

Rhode Island Aquaculture Initiative:  
A SHARED VISION FOR THE FUTURE



## Acknowledgements

We extend our appreciation to the members of the Rhode Island Aquaculture Initiative Executive Committee for their suggestions on this document and for their review of the text. We also extend special thanks to scientists, students, fish farmers, educators, photographers, and aquaculture specialists for providing the photographs and other visuals included here: David Alves, Rhode Island Coastal Resources Management Council; Constance Brown, Constance Brown Photographer; Tony Corey, Rhode Island Sea Grant; Christopher Damon, Environmental Data Center, University of Rhode Island (URI); Marta Gomez-Chiarri, URI; Perry Raso, Ocean State Aqua Farm; Robert Rheault, Spatco, Ltd.; Roger Williams University (RWU); and Jessica Tallman, URI.

### This document should be referenced as:

Rhode Island Aquaculture Initiative. 2004. *Rhode Island Aquaculture Initiative: A Shared Vision for the Future*. Rhode Island Sea Grant, Narragansett, R.I. 16 pp.

Additional copies of this publication are available from the Rhode Island Sea Grant Communications Office, University of Rhode Island Bay Campus, Narragansett, R.I. 02882-1197. Order P1714. Copies may be downloaded from the Web at <http://seagrant.gso.uri.edu/research/rhodyaquaculture/rhodyaquaculture.html>.

Loan copies of this publication are available from the National Sea Grant Library, Pell Library Building, University of Rhode Island Bay Campus, Narragansett, R.I. 02882-1197. Order RIU-Q-04-001.

This publication is funded by the Rhode Island Aquaculture Initiative through the Rhode Island Coastal Resources Management Council, with production by Rhode Island Sea Grant, under NOAA Grant No. NA40AR4170062. The views expressed herein are those of the authors and do not necessarily reflect the views of the Rhode Island Coastal Resources Management Council, NOAA, or any of its sub-agencies. The U.S. Government is authorized to produce and distribute reprints for governmental purposes notwithstanding any copyright notation that may appear hereon.

**Cover photo:** Photo by David Alves

**Back cover:** Photo by Constance Brown Photographer

**Inside cover background photo:** Photo by Perry Raso

URI doctoral student  
Rachel Petrik-Finley  
emptying a pot of fish  
to be tagged and  
released for a  
habitat study.  
Photo by Jessica  
Tallman.



Shellfish farmer Robert Krause at work among suspended oyster cages. Photo by Marta Gomez-Chiarri.



# Rhode Island Aquaculture Initiative: A SHARED VISION FOR THE FUTURE



*Ross Ricciarelli hauling gear at his father Louis's oyster culture site. Photo by David Alves.*

## VISION STATEMENT

*Rhode Island becomes a globally recognized center for the development of sustainable, ecological aquaculture by the integration of its innovative farming and aquaculture business sectors with its world-class research, education, and outreach capabilities.*



*Starfish, a problem predator for cultured oysters.*  
Photo courtesy of RWU.

*A harvest from Shellfish For You, Quonochontaug Pond.*  
Photo by Marta Gomez-Chiari.





# RHODE ISLAND AQUACULTURE INITIATIVE: A SHARED VISION FOR THE FUTURE

## INTRODUCTION

Aquaculture has a long history in Rhode Island. In the early 1900s, oyster culture generated the equivalent—in today's dollars—of \$50 million to \$90 million in revenue. But by mid-century, pollution, political problems, turf conflicts between aquaculture lease holders and capture fisheries, and natural disasters—notably, the hurricane of 1938—had decimated the state's aquaculture industry. Limited growing space and intensive competition for coastal access have hindered reestablishment of the industry over the years. Conflicts stemming from multiple uses of aquatic resources along an increasingly crowded coastline have thwarted accommodation of still more demands on coastal areas.

Yet despite these restrictions, aquaculture is experiencing resurgent growth in Rhode Island, with shellfish culture dominating marketplace activity. Much of the state's production is based in Rhode Island's south shore salt ponds—coastal lagoons whose exceptional productivity promotes fast growth and excellent flavor. Excellent water quality in areas of Narragansett Bay and in Block Island and Rhode Island sounds also contributes to a consistently high-caliber product. The superb quality of Rhode Island's aquaculture products assures premium prices, boosting the value of the state's aquaculture harvest despite the industry's small size.

