# Town of Chilmark

## Shellfish Propagation Report

**2008**

Prepared by
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Shellfish Propagation Agent

# Table of Contents

## Introduction

In the winter of 2008-09, the town of Chilmark sold a total of 46 commercial bay scallop permits. On opening day, nearly 35 fishermen were seen utilizing their licenses. Soon thereafter, Chilmark fishermen found out that Menemsha and Nashaquitsa Ponds were offering some of the best bay scalloping seen in recent years. In the first two months, the catch more then doubled compared to the previous year. There were 1,477 bushels of bay scallops harvested commercially at an estimated worth of $172,000. With an economic multiplier of four and a half the total value to the vineyard community is $774,000.

The shellfish enhancement project was originally designed with the hope of inspiring young Chilmark residents to fish as a way of life. In 2008, in part due to a declining economy, many first-time young residents began scalloping. After some of the younger fishermen were finished getting their limits, they could be seen shucking their catch, elbow to elbow, before scallops were sold. It was a very promising sight that has not been seen in Chilmark in nearly two decades.

Unfortunately the demand for bay scallops decreased after the New Year, causing a huge drop in price. The price drop made scalloping for most fishermen economically unfeasible. The few individuals that were lucky to find a market continued to fish almost to the end of the season.

In addition to the high number of commercial fishermen, eighty family permits were utilized in the 2008 season. On weekends in November and December as many as twenty family permit fishermen could be seen frequenting the ponds.

This year's quahog enhancement project has taken a giant step in the right direction. A quahog relay transplanted one hundred bushels of adult quahogs in Menemsha Pond. In addition 193,000 quahog seed matured in four newly constructed floating rafts.

Starting in 2008 the oyster enhancement project in Tisbury Great Pond grew substantially as well. Through the production of hatchery-reared seed, 90,000 oysters were grown from a mere 3 millimeter, to almost 1" – 1 ½" in a single growing season.

It is clear that propagation assistance is needed in order to boost shellfish stocks for the residents of Chilmark. The frequency of these good seasons should continue to become more commonplace as the shellfish enhancement program grows. A good scallop or oyster season can be experienced by the fishermen who harvest them, as well as, those who enjoy consuming them. The entire community benefits from shellfish as a healthy protein food source.

If there are any questions as to the methods used to handle each type of shellfish please, see the 2007 Propagation Report.

## Bay Scallop Enhancement

### Stage 1 Grow Out

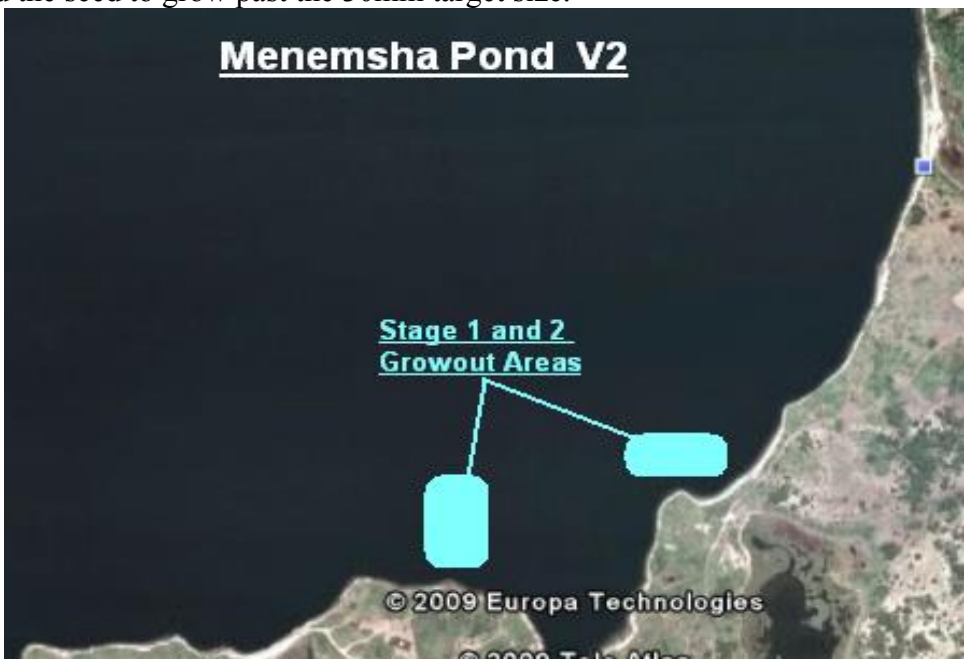
The Martha's Vineyard Shellfish Group (MVSG), a solar-assisted shellfish hatchery, supplied an estimated 2,000,000 bay scallop spat to the town of Chilmark in 2008. Scallop seed was given in varying amounts and sizes. The number of packets Chilmark received far exceeded that of the 2007 season. At the hatchery spat was set on sterile cotton or burlap medium and wrapped in cotton tissues. After all the packets were assembled they were placed in a cooler and transported by vehicle to Chilmark and Nashaquitsa Ponds. The packets were attached: two per .75mm spat bag. The spat bags were filled with netron and attached to floating lines at one of the three locations noted on Map 1-1. Compared to last year, scallop growth was slower in all phases except in Stage 1 Grow Out located at the up-weller in Menemsha Harbor. Spat bags containing seed were checked periodically and cleaned until large enough for Stage 2 Grow Out.

