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PROJECT OBJECTIVES:

1. Foster interaction, communication and collaboration among extension personnel and key aquaculture stakeholders in the region.
2. Conduct an assessment of the information needs of key aquaculture stakeholders in the region.
3. Develop five technical publications of regional importance to the existing aquaculture industry, and an introductory brochure for new producers.
4. Develop an Extension Web site and Web forum for timely distribution of outreach information, and to facilitate a communication network among stakeholders.
5. Develop an outreach workshop of regional importance to the existing aquaculture industry and provide conference support for two regional industry meetings.

ANTICIPATED BENEFITS:

The formalization of this aquaculture extension network through NRAC will foster interaction, communication and collaboration among extension personnel and key aquaculture stakeholders in the Northeast region of the U.S., and will provide high-quality educational products and activities that can aid producers in the formation and management of their businesses, and aid other stakeholders in the decisions they make regarding aquaculture.

PROGRESS AND PRINCIPAL ACCOMPLISHMENTS:

OBJECTIVE 1. Foster interaction, communication and collaboration among extension personnel and key aquaculture stakeholders in the region.

The project participants invited two industry representatives to participate as advisors to the Northeast Aquaculture Extension Network (NAEN) in upcoming years. The industry advisors (marine - Robert Rheault-confirmed; freshwater - Charles Conklin-requested, not confirmed) will be asked to join in the organizational meeting in December of 2008 and to advise us on outreach activities of particular relevance to their industry segments and the region as a whole.

The project participants and a representative from the NRAC staff attended an organization meeting on December 5, 2005 and reviewed project objectives, activities, methods, and the

expectations of each project participant. The group discussed the implementation plan and evaluation strategy for each respective objective. Two follow-up conference calls were conducted to track the progress of the project, and to discuss emerging issues of importance that could be addressed through the current and future NAEN projects.

OBJECTIVE 2. Conduct an assessment of the information needs of key aquaculture stakeholders in the region.

In 2007, the NAEN, in cooperation with the Center for Survey Research and Analysis (CSRA) at the University of Connecticut, conducted an assessment of the outreach needs of the region's aquaculture industry. The purpose of the assessment was to gather opinions about information needs related to production, marketing, the regulatory process, and business development. The survey was mailed to all licensed aquaculture producers (n=1507) in the NRAC region (Maine to West Virginia). Of those surveyed, a total of 326 producers (22%) responded between July and September of 2007. The responses came from producers of finfish (48%), molluscan shellfish (45%), miscellaneous invertebrates (3%), plants or algae (2%), and other (i.e. reptiles, amphibians) (2%). An uneven distribution of responses among various states in the region skewed the data; however, the results suggest that there are several areas of common need and opportunity.

A key finding of the study was that less than 20% of aquaculture producers are very satisfied with the aquaculture information available to them in their respective states. Information related to the regulatory process is critical or important (90%) to all producers. Next in importance is the availability of production information (82%), followed by information on business development (63%) and marketing (60%) (Getchis and Magda 2007). The findings suggest that improvements can be made related to type of and accessibility to information. One-on-one consultations and group workshops are listed as preferred sources of information for new and practicing producers, while prospective producers may seek print publications and Internet resources prior to engaging in hands-on activities.

The NAEN is developing a manuscript for the *Journal of Extension*, which will describe the results of outreach needs assessment of the Northeast's aquaculture industry.

The NAEN recently provided poster presentations documenting the project objectives and results at 2008 meetings of the U.S. Aquaculture Society (February) and the Milford Aquaculture Seminar (February).

OBJECTIVE 3. Develop five technical publications of regional importance to the existing aquaculture industry, and an introductory brochure for new producers.

The NAEN reviewed and assessed current NRAC Extension publications for possible revision. Four publications (*Freshwater Aquaculture Species for the Northeast*, *Marine Aquaculture Species for the Northeast*, *Aquaculture Systems for the Northeast* and *Planning for Success in Your Aquaculture Business*) were recommended for revision and publication of these documents took place in 2008 (see PUBLICATIONS, MANUSCRIPTS, OR PAPERS PRESENTED section of this report for full citations).

Three new publications (*Aquaculture Risk Management*, *Environmental Effects of Shellfish Aquaculture in the Northeast* and *Fish Health Inspections*) were developed based on emerging issues to the industry and include: (see PUBLICATIONS, MANUSCRIPTS, OR PAPERS PRESENTED section of this report for full citations).

The NAEN worked with extension specialists in each of the northeast states to develop Aquaculture Situation and Outlook Reports. Twelve reports containing information on state of the industry, research, extension and educational projects were completed and published in 2008. These publications will be update as needed or at least on a biennial basis (see PUBLICATIONS, MANUSCRIPTS, OR PAPERS PRESENTED section of this report for full citations).

OBJECTIVE 4. Develop an Extension Web site and Web forum for timely distribution of outreach information, and to facilitate a communication network among stakeholders.

The NAEN developed an Educational Resources Web Page <http://www.nrac.umd.edu/Contacts/Resources.cfm> for producers, and an NAEN Web Page <http://www.nrac.umd.edu/Contacts/Projects.cfm> targeted to Extension professionals and those who serve in an outreach capacity.

The team leader for the web site posts information related to the other components of the regional extension network development project: needs assessment, educational publications, research project overviews and outreach activities. The Web page has full public access with links to the NRAC Home Page. The page contains information and links related to professional development, funding opportunities, the *Journal of Extension*, program impact and assessment articles and other similar resources to share useful information and assist regional extension personnel with their individual program development.

