



Aquaculture in Rhode Island

2003 Yearly Status Report

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A snapshot of the Aquaculture Industry in Rhode Island

For the year 2003

- The 2003 farm gate value of Rhode Island raised aquaculture products rose 16%.
- This is the 7th double-digit increase in the past 8 years.
- The number of farms in Rhode Island increased by two to 20.
- The total acreage under cultivation in Rhode Island rose to 61 acres.
- Aquaculture related industries in Rhode Island had gross revenue of \$5.5 million dollars during the calendar year 2003. This was a 28% increase from 2002.
- The total contribution of aquaculture to the economic bottom line of the State of Rhode Island was \$6 million dollars.
- Regulatory agencies charged with responsibility for aquaculture continued to make progress in streamlining the permitting process.
- Regulatory agencies continued to involve stakeholders in the planning and regulation of aquaculture during the year 2003.
- The East Coast Shellfish Grower's Association was formed.
- The Rhode Island Aquaculture Initiative continued to make investments for the future of RI aquaculture.

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Introduction

Aquaculture in Rhode Island continues to be a very dynamic, albeit small, industry. The year 2003 continued the record of growth. The value of product harvested increased by 16.5% from the previous year. The American oyster was the predominate species of shellfish grown accounting for 97% of the total harvest. The hard clam being the only other species cultivated in any numbers making up 3% of the total harvest. Oysters harvested increased 28% from the previous year, clams saw an increase of 28% harvested as compared to 2002. For the fifth year 100% of all Rhode Island grown aquaculture products were shellfish. The number of farms under lease increased to 20. The acreage under lease increased to 61.

The Rhode Island Aquaculture Initiative, funded during 2002, continues to provide an investment in the future growth of the industry in Rhode Island. Competitions for research grants and mini-grants for growers were held with the best grants receiving funding. Two aquaculture extension positions that were funded in partnership with Roger Williams University and the University of Rhode Island provide very real benefits to the industry and to prospective participants. This initiative has been successful in helping the industry build infrastructure for continued future growth.

Research at the universities continued to be an important part of aquaculture in Rhode Island. Not including the money from the Rhode Island Aquaculture Initiative, the universities brought in almost \$2 million dollars in outside grants, and tuition for students studying aquaculture related subjects.

The seventh annual Rhode Island Aquaculture Conference was held at the URI Alton Jones Conference Center in 2003. The cooperative effort brought in speakers from the region and

Canada. The biggest surprise was the realization that Rhode Island is doing quite well as compared to neighboring states in regulation of the industry. In the past Rhode Island growers had been very concerned that the state was being a hindrance to industry growth. Efforts by the industry and the various governing agencies in Rhode Island over the past few years to rationalize regulations have paid off. Rhode Island has revamped almost all of the aquaculture regulations in the past four years and is now a model for other states. The situation is much better than in the recent past and all concerned realize that it can continue to improve.

A quick explanation on how the numbers cited in this report were derived.

Harvest figures came from the yearly CRMC aquaculture questionnaire distributed to all lease holders. All reports are taken at face value and no further queries are made of the farmer. Monetary figures for this report were calculated by averaging an estimated yearly average price from multiple sources. This figure was then multiplied by the numbers reported by growers in the yearly CRMC report to arrive at the figures used in this report. Figures from the aquaculture associated industries came from the principals involved in these privately held companies. The figures cited are for gross sales of aquaculture related products. The statistics cited for the universities were supplied by the universities.

Farm Production

The farm gate value of Rhode Island grown shellfish increased 16.5% from the previous year. This increase came after a 60% increase in product sold in 2002. This increase puts the Rhode Aquaculture back on track of double digit increases for seven of the past eight years. (Please see Table 1 and Graph 5). The 2003 farm gate value is estimated to be \$556,326, up from \$478,160.00 in 2002 and \$299,998.00 in 2001 (Please see Graph 1).

Again in 2003 100% of all Rhode Island aquaculture production was shellfish. The dominate species was again the American oyster with 1,163,589 pieces being sold (see Graph 2). This is a 28% increase from the previous year which resulted in an increase of 21% (see Graph 3) in value of the oyster production. The difference in the percentage production increase and value is due to differences in amounts sold retail versus wholesale and a softening of prices due to the slow economy. Clam production was down sharply with a 73% decrease in harvest (see Graph 2) which resulted in a 74% decrease in value (see Graph 3).

The number of farms active in Rhode Island Aquaculture increased in 2003 to 20 active farms. This number was a result of two new farms joining the ranks. This resulted in an increase in acreage under cultivation to 61 acres (see Graph 4). The production per acre of aquaculture in Rhode Island was \$9,120 which was an increase from \$8,896 for the 2002 year.

