

**PROCEEDINGS
OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
SPINY DOGFISH AND COASTAL SHARK MANAGEMENT BOARD**

**December 17, 2003
The Roosevelt Hotel
New York City, New York**

ATTENDANCE

Board Members

Lew Flagg, Maine DMR
Senator Dennis Damon, Legislative Apte. (ME)
John Nelson, New Hampshire Fish & Game Dep.
G. Ritchie White, New Hampshire Gov. Apte.
Dennis Abbott, proxy for Rep. Blanchard
David Pierce, Massachusetts DMF
William Adler, Massachusetts, Gov. Apte.
Vito Calomo, proxy for Representative Verga (MA)
David Borden, Rhode Island DEM
Gil Pope, Rhode Island Gov. Apte.
Jerry Carvalho, proxy for Rep. Naughton (RI)
Eric Smith, Connecticut DMR
Lance Stewart, Connecticut Gov. Apte.
Fred Frillici, proxy for Senator Gunther (CT)
Gordon Colvin, New York DEC
Pat Augustine, New York Gov. Apte.
Brian Culhane, proxy for Senator Johnson (NY)
Bruce Freeman, New Jersey DFG&W

Tom Fote, New Jersey Gov. Apte.
Roy Miller, Delaware DFW
Bill Goldsborough, Maryland Gov. Apte.
Jack Travelstead, Virginia MRC
Catherine Davenport, Virginia Gov. Apte.
Fentress Munden, **Chair**, North Carolina DMF
Damon Tatem, North Carolina Gov. Apte.
David Cupka, SC DNR, Gov. Apte.
Susan Shipman, GA DNR Coastal Resources
John Duren, proxy for Mr. Balkcom (GA Gov Apte)
Gil McRae, Florida FWC-FMRI
Representative Mitch Needleman, Legislative Apte. (FL)
Harold Mears, NOAA Fisheries
Bill Cole, USFWS

Ex-Officio Members

Chris Batsavage, Technical Committee Chair

ASMFC Staff

Bob Beal
Megan Gamble
Toni Kerns

Vince O'Shea
Nancy Wallace
Brad Spear

Guests

Paul Rago, NEFSC, NOAA Fisheries
Dale Mitchell, Brooklyn, NY
Jeff Young, MA
Lester Kuhn, CT
Jaime Geiger, USFWS
Anne Lange, NMFS
Tom Meyer, NMFS
Charles Lynch, NOAA
Bob Ross, NMFS
Dan Furlong, MAFMC
Jim Armstrong, MAFMC
Joel Banslaben, East Rockaway, NY
Rusty Jill, Rockaway, NY
Jill Olin, Hempstead, NY
Matthew Atemian, Hempstead, NY
Nicole Carroll, Hempstead, NY
David DeHardo, Brooklyn, NY
Heather Ritter, Glen Head, NY
James Zihal, Centerport, NY
Merry Camhi, Islip, NY
Hans Walter, Brooklyn, NY
Todd Gardner, Centerport, NY

Coby Dolan, Ocean Conservancy
Kelly Place, Williamsburg, VA
Peter Anderson, NY DEC
Rich Cook, NY
Erika Santavjelo, VA
Patrick Raitt, VA
Mike Misner, NY
John Morrissey, NY
Donna McLaughlin, NY
Elizabeth Hennritus, MD
Heidi Nitze, NY
Vivion Tartler, NY
Irvn Rinard, NY
Marie Pendzich, NY
Jane Owens, NY
Steve Lander, NY
Roger Rufe, Ocean Conservancy
Susan Martin, Ocean Conservancy
Sonja Fordham, Ocean Conservancy
Michelle Duvall, Environmental Defense
Dorothy David, Ocean Conservancy

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MOTIONS

I move that the for the 2004-2005 fishing year the Spiny Dogfish quota be set at eight million pounds with a 1,500 pound trip limit for both quota periods.

Motion by Mr. R. Munden; second by Mr. Pope. Motion substituted.

Move to substitute with a quota of 4 million pound for the 2004 –2005 fishing year to be divided into two semi-annual quota periods (quota period one = 2.316 million pounds and quota period two = 1.684 million pounds) and bycatch trip limits of 600 pounds for quota period one (May – October) and 300 pounds for quota period two (November – April).

Motion by Mr. Augustine; second by Mr. Flagg. Motion to substitute passes and becomes the main motion (8 in favor, 5 opposed, 1 null vote, and 2 states were absent). Main motion passes (9 in favor, 4 opposed, 1 null vote, and 2 states were absent).

Move to amend the motion to change the trip limit to 1500 pounds for both quota periods.

Motion by Mr. Munden; second by Mr. Pope. Motion to amend fails (6 in favor, 7 opposed, 1 null vote, and 2 states were absent).

Motion to split the motion into two motions as follows:

Motion one: Move that the Board approve a quota of 4 million pound for the 2004 –2005 fishing year to be divided into two semiannual quota periods (quota period one = 2.316 million pounds and quota period two = 1.684 million pounds).

Motion two: Move that the Board approve bycatch trip limits of 600 pounds for quota period one (May – October) and 300 pounds for quota period two (November – April).

Motion by Mr. Nelson; second by Mr. Borden. Motion fails.

Motion to substitute: I move to develop an Addendum to adopt a 4.4 million pound quota for the next fishing year with 2.5 million pounds being allocated to Massachusetts and New Hampshire and 1.9 million pounds for states from Rhode Island through North Carolina. Allocations between states in each region will be as in the current fishing year and as established by these states through agreements. Daily landing limits will be established by each state up to 7,000 pounds.

Motion by Mr. Pierce; motion fails for lack of a second.

**ATLANTIC STATES MARINE FISHERIES
COMMISSION**

**SPINY DOGFISH AND COASTAL SHARK
MANAGEMENT BOARD**

**DoubleTree Hotel Crystal City
Arlington, Virginia
June 10, 2003**

The meeting of the Spiny Dogfish and Coastal Shark Management Board of the Atlantic States Marine Fisheries Commission convened in the Terrace Room of the Roosevelt Hotel, New York, New York, on Wednesday, December 17, 2003, and was called to order at 4:15 o'clock, p.m., by Chairman Red Munden.

WELCOME & INTRODUCTIONS

CHAIRMAN RED MUNDEN: I would like for all of the members of the Spiny Dogfish Board Management Board to take their place at the table, please.

Good afternoon everyone. I'm Red Munden. I'm with the North Carolina Division of Marine Fisheries and I serve as chairman of the Spiny Dogfish Management Board. We have a very, very busy schedule today. We only have two hours to cover this meeting of the Spiny Dogfish and Coastal Shark Management Board.

BOARD CONSENT

CHAIRMAN RED MUNDEN: We'll go ahead and start with the agenda. Do I have anyone that would like to make additions, changes or corrections to the agenda? Seeing none, then the agenda is approved as included in your briefing book.

The minutes were also provided on the CD with the briefing materials. Any additions, corrections or additions to the minutes for the last meeting? Do I see a motion to approve?

MR. PATRICK AUGUSTINE: So moved.

MR. JOHN I. NELSON: Second.

CHAIRMAN MUNDEN: Any objection? The minutes are approved.

PUBLIC COMMENT

CHAIRMAN RED MUNDEN: The third thing on our agenda is a time period of five minutes for public comments. I have talked with the chairman, John Nelson, and he has provided guidance and direction as to how we should handle the public comment period because we have a number of individuals who would like to make comments.

John indicated that the time on the agenda for public comments is to bring to the attention of the board items that are not included on the agenda and things that you feel like the board members should be aware of.

If there are members of the public here who would like to make comments on specific items on the agenda, then we will allow you to do that when we reach that point on the agenda.

PRESENTATION ON THE 37TH SARC

CHAIRMAN RED MUNDEN: I know a lot of people would like to make general comments about the stock assessment and the status of spiny dogfish, but my determination is that the appropriate time to make those comments would be after the scientists have made the presentations, we've heard from Dr. Paul Rago with the Northeast Fishery Science Center, and the technical committee.

Now is there anyone in the public that would like to make comments that do not pertain to the advertised agenda items? Seeing none, then we will move to the presentation on the 37th stock assessment workshop, and that presentation will be done by Dr. Paul Rago with the Northeast Fishery Science Center.

DR. PAUL RAGO: Thank you very much, Red. It's a pleasure to be here today. I remember the last time I think I was before the annual meeting for the Atlantic States Marine Fisheries Commission I was talking about striped bass. I guess that's why they call it the "good old days."

What I'd like to do is to present the information related to the 37th SARC and give you an overview of the spiny dogfish report. The 37th SARC was held in June. It was held at the School of Marine Science and Technology at the University of Massachusetts at Dartmouth.

And it was chaired by Dr. Patrick Cardue, a member of the committee of independent experts. He's from

New Zealand. There were five species addressed and four minor species, and then, of course, spiny dogfish, which we'll be focusing on today.

Now a lot of people who have heard presentations on dogfish and so forth, they may feel there is a certain "sameness" to the presentations because it is a slow-moving story in terms of a change in the status of this resource.

But, there is quite a bit that's new in the SARC. The SARC document, all hundred and forty-some pages of it, does incorporate all the survey data through 2003, the catch data through 2002.

One of the Achilles heels of the previous assessments was sort of a lack of treatment of the issue of discarding. That's been examined now for over 17,000 trips, which were examined over the period 1989 through 2003.

We're incorporating all of the landings as part of the assessment now, including the Canadian landings, which are in fact an important issue that you'll be debating in terms of allocation of this resource.

We've developed and incorporated the elements of uncertainty associated with the biomass estimates and the subsequent fishing mortality rates. So in the sense that we have stochastic estimators of both biomass and fishing mortality, those are now a part of this assessment.

One of the intriguing things that was done was the result of four or five years of biological observations, conducted by Kathy Sosebee at the Northeast Fisheries Science Center, was a relationship between material size and pup size and the indirect evidence that we have of a relationship between those smaller sized females producing smaller sized pups and, therefore, lower levels of survival for those offspring.

Tagging information from Dr. Roger Ruleson in East Carolina State University was incorporated as part of the assessment. And then we incorporated these various elements of stochastic density and mortality estimates as part of a revised projection model, which incorporates the size dependent and selectivity patterns of the fishery itself.

So if I could summarize quickly the bullet points in terms of status of the stock and management advice, the first one for these -- this is usually the first paragraph in the advisory report. The stock is overfished. With respect to the biomass targets of the

resource, it's well below the targets in the federal management plan.

Overfishing is not occurring. The change in the magnitude of the fishery in the last several years as a result of the management measures taken by the federal councils and the Atlantic States Marine Fisheries Commission have resulted in about a 90 percent reduction in overall fishing levels in terms of metric tons removed.

The population is just about where it should be in terms of an equilibrium fishery; however, it's operating on a very small stock relative to what it could produce. So the fishing mortality in 2002 of about 0.09 exceeds what is required for rebuilding back to the target by a factor of about three.

Now this is a very small fishing mortality, on the order of about 0.03. The reason these are so low is, of course, because of the low productivity of this resource which is well known to everyone here.

The spawning females, as a result of the intensive fishery, have declined by about 75 percent since 1988. And, probably one of the more important aspects of the status of this resource right now, the one that has sort of the greatest deal of long-term uncertainty, but is the aspect of the recruitment estimates for the last seven years are the lowest on record in our 40-year time series.

In terms of management advice, the overall report was the total removal should be kept as low as possible and to, secondly, avoid targeting females, so those are the major points as a result of the SARC.

Now I'll go into some detail in terms of some of the technical aspects of these individuals. Many of you have seen this plot before and simply what we're looking at is sort of the bi-modal pattern of this fishery.

Prior to 1976 the fishery was largely prosecuted as a reduction fishery by Soviet block and other countries and other foreign fleets, and the fishery reached a peak of about 25,000 metric tons.

This was followed by a period of about a 4,000 to 5,000 metric ton fishery and then beginning in 1989 a rapid increase in the fishery of which most of the landings were taken from large reproductive females.

The last two years have seen the reduction as a result of the management measures and incorporate a fairly

significant, I think, and substantive changes in the nature of this fishery.

In terms of the gear types, in this slide you can see the change in the mix. It was largely a gillnet fishery in terms of landings. However, the discards during this period are important factors as well. In the last two years the fishery has changed and with an increasing importance of hook-and-line gear and so forth.

So, if we sort of look at the population response in this, these are estimates based on our surveys in terms of an index or a swept area estimate of biomass. The population peaked shortly after the fishery began. It has been declining since then, still at reasonably high levels.

If we look at the consequence of that fishery, though, which shows up in the next slide, the consequence here again is, of course, very obvious. The reproductive stock of female dogfish has decreased by about 75 percent.

The last couple of years have shown a relatively static condition, which is in fact what we had anticipated that the stock would rebound under low fishing mortality rates. Now whether or not this represents the start of an upward trend, the stabilization of the current stock size is still problematic.

However, there is some good news I suspect in this piece of information. The stock of the sort of unfished population shows the 36 to 79 centimeter. These are males and immature females.

These have sort of stabilized and we are hoping and the expectation under the different types of modeling that has been done suggests that these will be sufficient to restore the stock to its higher levels.

Now, one aspect that is obviously very important about this, there's a broad scatter about the points on these various trend lines, and that aspect has been explicitly considered in terms of the spawning stock estimates and so forth.

Okay, so this is the estimate of total biomass. The top line represents the sort of inter-quartile range of abundance estimates ranging from a high of about 600,000 tons in the early '90s and decreasing to less than 400,000 in recent years.

The aspect, which is obviously important for the spawning stock, is that it has also declined

substantively; and of even greater magnitude, that's the lower line here. The reason it doesn't go back farther than this is important, and that's because we didn't have the discard program prior to 1989 so that's the reason this series is truncated.

That's the reason why the full estimator could not be applied to the entire period. The next slide shows the similar -- this is the parallel treatment of fishing mortality, both on the exploitable resource and on the discard mortality.

The important peak that shows up in terms of high levels of about 0.3 to 0.4 during the period of the peak part of the fishery on the exploitable stock are commensurate and comparable to what we were using when we used simply a length-based estimator of abundance.

They have in fact declined substantially since then, reflecting the magnitude of drop in the fishery. The discard mortality -- and you may be wondering with estimates so high why is this estimate of F so low?

The reason is that this reflects the force of mortality being applied across all sizes in the population and both sexes; whereas, the F in the top, the one where the management plan was focused on, is the exploitation rate of the fishing mortality on the female exploitable stock.

Now, the consequence of these size dependence and intensive fisheries are shown in this figure, which gives a picture of the stock as it was prior to the fishery, '85 to '89. That's the solid blue line.

The picture of the stock in the last three years is shown in the red line. Essentially what has happened is there has been a removal of numbers of large females basically represented by the area between those two curves.

And, importantly, what is showing up in recent years is pretty much a severe reduction, not only of pups, which are defined as animals less than 36 centimeters, but animals up to 55-60 centimeters are not showing up in the survey as well.

So this is reflecting the fact that the absence that we see in terms of pups is propagating itself forward in terms of the absence of the four and five year old at this point. If we look at the biomass at length, you can basically see the effect of essentially on upwards of a quarter million of metric tons of removal of spiny dogfish over the period of the fishery.

Now in the next slide this absence of large females and reproductive females is something that shows up in a number of surveys, and this line is depicting the changes that have occurred in the National Marine Fisheries Service spring and fall surveys, also a winter survey which is a shorter duration.

