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Recommended Citation

Murray, T. J., & Kirkley, J. E. (2008) Economic Outlook for Expansion of the Eastern Shore Farmers' Market: Seafood Handling, Storage, and Transportation Facility. Marine Resource Report No. 2008-7; VSG-08-08. Virginia Institute of Marine Science, College of William and Mary. <http://dx.doi.org/doi:10.21220/m2-f9vx-t983>

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Economic Outlook for Expansion of the Eastern Shore Farmers' Market: Seafood Handling, Storage, and Transportation Facility

By

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VSG-08-08

VIMS Marine Resource Report No. 2008-7

September 5, 2008



VSG-08-08

VIMS Marine Resource Report No. 2008-7

Additional copies of this publication are available from Virginia Sea Grant at:

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This work is a result of research sponsored in part by NOAA Office of Sea Grant, U.S. Department of Commerce, under Grant No. NA96RG0025 to the Virginia Sea Grant Program. The views expressed herein do not necessarily reflect the views of any of those organizations.

Economic Outlook for Expansion of the Eastern Shore Farmers' Market: "Seafood Handling, Storage and Transportation Facility."

Background

The Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Farm Market Board established the Eastern Shore Farmers' Market to function as a regional wholesale and distributing facility for agricultural products, especially those produced by small to medium sized farms. The Eastern Shore Farmers' Market has reported significant success in this endeavor, handling almost \$25 million worth of produce in its first 5 years of operation. After receiving a State guaranteed loan for its start-up, the Market is now self-supporting except for normal maintenance reserve costs for infrastructure.

Located on the Delmarva Peninsula, Virginia's Eastern Shore consists of Accomack and Northampton Counties, two of the top vegetable and seafood-producing counties in the state. The current facility location in Melfa is a centrally located area with excellent access from the major highway and adjacent to Accomack County Airport, allowing easy access to land or air shipment. The facility already has several support services, including a commercial truck scale and administrative building.

To broaden its support of the Eastern Shore's food-producing industries VDACS and its partners are now endeavoring to invest in needed building and capital equipment to support the Eastern Shore's growing seafood and aquaculture sector. The two counties represent one of the most productive commercial fisheries and seafood industries in the Commonwealth. In many ways the seafood industry has mirrored agriculture on the Eastern Shore; both industries are comprised of many relatively small producers harvesting diverse perishable products subject to national and international competition in the food marketplace.

The second part of the Eastern Shore Farmers' Market's development, the seafood warehouse, is the subject of this evaluation. Funds have now been appropriated to the VDACS to construct and equip a \$5.4 million state-of-the-art Eastern Shore Seafood Market. This success in funding is actually the culmination of earlier efforts. The Eastern Shore Farmers Cooperative, Resource Conservation and Development, and the Working Watermen's Association merged as a Task Force in the late 1990's and assessed the needs of the Eastern Shore Watermen. In response to those findings a report "Economic Feasibility of Proposed Expansion of Eastern Shore Farmers' Market: Seafood Warehouse and Distribution Facility" was completed in 1999 (1).

Since that assessment, the seafood and aquaculture landscape has evolved on the Eastern Shore. While certain areas of activity have contracted, others have grown to contribute to an overall significantly increasing level of economic activity relating to the culture and harvest of fish and shellfish. In many ways, the industry is at a crossroads: facing on one hand a real potential for significant expansion in value-added while at the same time dealing with the challenge of expanding harvests without the local infrastructure to properly handle, store and transport the greater harvests to build economic value on the Eastern Shore.

To increase the value and marketing of this expanding supply, a facility with a blast freezer, two freezer units, and cold and dry storage units will be well positioned to meet not only the current needs, but also the needs well into the 21st century. The facility will be operated in the same manner as the successful Farmers’ Market produce facility; allowing the small and medium-sized fisheries and aquaculture harvesters to enhance their market leverage by using the new facilities.

Accomack and Northampton Counties

The counties of Accomack and Northampton comprise what is known as the Eastern Shore of Virginia, a peninsula bordered on the west by the Chesapeake Bay and on the east by the Atlantic Ocean. Northampton makes up the southern half of the peninsula and Accomack is the northern section. There are 45 towns located within the two counties. The counties are transected by U.S. Highway 13, strategically connecting the Eastern Shore to major metropolitan areas along the Eastern Seaboard.

Table 1: Distances in Miles from The Central Eastern Shore to Major Metropolitan Areas	
Norfolk, Virginia	35 miles
Richmond, Virginia	125 miles
Baltimore, Maryland	140 miles
Washington, D.C.	150 miles
Philadelphia, Pennsylvania	165 miles
Raleigh, North Carolina	225 miles
New York, New York	290 miles

In addition, the Eastern Shore Railroad has more than 90 miles of track spanning the two counties. Accomack Airport is located at Accomack Industrial Park, which adjoins the proposed seafood market. Commercial air service is available within 35 miles at the Norfolk International Airport (1).

