida and other states established mercury advisories to pregnant women, yet the damage was significant for the US fish markets as shark sales fell by over half. Then the Atlantic Shark FMP became effective causing even more reductions in shark landings.

[1] http://www.sharkattackdata.com/country-overview/united_states_of_america
[2] http://www.slate.com/articles/health_and_science/green_room/2011/06/sharkonomics.html

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The HMS Atlantic Shark FMP and some coastal states shark fishing rules have been creating **shark sanctuaries** unintentionally for decades by depending on questionable stock assessment results, long rebuilding plans, reduced quotas, lowering trip limits, prohibited shark species, limited access permits, choke species, minimum sizes and closed access for fishing regions. Below is a timeline of some major events that have significantly increased US Atlantic LCS populations near beaches **leading to more shark attacks** and offshore negatively interacting with numerous fisheries during the past decade in the US Atlantic and Gulf of Mexico regions:

1. March 1992 Florida limits commercial shark fishing in state waters to one large shark landed, and banned most shark fishing gear, except for rod and reels out to three-miles on the east coast and nine-miles on the Florida west coast. Later, New Smyrna Beach, Florida became known as the **"shark attack capital of the world"** since the 1990's because of the **shark sanctuary** benefit from underfishing and overregulation **contributing to more frequent shark bites in this area** by Ponce de Leon Inlet, mostly from the Blacktip sharks.
2. On April 26, 1993 the NMFS published the Atlantic Shark FMP final rule with a LCS quota of about **5.3 million pounds dressed weight** (dw) closing LCS fishing for 6-months that year [which has reoccurred almost every year], and the NMFS **made shark finning illegal**. Over two-thousand open access commercial shark permits were bought by fishermen as required by the NMFS Atlantic Shark FMP rules.
3. In January 1994 a commercial LCS trip limit of 4000-pounds dw was implemented to slow the LCS harvest down, but the fishing season for LCS still only lasted about 6-months that year, and for many shark fishing seasons afterwards.
4. During April 1997 a **50% LCS commercial quota reduction** final rule was published that the NMFS stated would not have a negative socio-economic impact, but under federal court remand the NMFS later restated the quota reduction would have **"a significant economic effect"** on commercial shark fisheries and the ancillary businesses that depended on the LCS resource was reduced to around **2.5 million pounds dw**.
5. A prohibited shark species complex was started during 1997, and expanded in 1999 using no science assessments for these 19-shark species, and only one specie, the Dusky shark has had a stock assessment since, conducted during 2006, again in 2010, and a scheduled update in 2016.
6. About late-1999 **a limited access permit system was implemented** that significantly reduced the **US directed shark fishing fleet** from Maine to Texas. The number of these limited permits originally issued has shrunk significantly when not annually renewed on time across these last fifteen-years. A vessel owner has to purchase an existing shark limited access permit, either a directed or an incidental permit to sell a shark for food.
7. Closed areas to pelagic longlines fishing began during late 2000 into 2001 that remain in place for the US Atlantic and Gulf of Mexico. A significant reduction of vessels with the swordfish/tuna fleet occurred in Florida, and elsewhere. The marketing of incidental caught sharks fell helping to cause the pelagic and coastal shark stock populations to expand faster than expected.
8. For the 2003 shark fishing season, based on a new LCS stock assessment the NMFS raised the LCS quotas up to almost **3.8 million pounds dw**, about a million pounds dw extra.
9. Then during 2004 the NMFS lowered the LCS quota to about **2.2 million pounds dw** until shark dealers could be species specific with the shark identification when submitting landing reports to the NMFS, and since 2007 shark dealers attend the NMFS special classes to **renew** their shark identification **certificates** every three-years.

