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# Laboratory Analyses of Water and Shellfish from Coastal Waters and Watershed of New Hampshire

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# LABORATORY ANALYSES OF WATER AND SHELLFISH FROM COASTAL WATERS AND WATERSHED OF NEW HAMPSHIRE

A Final Report to

The New Hampshire Estuaries Project

Submitted by

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## **Executive Summary:**

The Department of Health and Human Services-New Hampshire Public Health Laboratories (DHHS-NHPHL) has participated in providing laboratory analyses as part of the National Estuary Program since its inception in New Hampshire in 1995. The NHPHL has continued to carry out various actions dealing with the monitoring program as listed in the NH Estuaries Project Management Plan.

### **Introduction:**

The NHPHL implemented selected actions from the NH Estuaries Project Management Plan and Year Six and Seven workplan to help address the environmental problems affecting the state's estuarine systems.

### **Project Goals and Objectives:**

The NHPHL succeeded in meeting the following goals and objectives:

The NHPHL assisted in the evaluation of the sanitary quality of the state's shellfish growing waters and shellfish meats by providing laboratory analyses for bacterial contamination, salinity, and pH. The data obtained is used to evaluate the sanitary quality of the state's shellfish waters.

The NHPHL supplemented efforts to monitor for the presence of Paralytic Shellfish Poisoning in the state's shellfish resources by providing laboratory analyses of shellfish samples from two sites in coastal NH.

### **Methods:**

All laboratory analyses were conducted according to applicable FDA methods. All analyses met FDA-required Quality Assurance/Quality Control standards. All testing was performed using guidelines conforming to the National Shellfish Sanitation Program. The NHPHL implemented a split sample proficiency program that is becoming nationwide in scope and designed specifically for analysis of fecal coliforms with levels in ranges important to the Shellfish Program. This is the only program of its kind and has the potential for use internationally.

The NHPHL maintained a minimum of 6 full-time employees including support personnel to provide timely and accurate laboratory testing as needed throughout the calendar year. Ms. Finnigan, as part of the New England Laboratory Evaluation Officers and Managers (NELEOM), attended the FDA sponsored NELEOM Annual Meeting. The purpose of the meeting is to maintain uniformity and implement procedures of the National Shellfish Sanitation Program. Ms. Finnigan also attended an FDA sponsored Checklist Intent Workshop that involved maintaining,



updating, and developing laboratory standard methods and regional and nation-wide policies to promote and enhance uniform application of laboratory procedures pertaining to shellfish bacteriological and biotoxin testing.

The NHPHL maintained and provided all analytical results in hard copy to the DES Shellfish Program for inclusion in their final report to NHEP. Data is available to any cooperating agency upon request and is included in the appendices of this report.

### **Results and Discussion:**

Shellfish Water Monitoring: Bacterial Analyses. The NHPHL received and tested 963 shellfish growing water samples for fecal coliforms in 2003. 500 fecal coliform tests were applied to the match. 463 fecal coliform tests were supported by the NHEP. The salinity and pH were performed on 963 and 961 samples respectively and were used as match. This activity is relevant to NHEP Workplan #02-B-1.10 and 02-B-1.11.

Shellfish Water Monitoring: Paralytic Shellfish Poisoning (PSP) Analyses. The NHPHL received 66 and tested 64 shellfish tissue samples for PSP toxin in 2003. 32 samples were used as match. 23 samples were supported by the NHEP. This activity is relevant to NHEP Workplan #02-B-1.12.

Shellfish Meat Testing: Bacterial Analyses. The NHPHL received and tested 120 shellfish meats. This activity is relevant to NHEP Workplan #02-B-1.11.

### **Conclusions:**

All aspects of the DHHS-NHPHL portion of the Management Plan were carried out. 2 of the 963 (0.2%) pH samples were not recorded and 2 out of 66 PSP samples (3%) were not processed. Each of these samples was investigated as to the cause, and corrective action was undertaken to prevent future occurrences.

### **Recommendations:**

The upcoming year will include providing continued laboratory analyses for the presence of PSP. Budget constraints may preclude providing continued laboratory analyses of shellfish growing water samples for fecal coliform bacteria, salinity, pH or assisting in evaluating the sanitary quality of the state's shellfish by performing shellfish meat fecal coliform testing on samples taken during dry and wet weather conditions.

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Appendix A



**LABORATORY ANALYSES OF WATER AND SHELLFISH FROM  
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Appendix B

**LABORATORY ANALYSES OF WATER AND SHELLFISH FROM  
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Appendix C