Accomack		Northampton		
	Population	Total Employment	Population	Total Employment
1976	30,878	14,711	15,262	6,892
1986	31,228	15,492	13,526	6,223
1996	32,126	17,313	12,887	5,948
2006	39,345	18,168	13,609	5,691

As depicted in Table 2, the two counties have continued to exhibit considerably different population and employment patterns over the past thirty years. Accomack has continued to grow in both population and workforce while Northampton showed declines over the same period.

	Accomack	Northampton
Number of Private Non-Farm Businesses	854	361
Private Non-Farm Business Employment	10,047	3,331
Payroll per Employee (% of U.S. Average)	\$23,041 (62.3%)	\$26,437 (71.5%)

Aquatic Harvesting - An Economic Tradition

Though early settlers on the Eastern Shore relied on subsistence fishing to supplement their agricultural activity, in the mid-19th century, seafood production became the primary employer. With expanding seafood demand in large urban areas such as New York, Philadelphia and Washington DC, the Eastern Shore seafood industry grew by serving the expanding marketplace.

As with farming, the seasonal fluctuations in seafood product harvesting create chronic difficulties in seafood marketing. As the seafood dealers and the Working Waterman's Association have noted, flounder or croaker catches often flood the market, driving down prices

¹ County and City Data Book 2007. U.S. Census Bureau. (1)

² Ibid.

and making profit margins tight for watermen and wholesalers. With limited markets for the individual fishermen to sell their catch competitively, the position of price-taker has historically limited the opportunity for individuals and small firms to grow enterprises and add value to harvests. Succumbing to the diverse pressures of fluctuating market prices, federal and state regulations, and spiraling costs for needed inputs such as gear and fuel prices, many fishermen on the Eastern Shore have left the fisheries, seeking seasonal jobs such as construction.

Despite this long history there has been recent growth in landings and value on the Eastern Shore. In general, fresh finfish products produced are still directly unloaded and packed at the dock (the only “value added” activity) and sold to a variety of local, regional, and Eastern Seaboard wholesale and retail markets.

Since the 1999 study, commercial fisheries landings and values have increased on the Eastern Shore (Appendix 1). The 1994 landings data referenced in that report showed a combined value of \$9.5 million for seafood landed on the Eastern Shore. Table 4 contains the most recent data (2007), reflecting that the combined value of the seafood harvest has risen to \$15.9 million.

Table 4: Commercial Fishery Landings & Value, Eastern Shore of Virginia, 2007			
2007 Commercial Fishery Landings	Accomack	Northampton	Eastern Shore Total
Pounds	12,056,215	6,832,734	18,888,949
Value	\$ 9,452,517	\$6,462,320	\$15,914,837

Developing Industry and Needs

Change has always been a constant in the Eastern Shore’s seafood industry and the past decade has perhaps brought as much new development as any in the Shore’s long history. The two major areas of development and future potential have been related to shellfish. First and foremost has been the dramatic growth in the intensive aquaculture of clams.

Virginia Clam (*Mercenaria mercenaria*) Aquaculture 2005-2007

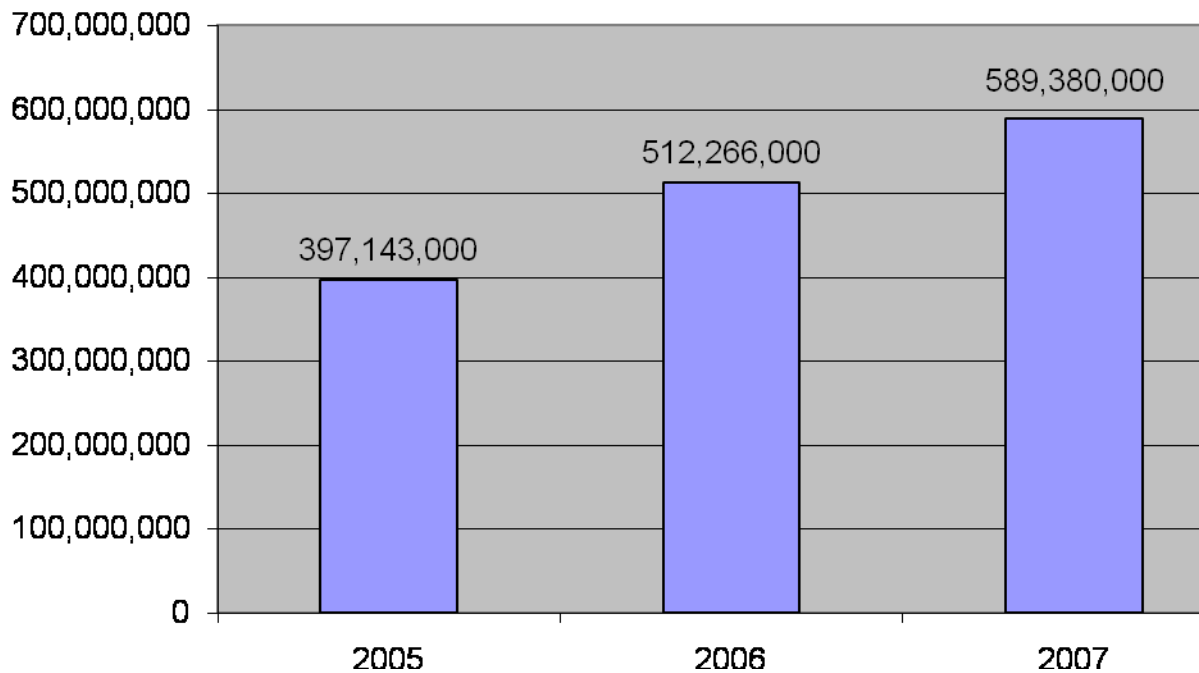
Continued growth of the shellfish aquaculture industry on the Eastern Shore has added significant value to the State’s seafood marketplace. Today, watermen continue to harvest both hard clams and oysters from the State’s public resources, albeit at diminished rates. At the same time, Eastern Shore watermen-farmers are providing growing quantities of additional quality shellfish to consumers. Following the lead of the hard-clam industry, in recent years, there has begun a significant transition to intensive aquaculture of native oysters. The once extensive oyster planting has disappeared primarily as a result of endemic oyster diseases and increasing

