

**Final Progress Report
Subaward # Z514704
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SUBCONTRACT/ACCOUNT NO: Z514704

PROJECT TITLE: Targeted Biosecurity Education and Best Management Practices Development Program for Aquaculturists, Extension Agents, Researchers & Regulators

REPORTING PERIOD: 9/16/10 – 12/31/10

FUNDING LEVEL: \$89,920

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PROJECT OBJECTIVES:

This project will provide regionally focused, practical training in aquaculture biosecurity and Best Management Practices (BMPs) for industry, extension agents, researchers and regulators in the Northeast in order to reduce disease incidence and lower production costs. This goal will be achieved through the following activities and materials:

1. **Five two-day interactive biosecurity/BMP training workshops conducted in Maine, Rhode Island, West Virginia, New York and Pennsylvania.**
2. **Production of a Biosecurity/BMP Resource Manual**, adaptable to specific species and/or facility design, and distributed at workshops and beyond (most likely via Internet, through the NRAC website.) This manual will serve as a syllabus for the individual workshops.
3. **Creation and maintenance of a public access web-based database with information resources relevant to aquaculture stakeholders**, including current disease research, fish health

resources, state/federal/international testing requirements and other regulatory information, as well as updates to biosecurity/BMP recommendations.

ANTICIPATED BENEFITS:

Aquaculturists in the Northeast region face enormous pressure from exotic and endemic pathogens. Infection and disease can infiltrate from multiple sources – water, wild conspecifics, introduced stocks, predators, human visitors – and can interfere at all stages of production. The results of pathogen exposure on a farm can be devastating: production losses from mortality events; loss of market access if certain pathogens are associated with the facility, aquaculture sector or region; and consequent inability to transport product to other farms or locations. These types of events frequently have crippling economic consequences. Lack of adequate information about disease ecology of many aquatic pathogens or lack of access to current, quality information about particular diseases compounds the problems posed by disease in the aquaculture sector.

The concept of establishing biosecurity protocols on farms is not new, but interactions with key aquaculture sectors indicate that few have adequate working knowledge of biosecurity to implement it effectively. Although NRAC and public entities such as regional Sea Grant programs and university researchers have offered written guidelines and, in some cases, one day workshops or presentations on “best management practices” (BMP), to industry, few hands-on, facility-based, affordable biosecurity audits and BMP training programs are available to aquaculturists in the Northeast, particularly in a regionally coordinated format. No current programs provide biosecurity and BMP guidelines adaptable to specific species or facility design, and few provide follow-up support services with qualified fish health professionals with access to the most current information on the efficacy of specific biosecurity/BMP protocols (e.g. disinfection techniques & products), regulatory changes and disease research.

Region-wide programs, particularly ones that include a fish health certification component, help increase assurance that aquatic species being transported are specific pathogen free. Interactive training workshops encourage face-to-face interaction among stakeholders and can provide unprecedented access to information about current disease threats to the region, such as Viral Hemorrhagic Septicemia (VHS.)

Materials generated for these workshops and references gathered for consolidation into the web-based aquaculture information resource will be widely disseminated after the workshops have been conducted. It is expected that the database generated from our efforts will become the property and charge of NRAC, with the Project Coordinator and willing Principal Investigators providing support when possible or requested.

PROGRESS AND PRINCIPAL ACCOMPLISHMENTS:

1. All of the five two-day interactive biosecurity/BMP training workshops were completed by July 2009. The first two workshops were in Turners Falls, Massachusetts and Carlisle, Pennsylvania, both in October 2008. The third took place in Edmeston, New York (April 2009), and the final two workshops were conducted in Skowhegan, Maine (June 2009) and in Wardensville, WV (July 2009.) Attendance at all workshops exceeded expectations, and personal communication and formal feedback (via a survey distributed following the MA/CT/RI; ME; and WV workshops) to the local organizers and to the project coordinator demonstrated the enthusiastic response and appreciation for our low-cost, hands-on instruction. Collaboration between this group and Dr. Paul Bowser's NRAC-funded VHS research and education outreach team has been a priority in all of the workshops, and Dr. Bowser and/or others from the Cornell research laboratory joined us at every one. It has been a pleasure to work with them and a benefit to our collective efforts and our workshop audiences.
2. The Biosecurity/BMP Resource Manual was created for the first workshop in October 2008 (PA) and has been updated for subsequent workshops based on peer-review (Drs. Rod Getchell, Lester Khoo, Andy Goodwin, Andy Noyes and PI edits) as well as feedback from workshop participants. An electronic version of the peer-reviewed document has been made available to

designers of the project's web presence (via Dr. Dale Leavitt) and will be available via the NRAC website in late 2010 or early 2011.

3. The public access web-based database with information resources for aquaculture stakeholders is in progress, and is slated for completion by late December 2010/early 2011. Dr. Dale Leavitt is managing this final portion of the overall project. Information compiled for the Biosecurity/BMP Manual provides both the framework and content of the web resource. Reconnaissance about current disease research, fish health resources, regulatory information, and updates to biosecurity/BMP information offered in the Manual is ongoing and will be downloaded into the web presence developed in conjunction with NRAC representatives (with IT expertise) identified in January 2008.

WORK PLANNED: See narrative above.

IMPACTS:

- Demonstration of what appropriate biosecurity practices should look like at an aquaculture facility
- Demonstration of appropriate, comprehensive fish health sampling event.
- Direct interaction between fish health professionals, biosecurity auditors, regulators, researchers, educators and aquaculturists.
- Written materials distributed to workshop participants to reinforce biosecurity principles demonstrated at workshops.
- Relationships established between those with questions and those who may be able to facilitate answers/solutions.

SUPPORT: No additional support sought for project.

PUBLICATIONS, MANUSCRIPTS, OR PAPERS PRESENTED: In progress.