# April 2016 Blue Crab Update

# 2016 Bay wide Winter Dredge Survey Results

# 2015 Blue Crab Harvest

Figure 1. Winter dredge survey estimate of **total blue crab abundance (males and females)** 1990-2016. Error bars represent 95% confidence intervals.

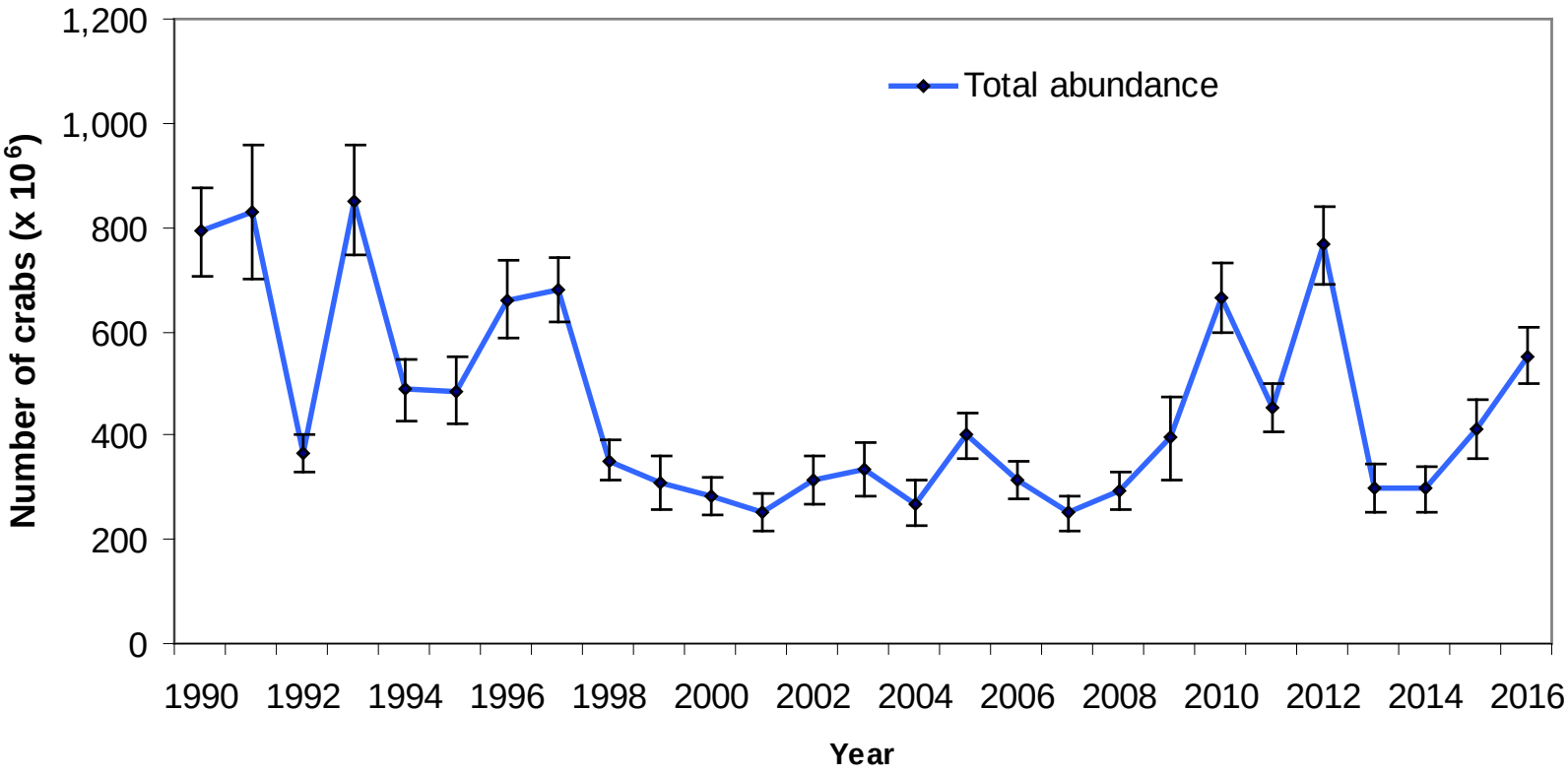


Figure 2. Winter dredge survey estimate of **abundance of juvenile blue crabs (age 0)**, 1990-2016. These are male and female crabs measuring less than 60mm across the carapace. Error bars represent 95% confidence intervals.

