

NOAA
FISHERIES

Atlantic Highly Migratory Species Management

Amendment 5b Update

HMS Advisory Panel Meeting
September 9, 2015

Dusky Sharks

- Recap
- New Analysis
- Potential Proposed Rule Alternatives



SEDAR 21 Stock Assessment – Dusky Sharks

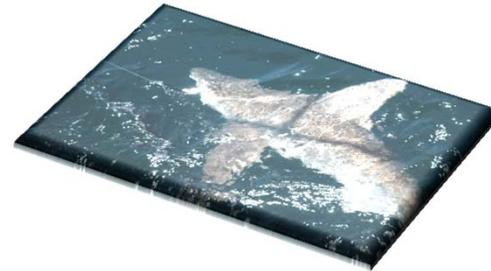
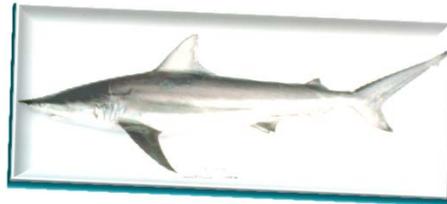
Results from SEDAR stock assessment for dusky sharks (2011)



- Dusky sharks are overfished with overfishing occurring
 - Same status as 2006 stock assessment
- New rebuilding timeline = 100 years
 - Rebuilding plan implemented in 2008 (Amendment 2); had rebuilding time of 400 years
- Need to reduce fishing mortality by 58%
- Stock assessment used data through 2009

Amendment 5

- New and updated shark stock assessments resulted in the development of Amendment 5



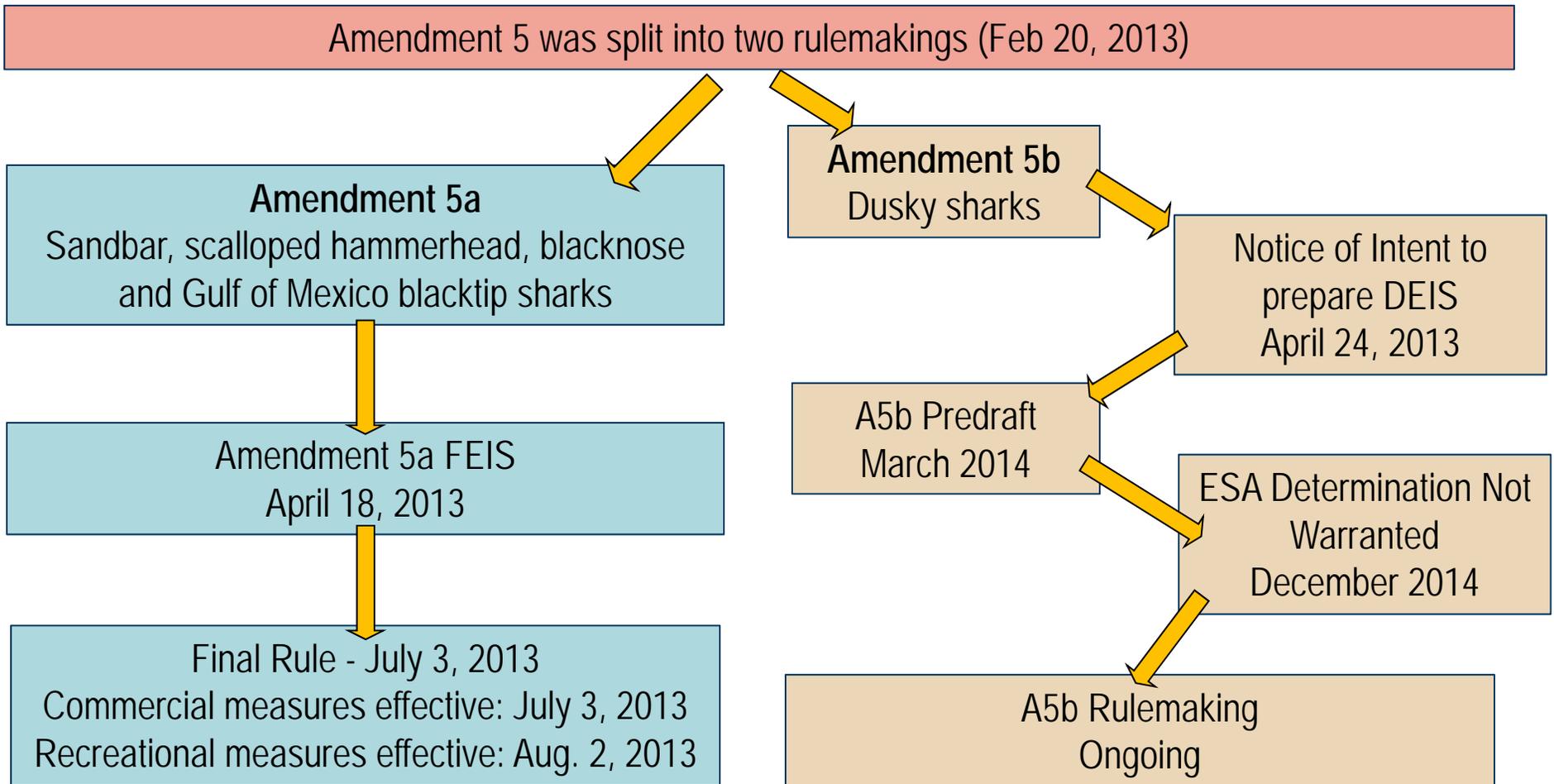
Management measures proposed to reduce dusky shark mortality