Legislative interest has acknowledged industry potential through establishment of a Legislative Commission on Aquaculture and the introduction of aquaculture reform legislation. And national support has significantly accelerated industry development through a \$1.42-million Rhode Island Aquaculture Initiative provided through the efforts of U.S. Sen. Jack Reed, with strong local backing from R.I. Rep. Eileen Naughton.



## Harvest Value

*Rhode Island's aquaculture products are acknowledged for their exceptional quality, commanding premium prices. The Rhode Island Coastal Resources Management Council assesses the gross value of the state's aquaculture harvest at more than \$8,000 per acre for 2003. In comparison, land-based agriculture in Rhode Island earns a little more than \$640 per acre.*

*A quality product from Moonstone Oysters.  
Photo by Robert Rheault.*



*Floating upweller powered remotely by a generator.  
Photo by Robert Rheault.*

## Recent Growth

*Aquaculture has been slow to gain a foothold in Rhode Island. Limited to the production of shellfish—primarily oysters and hard clams—the state's industry is small even in comparison to the industries of neighboring Connecticut and Massachusetts. Nationally, Rhode Island ranks near the bottom of the 50 states in aquaculture production.*

*But a more competitive industry is in the making. From about \$90,000 in sales in 1996 to \$550,000 in sales in 2003, aquaculture in the Ocean State has grown steadily. From six farms on about 9 acres in 1996, the industry had expanded to cover 61 acres with 20 working farms by 2003.*

## A legislative boost

*Legislative support for aquaculture has advanced industry growth in Rhode Island through establishment of the Legislative Commission on Aquaculture and the introduction of aquaculture reform legislation.*

*Significant financial and developmental support energized the industry in 2002 with the \$1.42-million Rhode Island Aquaculture Initiative secured through the National Oceanic and Atmospheric Administration by U.S. Sen. Jack Reed.*

## THE RHODE ISLAND AQUACULTURE INITIATIVE

A thriving aquaculture industry in Rhode Island requires connections and commitments that capitalize on, augment, and strengthen existing resources and relationships while minimizing user conflicts. The industry can encourage a productive aquaculture environment by pioneering positive connections between capture fisheries and aquaculture farmers. By supporting collaborative projects among farmers and educational and technological institutions, the industry can promote invention of technologies suitable for Rhode Island's environmental and cultural landscape. By strengthening human resources through maintenance of the existing investment and through the addition of aquaculture business-management expertise, the industry can provide the technical know-how and practical assistance to support robust entrepreneurship. And by developing economically viable and educationally appropriate aquaculture demonstration sites, the industry can provide an infrastructure blueprint to encourage and guide new aquaculture endeavors.

The Rhode Island Aquaculture Initiative is working to advance Rhode Island's standing in world aquaculture by focusing the state's academic, scientific, industrial, and regulatory resources on development, promotion, and management of a competitive aquaculture industry. In the context of the strategic plan, the Initiative's executive committee is shaping the future of Rhode Island aquaculture in its considerations for the next round of investment in Initiative projects. These investments work to promote diversification and innovation in the industry in ways that maintain and enhance Rhode Island's coastal and marine environments and assure compatibility with the state's vital commercial capture fisheries.

Right: Oyster farmer Rob Krause (left) and extension agent Dale Leavitt assessing samples from Krause's lease site.  
Photo by Marta Gomez-Chiarri.



Left: Collecting clams for a survey of bivalve diseases. Photo by Marta Gomez-Chiarri.

Industry-related research and capacity-building projects funded through the Initiative have expanded Rhode Island's aquaculture presence into classrooms, public works, and specialty markets as well as traditional food-production enterprises. Through multiyear appropriations and short-term mini-grants, the Initiative encourages bold experiments with potential impacts on the entire industry as well as smaller scale innovations pertinent to a single farm. The Initiative has directed approximately \$536,000 (\$513,000 in research awards and \$23,000 in industry-targeted mini-grants) to widely varied research and development projects. Production projects take advantage of applied, industry-relevant aquaculture science by generating new techniques or new gear, encouraging experimentation with new species, and enhancing the efficiency and output of fish farms.