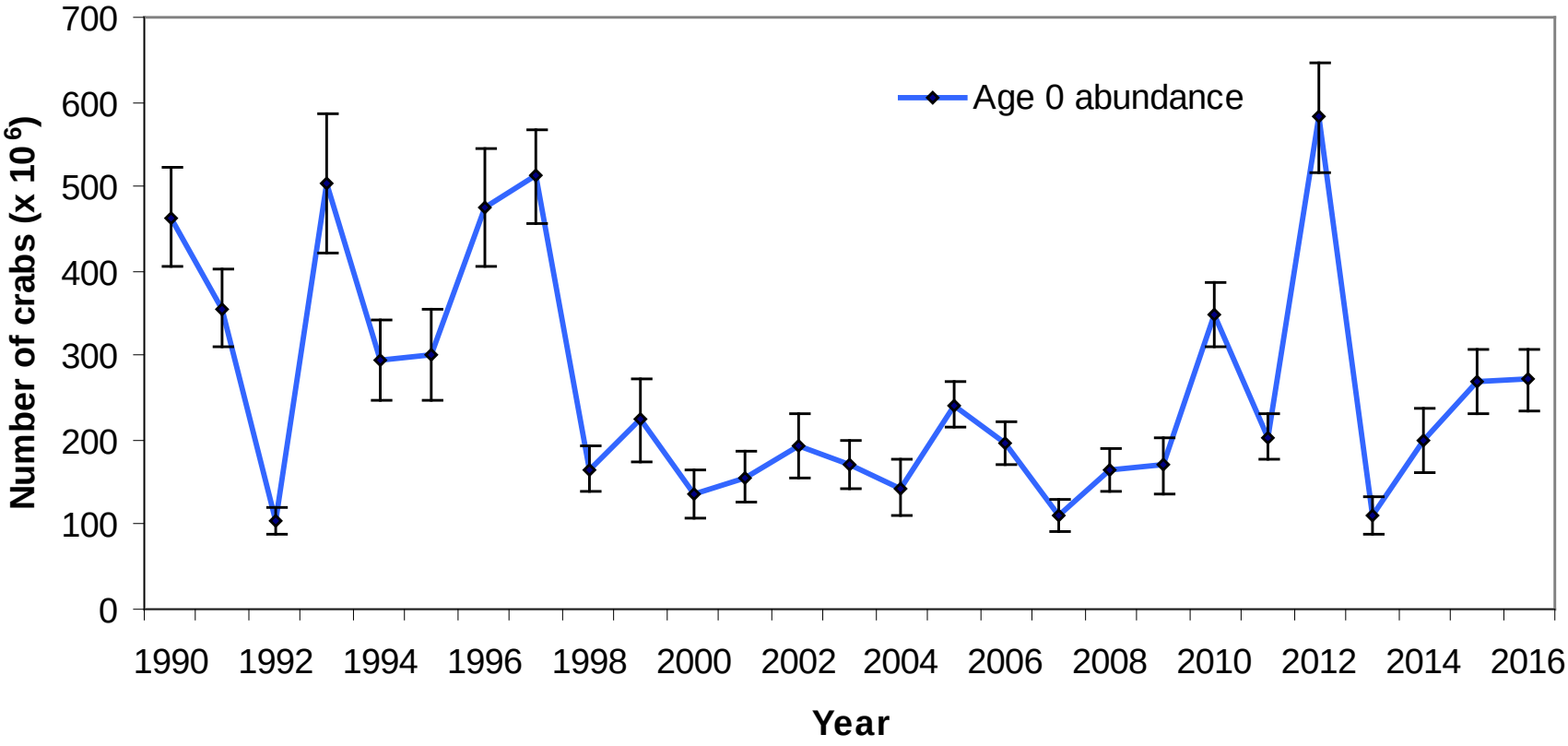


Figure 3. Winter dredge survey estimate of **abundance of age 1+ female blue crabs (≥ 60 mm carapace width)** 1990-2016 with female-specific reference points. These are female crabs considered the 'exploitable stock' that will spawn within the coming year.

