

Southeastern University. Sean, now a commissioned Second Lieutenant, has received a prestigious delay on entering the military to pursue graduate research at Northeastern University. Matt has applied to graduate school and is currently working. We will miss our energetic and “fun” crew as they move forward, realizing their professional and personal aspirations.



Dr. Joe, Dr. Fregeau, Matti Lotti and Mae Taylor (lt to rt) savor graduation

A BIG thank you to our summer crew, without whose assistance NEMAC would be unable to function at the capacity realized over the last half decade.



NEMAC summer 2007 crew gets funky: Scott Weston, Ashley London, Jamie Collins, Bonnie McAneney, John McGrade, Dr Joe, Veronica Wade (lt to rt). Not pictured is the late-joining Bill Raymond.

Professional contributions take many forms including publications, professional and technical presentations. During the 2006–2007 academic year, a half dozen presentations were made by Laboratory personnel before varied audiences. Recent publications and reports include:

Murawski, A. and J.K. Buttner. 2006 *Soft Shell Clam Aquaculture on the North Shore, Buy Local Products They are the Freshest*. Brochure, Northeastern Massachusetts Aquaculture Center.

Buttner, J.K., M. Fregeau, S. Weston, and B. McAneney. 2007 *Overwintering and Suspension Growout of Softshell Clams (Mya arenaria) in Northeastern Massachusetts* pages, 18-19; *Some Experiments with Seeding and Sampling Softshell Clams*, pages 23-26; *How to Seed Softshell Clams: What Works in Massachusetts*, pages 28-29 in *Altelier de travail sur l'élevage de la mye commune, I. Calderon (ed). Institut des sciences de la mer de Rimouski, 20 au 22 Avril 2005, Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec, Québec, Canada.*

Calendar

28 September 2007 Cat Cove Marine Laboratory participates in Essex Heritage, Trails and Sails. Laboratory open to all for a personalized tour from 0830-0930. (contact Dr. Joe, 978-542-6703; jbuttner@salemstate.edu)

26 October 2007 Massachusetts Aquaculture Association, annual meeting, Hemisphere Restaurant, Sandwich, MA. (contact Beth Walton, bethanywalton@comcast.net)

NEMAC News is published by the Northeastern Massachusetts Aquaculture Center, housed at the Cat Cove Marine Laboratory operated by Salem State College. The Cat Cove Marine Laboratory physically includes a 5,500 ft² laboratory and an 8 acre, tidal pool, Smith Pool. For more information regarding aquaculture initiatives by NEMAC and Salem State College or to be added to our Newsletter mailing list contact the Cat Cove Marine Laboratory at 978-542-6824 or Dr. Joe (jbuttner@salemstate.edu) or Dr. Fregeau (mfregau@salemstate.edu) or visit our website www.salemstate.edu/biology/aquaculture.

NEMAC NEWS

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Salem State College/Department of Biology
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Clam capers continue as production of softshell clams by Hatchery Technician, Scott Weston, and NEMAC personnel once again increases and now approaches 14 million since the Cat Cove Marine Laboratory opened (Table 1). While considerable quantities of softshell clams are distributed and grown on the North Shore, interest and production has expanded to include much of Massachusetts' coastline (Figure 1). Requests for clams from out-of-state, Connecticut, have also been received and filled. Navigating out-of-state shipments has proven enlightening as regulations and processing challenges essentially double. Agencies, pathologists and growers from two vs. one state become involved; a real learning experience!

Year	Number
2000	30,000
2001	200,000
2002	1,040,000
2003	1,540,000
2004	1,103,000
2005	2,900,000
2006	3,345,000
2007	3,795,000
Total	13,953,000

Table 1. Production by year of softshell clams by NEMAC personnel

Most of NEMAC's clam effort focuses on spawning and rearing of softshell clams

to 2-15 mm shell length (SL). Efficacy of our capabilities is illustrated by the number of clams produced and the ability to spawn clams in virtually every month. Increasingly, NEMAC people traverse to the field and assist with clam growout.

Last year in excess of 1 million juvenile clams were produced and stocked as part of a cooperative effort initiated and funded by the Division of Marine Fisheries to restore and enhance populations in Boston Harbor. Survival and growth has varied among and within the five experimental sites (Hingham, 2; Quincy, 1; Weymouth, 2). Clams stocked between May and August of 2006 averaged 42-48 mm SL by August 2007! Minimum legal harvest size is 51 mm SL. The project has been favorably assessed by all participants, including Shellfish Wardens and commercial diggers from all collaborating towns. Efforts continue this year with the addition of two towns: Winthrop and Hull. An estimated 870,000 clams (> 10 mm SL) were produced and released in 2007 for the project.