Recreational fishery: increasing recreational minimum size to 96 inches fork length

Commercial fishery: Hotspot closure areas for pelagic longline fishing gear

Amendment 5 Comments

- After reviewing the public comments received, we decided not to proceed with the dusky shark management measures as proposed



Dusky Shark Mortality Analysis – A5

- Considered measures taken in Amendment 2 to be sufficient reducing dusky mortality in the BLL shark fishery
- Looked to find mortality reductions recommended by the stock assessment in the recreational shark and commercial PLL fisheries
- Data from 2008-2010 was used for analysis in Draft A5 (2009 – terminal year of assessment)

Dusky Shark Mortality Analysis – A2

- Amendment 2 analyzed mortality reductions in multiple fisheries based on the anticipated effects of the final measures.
- Fisheries included
 - Shark Research Fishery
 - Directed Shark BLL
 - SWO / Tuna PLL
 - Shark Gillnet
 - Snapper / Grouper and Tilefish BLL
 - Recreational fishing

Dusky Shark Mortality Analysis – Data

- Mortality in the Shark Research Fishery
 - Data from observed dead discards

Year	Dead Discards Within Research Fishery (# of sharks)
2003	0
2004	0
2005	0
2006	0
2007	0
2008	21
2009	54
2010	124
2011	60
2012	211
2013	8
2014	34

Dusky Shark Mortality Analysis – Data

- Mortality in the Directed Shark Fishery
 - Data calculated from observed dusky interactions and Coastal Fishery Logbook Trips

Year	Dead Discards Within Research Fishery (# of sharks)
2003	0
2004	0
2005	0
2006	0
2007	0
2008	21
2009	54
2010	124
2011	60
2012	211
2013	8
2014	34

Year	Estimated Dead Discards on Directed LCS Trips (# of sharks)
2003	726
2004	291
2005	285
2006	515
2007	124
2008	26
2009	36
2010	32
2011	39
2012	41
2013	50
2014	46

Dusky Shark Mortality Analysis – Data

- Mortality in the PLL Fishery
 - Data from HMS Logbook

Year	Dead Discards Within Research Fishery (# of sharks)	Estimated Dead Discards on Directed LCS Trips (# of sharks)
2003	0	726
2004	0	291
2005	0	285
2006	0	515
2007	0	124
2008	21	26
2009	54	36
2010	124	32
2011	60	39
2012	211	41
2013	8	50
2014	34	46

Year	Estimated Dead Discards on PLL Gear (# of sharks)
2003	124
2004	142
2005	43
2006	76
2007	89
2008	36
2009	68
2010	35
2011	12
2012	114
2013	38
2014	11

Dusky Shark Mortality Analysis – Data

- Mortality in the Shark and Mackerel Gillnet Fisheries
 - Data from observed dead discards

Year	Dead Discards Within Research Fishery (# of sharks)	Estimated Dead Discards on Directed LCS Trips (# of sharks)	Estimated Dead Discards on PLL Gear (# of sharks)
2003	0	726	124
2004	0	291	142
2005	0	285	43
2006	0	515	76
2007	0	124	89
2008	21	26	36
2009	54	36	68
2010	124	32	35
2011	60	39	12
2012	211	41	114
2013	8	50	38
2014	34	46	11

Year	Total observed Gillnet Discards (# of dusky sharks)
2003	0
2004	0
2005	0
2006	21
2007	0
2008	3
2009	1
2010	1
2011	0
2012	1
2013	0
2014	0

Dusky Shark Mortality Analysis – Data

- Mortality in the Snapper / Grouper and Tilefish Fisheries
 - Data from observed dead discards

Year	Dead Discards Within Research Fishery (# of sharks)	Estimated Dead Discards on Directed LCS Trips (# of sharks)	Estimated Dead Discards on PLL Gear (# of sharks)	Total observed Discards (# of sharks)
2003	0	726	124	0
2004	0	291	142	0
2005	0	285	43	0
2006	0	515	76	21
2007	0	124	89	0
2008	21	26	36	3
2009	54	36	68	1
2010	124	32	35	1
2011	60	39	12	0
2012	211	41	114	1
2013	8	50	38	0
2014	34	46	11	0

Year	Discards from Snapper / Grouper & Tilefish BLL Fisheries (# of sharks)
2003	0
2004	0
2005	0
2006	0
2007	0
2008	0
2009	0
2010	0
2011	0
2012	0
2013	0
2014	0

Dusky Shark Mortality Analysis – Data

- Mortality in Recreational Fisheries
 - Estimates from HMS SAFE Report

Year	Dead Discards Within Research Fishery (# of sharks)	Estimated Dead Discards on Directed LCS Trips (# of sharks)	Dead Discards on PLL Gear (# of sharks)	Total observed Gillnet Discards (# of sharks)	Discards from Snapper/Grouper & Tilefish BLL Fisheries (# of sharks)
2003	0	726	124	0	0
2004	0	291	142	0	0
2005	0	285	43	0	0
2006	0	515	76	21	0
2007	0	124	89	0	0
2008	21	26	36	3	0
2009	54	36	68	1	0
2010	124	32	35	1	0
2011	60	39	12	0	0
2012	211	41	114	1	0
2013	8	50	38	0	0
2014	34	46	11	0	0

Year	Estimated Recreational Landings (# of dusky sharks)
2003	2777
2004	36
2005	3040
2006	194
2007	112
2008	1559
2009	546
2010	91
2011	148
2012	57
2013	36
2014	599