## RHODE ISLAND AQUACULTURE INITIATIVE GOALS

To realize the full potential of Rhode Island's aquaculture industry, the state is applying its natural, human, and economic resources to two specific goals:

1. Promoting a balance in jobs and growth within traditional and nontraditional industry sectors; growing aquaculture while respecting Rhode Island traditions and culture; building and supporting partnerships; developing techniques that improve aquaculture productivity in harmony with other uses of the resource and the environment
2. Fostering a linked global and local approach to the development of nontraditional futuristic aquaculture businesses by creating an environment that enables innovative aquaculture development

## A Mandate for Growth

The mandate of the Rhode Island Aquaculture Initiative is to assist the growth, expansion, and diversification of the aquaculture industry in Rhode Island. The following overarching goals of the Initiative are focal points for revitalization of the aquaculture industry:

- Increasing the number of farmer entrants and related technological and manufacturing companies
- Increasing incomes and job opportunities in aquaculture and aquaculture support industries in Rhode Island
- Building new partnerships, reinforcing existing collaborations, and enhancing cooperation between federal-state-university and industry stakeholders to develop sustainable aquaculture in Rhode Island

## Collaborative strength

*A major accomplishment of the Initiative has been development of a unique collaboration among federal, state, academic, commercial fisheries, and aquaculture interests in Rhode Island. This collaborative strength has furthered the industry while ensuring that the future of aquaculture will fit into the unique cultural and natural environment of Rhode Island.*



*Shellfish farmers sort through a cage of oysters. Photo courtesy of Perry Raso.*



*Generator and battery bank for powering floating upweller systems in remote locations. Photo by Robert Rheault.*





*Former Coastal Fellow Meggan Dwyer processing oysters for a shellfish disease survey. Photo by Marta Gomez-Chiarri.*

- Creating new institutional linkages by enhancing extension and outreach capacities to encourage growth of the state's aquaculture industry
- Accelerating applied, industry-relevant, cooperative research between universities and industry
- Promoting Rhode Island aquaculture by enhancing communications and public outreach
- Assisting in the organization of public aquaculture efforts among state and federal agencies and the industry to restore and invigorate commercial and recreational shellfish harvests in Rhode Island waters
- Clarifying the economic, environmental, and social benefits of aquaculture for consumers

## A STRATEGIC PLAN FOR RHODE ISLAND AQUACULTURE

The vision statement of the Rhode Island Aquaculture Initiative encapsulates a broader strategic plan whose specific goals, objectives, and actions are directed toward building the aquaculture industry in Rhode Island to a position of national and international recognition. Inherent in both the vision and the strategy is a determination to rejuvenate aquaculture with enterprises consistent with the state's cultural and social structure.

### Opportunities and Needs

The aquaculture industry in Rhode Island recognizes the need for stable investment as a strategy for continued growth in established areas, and for diversification into new ventures to ensure long-term viability. Rhode Island aquaculture has grown slowly but steadily in recent years as traditional fishing and shellfishing families have integrated wild harvest with culture practices. Additionally, interest has expanded to inland areas, which present opportunities for innovative approaches to aquaculture. Rhode Island has the resources in place to cultivate a modern, knowledge-based industry that advances the development of aquaculture worldwide in a sustainable and ecologically and socially responsible manner.

*Farmer Louis Ricciarelli instituting new cage methodology using PVC cages. Photo by David Alves.*

*Right: Former URI fisheries student and Coastal Fellow Josepha Dougal preparing oyster tissue for histological examination. Photo by Marta Gomez-Chiarri.*











RWU shellfish hatchery manager Karin Tammi collecting broodstock. Photo by Marta Gomez-Chiarri.

## ACCOMPLISHMENTS AND PROGRESS

Creation of the Aquaculture Initiative's executive committee established an infrastructure of leadership to reinvigorate the aquaculture industry and nurture its expansion. The committee's support of diverse projects and the pioneering advances achieved through these projects construct a sturdy framework on which to build the industry.