The NAEN, on the advice of the NRAC BOD, decided against developing an internal web forum.

OBJECTIVE 5. Develop an outreach workshop of regional importance to the existing aquaculture industry and provide conference support for two regional industry meetings.

This objective was modified based on the results of the producer outreach survey. Although workshops were seen as valuable extension efforts, access to interactive, user-friendly multi-media educational tools was introduced as a desirable product. The NAEN sponsored several already planned workshops, but decided against organizing an independent extension workshop and instead refocused on developing web-based educational materials. The Network, in cooperation with the University of Maryland Information Technology Services Department, developed a template for web-based "tutorials" that will be hosted on the NRAC web site. These tutorials integrate and offer the use of electronic publications (NRAC fact sheets in PDF), video clips demonstrating husbandry practices, and instructional PowerPoint presentations with voice-over on aquaculture subject-matter. Three topical tutorials (*Getting Started in Aquaculture*, *Aquaculture Systems* and *Aquaculture Species*) will be developed through the newly funded NRAC extension project (7/2008-6/2010).

The NAEN sponsored several meetings of regional importance including the Farmed Fish Health Workshop, the Milford Aquaculture Seminar, the Cornell Recirculating Aquaculture Short Course, the East Coast Commercial Fishermen's and Aquaculture Trade Exposition, and an industry session at the Annual Meeting of the National Shellfisheries Association. The NAEN also provided professional development funds for one Extension professional to attend the Cornell Short Course.

PUBLICATIONS, MANUSCRIPTS, OR PAPERS PRESENTED:

Fact Sheets / Technical Bulletins

- Barnaby, R. (2007). New Hampshire Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-106-2007.
- Bowser, P.R. (2008). Fish Health Inspections. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-106-2008. 3pp.
- Buttner, J., Flimlin, G. & Webster, D. (2008). Freshwater Aquaculture Species for the Northeast. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-102-2008. 7pp.
- Buttner, J., Flimlin, G. & Webster, D. (2008). Marine Aquaculture Species for the Northeast. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-103-2008. 6pp.
- Buttner, J.K, Burt, W., Walton, W.C., Wilbur, B.M., Hollingsworth, C., Murphy, D. (2007). Massachusetts Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-103-2007.
- Faulds, A. (2007). Pennsylvania Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-109-2007.
- Flimlin, G., Buttner, J. & Webster, D. (2008). Aquaculture Systems for the Northeast. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-104-2008. 7pp.
- Flimlin, G.E., Myers, J. (2007). New Jersey Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-107-2007.
- Getchis, T.S., Pomeroy, R.S. (2007). Connecticut Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-101-2007.
- Homziak, J. (2007). Vermont Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-112-2007.
- McIntosh, D., Ewart, J. (2007). Delaware Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-102-2007.
- McIntosh, D. (2008). Aquaculture Risk Management. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-107-2008. 4pp.
- Morse, D., Pietrak, M. (2007). Maine Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-105-2007.
- Rice, M.A. (2008). Environmental Effects of Shellfish Aquaculture in the Northeast. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-105-2008. 6pp.
- Rice, M.A., Leavitt, D., Alves, D. (2007). Rhode Island Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-110-2007.
- Rivara, G., Timmons, M. (2007). New York Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-108-2007.
- Semmens, K., Miller, D.J., Kiser, R. (2007). West Virginia Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-112-2007.
- Webster, D., Buttner, J. & Flimlin, G. (2008). Planning for Success in Your Aquaculture Business. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-101-2008. 8pp.
- Webster, D., Takacs, J., Rippen, T.E., Lazur, A., Terlizzi, D. (2007). Maryland Aquaculture Situation and Outlook Report 2007. USDA CSREES Northeastern Regional Aquaculture Center. NRAC-104-2007.

Articles / Reports

- Getchis, T.S. et al. (To be submitted to *Journal of Extension* Nov 2008). Assessing Aquaculture Producer's Outreach Needs.
- Getchis, T.S. & Magda, A. (2007) Aquaculture Producer Outreach Needs Survey.

Northeastern Regional Aquaculture Center and UConn Center for Survey Research and Analysis. 30pp.

Presentations

Getchis, T.S., Alves, D., Barnaby, R., Bartlett, C., Burt, W., Buttner, J., Ewart, J., Faulds, A., Flimlin, G., Hicks, D., Hollingsworth, C., Homziak, J., La Valley, K., Lazur, A., Leavitt, D., McIntosh, D., Morse, D., Murphy, D., Pietrak, M., Pomeroy, R., Rice, M.A., Rippen, T.E., Rivara, G., Semmens, K., Takacs, J., Terlizzi, D., Timmons, M., Walton, W.C., Webster, D. & B. Wilbur. (in press) Northeast Aquaculture Extension Network. Milford Aquaculture Seminar, Meriden, CT. *Journal of Shellfish Research*. Abstract.

Getchis, T.S., Alves, D., Barnaby, R., Bartlett, C., Burt, W., Buttner, J., Ewart, J., Faulds, A., Flimlin, G., Hicks, D., Hollingsworth, C., Homziak, J., La Valley, K., Lazur, A., Leavitt, D., McIntosh, D., Morse, D., Murphy, D., Pietrak, M., Pomeroy, R., Rice, M.A., Rippen, T.E., Rivara, G., Semmens, K., Takacs, J., Terlizzi, D., Timmons, M., Walton, W.C., Webster, D. & B. Wilbur. (2008) Northeast Aquaculture Extension Network. Aquaculture America, Annual Meeting of the U.S. Aquaculture Society, Orlando, FL.