Dusky Shark Mortality Analysis – Data

- Total Dusky Shark Mortality

Year	Dead Discards Within Research Fishery (# of sharks)	Estimated Dead Discards on Directed LCS Trips (# of sharks)	Dead Discards on PLL Gear (# of sharks)	Total observed Gillnet Discards (# of sharks)	Discards from Snapper/Group er & Tilefish BLL Fisheries (# of sharks)	Estimated Recreational Landings (# of dusky sharks)
2003	0	726	124	0	0	2777
2004	0	291	142	0	0	36
2005	0	285	43	0	0	3040
2006	0	515	76	21	0	194
2007	0	124	89	0	0	112
2008	21	26	36	3	0	1559
2009	54	36	68	1	0	546
2010	124	32	35	1	0	91
2011	60	39	12	0	0	148
2012	211	41	114	1	0	57
2013	8	50	38	0	0	36
2014	34	46	11	0	0	599

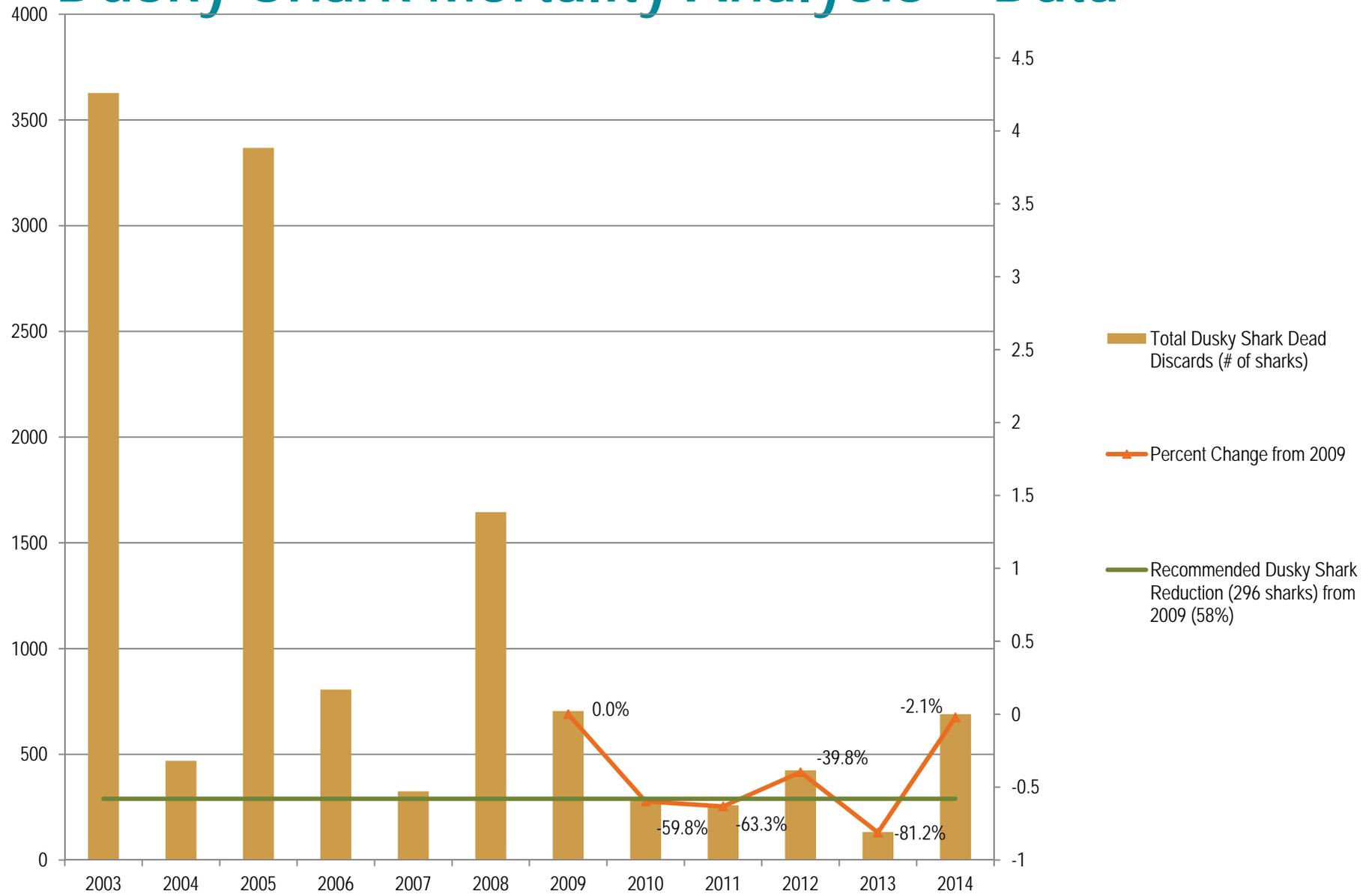
Year	Total Dusky Dead Discards (# of sharks)
2003	3627
2004	469
2005	3368
2006	806
2007	325
2008	1645
2009	705
2010	283
2011	259
2012	424
2013	132
2014	690

