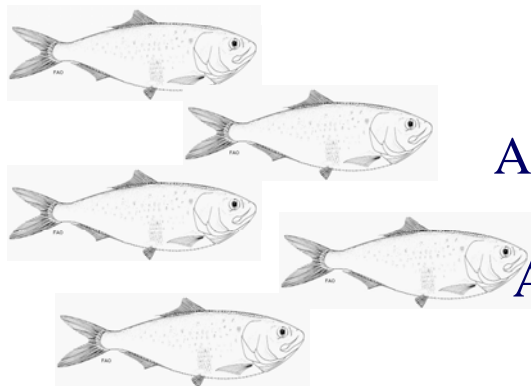




*Working towards healthy, self-sustaining populations
for all Atlantic coast fish species or successful
restoration well in progress by 2015*

Preliminary methodology for calculating
allowable harvest levels for Atlantic menhaden



A report from the
Atlantic Menhaden Technical Committee

Atlantic Menhaden Management Board

February 2012



Overview of task

- Develop methodology for calculating allowable harvest levels that achieve new fishing mortality reference points
 - ❖ Threshold ($F_{15\%} \text{ MSP} = 1.32$) in 1 year
 - ❖ Target ($F_{30\%} \text{ MSP} = 0.62$) in 1-5 years

- Include consideration for terminal year uncertainty

- “Prototype” methodology developed
 - ❖ Fine-tuning of methodology is planned
 - ❖ Results are not final
 - Need input from Board
 - Need 2012 stock assessment update results





Methodology overview

- Projection-based methodology
- Similar to previous projection exercises
 - ❖ Question has been rephrased
- Consistent with previous projection exercises
 - ❖ Same input data decisions
 - ❖ Ideas for slight modifications
- Probability-based results
 - ❖ Will require decision on acceptable risk level





