

Virginia Shellfish Aquaculture

Situation and Outlook Report

Results of Virginia Shellfish Aquaculture Crop Reporting Survey 2004-2006



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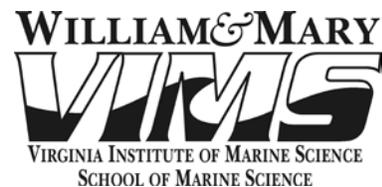
June 2006

VSG-06-06
VIMS Marine Resource Report No. 2006-5

This work is the result of research supported in part by NOAA Office of Sea Grant, U.S. Department of Commerce, under Grant No. NA96RG0025 to the Virginia Graduate Marine Science Consortium and the Virginia Sea Grant College Program.

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The growth of the shellfish aquaculture industry in Virginia 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, Virginia's 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 traditional shellfish shell 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 shellfish seed.

While these trends are widely acknowledged, there has been no consistent reporting of production and economic trends in Virginia's shellfish aquaculture industry. Periodic assessments are necessary to inform growers and related interests about the actual status and trends in the industry. The intent of this survey is to initiate annual assessments with which to gauge growth and inputs in Virginia's shellfish aquaculture industry. This report is based upon an industry survey completed during the first quarter of 2006.

Methodology

Survey

A mail survey was developed to collect information from Virginia clam and oyster growers known to be active in the industry. A preliminary version of the survey instrument was pilot tested and revised based upon the field testing. (Appendix 1). Forty-nine surveys were returned with 44 complete usable surveys provided including 18 clam growers and 26 oyster growers. In discussions with industry it is felt that the firms responding represent 95%

of the total production of Virginia's aquaculture of market size oysters and clams during 2005.

For confidentiality reasons, the information collected is aggregated and the total represents both the eastern and western shores of Virginia.

Summary of Findings

Virginia Aquaculture Clams 2004-2006

The aquaculture of hard clams continues to expand in Virginia. Based upon an economic assessment in 2004, Virginia's clam farms lead the nation in the culture of hard clams. The growth continues in this sector as evidenced by the recent survey.

As depicted in Figure 1, clam growers reported a slight increase in the number of leases held for aquaculture.

Figure 1. Number of Acres Leased that Include Clam Aquaculture, 2004 - 2005.

