



2010 Annual Report of Activity

Overview

The mission of RCTB is to teach about the coastal bay, its watersheds and peoples' impact on these natural resources by using the hard clam and oyster as living representatives of the bay ecosystem. We educate people about the needs of the shellfish, which serve as watchdogs for good water quality. We also explain how the public can be stewards of the natural resources we share. This report will highlight activities for the 2010 growing season. Much more information is available at <http://reclamthebay.org/>.

Reclam the Bay (RCTB) and its partner, The Barnegat Bay Shellfish Restoration Program (BBSRP), work diligently to provide interesting and scientifically valid information about our environment. Coupling learning experiences with the natural beauty of NJ provides a true attraction and stimulates tourists who want to learn about the bay and its issues and, hopefully, share that knowledge with family and friends.. Promoting our educational events is critical not only to their success but also to the wellbeing of our environment. Every time we promote an event we raise the awareness of the problems in the bay and the potential solutions.

Causing Change - Since clams and oysters are filter feeders, their natural feeding process can have a positive effect on the nitrogen in the bay. The problem is that fertilizer runoff (among other forms of nitrogen loading) puts so much nitrogen in the bay that healthy and unhealthy algae grow beyond the ability of shellfish to help nature reach a balance. RCTB believes that simply putting shellfish in the bay is only half the story. Growing shellfish can have a much bigger impact when we involve the public in our endeavors; it is the public who can change their activities to reduce nitrogen from all sources, including fertilizer, going into the environment. One person who stops using nitrogen-rich lawn fertilizer can have the impact of thousands of filter feeders! That simple change will have an enormous positive impact on the bay. Education and awareness about the nitrogen problem has been publicized in the press, which has led to legislative change. There have been hundreds of stories over the past years but the excerpt below is a shining example.

The real net effect is seen in three bills signed into law by Governor Christie on January 3, 2011. The bills address fertilizer, storm water runoff and soil compression. These three issues collectively have a huge negative impact on the bay. Our partners including Save Barnegat Bay, Clean Ocean Action, Alliance for a Living Ocean, the American Littoral Society have worked for years (along with others) to make this happen. Although RCTB cannot take credit for the legislation we have been told that our education and stimulation of public involvement over the past five years did help. *NJ bill S-1411 is the strictest fertilizer law in the nation.*

These laws are just part of a ten point plan (unprecedented in NJ history) specifically directed at Barnegat Bay and presented by Governor Christie and the DEP commissioner, Bob Martin in December 2010. The governor has also called for the closing of the Oyster Creek nuclear power plant with an open cooling system that poaches the life out of 1.7 billion gallons of bay water every day. The remaining problem is that it is scheduled to continue to run for another nine years.

Asbury Park Press – November 17, 2010

["http://www.app.com/apps/pbcs.dll/article?AID=201011160326"](http://www.app.com/apps/pbcs.dll/article?AID=201011160326)

Headline:

Residents have ideas for saving Barnegat Bay

The people who live around Barnegat Bay have come up with plenty of ways to bring the bay back to health

Volunteers with ReClam the Bay put a 2010 crop of clams into wintering beds near the Waretown public dock on Nov. 6. Next spring, the clams will be distributed to other sites around the bay. (STAFF PHOTOS: KIRK MOORE)

Those ideas have washed like waves through debates over how to protect the bay — from calls for heroic engineering of new ocean inlets, to Zen-like individual actions of planting trees and rain gardens.

As the science of watershed management gets better and more popularized, it is being interpreted at the neighborhood level by people who use their own ingenuity and local knowledge.

"I've been trying to get rid of whatever lawn I've got left, with garden areas and decking," said Fred Magee of Island Heights, who has ivy, hostas and ferns planted around his house. Even in this summer's nuclear heat, they had little need of watering in the shade under his trees.....

On Monday, the state Senate Environment and Energy Committee moved a package of Barnegat Bay legislation that would require the state to set nutrient pollution limits for the bay, and authorize Ocean County to set up a public utility to fix storm water basins.....

Excess nitrogen from fertilizer misuse is one of the easier problems to tackle in the bay watershed, environmental workers say. Details still have to be finalized, but.....

See a full report at: <http://www.app.com/section/barnegatbay/>

Growing Shellfish – RCTB volunteers are basically farmers. Farmers are, and always have been, at the mercy of the environment, especially the weather. Since we started in 2005 RCTB has put 9.7 million shellfish in Barnegat Bay. The fall activity of each year is to take up the clams planted under predator control screens in the preceding year and release or distribute them. Following this, volunteers plant the current year juveniles that have been grown in the upwellers (nurseries) in the same or new plots. This enables RCTB to evaluate a sample of the earlier year's clams and to report on growth and mortality as well as other observations. (See chart below)

The 2009 report expressed concerns about winter (2009 -2010) survival because the 2009 growing season started late and was quite stormy. The result was a group of shellfish that were small but not very robust.