### Initiative Accomplishments

*Achievements of the Rhode Island Aquaculture Initiative confirm Rhode Island's capacity to support an innovative aquaculture industry and establish a solid foundation for future development:*

- *Extension positions provide expertise in finfish and shellfish culture to advance aquaculture efforts in a production setting*
- *A finfish aquaculture demonstration center at the University of Rhode Island offers working examples of commercial aquaculture applications*
- *Aquaculture education familiarizes middle school- through college-age students with the mechanics, impacts, and potential benefits of aquaculture*
- *Shellfish enhancement augments wild populations to expand the commercial harvest*
- *Geographic Information System (GIS) maps plot various uses of Rhode Island waters to inform future development decisions*
- *A marine ornamental aquaculture research center assesses the economic potential of commercial-scale ornamental aquaculture for Rhode Island*
- *Initial work toward a marine technology and aquaculture center advances prospects for a marine biotechnology industry in Rhode Island*
- *Inclusion of members of the Initiative's executive committee on the Rhode Island House of Representatives Commission on Aquaculture ensures a voice for industry interests*
- *Sponsorship of state and regional aquaculture conferences and expos extends knowledge of aquaculture to multiple constituencies*



A handful of seed that will become tomorrow's harvest. Photo by David Alves.



## Rhode Isl and Aquaculture Initiative Grants Research Awards

### 2002

- *Habitat value of shellfish aquaculture gear, \$100,028*  
Graham E. Forrester, University of Rhode Island  
Robert Rheault, Moonstone Oysters
- *QPX in Rhode Island Quahogs, \$49,100*  
Marta Gomez-Chiarri, University of Rhode Island  
Roxanna Smolowitz, The Marine Biological Laboratory  
Timothy Scott, Roger Williams University
- *Development of a marine ornamental aquaculture research center in Rhode Island, \$125,400*  
Bradford Bourque, Roger Williams University  
Harold Pomeroy, Roger Williams University  
Kurt Harrington, Something Fishy, Inc.
- *Ocean State aquaculture education project: Building a better community through aquaculture education, \$104,000*  
Perry Raso, Ocean State Aqua Farm  
Alicia Thayer, South Kingstown High School

### 2004

- *An evaluation of currently available disease-resistant oysters for use in Rhode Island oyster farms, \$99,100*  
Marta Gomez-Chiarri, University of Rhode Island  
Dale Leavitt, Roger Williams University
- *Survey of bivalve diseases in Rhode Island farms, \$35,164*  
Marta Gomez-Chiarri, University of Rhode Island



Launching the Rhode Island Aquaculture Initiative at the signing of the Memorandum of Understanding, from left: Rhode Island Sea Grant Director Barry Costa-Pierce, URI President Robert L. Carothers, RWU President Roy J. Nirschel, U.S. Sen. Jack Reed, R.I. Coastal Resources Management Council Chair Michael Tikoian, R.I. Rep. Eileen Naughton, and Ocean State Aquaculture Association President Bill Silkes. Photo courtesy of RWU.



Mashantucket Pequot Tribal Council members visiting the RWU wet lab to see their donated equipment in operation, from left: Councilor Richard E. Sebastian, Chairman Michael Thomas, university President Nirschel, Councilor Rodney Butler, Council Secretary Charlene Jones, and Council Treasurer John E. Perry, with the university Center for Economic and Environmental Development Director Timothy M. Scott. Photo courtesy of RWU.



Touring the aquaculture facility at RWU, from left: Anne Rheault, Moonstone Oysters owner Robert Rheault, Shellfish For You owner Jeffrey Gardner, Salt Water Farms owner Todd Corayer, Coastal Resources Management Council Chair Michael Tikoian. Photo courtesy of RWU.

Rhode Island is seizing aquaculture's potential.



Students documenting shellfish samples at RWU. Photo courtesy of RWU.



Oysters growing out to market size. Photo by Robert Rheault.



Brand new aquaculture wet lab at RWU. Photo courtesy of RWU.