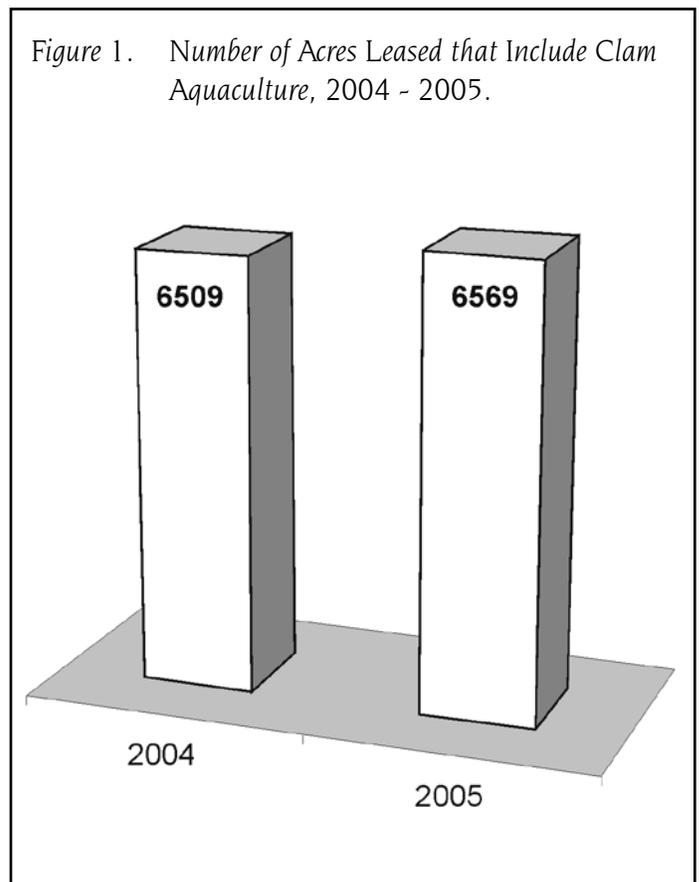


Figure 2 shows that clam growers reportedly increased seed plantings by over 20 million clams (39%) between 2004 and 2005. The outlook for 2006 is incomplete; however those reporting suggest a further increase in their seed planting of 20-25% during 2006¹.

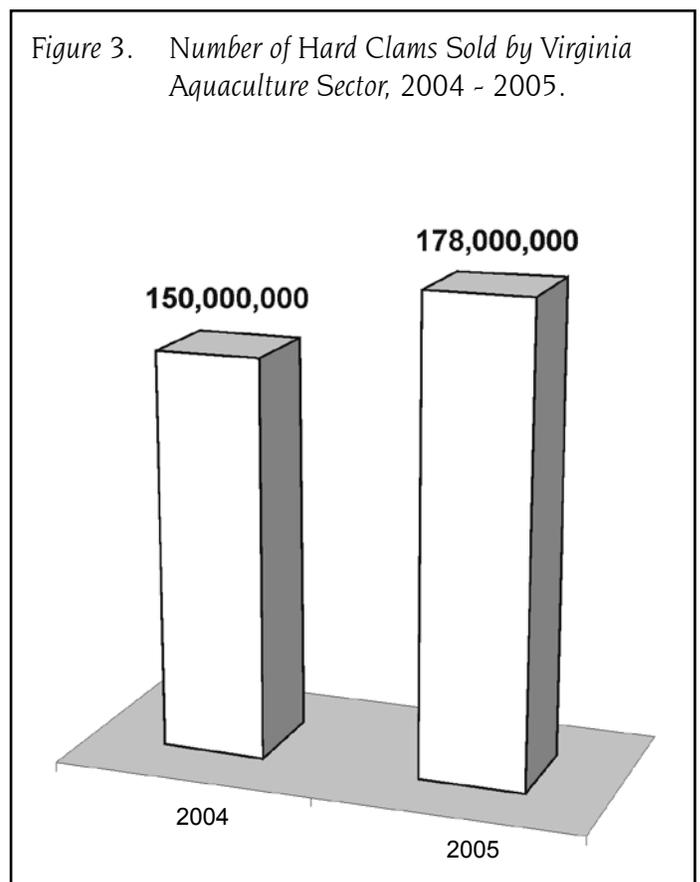
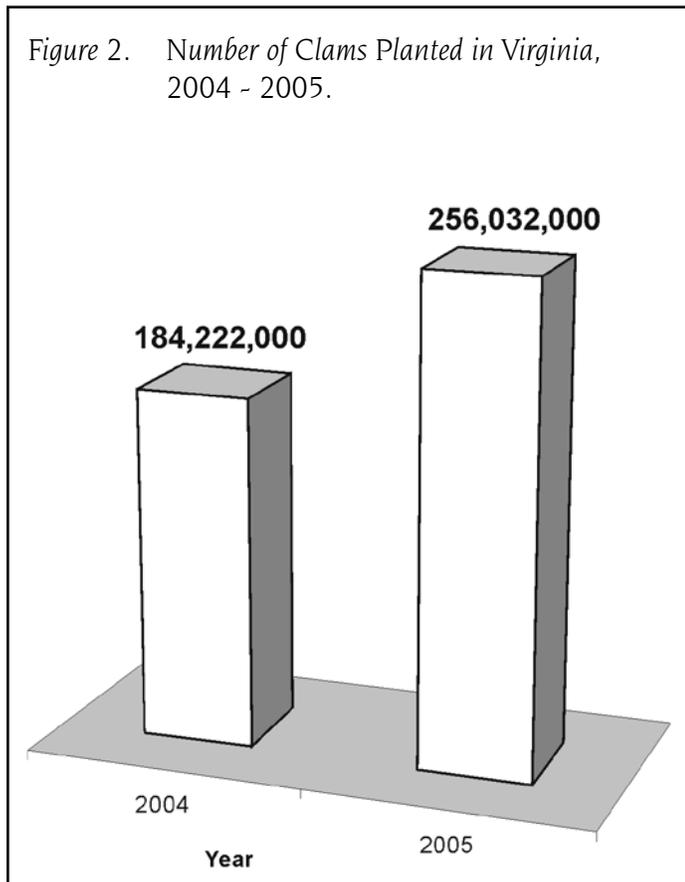
Clam Sales and Prices