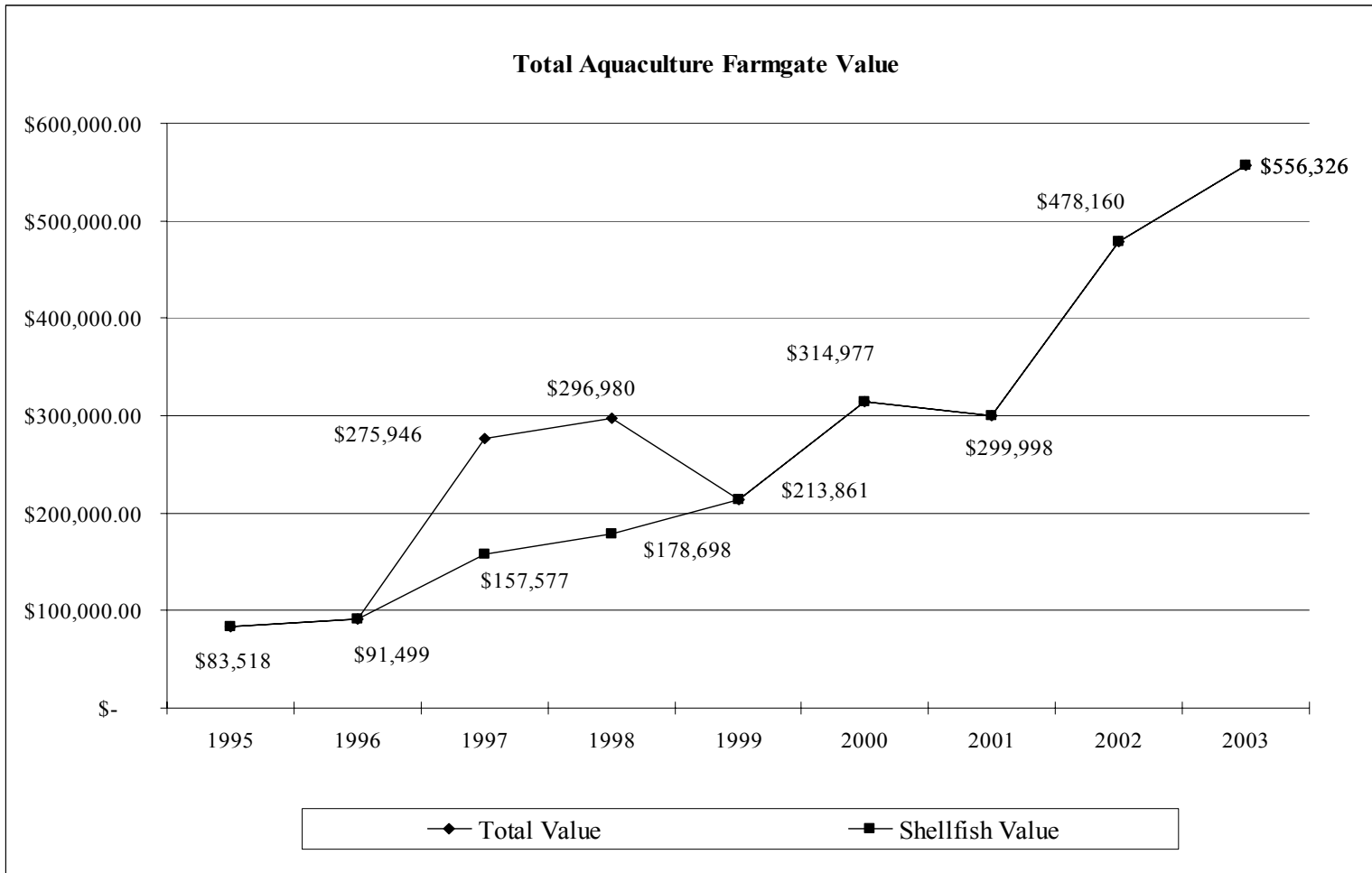
The farm related employment fell slightly. In 2003 there were 10 full-time year-around and 14 part-time year-around seasonal people employed in Rhode Island aquaculture. Employment increases a bit during the summer with Rhode Island aquaculture farms hiring 1 full-time seasonal and 14 part-time seasonal workers.

For the first time the question was asked of growers of how much they invested in their farms during 2002. The reports indicate that growers invested \$271,000 into their aquaculture farms in Rhode Island. This is an almost 50% return into the farms of the gross sales for the year.

Table 1

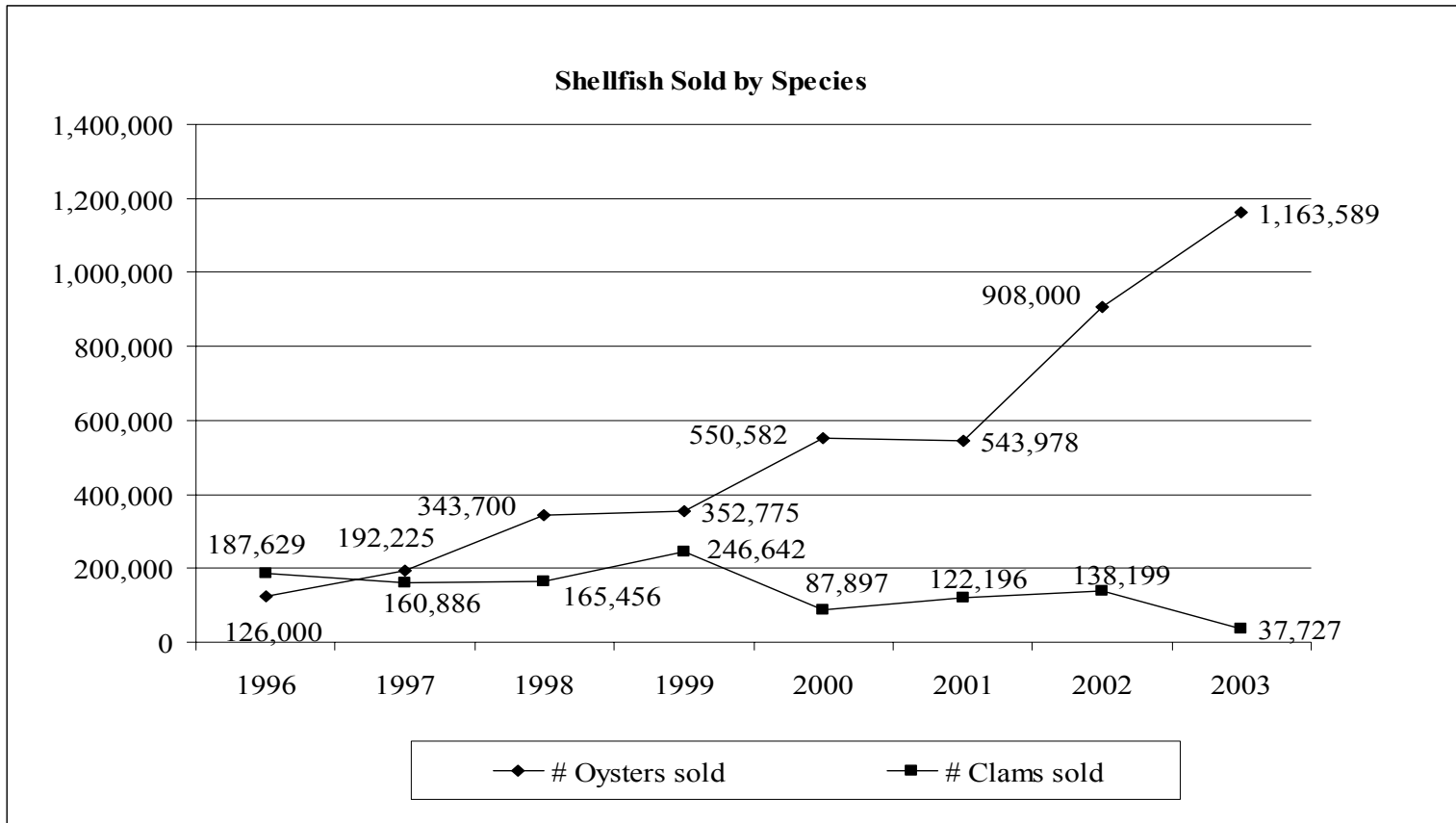
Year	Percent Change in Farm Gate Value from Previous Year
1995-1996	9.6%
1996-1997	72%
1997-1998	13%
1998-1999	20%
1999-2000	47%
2000-2001	-4.7%
2001-2002	59%
2002-2003	16.5%

