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New England Fishery Management Council

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MEMORANDUM

DATE: November 2, 2010
TO: Council
FROM: Skate Plan Development Team
SUBJECT: Adjustments to skate specifications to account for discards

The Council has requested that the Skate PDT analyze discards in 2010 to date and make a recommendation whether an increase in the skate wing TAL would be warranted because discards have declined. The Council expects a report by the PDT at the November Council meeting. The supposition is that the vessels in groundfish sectors have experienced drastically lower skate discards, even though skate landings were way ahead of 2009 landings by September 2010.

In addition, the ACL specifications for 2010 and 2011 use the 2006-2008 discard rate (the proportion of total skate catch which is composed of estimated discards) to allocate the target catch (ACT, a 25% reduction from the ABC) between landings and dead discards (assuming a 50% discard mortality rate). A three year moving average is used to smooth out potential sampling anomalies that could occur in a single year, a method proposed by the PDT and approved by the SSC. When the SSC approved the ABC and reviewed the specifications in April 2010, only a preliminary and incomplete 2009 discard estimate was available and was therefore not used in the discard rate. A final 2009 discard estimate is now available.

Using new 2009 discard estimates (Table 1) relying on SBRM methods and standard statistical area landings allocations, the PDT recalculated the specifications using the existing 41,080 mt ABC and 2007-2009 discards. As a result, the 2010 and 2011 combined wing and bait TAL could be adjusted from 14,772 mt (Table 3) to 14,780 mt (Table 4) a net gain of 8 mt, or 17,636 lbs. This adjustment would be allocated to fishery and season as shown in Table 4.

Updating the discard rate from 2006-2008 to 2007-2009, the estimated discard rate declines from 53.7% to 52.2% (Table 2). The 2006-2008 average dead discards, after applying a 50% mortality rate, were estimated to be 19,917 mt. For 2007-2009, this increased to 20,466 mt.

Correspondingly, the 2007-2009 landings increased from 17,170 mt to 18,191 mt, respectively. The PDT also updated the reported skate landings for 2009, which increased from 17,765 mt as of February 2010 to 18,117 mt.

In its evaluation of the question about 2010 discards posed by the Council, the Skate PDT considered the following two questions:

1. Is it possible and reasonable to estimate and forecast discards for the year with incomplete and partial data for the year?
2. Whether discards can be estimated and forecast, how reasonable is it that 2010 discards have declined more than 29% relative to the previous 2009 total skate discard estimate? The allocation or allowance for discards in the 2010-2011 specification is 29% less than the (preliminary) 2009 discard estimate, a lower amount partly from applying a higher 2006-2008 discard rate and partly from the 25% uncertainty buffer between the ABC and the ACT.

There are some important factors that should be considered whether it is reasonable to use existing, but partial data to estimate annual discards. Based on this evaluation and the availability of data regarding fishing performance by vessels enrolled in sectors, the Skate PDT does not recommend estimating discards with only a few months of incomplete data and applying it to the specifications for an entire fishing year.

Preliminary estimates are always going to be imprecise and unless the process is very stable, and therefore preliminary estimates with incomplete data can be highly biased. Even under the best of circumstances, fully audited data for observers takes 90 days to become available for analysis. And since the sector program became effective on May 1, only a couple of months of observer data are available and do not provide any information about skate discards to be expected during the remainder of the fishing year.

Using rough data for quota monitoring is done in select circumstances, e.g for monitoring yellowtail flounder in the scallop fishery, and for monitoring groundfish catches to provide guidance to sector management, but the focus of these preliminary estimates is usually narrow. Monkfish discards in the scallop fishery is not monitored in real time, nor are skates monitored for vessels participating in groundfish sectors, or for other fleets (e.g. scallops, groundfish common pool, monkfish fisheries).

There is a basic tradeoff involved in using data that is perceived to be timely but is incomplete and subject to revision. In the Skate FMP, there are post hoc accountability measures that respond to overages which could have serious ramifications for future skate specifications if discards in the current year are underestimated and later found to be in error.

And although skate discards are expected to increase while the in-season accountability measure is in place, the purpose of the reduced skate possession limit is to stop directed fishing activity on skates and thereby reduce total mortality (including discards that might occur on those trips).