### Stage 2 Grow Out

In Stage 2 Grow Out, two methods were employed in handling the scallops. The first method started with three millimeter spat bags stuffed with netron as the medium used in the ponds. After the scallops grew larger than three millimeters, while in Stage 1 bags, they were divided into Stage 2 bags. Bags were filled with seed and attached to floating lines in one of the three areas noted on Map 1-1. Spat bags were cleaned and checked twice per week. The up-weller was the second method used during Stage 2

Grow Out. Once all scallop seed reached its capacity within the small mesh silos in the up-weller, the seed was transferred to larger mesh silos at approximately four millimeters.

The seed that was divided earlier in the growing season showed much better growth compared to those that were divided later in the season. Scallops that reached a large enough size during the Stage 2 growing period were transferred to the Stage 3 grow out medium. The extra two to three weeks of growth between these dividing times allowed the seed to grow past the 30mm target size.




**Map 1-1 Stage 1 and 2 Growout**

## Stage 3 Grow Out

Stage 3 Grow Out consists of 3/8”-5/8” plastic bottom bags. Bags were filled at 1/3 the surface area of each bag or approximately 500 seed per bag. The bags were attached to a trawl consisting of 50 bottom bags and placed on the bottom of the east flat of Menemsha Pond. There were a total of seven trawls holding 360 bottom bags. The east flat was approved by the Selectmen and Shellfish Advisory Committee as the best possible site for Stage 3 Grow Out.

Bags were checked and flipped once per week throughout the winter season. Scallops in these bags are the largest seed grown over the season and will be used for spawning purposes next year. Some seed were transferred to eight, five-bag cages and placed by Schuer's Dock.


**Map 1-2 Stage 3 Growout**

## Seed Distribution

Seed from Stage 2 and 3 spat bags, larger than 25 mm, were field planted depending on a variety of factors including: overcrowding in up-weller or bottom bags, fouling of spat bags, or ideal timing for release.

There were higher survival rates for seed released once the water temperature reached 45 degrees Fahrenheit or below. Cooler water slows predator movement. Also, scallops usually do not swim at this temperature. This keeps scallops from swimming and planting themselves in mud or on the shore line, where they have a much lower survival rate.

Some of the release sites were active scalloping areas which had an effect on seed being displaced. Fishermen targeting adult scallops sometimes get seed with their catch and return them to the water in a different location. There were some limitations on areas seed could be distributed. Nashaquitsa, already over crowded with adult scallops, made Chocker's and the Flats, in Menemsha Pond, a better place to spread seed.

