COMMONWEALTH of VIRGINIA

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

Marine Resources Commission
2600 Washington Avenue
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William A. Pruitt
Commissioner

November 29, 2004

MEMORANDUM

TO: The Honorable Mark R. Warner
Governor of the Commonwealth of Virginia
And,
Members of the Virginia General Assembly

THROUGH: The Honorable W. Tayloe Murphy, Jr.
Secretary of Natural Resources

FROM: William A. Pruitt

SUBJECT: Blue Crab Fishery Management Plan

On behalf of the Virginia Marine Resources Commission, I am writing to report on the status and current implementation of the blue crab fisheries management plan, in accordance with the provisions of Section 28.2-203.1 of the Code of Virginia.

The 2004 Chesapeake Bay Blue Crab Advisory Report, prepared by the Chesapeake Bay Stock Assessment Committee, indicates that blue crab abundance improved in 2003, compared to near historical low levels the previous four years. Unfortunately, the results of all of the scientific surveys are not uniform, but stock abundance and spawning biomass remain at relatively low levels. Stock abundance in 2003 was higher than the overfished threshold that indicates a danger to the biological stability of the blue crab stock. However, stock abundance was lower than the action threshold that calls for management action to promote increases in stock abundance. Fishing mortality fell below the action threshold for the first time since 1997. Based on these facts, the Stock Assessment Committee recommended that the Chesapeake Bay jurisdictions keep all current management measures in place, especially given the persistent condition of low stock abundance. Accordingly, the Marine Resources Commission maintained all of its blue crab management measures in place in 2004. A summary of the Commission's more recent blue crab management actions is attached.

Commercial harvests of blue crab through fall 2004 improved by nearly 17% percent over 2003, one of the lowest harvest years on record. In spite of this improvement, the 2004 harvest was about 20 percent below the most recent 10-year average. It is important to note; however, that portions of the harvest reduction over the last three years are attributable to the Commission's reductions in fishing effort. These measures were designed to reduce immediately the effort and catch in the fishery by 15 percent, in order to rebuild the spawning stock over the long term. Importantly, environmental factors that promote successful production of new crabs have not been favorable for several years, and management efforts have forestalled an even lower stock abundance.

Later this year, a team of Virginia and Maryland scientists will complete the first comprehensive assessment of the blue crab stock since 1997. The assessment will examine the health of the Chesapeake Bay blue crab spawning stock, determine the effects of harvest on that stock, and comment on the need for additional management action. Should additional measures be necessary to maintain or to improve the status of the blue crab resource, the Commission will initiate the management process through discussions with our Blue Crab Citizen Advisory Committee and scientific advisors at the Virginia Institute of Marine Science. The Commission's final decisions for management action would be made prior to April 1, 2005, the start of next year's crabbing season.

Blue Crab Management Efforts of the Virginia Marine Resources Commission

The first Blue Crab Fishery Management Plan, adopted in 1989, placed controls on fishing effort and established other measures to reduce or eliminate wasteful harvesting practices in the blue crab fishery. By 1995, the Commission expanded, by 75 square miles, the Blue Crab Spawning Sanctuary (146 square miles), originally established by the General Assembly in 1942. It also shortened the crab pot season to the current April1 through November 30 period, and for the first time, required two cull rings in each crab pot to allow for the escapement of the smaller, immature, crabs.

In January 1996, the Commission reinforced it prior management efforts, by adoption of the following additional measures:

1. Prohibited the possession of dark-colored (brown through black) female sponge crabs, with a 10-sponge crab per bushel tolerance.

A sponge or cushion of eggs is caused by the extrusion of eggs onto the abdomen of the female crab. Prior to that time, female crabs carry their eggs internally, from the onset of maturity and mating (at approximately 1 ½ years of age), and can produce 2 or more batches of eggs within its lifetime. The prohibition on the taking of dark-colored sponge crabs is projected to protect approximately 28 percent of female crabs. This action effectively increases the spawning potential of the blue crab stock, yet allows the lower Bay crabbing industry, which depends on egg-bearing female crabs, to continue. Crabs are available to the fishery, within a few days after they release their eggs. Protection of the dark sponge crabs occurs over the entire spawning season, increasing the probability that those crabs that are allowed to spawn will do so during a period of favorable environmental conditions.

2. Limited license sales of hard crab and peeler pot licenses, based on previous eligibility or exemption requirements.

This moratorium on the sale of crab pot and peeler pot licenses was proposed for one year. Eligible participants for the 1996 crabbing season were limited to those who participated in the 1995 fishery. This element was considered as critical to preventing further expansion of the fishery in order to stabilize the resource and its fisheries.

3. Established a 300-hard crab pot limit for all Virginia tributaries of the mainstem Chesapeake Bay. Other Virginia harvest areas were limited to a 500-hard crab pot limit.

The 300-pot limit was the second element needed to cap effort and attempt to stabilize the resource and its fisheries. Only eight percent of the crabbers, from 1993 – 1995, reported fishing more than 300 hard crab pots. This measure was designed as a cap on effort and was not intended to reduce effort substantially.

4. Established a 3 ½-inch minimum possession size limit for all soft shell crabs.

The 3 ½-inch minimum size limit for soft shell crabs provides additional protections for the resource, by reducing harvests of small peeler crabs, at a time of low crab abundance. The measure complimented similar action in the State of Maryland and at the Potomac River Fisheries Commission to protect small soft crabs. Continued concern over excess effort in the blue crab fisheries and a persistent trend of low

spawning stock biomass during most of the 1990's led the Commission to adopt additional crab conservation measures in 1999 and 2000:

1. Lowered the maximum limit on peeler pots per licensee from 400 to 300 pots.

Effort reductions were clearly needed in this fishery that had grown significantly since 1994, but severe reductions on an immediate basis would result in severe economic burdens on the industry. Consequently, the Commission lowered the pot limit by 25 percent to minimize the economic impacts of the provision. Reports from many fishermen indicated that many did not fish the maximum 400 pots previously allowed.