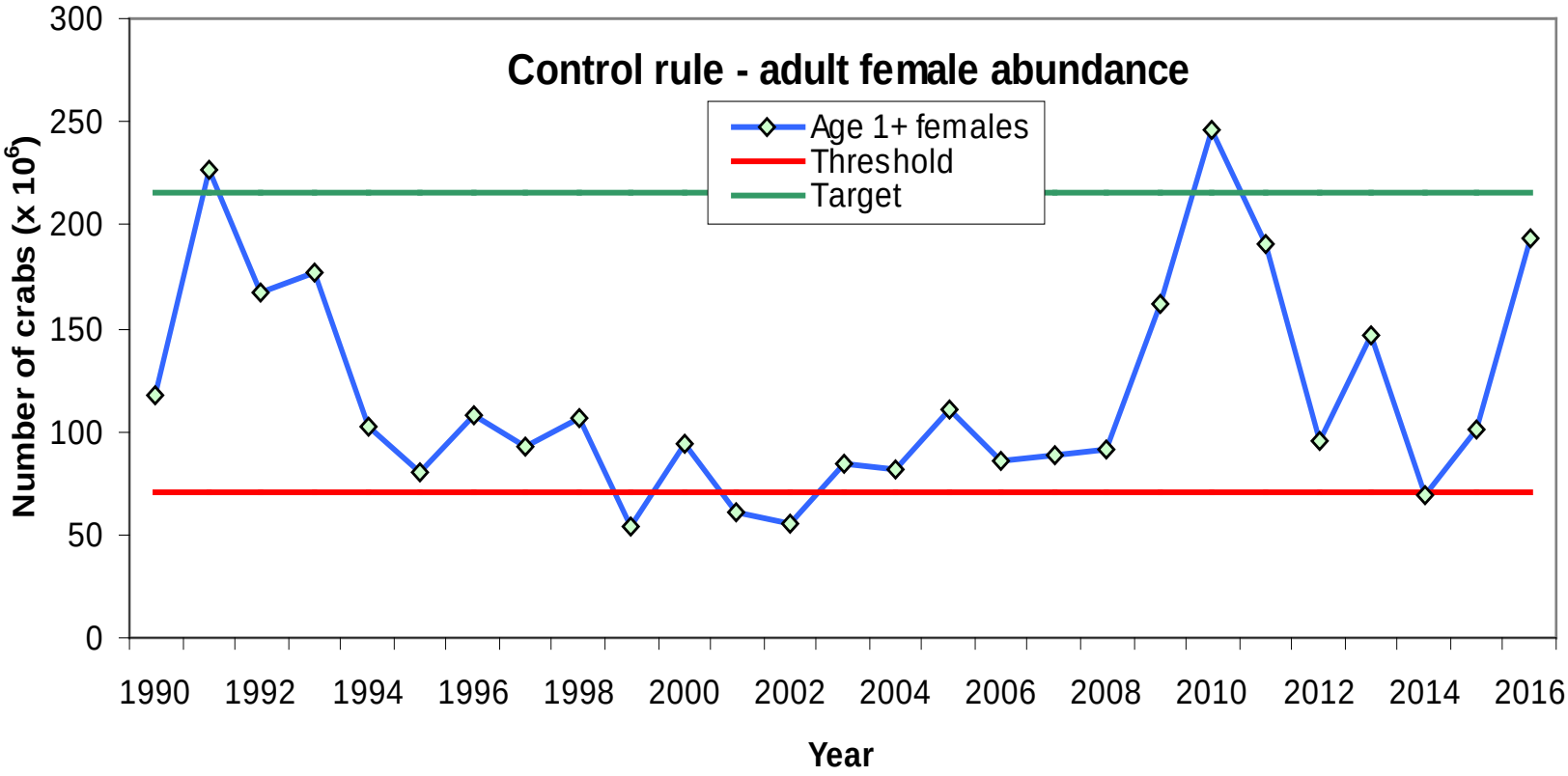


Figure 4. Winter dredge survey estimate of **abundance of age1+ male blue crabs (≥ 60 mm carapace width)**1990-2016. Error bars represent 95% confidence intervals.

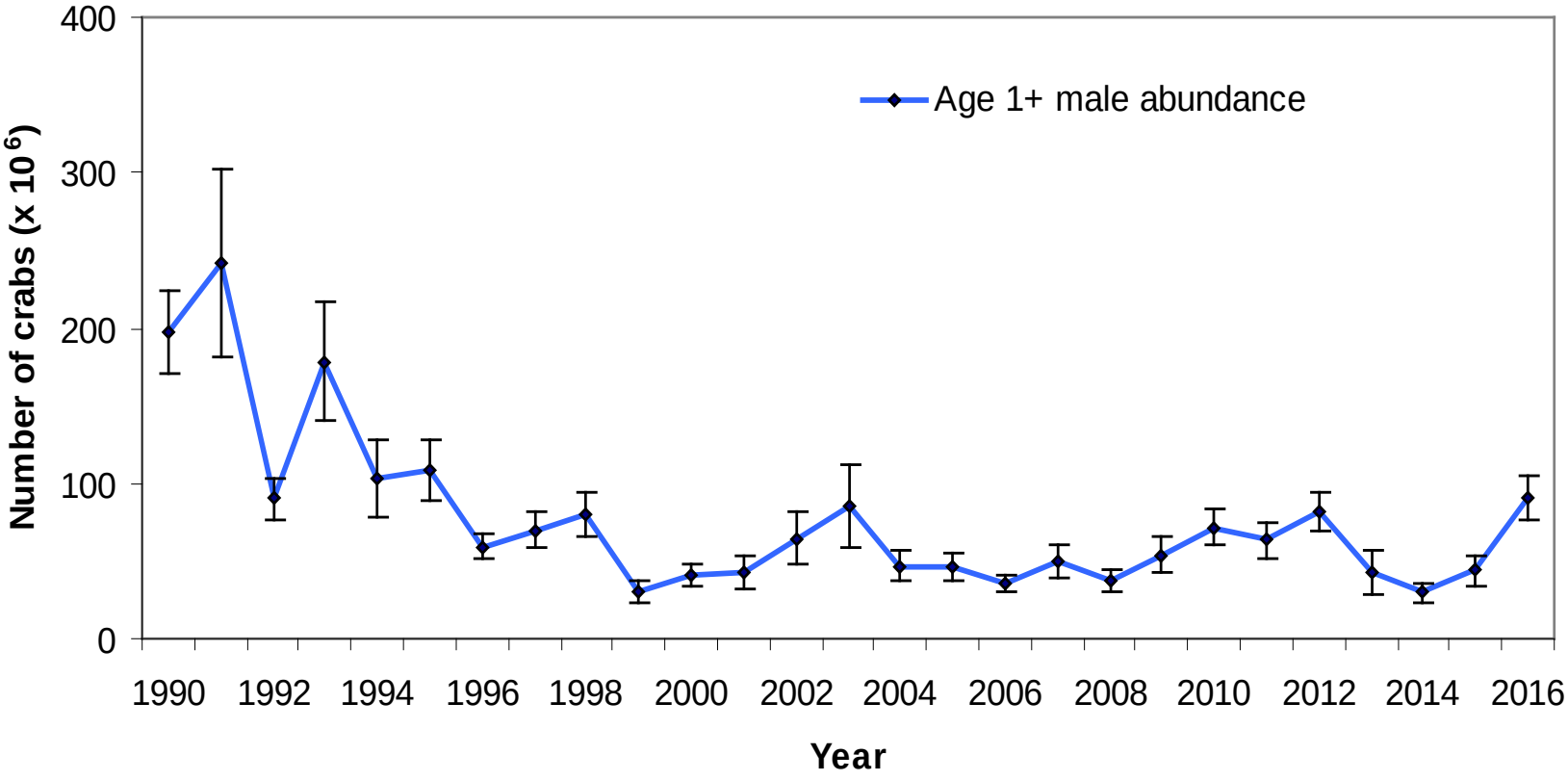


Figure 5. Winter dredge survey estimate of **abundance of age1+ male and female blue crabs (≥ 60 mm carapace width)** with average abundance.

