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FISHERIES

Atlantic Highly Migratory Species Management

Dusky Shark Update

HMS Advisory Panel Meeting
March 11, 2015

Dusky Sharks

- Where we've been
- Where we are
- What's next



SEDAR 21 Stock Assessment – Dusky Sharks

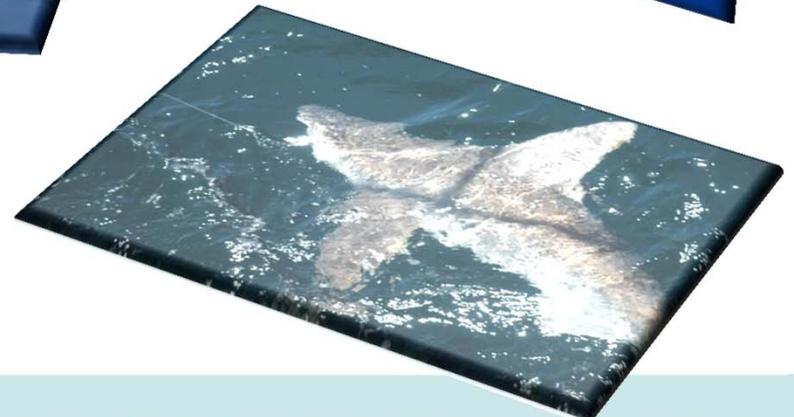
Results from SEDAR stock assessment for dusky sharks (2011)



- 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 for many different shark stocks resulted in the development of Amendment 5



Amendment 5 – Proposed Measures for Dusky Sharks

Management measures proposed to reduce dusky shark mortality

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

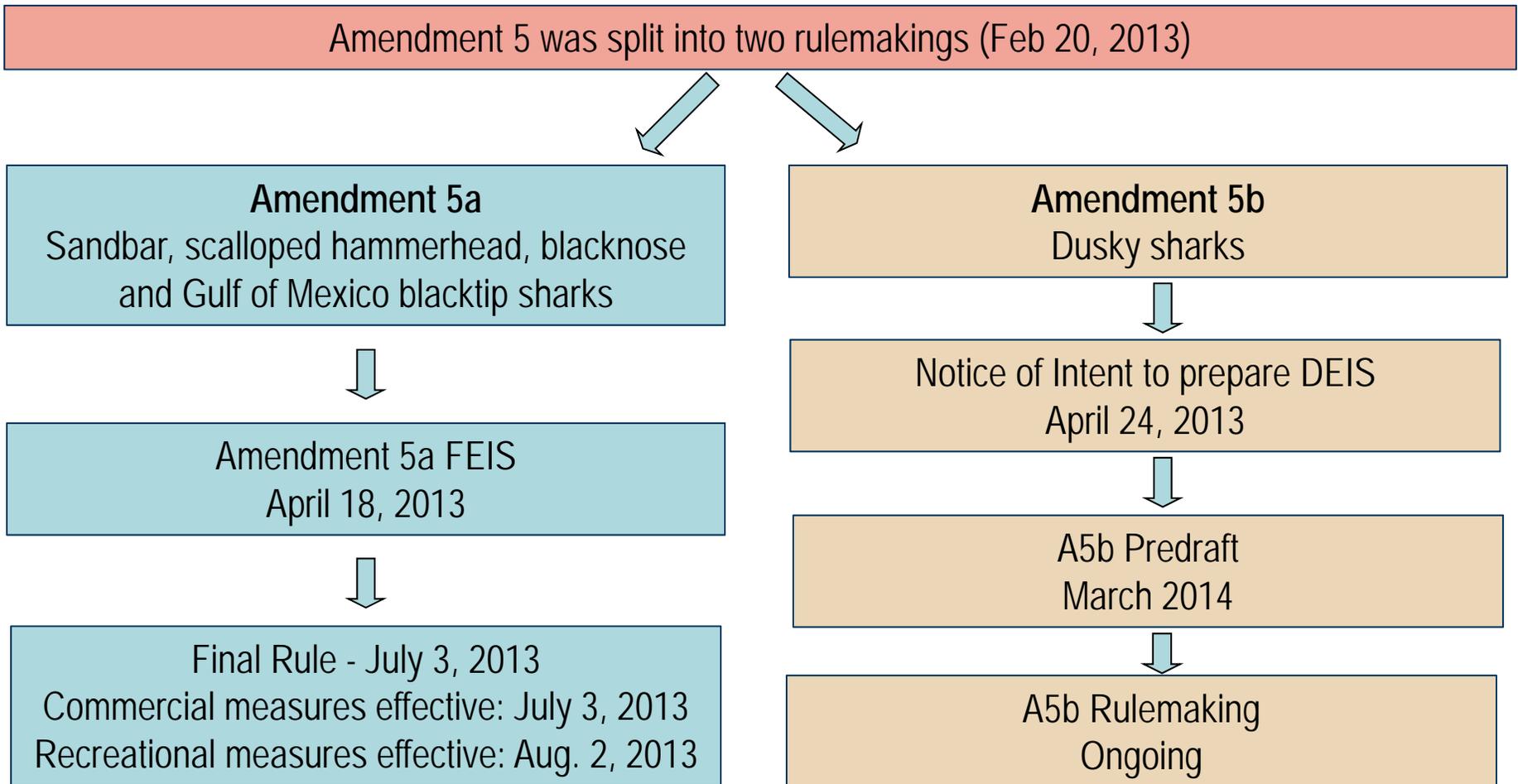
Commercial fishery: Hotspot closure areas for pelagic longline fishing gear

