

Coastal Features



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The Newsletter of the Rhode Island Coastal Resources Management Council

CRMC report says aquaculture growing

RI aquaculture industry sees another increase in value in 2007

Rhode Island's aquaculture industry continued to grow in 2007, according to the Coastal Resources Management Council's annual report,

"Aquaculture in Rhode Island." The industry grew in almost every area, and for the first time in eight years, the state has a commercial finfish farm.

In 2007, the farm gate value (the value for the product paid to the farmer) of the state's aquacul-

ture products increased 18 percent, the tenth double-digit increase in the past 12 years. In 2006 the total value of Rhode Island aquaculture

products increased 18 percent, the number of farms in Rhode Island also grew in 2007 from 28 to 30 farms, which increased the acreage under cultivation to



Photo courtesy of: Brad Bourque, New England Marine Ornamentals and Koi, Inc.

Clown fish thrive in the state's first finfish farm in almost a decade.

exceeded \$1 million for the first time, and 2007 continued that trend with a value of almost \$1.6 million (\$1,587,857). Ac-

123 acres. The production per acre value of aquaculture in Rhode Island was \$12,862, down slightly from last year's value of \$13,621, but still a large increase compared to 2005 and 2004, years in which the production per acre value held at \$8,757 and \$8,185,

CRMC sponsors climate change conference

The RI Coastal Resources Management Council and University of Rhode Island Coastal Institute hosted a day-long discussion on climate change and its effects on Rhode Island's coastline.

"Climate Change and Rhode Island's Coast: Where Will Tomorrow's Shoreline Be?" was held on June 17 at the Towers in Narragansett. The conference was followed by a reception and a show, "It's a Shore Thing: Coastal Cabaret" produced by Judith Swift of URI. The day's events included discussions led by the CRMC, URI Graduate School of Oceanography, the

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Aquaculture Report, *continued from Page 1*

respectively.

In 2007, aquaculture-related industries in the state experienced gross revenue of \$4.3 million, an increase from the \$3.5 million reported in 2006, and regulatory agencies charged with overseeing and managing the industry continued to streamline the permitting process. The CRMC Working Group on Aquaculture Regulations reconvened in 2007 due to the lack of a long-term aquaculture development plan. The working group hopes to complete its work this summer, and hopes to submit a draft for suggested regulatory changes to the Council soon.

This year's aquaculture report, like last year's, includes updates and industry information contributed by the state's leading aquaculture experts, including Dr. David Bengtson, chair of the Department of Fisheries, Animal and Veterinary Sciences at the University of Rhode Island; Dr. Timothy Scott, director of the Roger Williams University Center for Economic and Environmental Development (CEED); Michael McGiveney, president of the Rhode Island Shellfisherman's Association (RISA); Andrew Lipsky of the USDA NRCS; Dr. Barry Costa-Pierce, executive director of Rhode Island Sea Grant (RISG); Perry Raso, president of the Ocean State Aquaculture Association; and Ken Ayars, chief of the RI Department of Environmental Management's Division of Agriculture. The report also includes a special section on bivalve disease by Dr. Marta Gomez-Chiarri and a special section on the history of lobster aquaculture in Rhode Island by Dr. Michael Rice, both of URI.

"The annual CRMC report shows that while the industry is still small in Rhode Island, aquaculture continues to experience significant growth and diversification," said CRMC Chairman Michael M. Tikoian. "We credit our regulations and policies, which we are constantly seeking to improve – through our development of a statewide aquaculture development plan – as well as our good working relationship with industry members, for this growth."

The full report is available at the CRMC's web site, <http://www.crmc.ri.gov/pubs/pdfs/aquaculture-report07.pdf>.

CRMC 2007 Aquaculture in Rhode Island Report

A snapshot of the Aquaculture Industry in Rhode Island for the year 2007:

- The 2007 farm gate value of Rhode Island aquaculture products rose 18%.
- This is the 10th double digit increase in the past 12 years.
- For the second year in a row the total value of Rhode Island aquaculture exceeded \$1 million.
- The value of Rhode Island aquaculture per acre is an amazing \$12,862.
- The number of farms in Rhode Island increased by two to 30.
- The total acreage under cultivation in Rhode Island rose to 123 acres.
- Aquaculture related industries in Rhode Island had gross revenue of \$4.3 million dollars during the calendar year 2007.
- 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 2007.
- The Rhode Island Aquaculture Initiative finished in 2007. Investments made have enabled one new finfish farm to be established.