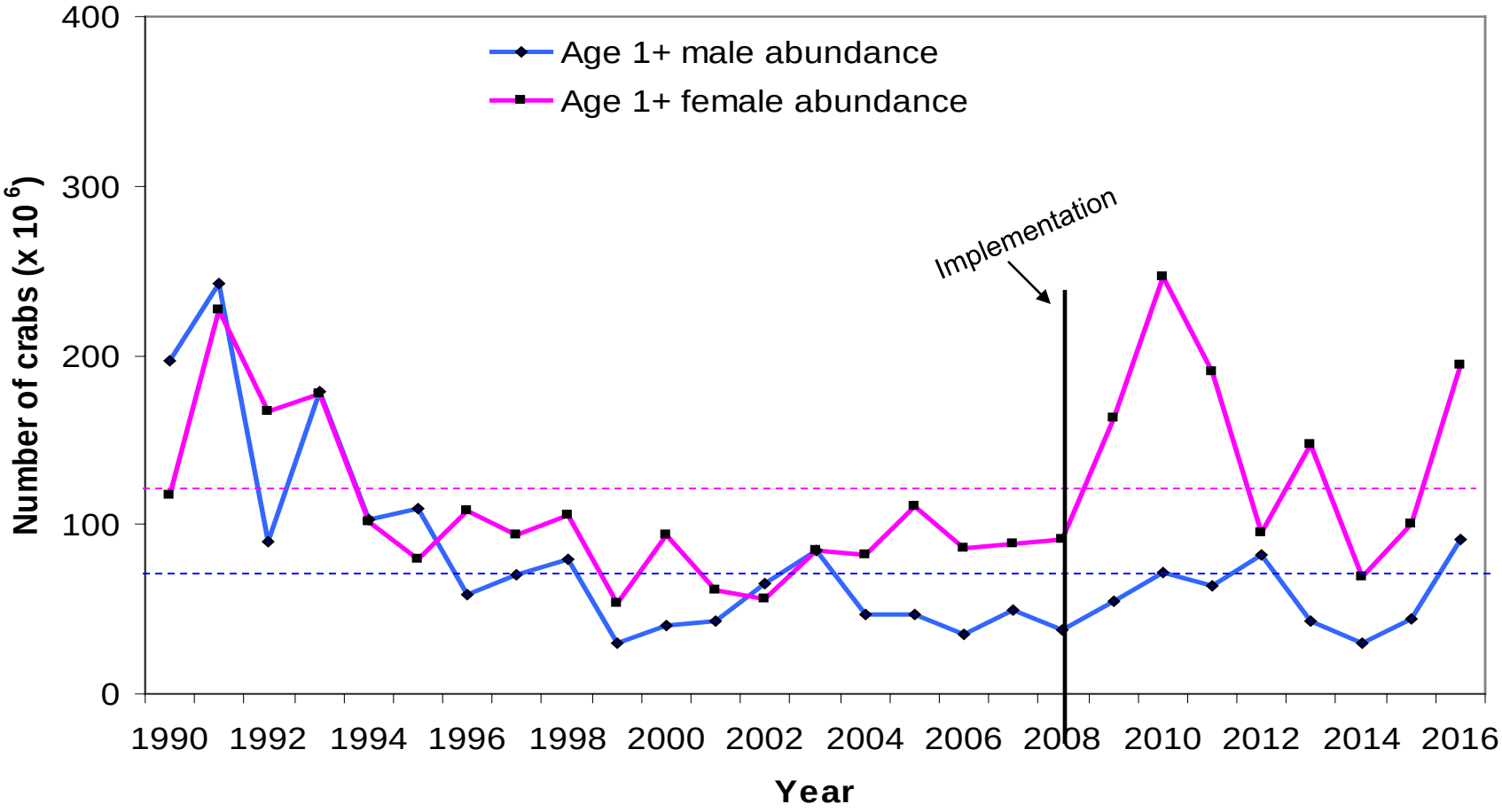


Figure 6. Total commercial blue crab landings (all market categories) in Chesapeake Bay, 1990-2015. Bay-wide harvest in 2015 was approximately 49.7 million pounds.

