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Virginia Sea Grant Marine Advisory Program

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SHELLFISH CULTURE FORUM:
INDUSTRY ISSUES

An Annual Evaluation

April 26, 2004
Wachapreague, Virginia

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The 2004 Shellfish Culture Forum was held on Monday, April 26, 2004 at the Eastern Shore Laboratory of the Virginia Institute of Marine Science (VIMS) in Wachapreague. Sponsored by VIMS and the Virginia Sea Grant College Program (VSGCP), this annual forum is intended to provide shellfish culturists updates on a wide range of issues that could impact their industry. Additionally, the forum provides a means for shellfish culturists to express their opinions and exchange their views with others in the industry, as well as propose other topics for future discussion or research.

**Legislative activities**

Similar to the 2003 Virginia legislative session, the state budget situation dominated most of the Delegates and Senators activities, without much legislation directed at the shellfish culture industry. There were, however, several pieces of legislation that should be of interest to shellfish culturists.

One piece of legislation that did not get passed, but is still “alive” in committee, was HB 281. This bill would direct the Commissioner of the Department of Agriculture and Consumer Services to coordinate with appropriate state agencies to establish standards for and certification of the commercial production of aquaculture. This bill was opposed by members from both the saltwater and freshwater aquaculture industry. Discussions with the patron (Delegate H.R. Purkey) resulted in the bill being continued to the 2005 legislative session within the House Committee on Agriculture, Chesapeake Bay, and Natural Resources. There is a high likelihood, however, that this bill will die within Committee and not be re-visited in 2005. The entire bill can be viewed at <http://leg1.state.va.us/cgi-bin/legp504.exe?041+ful+HB281>.

Although not directly addressing shellfish culture activities, HB 1024 could impact shellfish culturists, especially those that also participate in wild fisheries. This change in Section 28.2-201 of the Code of Virginia authorizes the Virginia Marine Resources Commission (VMRC) to adjust fees for saltwater fishing licenses (commercial and recreational) and permits. Fee increases are capped based upon the Consumer Price Index or a set fee of $5.00, whichever is greater. Any such adjustment in a permit or license fee cannot occur more often than once every three years. It also dictates where the fees shall be applied; commercial fees go to the Marine Fishing Improvement Fund and recreational fees to the Virginia Recreational Fishing Development Fund. VMRC is also authorized to establish permit fees for the delayed or limited entry fisheries, as well as for shellfish relaying and scientific collections. This law can be viewed at <http://leg1.state.va.us/cgi-bin/legp504.exe?041+ful+HB1024ER>.

HB 1278 clarified Code of Virginia Section 28.2-527, relating to the theft of oysters and clams. It added several words to the Code which offer increased legislative protection to both naturally occurring oysters and clams, as well as shells or seed planted by the Commonwealth or private individuals. Unauthorized removal is classified as larceny. The text for this law can be viewed at <http://leg1.state.va.us/cgi-bin/legp504.exe?041+ful+CHAP0475>.

On the Senate side, SB 432 modifies Code of Virginia Section 28.2-1205 by defining when a denied request for a bottomland use (for instance, a shellfish culture lease) can be resubmitted. While this may not have originated as a result of shellfish culture issues, because of the language, it will apply to denied shellfish culture leases. The law states that, “No person shall reapply for the same or substantially similar use of the bottomlands within 12 months of the denial of a permit by the Commission.” The complete Section can be viewed at <http://leg1.state.va.us/cgi-bin/legp504.exe?041+ful+CHAP0405>.

Finally, the most significant shellfish culture legislation of the session had to be SB 605 which established and codified water column leasing (three-dimensional) guidelines. Section 28.2 of the Code of Virginia was amended by adding a new chapter (16) entitled “Water Column Leases for Aquaculture Purposes.” This new chapter contains all the definitions, eligibility, procedures, fee schedules, and other requirements for leasing the water column. Rather than try to summarize this important piece of legislation, the reader is referred to the full text of this new law at <http://leg1.state.va.us/cgi-bin/legp504.exe?041+ful+SB605ER>.
Cultured clam insurance program

The insurance program for cultured hard clams is still in the "pilot" phase, with Virginia growers in only Accomac and Northampton counties eligible to participate. Other participants are in Massachusetts, South Carolina and Florida. The program is administered by the Risk Management Agency (RMA) within the US Department of Agriculture.

Over the past year, there have been numerous changes in how the insurance policies can be written. Growers are encouraged to remain current on policy requirements by talking with either their individual underwriters or by contacting the RMA directly (see below for web site address).