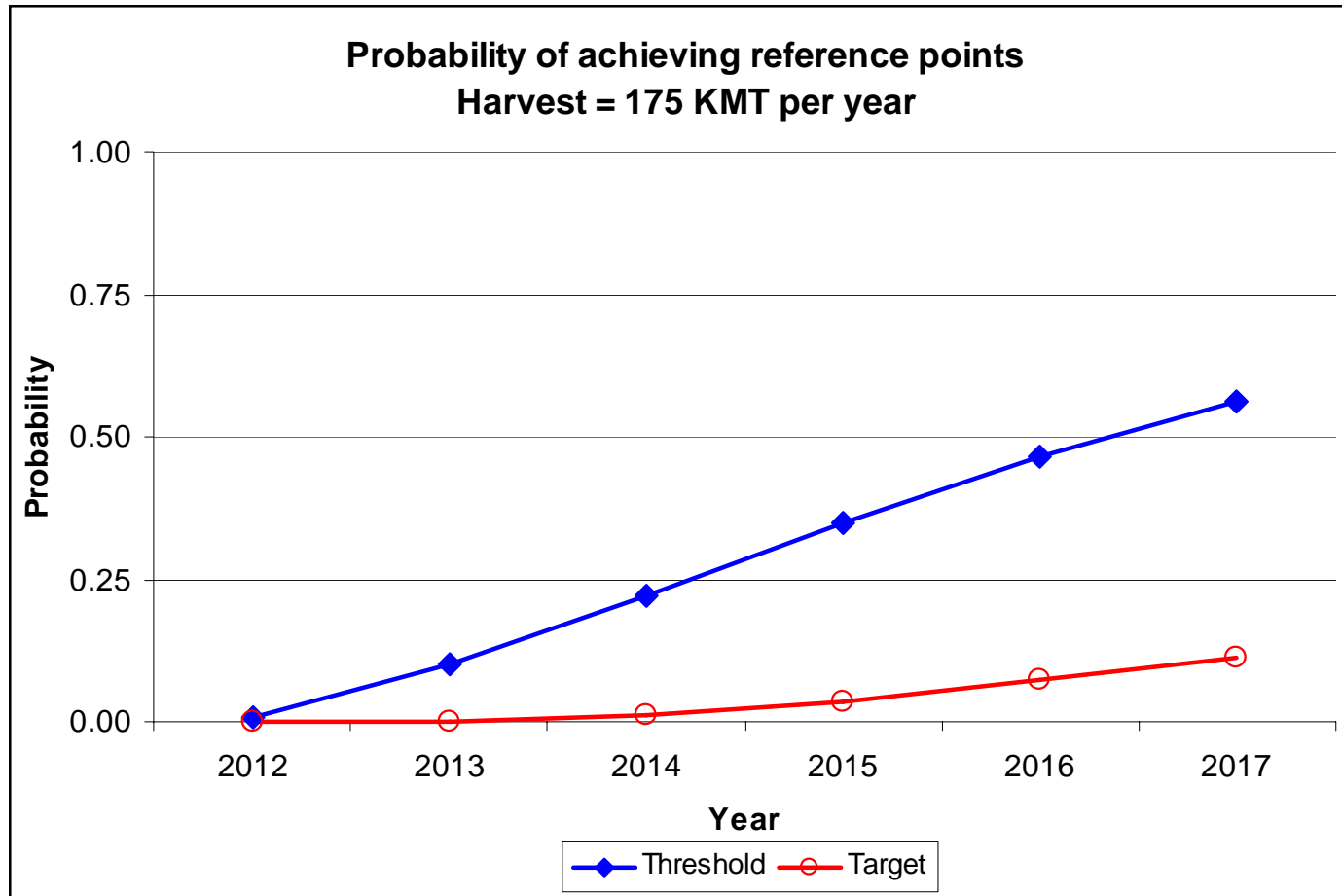
General methodology

- Terminal year numbers-at-age from 2009 stock assessment
- Assumptions regarding natural mortality, recruitment, allocation among sectors, etc
- For a range of constant landings scenarios...
 - ❖ Project population size through 2017 (2000 iterations)
 - ❖ For each year, what is probability that selected harvest level produces fishing mortality rate that is below reference point
- Results are conditional on assumptions



