

CBSAC

2010 Blue Crab Advisory Report

Figures



Figure 1. Winter dredge survey index of total blue crab abundance (density of males and females, all sizes combined) in Chesapeake Bay, 1989-2010.

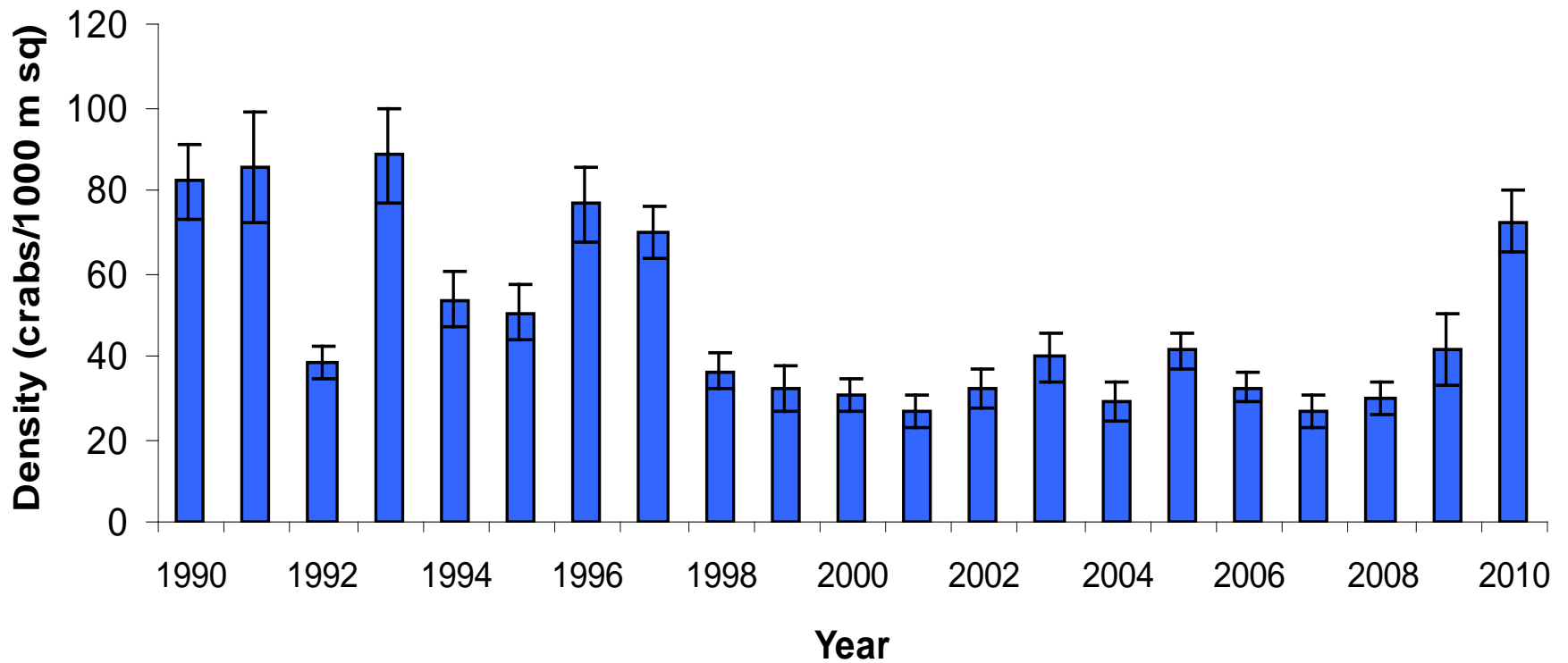


Figure 2. Winter dredge survey estimate of **abundance of male and female blue crabs aged one year and older (age 1+) 1989-2010**. These are crabs measuring greater than 60mm across the carapace and are considered the ‘exploitable stock’ that will spawn within the coming year. The lowest observed abundance of 86 million crabs was observed in the 1998-1999 survey. This is considered the overfished threshold. The interim target abundance is 200 million crabs.

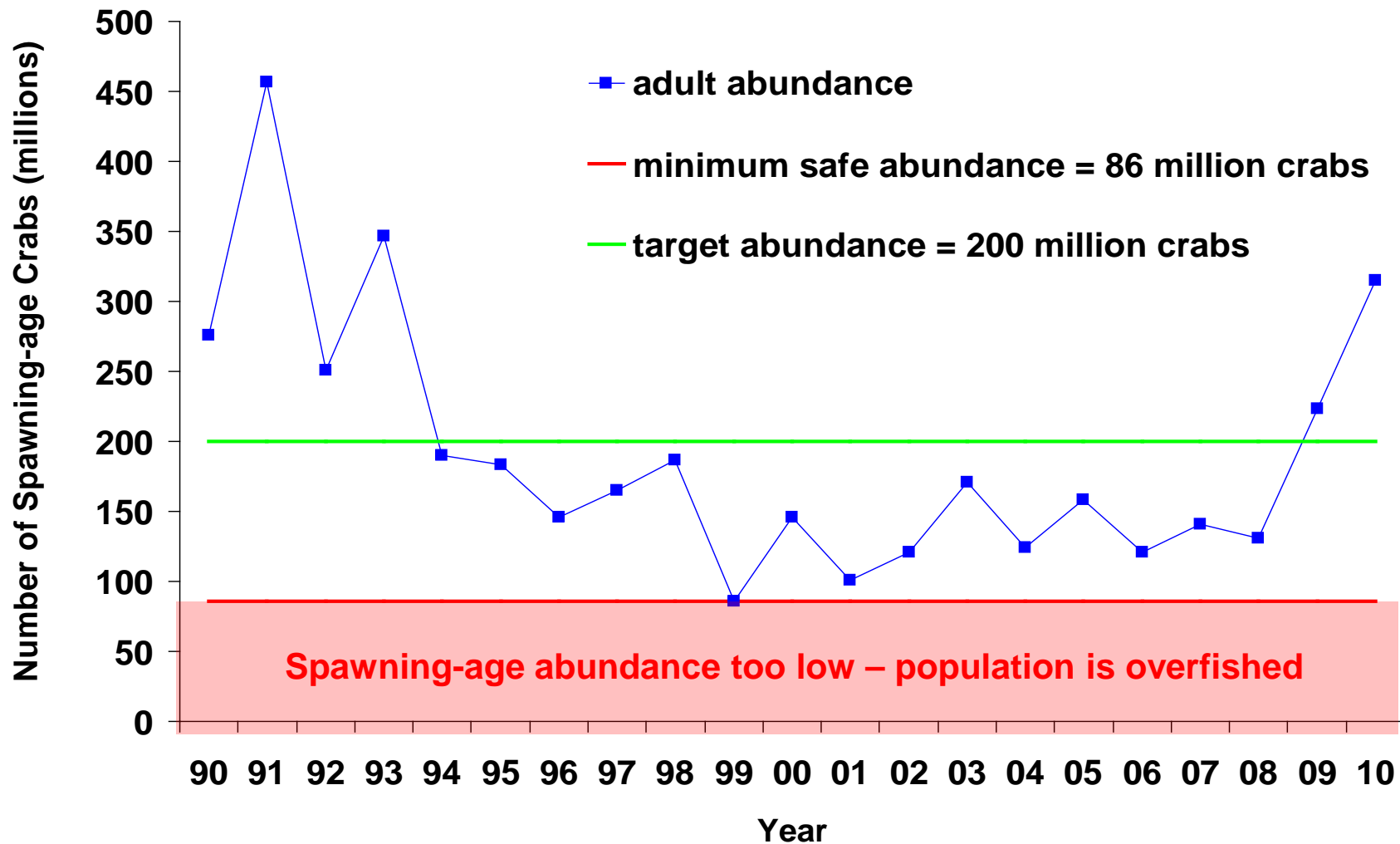


Figure 3. Winter dredge survey estimate of **abundance of female blue crabs aged one year and older** (age 1+) 1990-2010. These are female crabs measuring greater than 60mm across the carapace and are considered the ‘exploitable stock’ that will spawn within the coming year.