2. In May 1999, the Commission initiated a one-year moratorium on the sale of all additional commercial crabbing licenses. In May 2000, the crabbing license sales moratorium was continued until May 26, 2001. The moratorium was again extended for 2002 and 2003, and, recently, this moratorium on the sale of additional crabbing licenses was extended through 2007.

Although scientists continue to debate the finer points of the blue crab stock assessment, all agree that the levels of effort in the peeler and hard crab fisheries have increased substantially, are too high to support viable incomes for many industry members, and may be eroding the abundance of the spawning stock

3. Established (in 2000) the Virginia Blue Crab Spawning Sanctuary. This additional sanctuary of 435 square miles was closed to all crabbing during the spawning season of June 1st through September 15th.

Through extensive research by Dr. Rom Lipcius (VIMS), the Commission was able to identify the proper boundaries of the sanctuary, in order to protect female crabs during their spawning migration down the Bay. To effectively protect females during their entire migration in Virginia waters and their entire spawning period, the sanctuary is closed from June 1 through September 15 and stretches from the VA-MD line to the mouth of the Bay. The sanctuary was further supported by research that indicated the blue crab abundance continued below average levels and the stock was fully exploited. Recruitment of young crabs to the fishery was also below average. Scientists also reported studies documenting a 70 percent decline in female spawning stock.

In 2000, the Commission entered into crab management discussions with the State of Maryland and the Potomac River Fisheries Commission, through the Bi-State Blue Crab Advisory Committee, a subcommittee of the Chesapeake Bay Commission. An Action Plan was adopted that recommended a harvest threshold that would preserve 10 percent of the blue crab spawning potential and a minimum stock size threshold that would be set at the lowest stock size that had been shown to have subsequently sustained a fishery. Managers further recommended the adoption of fishing targets that are more conservative than the thresholds and are the levels of fishing to be achieved each year. The recommended target level for blue crab fishing mortality was that level which achieves a doubling of the blue crab spawning potential. More importantly, it is estimated that a 15 percent decrease in harvest (based on the 1997-1999 landings average) was needed to achieve the target (F=0.7) in 2001. The Chesapeake Bay Commission recommended that the reductions be phased in over one to three

years to minimize economic impacts associated with large reductions in harvest. The Marine Resources Commission endorsed the recommendations of the Chesapeake Bay Commission and its Bi-State Blue Crab Advisory Committee and promulgated the following regulations in 2002 to achieve the agreed upon harvest reduction target.

1. Enacted an 8-hour workday for commercial crabbers (2002) that replaced a prior closure of crabbing on Wednesdays.

In April 2001, staff conducted analyses of the harvest reductions associated with a variety of restrictions such as hourly workday limits, day of week closures, seasonal or monthly closures, and catch limits. Percent harvest reductions were calculated for each targeted fishery as well as the contributions each measure provided to the overall goal of a five percent reduction in blue crab harvest for the first year. The Commission adopted a Wednesday closure of the crab pot and peeler pot fisheries from June 6 through August 22, calculated as a 5.7 percent reduction in harvest in the crab pot/peeler pot fishery. The advantages of this measure included equal treatment of all fishermen and ease of enforcement.

In January 2002, the Commission removed the Wednesday closure, at the request of industry, and replaced it with an 8-hour workday. There appeared to be more support from industry members for an 8-hour workday than there was in 2001. The new measure also was endorsed by the industry-based Crab Management Advisory Committee

2. Established a 3-inch minimum size limit for peeler crabs in 2002.

The size limit on soft crabs had proven to be difficult to enforce on the water, where conservation is best served, since the fishery harvests mostly peeler crabs. Consequently, the Commission adopted a 3- inch size limit on peeler crabs, with the intent to improve enforcement and to protect a significant portion of the immature female crab population.

The previously adopted crab sanctuary and the ban on harvesting dark sponge crabs protects over half the female spawning stock. Yet, these measures are meaningless, if crabbing effort is redirected to the immature female crab portion that has not had an opportunity to spawn. The minimum peeler size limit provides protection for those immature females. Thus, the combined efforts, to protect the adult spawners and the immature portion of the population, work together to provide more biological stability to the population.

3. Reduced the winter dredge fishery trip limit from 20 to 17 barrels per boat per day in 2001.

The Crab Management Advisory Committee supported this measure and noted that it should be enforceable. Staff determined that a reduction of the catch limit of 20 barrels during the Virginia winter dredge season to 17 barrels would result in a 3.1 percent reduction in harvest from that fishery.

4. Augmented (2002) the Virginia Blue Crab Sanctuary by 272 sq. miles.

The expansion of the Virginia Blue Crab Sanctuary increased the closed area from 661 square miles to 947 square miles. Commercial and recreational harvesting of crabs is prohibited in the Sanctuary from June 1 through September 15. The benefit of the expanded sanctuary is its significant protection of spawning female crabs, about 70 percent of the spawning stock.

5. Reduced unlicensed recreational harvester limits to 1 bushel of hard crabs, 2-dozen peelers (2002).

Recreational fishermen willingly supported reductions in their crab harvest. The regulations established a harvest limit for the vessel regardless of the number of crabbers on board. Since most recreational harvesters take well less than one bushel per day, the total reduction in harvest was expected to be minimal. A 2001 study concluded that the Virginia recreational harvest was only a fraction (< 5%) of total blue crab harvests, but other studies show the Bay-wide recreational fishery can be significant when blue crab abundance is not low.