During the 2005 economic impact survey, clam farms were reported to have sold an estimated 150,000,000 market clams during 2004. The recent crop reporting survey provided additional details and information from growers suggested an estimated 19% increase in market clams sold during 2005 to total farm output of an estimated 178,000,000 clams, as shown in Figure 3.

The weighted average price reported per clam at the farm gate was \$.149 during 2005. This is virtually unchanged since 2004². As in 2004, 90% of the market clams grown in Virginia were shipped to out-of-state markets.

Growth in production of seed detailed in Figure 4, has accompanied the expansion of the industry, with an estimated 95% of seed produced being planted in Virginia. The reported average price of clam seed was the same in 2005 as 2004 and is projected to remain the same in 2006³.

Also, shown in Figure 5, expansion at the farm level has entailed an increasing employment of both full time (+9%) and part time (+22%) personnel; an overall growth of 13%.



¹ Several large growers indicated at the time of the survey that their 2006 planting intentions were not finalized. If those firms repeated their 2005 plantings during 2006, the outlook suggests an added increase of 20% for Virginia's industry overall during 2006 to an estimated 275 million seed clams planted.

² Smaller niche growers, with production and sales of less than 50,000 clams reported average prices as high as \$.30. \$.15 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.

³ The price of seed depends upon size but the overall average reported was \$.02-\$.03 per seed during 2005.

Virginia Aquaculture Oysters 2004-2006

The oyster industry continues to evolve from the traditional extensive planting of "shell on bottom" to more intensive contained aquaculture on-bottom or racks⁴. As is depicted in Figure 6, there is has been a gradual increase (10%) in the amount of lease bottom reportedly being employed in containerized oyster aquaculture.

Figure 4. Amount of Clam Seed Sold by Virginia Hatcheries, 2004 - Estimated 2006.

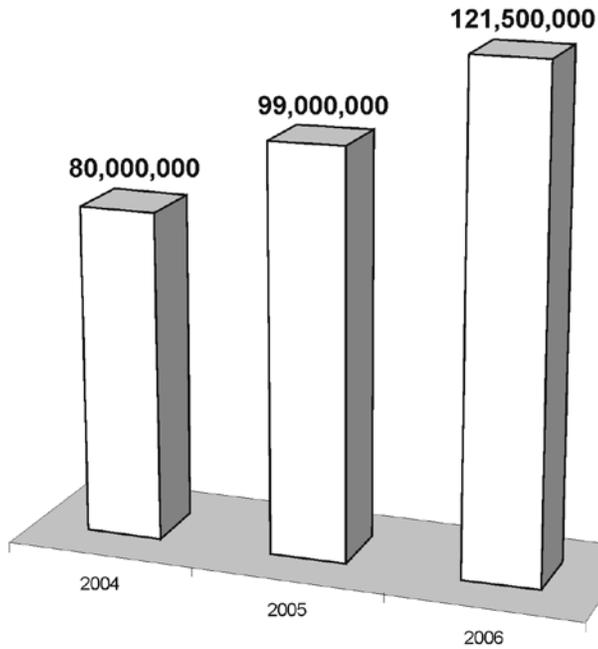


Figure 6. Number of Leases Used by Virginia Oyster Aquaculturists, 2004 - 2005.

