

EXAMPLES OF ATLANTIC KING MACKEREL REVISED ACLS with 20B ZONES and SEDAR 38 STOCK BOUNDARY/MIXING ZONE

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This document provides examples of how revised ACLs for Atlantic king mackerel will work with the SEDAR 38 stock boundary and mixing zone, and (for commercial) under the recently implemented Northern and Southern Zones. This document accompanies the Decision Document for CMP Amendment 26 (Attachment 5 - Mackerel Committee March 2015).

In these examples, I will use two values for the ABCs from Action 2-1.

- **Sub-Alternative 2a** - ABC recommendations under the high recruitment scenario (recommended by several commenters during scoping)
- **Sub-Alternative 2d** -ABC recommendations under the deterministic equilibrium yield at $F_{30\%SPR}$ (SSC Recommendation)

Outline:

- Commercial and Recreational Landings of Atlantic King Mackerel under SEDAR 38 stock boundary/mixing zone
- Commercial ACLs
 - Commercial ACL under High Recruitment Scenario
 - Commercial ACL using deterministic equilibrium yield at $F_{30\%SPR}$
- Recreational ACLs
 - Recreational ACL under High Recruitment Scenario
 - Recreational ACL using deterministic equilibrium yield at $F_{30\%SPR}$

Commercial and Recreational Landings

Table 1. Recreational landings estimates (blue) and total commercial landings (red) of Atlantic king mackerel from 2002-03 through 2012-13. Data sources: SEFSC/MRIP/SEDAR 38.

Fishing Year	Commercial Landings (lbs)			Recreational Landings (lbs)
	Northern Zone	Southern Zone	TOTAL Commercial	
2002-03	777,749	2,102,493	2,880,242	4,572,182
2003-04	594,870	2,181,464	2,776,334	5,484,156
2004-05	1,046,857	2,622,305	3,669,162	5,354,585
2005-06	1,156,465	2,021,140	3,177,605	3,962,532
2006-07	1,204,659	2,825,673	4,030,332	5,410,425
2007-08	1,112,270	2,709,845	3,822,115	7,134,876
2008-09	953,736	3,359,877	4,313,613	4,154,875
2009-10	786,060	4,087,983	4,874,043	4,212,935
2010-11	294,281	4,255,278	4,549,559	2,636,250
2011-12	433,295	2,817,705	3,251,000	1,835,817
2012-13	345,175	2,029,643	2,374,818	1,802,805