Table 1 shows the percentage change of the farm gate value of aquaculture shellfish production in Rhode Island. See Graph 1 for overall production figures.



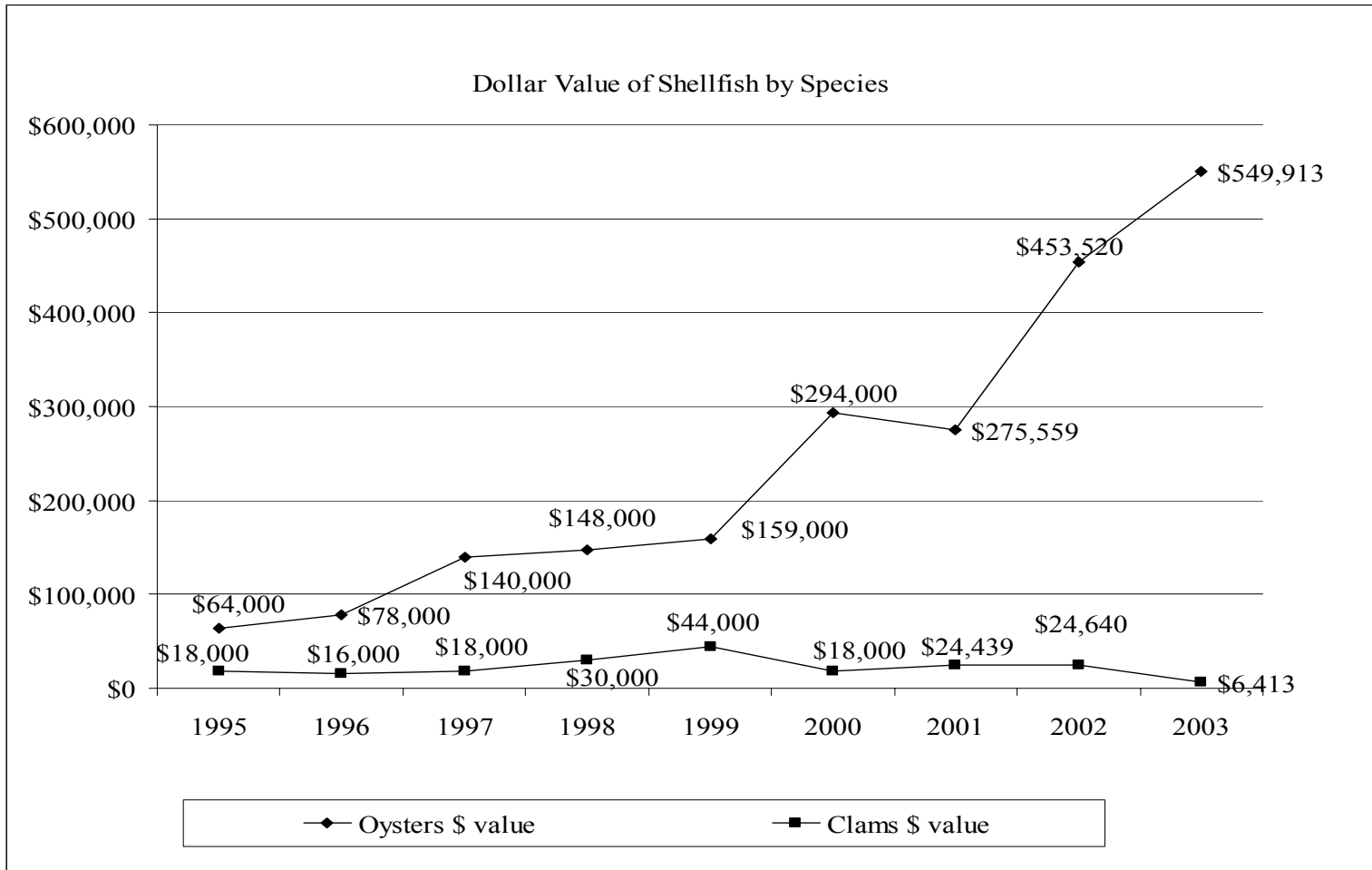
Graph 1

In 2003, total Rhode Island aquaculture production increased 16.5%. The total value indicated for the years 1997 and 1998 includes a retail ornamental finfish operation that was in business for those two years only. In all other years 100% of Rhode Island aquaculture production is in shellfish.



Graph 2

The American oyster is the dominant species cultured in Rhode Island waters. Oyster production accounted for 97% of the total Rhode Island aquaculture production. Grower's reported 1,163,589 oysters were sold in 2003, an increase of 28% from 2002. The culture of quahogs has decreased sharply with approximately 37,727 being produced in 2003, a decrease of 73% from 2001.