| Menemsha Pond | | | | | | | | | Nashaquitsa | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Flat East of Channel | | | Flat West of Channel | | | Chocker's Flats | | | Chocker's Inside | | |
| Date | Amount | | Date | Amount | | Date | Amount | | Date | Amount | |
| 8-Oct | 1200 | N | 29-Sep | 5000 | P | 14-Oct | 2400 | N | 4-Nov | 10000 | P |
| 8-Oct | 3250 | P | 30-Sep | 5000 | P | 17-Oct | 4000 | P | 16-Nov | 6200 | P |
| 10-Oct | 5000 | P | 15-Oct | 25000 | P | 15-Dec | 10000 | P | 17-Dec | 5000 | N |
| Oct | 120000 | T | 16-Oct | 32000 | P | 26-Dec | 4000 | P | 29-Dec | 5000 | N |
| 14-Oct | 23500 | P | 16-Oct | 6650 | N | 2-Jan | 6750 | P | | | |
| 14-Oct | 2400 | N | 18-Oct | 5000 | N | 5-Jan | 7000 | P | | | |
| 5-Nov | 20500 | P | 6-Nov | 10000 | P | 6-Jan | 6800 | N | | | |
| 5-Nov | 5000 | N | 14-Nov | 5000 | P | Flat Rock | | | | | |
| 12-Nov | 17500 | P | 24-Nov | 9000 | P | Date | Amount | | | | |
| 26-Nov | 17500 | P | 26-Nov | 2000 | N | 21-Nov | 5500 | P | | | |
| 1-Dec | 2000 | N | 16-Dec | 8000 | P | Schuer's Dock | | | | | |
| 8-Dec | 3000 | N | | | | Date | Amount | | | | |
| 10-Dec | 3000 | P | | | | 15-Oct | 1800 | P | | | |
| 19-Dec | 5000 | P | | | | | | | | | |
| 27-Dec | 3000 | N | | | | | | | | | |
| 28-Dec | 14000 | P | | | | | | | | | |

| | |
|---|---|
| Scallop Seed from Propagation Distribution(P) | **263,500** |
| Scallop Seed from Propagation not Distributed | **105,000** |
| Scallop Seed from Natural Collectors Distributed(N) | **49,450** |
| Scallop Seed Distributed from Taylor Seafood(T) | **120,000** |
| **Total Bay Scallop Enhancement** | **537,950** |

## Natural Scallop Spat Collection

For the second straight year natural spat collection proved to be a good way to enhance the ponds. After last year's growing season all the spat bags that became torn or had small holes were recycled and used for natural collectors this year. Floated from the surface, 270 collectors were deployed throughout the ponds (See Map 1-2). Last year's two most efficient mesh size bags were 1.5mm and 3mm. Bags were stuffed with netron and attached to floating lines called strings. This year in an attempt to determine if spat was present throughout both ponds, two new sites were utilized. The spat recruits results were similar to last year, proving that spat was present equally throughout the ponds. The highest number of recruits, at 600 per collector, came from strings at Schuer's Dock and on the east side of Chocker's. The second highest number of recruits collected came from bags placed in Nashaquitsa. It was thought that when collectors were placed in the water, Nashaquitsa would not produce significant number of recruits due to the overcrowding of adult scallops. Despite the high density of adult scallops, collectors in

that pond did well. At 500 seed collected per spat bag, this area was exactly like the large natural set of last year. If the same amount of seed were collected, then it would be logical to say that there were similar numbers of spat throughout the pond this year. Last year the natural seed set was exceptional compared to any recent year. This year there was no significant natural set, despite good collection numbers. Spat collectors floating on the surface must keep seed far enough away from adults, on the bottom, so food and oxygen is more abundant. The third collection site on the east flat of Menemsha Pond had the least number of recruits at 400. Natural seed distribution can be found on table 1-1.


**Map 1-3 Spat Collectors and Spawning Cages**

## Spawning Cages

The location where spawning cages were placed can be found on Map 1-3. Spawning cages were attached to natural collection lines. Cages were filled with seed and nub scallops at the beginning of June. As scallops ripened, they needed weekly scrubbing to remove fouling that covered the shells. The bio-fouling consisted of sea squirts, tunicates, barnacles and algae. Cages were also cleaned by air drying. Cycling clean cages kept bio-fouling from invading or killing scallops over the summer. Keeping scallops and the cages free from fouling increases water flow and can promote better development.

Mid-July to late August scallops appeared to have a bright orange gonad, which indicated ripeness for spawning. Each cage was filled with 50 to 100 scallops depending on their size. At the end of the season many of the scallops in cages on the surface had doubled in size compared to the beds underneath. This occurred because of more oxygen and food present at the water's surface. After spawning, scallops released were ready for harvest.

## Seed Relay

Seed relayed from Nashaquitsa Pond during last year's fall and winter months, were placed in several areas throughout Menemsha Pond. An estimated 25 bushels of seed were rescued from Chocker's after several storms pushed them onto the beach. At low tide, seed was collected and relocated to deeper water.

Over 200 bushels of seed were relayed from November 2007 to August of 2008. A few fishermen volunteered during this process to spread out the vast number of seed in Nashaquitsa Pond. Since Nashaquitsa Pond historically grows smaller scallops than Menemsha Pond, the fishermen and propagation agent decided to spread the abundant seed in Menemsha Pond.

