

## Chesapeake Bay Jurisdictions White Paper on Draft Addendum IV for the Striped Bass Fishery Management Plan

Maryland Department of Natural Resources, District of Columbia's Fisheries and Wildlife Division, Potomac River Fisheries Commission, and Virginia Marine Resources Commission

### Summary

On October 29, 2014, the Atlantic States Marine Fisheries Commission (ASMFC) will consider approval of Draft Addendum IV to the Striped Bass Fishery Management Plan. The draft Addendum proposes new fishing mortality (F) reference points, and associated management measures to increase SSB by reducing F to a level at or below the proposed target within one to three years. ASMFC staff had previously asked the Chesapeake Bay jurisdictions to submit a background and issue white paper to the Striped Bass Management Board that underscores the jurisdictions' concerns regarding the Addendum, as well as, for the Management Board to consider certain requests regarding issues addressed in the white paper. That paper was provided in August and we hope this additional information will be reviewed by the Management Board.

The Chesapeake Bay jurisdictions have met over the course of several meetings to discuss issues related to the Addendum, specific to the Chesapeake Bay, and are united in their concerns and requests for the Management Board. This white paper outlines background on the issue, Chesapeake Bay jurisdictions' issues, Chesapeake Bay jurisdictions' requests to be considered by the Management Board, and support for certain options.

### Background

In 2013, a benchmark stock assessment was completed resulting in new proposed biological reference points (F and SSB). The proposed reference points no longer include separate reference points for Chesapeake Bay and the Atlantic coast, but rather one for the entire coast. Separate reference points are preferred by both scientists and managers because the Chesapeake Bay fishery consists of predominately smaller sized male fish (usually > 80% Tables 1- 4), and the Coastal fishery consists of predominately large spawning-age females. However, the Technical Committee, for various reasons (model dependent 'age specific' sex and migration data, and time), was unable to reach consensus on separate reference points for the two areas.

The striped bass stock is currently not overfished, and overfishing is not occurring. The stock has experienced a decline from historically high levels, but remains at levels comparable to 1995 when the stock was declared recovered and juvenile reproduction remains at healthy levels. Stock projection models predict that SSB will likely fall below the SSB threshold (overfished threshold) by 2015 if management remains status quo. However, these projections also indicate that the SSB will level off slightly below the threshold and begin to increase by 2016 under the status quo. Stock - recruitment data reported in the 2013 assessment indicate that projected decline in SSB will not affect the recruitment success, as SSB will remain well above levels that are associated with recruitment failure. What is not known is how quickly the recovery of SSB will occur, given conservation of the very abundant 2011 year class and older female striped bass. What is troubling to more than just the Chesapeake Bay jurisdictions is whether the current SSB target (125% of the former SSB threshold) is unrealistically conservative, may be difficult to maintain consistently, and result in a striped bass

abundance that would be detrimental to the stability of other species in the Chesapeake Bay and coastal ecosystem(s).

### Issues

For the past 20 years, the Chesapeake Bay jurisdictions have responsibly managed their fisheries using Chesapeake Bay reference points by adjusting the annual harvest quota with changes in population size (except when ASMFC “froze regulations” while developing Amendment 6). Since 1997, all Chesapeake Bay recreational and commercial fisheries have been managed by a single quota that has been allocated to each of three jurisdictions and partitioned according to fishery sector (Table 5). It is evident that the inclusion of recreational fisheries, as part of the Chesapeake Bay-wide quota has offered advantages to the coastal and Chesapeake Bay striped bass, as shown in Table 6. Many states outside of the Chesapeake Bay have expanded their recreational harvest when stock abundance afforded such an increase and because they were not constrained by a quota, as Chesapeake Bay recreational fisheries. Table 6 provides information on all jurisdictional recreational fisheries, over time, and a conclusion is that the Chesapeake Bay quota has conserved strong, average, and less than average year classes for emigration to the coast. As the population has recently declined, the Chesapeake Bay jurisdictions have lowered the harvest quota 15% since 2009 and 18% since 2003 to maintain a stable and decreased level of fishing mortality. Over the same time period, fishing mortality rates on the Coastal fishery trended upward and peaked at high levels in the mid-2000s, which corresponds with the years of overfishing (Figure 1 - 2).