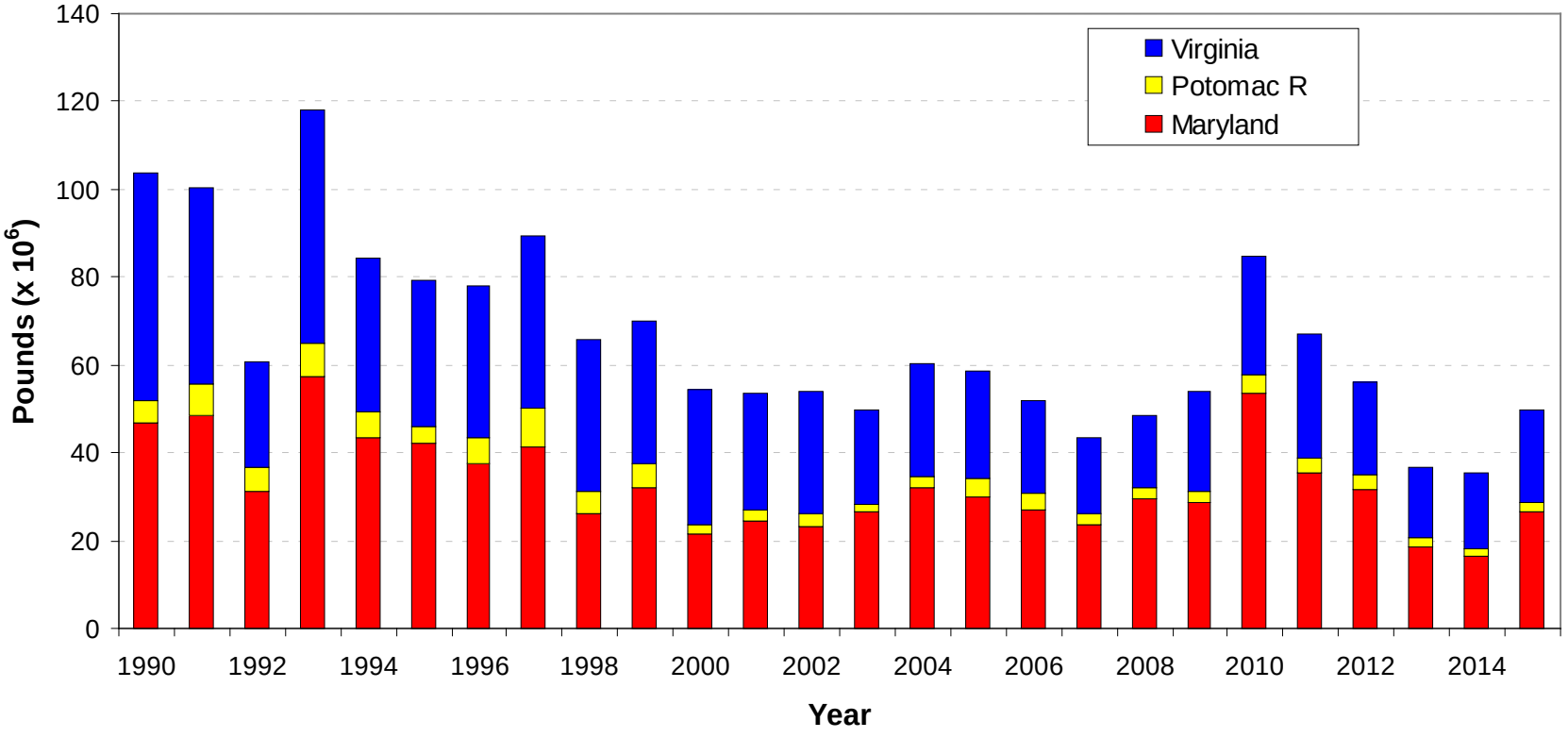


Figure 7. Commercial landings of **female** blue crabs (hard crabs and peeler/soft combined) from each jurisdiction in Chesapeake Bay, 1990-2015. Dotted lines represent the 1990-2014 average.

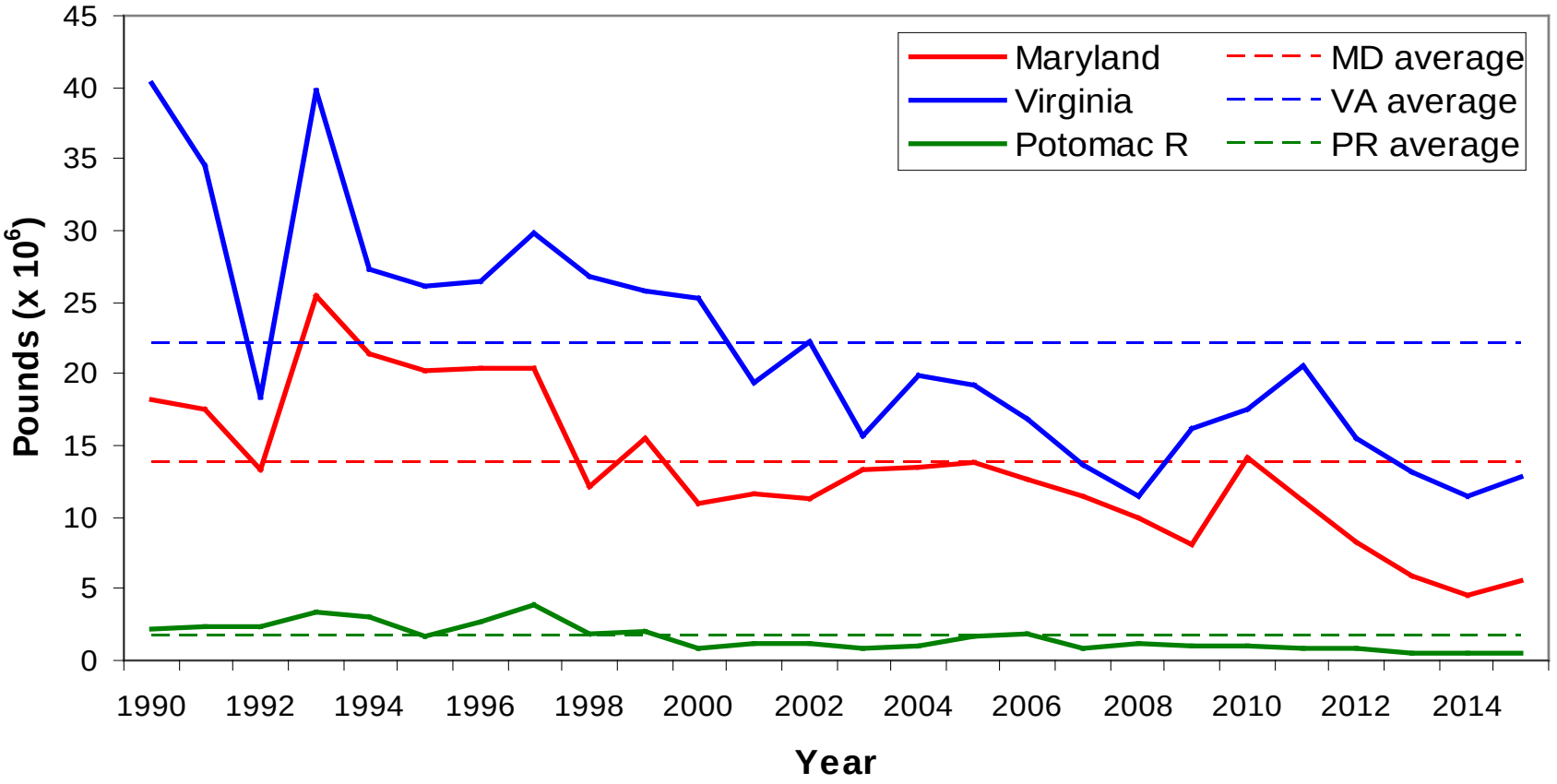


Figure 8. Commercial landings of **male** blue crabs (hard crabs and peeler/soft combined) from each jurisdiction in Chesapeake Bay, 1990-2015. Dotted lines represent the 1990-2014 average.

