

Project Completion Report
Subaward # S3160610/S31606009
Grant # 2003-38500-13505 &
2004-38500-14589

PROJECT CODE:

SUBCONTRACT/ACCOUNT NO: Q228901/Q229201

PROJECT TITLE: The Development of a Code of Practice and Best Management Practices for East Coast Shellfish Growers

DATES OF WORK: July 1, 2007 to June 30, 2010

PARTICIPANTS: Funded cooperating personnel and institutions, agencies, and business entities including extension liaison(s) and non-funded collaborators.

Edwin Rhodes and Kathy Rhodes, Aquatecnics LLC.
Sandy Macfarlane, Coastal Resource Specialists
Gef Flimlin, Rutgers Cooperative Extension

Gregg Rivara, Cornell Cooperative Extension
John Ewart, Delaware Sea Grant Extension
Don Webster, Maryland Sea Grant and Cooperative Extension

REASON FOR TERMINATION: Indicate objective(s) completed, funds terminated, or other specific reason for project termination.

The objectives of the grant were met and the tasks have been completed.

PROJECT OBJECTIVES: List objectives as written in approved proposal.

The overall objectives of this project are to assist the east coast shellfish aquaculture industry to develop an Environmental Code of Practice (Code) and model Best Management Practices (BMPs) and to encourage their subsequent adoption by individual companies.

ANTICIPATED BENEFITS: State how the project will benefit the aquaculture industry either directly or indirectly.

The Code and BMPs are the key elements of an environmental management system and their adoption and use by the industry will lead to an increase in public support of the industry, make it easier to obtain new sites for shellfish aquaculture, minimize additional government regulation, and form the basis for a future environmental certification program that could be used to further promote and expand the industry.

PRINCIPAL ACCOMPLISHMENTS: Summarize in a concise form the findings for each objective for the duration of the project. Measurement data are to be given in SI units. However, to minimize confusion, a dual system of measurement may be used to express results.

- *Initiate contacts, identify issues, plan workshops.* Completed in year one.
- *Literature review/management options.* Codes and BMPs already in use and other NRAC and survey data were used to help instruct the discussions at the workshops...done in year one.
- *Hold first round of workshops.* First round workshops were held with representatives of the eight target states plus one individual each from Pennsylvania (the Army Corps of Engineers) and

Washington, DC (a prospective grower.) The workshops were held in New York in December 2007, New Jersey on January 5, 2008, Maryland on January 26, 2008, Connecticut on February 25, 2008, Massachusetts on March 26, 2008 and Maine on March 27, 2008. These workshops were attended by a total of 105 participants. Forty percent of the participants were shellfish growers and thirty percent were regulators from state, county, and town governments. Nine percent of the participants were extension agents with an equal number of academics and researchers. The remainder of the participants was equally divided among people involved in shellfish restoration, environmental groups, and wild harvesters.

- ***Hold Second Round of Workshops.*** The second round of workshops was held in the same places as the first round. At these sessions, information which was supplied was discussed with those in attendance showing the similarities and some differences between shellfish culture techniques, environmental issues, socio-political issues and permitting in various states. The many issues and solutions identified by the workshop participants are being incorporated into the final document. We also were able to include information from our work supported by NOAA in the southern states. A boilerplate document was proffered to explain how an individual grower could show that his own farm was being operated sustainably. This can allow for individual marketing support without third party certification.
- ***Develop and disseminate a preliminary draft for a shellfish aquaculture Code and BMP Manual.*** During a working meeting all the information gathered in the first round workshops was organized in order to identify issues common across the industry, the industry's philosophical perspectives about the issues, and the various solutions that have been used to address these issues. A code of conduct for the east coast shellfish industry was written.
- ***Write a Best Management Practices for East Coast Shellfish Growers Manual.*** This work was done in conjunction with the NOAA funded BMP grant which covers the states from Virginia to Florida. A PDF version of the Manual will be available on ECSGA.org, the NRAC website, and possibly on the NOAA Aquaculture website. 500 hard copies are being printed and will be distributed back to the participants in the process and available for others who are interested..
- ***Additional final product.*** The PIs have also developed a document that an individual can use to show how his own shellfish farm is being operated sustainably. The document covers the pertinent licenses that each individual state might require, a description of the farm geographically, mention of the seed stock that is used, types of growout gear, how and when the farm is maintained, product harvest, transport, and storage, and finally showing an adherence to the individual's HACCP plan. We feel that this individual farm document would show prospective clients and current customers that the farm is being operated in an environmentally sound fashion under a Code of Practice using Best Management Practices. This allows for using it as a marketing tool similarly to how the third party certification is used to improve marketing but without the cost involved. This product will be available on-line at the East Coast Shellfish Growers Association website for use by all growers.

IMPACTS: In concise statements (possibly a bulleted list) indicate how the project has or will benefit the aquaculture industry either directly or indirectly and resulting economic values gained (where appropriate).