Because the proposed reference points do not include Chesapeake Bay reference points, the ASMFC’s proposed harvest reductions will unfairly impact Chesapeake Bay fishermen. The fishermen will be burdened with further reductions that should primarily occur on the coastal fisheries. There is an unclear characterization of the Chesapeake Bay striped bass stock, especially the differences, from the coast-wide stock, in sex composition by area. And, because the Chesapeake Bay reductions will be on a predominately male-based fishery, the needed protection of spawning-age females will not be achieved, while tremendous economic burden will be endured by the fishing industry. TC analysis indicated that even without a consideration of sex ratios, if there were separate Chesapeake Bay and Atlantic coast reference points that account for differences in age structure (bay fleet versus Coastal fleet), the harvest reductions under consideration by the ASMFC would be lower in the Chesapeake Bay (<15%) and higher on the coast (>25%).

The Chesapeake Bay jurisdictions remain perplexed as to why there cannot be an interim Chesapeake Bay target fishing mortality rate, as has been present since 1995, for management. We are concerned that without an interim reference point for Chesapeake Bay fisheries, there will be no impetus for determining final reference points for the Chesapeake Bay, even though a motion passed by the Management Board in October 2013 included determining Chesapeake reference points, as part of the addendum. The Chesapeake Bay jurisdictions have demonstrated in the past that using Chesapeake Bay specific reference points allows us to track the strength of year classes and adjust F via quota changes accordingly.

It has never been adequately explained why 2013 fisheries harvest data are the basis for reductions in harvest in the Addendum. It has been established that, typically, the terminal year of a stock assessment or at least a combination of data years are used to reduce F, as has been done in other management

plans. Since 2012 is the terminal year of the 2013 assessment, it should have been an option for the public to provide comments on. The use of 2013 harvest data is economically injurious to the Chesapeake Bay fisheries, as the Chesapeake Bay-wide quota was reduced by 14% in 2013, in keeping with the Chesapeake Bay commitment to raise or lower quotas, with definitive changes in the exploitable stock biomass. We are not aware that any other state or jurisdiction reduced quotas or harvest opportunities in 2013.

### Requests and Support

Recent calculations indicate that were there a Chesapeake Bay-wide quota in 2015, it would be higher than any recent quota, as the 2011 year class will be fully exploitable in the Chesapeake Bay in 2015. We are providing this information to reaffirm that any reductions of the 2013 quota or harvest border on severe economic and social disadvantages to the Chesapeake Bay fishermen and communities. There should be recognition by all that the Chesapeake Bay-wide quota promoted conservation benefits, as there was always a check on the magnitude of the recreational harvest. The constraint on recreational and commercial harvests, by the overall Chesapeake Bay quota, is why Virginia motioned for a reduction from the quotas, rather than harvest at the August 2014 Management Board meeting. The Chesapeake Bay jurisdictions request the Management Board consider allowing the Chesapeake Bay jurisdictions to reduce from, preferably, 2012 quotas or at least 2012 harvest amounts for the needed reductions.

The ASMFC has designed a probabilistic approach to reduce the fishing mortality rate to or below the target. It seems evident that there should be as much benefit (and probability) in allowing the Chesapeake Bay fisheries to reduce its fisheries' quotas or harvests over a three-year time period. This would allow some reduced harvest of the abundant 2011 year class. Although an economic impact analysis is not required, and this is not a plan amendment, this is a highly substantive change to the Chesapeake Bay and other areas' fisheries. The Chesapeake Bay jurisdictions have agreed that a 3-year reduction process affords these communities' fishermen and industries the best opportunity to remain viable. Therefore, the Chesapeake Bay jurisdictions support an option for a 3-year reduction plan.