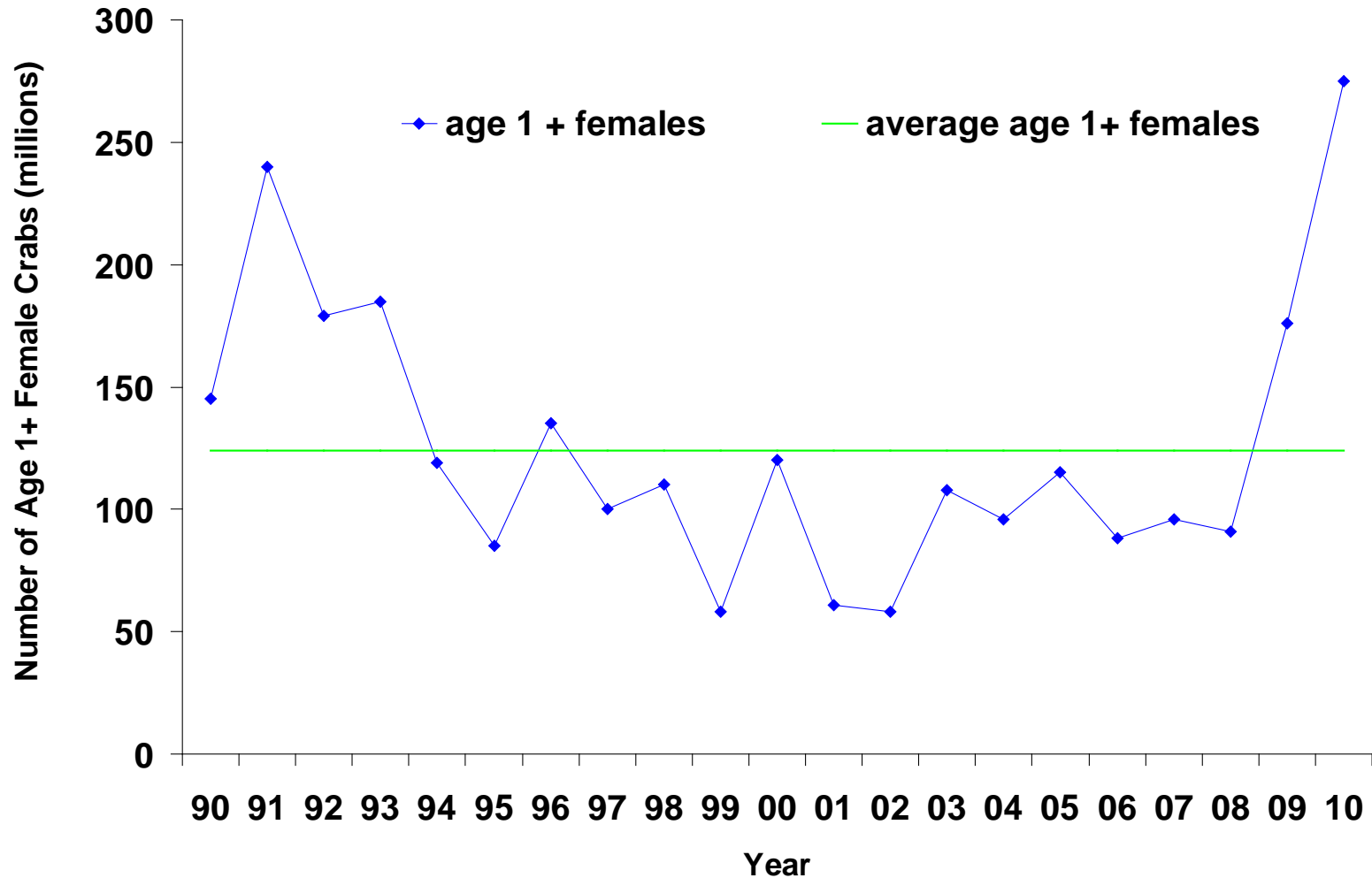


Figure 4. Winter dredge survey estimate of **abundance of male blue crabs aged one year and older (age 1+)** 1990-2010. These are male crabs measuring greater than 60mm across the carapace and are considered the ‘exploitable stock’ that will spawn within the coming year.