wildlife predation of seed oysters. In its place is an emerging aquaculture sector betting on improved culture techniques and disease-resistant oyster seed.

The aquaculture of hard clams continues to expand in Virginia. Based upon previous economic assessments compiled by the author (TJM), Virginia leads the nation in the culture of hard clams. The growth continues in this sector as evidenced by a recent survey. Virtually all of Virginia's hard-clam aquaculture takes place on the Eastern Shore (4).

As depicted in Figure 1, Eastern Shore clam growers have reported a significant increase in seed plantings during the most recent years. The firms reporting indicated that during 2007 they increased plantings by over 77 million clams (15%) compared to 2006. The outlook for 2008 was incomplete at the time of the 2007 survey; however, those reporting suggest the likelihood of a further increase in their seed planting of 5-10% during 2008.³

Figure 1: Number of Hard Clams Planted in Virginia (2005-2007)



³ Several large growers indicated at the time of the survey that their 2008 planting intentions were not finalized. If those firms repeated their 2007 plantings during 2008, the outlook suggests an added increase of 9% for Virginia's industry overall during 2008, to an estimated 645 million seed clams planted.

Clam Sales and Prices

The author's 2007 crop reporting survey collected additional details and information from growers, which reflected a continuing increase (9%) in the total number of Virginia market clams sold between 2006 and the end of 2007. During 2007, it is estimated that Virginia's total farm output rose to an estimated 211.9 million market clams, as shown in Figure 2 below.

Figure 2: Number of Hard Clams Sold in Virginia (2005-2007)