The Massachusetts Division of Marine Fisheries spring and fall surveys show a similar trend, and we were able to incorporate the North Carolina SEAMAP survey as well.

And although the trend is not apparent because of the shorter duration of this, you can in fact see the agreement on scale, that most of the dogfish that are above the reproductive size and maturity of 80 centimeters are in the neighborhood of about 85 to 88 centimeters right now.

The consequence of that in terms of recruitment is shown in this figure, which shows these last seven years of recruitment failure, or at least they are remaining off the bottom; whereas, for the last seven years, if that is a plausible explanation.

But, it does appear that these are related to the absence of spawning adults. In fact, this absence is greater than what we would expect on the basis of the numbers of female or numbers of pups per female dogfish, and we'll talk a little bit about that in a minute.

The next slide shows the relationship between the spawning stock in terms of metric tons and the numbers of recruits. Now this graph obviously speaks for itself in terms of its clarity and so forth.

Essentially, what we're looking at is the relationship between the numbers of pups scaled to the spawning stock size. The green line reflects the model that was used initially. This is the model that serves as the basis for the federal management plan.

We attempted to refit the model. That's shown in the red line. Essentially what has happened is that line has sort of tilted backwards on its side. The reason for that, you know, is that if you look at the 1997 through 2003 data, all of those points are sort of near the bottom of the axis there.

They're sort of laying low on the lower left-hand corner of the graph there. That is in fact reflecting the fact that the expected numbers of pups that we would have expected under earlier observations of stock size in that range have in fact -- they're not occurring.

Now, one of the factors that we can sort of try to get some insight into that was the biological sampling that was done. The next slide is showing the mean length of pups in our survey. Now these are the animals that we see that we know are at least less than a year old based on their expected growth rates at the time of our survey.

There is a fairly marked shift in the average size of these animals in our survey, and that, of course, could be related to a number of biological factors. One of those factors is sort of the clutch size, average size relationship here.

This is the numbers of pups produced in a clutch observed in the female and the average size of those pups. You see that the smaller clutches, these are the ones generally produced by the smaller sized animals, are smaller sized individuals.

The range on these are going from about 40 to 70 grams over most of this population. This is essentially a low birth weight phenomena.

Whether it has similar implications as you've seen in mammals, reptiles, birds, on other species, where low birth weight off spring have implication for neonate survival, is still an open question, but there is some evidence that it may be equally important for spiny dogfish.

In this graph there are two pictures here, one showing the relationship between maternal size and the average length of the pups on the left, again ranging over from 23 to 27 centimeters, over the range of 80 to 100 centimeters in length of females, the mother, and the numbers of pups in the survey also show this increasing trend as expected.

The consequence of these phenomena were investigated as sort of exploratory exercises as part of the SARC as a means of trying to identify whether or not the survival of these offspring may in fact be lower than others. I won't go into detail in that. I'm sure you'll have a copy of the SARC report, and perhaps you do as well.

So, I'm almost nearing the end. I do have a whole bunch of supporting slides after this for questions or anything that might serve to clarify or any questions. The next series of slides reflect the projections of spiny dogfish abundance.

Okay, one of the aspects of this analysis that was requested was to look at the variability of the forecast

and consider them in some level of detail and uncertainty and so forth; and so when I presented the results with that measure of uncertainty on it, everybody says, well, that's pretty hard to interpret.

You know, take all those confidence intervals off. Let's just look at the trends. So, this is what we're looking at in this case. These are the projected yields under various scenarios, some of which are related to fishing at the contemporary rate, some status quo fishing mortalities, various quota levels and so forth.

The yellow line reflects a preliminary analysis looking at the consequences under the assumption that reduced survival of smaller sized pups is in fact the proximate cause of the lower abundance estimates.

Again, that's simply for illustrative purposes at this point. But, in all cases what's relevant, I think, to the deliberations that will occur later in this meeting is that the magnitude of the fishing removals or the quota that could be obtained under a rebuilding scenario shown by the green line, they continuously increase.

There is a dip in all of the analyses. Basically what that is, is you're repaying the fact -- the absence of dogfish that weren't born in the last six or seven years. But, under the rebuilding -- the total magnitude of removals under the rebuilding strategy is on the order of about 3,000 metric tons.

That includes both U.S. and Canada as participants in that total quota. So, I mean, that just has to be up front and on the table in terms of the level of discussions. There is an implicit sharing of this resource that is imbedded in these projections.

However, of course, that's very difficult to solve that. Of course, science has no information on that particular part. Now the spawning stock biomass estimates suggest that -- kind of are used to bracket the magnitude of rebuilding.

If we sort of take the rough eyeball estimate of 200,000 metric tons as a measure of restoration and assume that a zero fishing mortality could obtain on this resource, then the rebuilding period is roughly about 2018.

The only purpose of this is to sort of provide a bound which establishes the rebuilding time under the most optimistic and perhaps unrealistic scenario.

The rebuilding time under a low-level fishing mortality in which the catch gradually increases from about 3,000 metric tons to about 8,000 metric tons over that trajectory suggests rebuilding on the order of about 2020 or so. That's the green line.

And then all the other ones basically fail to achieve the high level of stock size under the current fishing mortality and biomass targets. The total biomass estimates in the last slide and the -- I guess we can review those or you can ask questions about them later, but I just wanted to summarize quickly.

Again, repeating the main points of the assessment. First of all, the stock is overfished. Overfishing is not occurring. The dividends of reducing fishing mortality over the last two years are showing up in terms of -- you know, it's close but it's not undergoing further reduction.

However, it is still three times higher than it probably should be. The spawning stock has been significantly reduced, and there is the problematic issue of the recruitment estimates.

The recommendations of the SARC were to keep the removals as low as possible and avoid targeting females. That concludes my presentation. I'll be happy to entertain questions or whatever. Thank you.

CHAIRMAN MUNDEN: Questions of the board members of Paul. Bill Adler.

MR. WILLIAM A. ADLER: Paul, do you take into consideration the discard mortality rates when you're trying to figure that out, too; I mean, all the ones that are thrown over dead and stuff like that?

DR. RAGO: Yes.

MR. ADLER: You do have a figure for that?

DR. RAGO: We have some figures for that. As you know, these are quite uncertain. The estimates are based on some values that were established at an earlier SARC. We use 75 percent for gillnets; 50 percent for trawls; 25 percent for hook and line; and we use a figure of 100 percent for recreationally caught --

MR. ADLER: That's the discard rates?

DR. RAGO: These are the mortality rates applied to the estimates of discarded animals.

CHAIRMAN MUNDEN: Dave Pierce.

DR. DAVID PIERCE: Yes, thank you, Paul. As always, you give a very complete, concise summary of the latest news regarding dogfish assessments. And, certainly, no one is going to question the fact that abundance has dropped rather dramatically. The very large females, it's not longer the way it was back in the '80s and early '90s.

I do have a number of questions regarding the assessment, but I'm not going to ask them. As past chairman of the New England Council Dogfish Committee, I did submit a number of questions regarding this particular assessment that I thought once answered would help us get a better understanding as to the intricacies of the assessment and what it's all about.

I was told that I should ask those questions today, but I can't because of a lack of time and no one really wants to hear all those questions. I was also informed I probably should have been at the SARC and that would have been the best place for all those questions to be asked.

But, no one can be at the SARC when they would like to be because of other competing demands on our time, so that was not possible.

Now, Paul, I'll ask just a few questions that I think are quite germane, especially since you have indicated that in the assessment there is an assumption that we have had reduced survival of the pups; and that particular conclusion resulting from that assumption; that is, stock collapse has certainly captured the attention of a lot of people.

It has captured my attention and the attention of the board. Would you again characterize what exactly the SARC had to lead it to that particular conclusion. Was there any scientific evidence that pup survival had decreased?

Did the SARC actually calculate or estimate survival of pups at different sizes of pups? To me this is an extremely important question for us to have answered.

DR. RAGO: Thank you, Dave. Yes, the information that we reviewed was related to the information on pup size and average size of females. Of course, that's simply the observations of the relationship between those two quantities.

We also looked at the predicted numbers of pups that should be born within any given year based on the

size frequency distribution of the population and the numbers of pups at length.

So we're taking the size frequency distributions that we see from the surveys, projecting what we should have seen in terms of numbers of pups. For the period up through, like, 1995, the relationship between those two quantities, the predicted and the observed, is very good.

Subsequent to this drop in size of mature females, the relationship is consistently over-estimates the numbers of pups so, therefore, the predicted numbers of pups are consistently greater in abundance than the observed numbers.

One hypothesis that would explain that is low birth weight offspring. There is abundant evidence for a huge number of species, vertebrates and invertebrates, on this and, of course, quite a bit of work being done on cod and other finfish species which are showing these relationships to hold.

Now we only did one exercise in which we actually applied this relationship, and I think it's overly pessimistic. That's the one yellow line that shows the pulse in the population and a rapid decline.

However, there does seem to be some suggestion that there is -- that some of what we may be seeing in terms of differences in pup abundance may in fact be related to the maternal affect.

DR. PIERCE: I'll just follow up and that will be my last question for you, Paul. I have to disagree with the point that you just made regarding this relationship between observed and predicted going back in the previous years.

We don't have the figure to look at although maybe it's one of the two that you have that you can show us on Page 258 of the overall assessment produced by the SARC -- this is Figure B-6.12 which compares observed versus predicted.

DR. RAGO: Yes, right.

DR. PIERCE: And it's all over the place. The observed is up and down. The predicted is up and down. Sometimes predicted is greater than observed and at other times it is the other way. So, what you said isn't quite correct.

In addition, again, for the board's benefit because this is extremely important, this belief, this assumption that pup survival has decreased is due to the fact that

in recent years, the last four or five years, maybe, predicted has been less than expected.

Well, when you go back to the early '90s -- and again I'm looking at that figure -- in the early '90s you see the exact same situation where predicted was much less than expected.

Therefore, we're inconsistent with regard to how we can conclude there has been reduced pup survival, especially since in the early '90s we had a very large abundance of very large females, and we certainly would not have expected the survival of those pups to have decreased. Survival should have been very high.

So, this figure is an important one, and I'm still trying to figure out as a board member and as a council member how to use it, how to, well, digest, to assimilate that, once again, very important speculation that came out of the SARC that indeed we could potentially be collapsing this resource because of reduced pup survival.

DR. RAGO: As you note, the disparity or the residuals between what is observed and predicted were in fact often high in the past.

However, there was never a consistent pattern as we've observed in which case the predicted values were consistently above that which was observed for a seven-year period. So, that's one comment on your point.

The second is that this aspect of the assessment is one that has not been incorporated into any of the projections other than one, so all of the projections which are being done which are related to the effectiveness or the efficacy of a particular quota and/or level of harvest are in fact using the previous assumption, which is that there has been no reduction in the magnitude of the survival of offspring, juveniles. Thanks.

CHAIRMAN MUNDEN: Other questions from board members. Bruce Freeman.

MR. BRUCE FREEMAN: Thank you, Mr. Chairman. Paul, I'm looking at what is designated as Figure B-1 in the SAW or the SARC, 37th SARC report, and there are two graphs. One is biomass and metric tons plotted against years and it has total biomass and then spawning stock biomass.

And in the period from -- it's on Page 23 of the handout -- and in the time since 2001, it has a slight

upturn in the total biomass and spawning stock biomass tends to remain fairly level. I'm just curious the reason for that total biomass upturn. Is that essentially males or is that immatures moving into the population?

DR. RAGO: That is a good question, Bruce. The upturn that we're seeing was one that was actually we had projected that this stock would be able to rapidly rebuild at the time the federal management plan was initially developed.

The basis for that rapid increase was the fact that the stock was at a very high level. There was a large number of juvenile or sub-adult animals in the population that would move, grow, into the size range which would allow for a relatively rapid recovery.

That appears to be occurring and probably driving some of the increase in total biomass that we're seeing. What we did not -- what was not anticipated was sort of the magnitude and change in the directed fishery that occurred during the period when the plan was being implemented, particularly from 1998 through 2000 when the size range dropped and a large number of those smaller sized individuals were removed from the population.

Of course, there's an element of uncertainty in all of the estimates of that, but in fact it does appear that the magnitude of the removals were quite high and in fact eroded the ability of the population to rebound.

So, the rebound we're seeing is less than expected but it's in the right direction as far as the status of the resource as it was in the mid-90s and what we had anticipated in terms of a recovery.

MR. FREEMAN: Okay, and then on the graph just under that, which is fishing mortality against time, or in this case years, it has the female mortality rate dropping from a very high point in 1998 to a low in 2001 and then there is an upsurge.

I'm just curious an explanation for that upsurge. And then another question on that same graph, you have discard mortality. Do we really have a good handle on what that is?

DR. RAGO: Well, on the first point, the slight uptick in the fishing mortality estimates reflects the change in the Canadian fishery; whereas, it was previously less than 1,000 tons for most of the time series, over the last three years it has been in excess

of 3,000 metric tons. That fishery is a gillnet fishery. It's strongly directed towards large dogfish.

The relationship on discarding is one that is important. It has been reduced primarily through the efforts or the changes that have occurred in other fisheries, the reduction in overall landings of other species that discard dogfish, as well as an overall drop in effort.

I mean, I think it's more a reflection of the efficacy of management measures that have taken place over that ten-year period as opposed to anything management oriented towards dogfish, per se.

CHAIRMAN MUNDEN: Tom Fote.

MR. THOMAS FOTE: I've made this statement before. I always find it difficult when you talk about the hook and release of the recreational fishery at 100 percent. You know, I'm familiar with the boats in New Jersey.

I'm familiar with watching the catch. I've been on a number of those boats and I've been on a lot of private boats fishing. I probably have seen about 500 or 600 dogfish caught in the last two or three years.

With my knowledge and looking at these fish released, I probably would say almost 489 or 500 would actually survive what they're being released on.

There might be attitudes different in other states, in other jurisdictions, but to paint a broad brush to all the recreational anglers up and down the coast that they're killing every fish that they're catching or bringing on board recreationally does a disservice to the fishermen, to the recreational fishermen.

It reminds me of the story when I went to my first Mid-Atlantic Council and they told me they were putting a ten-fish bluefish limit in place is because we were throwing them in dumpsters. Not all fishermen were doing that, we were utilizing the resource.

And the ethic of the fishermen over the last ten years both commercially and recreationally has changed. We don't destroy the resource just because we want to destroy it because it gets in our way. So, I hope we will get some observer data and get that assumption taken off the list.

DR. RAGO: Your point is well taken. I mean, this is a very soft kind of number, obviously. The other aspect, which makes the magnitude of the removals

from the commercial fishery problematic, is that unlike striped bass there is not an active intercept program that is giving us good estimates of average size of the animals. So, as it states in the assessment report, we're using an average size of two and a half kilos per fish.

That's probably high for an average size for a recreationally caught dogfish. So it's not only problematic from the standpoint of the assumed 100 percent discard but also the magnitude of that removal is probably also small.

It's also important to note that the recreational fishery is typically not a directed fishery so we are incorporating that in the same way that we treat discards in terms of in the sense that it's spread across all size ranges and both sexes. So, thanks, Tom.

CHAIRMAN MUNDEN: Other questions for Paul from board members? Eric.

MR. ERIC SMITH: Thank you. This assessment and the technical review we get every year is always very enlightening. And, something that I saw that I hadn't really paid attention to -- well, let me back up. The thing that I find most sobering about all of this is the recruitment information which continues to be perplexing and troubling.