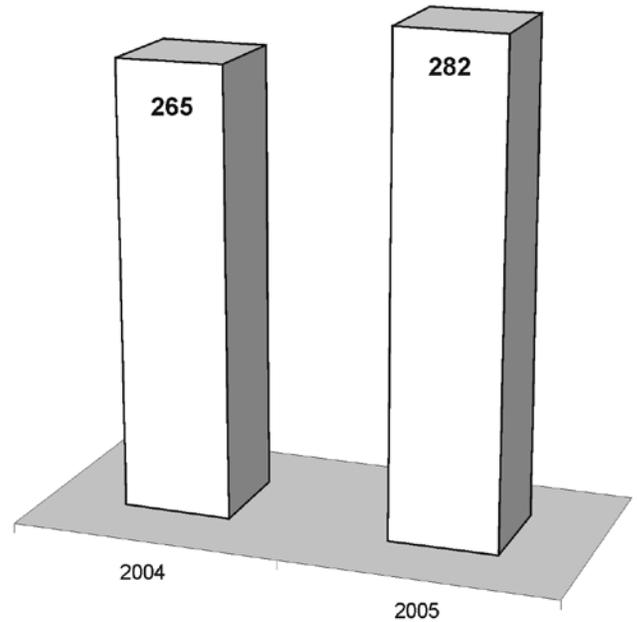
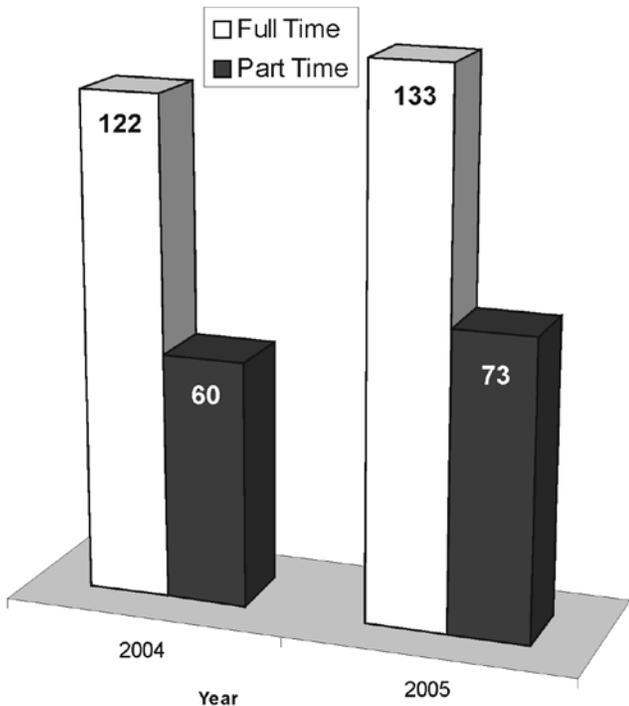


Figure 5. Virginia Clam Farm Employment, 2004 - 2005.



⁴ 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 adopted as a result of increased oyster disease and predation using hatchery produced seed.

As illustrated in Figures 7 and 8, the growers surveyed expect the growth to significantly increase into 2006 with a projected near tripling of planting, harvest and sale of market oysters. In addition to growth in the number of aquaculture leases carrying oysters, if expectations materialize, 2006 will see nearly a three fold increase in oysters planted by Virginia oyster growers.

Oyster prices were reported without detail as to market segment; i.e. primary wholesale, secondary wholesale, retail, etc. The data in Figure 9 show a general anticipation of level prices in the near term even with estimated increases in planting and expected harvest.

As can be seen in Figure 10, the primary market for Virginia aquaculture oysters lies outside of the

Commonwealth. Reportedly growers are attempting to market for the 1/2-shell trade, by-passing the shucking industry for a higher per unit value.