The History of Aquaculture in Rhode Island: Lobster Aquaculture

- Aquaculture of lobsters began in Rhode Island in 1898.
- In 1920 more than a million lobsters were released into the wild.

CRMC, Clean Ocean Access celebrate Middletown ROW designation, adoption

Tuckerman ROW is eighth to be adopted through CRMC Adopt-an-Access Program

Officials from the Town of Middletown, along with the Rhode Island Coastal Resources Management Council and Clean Ocean Access, gathered at the Tuckerman Avenue Right-of-Way (Y-1), a CRMC right-of-way, on May 29 to celebrate the designation and the group's adoption of the spot through the CRMC's Adopt-an-Access Program. The designation comes after a decades-long fight and consequent court battle over the right-of-way, which dates back to the late 19th century.

"The Tuckerman Avenue right-of-way is a prime public access point in Middletown, with access to the beach and serves as a great recreational fishing location," said CRMC Chairman Michael M. Tikoian. "The 2006 court decision rightly upholds the CRMC designation, and emphasizes that it's vital to preserve these designated public access points for all members of the public."

The Council designated the Tuckerman Avenue spot as a right-of-way in 1981, and the abutting property owners filed an appeal of the decision. After lengthy proceedings, additional appeals and reconsideration by the CRMC a number of times, in 2006 the Supreme Court denied the abutters' petition for writ of certiorari, upholding the CRMC's initial designation.

Since 1978, the CRMC has had the authority to designate public rights-of-way through RIGL 46-23-17, which directs the Council to discover and designate public rights-of-way to the tidal areas of the state, to be used by all members of the general public. In order to further protect these access sites, the CRMC in 2005 created its Adopt-an-Access Program.

"Clean Ocean Access is committed to protecting, preserving and maintaining the coastal right of way at Tuckerman Avenue. Adopting Y-1 has already had positive impacts that go beyond our initial thinking," said David McLaughlin, co-founder of Clean Ocean Access. "Simple things we do at Y-1 such as coastal cleanups a few times a year, our weekly water testing and bi-monthly surveys have really brought together a diverse group of the community to understand and value the importance of working together and protecting, persevering and maintaining the rights-of-way to our shoreline. A lot of the people involved in COA have enjoyed ocean activities along the Easton's Point shoreline in the past and adopting Y-1 gives us the opportunity to make sure that future generations can continue to enjoy the same things in the years to come."

The CRMC Adopt-an-Access program ensures that ROWs are maintained and protected as scenic access points, to be utilized and enjoyed by the public. The adopted locations are protected from the rapid development of the coastline, and the lapse of time, which has left many other ROWs overgrown and difficult to access. Under the program, the CRMC, adoptive partner and the town in which the ROW is located enter into an agreement that permits the partner to install Adopt-an-Access signage with logos of both the CRMC and that group.

"The Tuckerman ROW is a great example of what the CRMC was tasked to do-protect the public's right to access," Tikoian said. "We thank Clean Ocean Access for continuing the success of our Adopt-an-Access Program, and look forward to more adoptions all over the state."



From left to right: Members of Clean Ocean Access (COA), Middletown Interim Town Administrator Shawn Brown, Kevin Cute of CRMC, Susan Wallace, Dave McLaughlin, co-founder of COA, CRMC councilor Neill Gray, CRMC legal counsel Brian Goldman, council vice chair Paul Lemont and CRMC Chairman Michael M. Tikoian stand in front of the ROW.

Tikoian confirmed as CRMC chairman

The Rhode Island Coastal Resources Management Council's Chairman Michael M. Tikoian was confirmed by the full state Senate on June 18 for another three-year term ending January 31, 2011. This is Tikoian's fifth term as head of the Council.

Originally appointed to the Council in 1993 by former Governor Bruce Sundlun, Tikoian, of Narragansett, was re-appointed by former Governor Lincoln Almond and then appointed chairman of the Council in 1997 and now by Governor Donald Carcieri. Before his formal confirmation by the Senate, Tikoian went before the Senate Committee on Environment and Agriculture, chaired by Sen. V. Susan Sosnowski, on June 11, to receive a recommendation for re-appointment.