Scallops that grow larger are more marketable and take less time to shuck. The larger size also translated to lower count per bushel making for a longer season, due to baskets filling up faster with fewer scallops. Although a phenomenal seed set can occur a large scale community effort must be initiated so fishermen can harvest the best product.

During the summer of 2008, several individuals that live around the pond realized that scallops were beached and stranded during low tide. Scallops were swimming to find better water quality and were beaching themselves. These people spent hours scooping seed into buckets and transferred them to the town boat. Later, the seed was transferred to the Flats of Menemsha Pond. The fishermen and Shellfish Department would like to thank those undisclosed individuals for their help.

## Conclusion

Similar to last year, seed was grown to the same target size. Dividing seed for a third time allowed them to grow, in some instances, to 50mm. There is a very good chance that seed at this size will have better than 90% survival rate over the winter and hopefully offer spawn during the following summer. Next year, the shellfish propagation program will focus on creating more bottom bags to allow space for the seed to gain extra growth. If seed that is currently held in bottom bags has good survival, then more scallops will be held during the winter next year. The town will also continue to purchase seed raised by Taylor Seafood to further enhance efforts for a natural seed set.

## Quahog Enhancement

Quahog enhancement was approached in two ways. We participated in the State's Quahog Relay Program and were able to enhance certain areas with adult quahogs. The benefit of adding adult stock to the pond can encourage natural seed sets. The area on Map 1-4 was chosen by the Shellfish Advisory Committee as a place that would benefit commercial and recreational fishing alike. During the summer of 2009 this area will be opened for fishing unless otherwise posted.

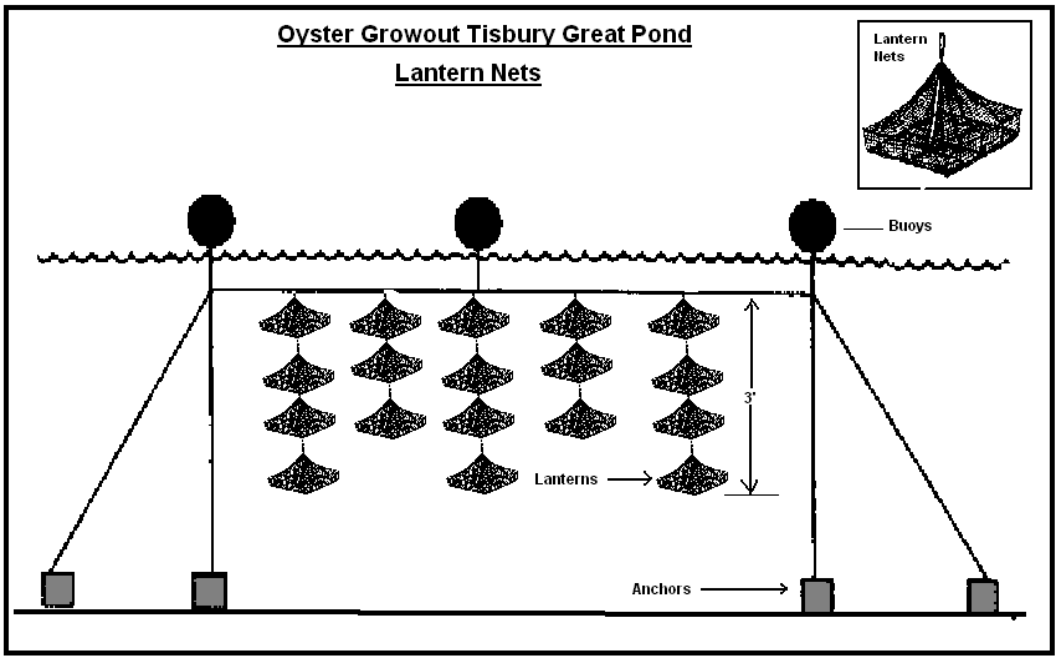

**Map 1-4 Quahog Relay**

The second enhancement approach was growing hatchery-produced quahog seed. The medium used to assist quahog seed growth is called a floating raft. This year, the program built four rafts to be used during the 2008 season. Each raft is capable of holding 100,000 one to two millimeter quahog seed. Rafts float seed above the bottom to avoid predation by crabs. Growth varied between rafts, but the target size of ten millimeters was achieved with most of the seed. Quahog seed was distributed in a number of places throughout Nashaquitsa Pond.