Dusky Shark Mortality Analysis – Data

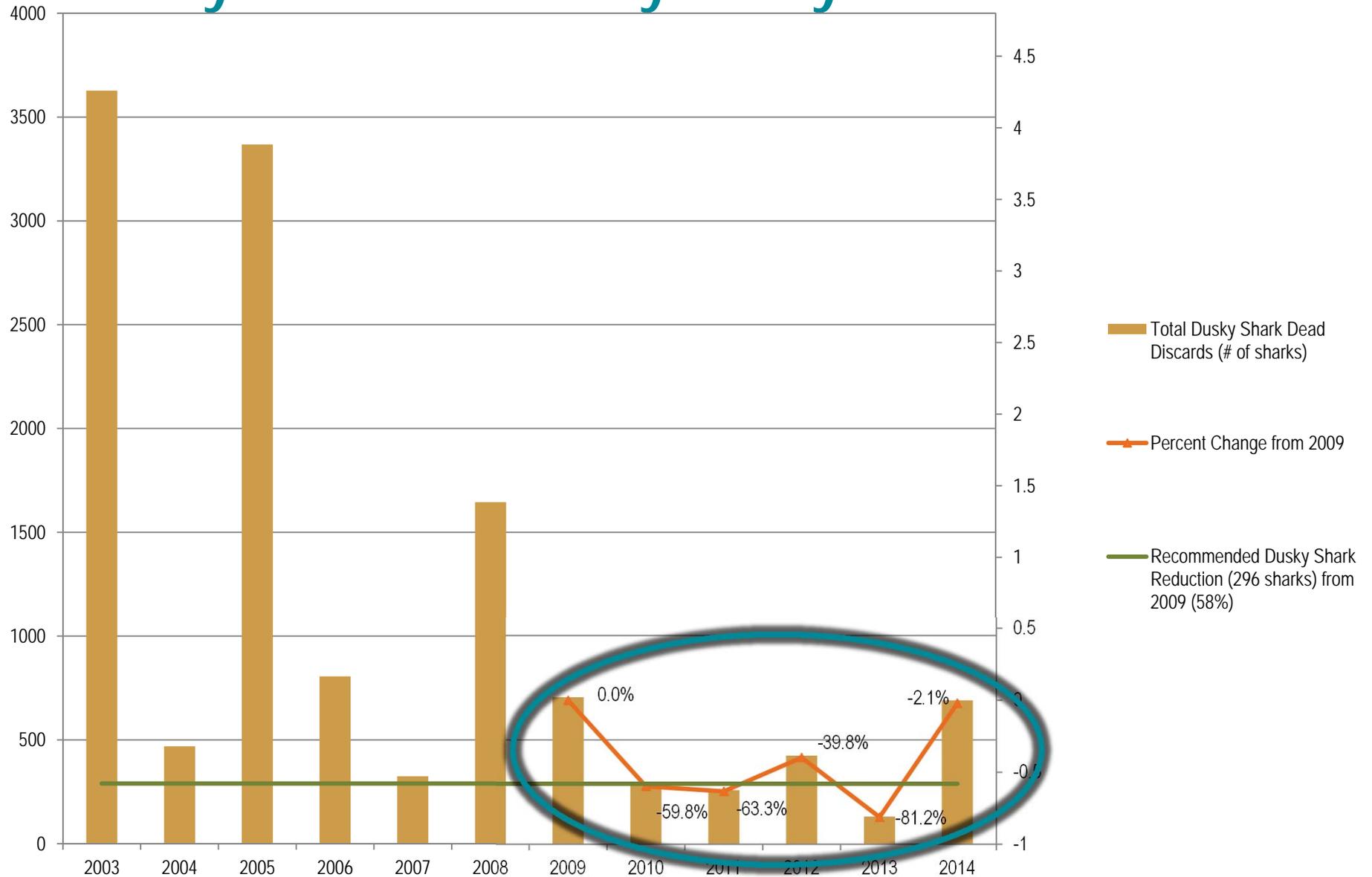
- Total Dusky Shark Mortality

Year	Dead Discards Within Research Fishery (# of sharks)	Estimated Dead Discards on Directed LCS Trips (# of sharks)	Dead Discards on PLL Gear (# of sharks)	Total observed Gillnet Discards (# of sharks)	Discards from Snapper/ Grouper & Tilefish BLL Fisheries (# of sharks)	Estimated Recreational Landings (# of dusky sharks)	Total Dusky Dead Discards (# of sharks)
2003	0	726	124	0	0	2777	3627
2004	0	291	142	0	0	36	469
2005	0	285	43	0	0	3040	3368
2006	0	515	76	21	0	194	806
2007	0	124	89	0	0	112	325
2008	21	26	36	3	0	1559	1645
2009	54	36	68	1	0	546	705
2010	124	32	35	1	0	91	283
2011	60	39	12	0	0	148	259
2012	211	41	114	1	0	57	424
2013	8	50	38	0	0	36	132
2014	34	46	11	0	0	599	690

Dusky Shark Mortality Analysis – Data



Dusky Shark Mortality Analysis – Data



Dusky Shark Landings – Recreational Data

MRFSS / MRIP Raw Data

Number of dusky sharks intercepted
by or reported to the survey as
harvested from 2003 – 2014:

20

Range of regional estimates when
a dusky was reported as
harvested:

16 – 5,482

Range of regional proportional
standard errors (PSE) for these
estimates:

53.8 – 104.1

A PSE value greater than 50 indicates a very imprecise estimate



Pelagic Longline Effort

Number of trips reported in the HMS Logbook 2003-2014

Average number of trips taken from 2010 – 2014: 1,517

Year	PLL Trips	Percent change from 2009
2003	1649	
2004	1711	
2005	1332	
2006	1288	
2007	1504	
2008	1,399	
2009	1,422	
2010	1,284	-9.7%
2011	1,319	-7.2%
2012	2,046	43.9%
2013	1,575	10.8%
2014	1,361	-4.3%