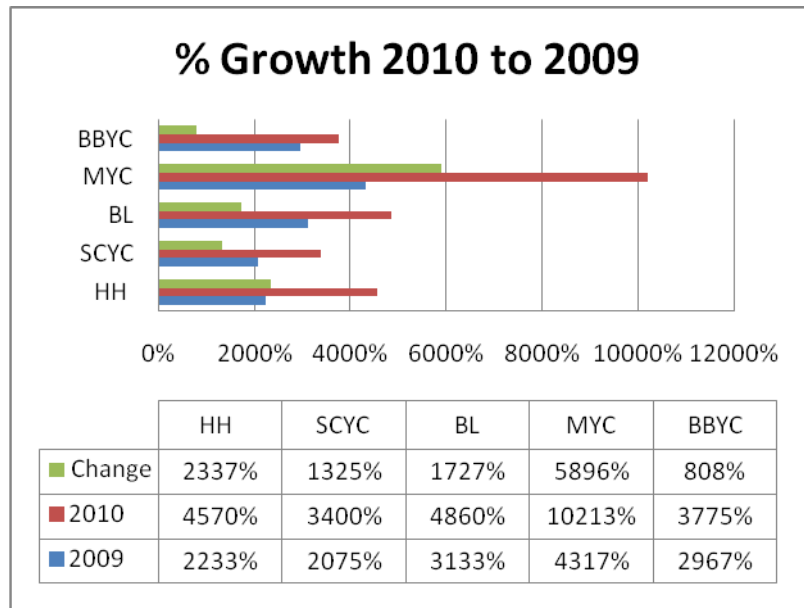
In a highly mechanized, automated and predictable world, Mother Nature and baby clams can tell us what our farmer ancestors knew. "Some crops just do not make it." Perhaps underscoring the vital role of weather in our environment is the most important lesson of all. Although we are disappointed that mortality was so high due to weather and habitat conditions beyond our control, we must point out that RCTB believes that the value of what our volunteers **learn** and **teach** the public is of equal or greater than the value of the shellfish that we **grow**.

To underscore the poor growing conditions of 2009 we note that, in 2005, 2006, 2007 and 2008, less than 1% of the seed died in the upweller phase of production. In 2009 the loss in the upwellers was 5%. We are told that some shellfish die in the spring of the ensuing year when they come out of suspended animation because they weren't strong enough in the fall. This is because they do not have enough body mass and use all their energy cycling early water (March, April,) that contains very little nutrition. These shellfish will be dead by the time algae rich water of May and June is available. Our observations confirm that the concern is well founded. Because of the varying size of the 2009 seed delivered at different times from different hatcheries there was wide range in mortality. The best result was 30% mortality and the worst was 70% mortality.

In general, 2010 was a much better growing year than 2009. (See chart.) The growth data were gathered each week for seed from each hatchery. This chart is based on seed from one hatchery at each location (some upwellers

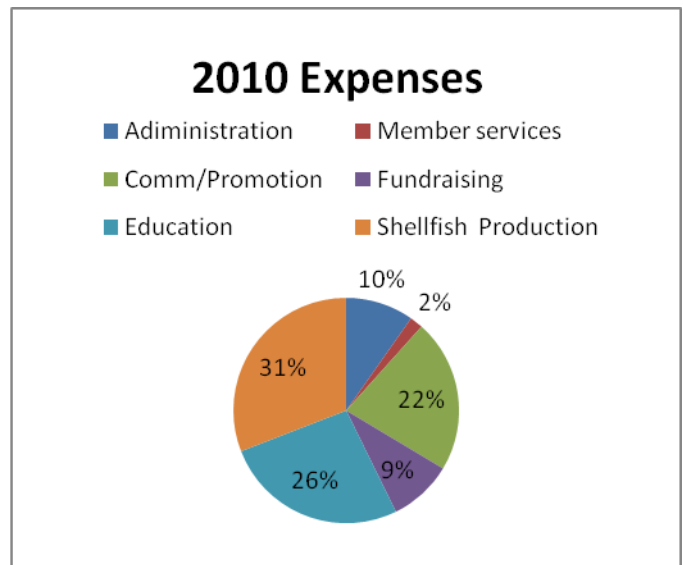
had seed from more than one hatchery). The data reflect the growth rate by percent for five of the upwellers. Again, conditions in the spring and summer of 2009 were not favorable for seed growth. This can be seen in the data table contained in the chart where we compare 2009 to 2010.