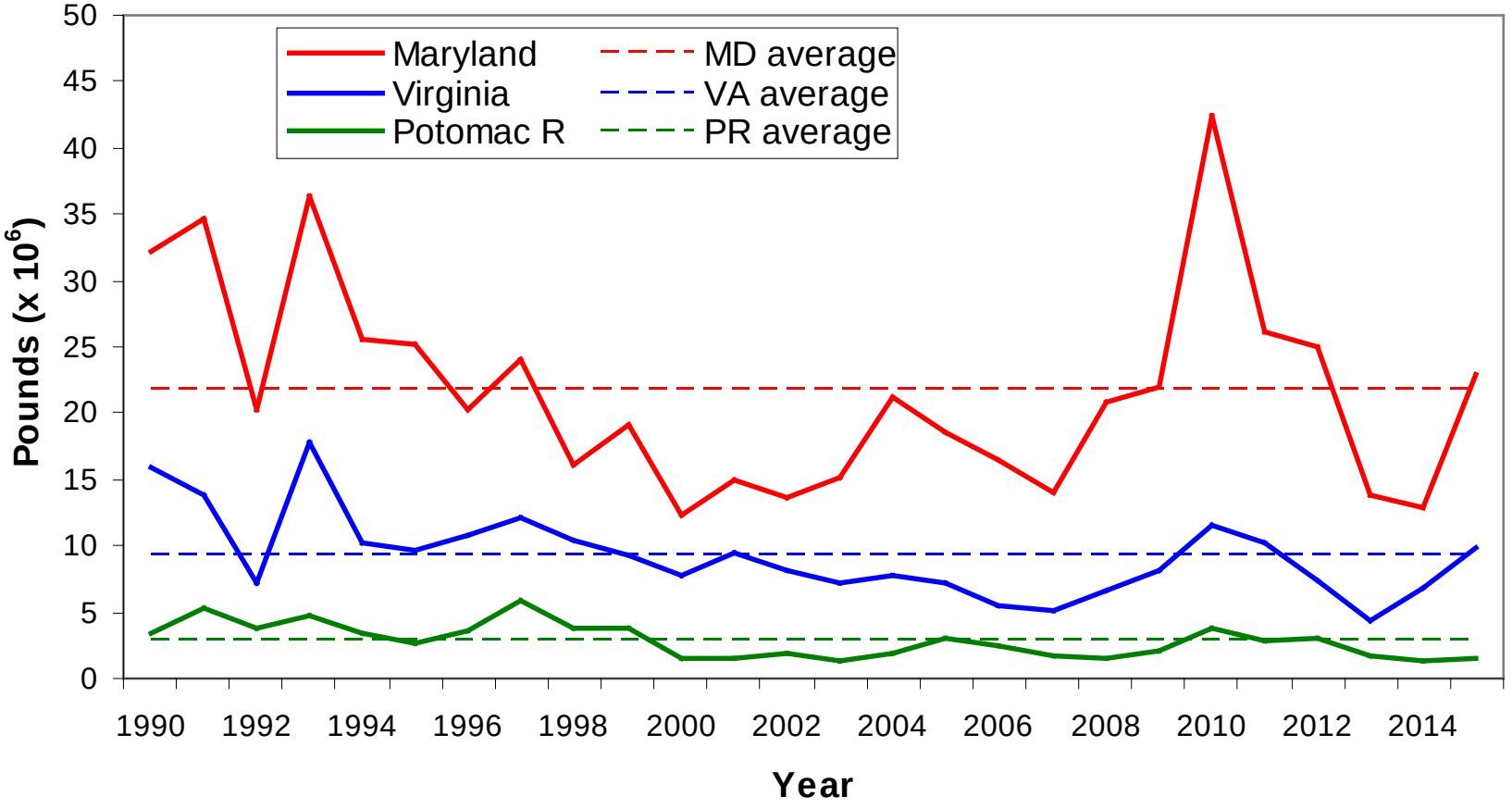
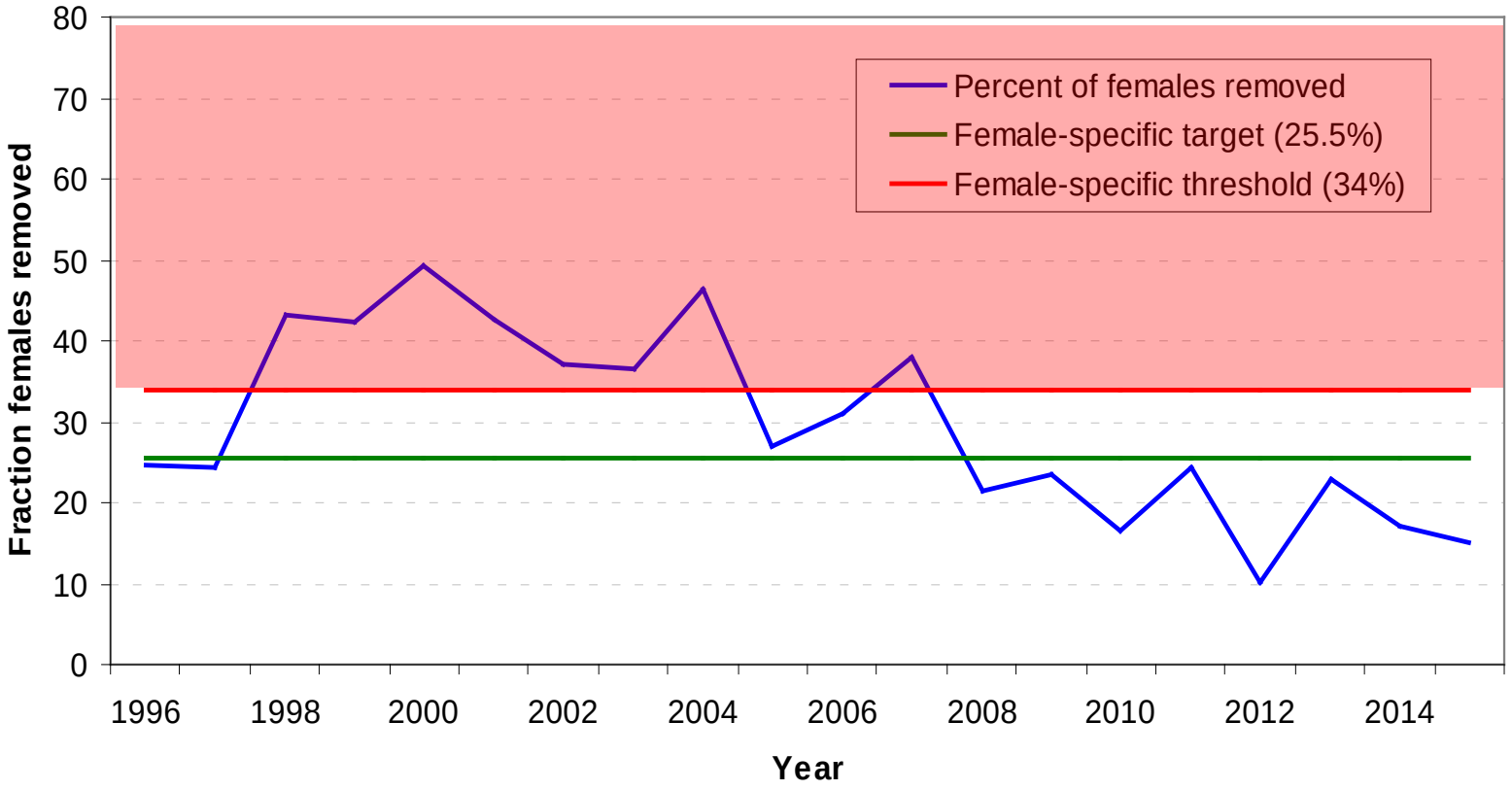