That said, I guess Paul I want you to get back, if you could, to the total biomass projections and make sure I understand what I'm reading here. It's Figure 4 in the document that was in the briefing materials.

If I understand that correctly, and correct me if I'm wrong, please, under the status quo F, the stock stabilizes at a lower level than it's at now and stays stable for the next 30 years at what amounts to 660 million pounds.

And the spawning stock biomass, which is two figures before, stabilizes at a level that 30 years from now is at 100,000 metric tons or 220 million pounds. Am I correct in reading that?

DR. RAGO: Yes, I think the numbers are about right. The point of running those out for 30 years is not so much the level of confidence we have in them at that point, but simply to show or distinguish among the various policy alternatives related to those values.

MR. SMITH: Okay, it's relative.

DR. RAGO: Yes. The reason that there is some stabilization of the resource is that the combination of the current fishing mortality rate of about 0.09 in conjunction with a discard mortality applied to the entire resource of about 0.02 is just about equilibrium in terms of its long-term implications for the resource.

So essentially the resource, although it experiences some transient conditions as a result of its size structure right now, it will sort of level out in terms of biomass that is on the order of the numbers you specified.

The point of saying the long-term recovery of this resource would not be to continue to let the resource grow after that, but in fact to phase in an alternative strategy which would in fact stabilize the resource at some level in the vicinity of the target biomass.

Now that's likely to occur over a 10- to 15-year period, and I'm sure we'll meet several more times to discuss that target value and its importance.

However, I think one take-home message in all this is the direction of change in terms of the fishery and the resource are clear from this; however, the magnitude of those changes and the ultimate target is still an issue to be clarified.

MR. SMITH: If I could follow up, Mr. Chairman. I appreciate that and I do appreciate that this is a relative representation, a modeling result that shows relative results. And, clearly, I'm not advocating for that status quo fishing rate in the sense of it doesn't meet the Magnuson Act requirements, although that's not our obligation here as a commission necessarily.

The thing that struck me as I saw it, though, from time to time state agencies get appeals that one stock or another is going to become extinct. It's hard to reconcile those kind of statements with a graph that says 30 years from now there will be 3/5 of a billion pounds of fish in the total biomass. Thank you, Mr. Chairman.

CHAIRMAN MUNDEN: Thanks. Other questions or Dr. Rago from board members? Gil Pope.

MR. GIL POPE: Red, I was kind of reluctant to ask this one, but it's been told to me so many times now, two or three times from various people that I can't remember who it was, that in some of the assessments that go on here, that because there is a certain lack of knowledge that there is a proxy used.

I have been told that a number of times and I wonder if you could either dispel that or could explain that there is some kind of proxy from another shark that's used in that. Because, it has been told to me a number of times, more than once. So, yes or no.

DR. RAGO: I'd have to have you clarify the question. A proxy for what?

MR. POPE: For something in the assessment. And it's very unclear to me, and that's why it's difficult for me to try and frame this question correctly.

DR. RAGO: Yes, I'm not sure what that is explicitly referring to. Possibly the issue of using the stock recruitment relationship as a proxy or -- oh, never mind, I think I know what you're getting at.

The fishing mortality rate associated with equilibrium is assumed to be -- this is from a Leslie matrix type of analysis -- is assumed to be a proxy for the threshold, and we use a fishing mortality of about 0.08 which would allow the population to grow as a proxy for F_{msy} . Now that may be the source of that comment, but I may talk afterwards and clarify it, but I'm not sure.

MR. POPE: Thank you very much. It does, and I was kind of reluctant to bring that up but I just wanted to know if it was kind of true or not. Thank you.

CHAIRMAN MUNDEN: Other questions from board members? Seeing none, based on the information provided by Chairman Nelson, I feel that this would be the appropriate time to allow the public to ask questions of Dr. Rago or to make comments concerning the recommendations from the SARC.

So if anyone from the public would like to ask questions of Dr. Rago, please indicate by raising your hand. I would ask you to come forward to the microphone at the table on my left. Please identify yourself and make your comments brief and to the point.

MR. EDWARD HOFFMAN: Mr. Chairman, members of the commission, if my voice breaks, it's only because I flew in on a red eye and the exhaustion is starting to hit. My name is Edward Hoffman. I'm an attorney and a political consultant in both New Jersey and New York.

And before I begin, I have served on commissions like this and boards, and I understand you folks have

been going all day so you have my sympathy and admiration, and I promise not to bore you too much.

I grew up in New Jersey, where I ignored the advice of my dermatologist, and spent many summers at the New Jersey shore. I'm a scuba diver and I have gone diving everywhere from Massachusetts to off Long Island to off Newport, Rhode Island, obviously, the New Jersey shore.

When I have seen what has happened to the oceans over the last 30 years, I am thankful there are commissions like this because I think in general the degradation of the oceans, at least off the New Jersey and New York shores, has been halted and may even have been reversed. So, again, I'm grateful for you ladies and gentlemen.

As a political consultant, I won't tell you for whom I work other than to say that I'm what's known as a prostitute and will work for anyone who has a sufficient check. But I will say that it's been my experience that both democrats and republicans, be it Cuomo and Pataki in New York or Whitman and McGreevy in New Jersey, have been very sympathetic towards efforts to try to protect our environment off our coastlines.

Also as an attorney, I've not only represented environmental groups, but I've represented a good number of business groups because I do not believe that protecting the environment and protecting our commercial activities are mutually exclusive. Still, I understand you folks have tough calls to make.

I'm sure you're going to be getting a lot of commentary on the scientific evidence, so I won't dwell on that other than to say that it is my understanding that the serious scientific reports in this matter are virtually indisputable.

The stocks have been devastated. They've been devastated in a very short period of time, so much so that I don't think it's hyperbole to suggest that if trends continue the dogfish may reach stages where it cannot recover.

It is my understanding that even the most pro-fishing reports are dire if not cataclysmic in this regard. I speak selfishly in two regards, first, as an environmentalist. In addition to my scuba diving and my love for sea life, the fact is that no one knows what is going to happen with the dogfish stock if this continues. No one knows what the impact will be.

And in fact the decline reminded me of my days as an Army officer at Fort Dix. Ironically, when we used to take the troops out in the morning and there were thousands of rabbits there, we'd say, what are rabbits doing? Thousands of them. I'm not exaggerating.

And the fact is we destroyed the predators in the middle of New Jersey. The rabbits overpopulated. The dogfish is an important predator. I have no idea what the consequences -- I don't pretend to have any idea what the consequences will be, although I'm not sure anyone else could pretend either, so I guess I'm advocating for prudence.

As importantly as a business attorney and taxpayer, I want healthy fisheries. I want people employed. I would like taxpaying people. And, when I look at the dogfish industry and others, it seems that we are eating our seed corn in that for today's profit we may be destroying the long-term health of the fishing industry.

So, in conclusion, I think it's fair to say that the dogfish stock is in a hole. And Will Rogers once said, "When a smart person finds himself in a hole, he stops digging." So, I would urge two things in particular.

The first is that this commission support efforts to stop targeting females; and far more importantly, that it reduce the trip limits. I think that would be critical to preserving the stock.

And in conclusion- conclusion, all I can say is this board has to make two choices, and there are consequences to each. And if the board takes a conservative approach and ultimately is proven wrong, I would think the harm would be minimal and could always be reversed.

Conversely, if it supports greatly increased limits and is wrong, then I think the consequences could be irreversible. So, again, I apologize if my voice cracked through there, and I would be happy to answer any questions or otherwise just thank you for listening.

CHAIRMAN MUNDEN: Thank you for your comments. Other questions of Dr. Rago concerning his presentation? Yes, if you would come forward. Please identify yourself and, again, I would encourage you to limit your questions and comments to the presentation of the stock assessment.

MR. JEFF YOUNG: My name is Jeff Young. I process at least 90 percent of all the dogfish waste

that's landed in North America. I've never been to one of these meetings before because I stopped coming about ten years ago because I knew what was going to happen. The thing was going to collapse.

I thought my friends in industry were going to shoot me because at the time and right up until this year I fully supported everything that the environmentalists were doing 100 percent. And in 1998 I was ecstatic about it.

I have a question for the doctor, but one of the things that I want to say is that what I can't believe because I know the biology of this fish, I'm shocked at the change I've seen in the last two years from what's coming into my plant from Massachusetts.

I honestly thought in 1998 this thing is dead, this is going to be ten years recovering. And there is a history of the dogfish fishery collapsing in British Columbia in the 1940s. I've studied that at length, and I hope everyone here would do that.

And it did recover but it took a long time. So in 1998 I thought, oh, this thing is dead. But I keep processing the waste and I supported the restrictions in fishing. But in the last two years I'm shocked because we stopped processing pups in '99 and 2000 completely.

There weren't any coming in the door. I was just shocked and saddened for the dogfish because it is my career. And, in the last two years I've actually resumed processing of the pups, and I'm shocked that the size landings have increased and the amount of pups and the amount of pregnant females is back to very high levels which I'm shocked about.

I'm just saying as a fact, if you shut the fishery down because you feel like it needs it, my business won't die, and I would support it, but that's just what I've seen.

And on the other end of it as far as -- no one I ever hear talk about this, but the dogfish is a predator and it's part of an ecosystem in the ocean. I just feel like if you do set the trip limits to 600 pounds and the fishery will totally shut down, the dogfish will explode.

And anecdotally the biomass is very large, and I think it would be a slow recovery to get back to fishing it to bring it back down. The ecosystem is a balance. My personal belief is from what I'm seeing, I'm shocked to be sitting here saying this, but the 4 million pounds that gets landed in Massachusetts

seems sustainable to me from what I see coming in my door.

My question with the pups for the doctor is what I see in pups is a cycle. The females are always in a state of pregnancy. And when they're ready to give birth, you know, they drop the egg sac when the pups are ready; and from my experience they're always the same size.

When they get to that state, they're always the same size. The only differences that I've seen is with bigger females they have more of them.

DR. RAGO: That's a good point, they do in fact tend to be around the same size. The data that we've observed and the data from the state of New Hampshire, which I have incorporated into this -- and I have some pictures of that as well if you want to see them -- also show that same relationship, that the smaller females are producing smaller sized pups.

With regard to the information about the increase in the average size of dogfish, as part of the report, there are some summary figures which in fact do support and demonstrate your observation there, that we are seeing larger sized animals.

Now, part of that may be due to the change in the complement of the fisheries that are producing them. They're going to hook and line. Traditionally, in that British Columbia fishery it was primarily a hook-and-line fishery in the Georgia Strait there, so, they do tend to get bigger animals. The gillnet fishery in Canada is a large mesh gillnet as well, which will tend to pull off the larger animals.

MR. YOUNG: But the funny thing is that in the landings back in '98-'99, where they was still gillnetting going on, the average size was just scary.

DR. RAGO: Yes, for whatever reason, and our data show as well, they were taking dogfish in the range of 70 to 75 centimeters and quite a few of them.

That is in part one of the reasons why the magnitude of the recovery that was projected initially under the plan is in fact not going to occur as quickly because of that pattern of removals that occurred in the '98-'99 period. I think your observations support many of the basic principles and tenets in the set there or in the assessment. Thank you.

CHAIRMAN MUNDEN: Thank you for your comments. If you'd give your name, please.

MS. SUSAN MARTIN: I'm Susan Martin. I'm from New York City. I'm the chair of the board of the Ocean Conservancy. Thank you very much for letting me speak today. I'm a diver. That's how I got into this. I've dived in healthy ecosystems all over the world.

I've also dived in some really dead ecosystems like Jamaica where all the fish are small, the coral is dead, so I know what happens when overfishing takes place and when pollution wrecks an ecosystem.

I'm more of an ecosystem person than a single species, but I also believe in science and the science shows that the dogfish is in terrible shape. I just want to say today I urge you to follow the scientific evidence and keep the trip limits at 600 or 300. Thank you.

CHAIRMAN MUNDEN: Thank you for your comments. Other comments? Lady in the back.

MS. LIZ HENNIKUS: Good evening. My name is Liz Hennrikus; I'm from the state of Maryland. I thank you for this opportunity to speak in from of this commission. I would just like to first thank Maryland for their strong record in supporting scientific advice to rebuild the spiny dogfish population on the federal level.

I would just like to go on record right now to urge this commission to vote in favor of measures that will be necessary to reduce the targeting of mature females, to encourage rebuilding of the spiny dogfish population in accordance with the advice you just heard from Dr. Rago, and also from the recommendations from your technical team you'll be getting shortly.

CHAIRMAN MUNDEN: If the other members of the audience who have specific comments concerning Dr. Rago's presentation, we would like to have them now, but, as I mentioned earlier, we have a lot on the agenda today.

You will be given a chance to make your comments as we work our way through the agenda. So, does anyone in the audience have a specific comment or question of Dr. Rago?

MS. BETH BABCOCK: My name is Beth Babcock. I'm a fishery stock assessment scientist with the PEW Institute for Ocean Science, which is affiliated with the University of Miami but we also have an office here in New York.

I'm not specifically familiar with the dogfish assessment. I've more worked on coastal sharks and some of the highly migratory species, but I would just like to say that seeing the presentation that you've made, I was really struck by the fact that you haven't had any recruitment at all in seven years.

And, looking at this biomass projection figure here, as I understand it, most of the projections, for example, the status quo quota, are assuming a stock recruitment relationship that would imply that recruitment next year and into the future would be higher than what it has been in the last seven years, and then this reduced survival one would be consistent with saying the bad recruitments we've had in the last seven years would continue.

So, my question for you would be what was the feeling of the biologists who participated in this assessment? What do you think is causing this recruitment failure, and do you expect it to continue into the future? I know that's a very hard question to answer but I just wondered what the feeling of the assessment group was.

DR. RAGO: I thought Dave Pierce asked hard questions. I think the balance is somewhere in between. I think the yellow line is overly pessimistic. This was an analysis which suggested a possible mechanism and a possible parameterization of that particular mechanism as part of the forecasting scenario.

It's probably a combination of reduced survival and perhaps -- and we're looking or I'm looking -- we're trying to figure out whether or not there may be some increased tendency for the small dogfish to be off the bottom more obviously.

But the magnitude of this sort of absence is not something that we would expect due to chance alone. The fact that we haven't seen them for seven years, one or two years and so forth is something to be expected, and that is reflected in the pattern of the recruitment over the historical time series.

However, unless something has markedly changed, consistently changed, and pervasively changed across all surveys in the last seven years, then something else is going on.

CHAIRMAN MUNDEN: Thank you for your comments. Other members of the audience who have specific questions for Dr. Rago that have not been raised to this point? Gentleman in the back, if you would come forward, please.

MR. STEVE LANDER: Thank you. My name is Steve Lander. I'm from New York. I noticed that there are lots of statistics and graphs and so on presented here, but the obvious conclusion or recommendation not to target older and larger females makes good sense. But, in terms of the actual fishing and the pressures placed on this spiny dogfish, I notice that the recommendation was to keep fishing as low as possible. Do we have a number?

DR. RAGO: Well, I guess the extreme of that is zero, so that's as low as possible. Obviously, that's said tongue in cheek. I think the recommendations of the SARC are that the committee that formulates this are usually diffused in some way, recognizing constraints and things that are going to occur as a part of normal fishing activities.

It's unrealistic to assert a zero landings as an objective, and it doesn't advance you in terms of the management of the resource because it fails to recognize that those landings are occurring and you're not really choosing a policy alternative that is appropriate at that point.