The increase in skate discards by vessels fishing for other species was analyzed in Amendment 3 using a possession limit model that incorporates economic factors, including a range of possession limits from 500 lbs. to 20,000 lbs. of wings. And although the anticipated change in discards has been considered in Amendment 3, the actual results are likely to vary from the prediction.

Vessel trip reports (VTRs) are routinely used to assign landings to statistical area, but do not allow for timely updates. VTRs are submitted by fishermen and must be received before they are entered and checked for errors (audited). Total landings that are used to scale the discard/kept ratios by statistical area come from dealer records which are often reported weekly, but state landings data are less timely and must be reconciled with federal dealer records. Collectively, the cumulative effects of these data availability lags makes it difficult to get accurate skate catch data until all of the annual data have been received, processed, and VTR information can be associated with landings.

Moreover, the switch to sector management as of May 2010 has and will cause important ripple effects for other fisheries, particularly skates and monkfish. Obviously, we don't yet fully understand the effects of those changes on related fisheries and we definitely do not yet have a full year of fishing activity under sectors to get a complete picture.

NMFS plans to prepare an SBRM report early in 2011 which will include the first six months of the 2010 data. Unfortunately, delivery of those data has been delayed by at least a month, owing to some staffing demands for sectors and other pre-trip notification fisheries, like Loligo. While one could go forward with analyses of unaudited data, it only takes one bad data point (such as an inappropriately applied high D/K ratio) to cause discard estimates to be inaccurate.

These issues furthermore cut across all of the fisheries in the Northeast. The timeliness of data is a big issue and a number of discussions/meetings/tasks are underway to improve the system and provide more timely estimates for ACL monitoring.

The Skate PDT therefore recommends no adjustment to the 2010 skate TALs until more data is available for analysis. The present schedule calls for the PDT to re-analyze the fishery in the spring of 2011 and recommend new 2012-2013 specifications. At the same time, the data to estimate discards in 2010 will become available and this could provide the advice needed by the Council to adjust the specifications that Amendment 3 set for the 2011 fishing year.

Table 1. New skate discard estimates. Source: Northeast Fisheries Science Center.

Year	Line Trawl	Otter Trawl	Shrimp Trawl	Sink Gill Net	Scallop Dredge	Grand Total
2008	177	23,148	2	2,023	10,241	35,591
2009	311	25,453	1	1,980	7,289	35,034
Change	76%	10%	-50%	-2%	-29%	-2%

Table 2. Updated skate discard rate.

	Ave landings (mt)	Ave dead discards (mt)	Rate
2006-2008	17,170	19,917	53.7%
2007-2009	18,191	20,466	52.9%

Table 3. Final skate specifications for 2010 and 2011 fishing years, using 2006-2008 discard estimates.

ABC	41,080 mt	Wing fishery possession limit	5,000 lbs. skate wings (11,350 lbs. whole weight)
ACT (75% of ABC)	30,810 mt	Wing fishery TAL trigger	80% of wing fishery TAL
TAL (assuming 53.7% discard rate)	14,772 mt	Bait fishery possession limit with a Letter of Authorization	20,000 lbs. whole weight
State waters catch	924 mt	Bait fishery TAL trigger	90% of bait fishery TAL
Wing fishery TAL	9,209 mt	Bait fishery quotas	
Bait fishery TAL	4,639 mt	May 1 – Jul 31	1,429 mt
		Aug 1 – Oct 31	1,721 mt
		Nov 1 – Apr 30	1,489 mt + any remaining from periods 1 & 2

Table 4. Final 2010-2011 skate specifications adjusted using 2007-2009 discard estimates.

ABC	41,080 mt	Wing fishery possession limit	5,000 lbs. skate wings (11,350 lbs. whole weight)
ACT (75% of ABC)	30,810 mt	Wing fishery TAL trigger	80% of wing fishery TAL
TAL (assuming 52.2% discard rate)	14,780 mt	Bait fishery possession limit with a Letter of Authorization	20,000 lbs. whole weight
State waters catch	924 mt	Bait fishery TAL trigger	90% of bait fishery TAL
Wing fishery TAL	9,214 mt	Bait fishery quotas	
Bait fishery TAL	4,642 mt	May 1 – Jul 31	1,430 mt
		Aug 1 – Oct 31	1,722 mt
		Nov 1 – Apr 30	1,490 mt + any remaining from periods 1 & 2