In two years these areas will be ready for harvesting. During the 2009 growing season, eight quahog rafts will be used. This should allow room for 800,000 seed, which will produce almost a half million 10-15mm quahogs.

**Quahogs Produced by Propagation 15mm (count)…..……...……..……193,000**
**Quahog Relay Program (bushels)…….……...…….....100**

## Oyster Enhancement




Oyster enhancement in Tisbury Great Pond (TGP) was met with mixed results. MVSG supplied Chilmark with approximately 90,000 three millimeter oysters to grow during the summer. Seed was placed in lantern nets and grown in the middle of the pond.

Lanterns filled with seed that were four feet below the surface grew less. All lanterns were moved closer to the surface to maximize growth. Periodic checking and cleaning of lantern nets gave the oysters plenty of food. Growth was favorable over the last part of summer which produced one inch oysters. During the fall, oysters were transferred into grow out bags and placed on bottom trawls for the winter. Oysters stored over the winter will be spread on beds of shell cultch in the spring of 2009.

Natural Collectors were made by placing shell inside protective envelopes, made from chicken wire, to encourage natural spat to set. Chinese hats were also deployed throughout the pond for collection. There was no significant amount of recruits collected at the end of the year. Natural collection of oyster spat did not occur as anticipated.

The department will continue to place natural collectors throughout the pond over the next few years to see if a better result can be achieved. The surest way to enhance oyster numbers is by aquaculture methods rather than relying on natural spat collection. The department will focus efforts on raising one inch seed and releasing them for further growth in 2009.

## Oyster Relay

The Shellfish Department requested permission from the Division of Marine Fisheries (DMF) to transfer oysters from Squibnocket Pond to Menemsha Pond. The oysters in Squibnocket Pond are small and plentiful but lack flavor (saltiness) which make them unmarketable. DMF would only grant permission for the area in Menemsha Pond and not for Nashaquitsa. By transferring oysters better growth and flavor was achieved over the summer. An estimated 50% percent of the oysters relayed grew to the legal size of three inches. There was some mortality due to predation by oyster drills, which was expected considering they were planted directly on the bottom. The area where oysters were relayed is open year round, and both commercial and recreational limits can be harvested. The area oysters were transferred to can be found on the copy of the relay proposal included at the end of this report.