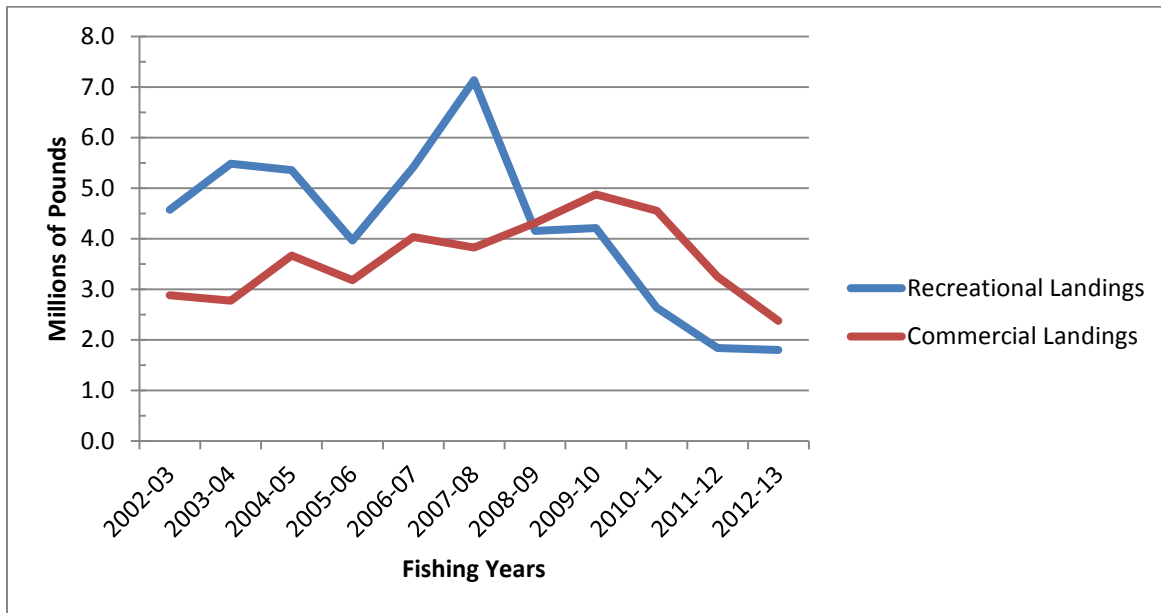


Figure 1. Recreational landings estimates (blue) and total commercial landings (red) of Atlantic king mackerel from 2002-03 through 2012-13. Data sources: SEFSC/MRIP/SEDAR 38.

NOTE: Following the approach used in SEDAR 38, landings in **Table 1** and **Figure 1** from the [new] mixing zone from November 1- March 31 are counted as 50% Atlantic and 50% Gulf; and landings from the [new] mixing zone from April 1- October 31 are counted as Atlantic. The fishing year for Atlantic king mackerel is March 1- February 28/29.

COMMERCIAL ACLs

First let's talk about the Northern and Southern Zone quotas for Atlantic king mackerel:

In Action 4.1 in Amendment 20B (Establish Regional Commercial Quotas for Atlantic Migratory Group King Mackerel), the Councils selected the following alternative as the Preferred:

Preferred Alternative 3: Establish quotas for Northern and Southern Zones for Atlantic migratory group king mackerel based on **Options a-d** below. The Northern Zone would include the EEZ off states from North Carolina north to New York. The Southern Zone would include the EEZ off South Carolina, Georgia, and the east coast of Florida. NMFS would monitor landings in both zones and close the EEZ of each zone when the respective quota is reached.

Preferred Option b: Each zone quota would be the Atlantic migratory group ACL times the average of the proportion of landings in that zone from 2002/2003 through 2011/2012.

For Amendment 26, the expected percentage of the quota for each zone was re-calculated using the same time period as specified in Amendment 20B, but with landings that would be counted as Atlantic king mackerel using the stock boundary and mixing zone from SEDAR 38 (**Table 1**). The expected percentages will be:

Northern Zone - 23.04%

Southern Zone - 76.96%

Northern Zone landings = Atlantic king mackerel landings north of the NC/SC boundary (North Carolina + Mid-Atlantic landings).

Southern Zone landings = Atlantic king mackerel landings south of the NC/SC boundary to the Dade/Monroe county line + Atlantic KM landings in the [new] mixing zone landings from April 1 through October 31 + 50% of Atlantic KM landings in the [new] mixing zone from November 1 through March 31.

Table 2 shows how landings would be counted as Atlantic king mackerel landings under the SEDAR 38 stock boundary and mixing zone. Following the approach used in SEDAR 38, landings from the [new] mixing zone from November 1- March 31 are counted as 50% Atlantic and 50% Gulf; and landings from the [new] mixing zone from April 1- October 31 are counted as 100% Atlantic. The fishing year for Atlantic king mackerel is March 1- February 28/29.

The landings data for the [new] mixing zone are confidential and cannot be shown separately from other Florida landings.

Table 2. Commercial landings of Atlantic king mackerel in the Northern and Southern Zones using the SEDAR 38 approach to designating landings in the [new] mixing zone as 100% Atlantic stock from April 1 – October 31; and 50% of landings in the [new mixing zone] from November 1 - March 31 and landings in the Florida East Coast subzone November 1 - March 31 as Atlantic stock. Proportion of total landings is shown for each year, in addition to the average proportion of total landings for each Zone from 2002-03 through 2011-12. Data source: SEFSC and SEDAR 38.