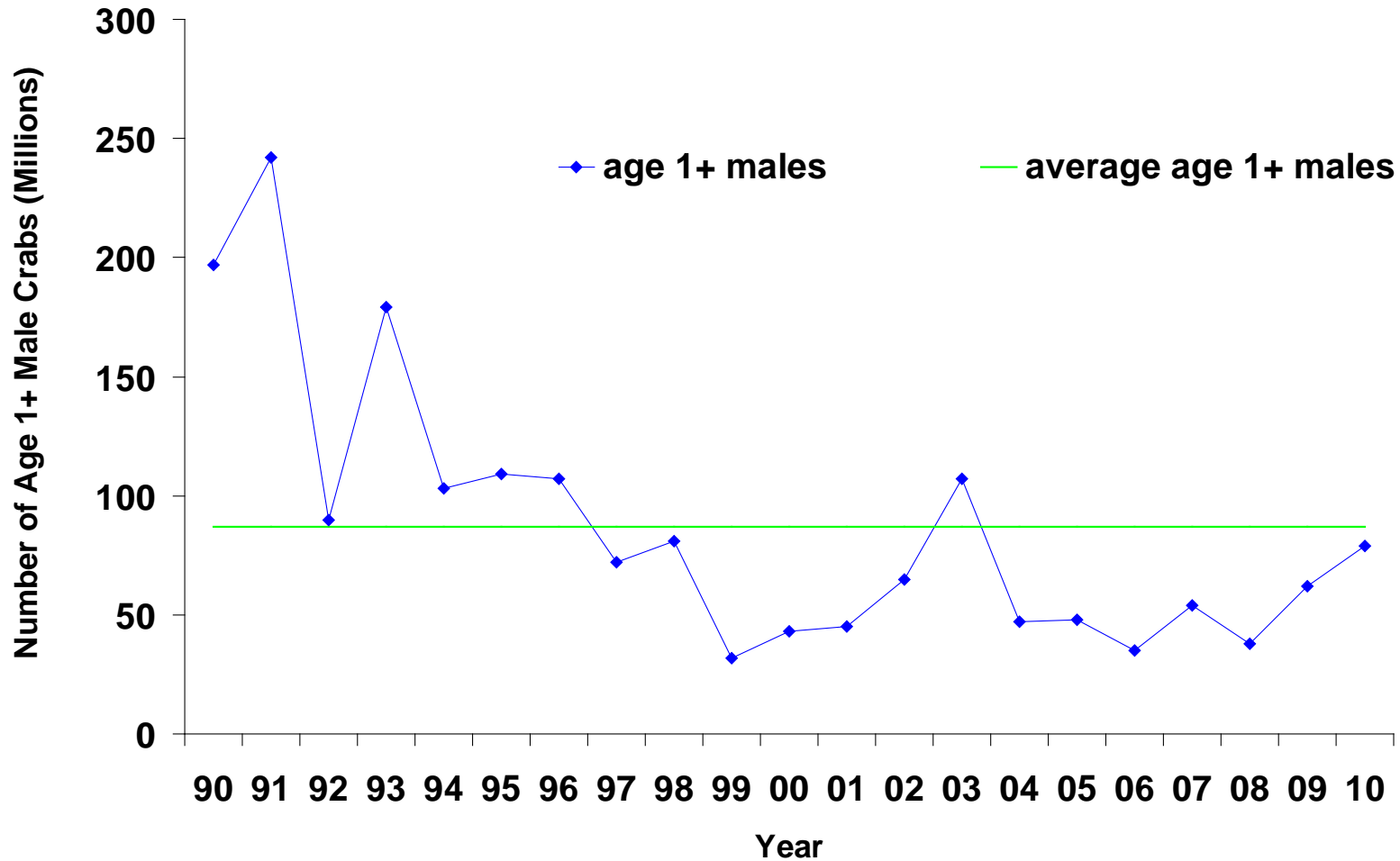


Figure 5. Winter dredge survey estimate of **abundance of age 0 crabs**. 1990-2010. These are male and female crabs measuring less than 60mm across the carapace.



Figure 6. Maryland and Virginia Chesapeake Bay Blue Crab harvest 1945-2009, adjusted for changes in reporting methods.

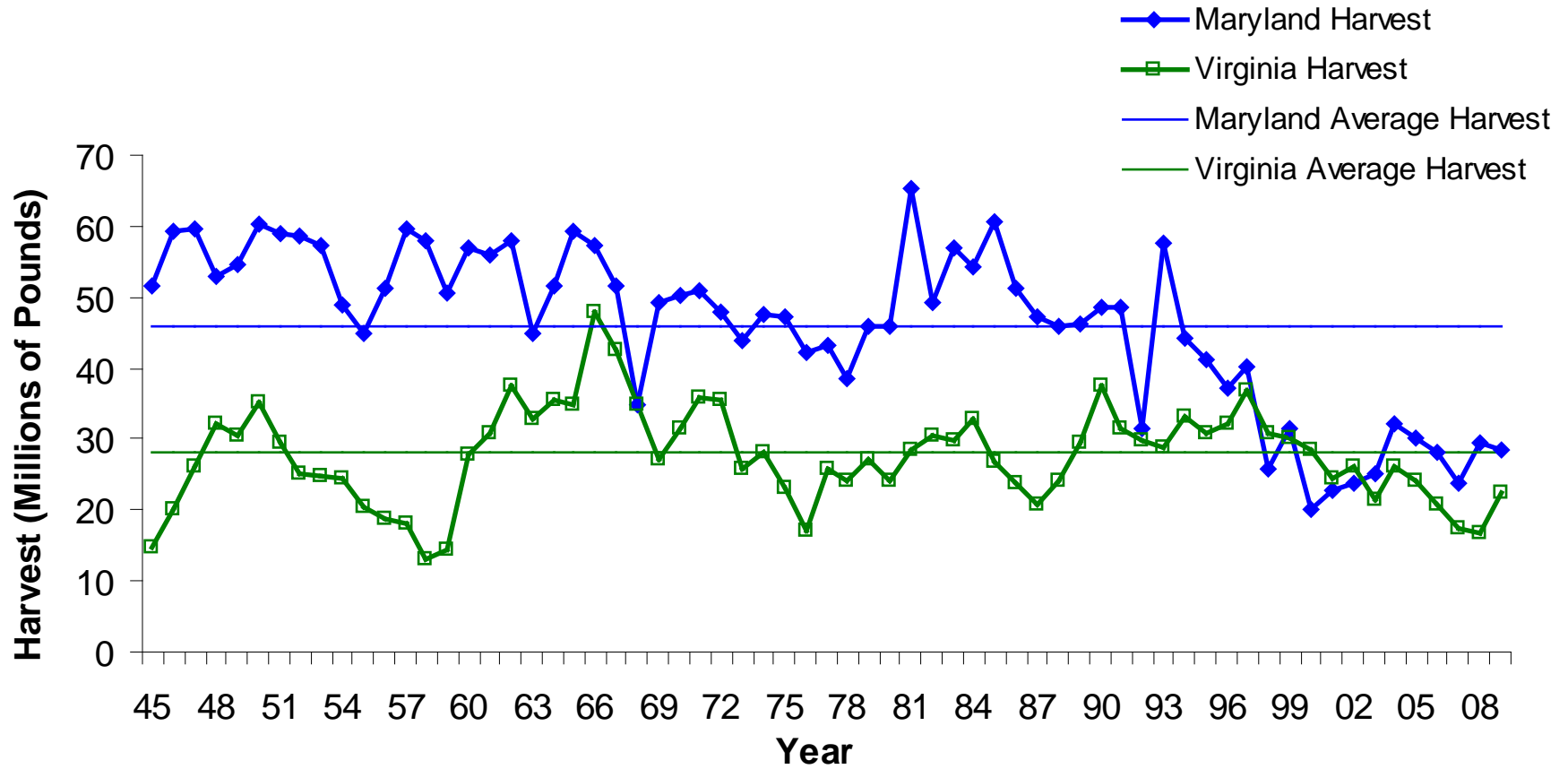


Figure 7. The control rule used to manage the Chesapeake Bay blue crab fishery. An abundance of 86 million age 1+ crabs represents the overfished threshold. In 2009, abundance was above the overfished target and the exploitation rate was below the overfishing target.