6. Reduced licensed recreational harvester limits to 1 bushel of hard crabs, 2 dozen peelers, with a vessel limit equal to number of crabbers on board multiplied by personal limits (2001).

This measure was supported by the Crab Management Advisory Committee.

Since 2003, the Commission has followed the management advice provided by the Chesapeake Bay Stock assessment Committee and has maintained recently implemented conservation management measures, without any changes.

2004 Chesapeake Bay Blue Crab Advisory Report

Prepared by the Chesapeake Bay Stock Assessment Committee: June 2, 2004

Status of the Stock: Analysis of long term fishery-independent surveys conducted in Chesapeake Bay (Maryland and Virginia trawl surveys, Calvert Cliffs peeler pot survey and Baywide winter dredge survey) indicate that blue crab abundance improved in 2003, compared to the near historically low levels of the previous four years. However, survey results are not uniform, and relatively low stock levels continue to create a risk of recruitment failure. The current status of the stock was compared to thresholds and targets endorsed by regional management agencies in January 2001. Stock abundance in 2003 was above the overfished threshold but remained below the Bi-State Blue Crab Advisory Committee (BBCAC) abundance action threshold (Figure 1). Measures of fishing mortality (F) indicated high exploitation rates, though the winter dredge survey measured fishing mortality below the action threshold level for the first time since 1997. Low abundance combined with a high exploitation rate indicated a stock condition that warrants concern for the seventh consecutive year.

Estimated fishing mortality from the winter dredge survey (the preferred method of estimation by CBSAC) of F = 0.80 decreased substantially compared to the previous five years, when F ranged from 1.04 to 1.80 (Figure 2 – solid line). The estimate of F derived from the length-based method (F= 0.83) suggests that F has remained relatively stable for six years (Figure 2 – dashed line). F estimates in 2003 from both methods were below the overfishing threshold ($F_{10\%}$ = 1.0) but above the target ($F_{20\%}$ = 0.7). Continued uncertainty about the appropriate rate of natural mortality (M) and the conversion rates used to change harvest data from pounds to numbers are primary factors contributing to uncertainty in the estimation of fishing mortality rates and biological reference points.

The 2003 Chesapeake Bay commercial harvest of approximately 48 million pounds represents a 10% decrease from 2002. Baywide harvest continued to follow a significant downward trend, and the 2003 harvest was well below the time series (1968 - 2003) average of 73 million pounds (Figure 3). The low harvest in 2003 was principally a result of low exploitable stock abundance. However, the harvest was also constrained by management measures implemented in prior seasons.

Despite uncertainty, it appears that fishing mortality was above the target level. Recruitment improved compared to recent years, and was approaching average, relative to historical levels. Female spawning stock biomass was average after several years at or near historically low levels. However, estimates of female abundance from the Virginia trawl survey have been below average for 10 of the past 12 years, including 2003. Exploitable stock abundance was below the Bi-State Blue Crab Advisory Committee (BBCAC) Decision Rule action threshold. Overall, stock levels appeared to improve in 2003. However, there is a consensus among committee members that restrictions should not be lifted until indices show a significant improving trend, and until stock abundance and fishing mortality rates intersect outside the Control Rule precautionary range (Figure 1).

Data: Four fishery-independent surveys are used to determine stock status: Virginia trawl survey, Maryland summer trawl survey, Calvert Cliffs crab pot survey, and Baywide winter dredge survey. Data from the two trawl surveys and the Calvert Cliffs pot survey are based on calendar year collections through 2003. The winter dredge survey data represent seasonal collections from December 2003 through March 2004. Indices from the winter dredge survey are expressed as estimates of the number of crabs per unit area. All other indices are expressed as the geometric mean catch per unit effort. Modified and standardized width-age cutoff values were used to differentiate age classes for three of the four surveys (Maryland and Virginia trawl and Calvert Cliffs pot survey) used to derive the abundance indices.

Biological Reference Points: A review of targets and thresholds for Chesapeake Bay blue crabs was conducted by an expert panel, convened by the BBCAC, in 2000. The panel identified exploitation and abundance thresholds and an exploitation target. The overfishing threshold ($F_{10\%}$ = 1.0) and target fishing mortality rate ($F_{20\%}$ = 0.7) refer to the levels of spawning potential which are 10% and 20%, respectively, of the spawning potential expected in a stock on which no fishing occurs. The overfished threshold (B_{low}) is equal to the lowest exploitable stock size observed in the fishery independent trawl, pot and dredge surveys

conducted in Chesapeake Bay, from 1968 – present and corresponds to the 1968 Virginia trawl survey estimate of stock size. There is considerable uncertainty about the appropriate value for natural mortality (M), but it is assumed to be 0.375.

Fishing Mortality: The winter dredge survey estimate of F was 0.80 in 2003. This was the first year in the last five that the dredge survey estimate of F was lower than the BBCAC threshold, though it was still above the target F. The length-based F, as determined from the Maryland and Virginia trawl surveys, the Calvert Cliffs crab pot survey, and the Baywide winter dredge survey, was 0.83 in 2003 (range = 0.74 to 0.88). None of the current length-based fishing mortality rates, estimated from individual surveys, exceeded the threshold F = 1.0, and none were below the target F = 0.7.

Recruitment (2001-03): Recruitment, averaged over the most recent three years, was near the long-term average for the Maryland and Virginia trawl surveys whereas the Baywide winter dredge survey results suggest that recruitment has been below average for five years. With data for the three surveys combined, it appears that recruitment improved in 2003 (Figure 4). Recruitment has stayed within 'normal' bounds (between –1.0 and 1.0 in Figure 4) for 11 years, but it has not exceeded the long-term average level (0 in Figure 4), for the past 5 years.