Fishing Year	Commercial Landings of Atlantic King Mackerel (lbs)			Proportion of Total Landings	
	Northern Zone (NC and Mid-Atl)	Southern Zone (SC, GA, FL, new mixing zone)	TOTAL Landings	Northern Zone	Southern Zone
2002-03	777,749	2,102,493	2,880,242	27.00%	73.00%
2003-04	594,870	2,181,464	2,776,334	21.43%	78.57%
2004-05	1,046,857	2,622,305	3,669,162	28.53%	71.47%
2005-06	1,156,465	2,021,140	3,177,605	36.39%	63.61%
2006-07	1,204,659	2,825,673	4,030,332	29.89%	70.11%
2007-08	1,112,270	2,709,845	3,822,115	29.10%	70.90%
2008-09	953,736	3,359,877	4,313,613	22.11%	77.89%
2009-10	786,060	4,087,983	4,874,043	16.13%	83.87%
2010-11	294,281	4,255,278	4,549,559	6.47%	93.53%
2011-12	433,295	2,817,705	3,251,000	13.33%	86.67%
			AVERAGE:	23.04%	76.96%

The following examples will use the expected 23.04% for the Northern Zone and 76.96% for the Southern Zone.

Commercial ACL under high recruitment scenario

This example assumes that the ACL = ABC for the following:

Fishing Year	Total Atl KM ACL (mp)	Atl KM Commercial ACL	Atl KM Recreational ACL
2016-17	17.4478	6.47	10.97
2017-18	15.8215	5.87	9.95
2018-19	14.1257	5.24	8.89
2019-20	12.6589	4.70	7.96
2020-21	11.54	4.28	7.26

* Recreational = 62.9%; Commercial = 37.1%

Allocating the commercial ACL by Northern and Southern Zones:

Fishing Year	Atl KM Commercial ACL	Northern Zone Quota	Southern Zone Quota
2016-17	6,470,000	1,490,688	4,979,312
2017-18	5,870,000	1,352,448	4,517,552
2018-19	5,240,000	1,207,296	4,032,704
2019-20	4,700,000	1,082,880	3,617,120
2020-21	4,280,000	986,112	3,293,888

* Estimated Northern Zone = 23.04%; Estimated Southern Zone = 76.96%

Compared to recent landings in the Northern and Southern Zones:

From **Table 2**. Commercial landings of Atlantic king mackerel in the Northern and Southern Zones.

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2012-13	345,175	2,029,643	2,374,818