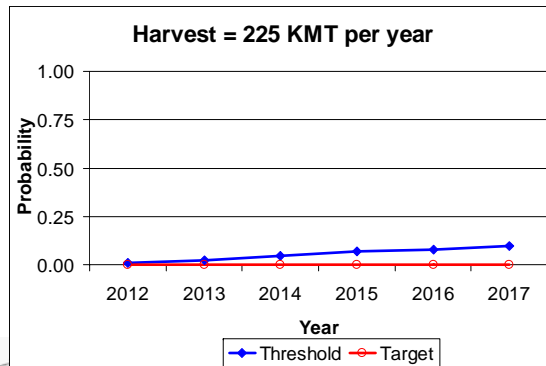
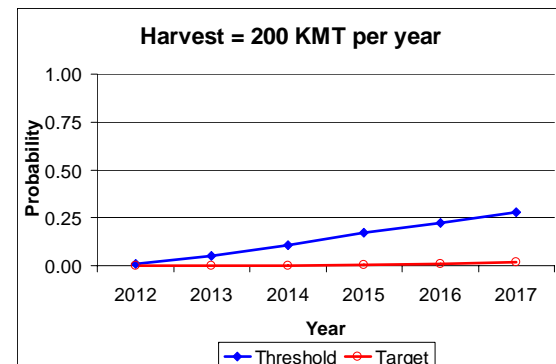
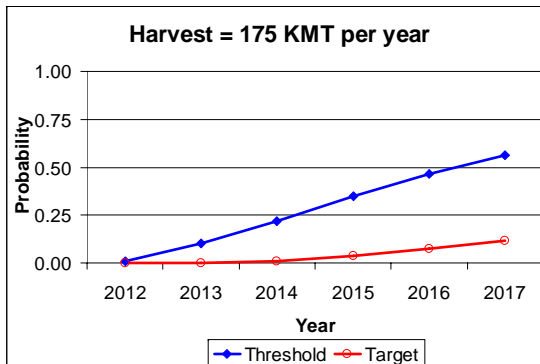
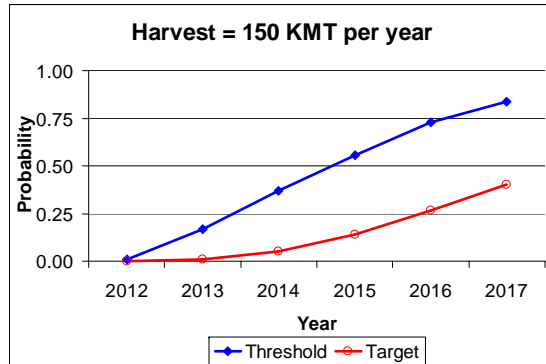
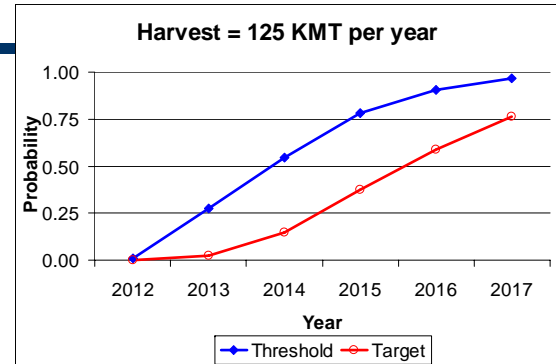
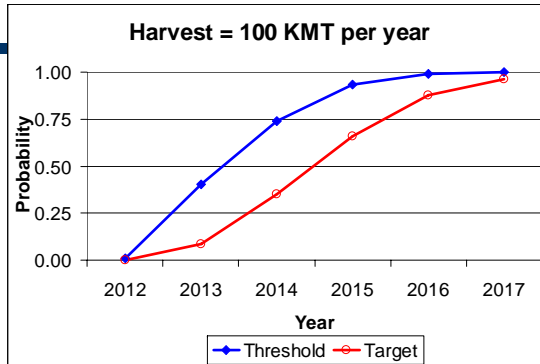
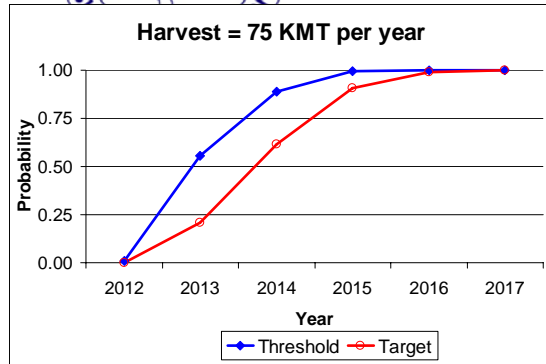


An example





Summary results





Moving forward

➤ Decisions by Management Board

- ❖ Acceptable level of risk (probability of achieving reference point)
- ❖ Allocation among sectors (current results assume 75:25)

➤ Actions by Technical Committee

- ❖ Investigate “fine tuning” ideas
- ❖ Complete 2012 stock assessment update
- ❖ Incorporate decisions by Board
- ❖ Run final calculations





Fine tuning ideas

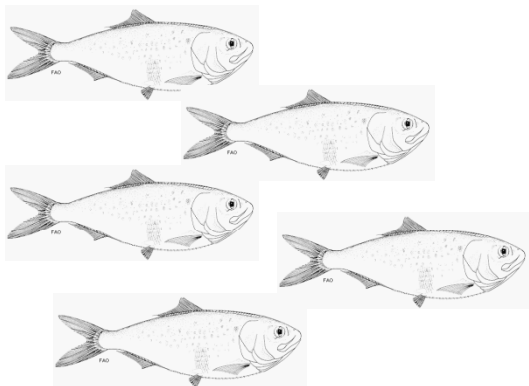
- Constant F \rightarrow produces distribution of harvest level that achieves reference point
- Link juvenile index and recruitment numbers
- Investigate S:R function
- Bootstrap results from assessment as starting values