Exploitable Stock Abundance (2001-03): The three-year running average abundance of exploitable (Age 1+) crabs was at or below the lower prediction bound (i.e. 'below average'), for all four surveys. Data for all surveys combined indicate that the exploitable stock abundance was nearly unchanged, compared to 2002 (Figure 5). Though within 'normal' bounds (between –1.0 and 1.0 in Figure 5), abundance of exploitable blue crabs has been below the long-term average level (0 in Figure 5) for nine of the past ten years. However, exploitable stock abundances in 2002 and 2003 were significantly higher compared to near historic low levels of abundance in 1998, 2000, and 2001.

Spawning Stock Abundance (2001-03): The three-year running average of mature female spawning stock abundance was within the prediction bounds (i.e. 'average') for three of the four fishery independent surveys (Calvert Cliffs, MD trawl, winter dredge), but each was only slightly above the lower prediction bound. The running average for the fourth survey (VA trawl survey) was below the prediction bound for the tenth straight year. Data for all surveys combined indicated that spawning stock abundance trended upwards for the past three years following an historical low in 2000 (Figure 6), but has been below the long-term average (0 in Figure 6) for ten of the past twelve years.

Harvest: The three-year (2001-2003) average, commercial Baywide harvest (50 million pounds) was 32% below the long-term (1968 - 2003) average of about 73 million pounds and was considerably below the prediction bounds (Figure 3). The 2003 Baywide harvest of approximately 48 million pounds was below average and was near the historical low. Based on the historical relationship between winter dredge survey abundance and commercial harvest, it is expected that the 2004 Baywide commercial Chesapeake Bay harvest will be similar to the 2003 harvest.

Management Advice: Management measures implemented between 2001 and 2003 to conserve the blue crab stock were necessary, given the persistent condition of low stock abundance. States should, at a minimum, keep all current management measures in place. The primary management goal of doubling the blue crab spawning potential has yet to be achieved, and is dependent upon maintaining a fishing mortality rate equal to the BBCAC target of F=0.7.

Special comments: Previously, the CBSAC suggested that fishing mortality rate estimates based absolute estimates of abundance from the winter dredge survey and on estimates of total catch in the Baywide recreational and commercial fisheries (direct enumeration of F) were more accurate than F estimates derived from a length-based method. Now, the CBSAC endorses replacement of the length-based method by the direct enumeration method. The CBSAC believes the direct enumeration method better tracks annual changes in fishing mortality rates. The Control-Rule graph (Figure 1) is presented this year with a time-series line connecting each data point. The fact that points on this graph tend to scatter around the equilibrium line is more evidence that the direct enumeration methodology is superior to the length-based

method. For comparative purposes, we also include the BBCAC Control Rule graph based on the previous length-based measurements of F (Figure 7).

A comprehensive update of the blue crab stock assessment is underway and completion is expected in approximately December 2004. It is anticipated that the new assessment will use updated data treatments and methodologies that will render obsolete some of the analyses presented in this and previous CBSAC annual updates.

Critical data needs: As was stated in previous advisory reports, it is critical that a carefully designed, Baywide data collection program be implemented for blue crabs in Chesapeake Bay. The design of the data collection program should be based, in part, on the need for improved information on: (1) harvest and effort data for the commercial and recreational fisheries, (2) growth and natural mortality rates, and (3) the age, size, sex and maturity composition of the harvest and stock.

We anticipate that a thorough review of the methods of estimating F, M, and biological reference points (thresholds and targets) will be conducted as elements of the new assessment. Such a review is critical to successful future management.

Chesapeake Bay Stock Assessment Committee Members:

Chris Bonzek VIMS, Chair
Lynn Fegley Maryland DNR
John Hoenig VIMS
Tom Miller CBL
Rob O'Reilly VMRC
Derek Orner NMFS/NCBO
Alexei Sharov Maryland DNR
Mark Terceiro NMFS/NEFSC
Doug Vaughan NMFS/SEFSC

Other Participants:

Dave Hewitt, VIMS

Figure 1. Bi-state Blue Crab Advisory Committee (BBCAC) Control Rule, with Fishing Mortality Rate as measured by the Winter Dredge Survey.