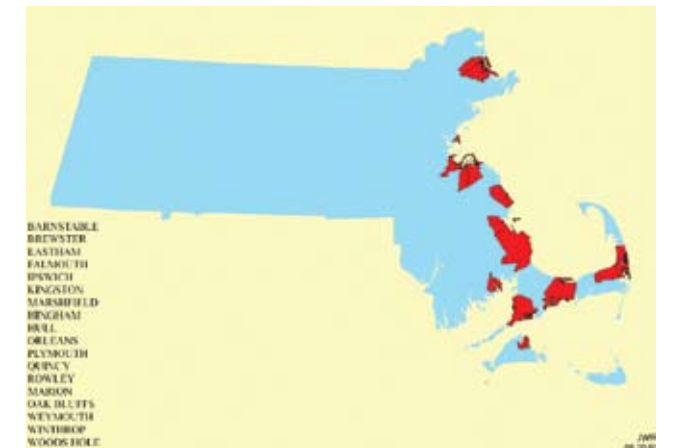


Figure 1. Communities, indicated in red, that have received juvenile clams produced at the Cat Cove Marine Laboratory



Dr. Joe examines brackish water pond on a Kona preserve, populated by threatened species of shrimp

Aquaculture Center, and shellfishers from both north and south of Boston was funded by the Massachusetts Department of Agricultural Resources.



SSC biology majors Ashley London, Veronica Wade and Jamie Collins (lt to rt) gain hands-on experience through externally funded projects

NEMAC continues to grow! This summer saw the garage roof replaced and construction of a new 460 ft² laboratory, literally on Smith Pool. The new lab will facilitate expanded production of juvenile softshell clams. Clams, ~0.5 mm SL, can be relocated from silos in the main hatchery to the new auxiliary laboratory that utilizes algal rich water from Smith Pool. Then clams will be transferred at 2 mm SL to a FLUPSY floated in Smith Pool.



Auxiliary laboratory newly constructed on concrete pier above Smith Pool. FLUPSY is located at end of dock below building



Youth from the Saltonstal School (Salem, MA) learn about tide pool life from touch-tank setup during their tour of the Cat Cove Marine Laboratory

Educational offerings were a major part of summer 2007. Drs. Fregeau and Buttner co-constructed *Topics in Aquaculture (BIO 705)*, which has been offered on alternate years as a summer institute since the Cat Cove Marine Laboratory opened in 1999. Nine local teachers and a federal employee participated this summer, gaining confidence and competence to grow aquatic organisms successfully in their classrooms or for personal use. Dr. Joe also assisted Northeastern University as an invited co-instructor of their *Ocean Science Educators Institute*, which attracted nearly two dozen teachers, several of whom have toured or arranged for tours of the Cat Cove Marine Laboratory. Additionally, nearly one hundred young people gained a hands-on appreciation of aquaculture and aquatic science as part of summer education programs.



Brian Preziosi nets and buckets a green crab

Rounding off educational opportunities facilitated by NEMAC and the Cat Cove Marine Laboratory, was the one month hands-on marine science experience cooperatively developed for Wheaton College sophomore and Wilmington H.S. alumnus, Brian Preziosi. Navigated by NEMAC personnel, Brian established a link with Allegra Schaefer, M.Sc. candidate at the University of Maryland. Brian learned about green crab (*Carcinus maenas*) biology as he collected and shipped nearly 500 specimens to MD for use in predator:prey studies. Brian validated his commitment to marine science, Allegra gained the specimens she needed to pursue her studies, and society may realize better means to control or utilize the invasive green crab...not a bad summer experience!



Bonnie (rt) and Mae Taylor share a final Cat Cove moment before departing to new opportunities.

Farewell and best wishes to Bonnie McAneney. After seven years serving as our Administrative Assistant and Jane-of-all functions, Bonnie has left NEMAC and SSC for a position closer to home in Lawrence. During her tenure at the Cat Cove Marine Laboratory, Bonnie was a familiar face that greeted and guided tours, assisted with field and laboratory initiatives, assembled annual reports and coordinated student workers.

KUDOS to our recent graduates, Mae Taylor, Sean Marcisin, and Matt Lotti. Mae has relocated to Fort Lauderdale, FL where she will pursue her dream to study sharks as a graduate student at Nova