In data distributed to the attendees, the 2003 summary showed that all states participating in the program experienced significant claims. In the past, Florida was the "loss leader" in terms of the loss ratio (total claims paid-out versus total premiums paid-into the program). For 2003, Massachusetts had the dubious distinction of being the "loss leader," recording a 3.07 loss ratio ($180,107 paid claims on $58,734 premiums collected). Florida experienced a loss ratio of 1.61 ($1,900,595 paid claims on $1,177,805). The total amount of premiums paid by Florida growers for insurance declined (presumably fewer insured clams) in 2003 from 2002 (2002 = $1,390,757; 2003 = $1,177,805). For Florida, in 2002 there were a total of 416 policies sold; in 2003 this number declined to 393. South Carolina continued to have the lowest loss ratio of any participating state, at 1.46 ($77,599 paid claims on $53,003 premiums collected).

Virginia claims amounted to a loss ratio of 1.53 ($889,648 paid claims on $580,002 premiums collected). The total number of policies sold within Virginia did not change from 2002 to 2003, with 88 total policies in effect both years. However, the total amount of premium paid decline in 2003, from $667,956 in 2002 to $580,002 last year. This could have resulted from changes in the levels of coverage being selected or a reduction in the total number of clams covered by insurance.

For more information or details on the annual summary of the pilot clam insurance program, interested individuals are directed to the following web address: <http://www.rma.fcis.usda.gov>.

Virginia’s Finest designation for cultured oysters

At the 2003 Shellfish Culture Forum, the Virginia’s Finest trademark program within the Department of Agriculture and Consumer Services (DACS) was explained and the latest designation for cultured hard clams introduced. The strength of the Virginia’s Finest program is that it is industry driven; quality standards are developed with direct input from the impacted sector of the industry. At the time of this writing, there was a move to develop Virginia’s Finest quality standards for cultured oysters. The proposed quality standards apply to live, whole oysters of the genus and species Crassostrea virginica to be marketed fresh for consumption. A draft of the proposed standards was distributed to attendees, with a request for comments.

Before any Virginia’s Finest can be designated from cultured oysters, the standards must be accepted by DACS. Any questions or comments regarding the status of the Virginia’s Finest designation for cultured oysters should be directed to the Director, Division of Marketing, VDACS, P.O. Box 1163, Richmond, VA 23218 (804-786-3530).

Shellfish disease update

Dr. Ryan Carnegie from the VIMS Department of Environmental and Aquatic Animal Health presented an overview of major shellfish disease activity for 2003. Dr. Carnegie works within the shellfish pathology program and is in charge of diagnostic services. Questions regarding shellfish diseases and diagnostic services, as well as participation in any of the VIMS shellfish pathology projects, should be directed to Dr. Carnegie at 804-684-7713 or <carnegie@vims.edu>.

The hard clam disease, QPX, continues to attract attention within Virginia and elsewhere along the eastern seaboard. In 2003, 14 sites from Chincoteague on the Seaside to Hungar’s Creek on the Bayside of the Eastern Shore were surveyed for the presence and intensity of QPX infections. Both wild and cultured clams were examined. The good news is that at only three sites (all on the Seaside) was any QPX detected, and then at very
low levels of intensity. Currently within Virginia, QPX appears to have a very patchy distribution, with very low levels of prevalence. After several years of controversy and information exchange, the clam culture industry appears to have modified their planting strategies to reduce the risks posed by QPX. There still remain, however, questions regarding the factors which trigger a catastrophic effect from QPX, whether they be environmental or husbandry related.

Oyster diseases caused by the pathogens Haplosporidium nelsoni (MSX) and Perkinsus marinus (Dermo) have plagued the oyster industry since the late 1950s. Both the prevalence and intensity of these pathogens are strongly influenced by water temperature and salinity. Warm water temperatures and elevated salinities are conducive for both diseases to intensify. This has been illustrated over the past several years.

Within the York River system, water temperatures monitored from 1998 through 2002 were generally warmer than normal. Similarly, stream flow (freshwater) in the James River for this same period was much reduced from the mean, resulting in elevated salinities during this time. As a result of increased water temperatures and elevated salinities, in 2002 Dermo was found at very high prevalence in oyster populations throughout the lower Chesapeake Bay and its tributaries. Also in 2002, MSX was discovered in the upper James River at Deep Water Shoals, where it previously had never been found. This information is contained within the annual shellfish disease monitoring report produced by the VIMS Shellfish Pathology Program and is available at this web address: <http://www.vims.edu/env/research/shellfish/monitor_rept02.pdf>.