## Rhode Isl and Aquaculture Initiative Grants Mini-Grant Awards

### 2003

- Scallop and soft-shell clam grow-out in Narragansett Bay, \$3,000  
Russell E. Blank and William Blank, Commercial Shellfishermen and Shellfish Farmers
- Mussel declumper with modifications for oyster hopper and market grading module, \$3,000  
Todd Corayer, Salt Water Farms, LLC
- Starfish predation control in oyster culture cages, \$275  
Rob Krause, Aquaculture Products by Krause, Inc.
- Scallop container grow-out in Narragansett Bay, \$3,000  
Louis Ricciarelli, Commercial Shellfisherman and Shellfish Farmer
- FLUPSY Genset for remote locations, \$2,000  
Robert Rheault, Spatco, Ltd.
- Surf clam grow-out in Narragansett Bay, \$2,000  
Kenneth Thompson, Commercial Shellfisherman
- Integration of wind turbine with photovoltaic-powered upwellers, \$1,700  
Christopher Warfel, Shellfish Farmer

### 2004

- Development of an electronic fish counting system, \$1,750  
Dale Leavitt, Roger Williams University
- Underwater video camera and recorder to document habitat value of shellfish aquaculture gear, \$4,030  
Robert Rheault, Shellfish Farmer
- Extending the FLUPSY fleet of the Rhode Island Shellfishermen's Association, \$2,500  
Michael McGivney, Commercial Shellfisherman, and Save The Bay

Legislative support for aquaculture has advanced industry growth.



## Extension Positions

The hiring of two extension agents satisfies an essential objective of the Aquaculture Initiative. These agents ensure an integrated statewide approach to outreach to support the aquaculture industry with technical assistance and training, demonstration projects, species diversification, and market development. Knowledgeable in marine sciences and experienced in various aspects of aquaculture, the agents offer guidance and assistance for addressing issues such as disease or water quality as well as general information about species whose hardiness, growth rates, marketability, or pharmaceutical potential might make them attractive subjects for entrepreneurial efforts.

- Randy Mickley, the Initiative's finfish aquaculture extension agent, has generated projects and programs that advance Rhode Island's efforts in the expansion of finfish culture in a production setting. Mickley is housed at the University of Rhode Island's East Farm Fisheries Center.

- Dale Leavitt, the shellfish aquaculture extension agent, has conducted research and outreach that cultivate and promote expansion of the culture of shellfish in a production setting. Leavitt is an assistant professor at Roger Williams University, with a courtesy appointment in the University of Rhode Island fisheries, animal and veterinary science department.



Finfish extension agent Randy Mickley at the East Farm water garden. Photo by Tony Corey.



Baby clams growing in an upweller. Photo by Perry Raso.



Shellfish extension agent Dale Leavitt. Photo by Marta Gomez-Chiarrri.

## Extension Developments

- Reestablishment of a finfish aquaculture demonstration site at the University of Rhode Island East Farm campus opens indoor grow-out tanks and outdoor/greenhouse finfish aquaculture facilities to students and the interested public as working demonstration projects
- Construction of a water garden at East Farm emphasizes landscaping as an aquaculture business opportunity
- Research into the causes and prevalence of oyster disease and evaluation of available disease-resistant oysters for aquaculture use generates practical applications for the Roger Williams University extension effort
- Cultivation of a vegetable garden at the University of Rhode Island demonstration site makes use of fish waste for fertilizer, with produce from the garden going to the state's food bank
- Facility tours and demonstrations at both campuses inform interested individuals about biological considerations, culture techniques, and equipment development important to an aquaculture business
- Informational materials, presentations, and consultations bring the knowledge, experience, and creativity of the extension agents directly to entrepreneurs, students, and other interested individuals



Algal culture at RWU's wet lab. Photo by Tony Corey.

## Marine Technology and Aquaculture Center

The Marine Technology and Aquaculture Center will have the capacity to incubate biotechnology initiatives both by ensuring the resources necessary for such enterprises and by remedying problems such as waterfront access, complex permitting systems, and potential user conflicts. Along with structural accommodations, including laboratories, offices, greenhouses, and access to flowing seawater, the proposed multi-acre facility will offer support in the way of business, technical, and legal expertise. Especially significant will be the center's role in providing necessary operating permits to facilitate industry development and expansion. This center will be the first facility in the Northeast dedicated to promotion of emerging marine biotechnology industries.



Oyster farmer Todd Corayer sorting oysters at Salt Water Farms. Photo by Tony Corey.