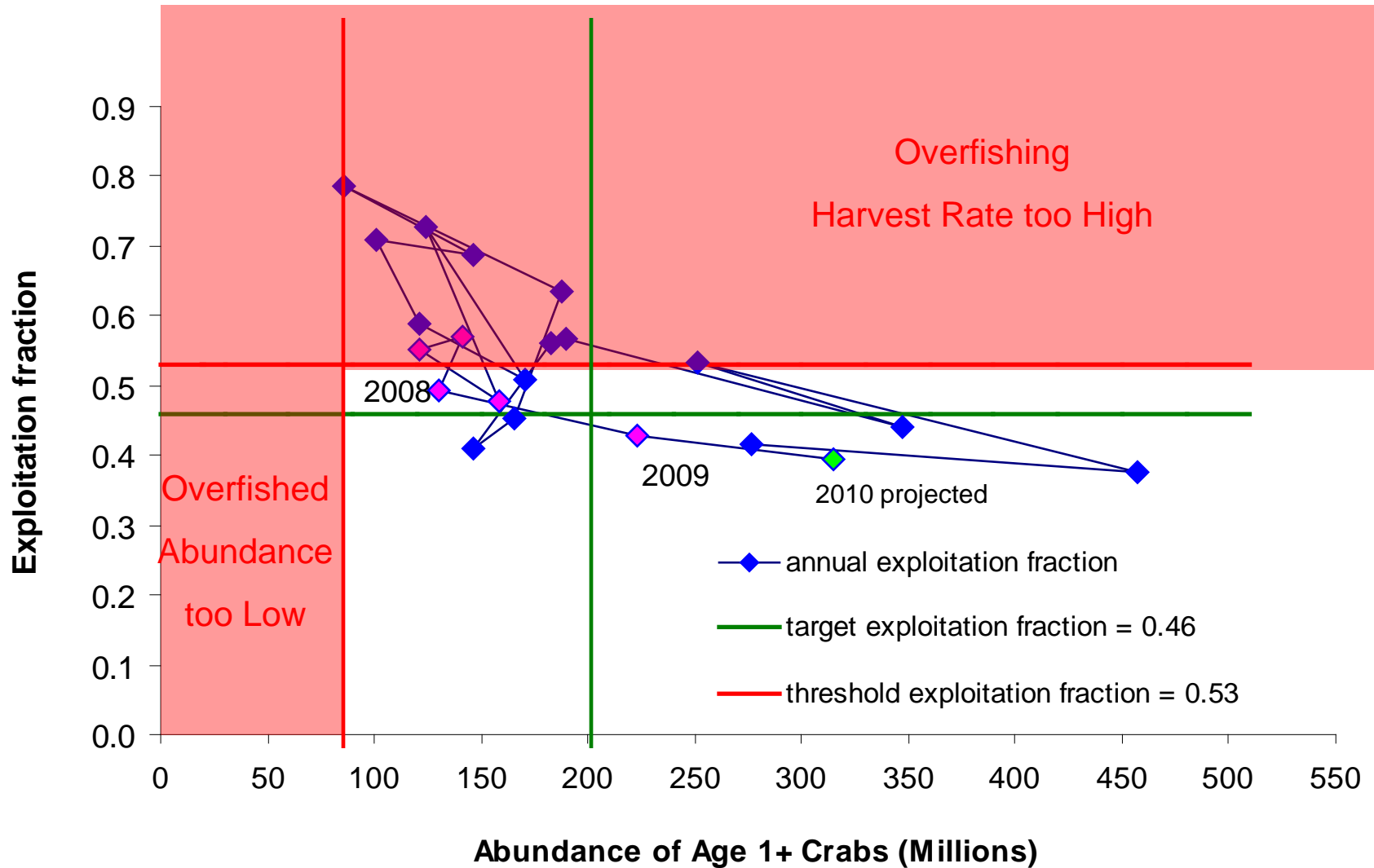
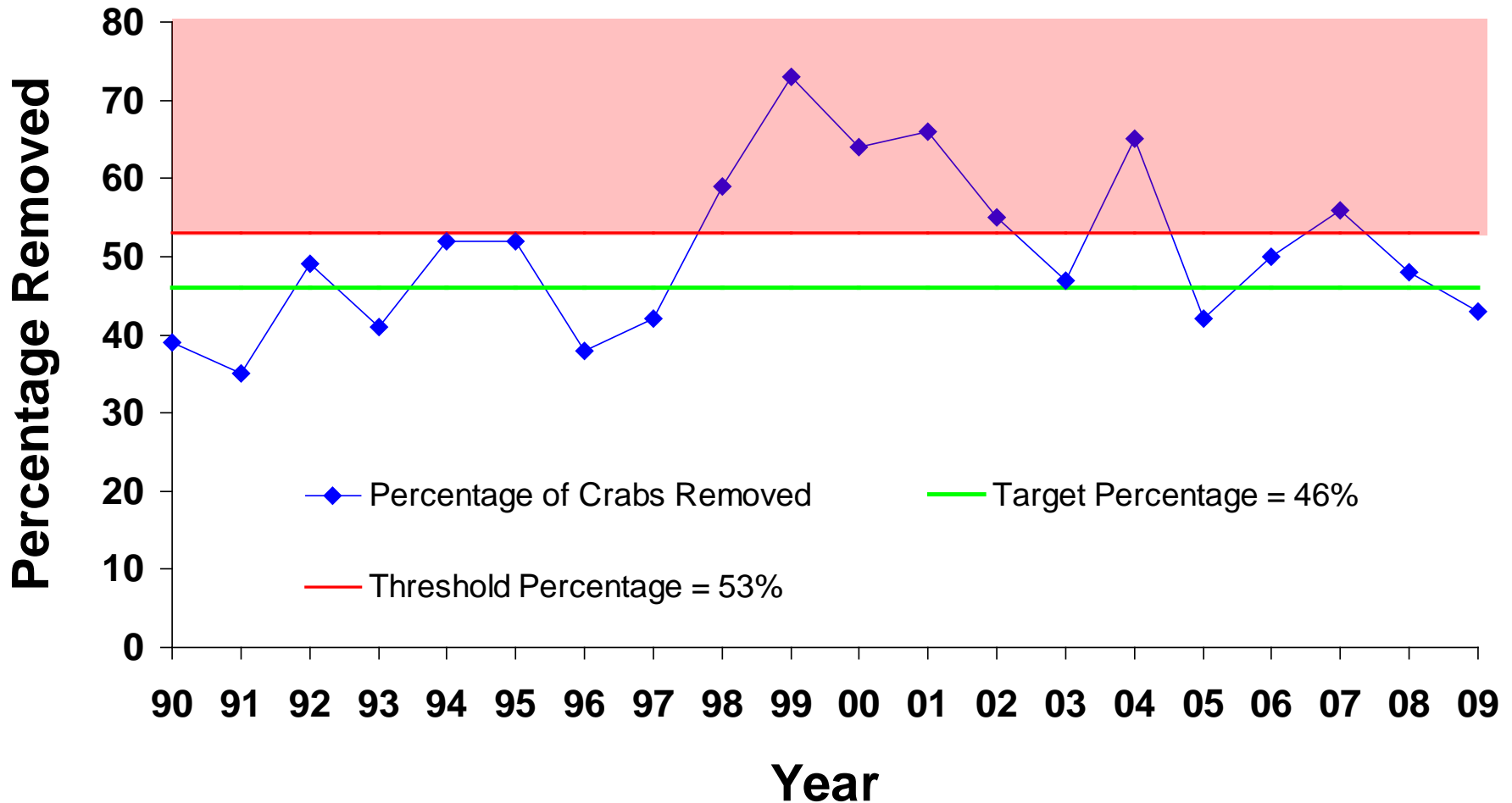


Figure 8. The percentage of crabs removed from the population each year by fishing relative to target and threshold levels between 1990 and 2009.