Given these facts, the Chesapeake Bay jurisdictions believe a 3-year plan to reduce the Chesapeake Bay harvest from 2012 to the target level is the appropriate level of management response needed at this time. A 3-year plan would reduce harvest by 7 to 17% in 2015 compared to 25% reduction under a 1-year timeframe. This level of reduction is at the upper level that we would have expected if there were Chesapeake Bay reference points. The Chesapeake Bay jurisdictions will likely support a 25% reduction in 2015 for our fisheries that interact with spawning-age females, including our spring trophy recreational fishery and Atlantic coast commercial and recreational fisheries.

By supporting a 3-year plan, socio-economic impacts of this reduction will be mitigated without a significant compromise to the protection of spawning-age females because the Chesapeake Bay fisheries harvest predominately males. A 3-year plan will also allow the Technical Committee time to develop Chesapeake Bay reference points which could potentially be considered by the ASMFC for the 2016 fishing season. This approach could demonstrate that the actions taken by the Chesapeake Bay jurisdictions in 2015 were adequate or require minor adjustments going forward.

The Management Board's final decision on Draft Addendum IV will be challenging given imperfect science and strong, but mixed, stakeholder preferences. When faced with difficult decisions, it helps to reflect upon one's values. At the Commission's annual meeting a year ago this month, we collectively approved a 5-year Strategic Plan (2014-2018) that includes the following list of values by which we agreed to make decisions. We ask that you consider these values, especially numbers 2 and 6, during our deliberation on Draft Addendum IV.

## **Values**

1. Effective stewardship of marine resources through strong partnerships
2. Decisions based on sound science
3. Long-term ecological sustainability
4. Transparency and accountability in all actions
5. Timely response to new information through adaptive management
6. Balancing resource conservation with the economic success of coastal communities
7. Efficient use of time and fiscal resources
8. Work cooperatively with honesty, integrity, and fairness

Table 1. Sex ratio data collected by CBEF for fish 18-24 inches in January, February, and December.

	2007		2008		2009		2010		Overall	
	n	%	n	%	n	%	n	%	n	%
M	71	97	89	95	95	91	27	79	282	92
F	2	3	5	5	9	9	7	21	23	8
TOTAL	73	100	94	100	104	100	34	100	305	100

Table 2. Sex ratio data collected by MD DNR for fish 18-24 inches from the winter gill net fishery.

	2004		2005		2006		2011		Overall	
	n	%	n	%	n	%	n	%	N	%
M	41	93	79	82	47	82	76	77	243	82
F	3	7	17	18	10	18	23	23	53	18
TOTAL	44	100	96	100	57	100	99	100	296	100

Table 3. Sex ratio data of fish 18-28 inches sampled by the MD DNR Fish Health Project, September-November.

Year	M		F		Total
	n	%	n	%	n
1998	118	94%	8	6%	126
1999	82	86%	13	14%	95
2000	53	85%	9	15%	62
2001	60	81%	14	19%	74
2002	59	84%	11	16%	70
2003	14	82%	3	18%	17
2004	65	86%	11	14%	76
2005	8	89%	1	11%	9
2006	231	95%	11	5%	242
2007	153	97%	5	3%	158
2008	130	92%	11	8%	141
2009	193	88%	27	12%	220
2010	174	72%	68	28%	242
2011	191	81%	45	19%	236
Total	1,531	87%	237	13%	1,768

Table 4. Sex ratio data for fish 18-28 inches sampled by the MD DNR creel survey from May 15-June 15.