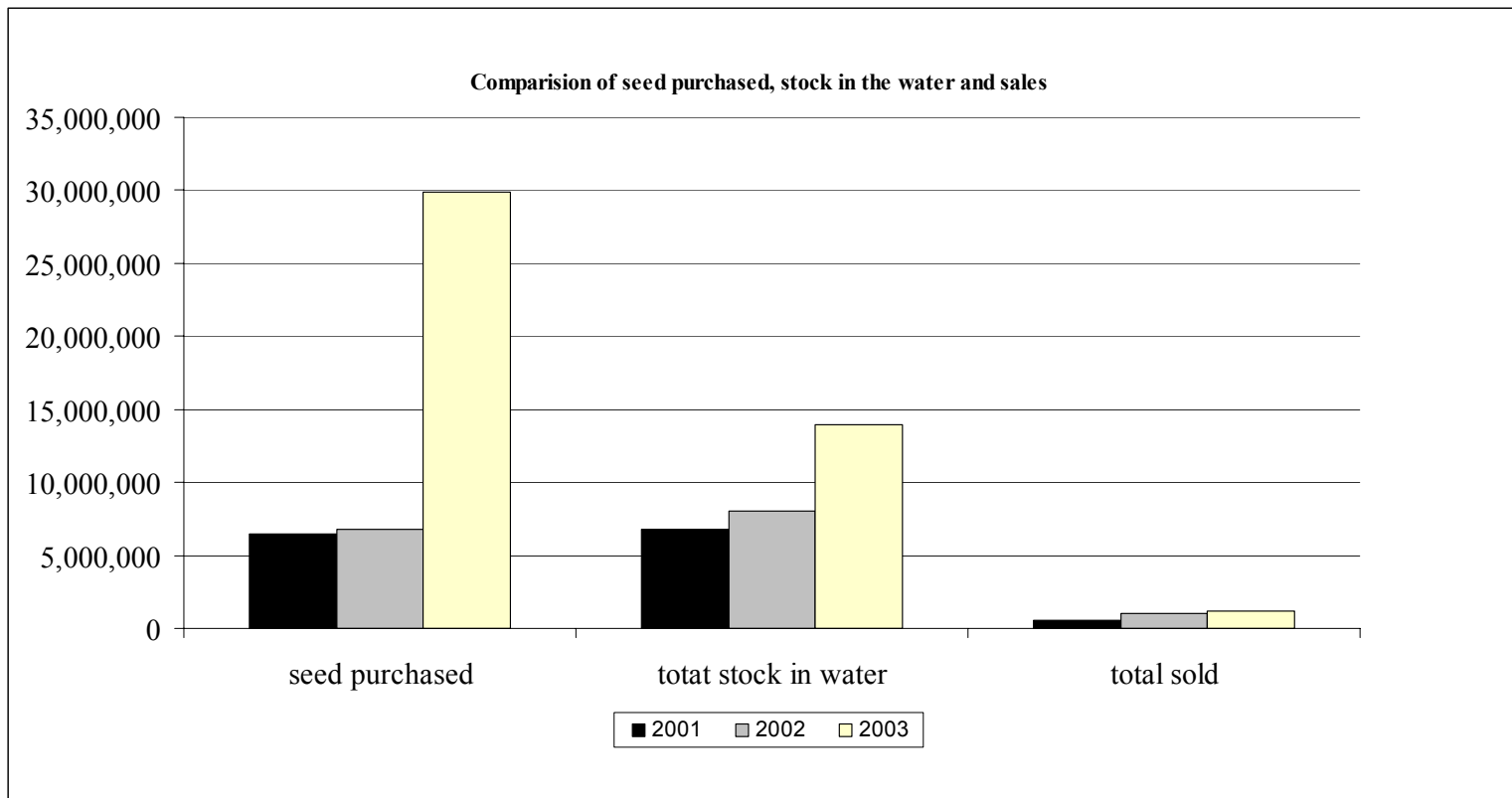
Graph 3

Graph 3 indicates the relative value of the shellfish production in Rhode Island for 2003. The increase in value of oysters from 2002 was 21%. The decrease in value of quahogs was 74%.



Graph 4

There were two new leases established during 2003. The totals for 2003 are 61.13 acres under cultivation and 20 permit holders (not including commercial viability, educational and research permits).



Graph 5

This graph shows the relationship between seed bought in a single year, the number of animals in the water on aquaculture farms and the numbers of shellfish sold. This graph indicates possible future animals available for harvest in coming years. Mortality of 40-50% per year is not uncommon in the shellfish industry. It also shows the growth and increased investment and stock on the farm in 2003.

Aquaculture Related Industries

It is the other aquaculture related industries in Rhode Island that are the largest contributors to the state's economic bottom line. These industries include distribution of aquaculture product (fish and shellfish), and the manufacturing of aquaculture products to be used on farms. There are a number of small privately held companies in the state that fit into this category. These companies did a gross total of \$5,500,000 in business in the state, an increase of 28% from the 2002 numbers. These companies employ 30 full time employees, an increase of 25% from 2002.

Not only do these companies serve local and regional farmers, but they also export internationally. This increase is especially impressive when the fact that one of the companies doing business in the state who contributed to this report two years ago continues to decline to contribute to this report this year. The aquaculture-associated industries within Rhode Island have contributed to the economic well being of the state. As the industry grows, in Rhode Island, the nation, and the world, this sector of the industry will continue to contribute economically.

The Universities

The State of Rhode Island is home to two universities that conduct aquaculture education and research; the University of Rhode Island and Roger Williams University. Each is recognized for both quality education and research. This recognition translates into grant monies flowing into the state in order to conduct aquaculture related research.

The universities continue to be centers of excellence in the field of aquaculture. The University of Rhode Island employs internationally known and respected researchers in the field. Roger Williams University continues to compliment the efforts of URI in the aquaculture arena

and is growing into a center of excellence on its own. Both universities contribute greatly to the state's economic bottom line and to supporting a viable aquaculture industry.

The University of Rhode Island has professors that are recognized as world class in many fields of aquaculture research. The university is a great resource to the state and brings in research dollars, undergraduate and graduate students from around the world. We are fortunate to have Dr. Michael Rice, Chair of the Department of Fisheries, Animal and Veterinary Sciences, contribute the following description of the aquaculture research and projects that URI conducted in 2003.

Aquaculture Activities at the University of Rhode Island – 2003

Aquaculture at the University of Rhode Island in 2003

Michael A. Rice

Dept of Fisheries, Animal and Veterinary Science

During the calendar year 2003, there was considerable activity in the areas of aquaculture instruction, research and extension at the University of Rhode Island. Various aspects of aquaculture research have been undertaken cooperatively by several units within the University, including the Graduate School of Oceanography, the College of Business

Administration, and, in the College of the Environment and Life Sciences, the Departments of Cell and Molecular Biology, Environmental and Natural Resource Economics, Fisheries, Animal and Veterinary Science, Natural Resources Science, and Nutrition and Food Science . Notable research during the year included continuation of work in the laboratory of Dr.

