

Blue Crabs in the Chesapeake

BI-STATE BLUE CRAB ADVISORY COMMITTEE • STATUS REPORT 2001

Status of the Baywide Fishery 2001

Gathering information from stock assessment experts, resource managers and other stakeholders, the Chesapeake Bay Commission's Bi-State Blue Crab Advisory Committee has produced this status report to help characterize the current condition of the Bay's valuable blue crab fishery. The report comes at the end of the 2001 crabbing season, and references available data through September or October of 2001.

As noted in the Blue Crab Advisory 2001, published by the Chesapeake Bay Stock Assessment Committee (CBSAC), scientific surveys indicate that the blue crab population is below average and in decline during the past several years. That advisory noted that:

- The Bay's blue crab stock is currently "fully exploited."
- There has been a declining population trend (lower "recruitment" to the fishery).
- The current size of the population (age 1+ crabs) is approaching a low not seen since the 1960s.
- Adult female abundance is the lowest since we started keeping records.
- Fishing pressure (fishing mortality rate) is well above the target set last year.

During 2001, preliminary totals showed a slight increase in Maryland's commercial landings, though the overall Chesapeake crab harvest declined once more, and is estimated to be lower than last year's below-average harvest. Though it may be some time before we know the precise effects of this year's commercial and recreational regulations, it is assumed that part of the recent decline results from Baywide efforts to reduce harvest pressure in 2001.

While crab abundance and harvests are down, they are not down uniformly around the Bay. In some areas harvests remained fairly constant, while other areas saw drastic declines. One challenge facing those who manage the Chesapeake's blue crab fishery is how to oversee the Bay's single population, given differences in fishing gear and basic biology over a range of areas experiencing different conditions in dif-

ferent jurisdictions (e.g., a natural preponderance of males in Maryland waters versus females in Virginia waters, or an abundance of peeler crabs in one area and hard crabs in another).

According to the CBSAC analysis — based on fisheries independent surveys — the fisheries effort remains very near the threshold set last year as part of the bi-state blue crab management effort. That threshold, which assures that at least 10 percent of the blue crab's spawning stock remains after each fishing season, was set at a fishing mortality rate (F) of 1.0. (An F of 1 equates to a removal of over half the stock — some 54 percent — by fishing alone.) During 2000, that rate was measured at an F of 0.9, which is quite near the threshold and clearly well above the target of 0.7. This target was established to assure the future health of the stock by preserving 20 percent of the crab's spawning potential.

Data from summer surveys continues to come in, and researchers, managers and crabbers alike will be watching these ongoing analyses very closely. In late spring 2002 the Chesapeake Bay Stock Assessment Committee (CBSAC) will again release the annual results of the winter dredge survey. For now, concern persists about the biological stability of the Chesapeake Bay's blue crab population.

Management Actions in 2001

During 2001 Maryland, Virginia and the Potomac River Commission all joined in a coordinated effort to reduce fishing pressure on blue crabs, with the aim of moving fishing effort away from the threshold and toward the target. Specifically, each jurisdiction instituted regulations aimed at reducing the fishing effort by approximately 5 percent, as part of a commitment to lower fishing effort by some 15 percent over a period of three years.

The popular press has widely reported this as an effort to reduce "harvests" by 15 percent, and the public has probably not understood that the effort is to reduce fishing pressure, not harvests. While harvests may go up and down, depending on the size of the crab population, the objective here is to reduce the fishing mortality rate, relative to abundance levels

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of the 1997-99 period. Since this fishing rate is determined by calculating crabbing effort relative to crab abundance, the rate actually can go down even with larger harvests — as long as the crab population rises faster than fishing pressure.

Commercial Regulations

In order to reduce fishing pressure, the three jurisdictions, after public hearings and discussions with industry leaders, chose a series of regulations, listed in very abbreviated form below. (Complete regulations are available from the natural resource agencies of Maryland, Virginia and the Potomac River Fisheries Commission, and on their websites, listed below.)