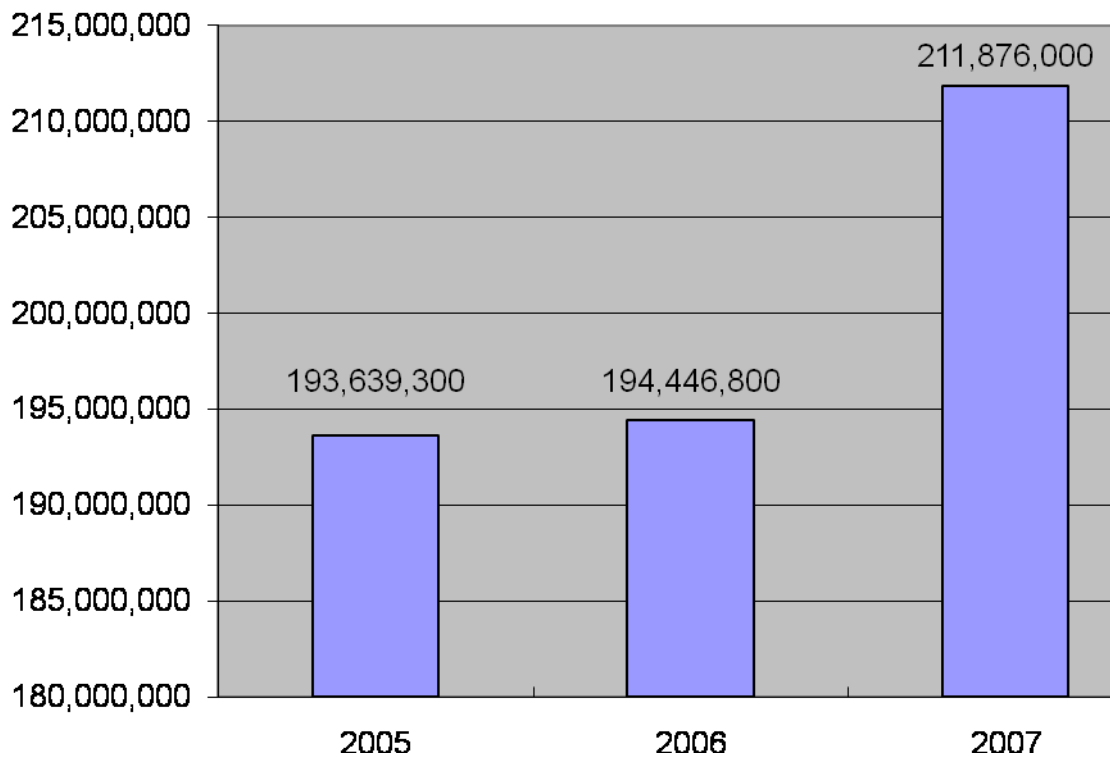


Figure 3 displays the survey findings regarding relative prices received for market clams. The weighted average price reported per market clam at the farm gate was \$0.13 during 2007—essentially at the same level overall as 2006.⁴ According to the growers, over 90% of all market-size clams grown in Virginia continued to be shipped to out-of-state buyers. The prospect of

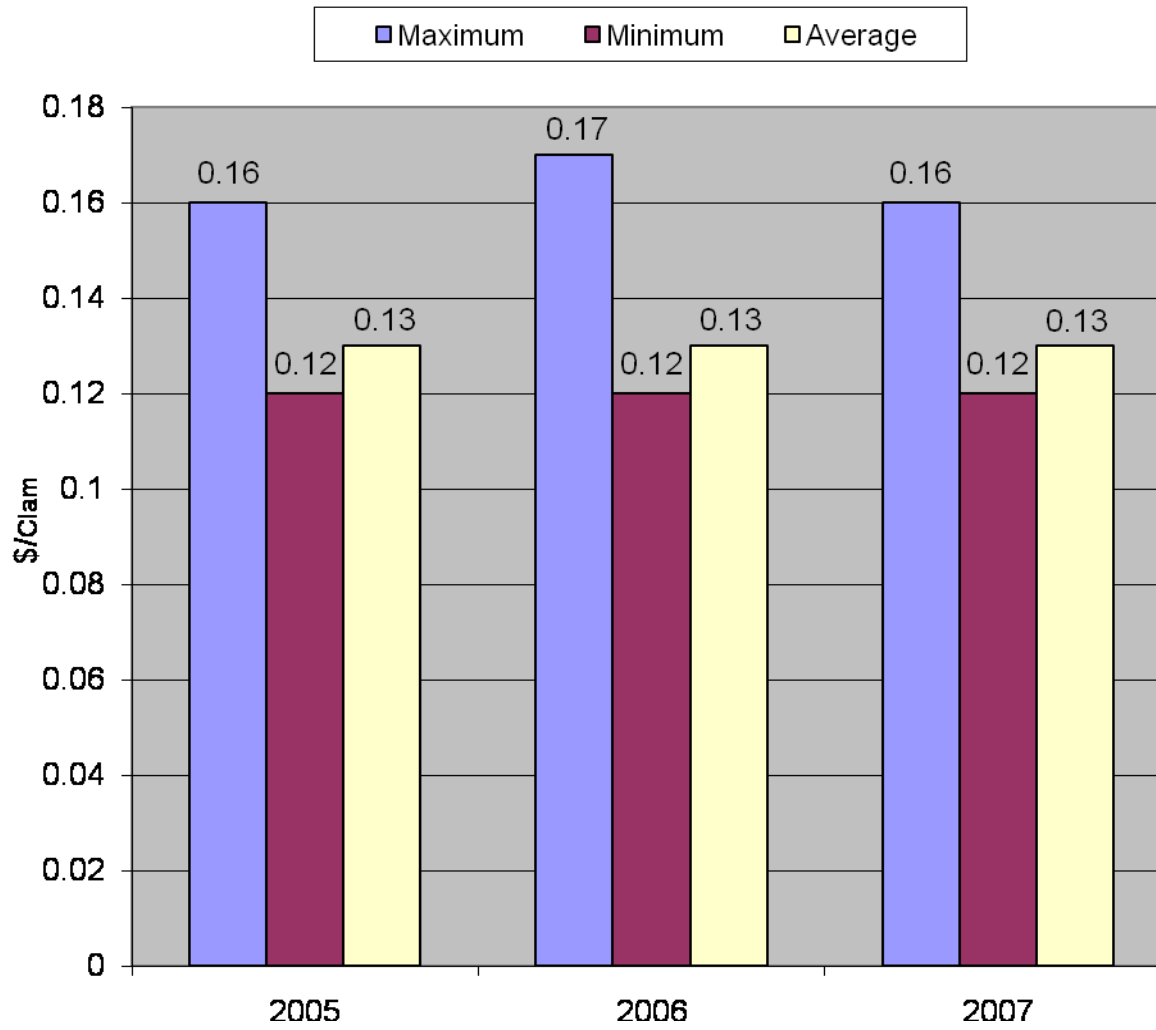
⁴ Smaller niche growers with production and sales of less than 50,000 clams reported average prices as high as \$0.30. Fourteen cents per clam was the modal price to the grower. It should be pointed out that market level for most growers is equivalent to farm gate prices. Some smaller growers market product directly at the retail level.

continually expanding plantings and harvest suggest that the recent leveling of farm prices is a challenge for future market and product development. This has resulted in the current interest by some Eastern Shore shellfish growers in the provision of centralized value-added processing capability aligned with the strategic intent of the Eastern Shore seafood market. It is estimated that the Eastern Shore clam farms sold \$27.5 million in clams during 2007.

