

## **G. NATIONAL AQUACULTURE EXTENSION CONFERENCE**

Progress Report  
for the period  
September 1, 1996 to August 31, 1997

**FUNDING LEVEL:**  
\$3,700

### **NATIONAL STEERING COMMITTEE:**

University of Arkansas at Pine Bluff -  
Nathan Stone

University of California-Davis - Fred Conte

University of Delaware - John Ewart

University of Guam - David Crisostomo

Iowa State University - Joe Morris

University of Maryland - Don Webster

Texas A&M University - James T. Davis

Washington State University - Steve  
Harbell

### **PROJECT OBJECTIVES:**

1. Learn successful approaches to problem-solving through case studies that can be replicated in other states.

2. Demonstrate and conduct hands-on experience with state-of-the-art computer applications for improving delivery of extension programs.

3. Identify national extension priorities and critical issues with development of corresponding action plans for implementation.

4. Identify potential interregional

extension projects, such as curriculum development or national decision-support databases.

5. Share educational materials and programs in addition to expertise.

6. Strengthen regional and national communications networks to improve services to customers.

7. Examine successful extension components and outcomes to Regional Aquaculture Center (RAC) research projects and develop approaches to improve integration across RACs nationwide.

8. Develop collective strategy to define extension's role in measuring impacts of RAC projects and collaboration with others in academia and private sector.

9. Strengthen communications networks to leverage resources and talent-sharing.

10. Improve business management skills related to aquaculture and enhance knowledge concerning marketing aspects of aquatic products.

11. Develop a method to evaluate the impact and accomplishments associated with the conference after one year (1998).

### **ANTICIPATED BENEFITS:**

This conference provided an opportunity for extension professionals to improve personal performance and effectiveness. As professional FTEs are undergoing scrutiny, and extension capabilities in the specialized field of aquaculture vary across the nation, this investment in human capital is of enormous benefit. As more university faculty are asked to address multiple responsibilities of extension, teaching and research functions, effectiveness becomes increasingly

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important. This conference offers each participant new contacts, knowledge about new topics, information about application of new tools to enhance productivity, appreciation of experience and different perspectives on issues, opportunities to replicate model programs, expand professional networks, and contribute to development of others, insights into participating in regionally and nationally linked initiatives, and growth in skills development responsibilities. The conference also provides a forum for professionals from different programs, such as Cooperative Extension Service and Sea Grant Marine Advisory Service, to seek avenues of collaboration for mutual benefit to a common customer base - the diverse aquaculture industry and the public.

#### **PROGRESS AND PRINCIPAL ACCOMPLISHMENTS:**

Extension agents and specialists from across the United States and its territories met in Annapolis, Maryland, April 8-12, 1997 for the second National Aquaculture Extension Conference. The meeting was sponsored by the USDA/CSREES supported Regional Aquaculture Centers and NOAA's National Office of Sea Grant. This was the first time since 1992 that aquaculture outreach professionals have gathered to share ideas and expertise and discuss ways to improve educational programs for the aquaculture industry.

The meeting included a two-day conference where topics covered new methods of providing educational programs and information. Sessions included methods of using the Internet and web pages to deliver information and how to work with clientele to help them use these new computer resources. The five RACs figured prominently in the program with the major part of the first day devoted to coverage of recently completed

projects and directions for the future. Educational programs included business planning and finance for aquaculture projects, methods of dealing with information requests, and ways for extension professionals to deal with unproven technology. A session on offshore aquaculture featured both a synopsis of the 1996 Portland, Maine, conference and subsequent industry developments.

Along with the meeting a poster session was held where extension agents and specialists presented projects from their states. Thirty-three posters were included in the display. A resource room provided an opportunity to display publications, software, and related products available for support of aquaculture programming. A computer room, equipped with six state-of-the-art machines, provided an opportunity for attendees to try software programs for the design and management of aquaculture businesses.

Following the conference, a series of five intensive short courses provided an opportunity to hone skills in a variety of areas. The Horn Point Environmental Lab provided the location for "Shellfish Aquaculture Techniques" and "Striped Bass and Hybrid Production." The Biological Resources Engineering Department at the University of Maryland College Park organized a program on "Recirculation Aquaculture Systems" and the Columbus Center in Baltimore was the site for "Biotechnology in Aquaculture" and "Internet and Web Page Construction." The final day included tours designed to highlight the various aquaculture businesses and research facilities in the Northeast region.

Exit questionnaires rated the conference, short courses, and tours very highly and extension specialists noted that they will be able to use a great deal of the information provided. A follow-up questionnaire is scheduled to be completed in one year to track the knowledge as it is applied to state

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programs and to assess the feelings of the extension community for another conference in the future.

### **IMPACTS:**

The National Steering Committee will hold a final meeting in order to assess the written evaluations from the conference and to plan for a follow up survey. This will serve to provide information on how much information gained from the conference was utilized by the agents and specialists in their respective programs as well as how beneficial the education effort was for them. It will also serve as a way to find out the extent of support within the network for future national conference and educational programs and to see what projects and programs developed out of the meeting that can be applied on a regional and national level.