Maryland

- Required commercial crabbers to take off one day a week and to limit their workday to 8 hours. Maryland's commercial crabbing season was also closed a month early (October 31).
- Web: www.dnr.state.md.us/fisheries/crab/2001commcrabreg.html

Virginia

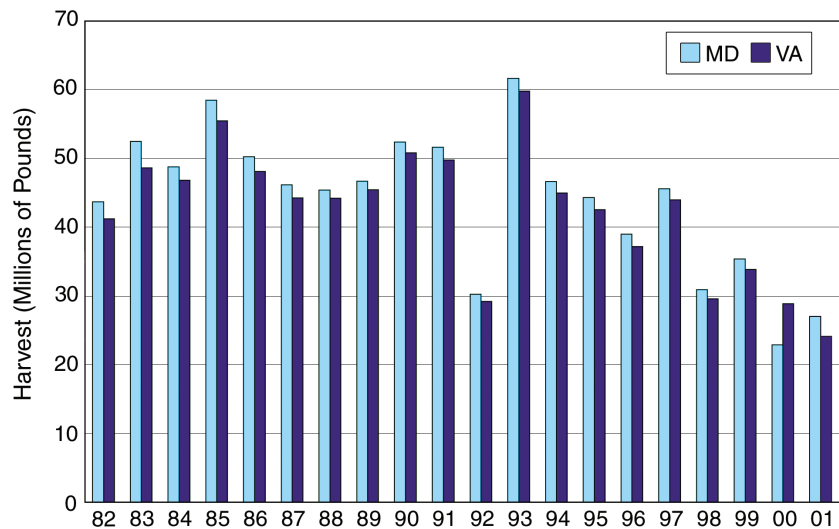
- Prohibited any activities associated with crab potting or peeler potting on 12 Wednesdays of the summer, and the winter dredge landing limit was lowered from 20 to 17 barrels.
- Web: www.state.va.us/mrc/page4a.htm

Potomac River

- Shortened the 2001 hard crab season by one month, to April 1-October 31, and the peeler season to May 20-Oct 31. Pot limits were reduced by 10 percent for all categories.

In each jurisdiction these actions resulted in a reduction in fishing pressure of approximately 5 percent, counting both hard and peeler commercial

Commercial Blue Crab Landings in Maryland and Virginia from 1982 to 2001



Source: NOAA National Marine Fisheries Service, Maryland figures include Potomac River harvest. Figures for 2001 provided by the states of Maryland and Virginia, and the PRFC and represent catches through October, 2001.

crab fisheries. Determining the precise impact of these regulations will require ongoing analysis over time.

Recreational Regulations

In addition to these commercial regulations, all three jurisdictions implemented new restrictions on recreational crabbers, to reduce the amount of gear and the landings of those catching crabs recreationally. For example:

