

**Atlantic States Marine Fisheries Commission**

**WEAKFISH DATA WORKSHOP**

**July 14-17, 2008**

**Providence, Rhode Island**

**Meeting Report**

**Workgroup**

Russ Allen (NJ DFW)	Desmond Kahn (DE DFW)	Brian Murphy (RI DEM)
Jeff Brust (NJ DFW)	Fred Kinard (AP, SC)	Lee Paramore (NC DMF)
Pat Campfield (ASMFC)	Erin Levesque (SC DNR)	Jim Uphoff (MD DNR)
Vic Crecco (CT DEP)	Nichola Meserve (ASMFC)	Andreas Winter (Virginia Tech.)
Dan Dugan (AP, DE)	Joseph Munyandorero (FL FWCC)	Hao Yu (Virginia Tech.)
Yan Jiao (Virginia Tech)		

**Overview**

The workgroup met to compile, organize, and critically evaluate all available fishery dependent data, fishery independent data, and life history information that will be used to conduct the 2008-2009 weakfish stock assessment. At the conclusion of the workshop, the workgroup discussed possible approaches for conducting the assessment. A list of assignments, to be completed by August 1, is at the end of the report.

**Assessment Timeline**

A data poor stocks workshop to be held in Woods Hole in December 2008 was added to the timeline. At the end of the workshop, the workgroup also decided to move the Assessment Workshop back to the week of October 27, also effecting the dates of subsequent timeline events. (Updated assessment timeline on last page.)

**Review Background Information for Stock Assessment**

The Workgroup looked over the format of the background information in the draft assessment report. Workgroup members are asked to review this on their own time and send any comments or additions to Jeff. Lee is assigned responsibility for drafting the life history section. The workgroup agreed to add a natural mortality subsection to the life history section.

**Review and Evaluate the Available Fishery Dependent Data**

Commercial landings: The workgroup reviewed the available commercial landings estimates. The preferred source is the states. An analysis of the state-federal landings discrepancies will be included in the stock assessment report to indicate potential uncertainty.

Commercial Biological Samples: The workgroup reviewed the sources of commercial biological data for developing the catch at age matrix. Substitutions of samples are necessary for many state-gear combinations when direct sample size is too low (< 30 samples). Jeff explained that that he took a different approach for state-gear combinations without samples that have less than 1% of the landings: these were grouped with the state's unclassified landings. State unclassified landings were then grouped into states with 16" and 12" minimum sizes before borrowed length-

weight equations were applied. Des expressed concern with this method, favoring gear categories, so this change will be made.

It was noted that NY has not supplied its biological sampling data as reported in its state compliance reports (n = 182 length/age samples in 2006), which could be a compliance issue.

Commercial Discards: Commercial discards have not yet been updated through 2007. Jeff has received Janaka de Silva's files that were previously used to develop the commercial discards. He is waiting on the observer data from NMFS, and, in the meantime, studying Janaka's code.

Recreational Landings: Recreational data are from MRFSS as per usual. Florida's landings need to be adjusted to account for sand seatrout and hybrids in the weakfish landings.

Recreational Discards: The workgroup agreed to implement the use of an empirically based discard mortality rate, because it will be more defensible than the 20% used since Amendment 3. Some studies (in NY, VA, NC, FL), which will be reviewed, indicate a rate closer to 10%. Dead discards will need to be recalculated.

The workgroup also discussed the length distribution for recreational releases, currently assumed to be the same as harvest. An alternative, based on length frequency from Jim's NEFSC analysis, will be used instead.

## **Review and Evaluate the Available Fishery Independent Data**

### ***Aged Surveys***

In general, catch curve analyses need to be updated for each survey. Each index should also be evaluated against the converged portion of the VPA, once a run is complete.

NEFSC Fall Trawl Survey: The workgroup decided that only tows from the core area (NJ to NC) should be included in the dataset (based on the recommendation from a previous SARC to do so). The workgroup also agreed that survey-specific ALKs should be used whenever possible. The workgroup agreed that the NEFSC fall trawl survey should not be utilized as an aged or biomass index (contains a low fraction of legal-sized weakfish, results in negative Z values in catch curves, is highly variable, is negatively correlated with harvest and the converged portion of the VPA). Alternative views of the data (wt/tow, positive tows, GM per tow) all showed the same incoherent trend.

NJ Ocean Trawl Program: Survey results were not used as an index of abundance in the previous assessment (high variation between years and tows; some negative Z values from catch curves). In hopes of making it useable (improved precision, coherency, and consistency), Jim suggested that an August tows only, percent positive tows index be considered for any age-based models. For the exploitable biomass models, he'll be using positive tows\*mean weight (all sizes), and also z-transformed indices based on time period in common. The workgroup agreed to work with this alternative (percent positive tows) NJ index.

DE Delaware Bay Trawl Survey: Survey results were used in the last assessment (tracked landings well, no negative Zs in catch curve, correlated with MRFSS index). The workgroup agreed to keep this index. Since 1991 have used survey specific ALKs. Don't truncate ages.