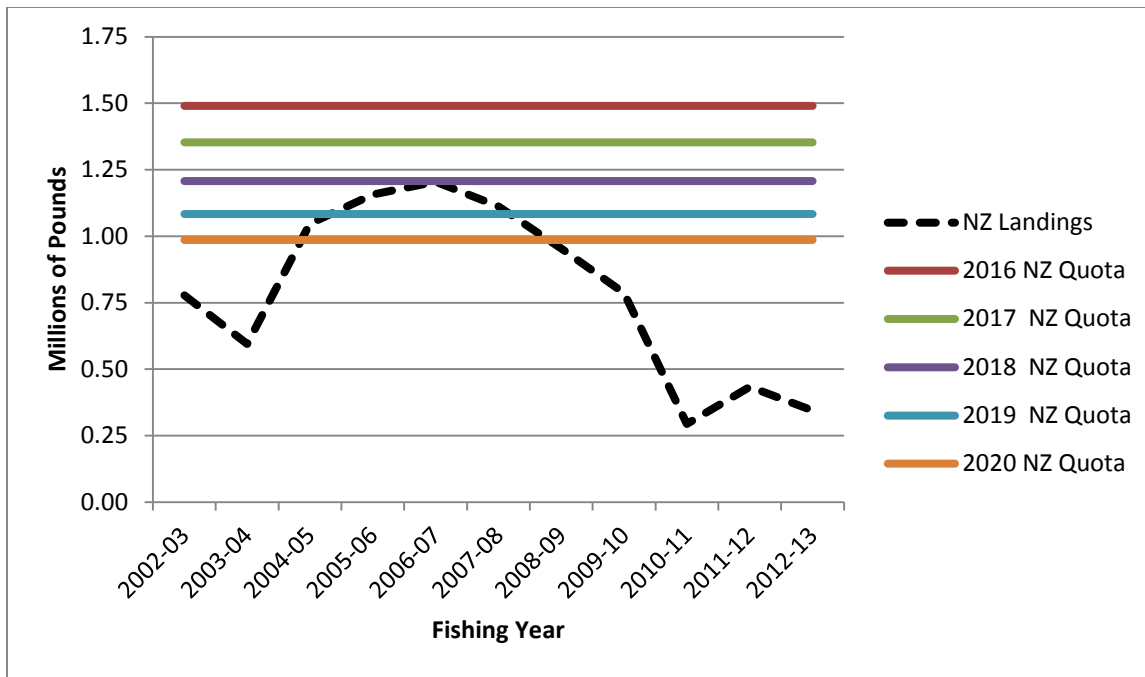


Figure 2. Northern Zone (NZ) commercial landings of Atlantic king mackerel from 2002-03 through 2012-13 compared to estimated NZ Quota for 2016-2020 using the ABC recommendations under the High Recruitment Scenario.

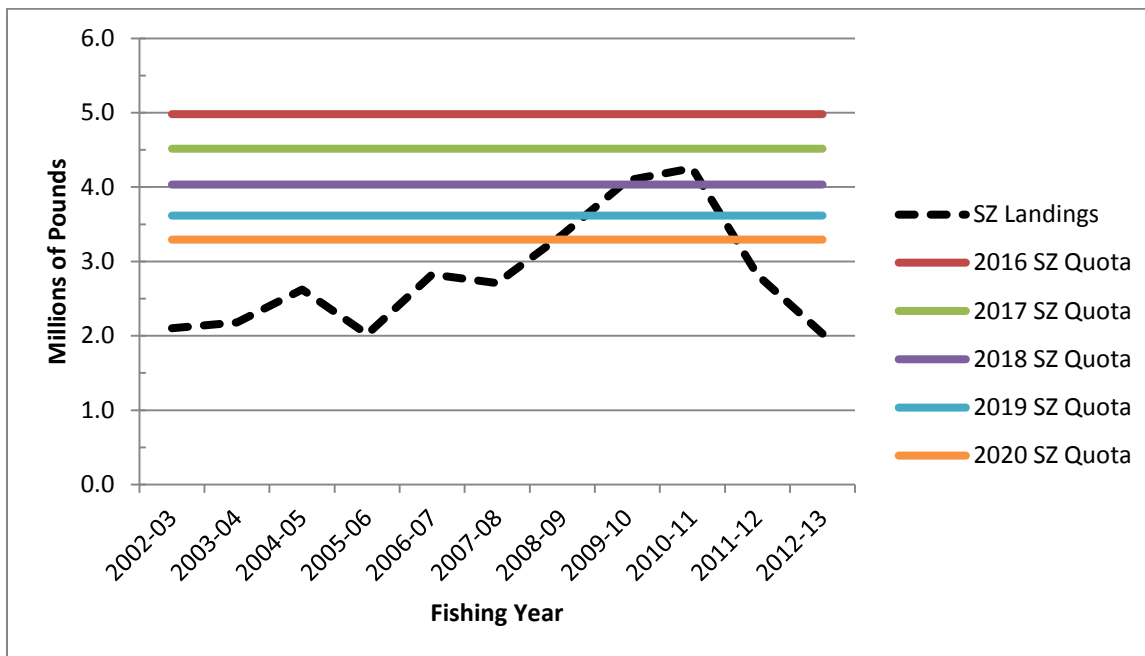


Figure 3. Southern Zone (SZ) commercial landings of Atlantic king mackerel from 2002-03 through 2012-13 compared to estimated SZ Quota for 2016-2020 using the ABC recommendations under the High Recruitment Scenario.