Figure 9. The percentage of **all female** blue crabs removed from the population each year by fishing relative to the female-specific target (25.5%) and threshold (34%) exploitation rates, 1990 through 2015. Exploitation rate for 2015 was approximately 15%.

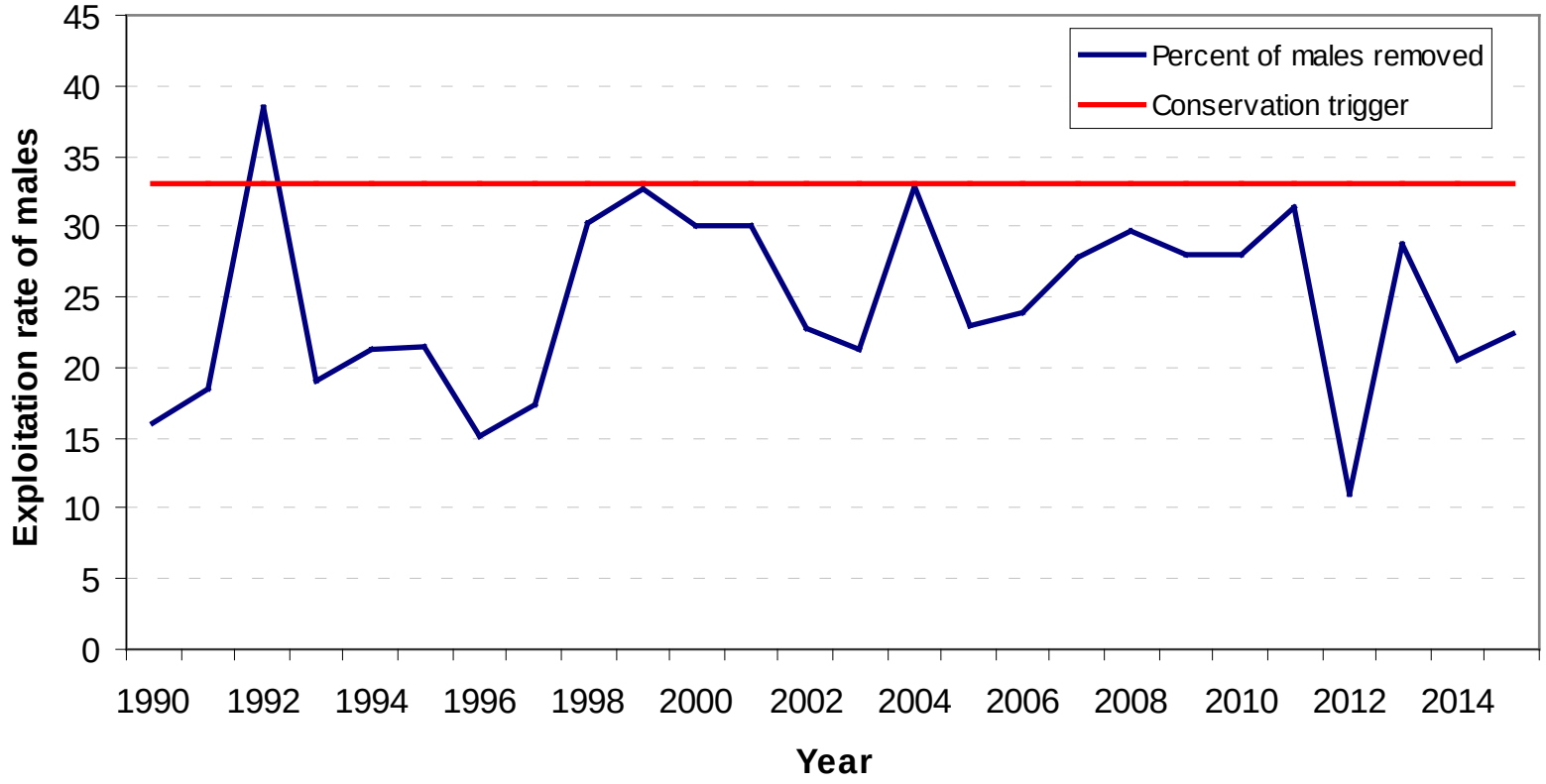
Exploitation rate (% removed) is the number of female crabs harvested within a year divided by the female population (age 0 and age 1+) estimated at the beginning of the year.