The expected price flexibility of Eastern Shore hard clams, which will be associated with farm sales approaching 300 million clams per year provides great justification for the development of markets for clam products that will not adversely impact the existing market for live hard clams. According to the trade press, supermarket clam sales rose 5.8% during 2007. However clam sales are not growing as fast as overall seafood department sales at the nation's supermarkets, which saw a one-year growth of 7.9%.⁵

⁵ Seafood Business "Retail Report" May, 2008. Volume 27, Number 5.

**Figure 3: Clam Prices Reported By Virginia Growers
(2005-2007)**



Virginia Oyster (*Crassostrea virginica*) Aquaculture 2005-2007

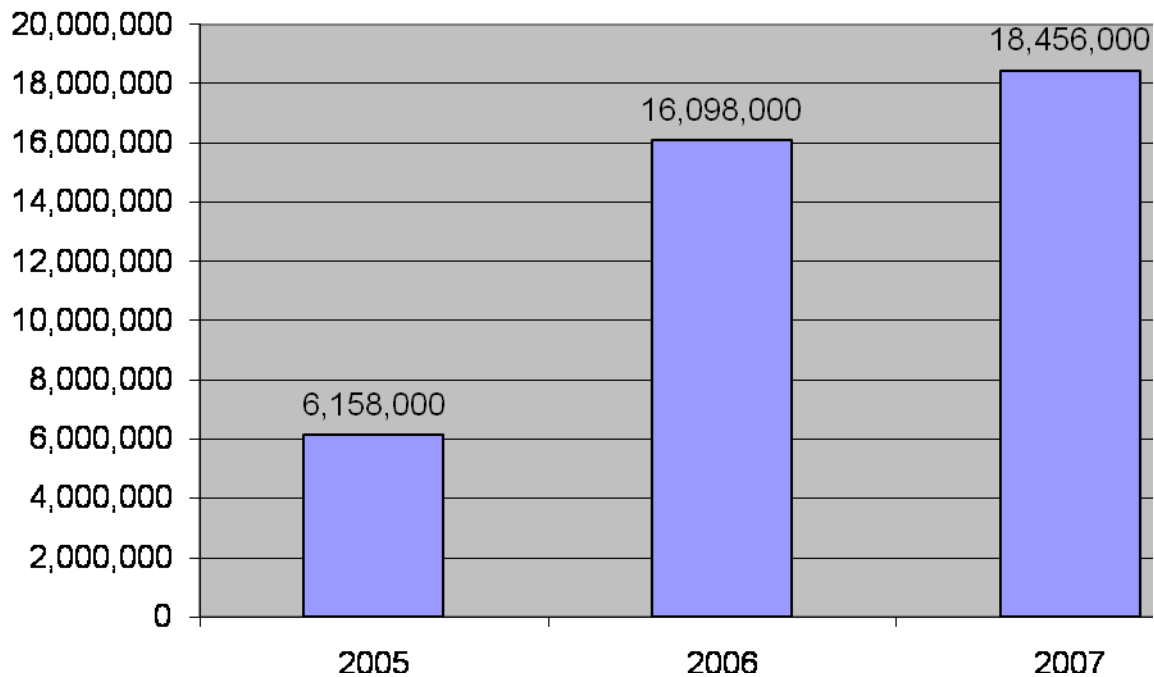
The oyster industry continues to evolve from the traditional extensive planting of “shell on bottom” to more intensive, contained aquaculture utilizing cages, racks, floats, and the like.⁶ As is depicted in Figure 4, the growers surveyed annually by the author showed continued growth from 2005 through 2007. The near tripling of oyster plantings, which occurred from 2005 through 2006, tapered during 2007. One reason noted for the diminished rate of expansion is the shortage of viable oyster seed from existing hatcheries. If the overall grower expectations gathered through this survey materialize, 2008 will see nearly a 33 % increase in oysters planted (25,000,000) by Virginia oyster growers. The growth in oysters sold by farmers depicted in Figure 4 tracks the lagged increase in oyster plantings and demonstrates an almost six-fold increase in farmed oyster sales by Virginia growers between 2005 and the end of 2007. Growers expect market oyster sales to reach 7.3 million during 2008.