Year	M		F		Total
	n	%	n	%	n
2005	187	94%	12	6%	199
2006	477	92%	42	8%	519
2007	316	93%	22	7%	338
2008	247	96%	10	4%	257
2009	199	91%	19	9%	218
2010	218	90%	23	10%	241
2011	181	75%	60	25%	241
2012	193	68%	90	32%	283
2013	188	77%	57	23%	245
Total	2,206	87%	335	13%	2,541

Table 5. Total Chesapeake bay-wide striped bass quota (pounds) in the Chesapeake Bay and by jurisdiction.

Bay-wide Quota	Year	Bay-wide	Maryland	PRFC	Virginia
	2004	8,417,000	4,407,141	1,281,909	2,727,950
	2005	9,285,588	4,861,934	1,414,195	3,009,459
	2006	9,476,867	4,962,088	1,443,327	3,071,453
	2007	9,476,867	4,962,088	1,443,327	3,071,453
	2008	10,132,844	5,305,557	1,543,232	3,284,055
	2009	10,132,844	5,305,557	1,543,232	3,284,055
	2010	9,489,794	4,968,856	1,445,296	3,075,642
	2011	8,825,508	4,621,036	1,344,125	2,860,347
	2012	8,825,508	4,621,036	1,344,125	2,860,347
	2013	7,589,937	3,974,091	1,155,947	2,459,899

Table 6. Harvest (A+B1) in number of fish by state and year (1997-2013), percent difference in harvest (A+B1) in numbers of fish by state and year (1997-2013), and percent difference in total removals (A+B1+dead discards) by state and year (1997-2013).

A1) Harvest (A+B1) in numbers of fish by state and year, 1997 through 2003 (start of Chesapeake Bay-wide quota through Amendment # 5 management). Virginia and Maryland harvest is separated into Inland (Bay) and Coast. North Carolina harvest is only Coast.

State	1997	1998	1999	2000	2001	2002	2003
MAINE	35,259	38,094	21,102	62,186	59,947	71,907	57,765
NEW HAMPSHIRE	13,546	5,929	4,641	4,262	15,291	12,857	24,878
MASSACHUSETTS	199,373	207,952	126,755	181,295	288,032	308,749	407,100
RHODE ISLAND	62,162	44,890	56,320	95,496	80,125	78,190	115,471
CONNECTICUT	64,639	64,215	55,805	53,191	54,165	51,060	95,983
NEW YORK	236,902	166,868	195,261	270,798	189,714	202,075	313,761
NEW JERSEY	67,800	88,973	237,010	402,302	560,208	416,455	391,842
DELAWARE	19,706	18,758	8,772	39,543	41,195	29,149	29,522
MD Coast	0	0	2,199	0	7,578		978
VA Coast	57,988	21,118	6,397	42,874	17,186	47,975	33,275
NORTH CAROLINA	47,152	28,665	45,589	11,975	38,758	33,610	48,052
VA Inland	317,404	234,256	292,146	288,192	276,476	261,274	365,923
MD Inland	334,068	386,185	260,991	506,462	374,979	282,429	524,213
Bay Total	651,472	620,441	553,137	794,654	651,455	543,703	890,136

A2) Harvest (A+B1) in numbers of fish by state and year, 2004 through 2013 (Amendment 6 management). Virginia and Maryland harvest is separated into Inland (Bay) and Coast. North Carolina harvest is only Coast.