The effectiveness of the World Wide Web was demonstrated during the development of this conference through the timely posting and updating of information on a web site. This included on-line registration which was utilized by almost one quarter of the registrants. This was also enhanced by the posting of the conference summary with all of the papers and posters on a web site with links from the table of contents to the participants papers. Counts of the number of contacts accessing the site will be maintained to assess the effectiveness of this means of communications.

### **PUBLICATIONS, MANUSCRIPTS, OR PAPERS PRESENTED:**

The following papers and posters are included in "***National Aquaculture Extension Conference: A Program Summary of Presentations, Posters and Aquaculture Short Courses***", edited by Donald Webster, Maryland Sea Grant Extension Publication Number UM-SG-MAP-97-01. Copies are

available from the Maryland Sea Grant College Program, 0112 Skinner Hall, University System of Maryland, College Park, MD, 20742 and at a Web site: <http://www.mdsg.umd.edu:80/extensionconf/summary.html>

### **CONFERENCE PAPERS**

#### Report from RACs and Sea Grant on Projects Completed and Immediate Future Priorities

Harrison, Kim E., "The Northeastern Regional Aquaculture Center (NRAC): Industry Assistance Program and the Jewel in the Crown -- The Regional Extension Project"

Batterson, Ted R., and J.E. Morris, "Role of the North Central Regional Aquaculture Center in Regional Aquaculture Development"

Tucker, Craig S., "Activities of the Southern Regional Aquaculture Center"

Hershberger, William K., "Western Regional Aquaculture Center (WRAC): Challenges and Priorities"

Lee, Cheng-Sheng, "Center for Tropical and Sub-Tropical Aquaculture -- Aquaculture Development Mission"

McVey, James P., "Aquaculture in Sea Grant: Past, Present and Future"

#### Aquaculture Extension in the Classroom

Mengel, Gordon J., "Overview of the National Council for Agricultural Education's Aquaculture Education Program"

Swann, LaDon, "High School Vocational Agricultural (Aquaculture) Training in Indiana"

Higginbotham, Billy, "Something's Fishy" in Texas -- A 4-H Aquatic Science School Enrichment Program for Elementary Students"

#### Online Services and the Aquaculture Industry

Ewart, John W., "Internet Basics"

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Swann, LaDon, "Aquaculture Resources on the Internet"

Conte, Fred S., and A. Ahmadi, "Outreach for Windows: Document Management for PC with Internet Application"

Extension Publications in the Future -- Covering More with What?

Davis, James T., K. Jefferson, and S. Williams, "Using Southern Regional Aquaculture Center Fact Sheets from Compact Discs"

Swann, LaDon, "AquaNIC: Philosophy and Direction"

Fitzsimmons, Kevin, "AquaRICs: Philosophy and Direction"

Sayegh, Marshall, "Networking the Specialist, Advisor, and Client"

Conte, Fred S., and A. Ahmadi, "Extension Tools for Desktop PCS and Internet"

Extension -- Evolution into the 21st Century

Jensen, Gary L., "The Land Grant Model for Agriculture Research and Extension"

Fiske, Shirley J., "The Sea Grant Model for Marine Research and Extension"

Conte, Fred S., "Land Grant and Sea Grant Institutional Modifications: The California Model"

DeVoe, M. Richard, "Changing Pattern of Coastal Audiences and Issues and the Sea Grant Response: The South Carolina Situation"

Business Planning for Aquaculture

Lacey, Patricia, and C. Coale, "Aquaculture Business Planning and Marketing"

Comerford, Robert, "Aquaculture Finance and Management"

Tips on Handling Information Requests

Brunson, Martin W., and M. Masser, "Handling Requests for Aquaculture Information and Assistance: Meeting Needs and Keeping Your Sanity"

Perspectives on Extension: How are We Doing and How Can We Make Ourselves Better?

Flick, George J., "HACCP and Quality Assurance"

Offshore Aquaculture Update

Barnaby, Roland, "A Report on the May 1996 'Open Ocean Aquaculture Conference' held in Portland, Maine"

Goudey, Clifford A., "The Role of Model Tests in the Engineering of Offshore Aquaculture Facilities"

Investment in Aquaculture

Losordo, Tom, and George Lewis, "Assessing Risks Related to Aquaculture Investments"

**POSTERS**

Bolte, John P., S.S. Nath and D.H. Ernst, "Decision Support Software and Database Access Tools for Aquaculture"

Brotman, Mark J., "The Northern Marianas College Extension Program"

Buttner, Joseph K., R.H. Findlay, J.C. Makerawicz, K.C. Weaver, and D.E. Landworthy, "Environmental Impacts of Net-Pen Culture in the Great Lakes"

Conte, Fred S., "State Issues Driving Changes in the Land Grant and Sea Grant Universities"

Daniels, Bill, "Cooperative Extension Aquaculture Activities in Delaware"

DeAlteris, Joseph T., "Aquaculture"