Accompanying the expansion in plantings and ultimate marketing levels, Virginia industry has continued to expand its hatchery capabilities, reportedly producing 26.7 million seed oysters for sale or planting during 2007. Eighty-four percent of the seed planted by Virginia growers was purchased from a hatchery. The growers surveyed project an additional 14% increase in oyster seed production during 2008 to an estimated 30.5 million.

This forecast derives directly from the continued growth in aquaculture of oysters in Virginia, as virtually all of the seed produced is either planted by the hatchery owners themselves in their aquaculture operations or sold to other Virginia oyster growers. This vertically integrated system with eventual sales to many out-of-state consumers adds important economic development to local coastal communities.

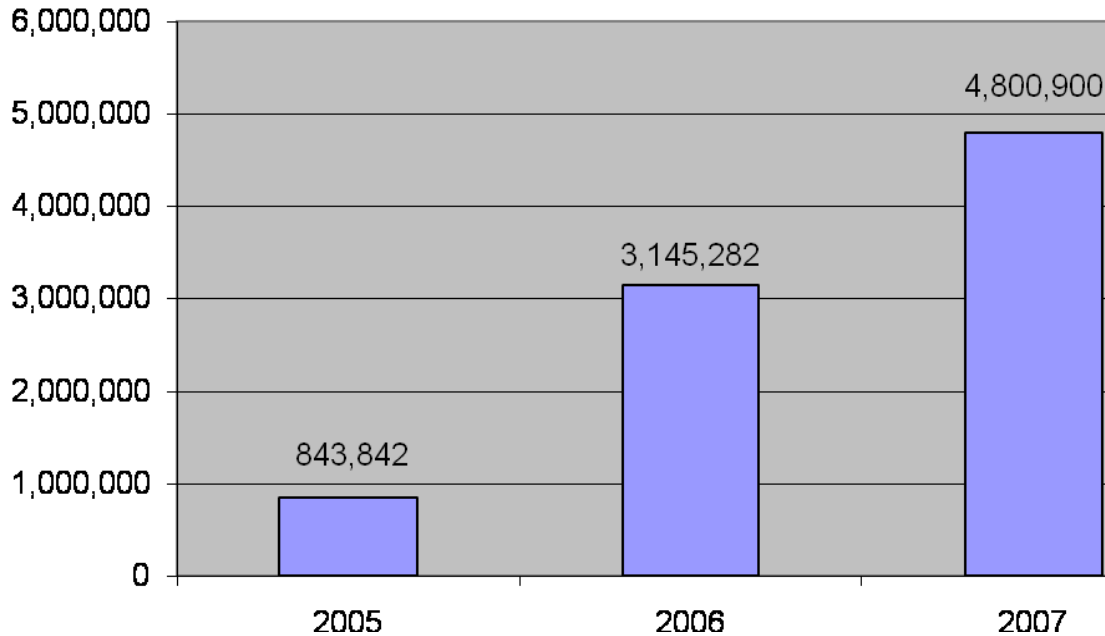
⁶ Historically the most common oyster “culture” technique in Virginia was the transplanting of wild harvested seed to leased growing grounds. Prior to the onslaught of diseases, the grower paid little attention to the grounds between the time seed was planted and the time mature oysters were harvested, some 2 or 3 years later. Today there is little such culture practiced and the results here do not include information on such oyster planting. The results here represent the use of intensive aquaculture practices using hatchery-produced seed adopted as a result of increased oyster disease and predation.

Figure 4: Number of Oysters Planted by Virginia Aquaculturists (2005-2007)



As the oyster aquaculture industry continues to expand on the Eastern Shore, increased demands will be placed upon its ability to supply shellfish to the marketplace that are able to surmount the growing demands of shellfish inspection. The seafood industry, and in particular the molluscan shellfish industry, is being required to produce products that meet customer specifications on the microbiological, physical, and biochemical properties of their products. These recent customer-initiated quality standards are a result of the high visibility that food quality and safety is receiving from consumers, consumer action groups, and state and federal food regulatory agencies. Firms that do not meet the specified standards on a consistent basis lose customers. The seafood industry on the Eastern Shore consists mostly of small firms that do not have quality-control laboratories in their facilities and lack access to independent testing laboratories due to their remoteness or the high cost of services. A centralized quality-control and testing capability such as that envisioned at the Eastern Shore seafood market is needed to assist the firms in evaluating their products for standard compliance and offering the necessary technical assistance that may be required to bring processed products under compliance.

