Proposal No. 19-117

Proposal for Task Force Consideration at the ISSC 2019 Biennial Meeting	1. a. X Growing Area b. ☐ Harvesting/Handling/Distribution c. ☐ Administrative

2. Submitter	J. Michael Hickey
3. Affiliation	Massachusetts Division of Marine Fisheries
4. Address Line 1	706 South Rodney French Blvd.
5. Address Line 2	
6. City, State, Zip	New Bedford , MA 02744
7. Phone	(508) 965-2273 (508) 742-9768
8. Fax	(508) 990- 0449
9. Email	Michael.hickey@mass.gov
10. Proposal Subject	Shellfish cleansing studies
11. Specific NSSP Guide Reference	Section II. Model Ordinance Chapter IV. Shellstock Growing Areas @.03 Growing Area Classification. C. Conditional Classifications. (2) (c) (iii)
12. Text of Proposal/ Requested Action	(iii) Sufficient time has elapsed to allow the shellstock to reduce pathogens that might be present to acceptable levels. Studies establishing sufficient elapsed time shall document the interval necessary for reduction of coliform levels in the shellstock to pre-closure levels. The study may establish criteria for reopening based on coliform levels in the water. If the conditional management plan is based on effects of non-point sources of pollution such as rain events and /or storm water runoff, an area can be reopened 48 hours after the water quality has met acceptable classification criteria as long as shellstock are actively feeding.
13. Public Health Significance	There are a number of problems related to the current M. O. language." There is no guidance or criteria in the Guide concerning what constitutes an adequate study. There are a number of study related questions: 1) How many shellfish samples of each species of shellfish and sampling stations (locations) are needed in a growing area; 2) Are studies required in every conditional area? 3) can information obtained in one growing area be applied to shellstock in another growing area? 4) The first sentence at (iii) refers "*to reducing pathogens...to acceptable levels*", what are acceptable levels of pathogens. The second sentence at (iii) refers to *reduction of coliform levels in shellstock to pre-closure levels*. Pre-closure levels in shellstock can be variable both temporally and spatially. Thus the concept of reducing coliforms to pre-closure levels is at best ambiguous. In order to obtain the required data, there is a sampling and laboratory burden. This requires time consuming shellstock sampling during open periods and again after pollution events over the year as well as increased laboratory effort to establish a data base. Shellfish samples require two lab days thus reducing lab capacity to handle water samples. In the 1980's and early 1990's Massachusetts and other states sampled shellstock one or two days after water in Conditionally Approved areas reached the criteria for an Approved classification to ensure that the shellstock was well below the then existing NSSP 230 FC market standard. Usually 150 FC or less was considered adequate to reopen because there was no actual coliform harvest standard and it made sense to only allow harvest well below the market standard. This reduction was accomplished within two days or less of the water quality returning to

	acceptable levels. This approach compared coliform levels in shellfish after water quality reached acceptable levels to an existing standard. When this policy was established, it was endorsed by the FDA Shellfish Specialist. \Shellstock can accumulate bacteria up to 100 times the level in the water. In theory shellstock in water at geometric mean of 10 FC per 100 ml could accumulate FC bacteria to a level of 1000 FC per 100 g. Thus opening an area at a level below the former 230 FC market standard would seem appropriate. Two day purging time is well established. Literature supports elimination of greater than 95% of FC bacteria from shellstock in less than 24 hours including NSSP workshop studies. Temperature is the most important factor affecting elimination of bacteria because it governs shellfish feeding activity. Naturally contaminated shellfish can eliminate fecal coliform levels in 48 hours to levels below most market standards over a range of environmental conditions (Perkins, et al, 1979). Other studies show that soft –shelled clams at MPN 10,000 FC /100 g reduced to values below 50 in 48 hours (Arcisz, et al, 1955) and oysters at MPN 39,000FC/1000g can purge to values below 50 in 48 hours.
14. Cost Information	Could produce significant savings to state shellfish classification programs.