

Needs identified for the RI Shellfish Management Plan

1) There is a need to improve shellfish management through increased sharing of information (Total votes: 12 individual/12 industry/1 individual for whole topic = 25)

- **Coordination between the DEM, CRMC, DOH and other agencies; protocols for data sharing** (8 individual/3 industry = 11 votes)
- **Aquaculture as agriculture – clarify, define** (0 individual/4 industry = 4 votes)
- **Continued collaboration with Narragansett Bay Commission – does good monitoring element** (2 individual/1 green = 3 votes)
- **Local community education of regulations and science** (1 individual/1 industry = 2 votes)
- **Funding for NRCS Program (utilizes commercial aquaculturist’s seed product)** (1 individual/1 industry – 2 votes)
- **Create use maps – to address use conflicts, diggers to know where leases are located, etc.** (0 individual/2 industry = 2 votes)
- 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
- Industry-based surveys
- Better communicating closures (possible GIS tool?)
- 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)

2) There is a need to identify the role economic valuation plays in shellfish management (Total votes: 5 individual/9 industry = 14)

- **Cost/ Benefit Analysis – Closed waters, use conflicts, best use of space (research)** (2 individual/3 industry = 5 votes)
- **Direct marketing of products** (2 individual/2 industry = 4 votes)
- **Role of shellfish in economic growth of RI** (1 individual/3 industry = 4 votes)
- **Address living wage** (1 individual/0 industry – 1 vote)

- Value of recreational shellfishing in RI (research)
- Value of species-specific fisheries (fisheries)
- Role of shellfish in ecotourism
- Public-private seed hatchery for RI (issue identified at Aquaculture Scoping Session)

3) There is a need to better understand the biological processes of our shellfish resources (8 individual/4 industry = 12 votes)

- **Maintain genetic diversity of shellfish stocks** (6 individual/1 industry = 7 votes)
- **Disease resistance** (issue identified at Aquaculture Scoping Session) (3 individual/0 industry = 3 votes)
- **Seeding and transplants – MOU for seeding; how to maximize seeding biomass** (1 individual/1 industry = 2 votes)
- **Minimum size issues (aquaculture)** (1 individual/0 industry = 1 vote)
- **Develop baselines for the evaluation of restoration projects** (research) (0 individual/1 industry = 1 vote)
- **Whelks in general** (0 individual/1 industry = 1 vote)
- **Whelks – not currently covered in biotoxin closures** (issue identified at Aquaculture Scoping Session)
- Understand brood stock characteristics necessary to maintain stocks
- Shellfish stock assessment at a reasonable scalar level (research)
- Research to address whether working a shellfish area aerates the ground (rchresea)
- Identify spawner sanctuaries based on environmental characteristics
- Develop facility in Jerusalem to support aquaculture in the state (issue identified at Aquaculture Scoping Session)

4) There is a need to understand the ecosystem-wide interactions with shellfish management (14 individual/6 industry = 20 votes)

- **Shellfish restoration for water quality purposes in enclosed waters** (6 individual/2 industry = 8 votes)
- **Ecological impacts from aquaculture** (issue identified at Aquaculture Scoping Session) (5 individual/1 industry = 6 votes)
- **Predator management** (1 individual/2 industry = 3 votes)
- **Predation – can we use predator control to increase clam numbers? (research)** (1 individual/0 industry = 1 vote)

- ➔ **Perpetual management for ecological health and sustainability** (0 individual/1 industry = 1 vote)
- ➔ **Climate change (research)** (1 individual/0 industry = 1 vote)
- ➔ Incorporation of hydrodynamic information (research)
- ➔ Management of invasive Species

5) There is a need to identify and minimize various risks to shellfish resources and mitigate those risks (11 individual/6 industry/1 individual for whole topic = 17 votes)

- ➔ **Time/Temp *Vibrio* issues** (issue identified at Aquaculture Scoping Session) (4 individual/1 industry = 5 votes)
- ➔ **Consistency of shellfish reporting and transport requirements** (1 individual/3 industry = 4 votes)
- ➔ **Harmful algal blooms** (2 individual/2 industry = 4 votes)
- ➔ **Management of invasive species** (1 individual/1 industry = 2 votes)
- ➔ **Upwellers in prohibited waters** (1 individual/0 industry = 1 vote)
- ➔ Disease resistance (issue identified at Aquaculture Scoping Session)
- ➔ Sanitation due to effects from birds, cormorants and Canadian Geese – issue with water quality in Narrow River watershed
- ➔ Build the capacity of state agencies to minimize risk
- ➔ Management of closures due to human health risks (research)
- ➔ Consumer education, esp. those who are vulnerable health-wise
- ➔ Issues of transplants, contamination, temperature “abuse”
- ➔ Harvest to plate temperature changes and effective cooling procedures (research)
- ➔ Time releasing of effluents (research)
- ➔ Dredging and marinas
- ➔ Water quality in enclosed waters (ex. Narragansett Bay)

6) There is a need to examine and determine effectiveness of existing policy and investigate alternative strategies for improved management

(27 individual/38 industry/1 individual for whole topic/1 industry for whole topic=66 votes)

- ➔ **Use conflicts – create use maps** (12 individual/13 industry = 25 votes)
- ➔ **Aquaculture as agriculture – clarify, define, Right to farm** (4 individual/5 industry = 9 votes)
- ➔ **Need a vision for where we want to be (issue identified at Aquaculture Scoping Session)** (3 individual/4 industry = 7 votes)
- ➔ **Nurseries/ Upwellers in prohibited waters** (1 individual/5 industry = 6 votes)

- ➔ **Licensing issues – cost, regulations, due date, capacity, exit/entry ratios, ‘use it or lose it’** (3 individual/2 industry = 5 votes)
- ➔ **ISSP – reasonable rules?** (2 individual/2 industry = 4 votes)
- ➔ **Limits of space for aquaculture (issue identified at Aquaculture Scoping Session)** (1 individual/1 industry = 2 votes)
- ➔ **Activities in conditional waters – how to appropriately go about this (issue identified at Aquaculture Scoping Session)** (0 individual/2 industry = 2 votes)
- ➔ **Identify spawner sanctuaries based on environmental characteristics** (0 individual/1 industry = 1 vote)
- ➔ **Climate change and Sea Level Rise - Anticipate changes to the environment** (0 individual/1 industry = 1 vote)
- ➔ **Recreational shellfishing - Permanent closures, conflicts, restoration** (0 individual/1 industry = 1 vote)
- ➔ **Development of “economic development zones”** (1 individual/0 industry = 1 vote)
- ➔ **Division of shellfish management areas – examine, re-evaluate** (1 individual/0 industry = 1 vote)
- ➔ **Further development of Spatial Tools – EcoPath, EcoSpace, etc. (research)** (0 individual/1 industry = 1 vote)
- ➔ **Social carrying capacity (issue identified at Aquaculture Scoping Session)** (0 individual/1 industry = 1 vote)
- ➔ 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
- ➔ Accessibility - recreational and commercial access to fishing areas
- ➔ Reclassify waters at federal level - \$30M+ is coming from restricted waters
- ➔ Identify possible ‘economic development zones’
- ➔ Seeding and transplants – MOU for seeding; how to maximize seeding biomass
- ➔ Climate change (research)
- ➔ Accessibility- most Right of Ways are gone – public access issues make recreational harvest challenging
- ➔ 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)