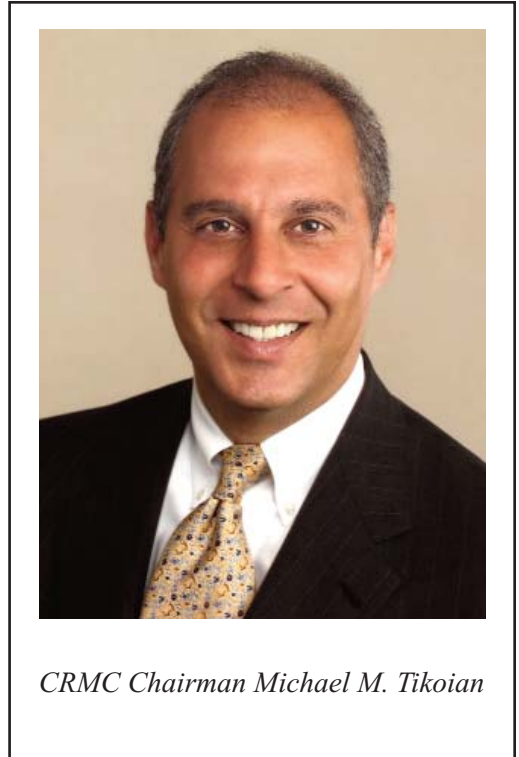
Officials who testified on behalf of Tikoian included former RI State Police Col. Steven Pare; Sen. Dennis Algieri (R-Westerly); Rep. Jan Malik (D-Barrington, Warren), chair of the Environment and Natural Resources Committee; Myrna George, president of the South County Tourism Council; Nancy Dodge, Block Island town manager; Jane Austin of Save The Bay; and CRMC vice-chair Paul Lemont and Council members Neill Gray and Don Gomez.

During his tenure as chairman of the Council, Tikoian has been involved in numerous initiatives and has been an integral part of the changes that have transpired within the CRMC. His accomplishments include promulgating regulations for the review of all activities concerning freshwater wetlands within the coastal zone, and coordinating the state's review of the Army Corps of Engineers' Environmental Impact Statement for the Providence River and Harbor Maintenance Dredging project.

During Tikoian's tenure, the CRMC has worked on revisions to the Narrow River and Salt Ponds Region Special Area Management Plans (SAMPs) and adopted the Greenwich Bay SAMP. Under his leadership, the CRMC has transformed itself from a permitting-heavy agency to a more policy-driven one, through the adoption of the Marine Resources Development Plan in 2006. The CRMC is also currently updating the former Providence Harbor SAMP – now called the Metro Bay SAMP – which provides management guidelines for shoreline development projects in the cities of Cranston East Providence Pawtucket and Providence. In 2006, the chairman also instituted the Coastal Education Series to educate Council members and the public about management issues and other agencies and groups that work with the CRMC. The education takes place at each semi-monthly Council meeting, and to date has introduced nearly 30 topics and speakers on all coastal, policy and planning topics.

"I am honored to have been reappointed by Governor Carcieri to serve the people of this state for another three years," Tikoian said. "As a steward of the state's coastal resources, I will continue to strive to continue the mission of the CRMC as mandated by its enabling legislation: to preserve, protect, develop and where possible, restore the coastal resources of the state for this and succeeding generations.

"We have accomplished so much in the last three years, and I look forward to continuing that progressive work with the help of the CRMC staff, Council members and public."



CRMC Chairman Michael M. Tikoian

CC Conference, *continued from Page 1*

state's geologist, coastal town officials other respected environmental professionals. Sponsors included The Nature Conservancy of Rhode Island, the Rhode Island Sea Grant Program and the 2008 URI Honors Colloquium: People and Planet – Global Environmental Change.

“All of the data we're looking at right now is lining up at the worst-case scenario,” said Grover Fugate, executive director of the CRMC. “With sea level rise along the shore we're interested in [looking at] increases in erosion, ground water contamination by sea water and ISDS failures. We're also going to be more susceptible to storm damage.”

Some possible ways to manage sea level rise,

Fugate said, are to accommodate it – build structures at a certain height above expected sea level rise (free board); retreat from it; or protect ourselves from it by protecting infrastructure and services and nonstructural areas like beaches and vegetated sites.

