

SMP Stakeholder Meeting
14 April 2014
5:30 – 7:30 pm
Coastal Institute Auditorium

**** Note: Presentations are posted on SMP Website: rismp.org ****

Azure, CRC

- Welcome and agenda for the day
- SMP updates
 - Hope and Main in Warren - direct marketing opportunities
 - Vibrio Control Plan – 2014 for oysters
 - RI DEM developing plan to maintain signage for open and closed waters
 - East Bay upweller being developed – to grow out seed for enhancement purposes
 - Upcoming events and seminars
 - o Clamming summer classes
 - o Final SMP event in November
 - o Please take survey to identify seminar topics of interest

Peg Parker, CFRF

- Provided brief background of CFRF
- Introduced research to be presented
- Commended collaboration skills of this research team

Dale Leavitt, RWU, and Dave Ullman, GSO

- The big picture –
 - o Need to understand larval distribution in Narragansett Bay
 - o Need to develop improved stock assessment protocols
 - Perhaps have RI commercial quahoggers conduct their own stock assessment in collaboration with RI DEM
- Described process and methodology for bullrake calibration and for calculating bullrake catch efficiency
- Examined quahog density measured by diver compared to that measured by bullrake
- Compared bullrake methods and results to those of hydraulic dredge used by RI DEM
- Results varied – some sites were close in comparison, some were not
 - o Seems to be correlated to quahog density
 - o May have something to do with substrate, as well
 - o Need additional data to better understand results and further compare methodologies
- Future work and discussions with RI DEM
 - o Appears bullrake is a viable stock assessment tool

- o What more do we need to do to confirm our observations? – How many samples are required?
 - o Is there a role for quahoggers to assist in stock assessment?
- Quahog reproduction
 - o Previous attempts to manage areas for quahog reproduction
 - o Some evidence to suggest quahogs in protected areas are not reproducing
 - o Need to investigate what is actually occurring
- Current study is assessing reproductive condition of quahogs – allows us to better determine efficacy of transplants
 - o Preliminary results show quahogs in open waters are more reproductive
 - o May have to do with animal densities
- Need to understand where larvae are going – recruitment
 - o Have knowledge of where there are high concentrations of reproductive quahogs, but where does the larvae go?
 - o This part of study focused on modeling - particle tracking simulations in Narragansett Bay – ROMS model
 - o Explained the assumptions made and data input into the model
 - o Realistically-Forced Circulation Model
 - First step in understanding larval distribution
 - Described process and simulation results for understanding circulation conditions in Bay
 - o Larval Tracking Model
 - Second step
 - Described process for simulations using the Lagrangian TRANSport model (LTRANS)
 - Showed simulations and results of particle distribution for particles released at five different locations throughout the Bay
 - Found that when the particles are released during a tidal cycle makes a drastic difference as to where the particles end up
 - Can also see the percentage of lost larvae between the two study years differs
 - More lost in 2006 at all locations – believe it is due the high freshwater input into the Bay that year
 - Demonstrated the importance of larval behavior (e.g. vertical swimming) on distribution
 - Preliminary results of this “active” behavior varied greatly from “passive” behavior – this behavior could be significant in determining larval distribution
- Surface drifter deployments to verify model results
 - o Drifters used to simulate larval transport
 - o Low-profile design so drifters are moved by currents, not the wind
 - o Showed videos of drifter data at various release locations
 - o Released many times over

- At different locations, over different periods in the tidal cycles, various wind conditions, etc. to get better understanding of distribution and influence of these factors on distribution
- Results show that where drifters end up is highly dependent on when released during tidal cycle
- Describe results at various locations and compared to 2006 model results
 - Some locations had great agreement and some locations did not
 - May be based on environment conditions – tidal cycle, year to year
 - Pleased overall with the comparison results
- Looking for the larvae
 - Final confirmation of the model – looked for the larvae in the Bay by sampling the water at various sites believed larvae would be located
 - Attempts not successful – did not recover a single larvae
 - Unsure if it was the methodology that failed or if missed the larvae
 - Area for future work
 - At this point, then, there is no confirmation that there are larvae present where the model predicted
- All the information from this study is important for management strategy
- Follow up studies are planned based on this work, including one recently funded by RI Sea Grant

Questions

- How active is the larvae? How do they swim? What are their preferences? Move towards high salinity, for example?
 - Good question. We need to understand their behavior better – have some understanding of such characteristics and behaviors – working on finding out more so can incorporate them into the model
- Larvae production is thought to be higher in open waters that are harvested, but closed areas have higher quahog density. Why is this?
 - May be behavioral, or could be a food limitation – looking into this now
 - Will have important management implications
- For the models, particles are released near the surface – what about releasing particles on bottom (where the quahogs are living)?
 - Chose surface release in the model because it is pretty accepted that once larvae are released, they come to the surface
 - But, we should consider bottom release – we can do this fairly easily and we also carry out other scenarios
- Models do not seem to correspond with what some fishermen believe occurs in the East Bay
- What happens after the quahogs set?
 - Even if have high-density quahog sets, the post-settlement survival is unknown and a big issue. Huge larval settlement does not mean huge harvest-ability. Predation is a major issue to think about. The larval distribution is one step of the process.

Alan DesBonnet, RI Sea Grant

- Described Sea Grant and funding process and how the funds are used mainly to support research and public outreach and education
- Described Sea Grant's process for funding research studies on a two year cycle and how this time around decided to support shellfish research for the SMP to help achieve the goals of the SMP
 - Funded 6 proposals, 7th in the cue if receive additional funding.
- Funded studies were chosen in part because they have application to the industry / stakeholders and practicality – not just conducting science for the sake of science. Also, had to have an outreach component.

Scott Rutherford, RWU

- Sea Grant funded research focused on expanding on CFRF research
- Four research objectives
 - Deploy current meters/ drifters near Ohio Ledge to verify model
 - Incorporate larval behavior into model – can have a significant impact
 - Produce a matrix showing links between larval source areas and potential settlement areas
 - Examine potential climate change effects on larval retention

Tom Angel, DEM, and Katie Eagan, RI Whelk Fishermen's Association (RIWA)

- Focus is to develop information and local capacity to manage the RI whelk fishery
- Describe background for this research – little known about whelk species in RI (channeled and knobbed), management is moving forward, and want fishermen to be apart of this process
- Research is a great chance for fishermen and agencies to come together and promote stewardship of the resource – first step potentially leading to co-management of the whelk resource
- Described DEM's recent work and data collection to understand the resource
- Goals
 - Provide synthesis of local and scientific knowledge on biology, ecology, and fishery for whelk – incorporate knowledge fishermen have with scientific knowledge
 - Fishery data improvement
 - Collaborative research
 - Build co-management capacity

Roxanna Smolowitz, RWU

- Research question: Could disease in blue mussels affect wild populations and commercial culture in RI waters?

- Blue mussel aquaculture has increased dramatically over the last few decades, making this an important topic to investigate
- Disease could ruin a population (wild stocks or cultivated), so are trying to understand relationship between diseases and bivalves
- Reviewed common diseases in blue mussels
- Reviewed previous studies and literature on the subject - currently, there is not strong evidence to suggest these diseases are an issue, but research in Europe starting to suggest otherwise
- Reviewed Trematode Disease (flatworm) and Microsporidial Disease (*Steinhausia* sp.)
- Objectives of study
 - o Determination of prevalence and severity of mussel disease in three sizes of wild and cultured stocks in RI
 - o Identification of environmental and physiological parameters characteristics of each sample site and time
 - o Association of disease with physiological condition and/or environmental data
 - o Extension of information from the study via outreach activities