NOTE: Following the approach used in SEDAR 38, landings from the [new] mixing zone from November 1- March 31 are counted as 50% Atlantic and 50% Gulf; and landings from the [new] mixing zone from April 1- October 31 are counted as Atlantic. The fishing year for Atlantic king mackerel is March 1- February 28/29.

Commercial ACL using deterministic equilibrium yield at $F_{30\%SPR}$

This example assumes that the ACL = ABC = 12.702 for fishing years 2016-2020.

Total Atl KM ACL (mp)	Atl KM Commercial ACL (lbs)	Atl KM Recreational ACL (lbs)
12.702	4,712,442	7,989,558

* Recreational = 62.9%; Commercial = 37.1%

Atl KM Commercial ACL (lbs)	Northern Zone Quota (lbs)	Southern Zone Quota (lbs)
4,712,442	1,085,747	3,626,695

* Estimated Northern Zone = 23.04%; Estimated Southern Zone = 76.96%

Compared to recent landings in the Northern and Southern Zones:

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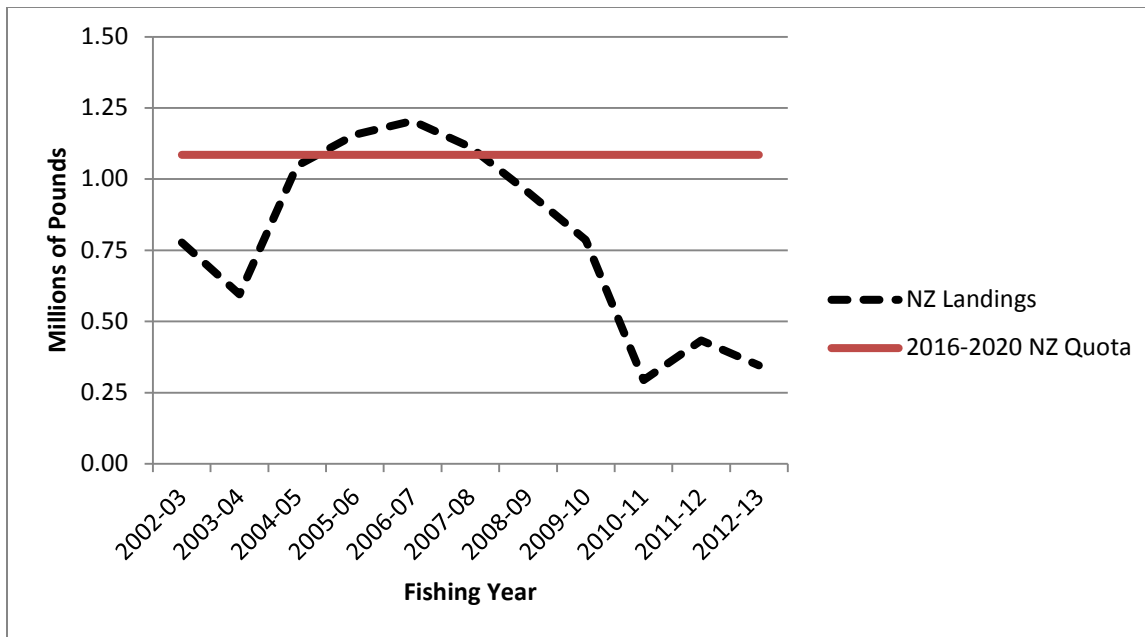


Figure 4. Northern Zone (NZ) commercial landings of Atlantic king mackerel from 2002-03 through 2012-13 compared to estimated NZ Quota for 2016-2020 using the ABC recommendation under the Deterministic Equilibrium Yield at $F_{30\%SPR}$.