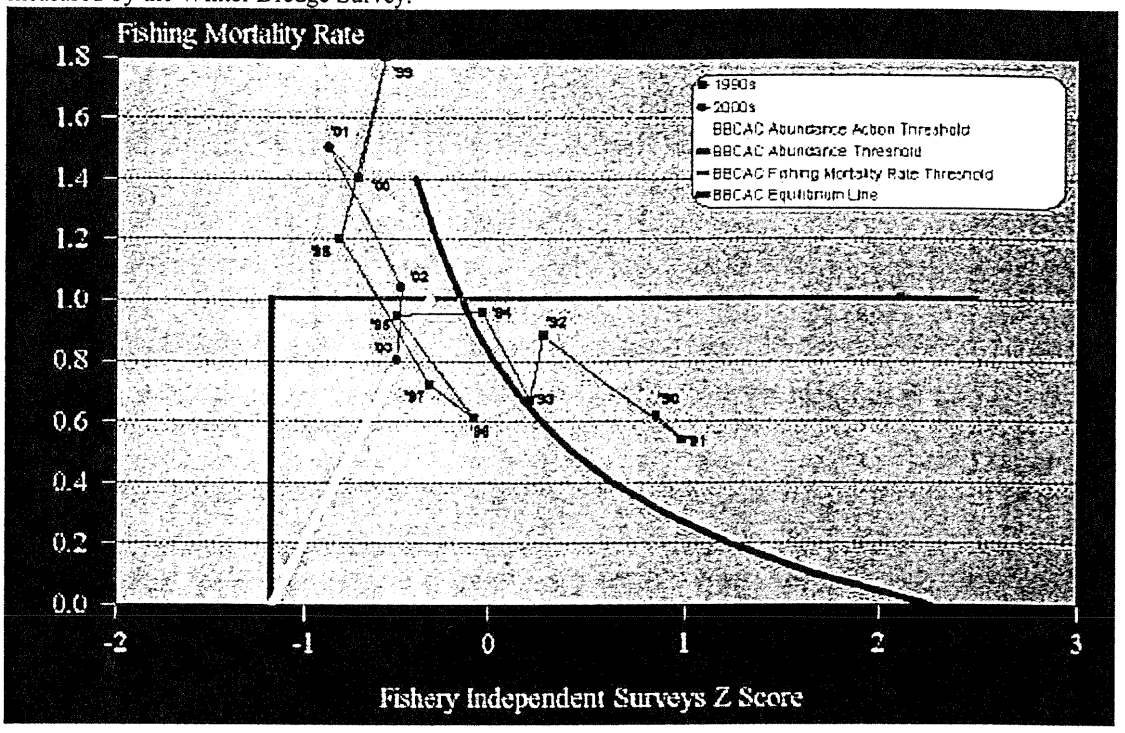


Figure 2. Fishing mortality rate as estimated by two methods, with target and threshold levels (assuming M=0.375).

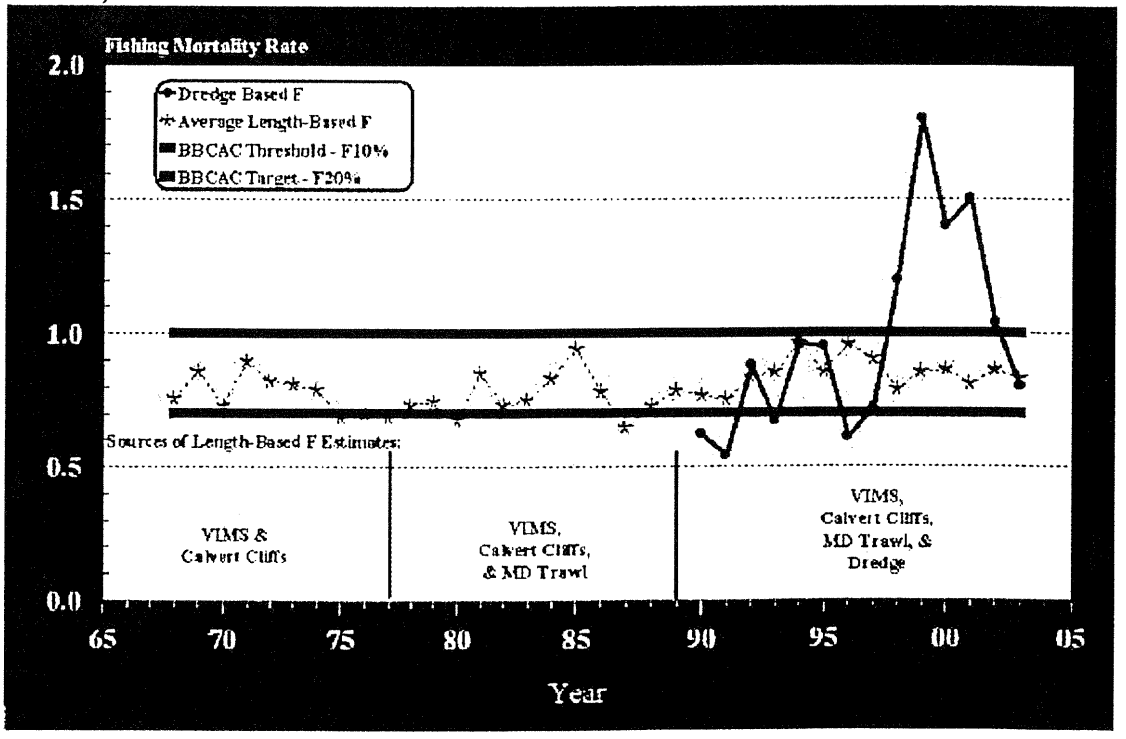


Figure 3. Combined Chesapeake Bay blue crab harvest.