Amendment 5 Comments

- Numerous comments on the proposed dusky shark measures regarding the data sources used and the analyses of these data
- Numerous comments to consider significantly different approaches to those previously analyzed, such as:
 - Exemptions to a recreational minimum size increase to allow landings of other shark species (ex. blacktip sharks, shortfin mako or thresher sharks)
 - Implementing gear restrictions instead of additional pelagic longline closures

Amendment 5 Comments

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



Dusky Shark Endangered Species Act Petitions

- WildEarth Guardians (November 2012) and Natural Resources Defense Council (February 2013) petitioned to list dusky sharks under the Endangered Species Act (ESA)



ESA Listing Process

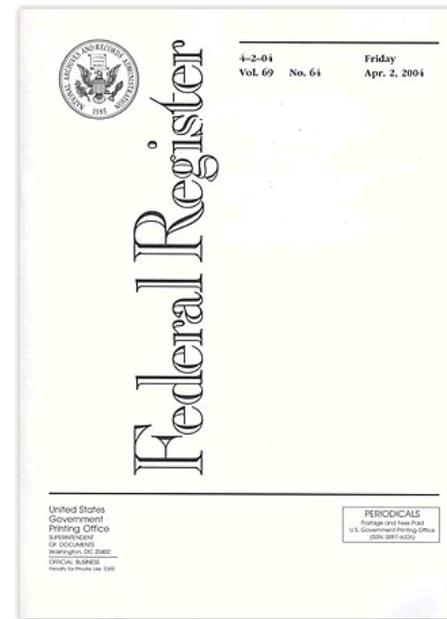
- Petition or self-initiation
- 90-day finding*
 - (+) presents substantial information that listing may be warranted
 - (-) does not present substantial information that listing may be warranted

*A positive 90-day finding initiates a status review which results in 12-month finding; Office of Protected Resources coordinates status review team made up of NMFS staff

- Status review
- 12-month finding
 - “Not Warranted”
 - Proposed Rule
- Final determination with critical habitat designation, if listed

Dusky Shark - ESA

- Positive 90-day finding for Northwest Atlantic and Gulf of Mexico population (May 17, 2013; 78 FR 29100)



Dusky Shark ESA Status Review – ESA Factors

- Present or threatened destruction, modification, or curtailment of habitat or range
- Overutilization for commercial, recreational, scientific, or educational purposes
- Disease, competition, or predation
- Evaluation of adequacy of existing regulatory mechanisms
- Other natural or manmade factors affecting its continued existence

Dusky Shark ESA Status Review – Extinction Risk Analysis

- The Status Review Team (SRT) conducted a demographic risks analysis and a threats assessment
- Ranked extinction risk to the dusky shark population in the Northwest Atlantic and Gulf of Mexico now and in the foreseeable future (30 years)
- Used results in an overall level of extinction risk analysis for now and in the foreseeable future

Dusky Shark ESA Status Review

- Status review document available October 2014
- Document contained recent information on dusky sharks, analyzed factors specified in section 4(a)(1) of the ESA, and conducted an Extinction Risk Analysis

http://www.nmfs.noaa.gov/pr/species/Status%20Reviews/nwa_dusky_shark_sr_2014.pdf

Dusky Shark ESA Status Review – Extinction Risk Analysis

Result: SRT determined that the NWA dusky shark DPS has a low risk of extinction currently and in the foreseeable future