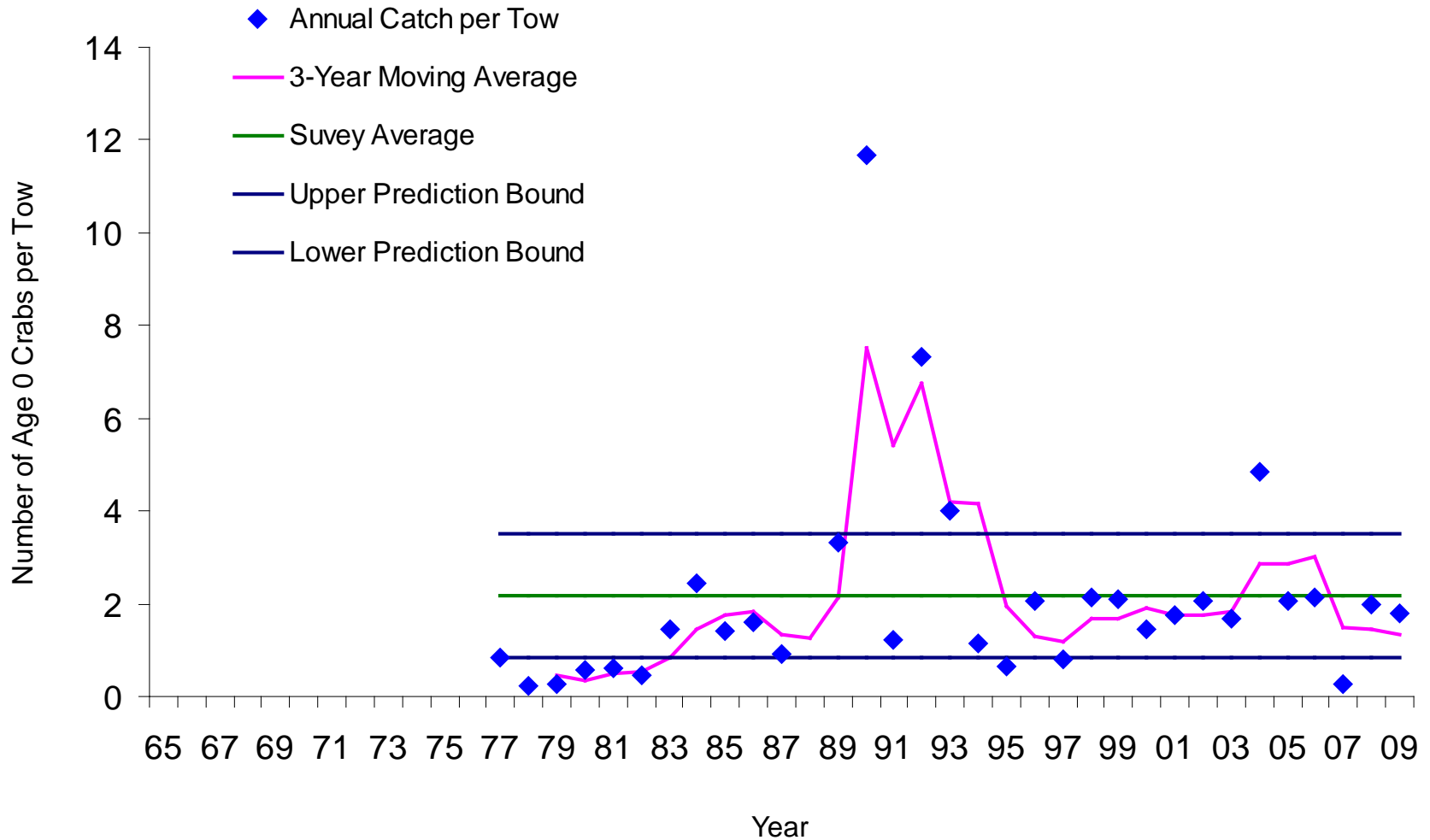
Appendix 1:

Supporting Survey Indices of Abundance

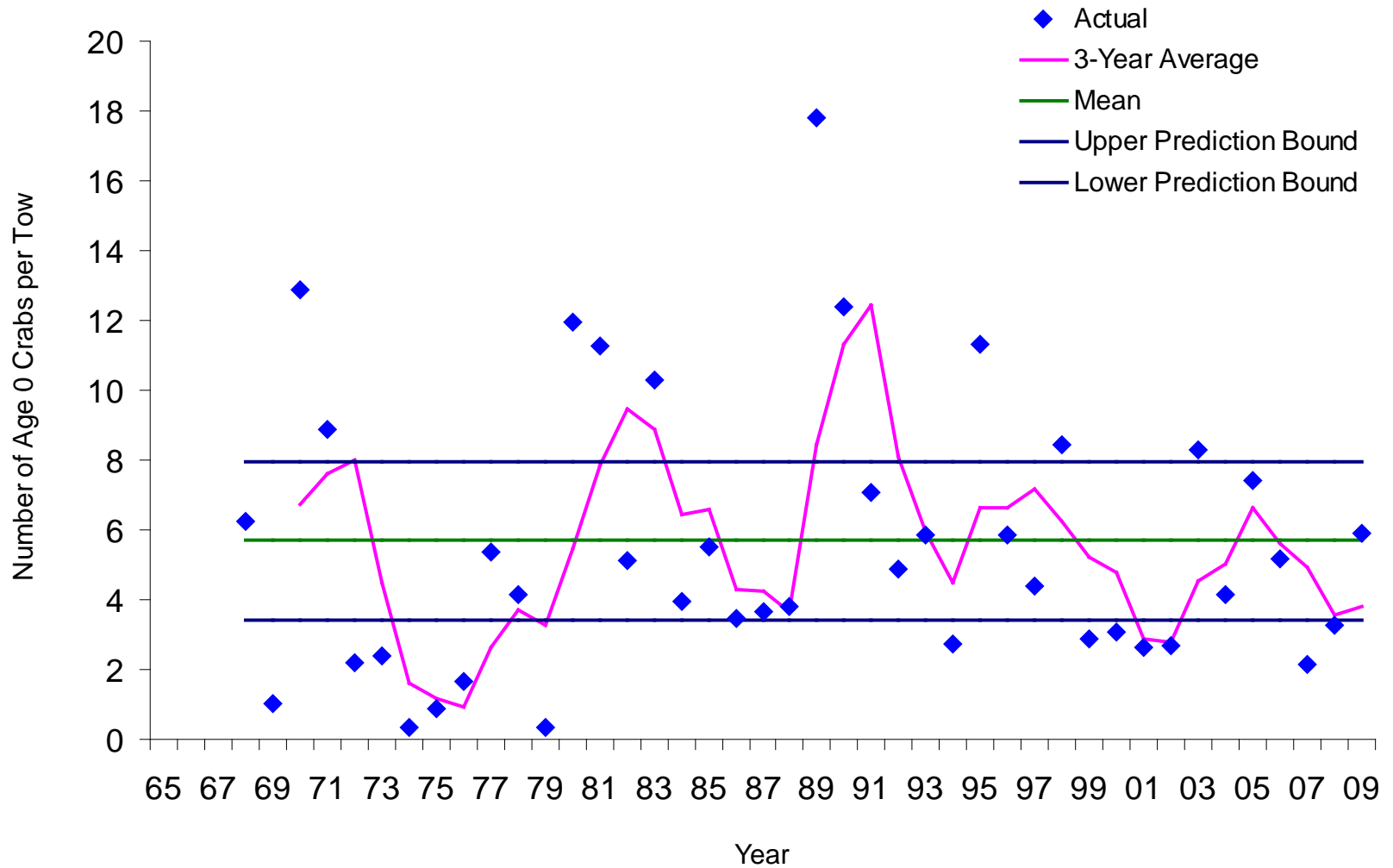
Data: Three additional fishery-independent surveys are used to monitor stock status: The Virginia trawl survey, the Maryland summer trawl survey, and the Calvert Cliffs crab pot survey. Data from the two trawl surveys and the Calvert Cliffs pot survey are based on calendar year collections through 2009. The indices are expressed as the geometric mean catch per unit effort. 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.