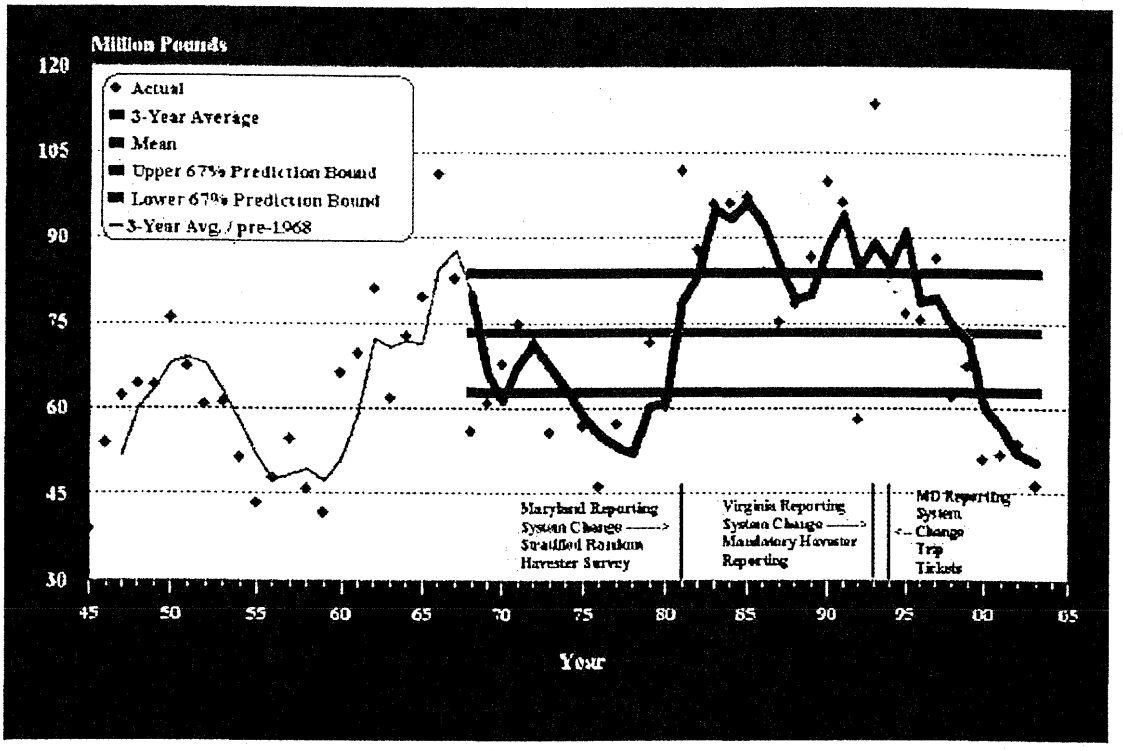


Figure 4. Average of standard normal transformed abundance indices for Age 0 blue crabs.

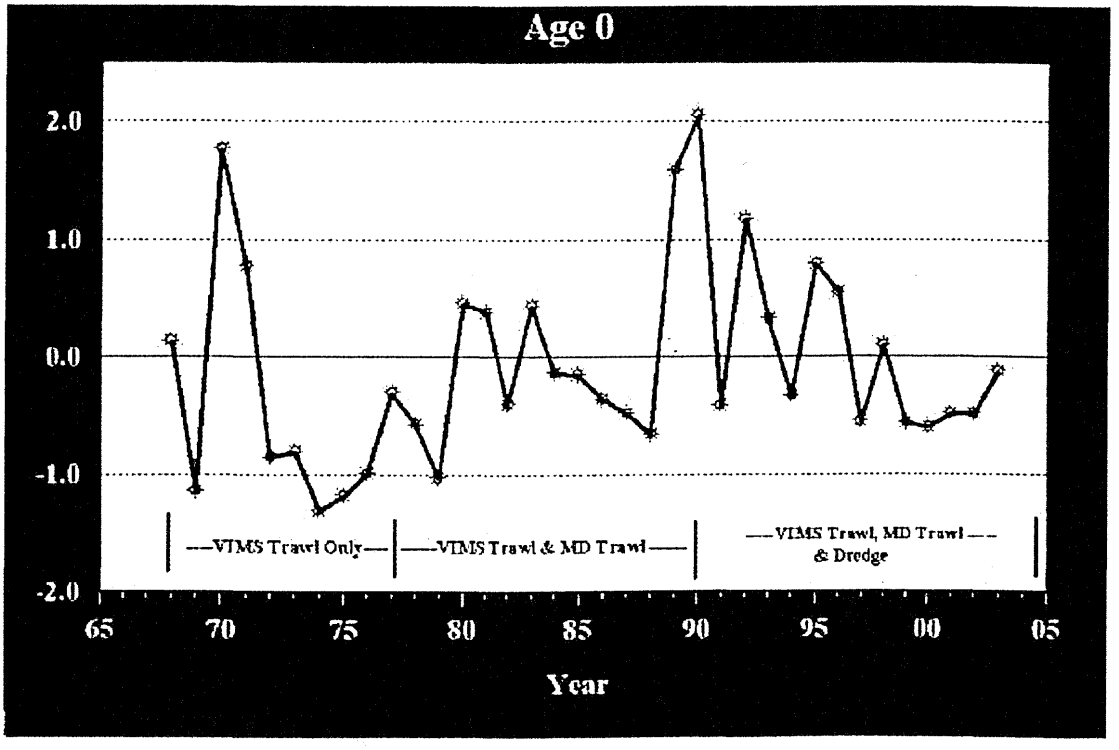


Figure 5. Average of standard normal transformed abundance indices for Age 1+ (exploitable) blue crabs.