However, during 2003 the water temperature in the York River was below the long-term mean, and the stream flow in the James River was greater than the long-term average. Both of these conditions were significant reversals from the previous several years and were reflected in the presence and abundance of oyster pathogens.

Increased stream flow within the James River in 2003 resulted in salinity dropping to levels where disease proliferation is reduced. Dermo levels within the James River dropped dramatically, with Deep Water Shoals being free of the pathogen by mid-summer. By July of 2003, MSX was undetectable in the James River. Overall, Dermo levels during the fall 2003 survey were reduced at almost all sampling stations throughout Virginia waters, when compared to the fall of 2002. Reductions in MSX prevalence during the fall 2003 survey were even more dramatic than the Dermo results, MSX being virtually absent.

For the first several months of 2004, the stream flow in the James River has been both below (January and March) and above (February and April) long-term averages, perhaps suggesting a return to more normal environmental conditions than have been observed in the last 5 years. This situation confuses the outlook for oyster disease activity for 2004. The disappearance of MSX from Virginia oyster beds in 2003, however, should result in lower oyster mortality this spring, which would normally peak as overwintering MSX infections become fatal with warming temperatures. It remains to be seen what the environmental conditions during the rest of 2004 bring to bear with regard to oyster disease activity.

In 2003, the occurrence in North Carolina of an oyster pathogen within the non-native Crassostrea ariakensis attracted a great deal of attention. Seed C. ariakensis within Bogue Sound, NC, experienced over 85% mortality, attributed to the oyster pathogen Bonamia sp. Subsequent investigations, including molecular diagnostics, actually identified two different Bonamia species, one occurring within C. ariakensis, the other in a small, native flat oyster, Ostrea equestris. Unfortunately, not much is known about this pathogen for this region, although there is information available from other oyster-producing areas worldwide indicating the potential for major problems associated with Bonamia infestations. Research is continuing on these pathogens in hopes of better understanding their environmental requirements, how they infect and impact C. ariakensis and potentially other oyster species, and to develop better diagnostic methodology. At the time of this presentation, both species of Bonamia were below our current detection levels. Questions remain as to whether or not there will be a return or proliferation of these pathogens as water temperatures rise. Thus far, Bonamia has not been found in any oysters sampled from Virginia waters.

Virginia Seafood Council Crassostrea ariakensis project

Mr. A.J. Erskine, project manager for the Virginia Seafood Council's (VSC) non-native Crassostrea ariakensis (Suminoe oyster) culture/marketing study, presented an update on the progress to date of that study. The current project is an expansion of two
previous studies that provided very encouraging growth and disease resistance information. There are two web addresses that provide information on the VSC project, as well as the VIMS research which is paralleling the VSC project: <http://www.mrc.state.va.us/ariakensis> and <http://www.vims.edu/vsc/>.

In order for the VSC to even begin this project, both a federal (US Army Corp of Engineers) and state (VMRC) permit had to be obtained. The federal permit contained 15 “provisions” that had to be met for the project to go forward; the state permit contained 13.

The main provisions required an overlay of science during the project (hence, the VIMS parallel study), that all systems be biosecure (contained culture), that all participants obtain letters of credit from approved banks to cover any “clean-up” costs associated with escapes, and finally, that 3,000 C. ariakensis spat be examined by flow cytometry methods to ascertain ploidy and that no more than 3 of these could exhibit diploid chromosomes. This final requirement resulted in a delay in the initiation of the project when 4 in 3,000 animals from the first spawn of C. ariakensis tested as diploids. A second spawn, produced only 2 in 3,000 diploids and were thus acceptable for deployment under the terms of both the federal and state permits.

In October, 2003, approximately 800,000 triploid (sterile) C. ariakensis were deployed at 8 different sites in Virginia waters. At each location, seed Suminoe oysters were placed within containment devices. Descriptions of the study locations and devices being used at each site are detailed on the above listed web addresses. The primary objectives for this study are to gather market information for the Suminoe oyster and conduct an economic feasibility on the potential for aquaculture production of this species.

Mr. Erskine presented growth and mortality information from the beginning of the project in October, 2003, to March, 2004. The Suminoe oyster continues to exhibit extraordinary growth when compared to the native Eastern oyster. Suminoe oysters during the study period have increased in shell height between 13.2 and 47 mm, depending upon growing site; during the same period, shell heights of Eastern oysters at the same sites increased only 2.7 to 18 mm. From October through December, 2003, there was no observed mortalities within the Suminoe oysters. There was minimal mortality of Suminoe oysters during January and February, 2004, most likely associated with winter icing and exposure.