Figure 11 documents the recent growth in oyster hatchery production and expected near doubling of output in 2006.

The relatively small scale state of oyster aquaculture is depicted in Figure 12. Currently the majority of the 24 individual growers involved in commercial oyster aquaculture view the venture as a part-time. There is some apparent expectation of shifting from part-time to full-time employees as the expansion of output is anticipated. The information provided shows an increase in full-time employments with less reliance upon part-time workers.

Figure 7. Number of Oysters Planted by Virginia Oyster Aquaculturists, 2004 - 2005 and Estimated for 2006.

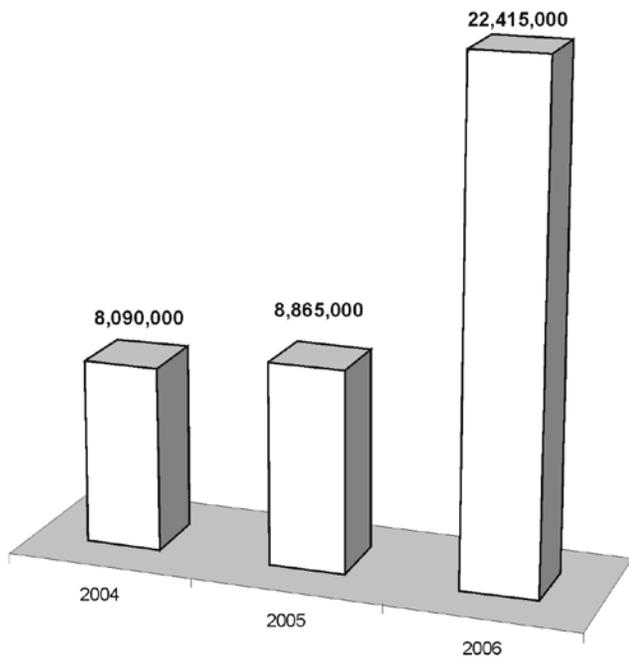


Figure 8. Number of Market Oysters Sold by Virginia Oyster Aquaculturists, 2004 - 2005 and Projections for 2006.

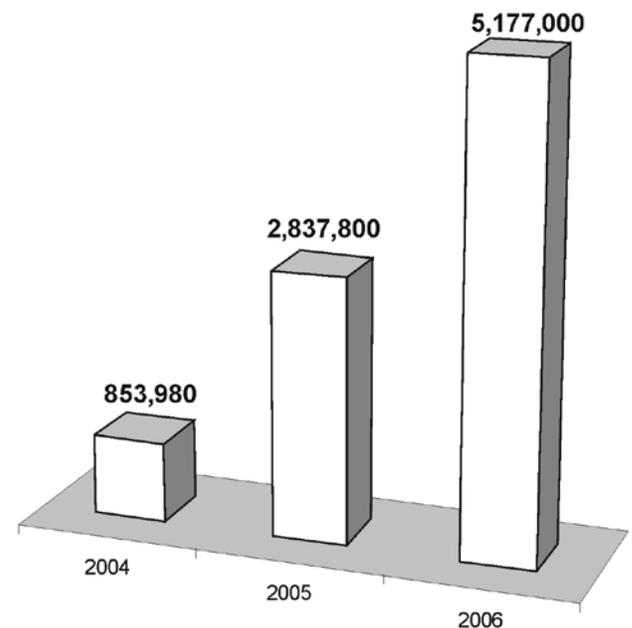


Figure 9. Average Oyster Market Prices Reported by Virginia Growers, 2004 - 2005 and Estimated for 2006.