I guess I'm not directly answering the question simply because I don't think it's one that the scientific exercise that supported this information is designed to address.

MR. LANDER: Well, I'm sorry we can't get a number on that. I know that the recommendation before this commission is something like 7,000 pounds per trip. Is that something that you think would be low enough to sustain this?

DR. RAGO: Well, just to clarify this point, if I could, the important thing, what science can bring to the table in terms of this assessment is the magnitude of the total removals; that is, how many thousands of tons could this stock sustain; and under the assumptions with which the models are developed, be expected to recover or stay where it is or whatever.

So, that is on the order of about 3,000 metric tons. All the decisions that occur after that are decisions of allocation; that is, who gets to participate in the removal of those 3,000 metric tons, "who" being individual fishermen and countries, so both of those play into that mix.

So, the science is not sufficient to predict human behavior in response to the magnitude of those landings nor is it sufficient to define what the future

economic conditions are going to be in terms of processing and so forth. I can't answer that and I think it would be a disservice to the assessment or what this part of the assessment is capable of providing so --

CHAIRMAN MUNDEN: We need to move on, but I will recognize the gentleman on the right back if you have questions specifically of Dr. Rago.

DR. JOHN MORRISSEY: Thank you very much for allowing me to speak. My name is John Morrissey. I have a Ph.D in marine biology and fisheries from the University of Miami, and I'm on the biology faculty of Hofstra University on Long Island here in New York.

In addition, since 1996 I have been on the board of directors and executive committees of the American Elasmobranch Society, without question the planet's preeminent scientific society dedicated to the study of sharks and rays.

I'm here to support the recommendations that are before this council in terms of trip limits and quotas. My question for Paul is I'd like to know what size at maturity for females was used in the SARC?

DR. RAGO: We were using 80 centimeters as sort of the size. In recent years, the work that Kathy Sosebee has done has suggested that size at first maturity has dropped slightly, so 70 to 75 may in fact be a more realistic aspect or a more realistic size at maturity right now.

It's important to note, though, that because of the small size of these animals, the potential reproductive contribution from them is expected to be relatively small.

DR. MORRISSEY: And the age of those females?

DR. RAGO: Aging is the soft underbelly of the assessment. We think, based on work that Marta Namick did and Jack Musick years ago, suggests that they're on the order of 12 to 15 years old in terms of that size range.

DR. MORRISSEY: Thank you. The point I wanted to make in light of that is to sort of echo what Paul just said; that is, that aging dogfish is a challenging and problematic task, but this estimate of 12 years old for mature females is without question the best case scenario.

The study by Jones and Ungwin from Norway demonstrated that the youngest mature female they could find was 12 years old, but they also found immature females that were 25 years old. Similarly Saunders and McFarland in British Columbia found females that were age 35 that were still immature.

If this estimate of age at maturity of 12 is wrong or is on the left side of this bell curve, and the majority of mature females mature at 15 or 18 or 22 years of age, this assessment would be much more dire.

Already the assessment, using the best-case scenario of mature females being 12 years old, using that best-case scenario, the stock is still overfished and it will not recover and there hasn't been recruitment for seven years.

If 18 or 19 or 20 years of age at maturity is more accurate, the forecast would only be more bleak. There are many people here, many citizens, who would like to speak so I will end my comments by reiterating, by pleading with you to consider the 600 and 300 trip limits and the proposed quota. This science is sound. These data are good. Thank you.

CHAIRMAN MUNDEN: Thank you for your comments. I have two more hands in the back. I'll recognize those two individuals if you want to make comments specifically to Dr. Rago's presentation. Then we're going to move on with the presentation by Chris Batsavage from the technical committee. The gentleman in the back.

MR. RICH COOK: Thank you for allowing me to speak. My name is Rich Cook. I'm here as a representative of the Fourth Universalist Society. I'm an envoy to the United Nations. I am not particularly well schooled in this issue; however, I do want to speak just from my heart to you all.

And thank you, doctor, very much for your presentation. In fact, I have a question for you, if I might. With regard to depletion of this stock historically, do you have any data on that going back more than 15-20-30 years?

DR. RAGO: We have our survey data which suggests that the spawning stock biomass was not depleted, so to speak, as a result of the earlier fisheries. We don't have longer-term information. Our record is not nearly as complete as, say, British Columbia or other ones where there is —

MR. COOK: Right. So my questions was, we've seen a reduction as a percentage of the biomass over

the last 20 years that is reflected in your charts and graphs here?

DR. RAGO: If we look at the early part of the time series, the current level of the stock size is on the same order of magnitude, even with respect to some of the large females.

So, we have experienced levels comparable to this at least from our best information, but the longer back we go, the more sketchy some of that information is, even in our scientific surveys with some of the gear changes and so forth that have occurred over that period of time.

MR. COOK: Thank you. Just a comment. I was born on Nantucket Island. I grew up on Cape Cod. I spent a lot of time fishing. A lot of the fish I caught were dogfish. I believe that they were there as part of the stock that I was allowed to catch because they're meant to be there.

Any reduction in the large-scale population of these creatures cannot be a good thing for the long-term environment or ecosystem.

I would recommend to the committee here that you proceed with due caution to maintain and sustain the levels both of fishing and of the species itself. I would recommend that you reduce the amount of take that's currently being allowed. Thanks for letting me speak.

CHAIRMAN MUNDEN: Thank you for your comments. I have a gentleman in the back who raised his hand to speak. This will be the last speaker. We will go into a report from the technical committee and then you will be allowed to also ask questions of Mr. Batsavage when he makes that report. Please give your name.

MR. JIM ZIHAL: My name is Jim Zihal. I'm from Long Island. I took a day off from work today because I'm concerned about the environment around Long Island and the fish stocks.

I feel that the data depicts not the real result of what is going to happen, and I'm not sure how things are regulated. My question is who regulates the actual numbers that come in and actually watches each boat and controls the uses of the numbers that are finally agreed upon?

DR. RAGO: Under the federal management plan, that would be the National Marine Fisheries Service that would have sort of the responsibilities for

monitoring the magnitude of the quota. For state waters those would be the individual states.

The individual fishermen and dealers are responsible for reporting the magnitude of their landings and so forth. Then that's complemented with the level of enforcement for on-site inspections. It's kind of an combination of things and multiple jurisdictions.

MR. ZIHAL: Thanks for that answer. I just would like to add that I'm a recreational fisherman, and I rarely take anything I catch. And I do notice that, for instance, on a striped bass, if the limit is 30 inches on a striped bass, people will go to 29 and say it's okay.

Then you have a relative group of people who don't care at all. My concern is that if you go with a higher quota, that above that there will be abuses and from the data itself it clearly, to me, judging from the scientific data, that there is a problem with the dogfish population and the way they reproduce.

And beyond just the higher quotas, you'll have abuse as well and where does that leave you in the end? That's something I think we should all consider. Thanks for your time.

TECHNICAL COMMITTEE REPORT: RECOMMENDATIONS FOR THE 2004-2005 FISHING YEAR SPECIFICATIONS

CHAIRMAN MUNDEN: Thank you for your comment. Now we'll got a report by Chris Batsavage, the chairman of the ASMFC Spiny Dogfish Technical Committee.

MR. CHRIS BATSAVAGE: Thank you. The Spiny Dogfish Technical Committee met with the Mid-Atlantic and New England Fishery Management Councils' Spiny Dogfish Monitoring Committee on September 10th to set specifications for the 2004-2005 fishing year.

The objectives of the meeting were to recommend an annual quota and trip limits for the upcoming fishing year. The committees reviewed the results from the 37th stock assessment workshop and evaluated the status of the stock before making their recommendations, so I'll be presenting some of the same information and slides that Dr. Rago just presented.

The latest three-year moving average of total biomass is at about 415,500 metric tons, and this is higher than the three-year average of total biomass from 2000 to 2002. The total exploitable biomass has

averaged approximately 138,000 metric tons for the past four years.

The 2003 female spawning stock biomass was estimated at about 64,500 metric tons, which is only 38 percent of the FMP target of 167,000 metric tons. The female spawning stock biomass is used as the target for rebuilding the population.

Okay, this graph shows the average size of female dogfish greater than 80 centimeters from the Northeast Fishery Science Center trawl surveys. The average size of mature female has declined from about 95 centimeters in 1980 to about 83 centimeters in 2002.

Likewise, the Massachusetts DMF Trawl Survey and the size composition of females from the commercial fishery have shown similar trends. Okay, you saw this slide not too long ago or one similar to it.

This graph shows the biomass of pups, and these are fish less than 36 centimeters, estimated from the Northeast Fisheries Science Center spring survey. As was stated before, over the last seven years this survey has seen the lowest pup biomass in the time series.

As the average length of mature females in the population has decreased, the average pup size has also decreased. The stock assessment shows that the length and weight of the pups is higher from the large females than from the small mature females.

This graph shows that the average pup length has decreased from about 31 centimeters in 1980 to roughly 27 centimeters in 2003. Large females not only produce larger pups, they also produce more of them.

This graph shows the increasing trend in the number of pups versus the maternal length. It's rare for females less than 90 centimeters to produce more than six pups. Previous studies have reported dogfish can produce up to 15 pups.

Okay, to summarize the stock status, the decrease in the average size of adult females has resulted in smaller and fewer pups produced and historically low pup production. In addition, the smaller pups may have a lower survival rate because they may be more susceptible to predation.

The technical committee discussed the Canadian Dogfish Fishery and its implications to the stock assessment. Canadian landings have significantly

increased from 700 metric tons in 1996 to 4,100 metric tons in 2001.

In 2002 a 3,200 metric ton quota was set for Nova Scotia and the Bay of Fundy with landings that year totaling 3,400 metric tons. 2003 Canadian spiny dogfish management measures are unknown, so it is assumed that they will land 3,400 metric tons in 2003.

Canadian landings are no longer modeled into the projected discards due to the high landings. Instead, Canadian landings are now directly accounted for in the projection model. The 2003 stock assessment uses a new methodology to estimate spiny dogfish discards in other directed fisheries.

Estimation methodology is based on discards recorded by the NMFS observer program and the Massachusetts DMF discard data. Discard data from over 17,000 trips from 1989 to 2002 were analyzed.

The trips were categorized by targeted species and gear groups and discard ratios were estimated for each group. The predominant gear types that captured dogfish included trawls, gillnets and hook and line.

Okay, this graph shows the estimates of total dead discards of spiny dogfish. The total dead discards from all gear types in 2002 were estimated to be around 5,000 metric tons. And as mentioned before, the level of discards has decreased in recent years because of restrictions on other fisheries such as New England groundfish restrictions.

The technical committee reviewed eight different scenarios projecting the rebuilding of the spawning stock biomass modeled for the stock assessment. Fishing mortality was applied to the exploitable biomass for the scenarios.

The projections assume Canadian landings will remain constant at 3,400 metric tons. All but one scenario seems a constant sustainable level of pups entering the population. The last seven years has shown the lowest recruitment levels in the time series.

The reduced-survival scenario assumes that with the current fishing mortality rate of 0.09 will remain constant and pup survival is a function of the maternal size. In other words, it accounts for the apparent lower survivability of pups from the smaller females.

We just saw this slide earlier, too, but, again, this graph shows the different scenarios projected through the next 30 years. The earliest the spawning stock biomass could rebuild is 15 years, but this is under a very unlikely scenario of no commercial harvest in the U.S. or Canada, no discard mortality, and constant recruitment into the population.

And, as Dr. Rago mentioned before, this scenario is kind of run as a baseline to compare to the others. Under a constant fishing mortality of 0.03, the spawning stock biomass could rebuild in about 23 years, but it does not account for the low recruitment into the population.

About half of the projection runs do not reach the target spawning stock biomass within 30 years. Under the scenario where the fishing mortality rate remains constant at 0.09 and considers the reduced survival of the pups, the population is not likely to rebuild.

In order to achieve a fishing mortality rate of 0.03 for the upcoming fishing year, only 2,960 metric tons or about 6.5 million pounds of spiny dogfish can be removed from the population.

Again, it is assumed that the 2003 Canadian landings will equal their 2002 landings of 3,400 metric tons. The projections of discards estimate about 19 million pounds of dogfish discards will occur from the commercial fishery this year and about half will be discarded dead.

This will be about 4,600 metric tons or 10.2 million pounds. The Canadian landings alone will remove more dogfish from the population to achieve a fishing mortality rate of 0.03.

For the 2004-2005 fishing year, the technical committee recommends a maximum bycatch quota of 4 million pounds and possession limits of 600 pounds in Period 1, which is May 1 to October 31; and 300 pounds in Period 2, which is November 1 to April 30.

This is the same recommendation the technical committee has made at previous meetings, but I want to explain our rationale for making the recommendation again.

The main reasons for the technical committee's recommendations are the stock status continues to show poor recruitment, a truncated size range, and no progress on rebuilding the spawning stock biomass.

A small bycatch quota allows a portion of the estimated 10.2 million pounds of dead discards to be converted into landings. The low trip limits are an effort to disperse the fishing mortality over a broader range of sizes instead of just on the spawning stock biomass.

Larger trip limits tend to target and concentrate fishing mortality on the mature females, which at this time should be discouraged.

The technical committee recognizes that low trip limits may not be economically feasible for landing, shipping and processing spiny dogfish. The proposed bycatch quota is a cap with no guarantee the entire quota will be landed. It's imperative that spiny dogfish landings do not increase the mortality on the stock.

A zero quota and zero possession limit were considered for the 2004-2005 fishing year, but the technical committee was concerned with the high level of discarding currently taking place. However, the technical committee does recognize the need for a better strategy to avoid the high level of discarding. That concludes the report. Thank you.

CHAIRMAN MUNDEN: Thank you, Chris. Questions from board members of Chris? David Borden.

MR. DAVID V.D. BORDEN: Thank you, Mr. Chairman. Chris, the estimate of dead discards, I'm just curious. You've got an estimate of total discards and then dead discards as a percentage of that. What specific scientific studies were used to generate that ratio; was it tagging studies, tag survival?

MR. BATSAVAGE: We took the discard mortality rates from the three predominant gear types, which would be 75 percent for gillnets, 50 percent for trawls and 25 percent for hook and line, and applied it to the total discards.

MR. BORDEN: But was that based on some kind of field study? I'm not arguing pro or con the estimate. I'm just trying to get at how was it derived?

MR. BATSAVAGE: Basically, we used the discard mortality numbers that were used in this current stock assessment. There was no new information.

MR. BORDEN: So just a continuation of the same assumptions in the model?

MR. BATSAVAGE: Yes, there were no special studies.

CHAIRMAN MUNDEN: Dave Pierce.

DR. PIERCE: Chris, regarding discards, did the monitoring committee have any opinion to offer regarding the nature of the fishery in Massachusetts' waters, small-scale fishery directed on dogfish, tightly controlled, no night fishing, it's a hook fishery, strike gillnets?

You know that I and my representatives have made the point that it's our belief that whatever bycatch there may be, there is a high survival of that bycatch by nature of the fishery itself. So, were there any comments offered regarding that issue?

MR. BATSAVAGE: Yes, the Massachusetts' dogfish fishery was discussed at a previous technical committee meeting where Dr. Pierce presented data, at-sea observer data from that fishery.

It was reported that the discarding is very low in that directed fishery, and it is likely the mortality is also low. Of course, a concern of the technical committee was they were targeting the fish inshore, and in many cases it was mature females.

I guess to compare that fishery to some other fisheries going on, the discarding is low. But, you know, the main point is in the current state of the spawning stock, we're concerned with too many removals of the mature females.