## Instant Information: Maps and Websites

Aquaculture lease sites, oyster disease sampling sites, and anoxia-threatened areas are some sections of Rhode Island waters that can be pinpointed with the click of a mouse on an updated and enhanced Aquaculture and Fisheries Website and Internet Map Server. These electronic tools draw on academic, regulatory, and industry resources to visually document current uses of Narragansett Bay and adjacent waters to help guide future development decisions. Detailed GIS maps and data files, all downloadable, put current, practical information at the fingertips of managers and decision makers. In addition, interactive capability created through the Internet Map Server allows users to manipulate information layers depicting fisheries data, habitat data, environmental sensitivity information, and related facts in order to create their own maps.

...the first facility in the Northeast dedicated to promotion of emerging marine biotechnology industries.



GIS map depicting bathymetry of Rhode Island waters. Map created using RIGIS data by the URI Environmental Data Center with funding from the R.I. Aquaculture Initiative and URI Cooperative Extension.



## Marine Ornamental Aquaculture

The potentially lucrative production of clownfish, lined sea horses, and other ornamental species is the focus of a three-year project designed to assess the economic feasibility of commercial-scale marine ornamental fish culture in Rhode Island. Supporting a marine ornamental aquaculture research center at the Roger Williams University Center for Economic and Environmental Development, the project incorporates student research and education, collaborative studies, and marketing through partnerships with the university, with other research institutions, and with private business. This concentration of resources has advanced production procedures for several ornamental species, generating successful feed-production strategies, water-quality maintenance, spawning protocols, disease-prevention techniques, and market analysis.

The marine ornamentals market is a high-value growth market that fits Rhode Island's vision of a sustainable commercial enterprise congenial with the state's natural, cultural, and social environments.

## Aquaculture Education Project

Dissecting shellfish, researching filtration rates for different species of shellfish, investigating and designing alternative power sources for upwellers, Rhode Island students from grade 6 through college have been building a comfortable familiarity with aquaculture. The Ocean State Aquaculture Education Project: Building a Better Community Through Aquaculture Education integrates lessons about aquaculture into the science curriculum to enhance students' understanding of aquaculture's processes, practices, and benefits. Awareness of positive impacts, such as the water-cleansing properties of shellfish filter-feeding, promotes better community acceptance of aquaculture—one of the project's goals.

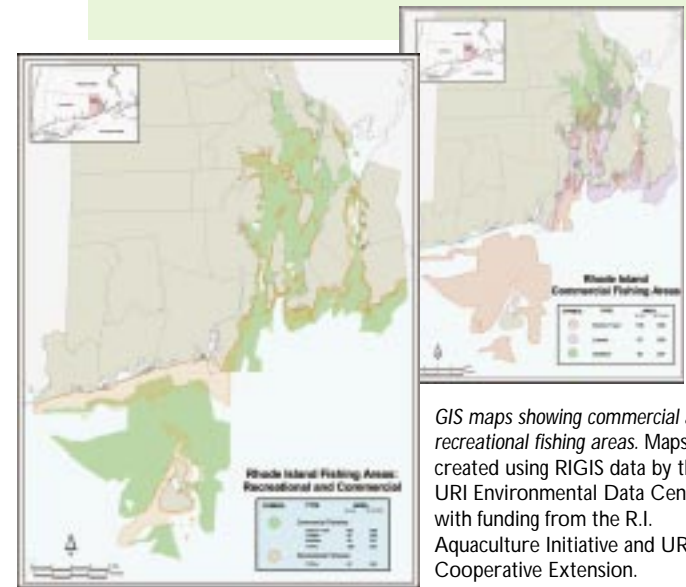
More than 2,000 students from Rhode Island middle schools, high schools, and universities are exploring the impacts and potential benefits of aquaculture during the project's first year. Opportunities ranging from introductory classroom lessons to model facility tours and hands-on shellfish filtration experiments to sample collection and lab work with research scientists bring aquaculture concepts into vivid relief.

### View Maps

View or download maps and data files of aquaculture lease sites, oyster disease sampling sites, Environmental Sensitivity Index information, and other water use details at <http://www.edc.uri.edu/fish/>.

### Create maps

Design maps displaying information tailored to specific interests at the Internet Map Server, <http://mapper.edc.uri.edu/website/rifish>.



