

Atlantic States Marine Fisheries Commission

Spiny Dogfish Technical Committee Report

September 19, 2007; October 2, 2007; and October 4, 2007

This report summarizes the discussions and recommendations from a joint meeting of the ASMFC's Spiny Dogfish Technical Committee (TC) and the Mid-Atlantic Fishery Management Council's Spiny Dogfish Monitoring Committee (MC) that was held on September 19, 2007 and two three-hour conference calls on October 2, 2007 and October 4, 2007.

Attendance at the Joint Technical Committee and Monitoring Committee Meeting:

Chris Vonderweidt, ASMFC (Staff)	Lori Steele, NEFMC
Jim Armstrong, MAFMC	Eric Brazer, CCCHFA
Angel Bolinger, MD DNR	Dan McKiernan, MA DMF
Hugh Carberry, NJ DFW	Hannah Goodall, NMFS
Matt Gates, CT DMF	Fentress Munden, MA DMF
Claire McBane, NH F&G	Kathy Sosebee, NMFS - NEFSC
Paul Rago, NMFS - NEFSC	

Participants on the October 2, 2007 Conference Call:

Chris Vonderweidt, ASMFC (Staff)	Kathy Sosebee, NMFS - NEFSC
Jim Armstrong, MAFMC	Matt Gates, CT DMF
Hugh Carberry, NJ DFW	Eric brazer, CCCHFA
Claire McBane, NH F&G	Dan McKiernan, MA DMF
Angel Bollinger, MD DNR	Lori Steele, NEFMC
Hannah Goodall, NMFS	Chris Hickman, NC
Paul Rago, NMFS – NEFSC	

Participants on the October 4, 2007 Conference Call:

Chris Vonderweidt, ASMFC (Staff)	
Bob Beal, ASMFC (Staff)	Sonja Fordham, Observer
Jim Armstrong, MAFMC	Claire McBane, NH F&G
Hannah Goodall, NMFS	Jack Musick, VIMS
Angel Bolinger, MD DNR	Dan McKiernan, MA DMF
Eric Brazer, CCCHFA	Lori Steele, NEFMC
Kathy Sosebee, NMFS - NEFSC	Matt Gates, CT DMF

Background

The Technical Committee met to provide input to the Management Board on two issues:
1.) Review analysis of updated stock assessment containing the spring 2007 trawl survey data.

2.) Recommend a quota and trip limit *within the range of zero and the maximum allowed by a constant fishing mortality rate*¹ of 0.11².

Dr. Paul Rago presented the TC with a detailed description of the update of stock status based on the 2007 NEFSC Spring Bottom Trawl Survey. Dr. Rago also presented a series of projections to the Committee to illustrate the estimated effects of different harvest strategies on the rebuilding of the stock.

Some of the main points that were made in the update of stock status include:

1. The stock is not overfished and overfishing is not occurring.
2. The stock has not yet achieved the target SSB.
3. The 2007 biomass number is in-between the low 2005 and high 2006 estimates.
4. Beginning about 1997, recruitment markedly declined, and 9 of the 11 lowest values in the 40-yr time series have been recorded in the last decade.
5. Female spawning stock biomass should continue to increase until 2010 and decline afterward, when the smallest year classes on record enter the mature component of the population.
6. There remains to be an imbalance in the sex ratio of the stock, strongly favoring males. The estimated ratio of Males to Females is 4:1.
7. The average size of females is declining, resulting in fewer and smaller pups.

Quota Projections

The following five scenarios were developed to project the impacts of different quota's on fishing mortality rate (F).

Scenario 1: *Baseline conditions. Estimated F on exploitable female biomass is 0.109 in 2006. This scenario can also be used to evaluate the hypothesis that landings can be increased to 6 million lbs by decreasing discards by an equivalent amount*

Quota: 6 million pounds

F = 0.109

Scenario 2: *Elimination of USA directed fishery but all other sources of mortality continue at status quo, including Canada. Estimated F on exploitable female biomass drops from 0.109 to 0.080*

Quota: 6 million pounds

F = 0.080

Scenario 3: *Increase in total landings to 6 million lb of which 84% are female. Estimated F on exploitable female biomass increases from 0.109 to 0.113. Scenario assumes no increase in discards.*

Quota: 6 million pounds

F = 0.113

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¹ As defined in section 4.1.2.1 of the Interstate Fishery Management Plan for Spiny Dogfish

² The original FMP defined the rebuilding F target as 0.03. F rebuild was updated at 43 SARC (2006) and was set at 0.11.