Result Summary: For age 0 crabs, the results of the two trawl surveys are consistent with the dredge survey, indicating a high abundance of age 0 crabs. The Maryland trawl survey indicated a substantial rise in the number of adult crabs (both male and female). The Calvert Cliffs Pot survey indicated that adult crab abundance remains at a high level, but adult female abundance declined in 2009. The Virginia trawl survey shows continued low abundance of adult crabs, and continued low abundance of adult female crabs in 2009.

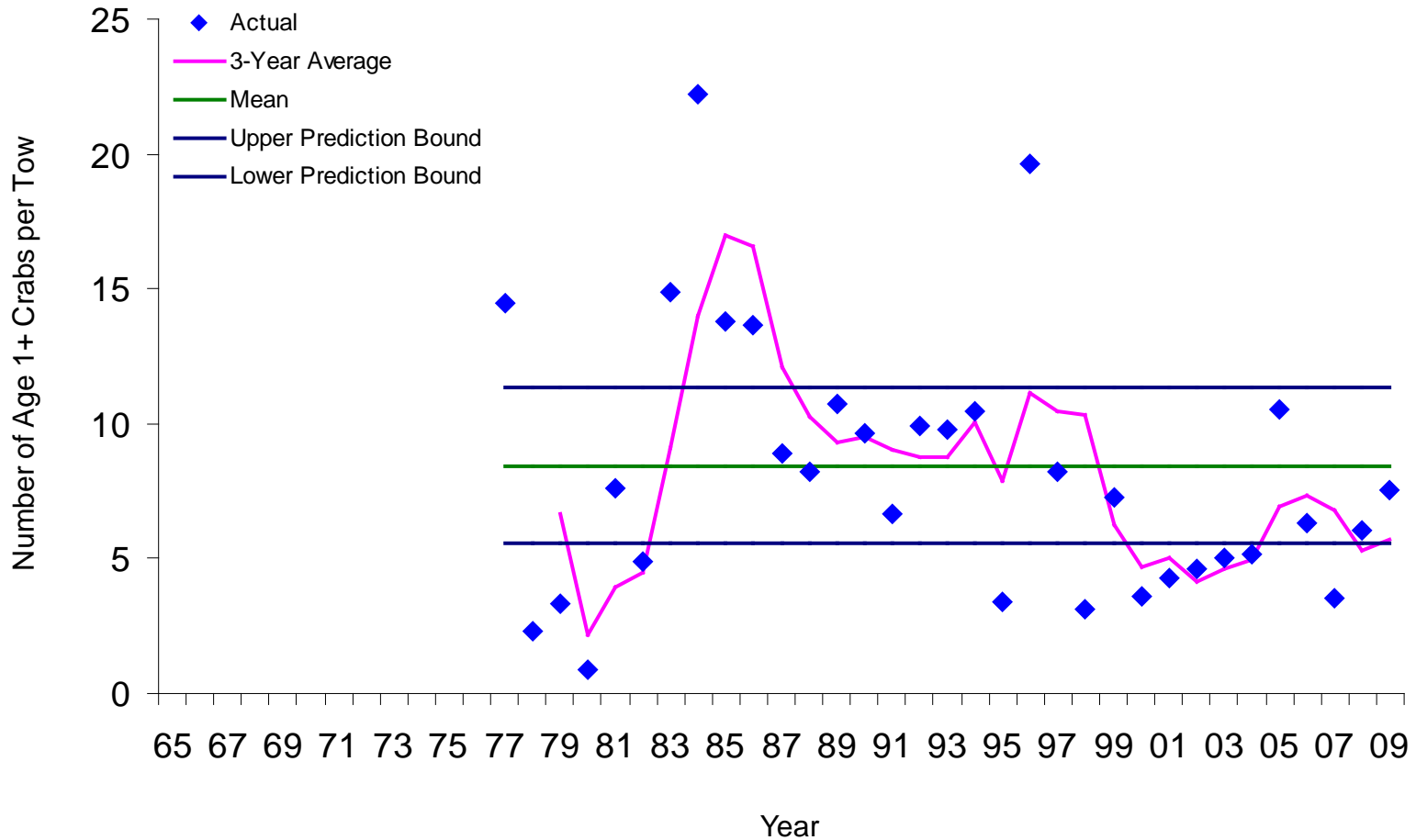
Appendix 1, Figure 1. Maryland Trawl Survey catch per tow of age 0 crabs, 1977 - 2009. Age 0 is assigned to crabs caught during September and October that are less than or equal to 50 mm across the carapace. The average range is defined as the standard deviation of the annual crab density values divided by the square root of three.



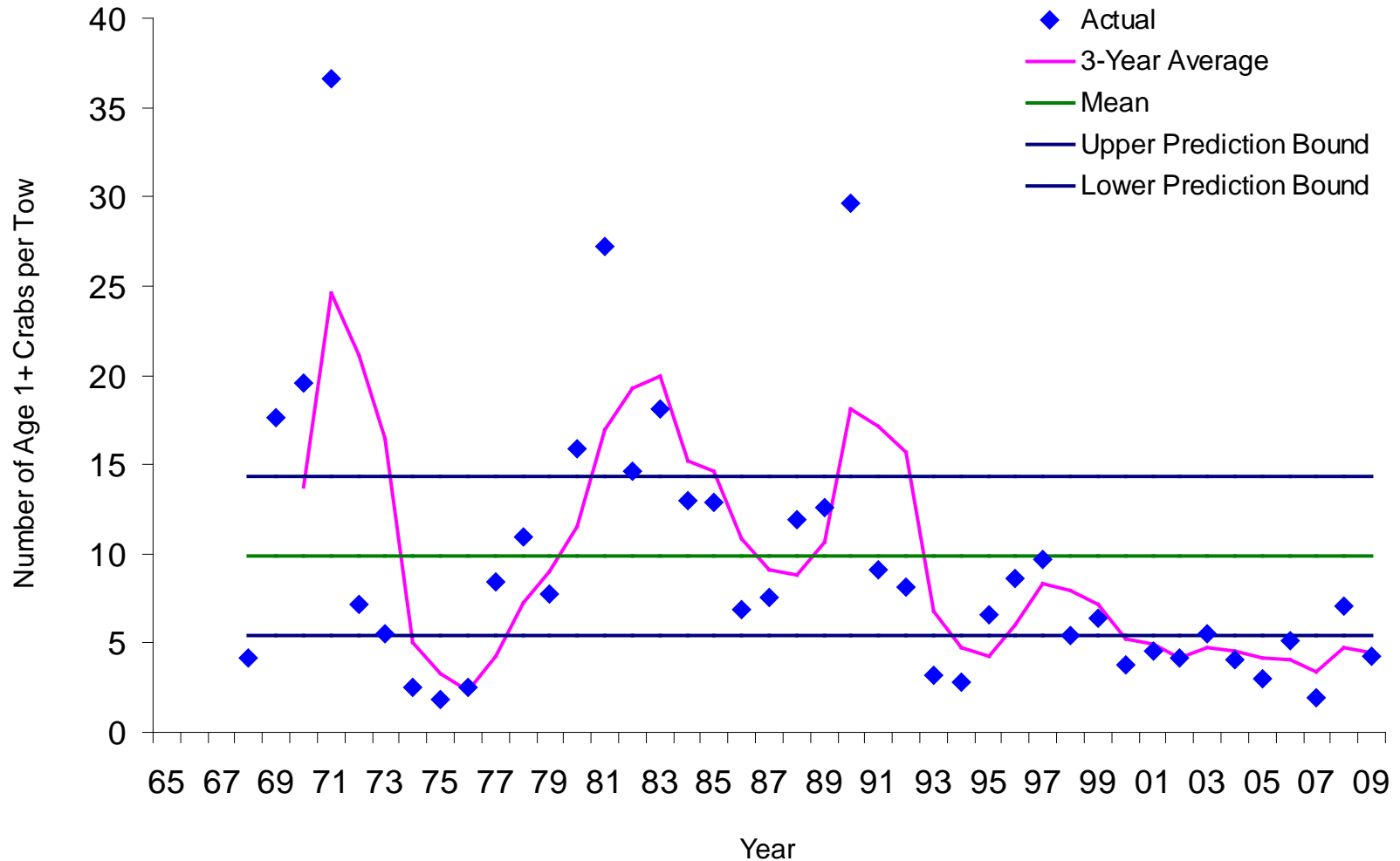
Appendix 1, Figure 2. Virginia Trawl Survey catch per tow of age 0 crabs, 1968-2009, from sites in the upper and lower rivers. Age 0 is assigned to crabs that are less than or equal to 50 mm across the carapace in September, and less than or equal to 60 mm across the carapace in October and November.



