

Needs identified for the RI Shellfish Management Plan
(Issues Identified and Voted on at Wild Harvest Scoping Session)

1) There is a need to improve shellfish management through increased sharing of information *(19 individual/15 industry = 34 votes)*

- ➔ **Lack of recruitment (people) into shellfishing – there is no next generation** (Issue identified at Wild Harvest Scoping Session) *(6 individual/7 industry = 13 votes)*
- ➔ **Ensure industry and management share common goals – “are on the same page”;**
understand needs of management and industry concurrently when managing resources (Issue identified at Wild Harvest Scoping Session) *(3 individual/2 industry = 5 votes)*
- ➔ **Better signage for pollution closures** (Issue identified at Wild Harvest Scoping Session) *(2 individual/2 industry = 4 votes)*
- ➔ **Coordination between the DEM, CRMC, DOH and other agencies; protocols for data sharing** *(3 individual/1 industry = 4 votes)*
- ➔ **Create use maps – to address use conflicts, diggers to know where leases are located, etc.** *(0 individual/4 industry = 4 votes)*
- ➔ **Fishermen’s knowledge and expertise is considered AND compensated in this process – how?** (Issue identified at Wild Harvest Scoping Session) *(2 individual/0 industry = 2 votes)*
- ➔ **Involve dealers more; dealers input into winter harvest schedules** (Issue identified at Wild Harvest Scoping Session) *(1 individual/1 industry = 2 votes)*
- ➔ **Knowledge transfer between generations** (Issue identified at Wild Harvest Scoping Session) *(1 individual/0 industry = 1 vote)*
- ➔ **Aquaculture as agriculture – clarify, define** *(0 individual/1 industry = 1 vote)*
- ➔ **Continued collaboration with Narragansett Bay Commission – does good monitoring element** *(1 individual/0 industry = 1 vote)*
- ➔ **Industry-based surveys** *(0 individual/1 industry = 1 vote)*
- ➔ Local community education of regulations and science
- ➔ Funding for NRCS Program (utilizes commercial aquaculturist’s seed product)
- ➔ Communicate ongoing, existing, and needed research
- ➔ Understanding differing needs of inshore and offshore aquaculture- in and out of Narragansett Bay, i.e. ponds vs. bays
- ➔ Better communicating closures (possible GIS tool?)
- ➔ Water quality – definitions and consistency in management; why closures, etc – better communication (Issue identified at Wild Harvest Scoping Session)

- ➔ DEM designated grow-out areas regarding aquaculture production – how are they determined? What do they mean? (issue identified at Aquaculture Scoping Session)
- ➔ Openness for changes in verbiage in the products of the Shellfish Management Plan - Not “will” or “shall” ... rather use, “may” (issue identified at Aquaculture Scoping Session)
- ➔ Emphasize diversity in the sense that this is not a “quahog-centric” project (issue identified at Aquaculture Scoping Session)
- ➔ Engage the general public – ensure public voice is heard – who? How? (Issue identified at Wild Harvest Scoping Session)
- ➔ Engage food distributors, dealers, towns, DOH etc. (Issue identified at Wild Harvest Scoping Session)
- ➔ Need for a Recreational harvest Scoping Session (Issue identified at Wild Harvest Scoping Session)
- ➔ Clarify goals of industry and management – reasonable time frame (Issue identified at Wild Harvest Scoping Session)

2) **There is a need to identify the role economic valuation plays in shellfish management** (7 individual/5 industry/2 industry for whole topic= 14 votes)

- ➔ **Direct marketing of products** (5 individual/5 industry = 10 votes)
- ➔ **Market research for spider crabs** (Issue identified at Wild Harvest Scoping Session) (1 individual/0 industry = 1 vote)
- ➔ **Role of shellfish in ecotourism** (1 individual/0 industry = 1 vote)
- ➔ Cost/ Benefit Analysis – Closed waters, use conflicts, best use of space (research)
- ➔ Role of shellfish in economic growth of RI
- ➔ Address living wage
- ➔ Value of recreational shellfishing in RI (research)
- ➔ Value of species-specific fisheries (research)
- ➔ Public-private seed hatchery for RI (issue identified at Aquaculture Scoping Session)
- ➔ Develop facility in Jerusalem to support aquaculture in the state (issue identified at Aquaculture Scoping Session)

3) **There is a need to better understand the biological processes of our shellfish resources** (10 individual/12 industry/1 industry vote for whole topic = 23 votes)

- **Shellfish stock assessment at a reasonable scalar level** (research) (*1 individual/7 industry = 8 votes*)
- **Concerns about using wild stock for aquaculture** (Issue identified at Wild Harvest Scoping Session) (*3 individual/2 industry = 5 votes*)
- **Seeding and transplants – MOU for seeding; how to maximize seeding biomass** (*3 individual/1 industry = 4 votes*)
- **Develop baselines for the evaluation of restoration projects** (research) (*2 individuals/1 industry = 3 votes*)
- **Whelks in general; also not currently covered in biotoxin closures** (issue identified at Aquaculture Scoping Session) (*1 individual/0 industry = 1 vote*)
- **Identify spawner sanctuaries based on environmental characteristics** (*0 individual/1 industry = 1 vote*)
- Maintain genetic diversity of shellfish stocks
- Disease resistance (issue identified at Aquaculture Scoping Session)
- Minimum size issues (aquaculture)
- Understand brood stock characteristics necessary to maintain stocks
- Spatial management - What scale are we operating on? Treat different areas differently; areas with size classes that have little/no value – how to address (Issue identified at Wild harvest Scoping Session).
- Research to address whether working a shellfish area aerates the ground (research)

4) There is a need to understand the ecosystem-wide interactions with shellfish management (*16 individual/12 industry/3 individual for whole topic/3 industry for whole topic = 34 votes*)