“Climate change has to be systematic throughout our program now,” he said. “We're going to have to consider out-of-the-box ideas now.”

The CRMC in 2007 created a new section of its program to specifically address global climate

change and sea level rise, one of the first programs in the nation to do this, and it will provide a framework for standards, restrictions and regulations as the CRMC collects more data on sea level rise and how it will affect Rhode Island.

crease in drought, and an increase in ocean acidification.”

Moran said that the sea level rise estimates made in the Intergovernmental Panel on Climate Change (IPCC) released last year are conservative at best. The observations, she said, almost double the 3-foot

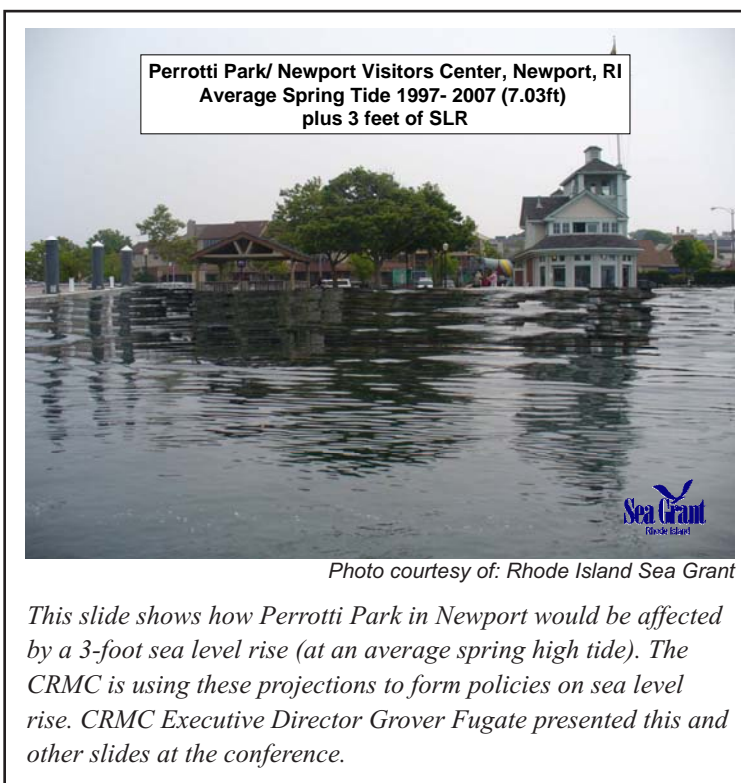
sea level rise expected and do not even take into account the impacts of changes in the Arctic ice sheet floes.

Jon Boothroyd, professor of geosciences and the state geologist, reviewed the physical and geological changes that will occur on Rhode Island's coast in the context of climate change. Boothroyd and his students have conducted numerous studies, and he has more than 30 years of research and monitoring the state's coastline.

Boothroyd said that sea level rise will be the vehicle that continues to push back the natural barrier beaches.

“There will always be a

(Continued on Page 7)



This slide shows how Perrotti Park in Newport would be affected by a 3-foot sea level rise (at an average spring high tide). The CRMC is using these projections to form policies on sea level rise. CRMC Executive Director Grover Fugate presented this and other slides at the conference.

Kate Moran, professor of oceanography and ocean engineering and associate dean of the URI Graduate School of Oceanography reviewed the science of climate change and discussed the latest available data addresses causes of climate change and how climate change will manifest itself. She also discussed various climate change projections for the future. “It's happening globally and locally,” she said of climate change and global warming. “Narragansett Bay is warming. We're seeing an increase in storminess, and in-