*Juvenile abundance used in calculation of exploitation was adjusted for catchability.*

Figure 10. The percentage of all male blue crabs removed from the population each year by fishing, 1990 – 2015, relative to the conservation trigger of 33%.
Exploitation rate for 2015 was approximately 22%.

Exploitation rate (% removed) is the number of male crabs harvested within a year divided by the male population (age 0 and age 1+) estimated at the beginning of the year.




*Juvenile abundance used in calculation of exploitation was adjusted for catchability.*

# Summary

-Total abundance increased 35% (410.6 million in 2015 to 553.2 in 2016)

-Age 1+ female (60 mm and larger) abundance increased 92% (100.9 million to 193.9 million)

-Age 1+ males (60 mm and larger) abundance increased 107% (43.7 million to 90.6 million)

-Total age 0 (less than 60 mm) abundance is about the same as 2015 (268.8 million to 271.4 million)

-Harvest of spawning age females was 15%, below the 25.5% target and well below the 34% threshold for the 8$^{th}$ consecutive year.

-Mild winter temperature resulted in a very low over winter mortality rate.

# CHESAPEAKE BAY WATERSHED AGREEMENT

2014




# Management Strategies and Work Plans Dashboard

Since the signing of the Watershed Agreement in June 2014, our Goal Implementation Teams have been crafting "management strategies" that describe the steps necessary to achieve the Agreement's Vision.

These management strategies offer insight into the Bay Program partners' proposals for reaching each outcome by 2025, as well as how we will monitor, assess and report progress toward abundant life, clean waters, engaged communities, conserved lands and climate change resilience. The strategies provide broad, overarching direction and will be further supported by two-year work plans summarizing the specific commitments, short-term actions and resources required for success.

**To stay informed as management strategies and work plans progress:**

- Sign up for our weekly Bay Brief newsletter
- Visit our subscription page to sign up for the appropriate mailing list, emails from the mailing list will include information about relevant meetings and public input periods
- View a listing of Management Strategy related events or the Chesapeake Bay Program calendar
- See feedback letters that have been received by the Chesapeake Bay Program Office

## Abundant Life

| Key Action** | Performance Target(s) | Participating Entity | Geographic Location | Timeline | Factors Influencing and/or |
|---|---|---|---|---|---|
| Work to improve harvest accountability within each management jurisdiction. | Maryland will continue to expand their pilot commercial electronic reporting project. | MD DNR, Industry groups | Maryland waters | Ongoing | High-quality harvest and effort data are essential for informing management decisions and reducing uncertainty. |
| | PRFC will explore options to implement commercial electronic reporting in 2016. | PRFC | Potomac River | 2016 | |
| | VMRC will continue promoting their commercial online reporting system. | VMRC | Virginia waters | Ongoing | |
| | Continue the discussion on recreational harvest and its impact on the fishery. Utilize ongoing scientific studies and existing reports. | MD DNR, PRFC, VMRC, CBSAC | Maryland, Virginia, Potomac River | Ongoing | |
| | Evaluate the need for developing standards for harvest accountability to improve the accuracy of any future allocation framework. | MD DNR, PRFC, VMRC, CBSAC | Maryland, Virginia, Potomac River | Ongoing | |
| | | | | | |
| Develop a framework to assess the feasibility of using and calculating a Baywide Total Allowable Catch (TAC) of blue crabs. | Engage stakeholders and the public to identify concerns and/or support for exploring a potential Baywide TAC. Use their comments to help guide the evaluation of a TAC and allocation moving forward. | MD DNR, PRFC, VMRC | Maryland, Virginia, Potomac River | mid 2016 | |
| | Compile the available, necessary harvest data from the three jurisdictions. | MD DNR, PRFC, VMRC | Maryland, Virginia, Potomac River | mid 2016 | |
| | Work with the scientists on CBSAC to determine how to calculate a TAC based on the current reference points, harvest data and abundance data. | CBSAC, MD DNR, PRFC, VMRC | Maryland, Virginia, Potomac River | late 2016 | |
| | | | | | |
| | Compile a list of potential allocation methods. | MD DNR, PRFC, VMRC | Maryland, Virginia, Potomac River | early 2017 | |

# Blue Crab Management Strategy –

## Management Approach 2: Evaluation of an Allocation-based Management Framework

Total Allowable Catch (TAC) and Jurisdictional Allocations –
This is not the same thing as Individual Transferable Quotas or ITQs

Female blue crab harvest is currently managed Bay wide to be around 25.5% target, but not to exceed the 34% threshold, of the Bay wide female spawning stock abundance. Each of the jurisdiction manages their Harvest to keep the Bay wide harvest around the Bay wide harvest target.

Jurisdictional allocations would specify what the female harvest would be in each of the jurisdiction – Maryland, Virginia and the Potomac River.

Pros:
Each jurisdictional would be responsible to manage their harvest not to exceed their allocation. This could increase the accountability of the jurisdictions.

Concerns:
-Initially discussed prior to the 2011 Blue Crab Stock Assessment update and switch to female specific management. Does the current management strategy reduce or eliminate the need for this?
-How to determine equitable allocation among the jurisdictions.
-Differing levels of harvest accountability in each of the jurisdictions.