State	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
MAINE	48,816	83,617	75,347	53,694	59,152	62,153	17,396	18,105	11,624	22,947
NEW HAMPSHIRE	8,386	24,940	13,521	6,348	5,308	8,587	5,948	32,704	14,498	18,236
MASSACHUSETTS	445,745	340,742	314,988	315,409	377,959	344,401	341,046	255,507	377,931	282,170
RHODE ISLAND	83,990	110,490	75,811	101,400	51,191	71,427	70,108	88,635	61,537	215,609
CONNECTICUT	102,844	141,290	115,214	118,549	108,166	60,876	92,806	63,288	64,573	144,294
NEW YORK	263,096	376,894	367,835	474,062	685,589	356,311	538,374	674,844	424,522	375,654
NEW JERSEY	424,208	411,531	509,602	289,657	309,412	283,026	320,413	393,193	168,629	346,505
DELAWARE	25,429	20,438	20,159	8,465	26,934	19,540	16,243	18,023	25,399	20,092
MD Coast	4,699	2,518	342	0	0	3,231	5,458	255	1,824	8,654
VA Coast	67,922	30,561	102,620	11,875	62,994	2,325	11,109	17,575	202	636
NORTH CAROLINA	230,766	104,904	77,542	35,039	25,623	5,650	23,778	94,182	0	0
VA Inland	324,328	226,184	358,450	219,745	182,455	223,547	63,193	96,882	70,061	87,048
MD Inland	363,983	531,412	668,798	765,169	415,403	498,614	452,439	444,915	260,319	471,664
Bay Total	688,311	757,596	1,027,248	984,914	597,858	722,161	515,632	541,797	330,380	558,712

B1) Percent difference in harvest (A+B1) in numbers of striped bass in 1998-2003 compared to 1997. Virginia and Maryland harvest is separated into Inland and Coast. North Carolina harvest is only Coast. The average (1998 - 2003) is based on the annual percent difference from 1997 harvest.

State	1998	1999	2000	2001	2002	2003	Average
MAINE	8%	-40%	76%	70%	104%	64%	47%
NEW HAMPSHIRE	-56%	-66%	-69%	13%	-5%	84%	-17%
MASSACHUSETTS	4%	-36%	-9%	44%	55%	104%	27%
RHODE ISLAND	-28%	-9%	54%	29%	26%	86%	26%
CONNECTICUT	-1%	-14%	-18%	-16%	-21%	48%	-3%
NEW YORK	-30%	-18%	14%	-20%	-15%	32%	-6%
NEW JERSEY	31%	250%	493%	726%	514%	478%	415%
DELAWARE	-5%	-55%	101%	109%	48%	50%	41%
MD Coast*	ND	2,199	ND	7,578	ND	978	ND
VA Coast	-64%	-89%	-26%	-70%	-17%	-43%	-51%
NORTH CAROLINA	-39%	-3%	-75%	-18%	-29%	2%	-27%
VA Inland	-26%	-8%	-9%	-13%	-18%	15%	-10%
MD Inland	16%	-22%	52%	12%	-15%	57%	17%
Bay Total	-5%	-15%	22%	0%	-17%	37%	4%

B2) Percent difference in harvest (A+B1) in numbers of striped bass in 2005-2013 compared to 2004. Virginia and Maryland harvest is separated into Inland (BAY) and Coast. North Carolina harvest is only Coast. The average (2005 - 2013) is based on the annual percent difference from 2004 harvest.

State	2005	2006	2007	2008	2009	2010	2011	2012	2013	Average
MAINE	71%	54%	10%	21%	27%	-64%	-63%	-76%	-53%	-8%
NEW HAMPSHIRE	197%	61%	-24%	-37%	2%	-29%	290%	73%	117%	72%
MASSACHUSETTS	-24%	-29%	-29%	-15%	-23%	-23%	-43%	-15%	-37%	-26%
RHODE ISLAND	32%	-10%	21%	-39%	-15%	-17%	6%	-27%	157%	12%
CONNECTICUT	37%	12%	15%	5%	-41%	-10%	-38%	-37%	40%	-2%
NEW YORK	43%	40%	80%	161%	35%	105%	157%	61%	43%	81%
NEW JERSEY	-3%	20%	-32%	-27%	-33%	-24%	-7%	-60%	-18%	-21%
DELAWARE	-20%	-21%	-67%	6%	-23%	-36%	-29%	0%	-21%	-23%
MD Coast	-46%	-93%	-100%	-100%	-31%	16%	-95%	-61%	84%	-47%
VA Coast	-55%	51%	-83%	-7%	-97%	-84%	-74%	-100%	-99%	-61%
NORTH CAROLINA	-55%	-66%	-85%	-89%	-98%	-90%	-59%	-100%	-100%	-82%
VA Inland	-30%	11%	-32%	-44%	-31%	-81%	-70%	-78%	-73%	-48%
MD Inland	46%	84%	110%	14%	37%	24%	22%	-28%	30%	38%
Bay Total	10%	49%	43%	-13%	5%	-25%	-21%	-52%	-19%	-3%

\* MD Coast only had reported harvest in 1999, 2001, and 2003. The number of fish harvested for those years is in the table.