CHAIRMAN MUNDEN: Jack Travelstead.

MR. JACK TRAVELSTEAD: Chris, was the recommendation of the technical committee unanimous or was it a split vote or how did that work out?

MR. BATSAVAGE: The technical committee was a unanimous decision. It was reached by consensus. There was no dissenting voice.

CHAIRMAN MUNDEN: I have Gil Pope, Bruce Freeman and Pete Jensen.

MR. POPE: Thank you, Mr. Chairman. From what I understand, I'm trying to convert this into pounds so that it is easier for me. I'm kind of metrically not very good here. 913 million pounds is what I get for what you have as an estimated biomass figure for now. Is it 415 metric tons? Is that correct?

MR. BATSAVAGE: That sounds correct. I can't do the math in my head, but the conversion sounds correct.

MR. POPE: It's about 913 million pounds, pretty close to a billion pounds, somewhere in there. I don't know what the PSE is on that. I don't know if there is a PSE -- 5 percent; 10 percent?

MR. BATSAVAGE: Dr. Rago would probably know the confidence intervals on that better than I.

DR. RAGO: Yes, the PSE --

MR. POPE: Percent standard error on that.

DR. RAGO: Yes, it's probably about 30 percent, plus or minus 30 percent.

MR. POPE: So it could be over a million, it could be less?

DR. RAGO: Yes, absolutely.

MR. POPE: All right. And the same thing with the female spawning stock biomass; what are the PSEs on that?

DR. RAGO: Similar, 20-25 percent.

MR. POPE: So you've figuring that out of that 913 million pounds of biomass, that only about 6 million of that would be safe to harvest. Those are some of the figures that I got, which is only about 3 percent of the spawning stock biomass each year would be what you could consider to be a safe level to be harvested?

DR. RAGO: That's correct, yes.

MR. POPE: These numbers are mind boggling, especially since we're trying to think of ecosystem management. We're trying to have these fish survive in relationship to other fish that we are trying to have rebuild, recover and so on and so on.

I'm wondering in some ways -- I understand that single-species management is great. You can bring back the striped bass. You can bring back them all singly, but when we try and look at the ecosystem and the people that have come up here have expressed their fear that we're not doing justice here as far as the relationship to other species, and I'm kind of worried about it because I'm wondering what billions of pounds of resource does to, for example, our lobsters that we're trying to rebuild, our bluefish, striped bass, how they all interrelate to the zero-one

menhaden that we're worried about or the herring or the peanut bunker that I see and the weakfish that we're trying to recover and all the things that they interact with from here to Florida.

Do you have any figure in your mind or have you guys talked about in any of your deliberations what you think would be the right amount of biomass -- and this is a tough question -- the exact right amount or even a plus or minus 30 percent of biomass that might be the right thing for us to be building to in order for that to be a safe number in comparison to all the other fisheries that we are trying to manage? Thank you.

MR. BATSAVAGE: I'll try to answer it as best I can. Of course, the fishery management plan has a set target for rebuilding the stock; and as you mentioned, single-species management is what we're doing.

I guess your question was asking have we considered these based on other fisheries going on and other species that we're trying to manage? We haven't discussed that specifically at these dogfish meetings. We're looking mostly at what kind of spawning stock biomass will we need in the population to make sure that the fishery is able to sustain itself.

CHAIRMAN MUNDEN: Bruce Freeman.

MR. FREEMAN: Thank you. The question I had was a little different than the one Dave Borden had, but it was on the dead discards. I thought, Chris, you had mentioned that at one time that we estimate the dead discards about 5,000 metric tons and then another time 4,600 metric tons. Was that different years or did I misunderstand what you said?

MR. BATSAVAGE: I think it's different years, let me check.

MR. FREEMAN: Well, I also thought I heard you say something about the commercial discards or maybe the total discards are 19 million, and then there was a percent of that that actually were recorded as dead, and I thought you said 40 percent, but I wasn't sure and I'm just trying to understand that.

MR. BATSAVAGE: They're two different years, Bruce. For 2002 it was about 5,000 metric tons. In 2003 it was 4,600.

MR. FREEMAN: Okay. And one other issue -- you mentioned it as well as Paul did, but I'm looking at

the graph that was presented in Paul's report about the commercial landings. It has U.S. commercial, U.S. recreational and then total foreign.

The issue that we glossed over very quickly is somewhat concerning in that 1998, when our catches started to decline because of regulatory impacts very precipitously, we see the Canadian catches going in the opposite direction. Ours are declining; theirs are increasing.

In fact, according to this graph, the highest catch was made in 2001, although there was a reduction in 2002. The question I have is I'm assuming the foreign catch is primarily Canadian catch, and that number we feel is relatively solid, and they have a good reporting system?

MR. BATSAVAGE: Yes, the Canadian catch made up the majority of the foreign landings. I think in the stock assessment it mentioned that there may be some other dogfish or squalid sharks being landed in those years by foreign fisheries.

And where you see the "other foreign", it may be something other than spiny dogfish but with Canada that was the majority of spiny dogfish in this.

DR. RAGO: Mostly Bay of Fundy. The component is NAFO Areas 2 to 6, which goes from Labrador down through North Carolina, but it's primarily dogfish being landed in the Bay of Fundy and Southwest Nova Scotia.

CHAIRMAN MUNDEN: I have Pete Jensen followed by Dave Pierce, Dave Cupka and Senator Damon.

MR. W. PETE JENSEN: You may have covered this and I missed it, but does this swept-area biomass include waters off of Canada, and does Canada monitor recruitment? Are they seeing the same seven-year reduction that we've seen in recruitment in their waters?

DR. RAGO: One of the primary tenets of the assessment is that during the time of our spring survey, we have access or we survey most of the dogfish resource. Later in the year, as you know, the dogfish migrate north in the summer, and that migration extends up into the Bay of Fundy, around the Scotian Shelf, out toward Sable Island and so forth.

Our fall survey and so forth does not capture that nor does the Canadian survey capture the entire resource.

Historically, there were very few pups that were less than 36 centimeter animals found in Canadian waters, historically, so they usually stay off our shelf zone there, on our shelf edge, and migrate north as they grow.

So the size composition data from the Canadians was not available as part of this assessment although we're working on getting that information as part of it. I can't answer whether or not they've seen a similar decline. What would be relevant would be a decline in the numbers of animals in the, say, 40 to 60 centimeter range for the Canadian survey.

MR. JENSEN: Do you expect that to be a significant factor if you're able to get the data from them?

DR. RAGO: I think as in other instances, it would be confirmatory of sort of general conditions and status of the resource. They use a similar size net and have similar survey protocols, so we would expect the numbers to be comparable from that standpoint, yes.

CHAIRMAN MUNDEN: Dr. Pierce.

DR. PIERCE: Our Captain Hart Award Winner, Jack Travelstead, asked a question, and I didn't quite get that answer squared. This was a meeting of the technical committee and the council's monitoring committee, right?

And at that meeting, according to the minutes, a vote was taken regarding the 4 million pound bycatch quota, the 600/300 pounds, and it was not unanimous. It was five in favor and two opposed, just to make sure that we have the record straight, unless, of course, the technical committee met separately and by itself, you know, voted on this issue, too.

And if it did, that's fine, but I at least wanted to make the point that the monitoring committee of the council did have a different perspective regarding unanimity of that particular decision.

Also, just one final point, because it was mentioned by Pete Jensen, these are swept-area biomass estimates and we need to consider that and also factor into our decision-making process as best we can the fact that these estimates of abundance come from 3 square nautical miles swept, applied to about 64,000 square nautical miles.

I'm not disputing the situation regarding the status of the resource, large females then versus now, but I

want everyone to realize that 3 square nautical miles are swept and the data are applied to 64,000 square nautical miles, approximately.

MS. MEGAN GAMBLE: To the first part of your comment, David, the council's monitoring committee did meet jointly with the commission's technical committee, but they take separate actions.

They're reviewing the same information and actually many of the members are the same, but the technical committee's recommendations to the management board were unanimous.

CHAIRMAN MUNDEN: Dave Cupka.

MR. DAVID CUPKA: Thank you, Mr. Chairman, just a point for clarification, a question for Chris, if I may. On Page 3 of the technical committee report, the middle of the page, it has the technical committee recommendation, and it appears to me there is an overlap in those time periods, and I wanted to know what the correct period was for that?

MS. GAMBLE: That's a typo. The second period is supposed to be November 1 to April 30.

CHAIRMAN MUNDEN: Senator Damon.

SENATOR DENNIS S. DAMON: Thank you, Mr. Chairman, that was my observation and question as well.

CHAIRMAN MUNDEN: Thank you. Other questions of Chris Batsavage from board members? Bruce Freeman.

MR. FREEMAN: Thank you, Mr. Chairman. One thing that struck me and I have a -- going back to the comments made by Tom Fote, and, again, I fish the same area he does so my observation is similar to his in that dogfish are taken quite commonly; however, most of them are smooth dogfish and are released but we do get spiny dogs and, again, most are released.

And, it is certainly not 100 percent mortality. But, when I look again at Figure B-2 and it shows the U.S. commercial, U.S. recreational and foreign catch combined, the thing that struck me, in the early 1990s, '92 through '95 -- and, again, this is inspection of the graph, there seems to be relatively small catches or at least mortality of dogfish in the recreational fishery, even when the population was high, and yet in 2001-2002, when the population is very low, the recreational catch or recreational

mortality appears to be three and four times what it was when a high population occurred.

I can't understand how that could be since they're not targeted, they tend to be incidental. Was there any discussion in the SAW or SARC process as to how that could be explained?

DR. RAGO: Thanks, Bruce. It was, of course, discussed and, as I tried to note, there are a couple components of that. One is that it is a sampling estimate based on the MRFSS survey.

The MRFSS survey, the Marine Recreational Fisheries Survey, is primarily oriented towards the more popular recreational species; therefore, much of the intercept effort and so forth is directed towards striped bass and bluefish and weakfish and so forth. That's one aspect of it.

The consequence of that is that the estimates of average size are not good. We use an average size of 2.5 kilos per animal, which is probably high. The magnitude of estimates of total recreational catch are probably high in terms of tonnage and so forth.

So, I guess that really kind of summarizes our level of discussion. It would probably be worth investigating more completely whether it's a wave effect or an area effect and so forth.

MR. FREEMAN: And one other thing. It was mentioned, Paul, by both you and Chris relative to the fact that the age at maturity seems to be decreasing, and you would expect that of an overfished population. I mean, it doesn't surprise me at all with the information provided that you would start seeing fish mature earlier.

I agree that the pup production is certainly less for the smaller fish. But, if in fact that is happening, did you go back and adjust your spawning stock biomass because now they're, let's say, maturing at 75 centimeters as opposed to 80? I mean, is that a factor? Does that have any contribution?

DR. RAGO: The short answer is, no, we did not adjust it to include smaller sizes. The scope for compensation or compensatory response to fishing mortality is rather small for dogfish.

That's primarily a physical constraint in terms of the investment they can make in pups. Unlike striped bass or cod or haddock, the ability for mother nature to sort of bail out the process through a strong year class is severely compromised for dogfish.

CHAIRMAN MUNDEN: Pat Augustine, did you have a question concerning the technical committee report?

MR. AUGUSTINE: Well, I have a question and a statement which will always end up when I make a motion, but let me do the question first, Mr. Chairman, thank you.

Can we assume, then, that what Dr. Rago and Mr. Batsavage have said is that the best course of action at this point in time, with all the information that we've had presented to us today, is that we should really stay the course and stay at the 4 million pounds, the similar approach we took at your previous recommendation in September? Is this what you're telling us we should do?

MR. BATSAVAGE: Well, basically, what we're saying is what we've said in the past, to stay at 4 million pounds, but we're differing on the trip limits than what was decided on in previous meetings.

MR. AUGUSTINE: A follow up. Thank you, Mr. Chairman. Thank you for that answer. That's the answer I was hoping to get on the record.

So it seems to me that when we finally get to the point where we want to make the motion, I'd like to be one to offer that up. That may be in two parts when Mr. Chairman is ready to hear that. So, I'll defer to you, sir.

CHAIRMAN MUNDEN: We're not ready for a motion at this point in time, but thank you. We will consider that. Any other questions of Mr. Batsavage from board members? Pete Jensen.

MR. JENSEN: Well, we don't get him here very often to ask him these kind of questions. You know, the seven-year dropoff is just still so puzzling because it just doesn't have any relationship at all to the variations that we saw prior to that where you go from a very poor year to an extremely high year.

What's the leading hypothesis other than what you've gone through that might be happening other than simply a total recruitment failure?

DR. RAGO: I think the leading candidates would be an increased preference for mid-water parts of the ocean and, therefore, not being available to the trawl. Now, that's equally implausible in terms of some of the mechanisms because what it would imply is some sort of major shift in the environmental conditions.

Now we are looking at things like that to see whether there may be a change in some of the thermal pattern and structure, which we know could induce something like that. We're hoping we can find them or if they show up somewhere else, then that would be great.

MR. JENSEN: That was one of the things I've been thinking about, because there are some examples out there of some thermal shifts and spatial distribution of other populations going a little farther north and so -- okay, thank you.

CHAIRMAN MUNDEN: Dave Borden.

MR. BORDEN: Thank you, Mr. Chairman. Can I ask Paul a question to follow up on Pete's, with your indulgence? Paul, I'm just curious.

The food preference chart that was put up clearly indicates that the sizable portion of the diet that is composed of herring and mackerel, and given the rapid rebuilding of the herring population, is it conceivable that somehow that is causing the affect that Pete was referencing, where they are in fact up off the bottom chasing herring in the mid-water? I mean, is that one of the issues you looked at?

DR. RAGO: Not specifically with respect to herring rebuilding; however, it is a plausible hypothesis that they could be feeding more on a more abundant herring resource.

That being said, we haven't seen any evidence that they are more closely associated with herring now than in the past or that there has been a diet shift towards them. As a scientific hypothesis, it's certainly one to investigate.

MR. BORDEN: And you touched on my second question which is, you have stomach content analysis that goes quite a ways back, and have you detected any shift in food preference for pelagic species during that time period?

DR. RAGO: I would defer to the experts on that and that would be Jason Link and Bill Overholtz, who have done more thorough analyses of that particular aspect. As I recall Jason's paper, it does not show evidence of that change over time. Well, I guess that's probably all I can comment on at this point.

MR. BORDEN: Okay, and one other last question which is the issue of we're at -- if my memory is correct we're at 38 percent of our SSB target. And, if

in fact we are at that level, what level of pups should be generating if everything were falling into the patterns, the same patterns of the past?

I mean the chart has virtually gone down to zero, but you wouldn't expect that with 38 percent SSB, so what should we be generating out of that much spawning stock?

DR. RAGO: I think it's about on the order of about three or four times as many as we are seeing. I could get an exact figure going back to the graphs and so forth, but it's on that order.

CHAIRMAN MUNDEN: Gil Pope.

MR. POPE: Thank you very much, Mr. Chairman. I was recently sent a survey that was done, just an informal survey that was done with some of our research monies, and there were some trawls that were done. Jimmy Ruhle and so on did some of these studies.

I don't know if you guys have had a chance to look at any of them or not, but 24 out of the 25 tows they caught dogfish, and I think the major amount of what was caught during those tows was dogfish. And I looked at the pups specifically in that, and that they did show up in that particular survey.