The marketing portion of the project is still in early stages, as test oysters begin to reach market sizes, at least for the half-shell trade. The project actually intends to investigate both half-shell and shucked product markets. Information to be obtained for half-shell product, approximately 2.5 - 3.0 inches, include price ranges, shelf life depending upon delivery method, and general consumer acceptance of the product. For shucked product, 3.0 inches or larger, the information to be developed includes the number of oysters per shucked volume, overall shucking characteristics, shelf life prior to shucking, pricing and consumer acceptance. Standardized data forms have been developed to aid the industry in collecting the required information.

Concurrent with the market development, economic parameters are also being collected to aid in evaluating the financial potential for aquaculture of the Suminoe oyster. Basic costs (initial investment, supplies, labor, fuel, etc.) and returns (revenue from sales) will be used in this portion of the project. Mr. Tom Murray from VIMS Marine Advisory Services is conducting this part of the project.

For the remainder of his presentation, Mr. Erskine, concentrated on “road blocks” through the different stages of this project. Even before the initiation of the project, the need for approved letters of credit from each grower created problems. This hurdle was overcome through numerous discussions with bankers and growers. The current “road block” had to do with different ending dates contained within the state permit and the federal permit. The state permit has a termination date of April 1, 2005, while the federal permit is slated to expire on June 30, 2004. Because of this, the VSC has been seeking an extension for the federal permit. Suffice it to say that this became a politicized process, with numerous discussions, conference calls and committee meetings. The federal agencies involved (Environmental Protection Agency, National Oceanic and Atmospheric Administration, US Fish and Wildlife Service, Army Corps of Engineers) have posed a series of questions that they’d like answered, as well as having made recommendations for the project. Specific
questions being asked include: Will a permit extension result in C. ariakensis populating Chesapeake Bay? How many C. ariakensis will be sold by June 30, 2004? What is the marketing plan for all C. ariakensis and where will they end up? Obviously, the answers to these questions are not simple or easy to predict. Many of the suggested recommendations would result in defeating the overall purposes of the study. Included within the suggested recommendations: 1. Remove all oysters from high salinity sites and move to low salinity sites for the summer. 2. Remove all oysters from all sites for the summer and re-deploy a new spawn of C. ariakensis this fall. 3. Reduce overall numbers at each site. 4. Reduce densities of oysters in each bag. 5. Terminate current VSC project. VSC personnel are concerned that these “tactics” are designed to delay any decision on the permit extension to the very last minute, when participants may not have adequate time to respond or react to the decision. At the time of this writing, there was no decision regarding the permit extension request.

For more information regarding the VSC C. ariakensis project, contact Mr. A.J. Erskine at 804-684-7757 or <aj@vims.edu>.

Virginia Fishery Resource Grant Program

Mr. Tom Murray from VIMS Advisory Services discussed the Virginia Fishery Resource Grant Program (FRGP). The program funds are administered by the Virginia Sea Grant College Program. Mr. Murray serves as the administrator of the FRGP.

The Virginia legislature created the FRGP in 1999 to stimulate efforts to protect and enhance the Commonwealth’s coastal fishery resources. The basic premise of the program is the belief that people within the industry often have valid ideas to enhance and protect fisheries, but may lack the financial resources to experiment with such innovations. The program invests in ideas generated by industry members through a fair and competitive grants process.

To be eligible for funding, a proposal must substantially involve Virginians who are actively participating in a fishing or aquaculture industry. This means people involved in commercial activities relating to fishery resources, aquaculture/mariculture, or the processing or handling of fishery products.

There are four priority areas established for the FRGP:

1. New Fisheries Equipment and Gear - ideas to develop more economically and environmentally efficient gear, develop information for fisheries management, reduce bycatch, and more effectively handle catch.

2. Environmental Pilot Studies - ways to restore damaged habitat, create new habitat, prevent habitat impairment, or reduce the impacts from fishing and/or aquaculture activities.

3. Aquaculture/Mariculture - ideas that provide the opportunity to diversify a business through aquaculture, increase return from investment in culture activities, or introduce new species for aquaculture consideration.

4. Seafood Technology and Utilization - ideas to develop value-added products from existing production, use currently underused or new fishery resources, or increase returns in the seafood industry by improving product packaging, handling, storage, and market concept development.