Jennifer Specker to elucidate the hormonal control mechanisms of reproduction and development in fishes, as well as continuing work on development of suitable culture methods and diets for cod and black sea bass in the laboratory of Dr. Terence Bradley. Work on the characterization of specific proteins acting as indicators of osmotic (salinity) stress in salmon also continued in the Bradley lab. In the laboratory of Dr. Marta Gomez-Chiarri, studies on bacterial disease in flounder and studies of DNA vaccines for fish and shellfish continued. Studies to optimize diets for summer flounder and to develop new diets using squid hydrolysate were carried out in the laboratories of Dr. David Bengtson and Dr. Chong Lee. Studies on the impacts of oyster culture on aquatic species diversity was carried out in the lab of Dr. Graham Forester and work to determine the impacts of oyster culture on various measures of water quality was completed in the lab of Dr. Michael Rice. Notable aquaculture economic research was carried out by Dr. James Anderson who chaired a National Research Council panel analyzing of the

potential economic impacts of the introduction of a Japanese species of oyster to Chesapeake Bay. Dr. Robert Comerford's work to analyze the financial structure of aquaculture businesses in the Northeastern United States will be contributing to the strengthening of aquaculture businesses and open up greater possibilities for business capitalization. During 2003, approximately \$1.92 million in external grant funds were obtained by URI scientists for aquaculture research projects, including several multi-year grants (Source: URI Research Office Data).

Key aquaculture extension /outreach activities by URI Faculty and staff include the reestablishment of a freshwater finfish aquaculture demonstration project at East Farm by Aquaculture Extension Agent Randall Mickley, and a shellfish aquaculture course for the general public cooperatively managed by Extension Agent David Beutel of URI and Dr. Dale Leavitt of Roger Williams University. The Seventh Annual Rhode Island Aquaculture Conference was held October 23-24 at the University of

Rhode Island W. Alton Jones Whispering Pines Conference Center. As in past years, the conference was a cooperative effort of multiple sponsors, including Cooperative Extension, RI Sea Grant, the Northeastern Regional Aquaculture Center, Roger Williams University, CRMC and The RI Legislative Commission on Aquaculture. This year's conference featured a keynote speaker Dr. Sandi McGeachy from the New Brunswick Department of Agriculture who gave an overview of efforts to culture eels in Western Europe and Canada. Other topics included business planning, shellfish disease management, reports from aquaculture extension agents from nearby states, aquaculture as a tool for shellfishery management and updates on projects funded by the Rhode Island Aquaculture Initiative. During 2003 major funding for aquaculture extension at URI came from Rhode Island Sea Grant, Rhode Island Cooperative Extension and the Rhode Island Aquaculture Initiative.

Academic programming in aquaculture at the University of Rhode

Island remained strong during 2003 with 57 enrolled undergraduates and 10 bachelor's degrees in Aquaculture and Fisheries Technology awarded (Source: URI Registrar). In 2003, there were 10 students studying for master's degrees in aquaculture, and 4 Ph.D. students in aquaculture. There were 4 master's degrees awarded (Source: Annual Report, Fisheries, Animal & Veterinary Science Department, URI).

One of the most significant developments for Aquaculture Programs at URI is the beginning of construction of the Blount Aquaculture Research Laboratory at the URI Narragansett Bay Campus. With major funding from the U.S. Department of Agriculture and matching funds from URI and Mr. Luther Blount of Warren, RI the laboratory is slated for opening in summer 2004. The facility should provide URI researchers much greater opportunities to undertake research on marine finfish and shellfish with the capability of studying marine fish diseases in a properly contained environment.

Roger Williams University has been investing in the future of Rhode Island aquaculture. This university is fast becoming a recognized center of excellence in the field, giving the state two universities active in aquaculture. We are fortunate to have the Director of the Roger Williams University Center for Economic and Environmental Development, Dr. Timothy M. Scott provide this report with the following project summary for the activities conducted during 2002.

Roger Williams University
Center for Economic and Environmental Development (CEED)

Project Summary (April, 2003)

Dr. Timothy M. Scott, CEED Director

Staff: Dr. Timothy M. Scott, CEED Director
Dr. Dale Leavitt, Aquaculture Faculty
Brad Bourque, Marine Laboratory
Karin Tammi, Shellfish Hatchery

Additional Roger Williams University Faculty in specific aquaculture-related projects:

Dr. Skip Pomeroy	Marine Biology	Tropical Fish Breeding
Dr. Andrew Tate	Marine Biology	Winter Flounder Enhancement
Dr. Stephen O'Shea	Environmental Chemistry	Environmental Monitoring
Dr. Scott Rutherford	Environmental Science	Environmental Monitoring

Projects: About 30 undergraduate students are involved in these projects.

Enhancement and Restoration Studies:

An on-going set of studies designed to 1) demonstrate the economic potential of *Public Benefit Aquaculture*, where shellfish seed are planted into the bay for subsequent harvest by commercial and recreational shellfishermen, and 2) introduce methods to reestablish commercially viable populations of scallops and oysters to Narragansett Bay. This project has been funded by grants from the Department of Commerce (\$30,000) and the RI Aquaculture Initiative (\$100,000). Participants include commercial shellfishermen, researchers with the University of Rhode Island (URI), National Marine Fisheries Service (NMFS) and the RI Coastal Resources Management Council (CRMC). In 2003 we began studies on tagging of juvenile winter flounder to examine methods to enhance the population of this species in Narragansett Bay.

Marine Technology and Aquaculture

Center: In 2003, we published a Phase I report that examined the potential for developing a Marine Technology Center for Rhode Island. This concept is designed to

foster marine and aquaculture technology development from the laboratory to the marketplace. The facility would serve as an R&D/Business Incubator, and support the development of the marine biotechnology and aquaculture industries. The document is available from the authors and has also been posted on the CRMC web site. The citation is:

Scott, Timothy M., David Alves and David Bengtson (2003) Rhode Island Marine Technology and Aquaculture Center: Project Development and Economic Feasibility. RI Aquaculture Initiative Technical Report.