*Working towards healthy, self-sustaining populations
for all Atlantic coast fish species or successful
restoration well in progress by 2015*

**Draft Public Information Document of
Amendment 2 to the ISFMP for Atlantic
Menhaden**



**Atlantic Menhaden Management Board
February 8, 2012**



Timeline

- Feb 2012 - Board review PID for public comment
- Spring 2012 - Public Comment/Hearing Period for PID
- May 2012 - Board reviews public comment on PID, tasks PDT to develop Draft Amendment 2 (narrows the focus for management tools)
- Summer 2012 PDT develops Draft Amendment 2
- August 2012 - Board reviews Draft Amendment 2 for public comment
- Fall 2012 - Public Comment/hearing Period for Draft Amendment 2
- ASMFC 2012 Annual Meeting - Board reviews public comment on Draft Amendment 2 and finalizes the document





Purpose

- New F reference points approved Nov 2011
 - ❖ Based on MSP, intended to provide increased protection for spawning adults
 - ❖ Threshold $F_{15\%MSP}=1.32$
 - ❖ Target $F_{30\%MSP}=0.62$
- Based on the terminal estimate $F_{2008} = 2.28$, overfishing is occurring and the Board must take steps to reduce fishing mortality to the new target
- The purpose of the PID is to scope a suite of potential tools to manage the fishery towards the F target





Overview

- Timeline to Achieve the Fishing Mortality Target
- Timely and Comprehensive Catch Reporting
- Recreational Fishery Management Tools
- Commercial Fishery Management Tools
- **How would you like the Atlantic menhaden fisheries to look in the future?**





1. Timeline to Achieve Target

- The Board must take steps to end overfishing immediately
 - ❖ Meet the threshold
- Reducing F to the target requires a longer time frame
- The Board is considering a 1 to 5 year time frame to achieve the target
- **If reducing F occurs over a longer time period should the reductions in landings be**





2. Timely Catch Reporting

- Current catch reporting does not provide complete data, particularly in the bait fishery
- Better reporting would allow managers to monitor landings throughout the season
- It would also allow to more easily evaluate the effectiveness of particular management tools
- **How should the landings reporting system be improved?**





3. Recreational Measures

- Important bait in many recreational fisheries
- Currently no recreational fishery management measures have been implemented
- To reduce F , there is a need to explore other management options that could be used to control the recreational fishery
- Harvest level scenarios to achieve the new threshold and target F rates will come from the 2012 stock assessment update





Stock Assessment Update

- Feb 2012: Approval of Draft PID By Board
- Mar 2012: Public review and comment on PID
- Apr 2012: Compile Data for Stock Assessment Update
- May 2012: Board review of public comment; Board direction on Draft Amend 2





Assessment Continued

- May 2012: Stock Assessment Modeling
- June 2012: Preparation of Draft Amendment 2
- June 2012: Assessment Workshop
- July 2012: Finalize Stock Assessment Update and Draft Amendment 2
- Aug 2012: Review and approval of Draft Amendment 2 and 2012 Stock Assessment





3. Recreational Options

- Option 1: Status quo
 - ❖ No current recreational measures in the FMP
- Option 2: Size limits
- Option 3: Bag limits
- Option 4: Seasons
- Option 5: Area Closures





4. Commercial Fishery

- Menhaden supports a reduction and bait fishery
 - Commercial Harvest in 2010
 - ❖ Reduction Fishery ~ 80% of total landings
 - ❖ Bait fishery is ~ 20% of total landings
- Several fisheries rely on menhaden for bait





4. Commercial Fishery

- Management changes proposed for both commercial bait and reduction fishery
- Harvest level scenarios to achieve the new threshold and target F rates will come from the 2012 stock assessment update





Commercial Options

- Option 1: Status Quo
 - ❖ Chesapeake Bay Harvest Cap
- Option 2: Trip Limits
- Option 3: Gear Restrictions
- Option 4: Season Closures
- Option 5: Area Closures





Commercial Options

- Option 6: Quotas
 - ❖ Need additional monitoring requirements
- Option 7: Effort Controls
- Option 8: Limited Entry