10. Effective January 01-July 31, 2005 a **habitat area of particular concern** (HAPC) for the Sandbar shark nursery and pupping area was implemented offshore of North Carolina offshore to 55-fathoms of depth. This action helped **enhance the shark sanctuary effect** for juvenile sandbar sharks that are preyed upon by other adult shark species (i.e. Bull sharks) feeding near the beaches based on climate conditions and water temperatures affecting forage food.
11. The controversial 2006 LCS stock assessment from NMFS led to the lower 2008 Sandbar shark quota and trip-limit changes for LCS fishing. Sandbar shark was limited to a small shark research fleet with 100% observer coverage, while a 33 non-sandbar LCS trip limit was implemented for the directed shark fishing fleet. This created a virtual day-boat fishery for LCS where landings became less than half as much by weight per trip when compared to the 4000-pound dw trip limit. The historical landings for Sandbar sharks were about 38% of the total LCS catch, normally caught offshore, and other commercially important LCS like Blacktip shark, Bull and Lemon sharks during many conditions are found in or near state waters rather than just in the US EEZ waters. **Shark fins** were **required** to be **naturally attached to the dressed carcass** until unloaded at the dock with this new NMFS HMS management regulation.
12. Beginning 2013 the trip limit increased to 36 LCS to land about **1.5 million pounds dw**. The **shark sanctuary** regions continued to grow because the NMFS used some shark species (i.e. Blacknose shark & large Hammerhead sharks as "choke species" to close down larger shark quotas before being 100% harvested. This unintended consequence from underfishing has created in the US waters a rapid LCS and small coastal shark (SCS) population's expansion.
13. Commercial **directed shark** fishermen have reported, and **US government independent shark surveys** have documented for several years now the extremely high catch per unit of effort (CPUE) that is occurring near shore and offshore. The NMFS Southeast Fisheries Science Center (SEFSC) claims they do not have enough funding, or NMFS analysts, to conduct shark stock assessments and have significantly delayed future science validation for many shark species as a result. **The tentative SEFSC schedule for reassessing Sandbar shark has been delayed until 2020** as rumor has it. Meanwhile landings for Sandbar shark, Dusky shark and LCS species in general are setting new CPUE records that need to be utilized with future stock assessments to see how far ahead of schedule the rebuilding plans have come in twenty-two years of management.
14. Non-sandbar LCS fishing opened for the US east coast on July 01, 2015, though the NC HAPC region will not open for shark fishing until August 1, 2015 as required demonstrating how fishing was not really part of the recent **increase of NC shark attacks**. The **decades underfishing sharks** has lead to the unintended consequence of creating **shark sanctuaries**. The American public are hearing more about **more frequent shark sightings and attacks** along numerous US beaches. The expanding shark populations are negatively interacting with many US saltwater fisheries causing large financial losses. These are plain facts about the US federal shark fishery management to date. T**he NMFS SEFSC inability** to have timely **shark stock assessments** is an **unacceptable management choice for shark fishing interests** who support catching realistic LCS & SCS **sustainable** quotas that prevent overfishing, and overfished conditions for sharks.

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American Elasmobranch Society (AES) member 2004-2015
Atlantic Coastal Cooperative Statistics Program (ACCSP) Advisory Committee member from Florida
Atlantic States Marine Fisheries Commission (ASMFC) Coastal Shark (CS) Florida (FL) Advisory Panel (AP) commercial & for-hire recreational member [former Chair of CS AP]
National Marine Fisheries Service (NMFS) Highly Migratory Species (HMS) AP commercial member 2013-2015
NMFS HMS SouthEast Data, Assessment and Review (SEDAR) AP Pool member 2013-2015
South Atlantic Fishery Management Council (SAFMC) SEDAR AP Pool member
SAFMC Marine Protected Area (MPA) Expert Work Group (EWG) participant 2012-2013
Former SAFMC MPA AP FL commercial member
Former NMFS Atlantic Large Whale Take Reduction Team FL participant (ALWTRT)
Former NMFS Bottlenose Dolphin Take Reduction Team FL participant (BDTRT)
Participant, observer and/or contributor to US coastal shark stock assessments during 1992, 1996, 1998, 2001, 2002, 2005, 2006, 2007, 2011, 2012, 2013, 2014 and 2015
Participant, observer and/or contributor SouthEast Data, Assessment and Review (SEDAR) 11 (Large Coastal Sharks), 13 (Small Coastal Sharks), 16 (King Mackerel), 19 (Red Grouper/Black Grouper), 21 (Large Coastal Sharks/Small Coastal Shark), 24 (Red Snapper), 25 (Black Sea Bass/Golden Tilefish), 28 (Spanish Mackerel/Cobia), 29 (Gulf Blacktip Shark), 32 (~~Gray Triggerfish~~/Blueline Tilefish), 34 (Atlantic Sharpnose Shark/Bonnethead Shark), 36 (Snowy Grouper), 38 (King Mackerel), 39 (Smoothhound Sharks) and SEDAR 41 (Red Snapper/Gray Triggerfish)