ND indicates no calculation could be made because of a lack of data.



C1) Percent difference in total removals (A+B1+dead discards) in numbers of striped bass in 1998-2003 compared to 1997. Virginia and Maryland harvest is divided into Inland and Coast. North Carolina harvest is only Coast. The average (1998 - 2003) is based on the annual percent difference from 1997 harvest.

State	1998	1999	2000	2001	2002	2003	Average
MAINE	-38%	-51%	-10%	-15%	21%	-18%	-19%
NEW HAMPSHIRE	-28%	-54%	-40%	-22%	-11%	25%	-22%
MASSACHUSETTS	24%	-22%	23%	13%	20%	16%	12%
RHODE ISLAND	-14%	-24%	24%	-2%	8%	33%	4%
CONNECTICUT	-8%	6%	13%	-18%	-33%	24%	-3%
NEW YORK	-14%	-14%	17%	-4%	-12%	29%	0%
NEW JERSEY	-1%	154%	259%	383%	259%	254%	218%
DELAWARE	13%	-42%	69%	78%	26%	42%	31%
MD Coast	-92%	143%	-79%	1119%	-100%	5%	166%
VA Coast	-65%	-88%	-24%	-72%	-19%	-45%	-52%
NORTH CAROLINA	-25%	16%	-61%	-27%	-34%	-12%	-24%
VA Inland	-27%	-8%	-9%	-19%	-22%	11%	-12%
MD Inland	-10%	-32%	15%	-10%	-21%	36%	-4%
Bay Total	-16%	-23%	6%	-13%	-22%	27%	-7%

C2) Percent difference in total removals (A+B1+dead discards) in numbers of fish compared to 2004. Virginia and Maryland harvest is divided into Inland and Coast. North Carolina harvest is only Coast. The average (2005 - 2013) is based on the annual percent difference from 2004 harvest.

State	2005	2006	2007	2008	2009	2010	2011	2012	2013	Average
MAINE	217%	291%	39%	-9%	-23%	-69%	-72%	-72%	-45%	28%
NEW HAMPSHIRE	166%	92%	3%	-57%	-52%	-63%	45%	-29%	-9%	11%
MASSACHUSETTS	-22%	14%	-11%	-21%	-38%	-45%	-62%	-48%	-51%	-32%
RHODE ISLAND	28%	15%	24%	-32%	-18%	-34%	-18%	-36%	121%	5%
CONNECTICUT	-23%	-22%	-22%	-34%	-55%	-45%	-43%	-66%	-37%	-38%
NEW YORK	59%	35%	67%	186%	37%	77%	116%	33%	32%	71%
NEW JERSEY	-7%	21%	-19%	-24%	-37%	-32%	-15%	-63%	-20%	-22%
DELAWARE	9%	8%	-22%	28%	-17%	-44%	-29%	-11%	-30%	-12%
MD Coast	-25%	-54%	-93%	-83%	14%	-10%	-95%	-72%	42%	-42%
VA Coast	-49%	53%	-70%	-13%	-97%	-84%	-75%	-100%	-99%	-59%
NORTH CAROLINA	-54%	-68%	-86%	-89%	-98%	-90%	-59%	-100%	-100%	-83%
VA Inland	-29%	5%	-38%	-52%	-46%	-84%	-77%	-83%	-78%	-54%
MD Inland	30%	48%	54%	-21%	-8%	-13%	-19%	-32%	2%	5%
Bay Total	5%	30%	16%	-34%	-24%	-42%	-43%	-53%	-31%	-19%

Figure 1. Chesapeake Bay Striped Bass Quota and Harvest in pounds (2000 - 2013).