SEAMAP Fall Survey: Development of the index uses late fall ALKs. No ages available for 2007. For most years, survey specific ALK are used; NC keys are used for the few instances that there aren't survey specific keys. Previously only data from the NC part of the survey (30-35 tows per season) were used (SARC recommendation). The workgroup discussed the sand

seatrout issue in FL, and how this justifies leaving FL, and perhaps GA, data out. The workgroup decided to definitely leave FL tows out. Before determining which tows to include, indices by state and region will be calculated, and their variability and precision reviewed. It was suggested that NC SEAMAP trends also be compared to NC IGNS trends (below) for agreement. Jim will review alternative calculations of the index (AM, GM, positive tows). Note: there might have been vessel problems in 2007.

Pamlico Sound Independent Gill Net Survey: The workgroup decided to add this survey for a new aged index of weakfish abundance. Seven years of data are now available; precision is good. Jeff has the data to include; Lee will work on a concise summary for the assessment report.

### ***Age-0 and Age-1 Surveys***

In general, the geometric mean will be used for each survey.

MA Trawl Survey – YOY: The workgroup agreed that this will not be used in model runs (CVs too large).

RI Fall Trawl Survey – YOY: This survey has become more erratic in recent years. The workgroup agreed that they could not fully evaluate this survey index until CVs become available. Rhode Island is in the process of converting data from R-base to Access. Brian should be able to get the CVs to Jeff in a few weeks. Once CVs are available, the index will be judged.

CT Long Island Sound Trawl Survey – YOY and Age-1: Based on previously good precision estimates and high catch rates, the workgroup preliminarily decided to include these indices in any model runs. However, updated precision estimates are needed.

NY Peconic Bay Juvenile Trawl Survey – YOY: The DEC experienced sampling issues in 2005-2006, which led to the index being recalculated with just July and August tows. Based on good precision estimates for the arithmetic mean values, the workgroup agreed to use the recalculated index. Precision values for the geometric mean are needed.

DE Delaware Bay Juvenile Trawl Survey – YOY: The workgroup agreed to keep this index for the model based on good precision estimates.

MD Chesapeake Bay and Coastal Bays Juvenile Trawl Surveys – YOY: These indices have been recently recalculated. Precision estimates for the recalculated indices are needed before the workgroup can decide whether these indices will be used in model runs. Jim suggests maybe adjusting for salinity in CB indices because there are few weakfish in wet years.

VIMS Chesapeake Bay Trawl Survey – YOY: The workgroup could not decide whether to keep this index in the model without more information, such as when it was standardized, and why the rivers only index is used. If used, the time series will be truncated to the standardized years.

NC DMF Pamlico Sound Juvenile Trawl Survey – YOY and Age-1: The workgroup agreed to use these indices in the model run based on good precision estimates. Lee has the geometric mean values to provide to Jeff.

### ***Fishery Dependent Indices***

MRFSS Index: The previous index used only mid-Atlantic states and private boat trips, which will be continued. The workgroup discussed alternative techniques for mean weight estimates. The method needs to take into account changes in minimum size limit. Take average 1981-1984

average weights from MRFSS and apply up to 1993. Starting in 1994, use Jim's alternative due to the increase in regulatory discards.

Two problems with MRFSS data were noted: the increasing use of cell phones and increasing price of gas. These are likely influencing estimates of effort or actual effort. It was suggested to show effort from MRFSS versus that from state recreational license information to look for potential source of uncertainty in use of MRFSS effort data.

**CPUE Standardization:** Yan Jiao recommends that the workgroup consider standardizing catch rates for spatial, temporal, and environmental factors with a generalized linear model or generalized additive model before inclusion in a stock assessment. She found, in general, a number of factors other than year (i.e., month, longitude, latitude, average depth) that have significant influence on survey CPUE. Yan volunteered to finish this work (once missing data are made available) and offered to provide the code if desired. The workgroup expressed interest in seeing the aged-structured results and also seeing how the standardized indices effect model output. Brian, Vic, Des, and Jim will help Yan to request the RI, CT, DE, and MD trawl survey data that she is missing. Whether or not this is used depends partly on the assessment timeline.

**Natural Mortality:** Joseph reviewed a number of ways to indirectly estimate M, including age independent and age dependent estimators. Some of these methods could possibly be used to derive time-varying or age-varying Ms for use in model runs, or show support for time-varying Ms estimated through the production models or Z-F method. Many of the methods require initial, assumed, input values. Several options were mentioned: Sheldon method, Boudreau and Dickey, Peterson and Wroblewski. Des will look into Sheldon method. Joseph will need mean weights at age for each year (to be provided by Jeff) to update Lorenzen. Results will be reviewed at the assessment workshop.

**Mean Weights:** Des reviewed the method for developing mean weight-at-age for the previous assessment. Jeff reviewed the method he has taken thus far, which he believes is really the same as the method Des used. Jeff will email this around to be reviewed by the workgroup again.