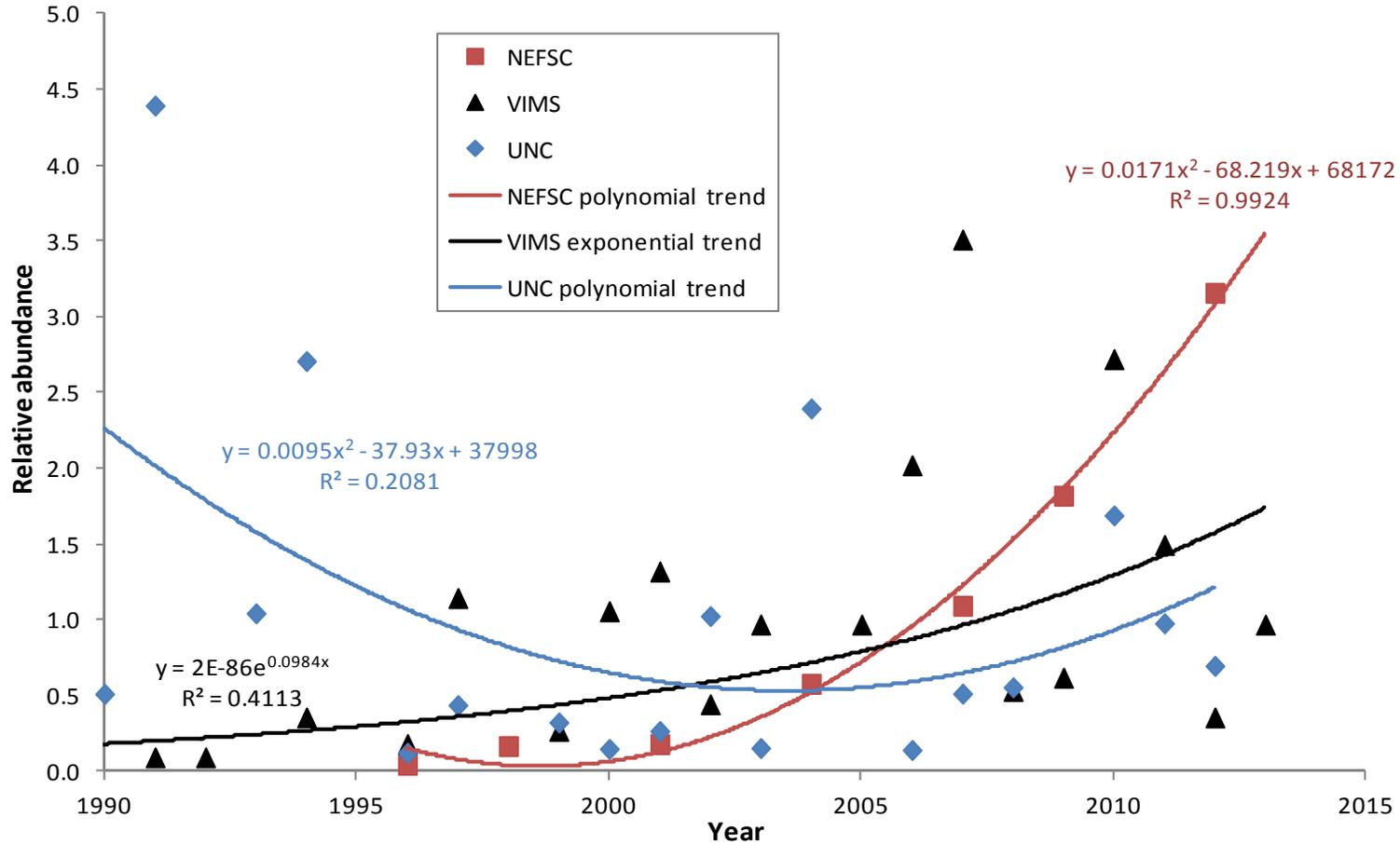
12-month finding published on December 17, 2014 and determined that the Northwest Atlantic and Gulf of Mexico population of dusky sharks does not warrant ESA listing at this time

Dusky Shark Status Review - Findings

- Dusky shark numbers were estimated to have declined 74% from virgin levels by 2004, but showed a gradual increasing trend through 2009
- Updated analyses using the same methodology from the two fishery-independent surveys (NEFSC Coastal Shark Bottom Longline Survey & VIMS Shark Longline Survey) used in the base model of the stock assessment show that the trends in dusky shark relative abundance continue to increase
- Analysis of the only fishery-independent time series that is still being conducted (UNC Shark Longline Survey) and used in sensitivity model runs also shows an increasing trend in recent years



Dusky Shark ESA Status Review – Recent Information



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).