Pelagic Longline Effort

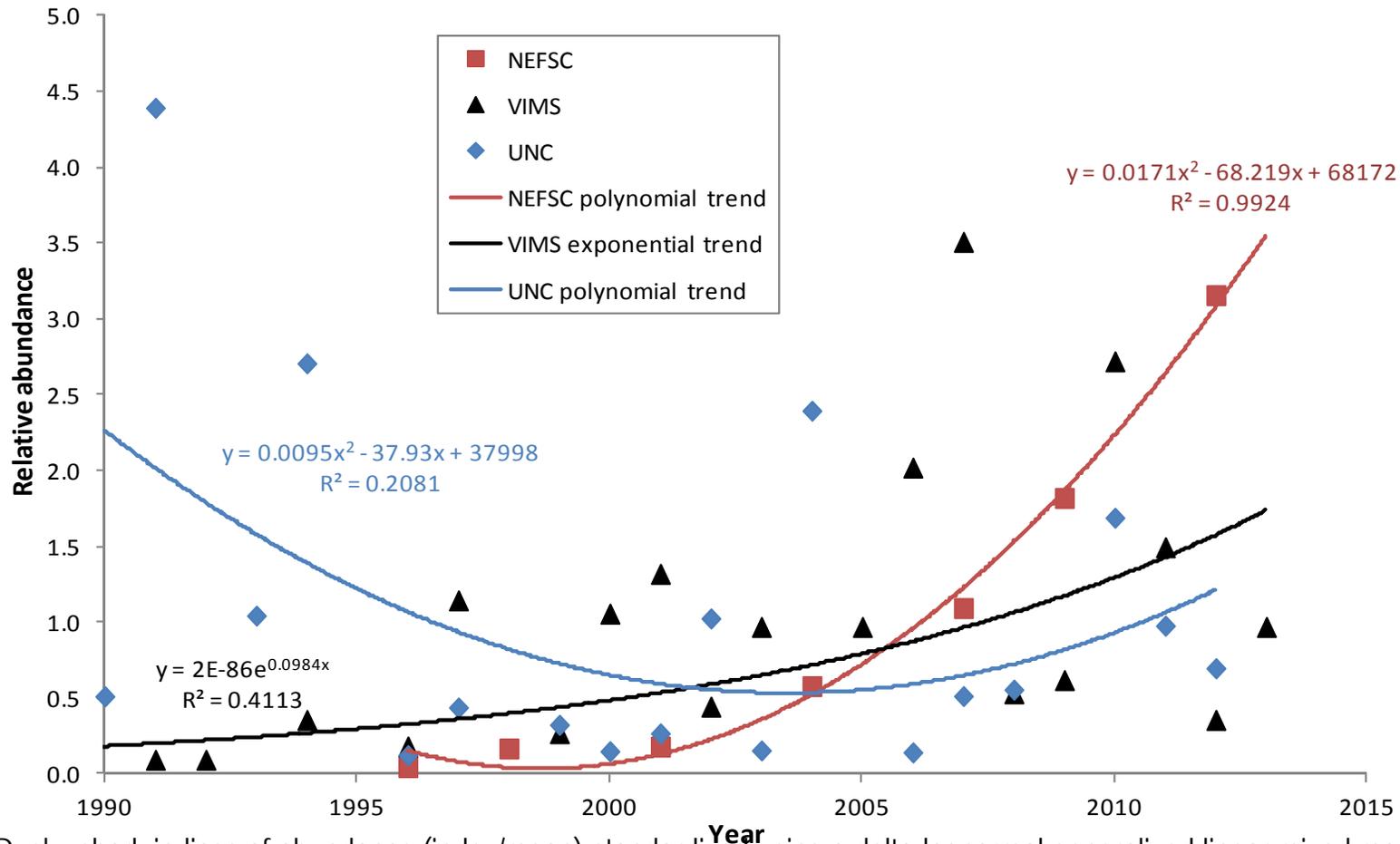
Number of trips reported in the HMS Logbook from January 1 – June 30