Now that was only, like I say, one research thing I don't know if you guys have had a chance to see that or not, but in some of the other surveys that have gone on, that there are some pups that are showing up in these surveys. Thank you.

CHAIRMAN MUNDEN: Other questions of Chris from the board members? Okay, we'll go to the public for comments. Again, I'm going to ask you to make your comments brief and also specifically to the presentation by Mr. Batsavage. Please give your name and brief comments.

MR. JIM SCHAEFER: My name is Jim Schaefer. I'm from Charlemont, Massachusetts. My family owns a number of businesses in Massachusetts, including some ski resorts. We are the largest employers in Franklin and Berkshire Counties.

I and my family pay significant taxes to the state of Massachusetts. It's probable at this point that most of you have already made up your minds around this important question. As a businessman, I know the importance of making good strategic decisions.

It's important to be thorough. It's important to consider all the facts around a decision at hand. If I make a decision, it affects the lives of a lot of different people, especially an important strategic decision.

This certainly is a very important strategic decision. If you increase quota limits and you're wrong, you run the risk of not only wiping out a species, but also permanently injuring the business for many folks up and down the eastern seaboard.

I think it's very important to consider the advice of the experts sitting in front of you now. I think you're all doing that. I find it surprising that you're considering increasing the quota limits to a level greater than what the experts are advising.

As a scuba diver, I've literally dived all over the world. I've dove in the Pacific Ocean, the Caribbean, the Red Sea, the Indian Ocean. I've seen the effects of overfishing. I've seen the effects of really damaging important ecosystems, and this is certainly one of them.

I ask doesn't it make sense to manage our ecosystems in a sustainable way, and doesn't it make sense to listen to the advice of the scientists? I highly recommend that the trip limit be limited to 600 pounds and 300 pounds for the two respective quota periods. Thanks.

VICE ADMIRAL ROGER RUFÉ: Thank you, Mr. Chairman and members of the commission. My name is Roger Rufe. I'm president of the Ocean Conservancy, and I'm also a retired Coast Guard vice admiral.

Most recently, I was a commissioner on the PEW Oceans Commission, and I'm sure most of you have seen the report. The most important, I think, conclusion was, among many, that the single greatest threat to ocean health and ocean ecosystems is overfishing.

The cause for overfishing is the failure in too many occasions of fisheries managers to follow the scientific advice and to make decisions based on short-term economic concerns rather than long-term economic and ecological health of the resource and the ecosystem.

I would like to urge this commission to change that pattern. Dogfish is practically a poster child for that overfishing based on the graphs we just saw. I would urge you to follow the scientific advice, which in

some of these decisions I know can be troublesome and can be not quite as solid as you would like.

In this case it's not a close call. The science is sound. I urge you to follow the unanimous advice of the technical committee and establish the limits that they have recommended. Thank you, Mr. Chairman.

CHAIRMAN MUNDEN: Thank you for your comments, Admiral. Other comments. Sonja Fordham.

MS. SONJA FORDHAM: Sonja Fordham, the Ocean Conservancy. My boss beat me to it. I think many of you are familiar with the Ocean Conservancy's stance on this issue. I did have a few clarifications and comments on what has just been said, and I would like to reserve the opportunity to speak later on a motion of action.

I did attend the SARC and the monitoring committee meeting, and I have a clarification. Dr. Pierce asserted that there were two no votes. I want to clarify from my recollection that one of those no votes was cast by a commercial fisherman, who is supposed to be an ex-officio non-voting member and accidentally voted.

Just briefly on the comments that have just been made, we certainly appreciate the conversation about moving towards an ecosystem approach. It seems to come up a lot for dogfish. I want to point out the ecosystem in this case is very complex.

Spiny dogfish have a varied diet and it's really not as simple as one species eating another. If it were, we would have a perfect argument for dogfish conservation considering that they eat at some times of the year mostly cone jellies, which in turn eat larval cod.

I think the larger point here is that unfortunately we have many decades now to figure out the absolute perfect level to rebuild dogfish and what that level and the perfect level in the ecosystem would be.

And right now, here, today, you are here to decide, to make some decisions to try to avoid a population collapse and try to repair damage to the mature female portion of the population and to rebuild it to what is a scientifically sound target that we have right now.

I would remind you that this is about the reproductive segment of the population, not the total biomass of dogfish in the ocean. I will remind you that the

scientists that have given you this advice are among the most respected fisheries scientists in the world.

Their dogfish assessment is one of the best shark assessments and is the leading assessment for fish populations in the world, and they have absolutely no incentive to make things look worse than they are, so I urge you to heed their advice.

I understand we're under time constraints and I'm sorry that there has been some confusion with the agenda, but I would remind you that there are a number of people, citizens and scientists that have taken time out of their day.

They're really interested in speaking perhaps a little bit later with some more general comments, and I would urge you to provide that opportunity before you vote. Thank you.

CHAIRMAN MUNDEN: Thank you for your comments. If you have specific comments or questions concerning the technical committee report, I'll recognize you to come forward. If not, then we're going to move on with the agenda. Specific comments or questions of Mr. Batsavage?

ESTABLISH THE 2004-2005 FISHING YEAR SPECIFICATIONS

CHAIRMAN MUNDEN: Okay, we'll move forward to the next item on the agenda which is an update on the action by the New England Fisheries Management Council and the Mid-Atlantic Fisheries Management Council by staff member Megan Gamble. Megan.

MS. GAMBLE: Thank you. I actually want to also inform you of the council's monitoring committee's recommendation as well as the joint committees, which has been discussed already. The Dogfish Monitoring Committee met on September 10 with the technical committee.

They have made a recommendation of 4 million pounds, and that's to be split between two seasonal periods, the first period receiving 2.1 million pounds; the second, 1.7 million pounds. They've also recommended a bycatch trip limit of 600 pounds for quota period 1 and 300 pounds for quota period 2. The joint committee met subsequent to the monitoring committee. They met on October 7, and they made a motion or a recommendation to set the quota at 8 million pounds with a zero trip limit in the Exclusive Economic Zone.

The Mid-Atlantic Fishery Management Council also met on October 7. They are forwarding a recommendation of a bycatch quota of 4 million pounds that has a seasonal split between the two periods. In addition to that, they made a recommendation that the trip limits are not to exceed 1,500 pounds.

The New England Fishery Management Council met on October 21. The council made a recommendation for a quota of 4.4 million pounds and a trip limit of 1,500 million pounds all year for federal waters. In addition to that, their motion included support for the commission's regional allocation with a 7,000 pound trip limit.

CHAIRMAN MUNDEN: Questions from board members of Megan concerning the council actions? At this point in time we're on the agenda where we're going to establish the 2004-2005 fishing year specifications for state waters.

This is why most of us are here, why we have provided comments. And, as a representative of the state of North Carolina, I'm going to reclude myself from the position of chairman. I've asked Bob Beal to set in for me while we discuss the specifications for 2004-2005 fishing year. I've asked Bob to recognize me once he assumes chairmanship.

MR. ROBERT E. BEAL: Okay, thank you, Red. I think, just to go over the kind of course or the plan that I think we'll take for the rest of the meeting, Red is prepared to make a motion, so I'll call on him first and then we will take discussion from the management board folks at the table, and then we will take comments from the audience regarding the motion, and then we will vote. Hopefully, that process will be relatively quick. With that, I'll call on Red Munden.

MR. MUNDEN: Thank you, Bob. The Mid-Atlantic Fisheries Management Council met in October in Kill Devil Hills, North Carolina. We had a joint meeting with the New England/Mid-Atlantic Fisheries Management Board for spiny dogfish.

The Mid-Atlantic Council voted for a 4 million pound quota for spiny dogfish for the coming fishing year with a 1,500 pound trip limit.

That motion passed after a motion for an 8 million pound quota failed. It was a tie vote and the chairman elected not to vote, so the motion did not pass for lack of a majority. The reason that the joint committee from New England and the Mid-Atlantic

Council recommended an 8 million pound quota was to utilize the bycatch.

A number of people today have talked about the discards in the dogfish fishery. But, if you get away from metric tons, we're talking about 19.1 million pounds of spiny dogfish are thrown over the side or will be thrown over the side this year, of which half are dead, so we're throwing away about 10 million pounds of dogfish.

The North Carolina Marine Fisheries Commission had representatives at the meeting of the Mid-Atlantic Fisheries Management Council, and they took action in November. They recommended to this board that the quota for the upcoming fishing year be 8 million pounds with a 1,500 pound trip limit.

In all the years that I have served as chairman of both the Spiny Dogfish Board and chairman of the Mid-Atlantic Spiny Dogfish Committee, I have supported actions that would bring spiny dogfish back.

But, it's very disturbing to me as well as members of our commission and other members of the Mid-Atlantic Council, as well as the New England Council, to be faced with discarding upwards of 10 million pounds of discard spiny dogfish that are dead and not utilized.

I'm making a motion before this board that for the 2004-2005 fishing year the quota be set at 8 million pounds with a 1,500 pound trip limit for both harvest areas. That's my motion, Mr. Chairman.

MR. BEAL: Thank you, Mr. Munden. Do we have a second to the motion?

MR. POPE: Second.

MR. BEAL: A second by Gil Pope. Discussion on the motion. David Pierce.

DR. PIERCE: That surprises me, Red. I have a substitute motion to make; and after I make that motion, I would like to have a few moments to comment regarding why I'm making the motion. I ask everyone around the table to please bear with us, those who have interest in dogfish, since, obviously, the day is nearing its end. We have had information overload.

I know dogfish tries everyone's patience but here we are. It's approximately 6:30, I think. Once these motions are made, I make my substitute, there will be

response from the audience so I suspect we'll be here for about another hour or so, my guess.

So, please bear with us, because this is an important issue, certainly, to Massachusetts and North Carolina as well and other states that have an interest in dogfish. My motion to substitute has been given to staff. They can put it up on the screen.

This motion is basically to go with status quo, which is what we haven't discussed here this afternoon yet. What did we do for the current fishing year? No one has talked about that. Has it been successful? Is it a template for the next fishing year? My motion is to that issue.

The motion to substitute is to adopt a 4.4 million pound quota for the next fishing year, with 2.5 million pounds being allocated to Massachusetts and New Hampshire, and 1.9 million pounds for states from Rhode Island through North Carolina.

Allocations between states in each region will be as in the current fishing year and as established by the states through agreements. Daily landings will be established by each state up to 7,000 pounds.

That's what we did at our last meeting; and if there is a second to that substitute, I would like to elaborate a little bit, not much, Mr. Chairman.

MR. BEAL: Okay, thank you, Dr. Pierce. Taking off my hat as stand-in chair and putting on my hat as a staff person, the motion that you've made includes state-by-state or regional allocations. In order to put in a binding regional allocation under the current ASMFC Dogfish Plan, we actually have to go through the addendum process to do that.

The current plan allows the commission to set a quota, and then that quota is automatically divided into the two quota periods by the percents that are in the fishery management plan. So going beyond the allocation between the two seasons, in other words, taking the coast-wide quota and dividing that up into the seasons is beyond the scope of what the board has the ability to do through the annual specification-setting process.

So, in order to set up either regional or state by state or some other form of binding allocations, it would take an addendum for the states to do that. So, with that said, I think a modification to your motion is probably in order, David, in order to -- I think it's fair if, in your motion, set a quota and then also initiate the addendum process to set up some further

allocations, but to try to do a quota, a trip limit and an allocation via one motion I don't think is in order at this time.

DR. PIERCE: All right, I'll be guided by that. I mean, we did it already without an addendum. We did it for the current fishing year so we've already set the standard; however, now you're saying that when we get to specifications, it's a different story. I might challenge that, but I'm not going to be -- I won't go that way.

So, the motion to substitute would be to develop an addendum that would adopt and then it would go on from there. Okay, so that would then set us down that path if indeed it's necessary for us to adopt an addendum, because the alternative is the motion that is, the original motion that really is unacceptable from the perspective of Massachusetts because it creates just a bycatch quota.

I think as you all know from the many times I've discussed this, bycatch quotas generally don't work. I don't think we've really tested the 1,500 pound as a bycatch limit yet to see if indeed landings will occur at that level.

My fear is that we go with 8.8 million or 4.4 million, with that kind of a bycatch or trip limit and we end up with no landings or very little landings, because there will be no processors processing bycatch limits.

I've gone this way. It's written down. I've testified to it. Everybody knows. Processors have come to hearings, to these meetings, and have made that point very clear. Now, that was the motion so I'm waiting for a second.

MR. BEAL: Do we have a second to the motion? Seeing no second, the motion fails for lack of a second. I've got a number of folks on the list here. David Borden had his hand up.

MR. BORDEN: I was going to comment on the motion to substitute, Mr. Chairman. I'll pass.

MR. BEAL: So the original motion is back in play, the motion made by Red Munden. Do folks want to comment on that? Pat Augustine.

MR. AUGUSTINE: Thank you, Mr. Substitute Chairman. If that substitute motion had passed, I was going to call for Mr. O'Shea to find out whether that motion was in order or not. It seemed so convoluted, even I couldn't understand it and I'm pretty good at it.

I'd like to substitute this and go back to the original position that I tried to move 20 minutes ago, but we had to have more people speak.

I'd like to substitute as we originally stated and move that we adopt the 4 million pound quota for fishing year 2004-2005 and specifically include in it the original division of two semi-annual quota periods as shown in our original piece, Quota Period 1, 2.1316 million pounds; and Quota Period 2, 1.684 million pounds; and bycatch trip limits of 600 pounds for Quota Period 1, May to October, and 300 pounds for Quota Period 2, November to April. I'd like to explain if I get a second. Thank you.

MR. BEAL: Is there a second to Mr. Augustine's motion?

MR. LEWIS FLAGG: Second.

MR. BEAL: Second by Lew Flagg. Discussion on this motion. I have Gordon Colvin and then Pete Jensen.

MR. AUGUSTINE: May I respond, Mr. Chairman?

MR. BEAL: Yes, Pat, I'm sorry.

MR. AUGUSTINE: We've been here before. We've got a hard decision to make. I think we've had enough information to tell us we'd better move in the right direction and do what we have to do; promote this position to save this fish before it becomes one of those indecent creatures that's over there in the CITES listing.

There is just no question that the data that we've had presented to us is literally overwhelming that we've got a major crisis on our hands. We can play with numbers all day and all night long. We can be here for the next five hours and at the end of the day we're going to be in the same position, because I'll be here until you bury me to defend this position. This is what's recommended. At the moment it's the right thing to do until we have further information. Thank you.

MR. BEAL: Thank you, Mr. Augustine. We'll go down the list. Pete Jensen.

MR. JENSEN: Well, Mr. Chairman, I had a question about the original motion; is that appropriate now; not on the substitute motion.

MR. BEAL: Let's try to focus comment on the substitute motion.

MR. JENSEN: My question was on the original motion.

MR. BEAL: Okay, we'll come back to you, then, Pete. Thank you. We'll go down the list. Jack Travelstead.

MR. TRAVELSTEAD: Thank you, Mr. Chairman. I had raised my hand to actually second the motion. I think Pat Augustine has hit the nail on the head with this. I've read Mr. Johnson's letter from North Carolina.

I can tell you that Virginia shares in some of the same frustrations that North Carolina has experienced with the current situation. But, those frustrations are absolutely overwhelmed by the stock assessment that Dr. Rago has presented.

And along with a unanimous consensus from the technical committee, I think we've got to go with this motion. Thank you.

MR. BEAL: Thank you. Next on the list is Red Munden.