CEED is currently administering a Phase II study assessing the economic viability of constructing this center. Funding for this second study came from a consortium consisting that includes the RI Coastal Resources Management Council (\$6,000), the RI Economic Development Corporation (\$6,000), Roger Williams University (\$5,000), the Slater Center for Marine and Environmental Technologies (\$5,000), the University of Rhode Island (\$5,000), and Brown University (\$5,000). This study is

being administered by the Center for Economic and Environmental the RI Coastal Resources Management Council.

Shellfish Hatchery: Most coastal states support one to several commercial or municipal shellfish hatcheries for local production of shellfish seed. However at present, Rhode Island does not have a functioning hatchery and all seed production must occur out of state. In 2003, CEED received approval and support from the University to hire a Shellfish Hatchery Coordinator and begin shellfish production for use in local restoration efforts and experiments. Space and resource have been allocated, and in early 2004 we hired Karin Tammi as Shellfish Hatchery Coordinator. We anticipate the production of quahogs and eastern oysters in 2004, with several other species under consideration.

Tropical Fish Breeding: In our second year of study, we are investigating the development of a local tropical fish production facility. Preliminary studies suggest that the added cost of local

production will be offset by the increased survival that we realize by being close to the major markets along the Northeast corridor. In addition, many tropical fish destined for the aquarium trade are harvested from live coral reefs using techniques that devastate the reef community. By developing hatchery protocols for many of these fish, and working to restore endangered species, our effort will promote the conservation of these species. Funding for this project was provided by a grant from the RI Aquaculture Initiative (\$125,000).

Shellfish Extension: Dr. Dale Leavitt joined Roger Williams University as a Visiting Professor of Aquaculture in February, 2003. His role is to teach aquaculture, and to share his shellfish aquaculture expertise to a wider community of researchers, aquaculturists and the general public. Dr. Leavitt's position is supported, in part, by a three year grant from the RI Aquaculture Initiative (for \$175,000) and compliments a finfish aquaculture extension position that was funded by the same granting agency at URI. During 2003 Dr. Leavitt gave numerous

public presentations and workshops to an impressive array of public and private groups. Funding has been received for studies on QPX disease research (Woods Hole Sea Grant); Design of a fish fingerling counter (RIAI Minigrant).

Additional Projects include:

Administration of Mini- and Competitive Grant Programs funded by the RI Aquaculture Initiative
Hydroponics Demonstration Facility
Conversion of Cranberry Bogs to Fish Production

Rhode Island Shellfishermen's Association

One of the newest developments in Rhode Island aquaculture is the participation of traditional fishing groups. The Rhode Island Shellfisherman's Association has been particularly active in using aquaculture to enhance populations of shellfish in Narragansett Bay. Mr. Michael McGiveney, president of the association was gracious enough to provide the following description of their activities.

Rhode Island Shellfisherman's Association

The R.I.S.A. began a cooperative venture of growing Shellfish in upwellers for public enhancement. This effort, using funding from Rhode Island Aquaculture Initiative, involved the Shellfishermen working with Roger Williams University,

C.R.M.C., D.E.M. and Sea Grant to begin using aquaculture technology to grow clam seed to a predator proof-size were they can safely be transplanted into public waters.

The involvement of the commercial fishermen using aquaculture technology to

enhance a public resource is an important step in incorporating traditional harvesters into the aquaculture community. R.I.S.A. is now working on another project involving

shellfish upwellers combined with an educational component working with Save the Bay.

Rhode Island Sea Grant

Rhode Island Sea Grant has been very active in promoting aquaculture in Rhode Island. We are fortunate to have the following contributed by the executive director, Dr. Barry Costa-Pierce.

Rhode Island Sea Grant Aquaculture Engagements, 2003

Dr. Barry Costa-Pierce

In cooperation with the Rhode Island Coastal Resources Management Council, the Rhode Island Sea Grant College Program has administered the approximately \$1.4 million Rhode Island Aquaculture Initiative. Major elements of that administration during 2003 has been:

- Continuing oversight of research awards granted during 2002, totaling approximately \$600,000. RISG conducts a totally transparent, external, expert peer reviewed grant selection process. Pre- and full- proposals are reviewed by relevant external experts via mail review and via a

convened expert panel on behalf of the RI Aquaculture Initiative.

- Announcement to the community of interested persons of availability of another round of research awards took place during the fall of 2003, which drew in 14 pre-proposals. RI Sea Grant, using the process noted above, conducted peer review of the pre-proposals, and, working with the CRMC Aquaculture Coordinator and the RIAI Executive Committee, invited 8 applicants to submit full proposals. Nine full proposals were received for consideration in late

December of 2003. RI Sea Grant processed the proposals for external expert peer review. A panel was assembled and convened by RISG in March 2004 that provided advice and guidance to the CRMC Aquaculture Coordinator in making final decisions on award of funding for new research projects.

- Coordination of the Executive Committee of the Aquaculture Initiative, having convened 3 meetings during 2003, producing minutes of those meetings and coordinating action items and decisions made by the committee.

- Development and upkeep of the RI Aquaculture Initiative web site <http://seagrants.gso.uri.edu/research/rhodyaquaculture/rhodyaquaculture.html> via the RI Sea Grant Communications Office. A web site was put on line for the RI Aquaculture Initiative in 2002, and is updated regularly as appropriate. The web site was also used as a vehicle for dissemination of the research and mini-grants RFP announcements, as well as providing

electronic versions of all application materials for downloading to interested parties.

- RI Sea Grant was a major sponsor of the RI Aquaculture Conference held at the Alton Jones campus in October of 2003. RI Sea Grant staff made a presentation to attendees regarding the status of existing research projects, as well as status of the ongoing RFP process.

Other RISG efforts in aquaculture in RI during 2002 have been:

- RISG is the home for the Husbandry & Management Section of the international journal Aquaculture (Elsevier Press, Amsterdam, The Netherlands). RISG processed ~280 international manuscripts for Aquaculture in 2003.