2003-2015

Percent of trips taken before July 1 from 2010 – 2014: 68 percent

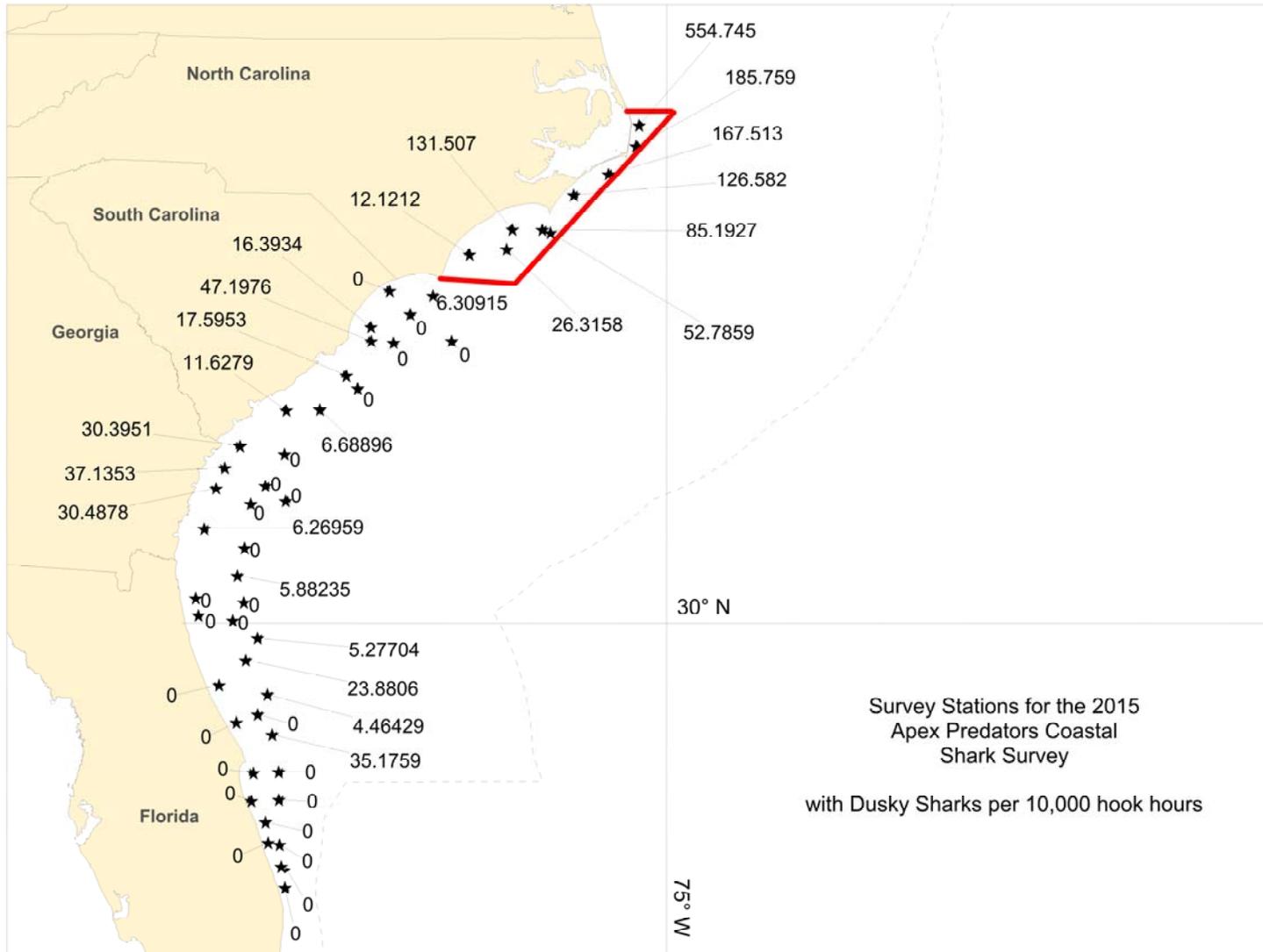
Year	PLL Trips thru June 30	Percent Change from 2009	Percent of Yearly Trips
2003	942		57.13%
2004	1053		61.54%
2005	876		65.77%
2006	707		54.89%
2007	953		63.36%
2008	916		65.48%
2009	1,025		72.08%
2010	989	-3.51%	77.02%
2011	836	-18.44%	63.38%
2012	1,190	16.10%	58.16%
2013	1,173	14.44%	74.48%
2014	968	-5.56%	71.12%
2015	551	-46.24%	TBD