Figure 5: Number of Aquacultured Market Oysters Sold by Virginia Growers (2005-2007)



Sea Scallops

Virginia's role as a major harvest center for Atlantic sea scallops has expanded markedly in recent years. With the federal fishery-management mechanisms, a series of rotational area-management mechanisms instituted since 1980 have produced significant value added to the fishing fleet and related industry. While sea scallops are primarily found from Maine to Virginia, large areas of harvestable bottom became accessible off of Virginia's Eastern Shore in 2003. The new open areas were within a three-hour boat trip from the Eastern Shore. Scallop boats operate under two types of management. One being the "limited access" vessels: a class of scallop harvesting boats which is composed of primarily larger vessels that have a limited number of participant boats and allowable fishing days at sea. The other sector of the fleet is the "general category" which is made up of smaller day trip boats, which are allowed to catch 400 pounds of meats per trip. This latter group has increasingly looked to the Eastern Shore as a seasonally important hailing port for the scallop area openings. Table 5 presents the growth in the sea scallop industry in Virginia since the original assessment of the Eastern Shore seafood market in 1999.⁷

⁷ Virginia's landings of sea scallops during 2006 were valued at \$52.8 million, down from a peak of \$92.3 million in 2004. Reportedly, a number of limited-access scallop permits were transferred to interests in New England, and the recent declines in Virginia's landings and value are a direct result of this relocation.

Table 5: Virginia's Sea Scallop Landings and Value 1998-2006 (Source: National Marine Fisheries Service)		
Year	Pounds	Value (\$)
1998	3,557,156	20,702,730
1999	5,562,177	27,340,390
2000	9,409,988	39,769,522
2001	14,429,723	43,697,279
2002	16,189,465	57,714,867
2003	17,536,197	68,297,828
2004	19,673,568	92,388,323
2005	11,434,832	84,595,114
2006	8,311,404	52,819,317

Federal managers plan to re-open extensive areas (“Del MarVa”, and the “Elephant Trunk”) both located a relatively easy steam off of the Eastern Shore. While it is uncertain the exact quantity of sea scallops that will be produced, scientists associated with the federal fishery management regime project that tens of millions of pounds of sea scallops will be harvested from these now closed areas when they are opened in 2009 and that there will be a potential for increasing harvests in 2010 and beyond.

The Eastern Shore’s comparative locational advantage relative to traditional New England scallop ports such as New Bedford Massachusetts suggests the possibility for future growth in Virginia’s harvesting and handling sector. During 2007, the Eastern Shore reportedly landed just over \$1 million in sea scallops. The prospect for landings increasing to \$20 million in 2010 may have implications for a facility such as the Eastern Shore seafood handling and distribution center.

Potential Economic Impact of the Eastern Shore Seafood Market

Combining the fish and shellfish harvest with the sales of Eastern Shore clam farmers and oyster growers, it is estimated that total sales from the three sources reached \$44 million during 2007.

It is not clear how much of this activity will be redirected through the new facility. Eastern Shore Fishermen’s Cooperative members suggest that virtually all of the traditional wild-caught

fish and shellfish would be marketed via the new facility. Again that value was \$15.9 million during 2007. It is likely that a large proportion of that catch will end up as throughputs at the new facility. To demonstrate what various levels of product flow could add to the local economy, a brief summary of economic impacts is provided here to benchmark the development potential. For example, the economic impacts arising from each \$1.0 million in products coming through the facility are displayed in Table 6. Since the exact amount and value of products to be handled at the new facility are not known, the estimates here relate to incremental economic impacts for each \$1 million in fish and shellfish products passing through the facility.

Table 6: Economic Impacts on Regional Economy of Accomack and Northampton, Virginia (2006)⁸				
	Direct	Indirect	Induced	Total
Output(\$)	1,000,000	141,533	191,984	1,333,517
Labor Income(\$)	370,540	41,120	54,631	466,291
Employment (FTEs) ⁹	10	2	2	14

Three traditional measures of economic impact (output or sales, labor income, and jobs) are used here to describe the potential for the facility in building the Eastern Shore’s economic base. Direct impacts represent the output/sales, income, or jobs that result directly from an economic activity within the study area or a regional economy.

The direct activity entails support from related businesses and results in *indirect impacts*. Indirect effects occur when businesses use revenues originating from outside the region, or study area, to purchase inputs (goods and services) from local suppliers. This secondary or indirect business generates additional revenues, income, and jobs for the area economy.

Further, the direct and indirect impacts add to the Eastern Shore economy as wages and incomes derived from the direct and indirect sectors multiply through households on the Eastern Shore. These *induced effects* or impacts occur when new dollars, originating from outside the study area, are introduced into the local economy. Induced economic impacts occur as the households

⁸ Dollar values are in terms of 2006 dollar values; to obtain 2008 dollar values, multiply by 1.0429, which is the factor to convert nominal dollars to 2008 constant dollar values (based in gross domestic product implicit price deflator). Impacts estimated using IMPLAN Pro 2.0 and 2006 multipliers; IMPLAN is a widely used and continually updated input/output modeling program.

⁹ FullTime Employment Equivalents.

of business owners and employees spend their earnings from these enterprises to purchase consumer goods and services from other businesses within the region. These goods and services may not be directly or indirectly associated with the seafood marketing enterprise. This induced effect generates additional revenues, income, and jobs for the area economy. Finally the total economic impact to the Eastern Shore will equal the sum of direct, indirect, and induced effects or economic impacts. To summarize, for each \$1 million in fish and shellfish passing through the new facility \$1.3 million in total sales, \$466,000 in labor income and 14 jobs are generated in the region.