**Effort Estimators:** The workgroup would like to see some commercial effort and CPUE data in the assessment report, as recommended by a previous SARC, to be used as another indicator of stock status. The workgroup discussed a definition for effort: directed effort = positive trips during the open season that catches more than the bycatch limit. Effort and CPUE data to review at the assessment workshop include: NC estuarine commercial gears (Lee); DE data from 1984 (Des), MD pound net, although reporting system has changed (Jim), VA data for pound net, gill net, and maybe haul seine (Joe Cimino), FL licensing data from 1986 (FL compliance reports; Joseph). Regulatory changes that influence effort and CPUE should be noted.

### **Other Data Gaps**

***Bycatch:*** any other potential sources of mortality on ages 0 and 1 fish need to be explained in the assessment report. The NEFSC trawl data that Jeff is waiting on will have some information on finfish bycatch. For the shrimp fishery, Charlie Wenner supplied a report in the past, and SC has some new data for one or two years. Additionally, analyses that Gibson conducted to get a time series of shrimp bycatch should be looked into.

**Catchability:** previous reviewers thought some changes could be due to catchability, thus the workgroup stressed including information in the assessment report on this issue.

**Identify possible assessment models**

ADAPT VPA – ?

Sheldon VPA – Des

ICA – Des?

ASAP – Jeff

SCA – ?

Shepherd SR, and Thompson-Bell YPR from ADAPT output for reference points – Vic

Exploitable Biomass Models – Vic, Jim

**Workgroup Responsibilities**

Deadline: August 1 (except items with \*)

Draft life history section for Assessment Report	Lee
SEAMAP biomass, positive tows, etc	Jim
Update catch curve analyses for aged indices and CAA	Pat
SEAMAP index by state and combined – possible if can get strata weights (Pat and Lee to try if data request will take too long to fulfill)	Erin to request data
Get NJ pos tows index from Jim; develop by age (use August only L freq); compare use of different (abundance vs positive tows) in models	Russ and Jeff
RI index update	Brian
Correct MRFSS estimates for sand seatrout and new 10% discard mortality	Joseph
MRFSS biomass index update. Use LF from Jim’s NEFSC analysis to estimate discard LF for CAA (Jeff)	Vic
Other/minimal catch cells C@size	Des
Track down Table 1 from Munyandorero (not in report compilation)	Joseph
Age MRFSS harvest only index	Jeff
Discards	Jeff
Z score YOY indices – possible GLM	Russ
NY index CIs (have geo mean, variance, N; need <i>t</i> -tables) and commercial samples	Jeff, Nichola
Get info on VIMS survey	Joe C.
Mean weights	Des, Jeff
Commercial and recreational effort and CPUEs	Lee, Joe, Des
Sheldon VPA and other natural mortality	Des, Joseph *
See table 17 of de Silva re annual vs grouped ratios! Jim thinks we used Table 16 of ratios for analysis	Jeff
Short summary on Pamlico Sound IGNS for assessment report	Lee
CVs for CT, NY, and MD (Ches. and Coastal bays) YOY surveys	Jeff?
Summarize recreational discard mortality studies and provide rationale for using 10%	Jim?
Address identified data gaps: shrimp bycatch and catchability	?
Weakfish tagging data from SC?	Erin

## Updated Assessment Timeline

<b>DATE</b>	<b>OBJECTIVE</b>
April 16-18, '07	Technical Committee Meeting: planning for next assessment
Ongoing	SASC working to address deficiencies identified in past assessments
January 7-8, '08	SASC Meeting for pre-data workshop meeting
February 5, '08	Board approves Terms of Reference
Ongoing	SASC prepares preliminary analyses and develops working papers and brief presentations on the submitted data sets (data through 2007) and the surveys/data collection methods to bring to Data Workshop.
<b>July 14-17, '08</b>	<b>Data Workshop</b> (TC, SASC, AP Chair, staff, other invited/interested persons)
August 1, 2008	Workshop assignments due
August 19, 2008	Report to Board on Progress
September – October 2008	Lead modelers develop documents describing reasoning and methodology of proposed assessment techniques; due two weeks prior to assessment workshop
<b>October 2008</b> (week of 27 <sup>th</sup> )	<b>Assessment Workshop</b> (SASC, TC chair and vice chair, staff, invited persons)
Nov/Dec 2008	Data Poor Stocks Workshop
December 2008	Stock Assessment Report completed and submitted to TC for approval
January 2009	TC Meeting to approve Stock Assessment Report
<b>June 2009</b>	<b>Peer Review Workshop</b>
August 2009	Board approves Stock Assessment Report and Peer Review

### Timeline Notes

Original timeline approved by the Weakfish TC at April 2007 Meeting.

Presented to Management Board on May 8, 2007; Board asks for August 2008 progress report.

SASC meeting moved from September 2007 to January 2008.

Updated for revised SARC scheduling; Peer Review Workshop moved from December 2008 to June 2009.

Reviewed by SASC at January 7-8, 2008 Meeting; no changes.

Data Poor Stocks Workshop added (when notified of it in June 2008).

Assessment Workshop moved from September to October 2008 at Data Workshop in July 2008.

Subsequent events adjusted accordingly.