GIS maps showing commercial and recreational fishing areas. Maps created using RIGIS data by the URI Environmental Data Center with funding from the R.I. Aquaculture Initiative and URI Cooperative Extension.



Aquaculture educator Perry Raso teaching young students with a food pyramid game. Photo courtesy of Perry Raso.



*Clownfish cultured at RWU's Marine Ornamental Aquaculture Research Center.  
Photo by Constance Brown Photographer.*



*Ornamental sea horses growing at RWU's Marine Ornamental Aquaculture Research Center.  
Photo by Constance Brown Photographer.*



## Shellfish Enhancement

A million-seed-clam aquaculture enhancement effort nurtures both productive commercial harvests and broader commitment to the state's still-developing aquaculture industry. The project taps the resources of the commercial shellfishing fleet—making use of the knowledge, the boats, the established markets, and the volunteered time of the Rhode Island Shellfishermen's Association—to generate both cooperation with the commercial shellfishing industry and a more bountiful catch for its members. As a public aquaculture enterprise, the project also finances upwellers for educational as well as commercial use. Youngsters participating in Save The Bay programs learn about aquaculture as they grow seed clams in their own upweller. These clams combine with those grown by shellfishermen in another project-funded upweller for transplanting in the wild, ultimately to be harvested by commercial shellfishermen.



*RWU professor and principal investigator Timothy Scott, left, encouraging Gov. Donald Carcieri, center, and R.I. Rep. Eileen Naughton as they toss ceremonial handfuls of seed clams into Potowomut Cove during "planting of the clams" activities for Scott's shellfish enhancement project. Photo courtesy of RWU.*



## Aquaculture Renaissance

From the heyday of Rhode Island's aquaculture industry in the early 20<sup>th</sup> century, when one-third of the Bay bottom was leased for oyster culture, through the industry decline in mid-century, through the moribund period during the latter half of the 20<sup>th</sup> century, the industry has come full circle. Spurred by new regulations that recognize differences between aquaculture and wild harvest; by a more streamlined permitting process and the commitment of resources to an aquaculture coordinator; by the use of less contentious techniques, such as under-dock cage culture; and by wide-ranging economic development possibilities, Rhode Island is seizing aquaculture's potential. The renaissance now under way bodes well for a revitalized industry that conquers historical obstacles and fully utilizes the abundant scientific, technical, entrepreneurial, and natural resources the state affords.



*Jeffrey Gardner hauling up an oyster cage at his farm with extension agent Dale Leavitt. Photo by Marta Gomez-Chiarri.*

Rhode Island's aquaculture products command premium prices.

## Executive Committee Membership

- *David Alves, Executive Committee Chair, Rhode Island Coastal Resources Management Council*
- *David Bengtson, Fisheries, Animal and Veterinary Science, University of Rhode Island*
- *David Beutel, Rhode Island Sea Grant, University of Rhode Island Fisheries Center*
- *Ames Colt, Rhode Island Sea Grant College Program*
- *Barry Costa-Pierce, Rhode Island Sea Grant College Program*
- *Dale Leavitt, Roger Williams University*
- *Michael McGiveney, Rhode Island Shellfishermen's Association*
- *Michael Rice, Fisheries, Animal and Veterinary Science, University of Rhode Island*
- *Robert Rheault, Moonstone Oysters*
- *Timothy Scott, Center for Economic and Environmental Development, Roger Williams University*
- *William Silkes, American Mussel Harvesters, Inc.*

For more information and initiative updates, see the Rhode Island Aquaculture Initiative website at: <http://seagrant.gso.uri.edu/research/rhodyaquaculture/rhodyaquaculture.html>

*URI student and Coastal Fellow David Hudson preparing to place a fish trap for a project testing the habitat value of shellfish aquaculture. Photo by Jessica Tallman.*

*(Inserts) Tagging and measuring tautaug. Photos by Jessica Tallman.*

*Opposite page: Chelsea Ricciarelli sorting shellfish harvested from her father Louis's farm off Wild Goose Point. Photo by David Alves.*









Clownfish. Photo by Constance Brown Photographer.

## Rhode Island Aquaculture Initiative: A SHARED VISION FOR THE FUTURE