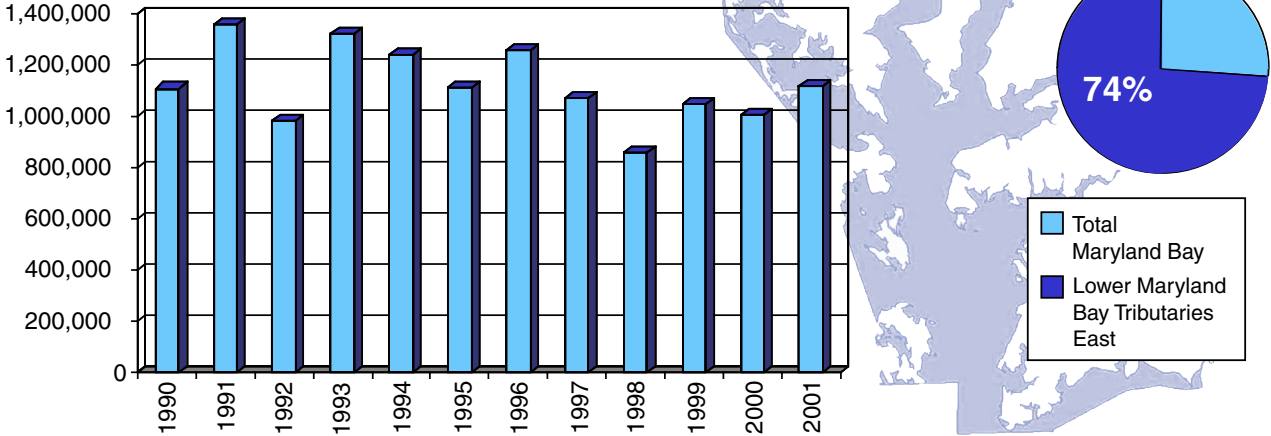
Maryland

- A recreational crabbing license is required, for anyone using more than 10 traps or rings and for anyone taking more than 2 dozen hard crabs or 1 dozen soft crabs or peelers per day. For additional requirements and exemptions, visit the web at: www.dnr.state.md.us/fisheries/crab/2001crabproposal.html

Virginia

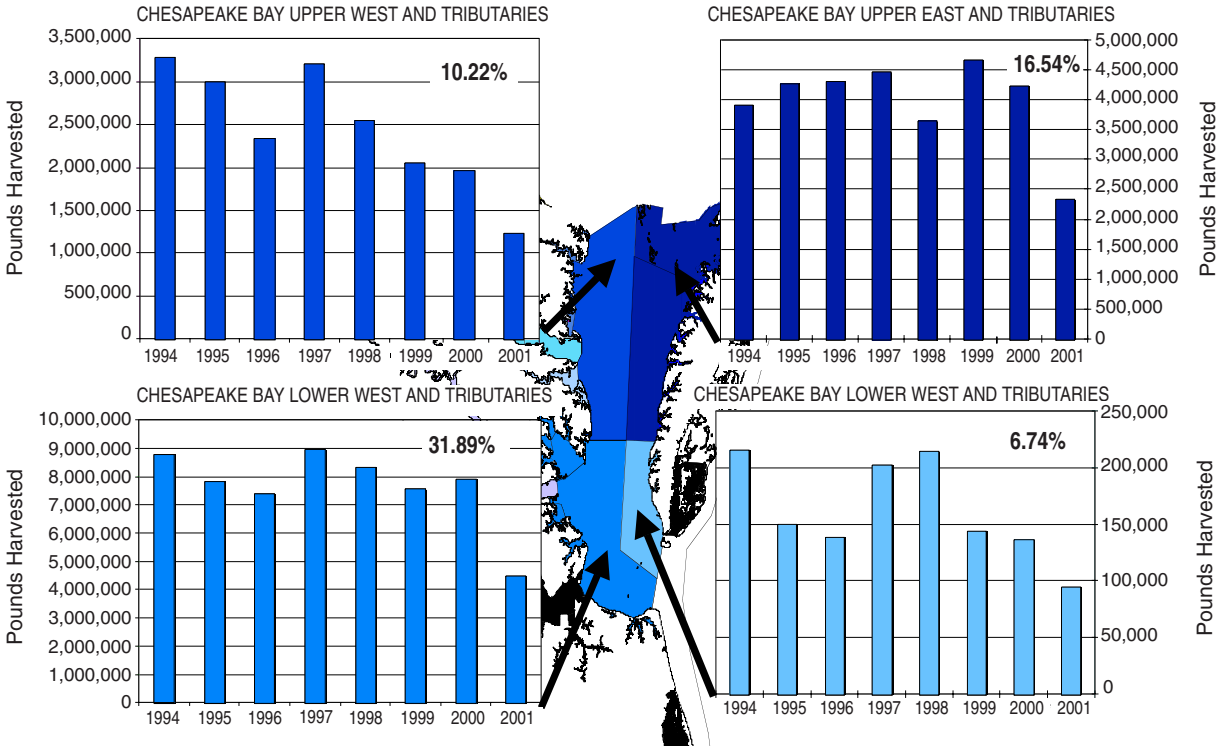
- A recreational crabbing license is required, with a 5-pot license and a limit of one bushel of hard crabs and/or two dozen peeler crabs in any one day. For additional requirements and exemptions, visit the web at: www.state.va.us/mrc/page1f3.htm

Peeler and Soft Crab Harvest in Maryland's Lower Bay Tributaries East 1990-2001



Depending on location, in any given year a snapshot of the blue crab harvest can look quite different. Though soft and peeler crabs may represent only about 10 percent or so of the Maryland harvest, for the lower Eastern Shore of Maryland the peeler fishery dominates. Source: Maryland Department of Natural Resources.