Dusky Shark ESA Status Review – Survey Data

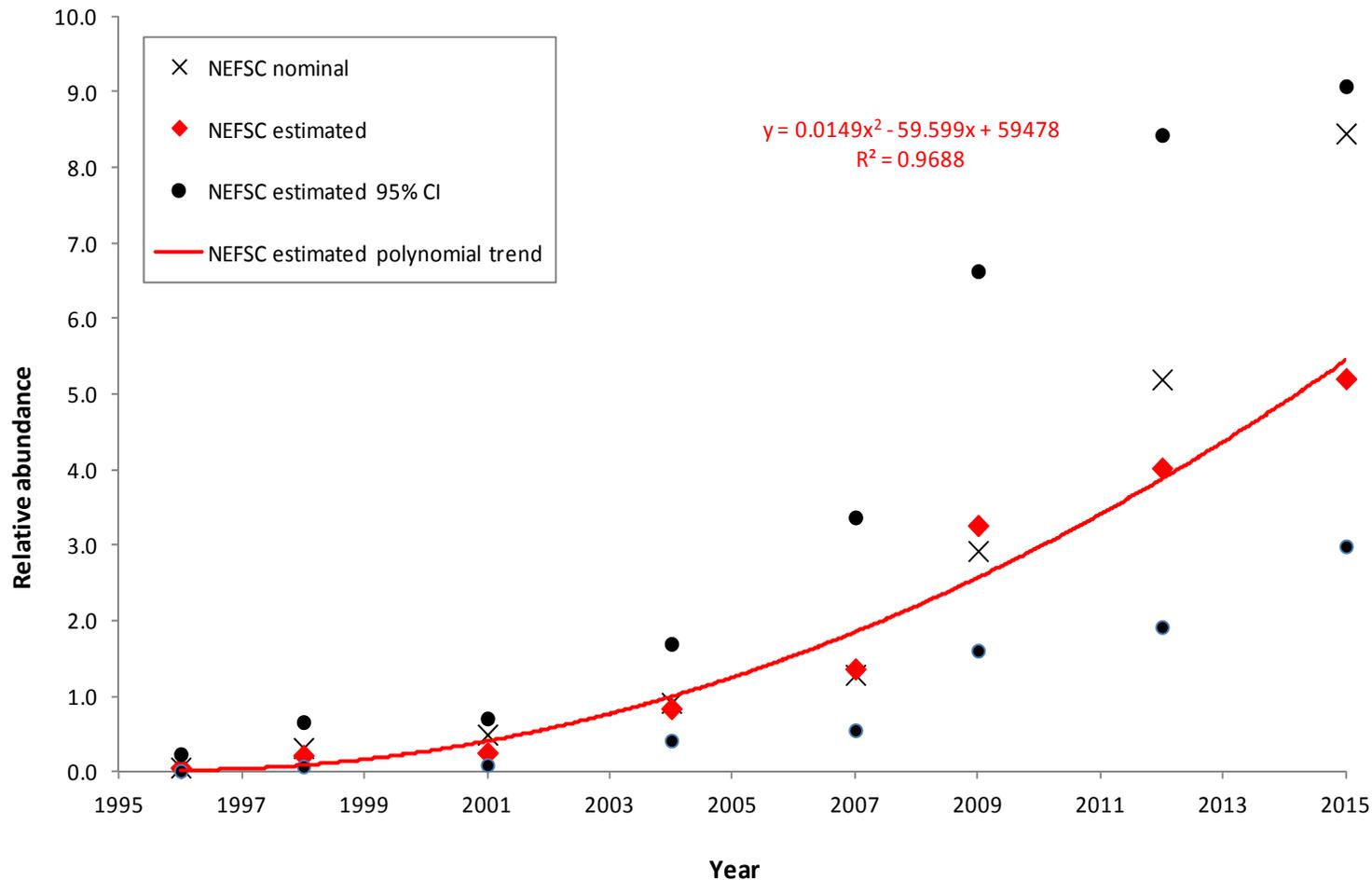


Dusky shark indices of abundance (index/mean) standardized using a delta-lognormal generalized linear mixed model plotted by year for three fishery-independent time series: NEFSC = Northeast Fisheries Science Center Coastal Shark Bottom Longline Survey, VIMS = Virginia Institute of Marine Science Shark Longline Survey, and UNC = University of North Carolina Shark Longline Survey. Trend lines are best fit regression models of the standardized data (exponential for VIMS and second order polynomial for NEFSC and UNC).

2015 Apex Shark Survey Results - Dusky



2015 Apex Shark Survey Results - Dusky



Dusky shark nominal and estimated (modeled using a delta-lognormal generalized linear model) indices of abundance from the NEFSC Coastal Shark Bottom Longline Survey from 1996 to 2015 divided by the mean index values for each time series with 95% confidence interval (CI) for the estimated time series

Petition for Rulemaking



Earthjustice, on behalf of Oceana

Submitted on July 22, 2015

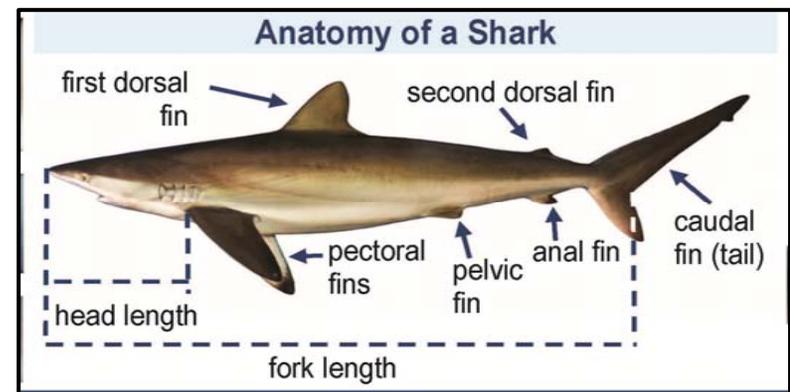
Take Immediate Action

- Rebuild the stock and end overfishing
- Establish annual catch limits (ACLs) and accountability measures (AMs)

Draft Amendment 5b will address these issues and is underway. A5b deemed significant by OMB

Potential Recreational Alternatives

- A1: Status Quo
- A2: Require HMS Angling and Charter/Headboat permit holders to obtain a shark endorsement in order to retain sharks. Online quiz regarding shark identification and fishing regulations must be completed to obtain the permit with the shark endorsement. Additional development of online shark identification and outreach materials for recreational shark fishermen.



Potential Recreational Alternatives

A3: Require HMS Angling and Charter/Headboat permit holders to have a NMFS-approved shark identification placard onboard when fishing for and/or retaining sharks

SHARK IDENTIFICATION *If you don't know, let it go*
 FOR THE RECREATIONAL FISHERY OF THE U.S. ATLANTIC AND GULF OF MEXICO
 Prohibited species are underlined in red

All ridgeback sharks are prohibited, except for oceanic whitetip, tiger, or smoothhound sharks

Ridgeback sharks are sharks with an interdorsal ridge (a visible line of raised skin between dorsal fins)

Prohibited ridgeback sharks: bignose, Caribbean reef, dusky, Galapagos, night, sandbar, and silky sharks

Oceanic whitetip shark: young sharks have black mottling on most fins; does not always have interdorsal ridge; max. size 8 ft; offshore
 Cannot be retained if tuna, swordfish, or billfish are onboard

Tiger shark: snout length much shorter than mouth width; markings fade with age; max. size 15 feet; coastal and offshore

There is no Federal permit requirement, minimum size, or bag limit for smoothhound or spiny dogfish

Smoothhound: second dorsal fin slightly smaller than first dorsal fin and much larger than anal fin; max. size 5 ft; coastal and offshore

Spiny dogfish: max. size 4 ft; coastal and offshore

Scalloped hammerheads, great hammerheads, and smooth hammerheads cannot be retained if tuna, swordfish or billfish are onboard

Scalloped hammerhead: max. size 11 ft; coastal and offshore

Great hammerhead: max. size 15 ft; coastal and offshore

Smooth hammerhead: max. size 12 ft; coastal and offshore

There is no minimum size for Atlantic sharpnose sharks or bonnetheads

Atlantic sharpnose shark: max. size 3 ft; coastal and offshore; similar species: smalltail sharks have very reduced labial furrows and Caribbean sharpnose sharks lack white spots