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Outreach Activities at the University of Rhode Island”

Durborow, Robert M., “Aquacultural Hazards: A Chapter in the Medical School Textbook, Safety and Health in Agriculture, Forestry and Fisheries”

Ernst, Douglas, J.P. Bolte, S.S. Nath, and J.W. Ewart, “AquaFarm -- Computer Software for Aquaculture Design and Management”

Ewart, John W., “The Northeastern Regional Aquaculture Extension Network”

Fitzsimmons, Kevin, “Development and Introduction of Triploid Carps for Water Quality Control”

Flick, George J., “Aquaculture Extension in Food Science and Technology”

Flimlin, Gef, “ClamFarm Software -- Shellfish Management Program for Clam Production”

Fornshell, Gary, “Aquaculture Waste Management”

Heikes, David L., “Yield Verification as a Mechanism for Technology Transfer in Commercial Catfish Aquaculture”

Hudgins, Douglas B., and G.D. Boardman, “Toxicity of Ammonia to the Marine Organisms, Sheepshead Minnow (*Cyprinodon variegatus*), Mysid (*Mysidopsis bahia*), and Grass Shrimp (*Palaemonetes pugio*)”

Hyde, Chris K., “Controlling Duckweed and Watermeal Using Sonar (Fluridone) Demonstration”

Killian, H. Steven, “Arkansas’ 1996 Aquaculture Industry and Supporting Extension Programs”

Landreneau, Dwight, “Assisting the Louisiana Crawfish Industry in Seeking

Protection from Low Cost Imported Crawfish Tailmeat”

Libey, George S., “Aquaculture Extension in Fisheries Biology”

Masser, Michael, and D. Cline, “Caged Fish Production in Alabama: Providing an Alternate Enterprise and Supplemental Income for Land Owners with Existing Ponds”

Meritt, Donald W., and J. Takacs, “Using Oysters as an Extension Tool: Interaction between Research, Industry and the Public”

Merry, Gwenn, A. Goodwin, and H. Thomforde, “Arkansas Cooperative Extension Fish Disease Diagnostic Services”

Nerrie, Brian L., “Virginia State University Extension Aquaculture Outreach to Limited Resource Farmers”

Olin, Paul G., and C. Friedman, “Mass Mortality of Pacific Oysters in Tomales Bay, California”

Poland, Jenny, G.D. Boardman, and G.K. Evanylo, “Applications for In-Vessel Composting of Crab Processing Waste”

Reginelli, Dennis B., and M.W. Brunson, “The Emerging Aquaculture Industry in Northeast Mississippi”

Rivara, Gregg, and J. Aldred, “A Shellfish Mariculture Training Program for Long Island Commercial Fishermen”

Smith, Stephen A., “Diagnostic Services and Consultation for the Aquaculture Producer”

Stone, Nathan, C. Engle, and R. Rode, “Extension Programming in Support of Alternative Catfish Businesses”

Takacs, Jackie, and D. Meritt, “The Adopt-A-Bag Oyster Program: Getting

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Community Youth Involved in Oyster Restoration Activities”

Terlizzi, Daniel E., “Pfiesteria piscicida Associated with Massive Fish Mortality in a Maryland Hybrid Striped Bass Farm”

Thonforde, Hugh, and J. Maret, “Baitfish Health”

Tweed, Stewart M., “Commercialization of Rutgers Disease Resistant Oyster Culture”

Whetstone, Jack M., and A. Stokes, “Extension Demonstration of Sustainable Aquaculture Practices on a Commercial Shrimp Farm in South Carolina”

Wynne, Forrest, “Budgets for Small Scale Catfish Production to Supply a Fee Fishing Operation”

#### **SHORT COURSES**

##### Shellfish Aquaculture Techniques

Allen, Standish K., Jr., “Broodstock Management in the (Shellfish) Hatchery”

Meritt, Don, J. Takacs, and G. Baptist, “Using Oyster Hatcheries in Aquaculture Extension Programs”

Bresee, Harrison P., III, “Biological,

Economic and Social Results of a ‘U-Rake-It’ Clam Farm”

RaLonde, Ray, “Shellfish Aquaculture in Alaska: Shellfish Aquaculture Extension in a Highly Constrained Environment”

Haws, Maria C., “Bivalve Culture in the U.S.-Affiliated Pacific Islands and Association Extension Activities”

Sturmer, Leslie N., and D.E. Vaughn, “Development of Hard Clam Aquaculture on Florida’s West Coast -- From Training to Production to a Sustainable Industry”

##### Striped Bass and Hybrid Production

Harrell, Reginal, “Finfish Hatchery Techniques and Management Considerations”

##### Recirculating Aquaculture Systems

Wheaton, Fred, J.E. Ebeling, S. Sahdev, and J. Redden, “Design, Management and Commercialization of Closed Systems”

##### Biotechnology in Aquaculture

Kramer, Jonathan G., “Principles and Applications of Molecular Biology”

##### Internet and Web Construction

Frederick, Adam, and D. Jacobs, “Hands-on on the Internet”

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