At different times of the year, a call for proposals is issued to Virginia commercial watermen, aquaculturists, and seafood businesses through ads in local newspapers and by direct mail. A series of workshops are offered following each request of proposals announcement. Workshops are designed to help individuals understand the grants process and to improve chances of submitting a qualified, successful application. An advisory panel comprised of industry representatives and scientists reviews all proposals received and ranks each submission according to how well the idea: addresses a priority; leads to conclusions based on an organized work plan; utilizes available expertise; employs an innovative approach; and, reflects a reasonable budget for the work proposed.

Hard copies of previous project reports are currently available by contacting Mr. Murray (804-684-7190, tjm@vims.edu). Plans are currently underway to make these reports available on the home page for the FRGP: <www.vims.edu/adv/frg/index.html>. Information about the Virginia Sea Grant College Program is available at <www.virginia.edu/virginia-seagrant/>.
East Coast Shellfish Growers Association

Mr. Ed Rhodes, the executive director for the East Coast Shellfish Growers Association (ECSGA) was on-hand to offer insight into this new regional association. The ECSGA is a non-profit shellfish grower’s organization that addresses issues affecting the commercial grower’s ability to harvest and market their product. The stated mission of the ECSGA is to promote responsible commercial shellfish aquaculture through market research and promotion, active involvement in public education, participation in policy formation at the state and national levels, and directed research.

The goal of the ECSGA is to become a unified, strong voice in the shellfish industry. As a group, the ECSGA can improve product marketability, focus shellfish research, educate consumers about shellfish and aquaculture, and reach politicians about important issues. Much of what the ECSGA is advocating is to be pro-active on issues before “it’s done to us.”

Membership in the ECSGA is open to shellfish farmers who produce commercially (voting membership), shellfish dealers (voting) and anyone involved with or interested in shellfish farming issues (non-voting membership). The dues structure is based upon a sliding scale depending upon annual gross sales of cultured shellfish.

At the time of this writing, Mr. Tom Gallivan from the Eastern Shore is the Vice President of the ECSGA, and Mr. Tommy Leggett from the western side of Chesapeake Bay is a member of the board of directors of the ECSGA.

More information on the ECSGA as well as the latest newsletter can be found at their web site: <www.ecsga.org>. Additionally, the 2005 annual meeting will be held in conjunction with the East Coast Commercial Fishermen and Aquaculture Trade Exposition in Ocean City, MD, January 28-30, 2005.

Open Discussion

One topic occupied most of the time for open discussion - what to do about “derelict” clam nets. Derelict nets are of two types, those that are accidentally lost such as through storm actions, or those that are purposely (and illegally!) discarded into the environment, rather than being carried back to shore for proper disposal. This issue has been discussed at previous Shellfish Culture Forums, without any clear-cut suggestions or solutions being offered. The situation now, however, is starting to come to a head on the Eastern Shore, with letters to the editor in the local newspaper chastising the industry and regulatory agencies for lack of action. Several attendees volunteered information on what might be done, including organizing industry supported clean-up days and trying to project a more positive approach to cleaning up derelict clam nets. Such efforts are currently being considered by industry members. Another suggestion focused on economic incentives for controlling the derelict nets, by imposing industry levies to generate funds for clean-up efforts.

The discussions surrounding derelict nets led to other topics being openly addressed. In the discussions about identifying nets and possible economic control measures, it was pointed out that there is still no “official” way to identify legitimate shellfish aquaculturists. In other words, there are still no permits necessary to be a commercial shellfish aquaculturist. This topic has also been discussed at past Shellfish Culture Forums and at meetings of different Virginia Marine Resources Commission committees, most recently the Hard Clam Aquaculture Task Force. The Task Force unanimously endorsed the concept of an aquaculture permit, but had some reservations on the actual implementation of such a permit. At that time, VMRC personnel pointed out that the VMRC could under current provisions initiate a permit and that the information gathered via the permitting process would be very valuable to the Commission.

The other topic stimulated by the derelict net issue focused on the need to re-establish a state or county-wide shellfish culture association. There was general confirmation that a Virginia (or Eastern Shore) association of shellfish growers is needed, in addition to the recently formed East Coast Shellfish Growers Association. While further discussion on the formation of a local association did not continue during the forum, indications were that efforts would be made to form a new shellfish grower association.

Future Topics

To suggest other educational events or training programs, industry members are encouraged to contact Mike Oesterling at VIMS, Department of Advisory Services, P.O. Box 1346, Gloucester Point, VA 23062 (804-684-7165; mike@vims.edu).