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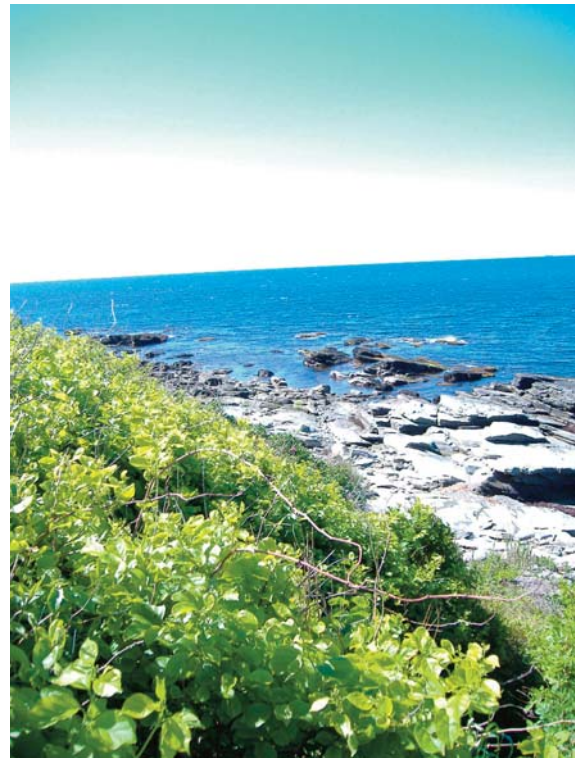
CRMC Photo Page



Above, from left to right - an old car seat pulled out of the Woonasquatucket River; and two CRMC staffers taking part in the Narragansett Bay Commission annual Earth Day cleanup of the river. To the right, CRMC staff pull more trash out of the river.



At the far right, a view of the ocean taken from the Tuckerman Right-of-Way (Y-1) in Middletown. (See story on Page 3).



CRMC Photo Page

CC Conference, *continued from Page 5*

beach; it will just be somewhere else,” he said.

Janet Freedman, CRMC’s coastal geologist, provided an overview of the work the CRMC has done to ensure coastal zone policies reflect the anticipated changes under climate change. According to Freedman, climate change and sea level rise could cause coastal environment changes like salt marsh drowning, eelgrass bed stress from rising water temperatures, increased invasive species, and shifting fisheries habitats. The CRMC,



Lands susceptible to 5 feet of sea level rise - Quonochontaug Pond, Charlestown, RI.

Vinhateiro, 2008

This slide from CRMC coastal geologist Janet Freedman shows the land that would be threatened by flooding in the case of a five-foot sea level rise. Freedman presented this and other scenarios at the conference, “Climate Change and Rhode Island’s Coast: Where Will Tomorrow’s Shoreline Be?”

in adopting its new Section 145: Climate Change and Sea Level Rise, recognizes that sea level rise is occurring and the primary concern is the accelerated rate of rise and the associated risks to Rhode Island’s coast. Freedman explained that the CRMC, through these regulations, will use a base rate of expected 3 -5-foot sea level rise by 2100 in siting, designing and implementing public and private coastal activities. The CRMC, she said, will also insure proactive stewardship of coastal ecosystems under these changing conditions, and revisit long term sea level changes periodically to address the latest scientific evidence.

In South Kingstown, according to Town Manager Stephen Alfred, officials are thinking about climate change issues and planning now to prepare for the

changes expected over the next decades. South Kingstown is an especially vulnerable community with a lot of coastline and considerable property at risk. According to Alfred, the town recently received a \$100,000 grant to examine Matunuck Beach Road and the Matunuck area. The infrastructure in that area is in danger of being washed out by sea level rise.

“That road will break at some time,” Alfred said at the conference. “We’re applying for funding to relocate the water service.”

Judith Swift, professor of communications studies and professor of theatre at URI, led a lively and thought-provoking musical performance focusing on various contemporary issues in coastal zone management she developed with her colleagues. It is a show that puts invasive species, fishery declines, and sea level rise to song.

Richard Horwitz, senior fellow of the Coastal Institute and a contractor for R.I. Department of Environmental Management who handles emergency response planning provided a summary of the day’s discussions, and captured the messages of the day and the views that the audience brought to the discussion.

A major theme for the day, he said was that “we are largely responsible for this, we and our ancestors, and we need to reduce our carbon footprint,” he said. Something he gleaned from the conference – “How much of an investment in certainty do we need before we start doing things that are more intelligent?”

For more information on sea level rise, go to the CRMC web site at www.crmc.ri.gov or for more information on the conference, including presentations from the speakers, go to <http://www.ci.uri.edu/ciip/projects/GCCinRI/>.



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The newly built fish passage at the former Rising Sun Mills in Providence will restore historic anadromous fish runs to the lower Woonasquatucket River.

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