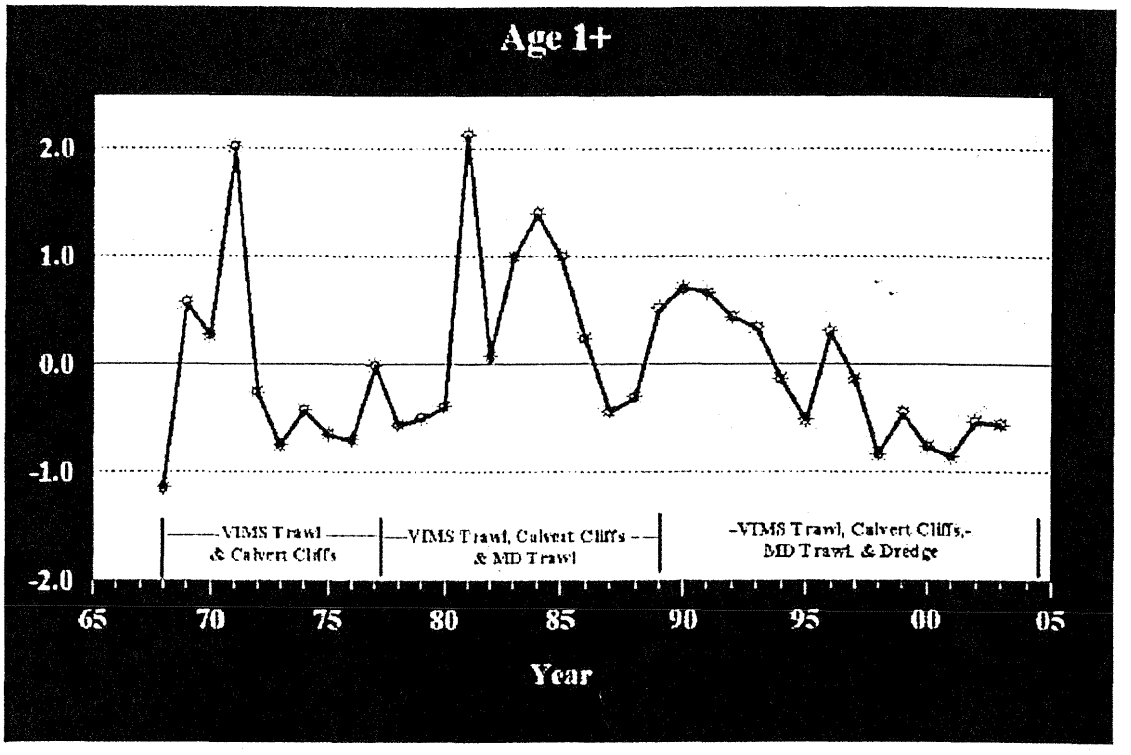


Figure 6. Average of standard normal transformed abundance indices for adult female blue crabs.

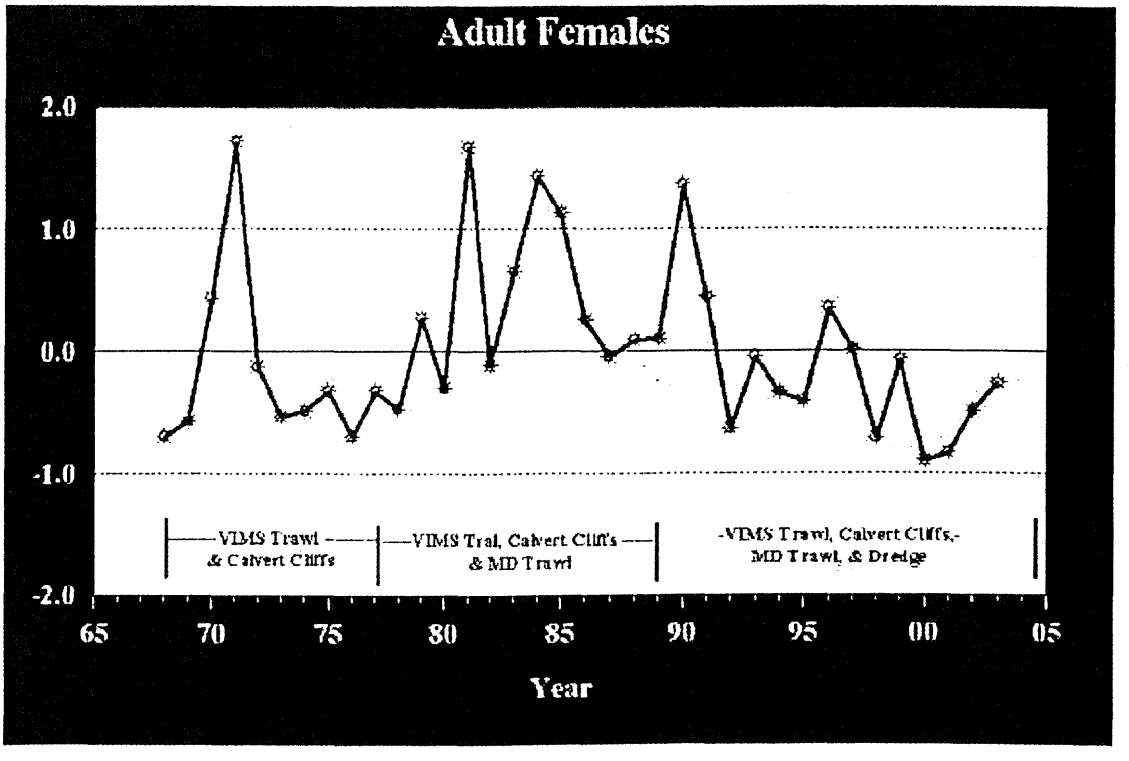
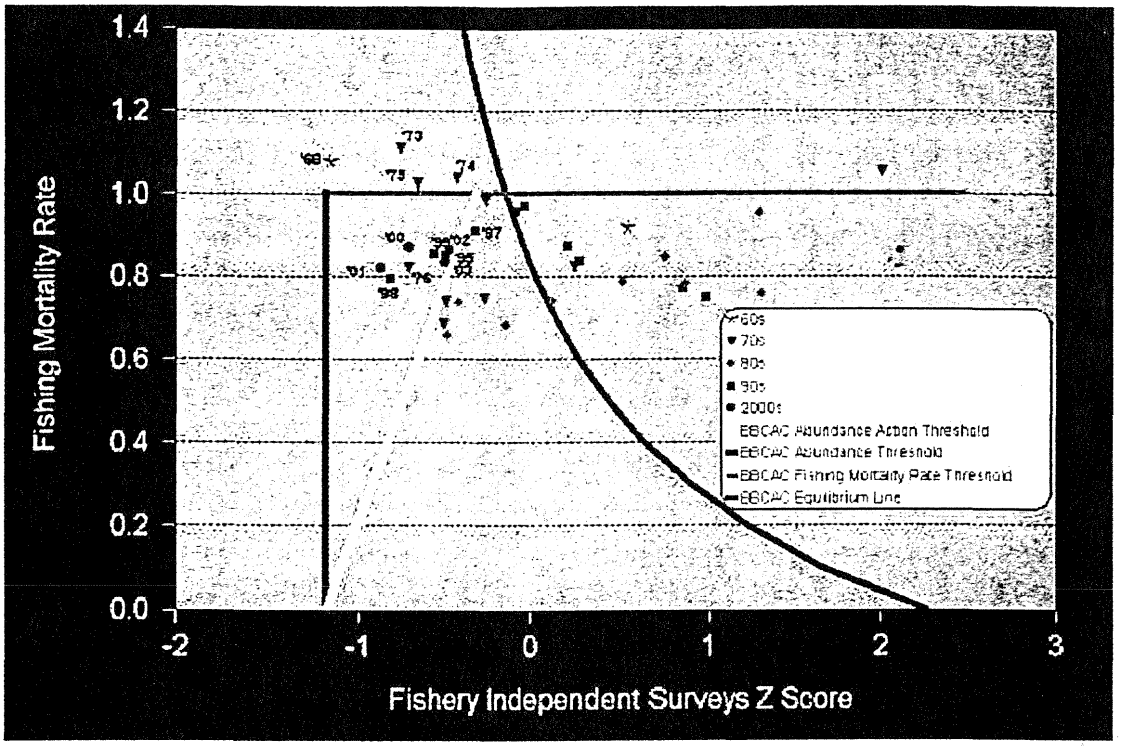


