Chesapeake Bay oyster stock assessment Terms of Reference

1) Characterize the commercial catch including landings, effort, CPUE and discards. Describe the uncertainty in these sources of data.
2) Characterize the survey data that are being used in the assessment (e.g., regional indices of abundance, recruitment, state surveys, age-length data, etc.). Describe the uncertainty in these sources of data.
3) Cross calibrate Maryland dredge with Virginia patent tong methodologies to provide information for total Baywide population estimation. Describe the methodology and characterize uncertainty.
4) Evaluate status of shell substrate on public reefs Baywide.
5) Quantify disease prevalence and intensity in all sampled populations Baywide. Compare age-specific mortality against disease prevalence and intensity. Retrospectively apply disease analysis Baywide to develop a single Baywide time series on oyster disease.
6) Estimate annual fishing mortality, recruitment and stock biomass (both total and spawning stock) for the time series, and characterize the uncertainty of those estimates.
7) Update or redefine biological reference points (BRPs; estimates or proxies for B_{MSY}, $B_{THRESHOLD}$, and F_{MSY}; rebuilding thresholds, and estimates of their uncertainty). Comment on the scientific adequacy of existing and redefined BRPs.
8) Evaluate stock status with respect to the existing BRPs, as well as with respect to updated or redefined BRPs (from TOR 7).
9) Identify potential environmental, ecological, and fishing-related factors that could be responsible for low recruitment in future years.
10) Develop and apply analytical approaches and data that can be used for conducting single and multi-year stock projections and for computing candidate ABCs (Acceptable Biological Catch).
    a. Provide numerical short-term projections (1-5 years; through 2015). Each projection should estimate and report annual probabilities of exceeding threshold BRPs for F, and probabilities of falling below threshold BRPs for biomass. In carrying out projections, consider a range of assumptions about the most important uncertainties in the assessments.
    b. Comment on which projections seem most realistic, taking into consideration uncertainties in the assessment.
    c. Describe the oyster stock's vulnerability to becoming overfished, and how this could affect the choice of ABC.
11) Identify, review, and prioritize future research needs (including to the extent practical, cost estimates).