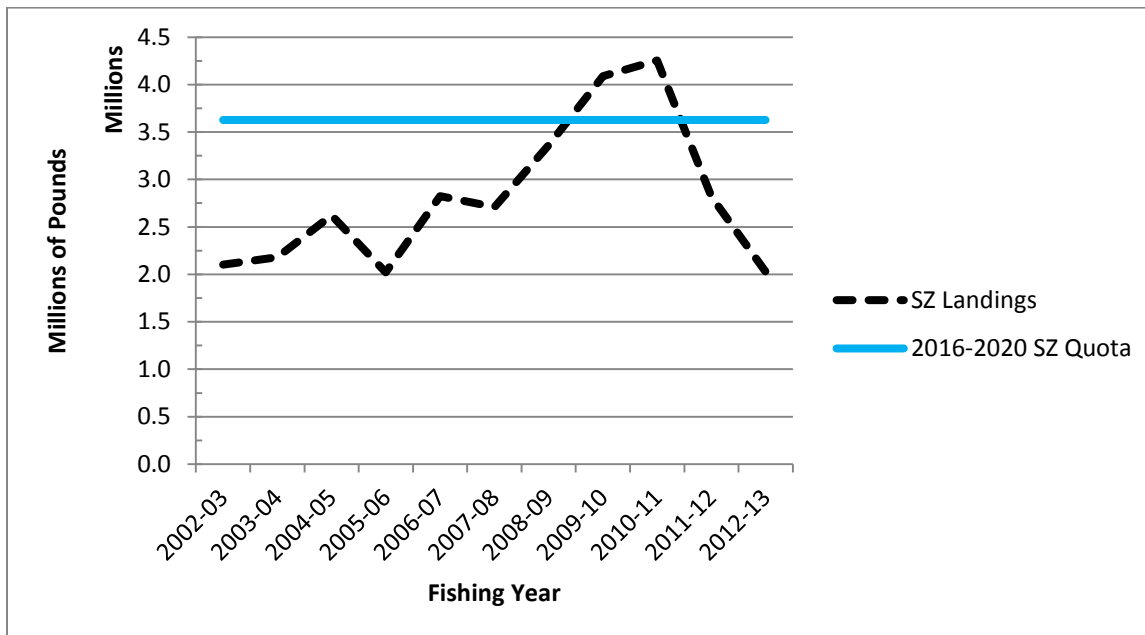


Figure 5. Southern Zone (SZ) commercial landings of Atlantic king mackerel from 2002-03 through 2012-13 compared to estimated SZ Quota for 2016-2020 using the ABC recommendation under the Deterministic Equilibrium Yield at $F_{30\%SPR}$.

NOTE: Following the approach used in SEDAR 38, landings from the [new] mixing zone from November 1- March 31 are counted as 50% Atlantic and 50% Gulf; and landings from the [new] mixing zone from April 1- October 31 are counted as Atlantic. The fishing year for Atlantic king mackerel is March 1- February 28/29.

Recreational ACL using high recruitment scenario

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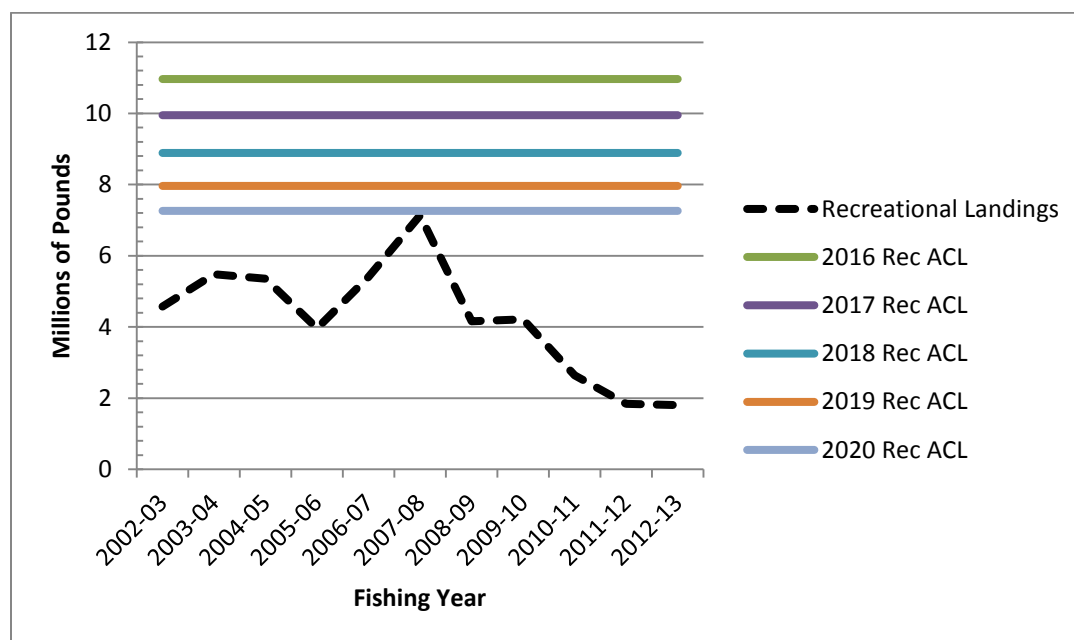