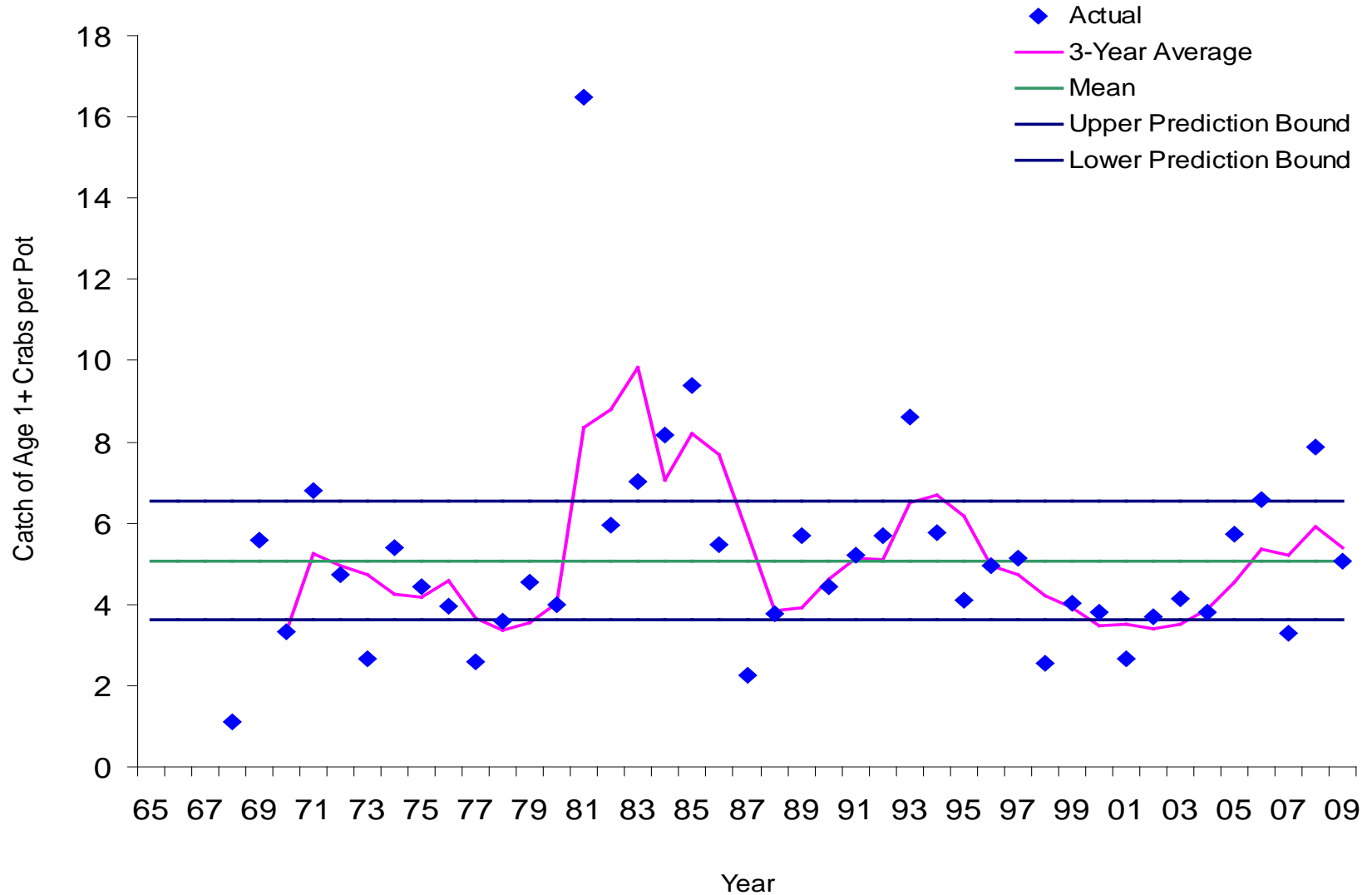
Appendix 1, Figure 3. Maryland Trawl Survey catch per tow of age 1+ crabs, 1977 – 2009. Age 1+ crabs are defined as those caught from June through October that are greater than or equal to 51 mm across the carapace.