- **Water quality – definitions and consistency in management; communication regarding why closures** (Issue identified at the Wild Harvest Scoping Session and before) (*3 individual/4 industry = 7 votes*)
- **Predator management – i.e. abundance of sea stars affecting shellfish, spider crab abundance (after lobster decline?)** (*3 individual/3 industry = 6 votes*)
- **Nitrogen reduction – impacts on shellfish resources** (Issue identified at Wild Harvest Scoping Session) (*2 individual/2 industry = 4 votes*)
- **Effects of ocean acidification** (Issue identified at Wild Harvest Scoping Session and before) (*1 individual/1 industry = 2 votes*)

- ➔ **Ecological impacts from aquaculture** (issue identified at Aquaculture Scoping Session) (2 individual/0 industry = 2 votes)
- ➔ **Shellfish restoration for water quality purposes in closed waters** (2 individual/0 industry = 2 votes)
- ➔ **Perpetual management for ecological health and sustainability** (2 individual/0 industry = 2 votes)
- ➔ **Management of Invasive Species** (0 individual/2 industry = 2 votes)
- ➔ **Climate change** (research) (1 individual/0 industry = 1 vote)
- ➔ Predation – can we use predator control to increase clam numbers? (research)
- ➔ Incorporation of hydrodynamic information (research)

5) There is a need to identify and minimize various risks to shellfish resources and mitigate those risks (2 individual/0 industry/1 industry vote for whole topic = 3 votes)

- ➔ **Management of closures due to human health risks** (research) (1 individual/0 industry = 1 vote)
- ➔ **Issues of transplants, contamination, temperature “abuse”** (1 individual/0 industry = 1 vote)
- ➔ Time/Temp *Vibrio* issues (issue identified at Aquaculture Scoping Session)
- ➔ Consistency of shellfish reporting and transport requirements
- ➔ Harmful algal blooms
- ➔ Management of invasive species
- ➔ Upwellers in prohibited waters
- ➔ Disease resistance (issue identified at Aquaculture Scoping Session)
- ➔ Sanitation due to effects from birds, i.e. cormorants and Canadian Geese – issue with water quality in Narrow River watershed
- ➔ Build the capacity of state agencies to minimize risk
- ➔ Consumer education, esp. those who are vulnerable health-wise
- ➔ Harvest to plate temperature changes and effective cooling procedures (research)
- ➔ Time releasing of effluents (research)
- ➔ Dredging and marinas
- ➔ Water quality in closed waters

6) There is a need to examine and determine effectiveness of existing policy and investigate alternative strategies for improved management (12 individual/12 industry/1 individual/3 industry for whole topic = 28 votes)

- ➔ **Review and justify management area and/or pollution closures (i.e. Green Hill Pond, Watch Hill)** (Issue identified at Wild Harvest Scoping Session) (2 individual/6 industry = 8 votes)
- ➔ **Accessibility - recreational and commercial access to fishing areas** (3 individual/1 industry = 4 votes)
- ➔ **Move process into real-time management** (Issue identified at Wild Harvest Scoping Session) (2 individual/0 industry = 2 votes)
- ➔ **Fishermen input into management process, equal say, and continues into future management regulations and implementation** - (Issue identified at Wild Harvest Scoping Session, was discussed specific to conch fishery but applies across all species) (0 individual/2 industry = 2 votes)
- ➔ **Licensing issues – cost, regulations, due date, capacity, exit/entry ratios, ‘use it or lose it’**(2 individual/0 industry = 2 votes)
- ➔ **Recreational shellfishing - Permanent closures, conflicts, restoration** (0 individual/2 industry = 2 votes)
- ➔ **Need a vision for where we want to be** (issue identified at Aquaculture Scoping Session) (0 individual/1 industry = 1 vote)
- ➔ **Identify possible ‘economic development zones’**(1 individual/0 industry = 1 vote)
- ➔ **Fair dockage prices** (Issue identified at Wild Harvest Scoping Session) (1 individual/0 industry = 1 vote)
- ➔ **Accessibility- most Right of Ways are gone – public access issues make recreational harvest challenging** (1 individual/0 industry = 1 vote)
- ➔ Use conflicts – create use maps
- ➔ Aquaculture as agriculture – clarify, define, Right to farm
- ➔ Nurseries/ Upwellers in prohibited waters
- ➔ NSSP – reasonable rules?
- ➔ Limits of space for aquaculture (issue identified at Aquaculture Scoping Session)
- ➔ Activities in conditional waters – how to appropriately go about this (issue identified at Aquaculture Scoping Session)
- ➔ Identify spawner sanctuaries based on environmental characteristics
- ➔ Climate change and Sea Level Rise - Anticipate changes to the environment
- ➔ Development of “economic development zones”
- ➔ Division of Shellfish Management Areas – examine, re-evaluate
- ➔ Further development of Spatial Tools – EcoPath, EcoSpace, etc. (research)
- ➔ Social carrying capacity (issue identified at Aquaculture Scoping Session)
- ➔ Biological carrying capacity (issue identified at Aquaculture Scoping Session)

- ➔ Organize existing laws
- ➔ Enforcement – funding?
- ➔ Consistency of health certifications
- ➔ Treating aquaculture as agriculture, Right to Farm
- ➔ Reclassify waters at federal level - \$30M+ is coming from restricted waters
- ➔ Seeding and transplants – MOU for seeding; how to maximize seeding biomass
- ➔ Climate change (research)
- ➔ Identify opportunities for aquaculture with existing infrastructure – public/private (issue identified at Aquaculture Scoping Session)
- ➔ Possible explore creating new management structures (issue identified at Aquaculture Scoping Session)