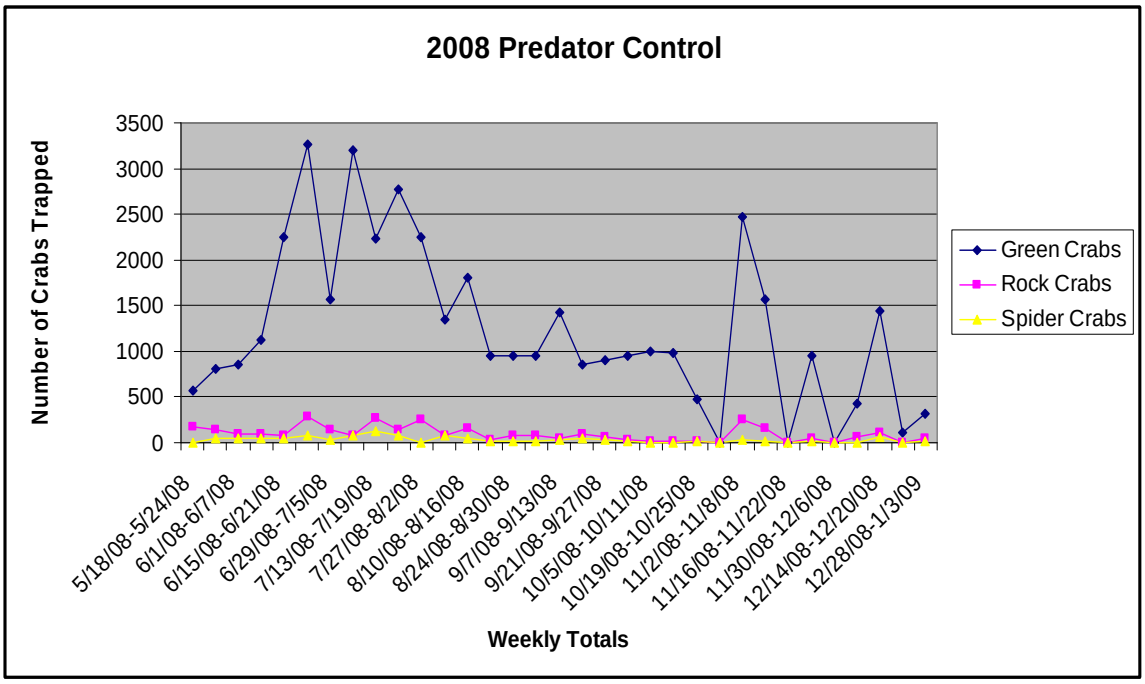
## Predator Control

The predator control program was intensified this summer by doubling the number of crab traps fished and extending the duration of the program. The 150 traps were deployed mostly at the mouth of the pond to catch crabs before they could reach the scallop beds. The program began mid May and continued through December. An estimated **44,994** crabs were harvested from Menemsha and Nashaquitsa Ponds.

| Date | | Green Crabs | Rock Crabs | Spider Crabs |
|---|---|---|---|---|
| | | | | |
| 5/18/08-5/24/08 | | 563 | 180 | 7 |
| 5/25/08-5/31/08 | | 800 | 150 | 50 |
| 6/1/08-6/7/08 | | 850 | 100 | 50 |
| 6/8/08-6/14/08 | | 1125 | 100 | 50 |
| 6/15/08-6/21/08 | | 2253 | 73 | 49 |
| 6/22/08-6/28/08 | | 3263 | 290 | 72 |
| 6/29/08-7/5/08 | | 1575 | 140 | 35 |
| 7/6/08-7/12/08 | | 3207 | 85 | 83 |
| 7/13/08-7/19/08 | | 2232 | 263 | 130 |
| 7/20/08-7/26/08 | | 2775 | 150 | 75 |
| 7/27/08-8/2/08 | | 2250 | 250 | 0 |
| 8/3/08-8/9/08 | | 1350 | 75 | 75 |
| 8/10/08-8/16/08 | | 1800 | 160 | 40 |
| 8/17/08-8/23/08 | | 950 | 30 | 20 |
| 8/24/08-8/30/08 | | 950 | 80 | 20 |
| 8/31/08-9/6/08 | | 950 | 80 | 20 |
| 9/7/08-9/13/08 | | 1425 | 45 | 30 |
| 9/14/08-9/20/08 | | 850 | 100 | 50 |
| 9/21/08-9/27/08 | | 900 | 70 | 30 |
| 9/28/08-10/4/08 | | 950 | 30 | 20 |
| 10/5/08-10/11/08 | | 990 | 10 | 0 |
| 10/12/08-10/18/08 | | 980 | 20 | 0 |
| 10/19/08-10/25/08 | | 475 | 15 | 10 |
| 10/26/08-11/1/08 | | No Bait | No Bait | No Bait |
| 11/2/08-11/8/08 | | 2475 | 248 | 27 |
| 11/9/08-11/15/08 | | 1575 | 158 | 17 |
| 11/16/08-11/22/08 | | No Bait | No Bait | No Bait |
| 11/23/08-11/29/08 | | 950 | 40 | 10 |
| 11/30/08-12/6/08 | | No Bait | No Bait | No Bait |
| 12/7/08-12/13/08 | | 425 | 70 | 5 |
| 12/14/08-12/20/08 | | 1440 | 114 | 65 |
| 12/21/08-12/27/08 | | 113 | 7 | 5 |
| 12/28/08-1/3/09 | | 319 | 45 | 11 |
| **Totals** | | **40760** | **3178** | **1056** |

### Total Number of Crabs=44,994

At 91% the European Green Crabs made up the largest proportion of this catch. All crabs that are trapped during this program were donated to local fishermen and used for bait. After water temperatures cooled below 45F, crab activity slowed considerably. In addition to catching larger crabs, more effort will be placed on catching the smaller




**Bay Scallop Seed ready to be divided into stage 2 media**

**Scallop Seed after Stage 3 (40-50mm)**

**Adult Bay Scallop Harvested during the Fall 2008**

**The first week of the scalloping season**

**Quahog Seed removed from one half of the first quahog raft (10-15mm)**

## Oyster Enhancement-1" Oyster Seed from Lantern Net Growout

## Conclusion

This year's shellfish enhancement program has grown and improved considerably. With propagation assistance the ponds can be enhanced for all the desirable shellfish species. The increased effort of the new assistant constable will make the 2009 growing season more productive.