MR. MUNDEN: Thank you, Bob. I cannot support this motion even though I believe it's the exact same motion that was passed by the Mid-Atlantic Fisheries Management Council because it does nothing to address discards.

And, again, I remind you we're throwing away 10 million pounds of fish dead, and we're squabbling over 4 million pounds in the difference between quotas.

But the other thing that I cannot support about this motion is that a 600 pound trip limit and a 300 pound trip limit amounts to no opportunity for fishermen to bring fish in because there will not be enough demand for the small quantities of fish for the dealers to put together enough fish to ship to a processor.

So by putting in these low trip limits, then you are automatically requiring every fisherman who goes out there to discard 300 or 600 pounds every trip that they could be bringing in, so I would ask you to vote against this motion because I don't think that it does a thing to help the dogfish stock.

MR. BEAL: Red, thank you. I'm going to keep going down the list here. David Borden.

MR. BORDEN: Thank you, Mr. Chairman, I'll try to be brief. I'm going to have to vote against the motion and I just want to explain the reason. I'm not terribly troubled by the 4 million pound quota nor am I troubled by the split.

The trip limits are just totally unacceptable, and I agree with the comments that Mr. Munden just made. I mean, we should learn from our errors here, and in the error is we've had a 300 and a 600 pound trip limit and what has happened is the result is we've had 19.5 million pounds of discards with that limit.

The only hope of converting some portion of those discards to landings is simply to raise the trip limit, in other words, keep the quotas the same and do the split and put a higher trip limit. Now what that will do is it will eliminate the directed fishery for dogfish.

Everyone around this table should understand that at \$.10 to \$.15 a pound, nobody can make a dime on 1,500 pounds of dogfish. They're just not going to go out there 20 or 30 miles off the coast and target dogfish.

It's just not economically feasible. But what it means is that when they're setting nets for bluefish or weakfish or any other species, instead of throwing those dogfish away, they're going to land them.

Now the last point I would make, and I've made this repeatedly, it's not worthwhile for any of the dealers to ship dogfish when they only have 300 pounds coming into the dealership.

The processors don't set up the operation and the net result of all that is you force all of the fishermen to discard, so I would just reiterate that I think we should try something new here and stay — I'd urge people to reject this motion.

And if they do, I'd be happy to make a substitute motion with a 1,500 pound trip limit because I think that's more appropriate. Try one year of that and see what happens to the discards.

MR. BEAL: Harry Mears.

MR. MEARS: Thank you, Mr. Chairman. I strongly support this motion. We've met several times to discuss dogfish management. And really never before have we had both the results of the most recent stock assessment and also a full report from the technical committee essentially giving us irrefutable information that in fact the dogfish fishery cannot sustain a directed harvest.

From the very beginning, this has been a tenet of dogfish management and was the very reason why the 300 and 600 pounds were initially identified and implemented in federal waters. Once again, I would hope that we listen to the advice and also the irrefutable information we've heard from our own technical committee and also from the most recent stock assessment. Thank you.

MR. BEAL: All right, thank you. Gil Pope.

MR. POPE: Thank you very much. I know everybody is saying this is "irrefutable" information that we have here, but when I ask the figure of 913 million pounds, plus or minus 30 percent, to me that's a big swing either way.

Now, when you're talking the difference between 4 million and 8 million pounds, when it comes to 913 million pounds, plus or minus 30 percent, something just doesn't jive with me. Now, I don't know how else to explain it.

I don't see the difference between 4 million and 8 million when you're talking about 913 million pounds. Now, if it's a directed fishery on females, you're even talking about 141 million pounds, plus or minus 30 percent.

I don't claim to be any expert, but plus or minus 30 percent to me is not anywhere near being "irrefutable," Number 1. I can't go with this motion at all, Number 1, because I don't think it's irrefutable information; and, Number 2, I totally agree about the discards in this case. Thank you.

MR. BEAL: Thank you, Gil. David Cupka.

MR. CUPKA: Thank you, Mr. Chairman. I'm going to speak in favor of the motion. I think based on the information we've had presented to us, I would find it difficult to do otherwise. One of the things that concerns me is bycatch and especially in the level of discards.

I'm afraid if we were to approve the original motion or something on that order in regard to a TAC, that until we do that or if we do that, we're not going to start addressing some of these other problems in the fishery so I would support the substitute motion, Mr. Chairman.

MR. BEAL: Thank you, David. John Nelson.

MR. JOHN I. NELSON: Thank you, Mr. Chairman. I think we can go around on this quite a bit and I'd like to not do that. As far as some of the comments on the landings for 600-300 pounds, I think we already have the evidence from the federal zone.

There were basically zero landings from the federal zone until the states opened up their fisheries for a bycatch fishery at a higher catch limit, so we had discards, nothing but discards. I know there was a lot of federal discussion on increasing the trip limit to try to reduce that waste.

I think that we need to move ahead on this, Mr. Chairman, and have a substance here to vote on so, for that reason I would move that we split the question and separate the trip limit discussion from the quota discussion.

MR. BORDEN: Second.

MR. BEAL: Seconded by David Borden. All right, we have a motion to split the motion that's before us. We're going to handle the quota portion of the motion first, which is 4 million pounds so if there is any discussion at the table.

I've got a couple more people on my list that I'll get to, but as I call on you please focus on the first part of the motion which is the 4 million pound quota for the 2004-2005 trip limit. The first person on the list is Red Munden.

MR. MUNDEN: Thank you, Bob. I really wanted to comment on the trip limit, but I will just say briefly that 4 million pounds still doesn't address the 10 million pounds of discards.

I think we have an obligation to try to put mechanisms in place, whether it be reduced trip limits or whatever, but a practical trip limit to utilize 10 million pounds of dead discards, so I am opposed to a 4 million pound quota for the upcoming year.

MR. BEAL: All right, first of all, I've been reminded that what we need to do is take a vote on the motion to divide the question, so let's go ahead and do that first. I don't think that requires any discussion so does anyone need to caucus on the motion to divide the question?

All right, seeing no hands, let's go ahead. All those in favor of splitting the question, please raise your right hand. I have six votes in favor, Those opposed, same sign, seven votes opposed; any abstentions, two

abstentions; any null votes? The motion fails for a lack of majority.

Therefore, we're back to the substitute motion which was made by Mr. Augustine and, Pat, would you like to comment on your motion?

MR. AUGUSTINE: No, I think I would request a roll call vote when we finally get to it, Mr. Chairman.

MR. BEAL: We've got that. I've got a couple more folks at the table on this list. Hopefully, we can go through that list pretty quickly, and then we'll take comment from the audience and vote on this. The next person on my list is Dr. Pierce.

DR. PIERCE: I pass.

MR. BEAL: That's efficient. Mr. Freeman.

MR. FREEMAN: I'll pass.

MR. BEAL: Susan Shipman.

MS. SHIPMAN: Call the question.

MR. BEAL: I have one more person on the list and then we'll call the question. Red Munden.

MR. MUNDEN: Thank you, Bob. A little bit of history and background relative to the 300-600 pound trip limit. I was involved in the development of the initial fishery management plan put together by the Mid-Atlantic Council and the New England Council.

We made the determination that approximately 4 million pounds of dogfish could be harvested, but we had a difficult time establishing a trip limit. And the way that -- and Paul Rago might want to correct me, but I think my memory serves me rightly -- the way we came up with 300 and 600 pounds, we said okay, during the summer we had "X" number of boats that landed dogfish, and we divided that into 42 percent of the quota, and then we took the number of pounds that were available for the second harvest period and divided it by the number of boats and came up with 600 pounds.

So there is nothing magical about a 300 and 600 pound trip limit except it doesn't work. I mean, you know, we've been telling you this for several years. It just doesn't work. The fishermen cannot justify bringing in such small quantities of dogfish. I strongly recommend that you defeat this motion because we're putting stuff in place that serves no purpose.

MR. BEAL: Okay, what I would like to do is have the board vote on the substitute motion. If that were to pass, then that becomes the main motion; and prior to voting on the main motion, then I will go to the audience and take comment, so let's go ahead and vote on the substitute motion. We need to have a caucus. Pete, is this regarding the process?

MR. JENSEN: It's on this motion. I had wanted to ask a question about the original motion, but what is the estimated bycatch discard that will not be landed under this motion? Is it 9.5 to 10 million pounds in addition to the 4 million that will be landed?

MS. GAMBLE: There's a big assumption going on here. We have projections that indicate that discards could be 19 million pounds, and the dead discards would be about half of that. But it's all an assumption that these landings are converted discards. We don't have any evidence that is the case, though.

MR. JENSEN: Well, that was my question. Mr. Munden's motion was intended to convert some of those discards to landings. If I'm understanding the difference now, this motion, because of the low trip limits, do not convert any of those dead discards to landings. That's what I'm trying to get clear. That's important to how I vote on this motion to understand the difference between the two.

MR. BEAL: David, to Pete's question.

MR. BORDEN: Just a follow up. Pete, my view is if you vote for this motion, you're voting for a continuation of the discards the way they have occurred the last two or three years, the way the scientists have documented it. You're going to end up with 19 million pounds and some portion of that is dead, a large portion of it.

MR. BEAL: With that, let's have a 30-second caucus on the motion to substitute and then we'll go the audience pending the results of that vote.

(Whereupon, a caucus was held.)

MR. BEAL: Most of the caucuses are covered. Pat Augustine requested a roll call vote so I'll ask Megan to go ahead and call the states and jurisdictions.

MS. GAMBLE: Maine.

MAINE: Yes.

MS. GAMBLE: New Hampshire.

NEW HAMPSHIRE: No.

MS. GAMBLE: Massachusetts.

MASSACHUSETTS: No.

MS. GAMBLE: Rhode Island.

RHODE ISLAND: No.

MS. GAMBLE: Connecticut.

CONNECTICUT: Yes.

MS. GAMBLE: New York.

NEW YORK: Yes.

MS. GAMBLE: New Jersey.

NEW JERSEY: Null.

MS. GAMBLE: N-u-l-l?

MR. FREEMAN: Yes.

MS. GAMBLE: Delaware. Okay, absent. Maryland.

MARYLAND: No.

MS. GAMBLE: Virginia.

VIRGINIA: Yes.

MS. GAMBLE: North Carolina.

NORTH CAROLINA: No.

MS. GAMBLE: South Carolina.

SOUTH CAROLINA: Yes.

MS. GAMBLE: Georgia.

GEORGIA: Yes.

MS. GAMBLE: Florida. (No response) National Marine Fisheries Service.

NATIONAL MARINE FISHERIES SERVICE: Yes.

MS. GAMBLE: U.S. Fish and Wildlife Service.

U.S. FISH AND WILDLIFE SERVICE: Yes.

MR. BEAL: Okay, we have seven votes in favor, five votes against, one abstention, a null vote. The substitute motion passes; therefore, it becomes the main motion.

With that we'll go the audience for hopefully relatively brief comments and hopefully not repetitive comments. If we can focus on new information, that would be appreciated.

MR. AUGUSTINE: For the record, point of information, Mr. Chairman, we counted eight in favor, five no, one abstention and one null.

MR. BEAL: Okay, eight in favor. I'm sorry, Mr. Augustine.

MR. AUGUSTINE: Thank you.

MR. BEAL: Okay, let's go to the audience.

MR. TODD GARDNER: Thank you. My name is Todd Gardner. I'm from Center Port, New York. It's out on Long Island. I'm a graduate student at Hofstra University.

As a graduate student, I have ready scientific papers for a living for the last five years, and I would just like to point out that the data presented here by your technical committee appears to me to be based on very sound science.

I've spent my whole life on Long Island. I have watched a number of "trash" fish species go from trash fish to directed effort species to collapsed or near collapse. I've seen the goose fish, the monkfish go from a trash fish to a directed effort fish to near collapse.

This is a species that matures at a much younger age and produces tens of thousands of times more offspring per season than the spiny dogfish. A high catch limit will lead to directed-effort fishing which invariably will lead to targeting the largest individuals in a population.

We've seen here that the largest individuals in the population of the spiny dogfish are mature females, reaching maturity anywhere from 12 years of age to 45 years of age. I would urge you all to take the advice of your technical committee and keep the catch limits as low as possible. Thank you.

MR. BEAL: Thank you. Can I see a show of hands for folks in the audience that would like to comment on this so I can get a total count. We've got, I guess, eight or nine folks. If we can get that done in 15 minutes or so, two to three minutes a person, just try to move through it. Try not to be repetitive.

MS. MERRY CAMHI: I'm Merry Camhi, for those of you who don't know me, and I'm from Long Island. As president of the American Elasmobranch Society, who Dr. Morrissey introduced to you earlier today, deputy chair of the IUCN Shark Specialist Group, past assistant director of Audubon's Living Ocean's program and now and always a concerned U.S. citizen, I've said this a thousand times, and you've probably even heard it more than that, sharks are extremely vulnerable animals and demand precautionary management.

Their case-selective life history makes them very poor choices for commercial exploitation. This is born out by your own scientific research and studies that indicate that mature females in this population have declined by 75 percent in less than a decade, and there has virtually been no pup production for the last seven years.

I'm going to cut all my comments and try to keep it brief, so sorry if this is a little bit jumbled. Despite this information from one of the best-studied shark populations in the world -- and I can attest to the fact that indeed we know more about this shark than almost any other shark population anywhere -- ASMFC has decided to continue to allow a 7,000 pound trip limit, which continues to encourage the directed fishing on this depleted stock.

Your SARC studies and your population assessments from this past June clearly indicated that we were heading toward stock collapse if we failed to change the way we fish and take management action now. We're running out of time. We don't really have another year.

In the late 1980s, I was involved in writing a CITES petition to list sharks on CITES, which is the treaty on international and trade in endangered species. Although the U.S. government decided not to actually support that effort, we in the conservation and in the scientific community were all very encouraged by the efforts of ASMFC and the councils to actually implement fishery management plans.

But what has been the point of all your efforts, all the data collection, the modeling, the meetings, the

letters, the money and the time you have all spent so diligently if you are not actually going to try to bring these animals back?

You've made a great start. Why not just finish the job? If we in the U.S. cannot effectively manage our own spiny dogfish resource, the international community is ready to step in and control international trade in spiny dogfish by listing it on CITES.

I think we would all prefer that we do it ourselves with effective and responsible management, domestic management. Therefore, I speak on behalf of the American Elasmobranch Society, the World Conservation Union Shark Specialist Group -- and together those represent virtually every single shark scientist in this world -- and also as a citizen of New York state when I urge you to please strongly support this substitute motion as proposed by the representative to New York and by comments from Virginia as well as NMFS and the U.S. Fish and Wildlife Service.

This is the advice of your own scientific advisors. Sharks are vulnerable and cannot or we simply cannot turn our back on them. Thank you very much.

MR. BEAL: Thank you, Yes, Ma'am.

MS. JANE OWENS: Good evening. My name is Jane Owens. I'm not a scientist but I'm quite good at making decisions. I'm a judge. I live here in New York. And thinking about your position in making this decision tonight, and it has occurred to me and, there's no question in my mind that the decisions that I make, that I made this morning, for example, affect a people, some people, some individuals, some groups, and to some extent society, but the decision you make affects the planet.

You're much more important than I am, much more. There is no comparison. I wanted to add a little bit about listening to evidence which is what I do and essentially what you're doing.

If I get expert testimony, most important these experts are scientists, I listen to them and I don't try to nitpick. Of course, we have lawyers who will do that for me, but basically I treat them as honorable, knowledgeable people who have made a strong effort to present what they believe and usually is the truth.