The first example is HH. In 2009 the seed growth for the year was 2,233% (shown in blue). In 2010 the rate was twice that at 4,570% (shown in red). The net change was 2,337% (green). The variation in growth rate for the year from one location to another (Example: MYC 10,213% to SCYC 3,400%) is the subject for study by our Certified Shellfish Gardeners. In 2010 we grew about 1 million clams and this brings the total to 8.2 million since 2005

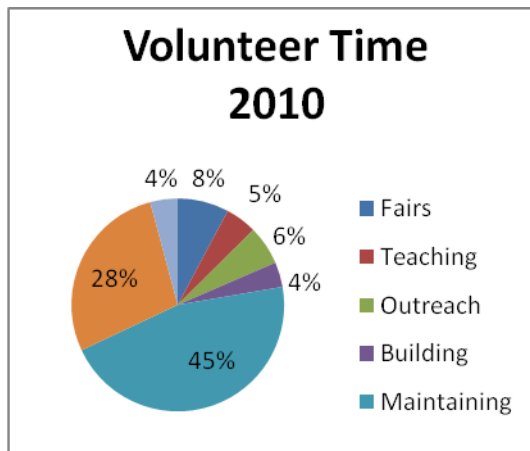


We also grew oysters using two techniques. About 320,000 oysters were grown in the traditional upwellers. We have also been experimenting with another technique, called "spat on shell" where we grow the spat directly onto large surf clam shells. (Define "spat") We estimate about 175,000 oysters were grown on shell. This brings the total to 1.6 million oysters since 2005.

The Budget – RCTB funds its activities through the generous donations of individuals, nongovernmental organizations, companies and a small amount from the State of New Jersey and Ocean County. RCTB used about \$135,000 in cash and about \$120,000 in the value of volunteer time. That is \$250,000 used to educate about 8,000 people, grow about 1.5 million shellfish and involve 200 people intimately in Barnegat Bay. As the chart to the right shows, almost 80% of our expenses are used to fulfill our mission. Our largest expenses are in the production of shellfish (31%), education (26%) and communication (22%).



Members – RCTB members are really environmental stewards. They lead by example and care for our environment while, at the same time, teaching others how to take responsibility and, in the process, make a difference. . RCTB



has two classes of volunteers. One group, Certified Shellfish Gardeners, enroll in a course conducted by Rutgers Cooperative Extension that includes 27 hours of classroom training and a minimum of 20 hours of internship. This year 14 new people enrolled in the class. A second group of volunteers (40 from earlier years and about 15 new ones) help with all the day-to-day activities, but have not completed the course. Additionally about 10 local children assist the teams that maintain the upwellers where we grow the baby clams and oysters. We estimate that more than 2,000 hours of volunteer

time were devoted to upweller maintenance and an additional 300 hours will be spent in planting and year end activities. In all, 4,700 hours are reported. RCTB is pleased with the new members, and are also happy that we retained about 80% of our former volunteers. Our active email list includes about 180.

Outreach – RCTB was awarded a \$12,000 grant from the NJ Bureau of Travel and Tourism to promote our fun and educational activities to visitors. We estimate that more than 3,000 visitors were attracted by this campaign (up 12% from 2009). This group of 3,000 is a subset of the 8,200 visitors who our volunteers educated, entertained and enlightened by providing an educational component to 15 different events, small group sessions hosted by civic organizations, libraries and museums and, of course, at clam nurseries (upwellers). The number of visitors to the upwellers, where people can actually see and touch baby shellfish and talk with volunteers, was up 23% over 2009. Visitors all expressed real gratitude for providing the experience for their children....and themselves!

The public schools that have participated in our pilot test of “Shellfish in the Classroom” are very enthusiastic. This program brings baby clams and oysters into the classroom so students can learn about how those creatures live and what needs to be done to increase the populations of shellfish in Barnegat Bay and why that is important. An estimated 500 students have participated in this program during its first year in existence. In the future, schools next to the bay will “buddy up” with schools across the state so that upland kids can understand the effect of pollutants that travel down-stream to the estuary. Classroom activities will be supplemented with field trips so the buddy schools can exchange emails and video clips to show each other’s field activities. This will also encourage “summer learning.” The students in the buddy schools will be “penpals” so that they can day-trip with their parents to visit one another and experience each other’s environment, and witness the cause and effect of pollution.

RCTB Position – laws and legislators alone do not make change happen. Only people can make real change happen. The ten point plan proposed by Governor Christie and the new legislation brings to mind what Winston Churchill said of D-Day. *This is not the end. It is not even the beginning of the end. But it is the end of the beginning.* That is to say this is the start on a long, long journey. RCTB is in this for the long haul.