The town has applied for two grants over the winter and spring. The first grant if awarded will be used to improve Tisbury Great Pond. The pond will be improved by restoring habitat and increasing the number of oysters. The Shellfish Department will work in conjunction with The Martha's Vineyard Shellfish Group to increase oyster numbers by what is called Remote Setting. The Remote Set is a way of setting eyed larvae on shell cultch and growing the spat to a large enough size for release. If this program is successful Tisbury Great Pond could be stocked with millions of oyster seed.

The second grant is part of an economic stimulus package that was applied for by Warren Doty and The Martha's Vineyard Shellfish Group. The grant money, if awarded to the island will give Chilmark a large scale operation for improving habitat and overall shellfish species numbers. The grant will primarily be used to create jobs. However some equipment will be purchased to restore and improve hatchery seed production.

The Shellfish Enhancement Program will continue to grow bay scallops, oysters, quahogs and experiment with soft-shell clams. An increase in the duration of the predator control program will help the survival of released shellfish seed. The methods for growing shellfish are now refined to be cost effective and efficient.

## The Shellfish Departments Goals for Seed Production in 2009

| | |
|---|---|
| **Bay Scallop Seed Released at 35mm** | **800,000** |
| **Oyster Seed Released at 1"-1 1/2"** | **500,000** |
| **Quahog Seed Released at 15mm** | **600,000** |
| **Steamer (Soft-Shell Clams) Experiment with Tent Netting** | **50,000** |

The final three pages of this report have the proposal written to the Division of Marine Fisheries for the oyster relay between Squibnocket and Menemsha Ponds. The Menemsha Pond site was the only site approved and will be opened to the public, unless otherwise posted, throughout the summer of 2009.

# Town of Chilmark

P.O. Box 119
Chilmark, Ma 02353-0119
Tel: (508) 645-2100
Fax: (508) 645-2110

Dear Dave Whittiker,

I am writing on behalf of the Board of Selectmen and the Shellfish Advisory Committee of the Town of Chilmark. The Selectmen approved a relay and would like to request permission from the Division of Marine Fisheries (DMF) to relay oyster seed from Squibnocket Pond (V35) to Menemsha Pond (V2) and Nashaquitsa Pond (V3). The Town of Chilmark recognizes that any relay program would be contingent on testing of shellfish for disease. The current classification of water quality from DMF maps has listed the area we plan to relay oysters from as approved for harvesting. If oysters are disease free we would like to begin relaying immediately, before water conditions deteriorate from summer inhabitants. The very low salinity in Squibnocket Pond has made oysters very flat and unmarketable. Overcrowding of oysters in Squibnocket Pond has also become a problem and has caused them to grow banana-shaped, further decreasing their appeal. Squibnocket and Menemsha Ponds are joined by a small tidal creek named Herring Creek. The tide that flows through the creek causes a full flush of Squibnocket Pond once every 300 days.

The oyster relay will be a town run program and overseen by Isaiah L. Scheffer (Shellfish Propagation Agent/ Assistant Shellfish Constable). The relay will take place over a three week period of time. Removal of oysters will be by dredge and boat. All oysters will be harvested from the area on **Map 1**. Oysters will then be transferred to trucks and driven approximately one mile to the town landing and placed on a town boat for field planting. All oysters will be field planted the same day as relayed. Oysters will be placed directly on the bottom until the fall of 2008 so oysters will have a chance to spawn over the summer months. The town would like to move a total of two hundred bushels of oysters to the two sites located on **Map 2** and **Map 3**. The two sites were selected by the Shellfish Advisory Committee so people, not fishing commercially, could also have access to oysters. Very few public access points in Menemsha and Nashaquitsa Ponds has limited the choices for relay sites.

## Squibnocket Pond Boundries

**NW Boundary 41° 19’3.84”N, 70° 46’53.13”W** **NE Boundary 41°19’3.92”N, 70°46’40.59”W**

**SW Boundary 41°18’52.57”N, 70°46’53.13”W** **SE Boundary 41°18’52.66”N, 70°46’40.59”W**

## Squibnocket Pond V35


Map 1

## Description of Menemsha Pond (V2) Relay Site:

The Mouth of Menemsha Pond in Chilmark, Massachusetts. From the end of Edy's Island Way by the Coast Guard Station west to the Chilmark/ Aquinnah town line. Pease's Point west to the Chilmark/ Aquinnah town line. All area around Edy's Island.

Description of Nashaquitsa Pond (V3) Relay Site:

From the Nashaquitsa Bridge two hundred yards through Harph's Creek.