Dusky Shark Next Steps – Things to Consider

- SEDAR 21 stock assessment used data through 2009
 - Updated abundance indices from fishery-independent surveys show positive trends since 2009
 - Amendment 2 was implemented in July of 2008
- Dusky sharks prohibited from retention in 2000
 - Age of 50% maturity for dusky sharks is ~17 years; effects of regulations could take time to result in population change
- Impacts from other regulatory amendments (e.g., Amendment 7)

Dusky Shark Next Steps – SEDAR Stock Assessment Schedule

Previous Schedule

2016: Atlantic and Gulf of Mexico Blacktip Sharks

2017: To be determined

2018: Dusky Sharks

Revised Schedule

2016: Dusky Sharks*

2017: Gulf of Mexico Blacktip Sharks

After 2018: Atlantic Blacktip Sharks

*intend to use data through 2015

Dusky Shark Next Steps – Things to Consider

Options to improve dusky shark data and increase outreach and education to reduce mortality on dusky sharks

- Simplifying Recreational Regulations
 - Prohibiting all ridgeback sharks might reduce confusion of what sharks may be retained and reduce accidental retention of dusky sharks

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

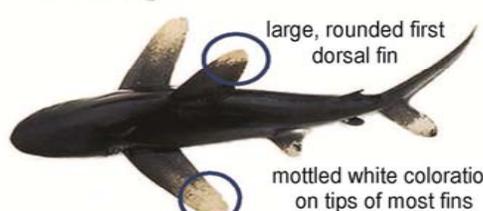
Ridgeback sharks are sharks with an **interdorsal ridge** (a visible line of raised skin between dorsal fins)

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

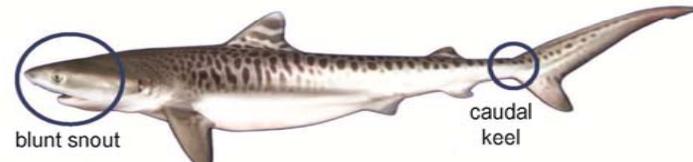


large, rounded first dorsal fin

mottled white coloration on tips of most fins



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



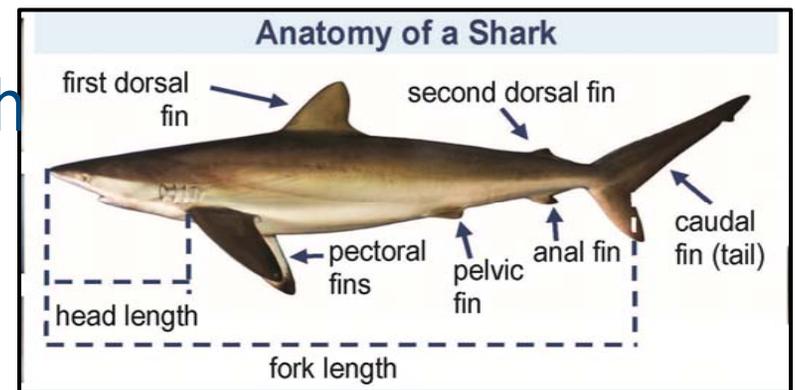
blunt snout

caudal keel

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

Dusky Shark Next Steps – Things to Consider

- Adding shark educational information to HMS Angling and Charter/Headboat permit website for anglers intending to retain sharks
 - Identifying the universe of HMS recreational anglers that retain sharks would help to improve MRIP estimates
- Could incorporate a shark identification / regulation outreach component to obtaining an endorsement to improve data



Dusky Shark Next Steps – Things to Consider

- Reducing bycatch mortality and promoting best practices
 - Releasing sharks caught on pelagic longline gear with minimal amounts of fishing gear remaining on the animal to reduce bycatch mortality
 - Cooperation within the pelagic longline fleet to report and avoid areas of high dusky shark interactions
 - Including shark identification information during sea turtle handling and release workshops to improve data





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Suggestions? Ideas?
Comments? Questions?