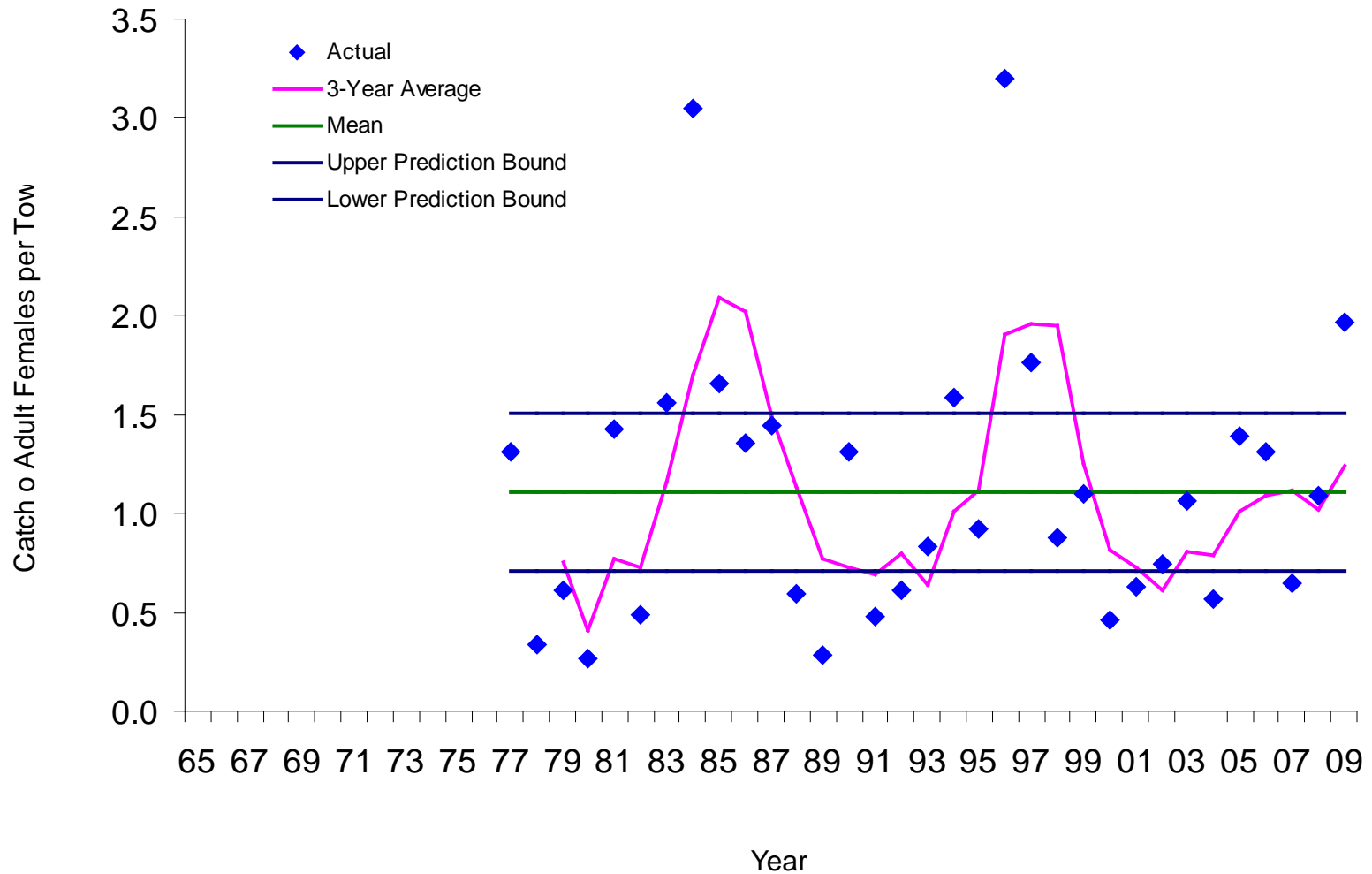
Appendix 1, Figure 4. Virginia Trawl Survey catch per tow of age 1+ crabs, 1968-2009, from sites sampled in the upper and lower rivers. Age 1+ crabs are defined as those that are greater than or equal to 36 mm across the carapace in August, greater than or equal to 51 mm in September, and greater than or equal to 61 mm across the carapace in October.



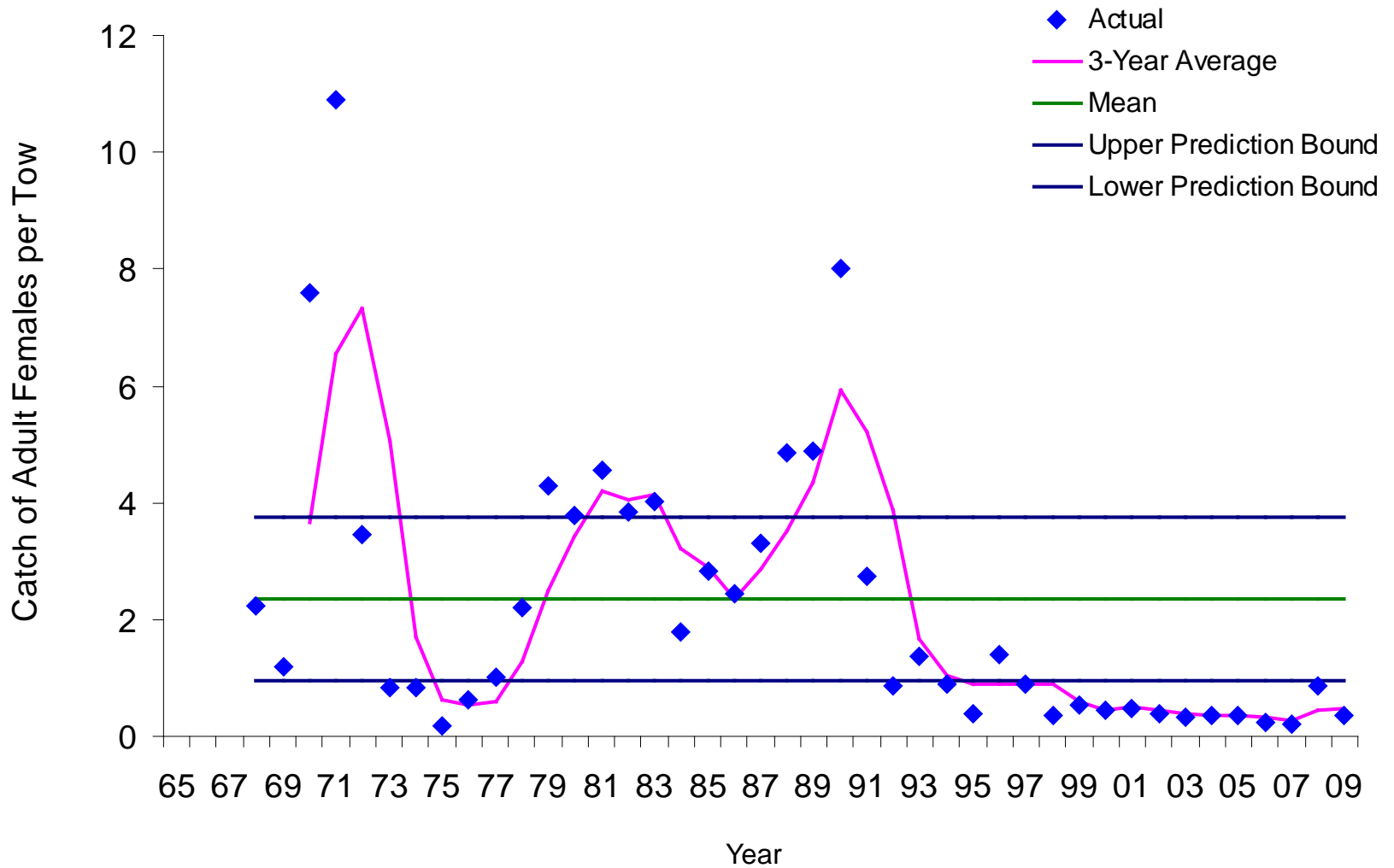
Appendix 1, Figure 5. Calvert Cliffs pot survey catch per pot of age 1+ crabs, 1968-2009. Age 1+ crabs are defined as those caught from June through August that are greater than or equal to 95 mm across the carapace.



Appendix 1, Figure 6. Maryland Trawl Survey catch per tow of adult female crabs, 1977 -2009. Adult female crabs caught from August through October are classified in adult, in that they will likely spawn within one year.



Appendix 1, Figure 7. Virginia Trawl Survey catch per tow of adult female crabs, 1968 through 2009, from sites in the upper and lower rivers, and the mainstem of Chesapeake Bay. All females caught from August through November are considered to be adult, in that they will likely spawn within 1 year.



Appendix 1, Figure 8. Calvert Cliffs pot survey catch per pot of adult female crabs, 1968-2009. Adult female crabs are defined as those caught in September that are greater than or equal to 120 mm across the carapace.