Scenario 4: Increase in total landings to 6 million lb of which 84% are female. Increase in landings are assumed to increase commercial discards by the same fraction as the increase in landings. No change in recreational fishery assumed. Estimated F on exploitable female biomass increases from 0.109 to 0.120.

Quota: 6 million pounds

$F = 0.120$

Scenario 5: Increase in total landings to 8 million lb of which 84% are female. Estimated F on exploitable female biomass increases from 0.109 to 0.125. Scenario assumes no increase in discards.

Quota: 8 million pounds

$F = 0.125$

Scenario 6: Increase in total landings to 8 million lb of which 84% are female. Increase in landings are assumed to increase commercial discards by the same fraction as the increase in landings (i.e. by $3630/2363.9=1.51$). No change in recreational fishery assumed. Estimated F on exploitable female biomass increases from 0.109 to 0.131.

Quota: 8 million pounds

$F = 0.131$

Specification Recommendations

The TC had unanimous support for a quota of 6 million pounds and a trip limit of 600 lbs for the fishing seasons 2008/2009, 2009/2010, and 2010/2011. The TC also stressed the importance of staying consistent in state and federal waters.

Quota Recommendation

Estimates of fishing mortality rate with a 6 million pound quota ranged from 0.09 to 0.12 depending on assumptions about discards. Although the fishing mortality rate under scenario 4 is 0.01 over the target rebuilding fishing mortality rate, the overage would only delay reaching target SSB (200,000mt) by one year—if this projection is exact. The TC agreed that with the uncertainty in the projections, an overage of 0.01 from the highest projected F with a 6 million pound quota would not be detrimental to rebuilding efforts.

The TC expressed great concern for any quota greater than 6 million pounds due to various obstacles to rebuilding including:

- A decade of low pup production has created a "hole" in the size composition of the stock such that mature female biomass is expected to decline after a momentary peak in the year 2010.
- The hole left by these missing cohorts necessitates preservation of existing mature and immature female biomass if pup production is to return to historic levels and assure long-term sustainability of the resource.
- Rebuilding is projected to occur by 2018-2019, though this result will occur only if survival of pups returns to average levels. The model used to make the rebuilding projection assumes that recruitment returns to average levels, rather than assuming a continuation of the low levels observed in the past decade. As a result, the model may be overly optimistic.

- Skewed male to female sex ratio of 4:1

Trip Limits

The TC found no strong biological reasoning for choosing a trip limit value. There is no quantitative projection that directly relates various possession limits to the F target.

Trip limits of both large and small values have discard problems associated with them. There was no evidence that a large trip limit would cause more discards than a small trip limit or vice versa. A large trip limit will take the quota early allowing for discarding of all bycatch dogfish. A small trip limit will discourage a certain portion of the fishing fleet from retaining any dogfish because the value of such a small quantity of dogfish does not give enough incentive to keep any bycatch dogfish.

There was debate as to what quantity of trip limit will allow for directed fishing on dogfish. Arguments were made that smaller boats will direct on dogfish when there is a 600 lb trip limit. Other members of the TC felt that 3,000 lb trip limits are not large enough to allow for any directed fishing.

The TC's recommendation of 600 lb trip limits for period I and II was because of 4 reasons.

1. Directed fishing should not be allowed until the stock has rebuilt. Dogfish stocks are particularly vulnerable at the present time due to years of overfishing on females, persistent low recruitment and the low fecundity of dogfish.
2. 600 lb trip limits will ensure that F is not exceeded based on landing history from previous years. The 4 million pound quota was not harvested in years when both the state and federal trip limits were 600/300 or 600/600 pound.
3. There is no biological reason to deviate from the previous years TC recommendations.
4. Federal and state trip limits should be consistent.

The TC recommended 3 year specification setting with annual review to allow the spiny dogfish industry to set long term business plans/goals.