I accept what they say unless something -- and that's very rare -- has shown that it is inaccurate. I strongly

urge you to accept the evidence of your own scientists and save these sharks. Thank you.

MR. BEAL: Thank you, Ma'am.

MR. MICHAEL MISNER: My name is Michael Misner. I live in New York City and I grew up on the Jersey Shore. I'm here today because the oceans belong to all of us, to me, to you, to my five-year-old nephew.

I urge this committee to accept the advice of the technical committee for the 600 pound trip limit and the quota. I think discards are a problem but not the problem. The problem is targeting females, which any trip limit over 600 pounds does.

And, finally, I'll leave you with a little quote. Maybe it's a little more interesting than these comments from all of us that are, you know -- this is from John Sawhill. He's at Nature Conservancy, former director of it. He said, "In the end our society will be defined not only by what we create but what we refuse to destroy." Thanks.

MR. BEAL: Thank you. Yes, Ma'am.

MS. MARIE PENDZICH: My name is Marie Pendzich and I have to spell that because no one ever gets it right. I think I became an ocean conservationist when I married my husband in 1970, who is an avid fisherman. Since then I've personally witnessed stocks of various fish just plummeting.

It's a sad state of affairs that we even need to rely on a commission like this where we have to manage fisheries that have managed themselves for millions of years without our interference.

Obviously, we've done something wrong and we really, seriously, need to turn around and correct it. We have seen tons of scientific evidence today showing a forewarning of a scenario that is just too horrific to think about that may be on the horizon if we don't need the warnings.

The way I look at it, there are two ways that this scenario can play out. We can stop fishing or lower the catches so that these animals can recover and we have future sustainable fisheries; or, we can fish to our heart's content today and sell our boats tomorrow.

When are we going to learn by our mistakes with the plummeting and the collapse of the lobster fishery, the cod fishery, et cetera, et cetera, et cetera? Let's

wake up, folks. We need to slow this down and we need this particular species to recover.

I support the substitute amendment. Although I am a conservationist at heart, I'm also right now the education chair of the Long Island Chapter of Sierra Club where I live on Long Island, surrounded by water and surrounded by, at one time, a lot of fish but now not too many at all. Thank you.

MR. BEAL: Thank you. The 15-minute block of time that I was hoping to adhere to, we're three people in and we've used up over 10 minutes of it; so if we can kind of be brief and really to the point and speed this up a little bit, everyone would appreciate it.

MR. DALE MITCHELL: Good evening. My name is Dale Mitchell. I am a mainframe computer security specialist for United Banks of Switzerland in our Weehauken Branch, which used to be Paine-Webber.

My last 10 years of vacation have been spent on a whale watch boat out of Montauk as a volunteer crew member collecting data. Now, I think the data here clearly points to an impending collapse of the population.

I don't think it takes a rocket scientist to figure out that if you kill all the females before they can breed, you ain't going to have nothing left. I remember the last six dusky sparrows were in a zoo, but the problem was they were six males.

I support this substitute amendment. I think you have the stewardship of our fisheries in your hands and I think you need to be very cautious here. Err on the side of caution because these guys will not recover once they're gone. Thank you.

MR. BEAL: Thank you. Yes, Ma'am.

MS. DONNA McLAUGHLIN: My name is Donna McLaughlin. I'm a graduate student at Hoffs University and I also work in the biology department. Part of my job is to order specimens and spiny dogfish are used in comparative anatomy labs.

And for the past four years the major biological supply companies have been giving me a hard time. They tell me that they can't get the spiny dogfish; and when they do, I get 20 of them in a five-gallon bucket.

They're so small that we can barely even use them because they're -- you know, and they're mature but they're so tiny. There is clearly a problem. I just want to say as a graduate student your dream is to -- when you're defending your thesis, is to have data as strong and irrefutable as what we've seen in the technical report. I am strongly in favor of the new motion on the floor. Thank you very much for letting me give you my opinion.

MR. BEAL: Thank you. Sonja Fordham.

MS. FORDHAM: Sonja Fordham, the Ocean Conservancy. On behalf of the broad array of scientific and conservation organizations that signed the letter that I hope you have in front of you, I want to express our sincere appreciation and strong support for the motion. We think it reflects the scientific advice.

The only thing I haven't heard is the argument that it will also help negotiations with Canada to bring their fisheries in line with science and reduce bycatch of dolphins and turtles and Atlantic sturgeon in the nearshore dogfish fisheries. I appreciate it. I offer my strong support and I urge you to vote in favor. Thank you.

MR. BEAL: Thank you, Sonja. Anyone else in the audience? All right, seeing none let's --

MR. AUGUSTINE: Request a roll call, Mr. Chairman.

MR. BEAL: We have a roll call vote requested by Mr. Augustine. I've got one hand up, Mr. Munden.

MR. MUNDEN: Thank you, Bob. Although this is nothing new for spiny dogfish, if we pass this motion, we are once again faced with an inconsistency between the recommendation to National Marine Fisheries Service for management of spiny dogfish in federal waters and in state waters.

Both the Mid-Atlantic Council and the New England Council have recommended to NMFS that the trip limit be 1,500 pounds for the upcoming fishing year; so with that, I move to amend the motion to change the specified trip limits to 1,500 pounds for both harvest periods.

MR. BEAL: Is there a second to the motion to amend?

MR. POPE: Second.

MR. BEAL: Seconded by Gil Pope. David Borden.

MR. BORDEN: Thank you, Mr. Chairman. My suggestion here is that there be a very limited period of time for discussion of this. I don't think we're going to change a lot of positions on it. I intend to vote yes on this motion to amend.

MR. BEAL: Thank you. Anyone else at the table feel the need to comment on this change? Yes, Lew Flagg.

MR. FLAGG: Well, just a point of order, Mr. Chairman. I think we've already established by vote of this board the trip limits already. This amendment would be a motion to reconsider which would require a two-thirds? We've already passed a motion on the trip limits.

MR. BEAL: No, the motion that we passed was on the substitute motion, and that made that the main motion so now this is a motion to amend the main motion. Gordon Colvin.

MR. COLVIN: Yes, I just wanted to get at one of the comments that Red made and maybe ask Harry a question based on it, because I do understand that there are standing recommendations to NMFS from both the Mid and New England Councils. Is NMFS bound to follow those recommendations, Harry? I'm going to ask you a hypothetical question.

Hypothetically, if the original motion were passed, would it not also be possible for NMFS to follow consistently with the action of the commission, should it take such action, regardless of the recommendations of the two councils for the EEZ fishery?

MR. BEAL: Harry, if you could answer that question. You also had your hand up to comment as well.

MR. MEARS: I'll start off with my original comment and then I'll ask Gordon if my comments answer his question. Relative to Red's comments that this will result in a discrepancy with the federal regs, that simply is not true.

The council has made a recommendation to the National Marine Fisheries Service, which now needs to be evaluated in view of what the specifications for the fishery will be for the next fishing year.

Although I can't prejudge what our review of the council recommendation will be, what I can say is

that the position of the National Marine Fisheries Service time and time again has been a 4 million pound quota with trip limits of 300 and 600, respectively. Thank you.

MR. BEAL: Gordon's nodding his head that answers his question. Mr. Smith.

MR. SMITH: In the context of the technical advice, the stock assessment results, and all the debate we've heard this afternoon, the only way this amendment is rational is if Dave Borden's comment is correct.

And that means if 1,500 pounds is not enough to promote a directed fishery, but it is enough to allow fish that would otherwise be discarded to come ashore and actually go into the marketplace instead of being dumped, who here can convince me that 1,500 pounds is not enough incentive to become a directed fishery on large females?

MR. BEAL: David Borden's hand went up.

MR. BORDEN: I would never offer the pretense that I could convince Eric of anything, but let me try. I mean, it's simply the math, Eric. Take 1,500 pounds, multiply it by the current price which ranges, depending upon what state you're in, anywhere from \$.10 to \$.15 and what you're talking about is \$225.

Now, if you need a 30-foot boat to go ten miles offshore to catch dogfish and set six or eight gillnets worth a couple thousand dollars to do it, for two people to do that for \$225, they're each going to earn about \$.50. They'd be better off going out a golf course and picking up golf balls and selling them.

MR. BEAL: All right, with that, let's go ahead and have the board vote on the motion to amend, and keep in mind what this will do. It will change the main motion and also the trip limit or increase the trip limit up to 1,500 pounds for both periods. Yes, 30-second caucus, please.

(Whereupon, a caucus was held.)

MR. AUGUSTINE: I like the roll call.

MR. BEAL: Yes, Pat likes the roll calls.

MR. BEAL: Okay, Megan, please call the roll.

MS. GAMBLE: Maine.

MAINE: No.

MS. GAMBLE: New Hampshire.

NEW HAMPSHIRE: Yes.

MS. GAMBLE: Massachusetts.

MASSACHUSETTS: Yes.

MS. GAMBLE: Rhode Island.

RHODE ISLAND: Yes.

MS. GAMBLE: Connecticut.

CONNECTICUT: Null.

MS. GAMBLE: Thank you. New York.

NEW YORK: No.

MS. GAMBLE: New York is voting no. New Jersey.

NEW JERSEY: Yes.

MS. GAMBLE: Delaware. Absent. Maryland.

MARYLAND: Yes.

MS. GAMBLE: Virginia.

VIRGINIA: No.

MS. GAMBLE: North Carolina.

NORTH CAROLINA: Yes.

MS. GAMBLE: South Carolina.

SOUTH CAROLINA: No.

MS. GAMBLE: Georgia.

GEORGIA: No.

MS. GAMBLE: Florida.

FLORIDA: Abstain.

MS. GAMBLE: National Marine Fisheries Service.

NATIONAL MARINE FISHERIES SERVICE: No.

MS. GAMBLE: U.S. Fish and Wildlife Service.

U.S. FISH AND WILDLIFE SERVICE: No.

MR. BEAL: There are seven yes votes, six no votes, one null and — there are six votes in favor; seven votes against; one abstention and one null vote. The motion to amend does not pass so that brings us back to the original motion.

MR. BORDEN: Call the question.

MR. BEAL: Call the question. Tom will make a very brief statement, then we will call the question.

MR. FOTE: Yes, I have said nothing. I've been sitting here for about three hours listening to this conversation. I like to be honest with fishermen. Let's be honest with what we're doing.

This motion is not honest. Either we basically say we're shutting the fishery down or we're going to allow for the bycatch. I'd support either one of these, and that's the problem I run into here.

This motion, when you say 300 and 600 pounds, is a bycatch fishery or it allows people to land fish. It doesn't allow people to land fish so we might as well just say we're shutting the fishery down and be honest with the fishermen out there. That's my problem with this motion.

I could support that because that's -- New Jersey has been shut down for five years, but I'm not going to support a motion that says we're allowing for 600 and 300 pounds when we know that's not going to happen, so let's just basically shut the fishery down and be honest about it at least.

MR. BEAL: Okay, with that, I think we're ready to vote. I will read the motion into the record: Move a quota of 4 million pounds for the 2004-2005 fishing year to be divided into two semi-annual quota periods. Quota Period 1 will have 2.316 million pounds and Quota Period 2 will have 1.684 million pounds, and a bycatch trip limit of 600 pounds for Quota Period 1, May through October; and a 300 pound trip limit for Period 2, November through April. Motion by Mr. Augustine, second by Mr. Flagg.

MR. AUGUSTINE: Roll call vote, please, Mr. Chairman.

MR. BEAL: Mr. Augustine has requested another roll call vote.

MS. GAMBLE: Maine.

MR. NELSON: I think it's only fitting, Mr. Chairman, we start from the south and work our way North now.

MR. BEAL: We can do that.

MS. GAMBLE: I'm going to start from the bottom of my list and work my way up so that starts with the U.S. Fish and Wildlife Service.

U.S. FISH AND WILDLIFE SERVICE: Yes.

MS. GAMBLE: National Marine Fisheries Service.

NATIONAL MARINE FISHERIES SERVICE: Yes.

MS. GAMBLE: Florida.

FLORIDA: Abstain.

MS. GAMBLE: Georgia.

GEORGIA: Yes.

MS. GAMBLE: South Carolina.

SOUTH CAROLINA: Yes.

MS. GAMBLE: North Carolina.

NORTH CAROLINA: No.

MS. GAMBLE: Virginia.

VIRGINIA: Yes.

MS. GAMBLE: Maryland.

MARYLAND: Yes.

MS. GAMBLE: Delaware. Absent. New Jersey.

NEW JERSEY: Null, n-u-l-l.

MS. GAMBLE: Thank you. New York.

NEW YORK: Yes.

MS. GAMBLE: Connecticut.

CONNECTICUT: Yes.

MS. GAMBLE: Rhode Island.

RHODE ISLAND: No.

MS. GAMBLE: Massachusetts

MASSACHUSETTS: No.

MS. GAMBLE: New Hampshire.

NEW HAMPSHIRE: No.

MS. GAMBLE: Maine.

MAINE: Yes.

MR. BEAL: Okay, apparently we count or hopefully we count better going south to north. We have nine yes votes, four no votes, one null vote and one abstention. The motion passes.

I think that brings us to the end of the agenda unless there's other business. Dr. Pierce.

OTHER BUSINESS

DR. PIERCE: Yes, now that we've taken this fateful action on spiny dogfish, I hope that this board can finally turn it's attention to coastal sharks where the attention needs to be paid. We have neglected coastal sharks for a very long time.

I hope that the chairman of this board will begin to assemble the necessary information and to put together an agenda so that this Dogfish/Coastal Shark Board can get on with its business regarding that important suite of coastal sharks.

MR. BEAL: Thank you, Dr. Pierce. Keep that thought in mind as we approve the action plan for next year. The way it's drafted right now there is some money for work on dogfish but not on coastal sharks. Lew Flagg.

MR. FLAGG: Yes, thank you, Mr. Chairman, just very quickly. I hope that as a result of this vote also that the National Marine Fisheries Service will quickly be in touch with the Canadians to see what can be done to make sure that quota is reduced or kept at some reasonably appropriate level.

MR. BEAL: Thank you, Lew. Ms. Shipman.

MS. SHIPMAN: Just very quickly, I would implore this commission to look at this discard issue. In the early 1990s in weakfish you all gave the southern shrimp fishery an ultimatum to reduce bycatch by 50 percent. You gave us several years to do it.

We put a lot of money into it. We worked with the federal agencies. We did it. It is time we start putting some bycatch reduction targets and discard targets on some of these other fisheries.

I'm going to get off my soapbox, but you've heard me say it again, but we did it with other fisheries and we can do it with this one, and we just have to have the resolve to do it and put some targets in there and work with the fishermen to do it.

I would implore that the next time this board meets we start looking at setting some targets for some discard reduction rates.

MR. BEAL: Thank you. Any other comments before we — Mr. Freeman.

MR. FREEMAN: Relative to that, it seemed in our discussion one of the great problems is our estimate of what the bycatch is. We're making assumptions, and as both Tom and I indicated, on the recreational side they're definitely not correct.

I suspect that's true of other fisheries as well so I would ask that we look at trying to get better determinations of what the true bycatch is and not make assumptions based on feelings but actually have hard facts. Thank you.

MR. BEAL: Great, any other comments? I'd just like to make one comment that doesn't pertain to this board. With that, we stand adjourned.

(Whereupon, the meeting adjourned at 7:30 o'clock p.m., December 17, 2003.)

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