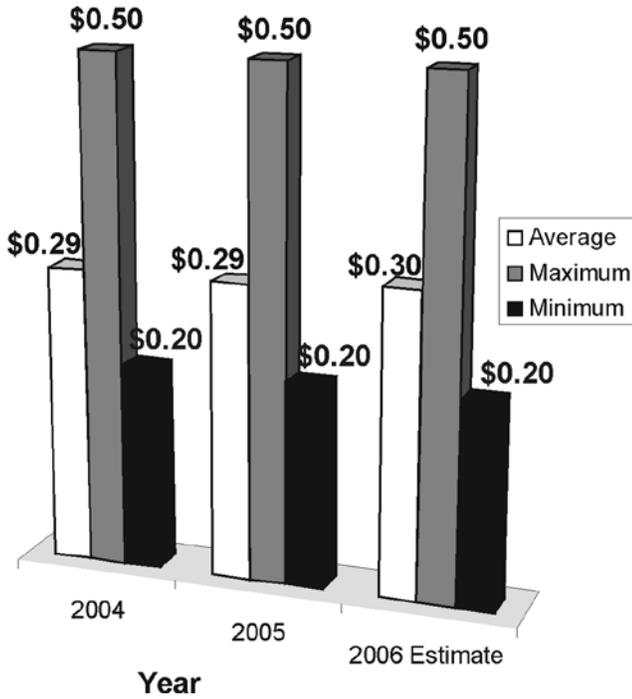


Figure 10. Percent of Virginia Aquaculture Oysters Sold Out of State, 2004 - 2005 and Estimated for 2006.

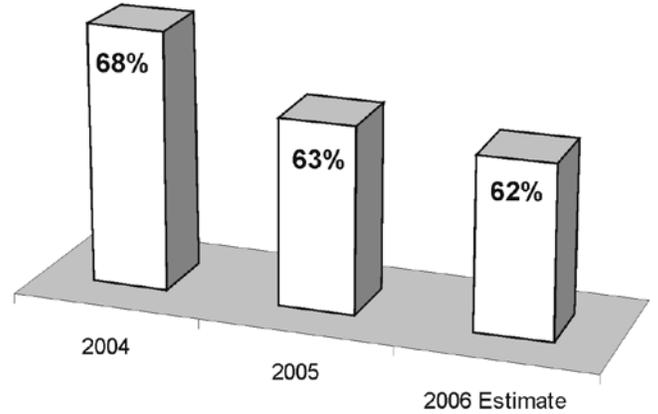


Figure 11. Growth in Amount of Oyster Seed Sold by Virginia Hatcheries, 2004 - 2006.

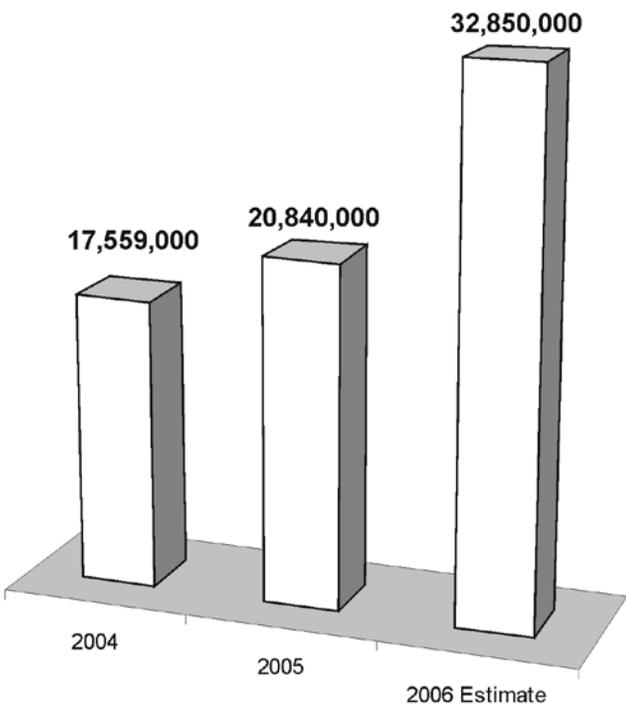


Figure 12. Employment in Virginia Oyster Aquaculture Sector, 2004 - 2006.