Figure 6. Recreational landings estimates of Atlantic king mackerel from 2002-03 through 2012-13 compared to recreational ACLs for 2016-2020 using the ABC recommendations under the High Recruitment Scenario. Data source: MRIP/SEDAR 38.

Recreational ACL using deterministic equilibrium yield at $F_{30\%SPR}$

This example assumes that the ACL = ABC = 12.702 for fishing years 2016-2020.

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12.702	4,712,442	7,989,558

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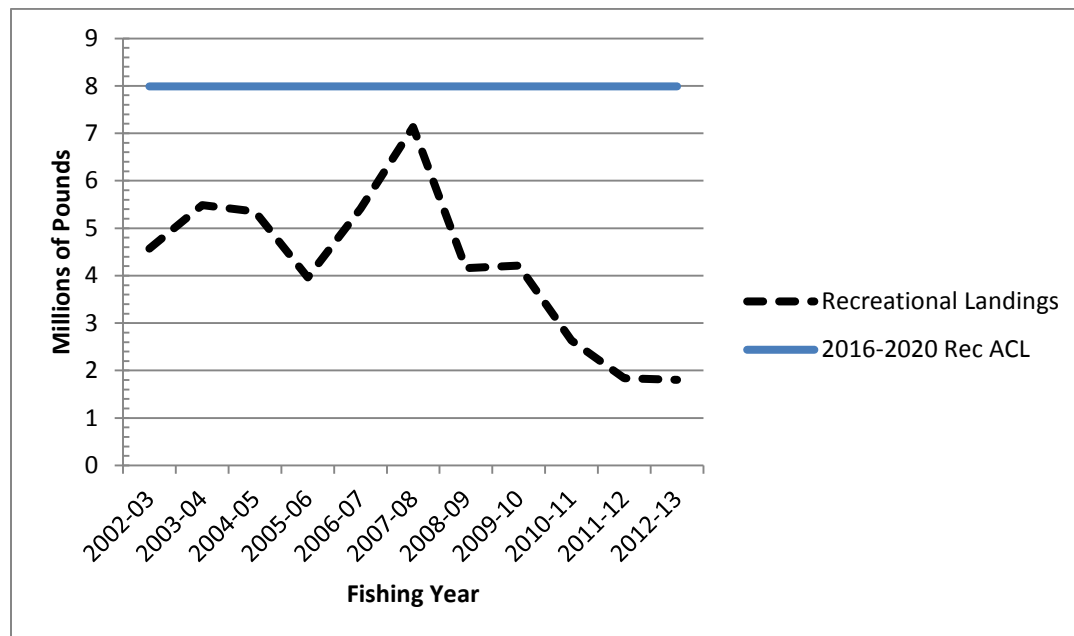


Figure 7. Recreational landings estimates of Atlantic king mackerel from 2002-03 through 2012-13 compared to recreational ACL for 2016-2020 using the ABC recommendation under the Deterministic Equilibrium Yield at $F_{30\%SPR}$. Data source: MRIP/SEDAR 38.