Some misunderstandings have been corrected through the workshop process as the stakeholders from different sectors sat down together to discuss issues. There have been many issues that have been identified as being important throughout the region and some interesting and potentially successful solutions have been identified. The interactions by growers with other growers through our facilitated process may have improved relationships between industry members and also with state and federal regulators who may have not completely understood all the ramifications of the shellfish culture process.

As growers begin to create individual farm BMPs, they will be able to better market their product by showing prospective clients and current customers that the farm is being operated in an environmentally sound fashion under a Code of Practice using Best Management Practices.

RECOMMENDED FOLLOW-UP ACTIVITIES: State concisely how future studies may be structured.

The PIs recommend that a third set of meetings be held to bring the BMP Manual and the Individual Farm Plan back to the participants and other growers who may not have been able to participate in the original meetings. At these meetings, we would assist them in filling out the Farm Plans and to be able to train the Shellfish Extension Personnel in each state in the method for preparing these Plans.

We would also like to produce a tri-fold brochure which would contain a generic shellfish background but leave space for individuals to insert pictures or text about their farm, showing that they grow their shellfish in a fashion that adheres to the Code of Practice/BMPs and is done in an environmentally sound way. These would then be used for Point of Purchase materials to inform and educate the consumers and as a marketing tool

SUPPORT: Use the format in the table below to indicate NRAC-USDA funding and additional other support, both federal and non-federal, for the project. Indicate the name of the source(s) of other support as a footnote to the table.

YEAR	NRAC-USDA FUNDING	OTHER SUPPORT				TOTAL SUPPORT
		UNIVERSITY	INDUSTRY	OTHER FEDERAL	OTHER	
2007	\$45,716.43					\$45,716.43
2008	\$95,257.74					\$95,257.74
2009	\$70,428.60					\$70,428.60
TOTAL						\$211,402.77

PUBLICATIONS, MANUSCRIPTS, OR PAPERS PRESENTED: List under an appendix with the following subheadings: *Publications in Print*; *Manuscripts*; and *Papers Presented*. For the first two subheadings, include journal articles, popular articles, extension materials, DVDs, technical reports, theses and dissertations, etc. using the format of the Transactions of the American Fisheries Society (example below). Under *Papers Presented* subheading include the authors, title, conference/workshop, location, and date(s).

Example of Transactions of the American Fisheries Society citation format: Billington, N., R. J. Barrette, and P. D. N. Hebert. 1992. Management implications of mitochondrial DNA variation in walleye stocks. North American Journal of Fisheries Management 12:276-284.

“Development of a Code of Practice and Best Management Practices for East Coast Shellfish Growers Workshops”, Interactive workshop sessions. Gef Flimlin, Sandy Macfarlane, Ed Rhodes, Kathy Rhodes.

- Riverhead NY (December 13, 2007 and January 22, 2009)
- Tuckerton NJ (January 25, 2008 and April 17, 2009)
- Ocean City MD (January 26, 2008 and January 24, 2009)
- Atlantic Beach NC (January 19, 2008 and January 31, 2009)
- Meriden CT (February 25, 2008 and February 23, 2009)
- Cape Cod MA (March 27, 2008 and April 21, 2009)
- Belfast ME (March 28, 2008 and September 12, 2009)
- Cedar Key FL (March 20, 2009)
- Brunswick GA (March 27, 2009 and November 16, 2009)
- Charleston SC (March 27, 2009 and November 17, 2009)
- Williamsburg VA (November 14, 2009)

“Examining Best Management Practices for Shellfish Restoration Projects”, Panel Discussion, 7th International Conference on Shellfish Restoration, Charleston, SC. November 18, 2004.

“Developing Best Management Practices for the US East Coast Shellfish Aquaculture Industry”
Ed Rhodes (PI), Gef Flimlin, Sandy Macfarlane, and Kathy Rhodes
2009 International Shellfish Restoration Conference, Charlottetown, PEI September 17, 2009.

“Developing Best Management Practices for the US East Coast Shellfish Aquaculture Industry”
Ed Rhodes (PI), Gef Flimlin, Sandy Macfarlane, and Kathy Rhodes. World Aquaculture Society
Triennial Meeting, San Diego CA, March 1-5, 2010.

Attachment 9
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PART II

TECHNICAL ANALYSIS AND SUMMARY: Describe the work undertaken and results obtained for each objective. Major results should be presented in detail, including graphs, charts, figures, photomicrographs or other presentations. Methodology should be briefly described and statistical analyses and significance should be included where appropriate. This section of the report should be written with style similar to scientific publication. Reports previously or currently prepared for publication may be submitted as part of this section.

All results are reported above and a pdf file of the completed manual is attached to this report.

PROJECT COMPLETION REPORT

SIGNATURE PAGE

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PREPARED BY: Gef Flimlin and Kathy Rhodes

Project Coordinator of Subawardee

Date