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3. “2007 Commercial Fisheries Landings and Values Accomack and Northampton Counties, Virginia.” Special data request and Preliminary report to Thomas Murray. The Virginia Marine Resources Commission. July 31, 2008.
4. “Virginia Shellfish Aquaculture Situation and Outlook Report” T.J. Murray and M.J. Oesterling. VIMS. Gloucester Point, Virginia. VMRR 2008-02. April 2008.

Appendix 1

Appendix 1: Eastern Shore 2007 Commercial Fishery Landings and Values Preliminary		
SPECIES	POUNDS	VALUE (\$)
ALEWIFE	58,260	6,793
ANGLER	534,817	423,267
BASS, BLACK SEA	32,192	103,967
BASS, STRIPED	272,371	527,096
BLOOD ARK, CLAM	2,012	11,310
BLUEFISH	253,869	102,584
BONITO	16	6
BUTTERFISH	31,699	27,477
CATFISH, UNCLASSIFIED	33	23
COBIA	2,117	3,371
CONCHS	117,130	228,020
CRAB, BLUE	6,242,107	4,992,922
CROAKER, ATLANTIC	4,512,672	2,220,588
DOGFISH, UNCLASSIFIED	238,134	49,208
DOGFISH, SMOOTH	412,984	204,851
DOGFISH, SPINY	1,205,388	167,769
DOLPHIN FISH	959	2,460
DRUM, BLACK	70,861	41,627
DRUM, UNCLASSIFIED	318	211
DRUM, RED	1,697	1,230
EEL, AMERICAN	4,295	6,793
EEL, CONGER	2,192	1,520
FISH, OTHER	311,172	30,536
FLOUNDER, SUMMER	582,279	1,086,346
GARFISH	12	1
HAKE, RED	144	45
HARVESTFISH	22,812	26,511
HERRING, BLUEBACK	18	2
HORSESHOE CRABS	143,316	67,695
LOBSTER	26,023	148,488
MACKEREL, ATLANTIC	2,303	276
MACKEREL, KING	382	539
MACKEREL, SPANISH	3,917	4,108
MENHADEN	161,682	12,670
MINNOW	38,295	28,512
MULLET	146	136
MUSSELS	2	4
OYSTERS	72,927	284,628

Appendix 1: Eastern Shore 2007 Commercial Fishery Landings and Values Preliminary

SPECIES	POUNDS	VALUE (\$)
PERCH, WHITE	15	13
PERCH, YELLOW	5	3
POLLOCK	1,035	1,033
POMPANO, COMMON	739	1,531
PUFFER, NORTHERN	8,768	9,374
QUAHOG	1,860,307	2,870,579
RAY, COWNOSE	9,922	19,084
RIBBON FISH	1,635	599
SCALLOP, SEA	172,791	1,028,127
SCUP	13,305	3,353
SEA ROBIN, NORTHERN	1,020	161
SEATROUT, GREY	121,659	102,663
SEATROUT, UNCLASSIFIED	15	17
SEATROUT, SPOTTED	274	276
SHAD, AMERICAN	11	3
SHAD, GIZZARD	1,436	86
SHAD, HICKORY	353	70
SHARK, ATL SHARPNOSE	35,534	26,649
SHARK, BLACKTIP	49,629	27,435
SHARK, BULL	1,906	1,430
SHARK, DUSKY	5	2
SHARK, UNCLASSIFIED	5,431	18,670
SHARK, SANDBAR	117,496	92,733
SHARK, SILKY	1,367	820
SHARK, THRESHER	14,483	6,533
SHARKS, MAKO	845	661
SHEEPSHEAD	728	346
SKATE, CLEARNOSE	10,000	2,500
SKATE, UNCLASSIFIED	19,284	1,702
SKATE, WINGS	70,490	11,595
SKATE, WINTER (BIG)	2,345	413
SPADEFISH	34,835	12,809
SPOT	928,104	790,925
SQUID (LOLIGO)	13,117	4,998
STARGAZERS	23	13
TAUTOG	3,566	5,065
TOADFISH, OYSTER	16	32
TRIGGERFISHES	2,679	1,377
TUNA, ALBACORE	5	1
TUNA, FALSE ALBACORE	9	32
TUNA, LITTLE	8	2

Appendix 1: Eastern Shore 2007 Commercial Fishery Landings and Values Preliminary

SPECIES	POUNDS	VALUE (\$)
TUNA, YELLOWFIN	2,486	3,797
WAHOO	40	80
WHELK, CHANNEL	13,301	39,649
WHELK, KNOBBED	32	41
WHITING, KING	6,214	3,404
WRECKFISH	130	260

Date: July 31, 2008

Department of Plans and Statistics

Data Source: FSMRPT

Criteria: Year, Species, Pounds, Value, State Landed = 49

Year: 2007 Preliminary

Species: All

Gear: All