Virginia Hard Crab Harvest April-November 1994-2001



While the Baywide harvest has declined overall in recent years, the trend in any given area will vary widely. For Virginia hard crabs, for example, some locations have seen a trend upward, while others have seen crabbing fall off in recent years. Source: Virginia Marine Resources Commission. Note that VMRC data for 2001 is through September only, and is preliminary.

Potomac River

- A recreational license has been in effect since 1999. It is required for anyone using 3-5 pots, 11-20 traps, or 601-1,200 feet of trotline. In 2001 limits were tightened for license holders to one bushel of hard crabs per person (two bushels per boat), or two dozen soft crabs per person (four dozen per boat).

The effect of these management efforts, whether commercial or recreational, will not likely show up immediately, and it will be necessary to follow through on current plans to reduce fishing pressure (i.e., 15 percent over three years) in order to determine trends, and to assess the effectiveness of these measures.

The Harvest

As the 2001 commercial crabbing season neared its end, preliminary figures indicated, overall, a below-average year.

**Commercial Landings (Hard and Soft/peeler)
(Millions of Pounds)**

| | 2000 | 2001 | Recent Average |
|---------------------|-------|------|-------------------|
| Maryland (thru Oct) | 20.2 | 24.6 | 32.6 (8-yr. avg.) |
| Virginia (thru Nov) | 24.95 | 24.1 | 32.0 (7-yr. avg.) |
| Potomac (thru Oct) | 2.1 | 2.4 | 5.6 (8-yr. agv.) |

As noted above, conditions are different in different areas of the Bay. The resource management agencies of Maryland and Virginia have calculated landings in different regions and tributaries of the Bay, and an example of that data is represented above (see page 3). Note that in Maryland some three-quarters of the peeler and soft crab production comes from the lower Eastern Shore/Tangier Sound area. Clearly this area represents a rich habitat for blue crabs, where grasses provide excellent refuge for molting.

Trends in the Peeler Fishery

According to a 2001 report prepared by the bi-state committee’s technical workgroup, the proportion

of the total harvest represented by the peeler fishery has varied over the last 20 years.

In Maryland, evidence points to an initial decline from 1981-1988 in soft and peeler harvests relative to total landings, followed by an increasing trend thereafter. In the last year examined (2000), soft and peeler landings in Maryland represented 10.9 percent of the total commercial landings in the state. In Virginia, data suggest a consistent increasing trend over the 20-year period, from an initial level for soft and peeler landings of 2 percent of total harvest, to 11.5 percent by 2000. According to a recent analysis, increased effort in the Virginia peeler fishery has not improved catch — so the catch per unit effort has dropped.

Data for the Potomac River indicate that the overall contribution of soft and peelers to the river’s commercial crab harvest is lower than in the other two jurisdictions, and that the trend over time is similar to that observed in Maryland.

In general, over time, the effort in the soft and peeler fishery has increased Baywide, and the proportion of soft and peeler crabs relative to total crab landings has increased. More research and analysis is required to determine the precise effect of this shift in crabbing effort on the blue crab fishery as a whole.

Recreational Crabbing

In addition to the commercial harvest, recreational crabbers are believed by many to take a significant number of crabs from the estuary. A study of recreational crabbing in the Bay is now underway, with analysis of survey data from this past year nearing completion, and a final report due by the beginning of 2002.

Credits

This status report was prepared for the Chesapeake Bay Commission’s Bi-State Blue Crab Advisory Committee by the Maryland Sea Grant College. The report reflects the broad consensus of the BBCAC Technical Workgroup. For additional information about this bi-state effort, contact the Chesapeake Bay Commission, 60 West St Suite 200 Annapolis, Maryland 21401, or visit the web at www.chesbay.state.va.us.

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