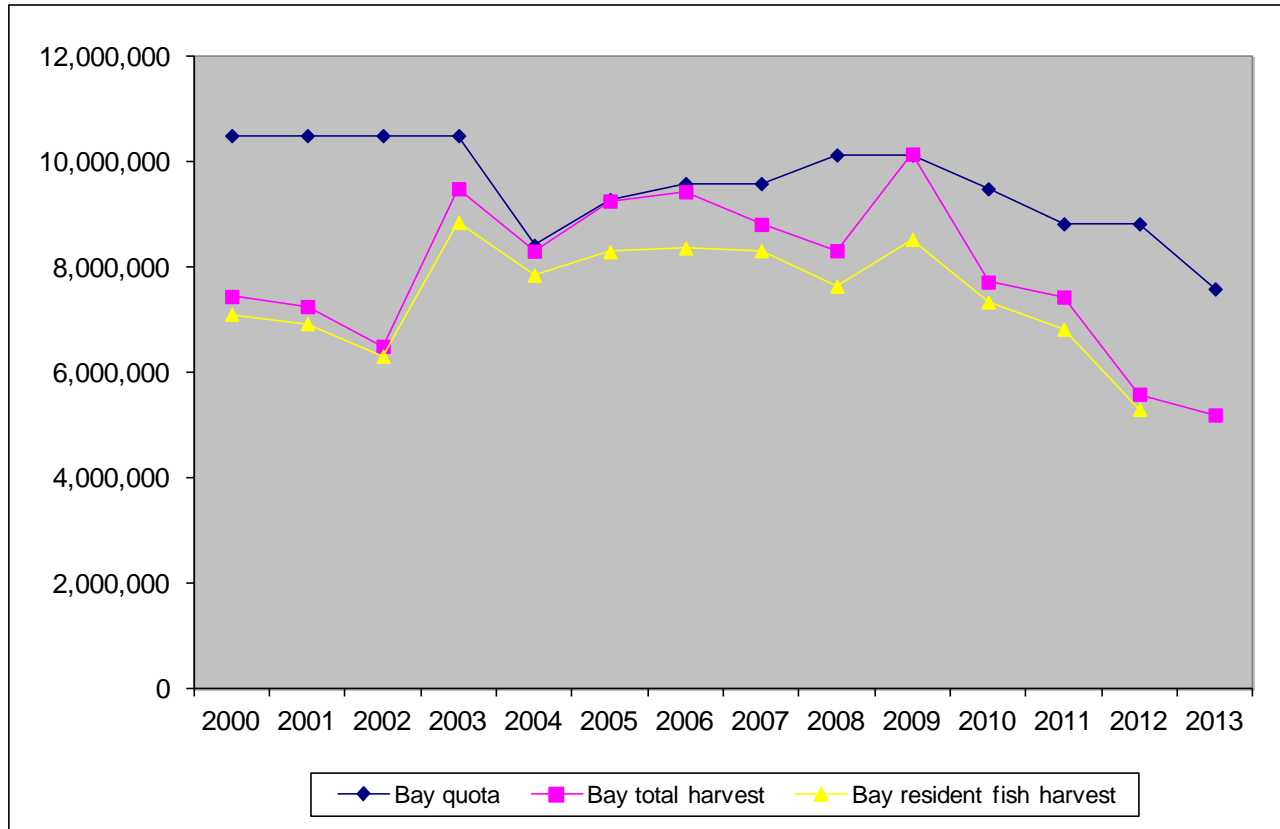


Figure 2. Fishing mortality reference points, and fishing mortality by Coastal and Bay fishery.