- Publication of “Did You Know that Shellfish Aquaculture is Good for the Environment?” by the East Coast Shellfish Grower’s Association funded by the RIAI and RI Sea Grant.

- Continued development of a book, based on the talks given at the special National Urban Aquaculture Symposium held at the 2002 NACE symposium. The

book is to be published in 2004 by CABI Publishing of the UK, and is titled Urban Aquaculture.

The Rhode Island Aquaculture Initiative

In November 2001, at the 2nd Southern New England Aquaculture Conference it was announced that \$1.5 million, secured through the efforts of Senator Jack Reed, had been appropriated for planning and advancement of aquaculture in Rhode Island. The project has been entitled the “Rhode Island Aquaculture Initiative”. During 2002 a memorandum of understanding was reached with Rhode Island Sea Grant, Roger Williams University and the University of Rhode Island to oversee the day-to-day management of the grant. A multi-institutional executive committee comprised of Rhode Island state, university, industry, and other aquaculture leaders was formulated to determine priorities for projects to be funded with the \$1.5 million that Senator Jack Reed obtained for aquaculture development in Rhode Island. Funds are routed from the National Oceanic and Atmospheric Administration (NOAA) Office of Oceanic and Atmospheric Research to the Rhode Island Sea Grant College Program at the University of Rhode Island (URI) and managed by David Alves, Coastal Resources Management Council (CRMC) state aquaculture initiative coordinator, assisted by Barry Costa-Pierce, Rhode Island Sea Grant director, and Ames Colt, Rhode Island Sea Grant associate director. Rhode Island Sea Grant reports to the NOAA-Sea Grant Project Manager, Jim McVey, in Washington, DC. CRMC has signed a memorandum of understanding with Rhode Island Sea Grant, the University of Rhode Island, and Roger Williams University to manage this project.

RI Sea Grant has built and hosted a web page to encourage all who might be interested to keep abreast of the developments with the initiative. The address is:

<http://seagrants.gso.uri.edu/research/rhodyaquaculture/rhodyaquaculture.html>

Grants awarded

The Rhode Island Aquaculture Initiative has awarded \$600,000 toward aquaculture research and development in the state through a series of multi-year research grants and one-year "mini-grants." The next round of grant proposals will be solicited during the fall of 2004.

Rhode Island Aquaculture Initiative Multi-Year Research Grants

- Peter August, URI natural resources science professor, received \$149,983 over three years to enhance the Rhode Island Aquaculture and Fisheries Web page and Internet map server with up-to-date physical, chemical, and biological spatial data.
- Bradford Bourque, of Roger Williams University, Harold Pomeroy, Roger Williams University biology professor, and Something Fishy, Inc. received \$125,438 over three years to develop economically and environmentally sustainable land-based culture techniques for at least three species of marine ornamentals.
- Graham Forrester, URI biological sciences associate professor, and Robert Rheault, Spatco, Ltd. President, received \$100,028 over two years to evaluate the effects of aquaculture facilities on natural habitats and to describe the habitat values of shellfish aquaculture gear.
- Marta Gomez-Chiarri, URI fisheries, animal, and veterinary science assistant professor, Roxanna Smolowitz, Marine Biological Laboratory researcher, and Tim Scott Roger Williams University Center for Economic and Environmental Development director, received \$49,136 over three years to evaluate the presence of a parasite found in wild and

farmed northern quahogs in Rhode Island and the potential effect of the disease on Rhode Island's quahog industry.

- Perry Raso, shellfish aquaculturist, and Alicia Thayer, South Kingstown High School teacher, received \$82,405 over three years to educate over 1,700 students from Grade 6 through college about shellfish aquaculture and to promote community acceptance of aquaculture. In addition, students will be involved in a cutting-edge model aquaculture facility.
- Tim Scott, Roger Williams University center for Economic and Environmental Development director, received \$100,000 over three years to determine whether producing young seed clams in a hatchery and replanting them on public grounds will result in a greater harvest of adult clams in the future or will inadvertently attract predators to a productive bed.

2003 Grants

- Dr. Dale Leavitt, Roger Williams University, and Dr. Marta Gomez-Chiarri, URI, had their proposal to test disease resistant oysters funded.
- Dr. Marta Gomez-Chiarri's proposal to continue the disease survey was funded. This survey was funded by RI DEM in the past, but because of financial and management problems the funding was not renewed. This is a project that rightly should be funded by the state but because of the importance of the survey for resource management decisions RIAI has provided funding.

Rhode Island Aquaculture Initiative Mini-Grants

- Aquaculture Products of Charlestown received \$275 to test methods for reducing starfish predation in oyster culture.

- Russell Blank and William Blank of North Kingstown received \$3,000 for the purchase of materials and seed to grow bay scallops and soft-shell clams.
- Louis Ricciarelli, Jr. of West Kingston received \$3,000 to grow bay scallops to harvestable size in Narragansett Bay, using varying types of cages to determine the best method for grow-out.
- Salt Water Farms, LLC of Wakefield received \$3,000 to purchase processing machinery intended to reduce operating costs and accelerate the growth rates of cultured oysters and mussels.
- Spatco, Ltd., of Wakefield, received \$2,000 to purchase and test in-water aeration equipment that will substantially reduce ambient noise levels.
- Kenneth Thompson of North Providence received \$2,000 to grow surf clams, which have not previously been cultivated in Rhode Island.
- Christopher Warfel of New Shoreham received \$1,700 to develop a hybrid wind and solar powered upweller to enable shellfish aquaculturists to site culture operations in remote waters.

2003 Grants

- A cooperative project between the RI Shellfisherman's Assoc. and Save The Bay was funded.
- Purchase/use of a video camera was funded for research use by Moonstone Oysters was funded.
- Development of a fish counter by Dale Leavitt at Roger Williams was funded.

Ocean State Aquaculture Association

Rhode Island is fortunate to be one of the few states in the region with an active aquaculture association. We are fortunate to have the following state of the farm report from the Ocean State Aquaculture Association's president, Mr. Todd Corayer.