Figure 7. Bi-state Blue Crab Advisory Committee (BBCAC) Control Rule, with Fishing Mortality Rate as Measured by the four-survey average of length-based Fs.



Virginia harvests of hard crabs by month (all areas), 1994-2004.

Month	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994-2003 avg
January	1,463,203	401,013	1,620,518	1,765,253	1,045,613	375,856	752,751	438,042	807,441	367,964	828,057	903,765
February	1,245,094	135,102	678,958	903,453	527,340	93,525	993,359	177,227	304,811	440,521	657,801	549,939
March	288,621	54,560	201,972	172,351	333,793	51,301	236,910	132,056	198,129	237,910	292,142	190,760
April	2,369,494	2,282,438	601,437	2,813,466	3,300,654	3,253,588	4,287,438	1,290,719	3,417,585	1,201,300	2,530,077	2,481,812
May	2,383,657	2,411,356	2,168,338	2,669,977	1,958,251	2,074,695	3,162,424	1,643,394	2,494,483	2,148,985	2,362,288	2,311,556
June	4,202,104	3,867,050	3,278,371	5,116,924	4,359,075	3,046,710	3,591,376	2,723,672	3,211,911	1,892,442	3,628,414	3,528,964
July	5,726,143	4,227,288	4,302,239	6,011,618	5,061,836	4,427,563	3,325,680	3,220,089	4,055,830	3,012,302	3,324,226	4,337,059
August	5,422,996	5,490,050	4,659,500	5,223,631	4,108,799	4,062,842	3,432,835	3,895,212	3,707,174	3,304,733	2,846,133	4,330,777
September	4,146,740	4,248,237	4,261,491	3,658,057	4,002,663	3,986,883	3,124,198	3,625,598	2,980,198	2,449,634	1,462,611	3,648,370
October	3,385,570	4,065,654	4,635,921	4,078,321	3,878,969	3,990,888	3,089,210	4,154,181	2,878,052	3,320,821		3,747,759
November	936,666	1,547,565	1,205,341	1,272,374	1,422,609	1,929,515	1,172,115	1,884,885	1,128,845	1,630,998		1,413,091
December	1,710,853	2,652,643	4,417,598	3,679,732	932,180	3,045,408	1,662,921	1,193,376	1,025,707	1,457,808		2,177,823
Totals	33,281,141	31,382,956	32,031,684	37,365,157	30,931,782	30,338,774	28,831,217	24,378,451	26,210,166	21,465,418	17,931,749	29,621,675

NOTE: September hard crab data are preliminary.

Virginia harvests of peeler/soft crabs by month (all areas), 1994-2004.

Month	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	1994-2003 avg
April	95,286	87,177	9,767	14,818	248,364	65,174	104,312	48,457	342,847	15,114	37,679	103,132
May	586,326	899,195	558,449	838,822	1,014,099	850,840	886,698	1,121,529	855,394	648,070	801,121	825,942
June	223,382	207,837	320,427	361,182	356,982	432,637	261,362	375,376	242,217	247,892	193,898	302,929
July	259,407	300,994	374,823	406,350	415,914	398,187	357,006	369,651	355,917	291,947	244,780	353,020
August	242,718	214,769	379,563	395,941	324,759	303,196	353,313	378,025	231,098	334,676	180,839	315,806
September	67,323	87,122	93,046	129,462	151,950	111,519	161,243	168,682	132,220	100,699	65,029	120,327
October	1,665	11,804	9,473	8,088	12,743	13,442	8,541	9,397	10,995	19,897		10,605
November	551		6	2	124	310	329	258	2	1,037		291
Totals	1,476,658	1,808,898	1,745,554	2,154,665	2,524,935	2,175,305	2,132,804	2,471,375	2,170,690	1,659,332	1,523,346	2,032,022
Grand Total	34,757,799	33,191,854	33,777,238	39,519,822	33,456,717	32,514,079	30,964,021	26,849,826	28,380,856	23,124,750	19,455,095	31,653,696