Bonnethead: small, black spots on body; max. size 4 ft; mostly coastal

Authorized Species	Minimum Size (fork length)	Bag Limit (per trip)
Atlantic sharpnose shark	None	1 per person
Bonnethead	None	1 per person
Hammerheads (great, scalloped, and smooth)	78 inches	1 per vessel (hammerhead OR other shark)
Other sharks	54 inches	

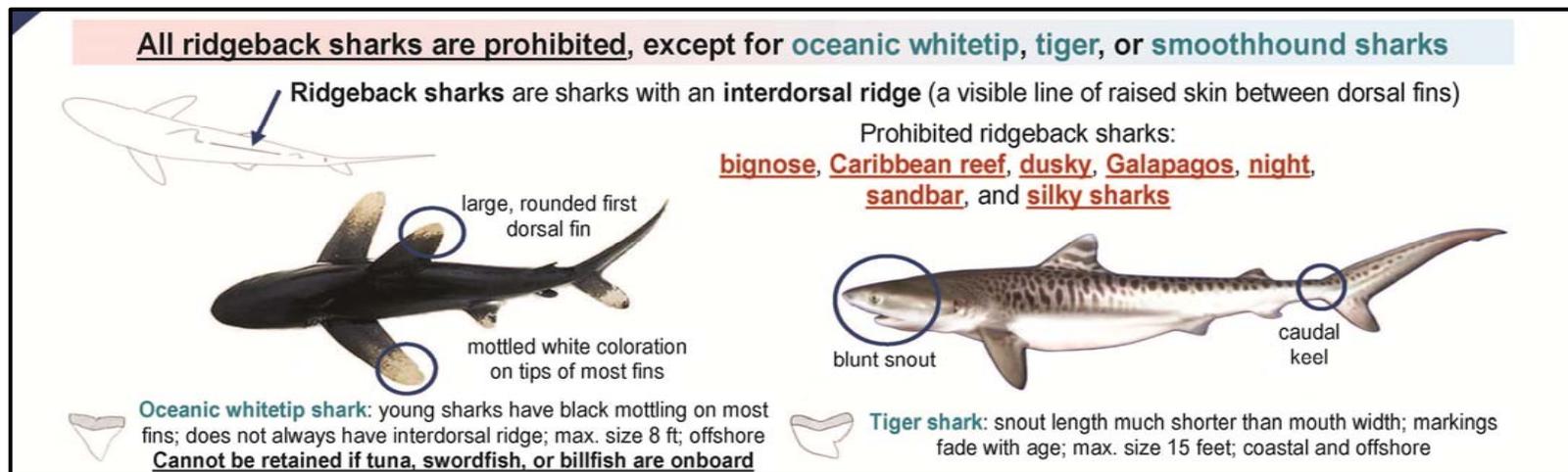
Anatomy of a Shark

Labels: snout length, mouth width, tooth, head length, fork length, first dorsal fin, second dorsal fin, pectoral fins, pelvic fin, anal fin, caudal fin (tail), fin origin, second dorsal fin, keel, tail.

All sharks within a species are not identical; however, these are common characteristics for the majority of individuals. Young sharks can vary in appearance from adults. Maximum sizes are approximate.
 Prepared by W.B. Driggers III, E.R. Hoffmayer, J.I. Castro, K.S. Davis, M. Clark, and P. Cooper. National Marine Fisheries Service. <http://www.nmfs.gov/species/sharks>
 Photographs and/or illustrations provided by NMFS, J. Castro, W.B. Driggers III, E.R. Hoffmayer, and S. Iglesias.
 Revised July 2013

Potential Recreational Alternatives

- A4: Prohibit retention of all ridgeback sharks in the Atlantic recreational shark fishery. Oceanic whitetip, tiger, and smoothhound sharks would be prohibited from retention by HMS Angling and Charter/Headboat permit holders.



- A5: Increase recreational minimum size to 89 inches fork length for all sharks.

Potential Recreational Alternatives

A6: Allow only catch and release of all Atlantic HMS managed sharks. Anglers could fish for and target sharks but retention of recreationally-caught sharks would be prohibited.



Potential Commercial Alternatives

- B1: Status Quo
- B2: Fishermen with an Atlantic shark commercial permit and pelagic longline (PLL) gear onboard would be limited to 750 hooks per PLL set and no more than 800 assembled gangions onboard at any time.



Potential Commercial Alternatives

- B3: Fishermen with an Atlantic shark commercial permit with PLL gear onboard must release all sharks not being retained using a dehooker or cutting the gangion less than three feet from the hook.



- B4: Develop dusky shark hotspot closure areas for HMS vessels with PLL gear.

Potential Commercial Alternatives

- B5: Require specific dusky shark training for vessel owners and operators that report the highest number of dusky shark interactions in the HMS logbook on an annual basis. Training would also be required for vessel owners and operators of vessels that have more dusky sharks reported by the Pelagic Observer Program than in the HMS Logbook.
- B6: Increase dusky shark outreach and awareness through development of additional outreach materials. Require vessels to abide by a dusky shark fleet communication and relocation protocol when in dusky shark hotspot areas.

Potential Commercial Alternatives

- B7: Request that certain states (NJ, DE, MD, VA) and the ASMFC extend end of existing shark closure from July 15 to July 31
- B8: Close Atlantic HMS PLL fishery





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Suggestions? Ideas?
Comments? Questions?