Ocean State Aquaculture Association

Farming the waters of the Ocean State has received increased press coverage and our members have been featured in many local papers, national magazines and scientific journals. We have delivered speeches at NOAA's Milford Aquaculture Seminar, written editorials for the Providence Journal and been featured in a USDA video about aquaculture in the Northeast Region.

We worked with children and their parents at the Kids First Expo held at the Convention Center, teaching them how shellfish can be an important part of their lives. The Association received Congressman James Langevin's support the MUMS (Minor Use Minor Species) Act before Congress in an effort to protect future

farming efforts in our state. Bob Rheault has worked tirelessly on behalf of the newly formed East Coast Shellfish Growers Association (www.ecsga.org) and developed a model for the many positive environmental benefits of shellfish and of the farms from which they came. His work details how shellfish remove nitrogen from the water, promote biological diversity and improve overall water quality.

We co-sponsored the RI Aquaculture Conference at U.R.I.'s Alton Jones campus and gave opening remarks on the importance of the oyster fishery to our state's economy and history. We joined the RI Farm Bureau in an effort to stay involved with a group who shares our concerns for local products

and high quality. For RI Agriculture Day, the Association rolled out our booth and spoke to many people about what we grow and how we are a net benefit for the environment and the economy. In September we hosted a chef's tour of shellfish farms. From the beautiful sailing vessel Branderis, many high profile chefs experienced the rich flavors and freshness of our farmer's oysters and clams and were able to see how they are handled and

harvested. The Association produced another pamphlet detailing our many products and the farms from which they are harvested. To accompany this, a poster was created to highlight our beautiful state waters and excellent farmed shellfish! It was a busy year for us and we are excited about increasing opportunities to bring our excellent products to the national market. Our meetings are open to the public and we welcome your participation.

East Coast Shellfish Grower's Association

One of the most exciting developments in 2003 was the formation of the East Coast Shellfish Grower's Association. This organization will fill an important role for all shellfish growers on the east coast. The following was written for the National Shellfisheries Association by the executive director, Mr. Ed Rhodes. A link to the ECSGA web site can be found on the CRMC web site.

The ECSGA, Up and Running!

The East Coast Shellfish Growers Association (ECSGA) is a bit more than a year old, and is getting up to speed in its

mission to serve the needs of the shellfish industry from Maine to Florida. The ECSGA goal is to provide a coordinated and effective voice for East Coast growers in regional and national issues. To a large

extent, we have followed the organizational model provided by our sister PCSGA on the Pacific Coast.

The ECSGA is now almost 200 members strong, with representation from all of the Atlantic states. Bob Rheault from Rhode Island is the President, Tom Gallivan from Virginia is the VP, Karen Rivera from New York is the Secretary, and Gef Flimlin from New Jersey the Treasurer. And in early February, Ed Rhodes was hired to become the Executive Director of the ECSGA. The ECSGA just held its second annual meeting in conjunction with the Milford Aquaculture Seminar.

The ECSGA participated in the annual shellfish industry “Walk on the Hill” in February in Washington, D.C. The week started with an issues and strategy session attended by ECSGA, PCSGA and the Gulf Oyster Industry Council and coordinated by the National Fisheries Institute. The remainder of the week was spent discussing key shellfish issues with congressional representatives. ECSGA representatives

were also able to attend a public meeting held by FDA on the proposed Codex limits for cadmium in shellfish, and to discuss the coordination of habitat conservation and aquaculture with NOAA.

With the assistance of the Rhode Island Sea Grant program, the ECSGA recently published a leaflet called “Did you know? Shellfish Aquaculture is GOOD for the Environment!”. The leaflet is designed for a wide public audience, and emphasizes the ecosystem services shellfish provide, and the sustainable nature of shellfish farming. The leaflet can be downloaded from the ECSGA website, www.ecsga.org. In addition to the website and a listserv discussion link, the ECSGA publishes a quarterly newsletter.

The ECSGA is still very much in its infancy, and is in the midst of a recruitment drive for new members. Voting memberships are open to all east coast shellfish companies and distributors that derive at least part of their income from shellfish culture activities. In addition, a variety of non-voting membership opportunities are available to

shellfish industry suppliers, and to researchers, academics and extension folks with an interest in the shellfish industry. State or regional shellfish organizations are

also encouraged to affiliate with the ECSGA. Information on membership is available on the website.

Regulatory Agencies

The Coastal Resources Management Council (CRMC), Department of Environmental Management (DEM) and the Department of Health (DOH) continue to work closely together during the year. The staff members who deal with the day-to-day regulations concerning aquaculture in Rhode Island continue to work toward streamlining the permitting process. The staffs are also active in continuing to monitor the industry and are able to respond quickly to unforeseen contingencies that may arise. During 2003 the DEM director delegated responsibility for regulating shellfish seed importation to the CRMC. The CRMC Bio-Security Board has crafted new guidelines for this critical issue. DEM is in the process of promulgating these guidelines.

The Coastal Resources Management Council now has all of its management plan, regulations and applications on the internet. The agency is making a major push to continue its effort to continue to provide access to all of the necessary documents in as easy format as possible. During 2003 the CRMC Aquaculture Application was continually updated to provide more information for the applicant and to clarify and simplify the process as much as possible. The CRMC web page address is: <http://www.crmc.state.ri.us>. From the CRMC home page clicking the “project” button will bring you to a page where if you click on “Aquaculture” will bring you to a page with information and links to Rhode Island aquaculture related sites. Clicking on the “application” button on the CRMC home page will bring you to a page that has a

downloadable complete CRMC aquaculture application package. Back to the home page if you click on the “publications” button will bring you to a page that has the past 4 years CRMC Aquaculture Report available in a downloadable format. CRMC is committed to providing information and forms via the internet to make applying for all CRMC permits easier for the public.

Conclusion

Aquaculture in Rhode Island is a small, diverse and very dynamic industry which is making a real contribution to the economic health of the state. The companies, farmers and universities involved will readily admit that the situation could be a great deal better, but they are showing their belief in the future of the industry by investing time and capital towards increasing their competitiveness now and into the future. Aquaculture in Rhode Island is an industry that is taking advantage of the state’s assets, its clean waters, its many universities and a well trained populace, and contributing to the economic health of the state. The industry is showing its belief in the future by making investments to ensure its continued competitiveness.

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