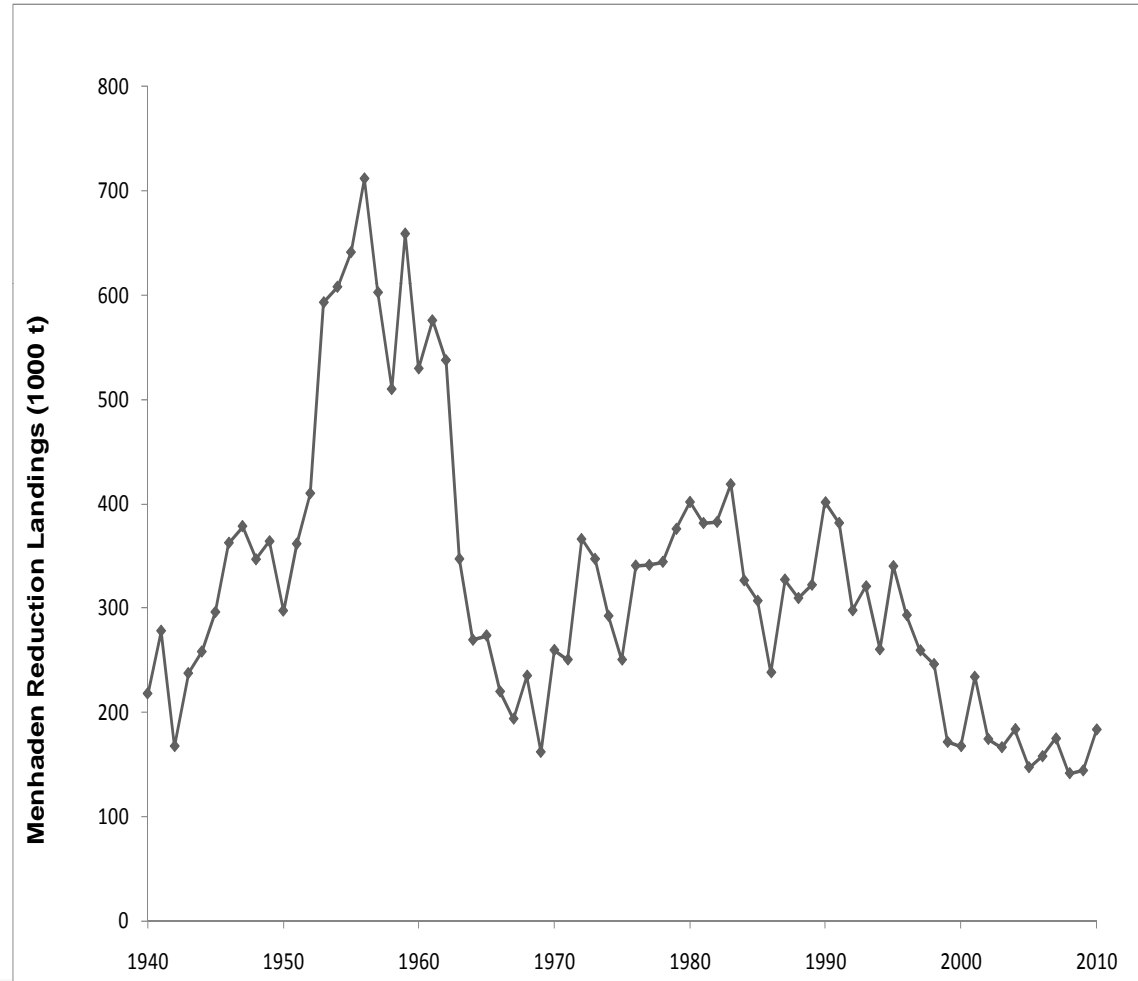
Background

- Status of Fishery Management
 - ❖ Amendment 1 and Addendum I-V
- Status of the Stock
 - ❖ Overfishing is occurring, but not overfished
- Social and Economic Impacts





Reduction Fishery





Bait Fishery

