DECISION DOCUMENT

SAFMC/MAFMC/NEFMC ITEMS FOR

DOLPHIN WAHOO

IN THE COMPREHENSIVE ACL AMENDMENT

DOLPHIN WAHOO COMMITTEE

December 8, 2009

Atlantic Beach Sheraton Oceanfront
Atlantic Beach, NC

This Decision Document includes actions by the following groups:

1. SAFMC Committee & Council actions from June 2009 meeting.
2. SAFMC AP actions from August 18-19, 2009 meeting.
3. SAFMC Council actions from September 2009 meeting.

NOVEMBER 2009

South Atlantic Fishery Management Council
Mid-Atlantic Fishery Management Council
New England Fishery Management Council
National Marine Fisheries Service

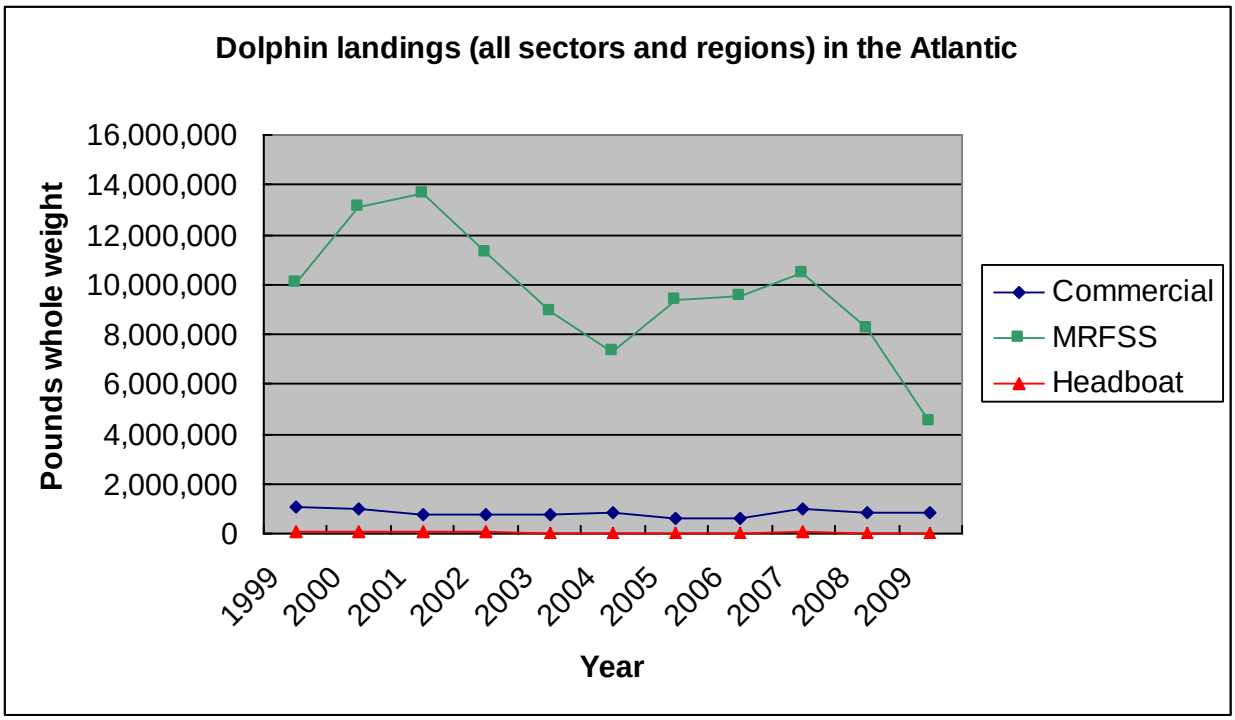
I. Dolphin

Fishery Management Unit

Common dolphin, *Coryphaena hippurus*, and pompano dolphin, *Coryphaena equiselis*, are in the fishery management unit. Pompano dolphin are rarely landed and are included in the landings data for common dolphin.

At the September 2009 meeting, the Council directed staff to drop pompano dolphin (designate as ecosystem component species) or consider them a part of a multispecies group for MSY, OFL, and ABC values.

History of management, landings data from 1999-2009, and a summary of dolphin size data and reductions from changes to the minimum size limit are included in Attachment 1. The following figure presents dolphin landings (all sectors and regions) in the Atlantic:



Source: Commercial dolphin landings for VA north are from SEFSC. Commercial landings for NC to FL are from ALS (except 2009). MRFSS data are from the MRFSS web site. Headboat data are from NMFS Beaufort Lab.

Figure 4. Annual commercial, MRFSS, and headboat landings (lbs whole weight) of dolphin in the Atlantic, 1999 – 2009. Data are inclusive of all the states within the jurisdiction of the New England, Mid-Atlantic, and South Atlantic Fishery Management Councils. Data are not reported by state due to confidentiality concerns. Data for 2009 are incomplete. Headboat data are from the South Atlantic region.

The following is taken directly from Appendix B. Exploratory Dolphin Stock Assessment (Prager 2000) contained in the Dolphin Wahoo FMP:

Table 4. Benchmark estimates from production model of dolphinfish in north Atlantic Ocean. Bias-corrected (BC) estimates shown, along with upper and lower bounds of nonparametric 80% confidence interval; all derived from bootstrapping.

Benchmark	BC estimate	80% LCB	80% UCB
MSY, mt/yr	12,241	8,506	21,110
F_{MSY}, proportion/yr	0.49	0.34	0.85
B_{1998}/B_{MSY}	1.56	1.22	1.77
F_{1997}/F_{MSY}	0.51	0.26	0.92

6 Reference Points and Proxies

It has been recommended that limit reference points be specified as part of the information supplied for fishery management (FAO 1995; Restrepo et al 1998), and this approach has become increasingly important. The production model estimates above provide one set of estimates of limit reference points: MSY = 12,241 mt/yr and F_{MSY} = 0.49/yr (Table 4). Because of uncertainty in those estimates, it seems desirable to seek another set of reference points for comparative purposes.

In data-limited situations, the use of proxies for MSY and F_{MSY} has been suggested, along with the necessity of "bringing the knowledge base at least up to data-moderate standards" (Restrepo et al 1998). The same document suggests that suitable proxies for F_{MSY} can lie between $F = 0.75M$ and $F = M$. Given the range of estimates of M developed in §3.3 ($0.68 \leq \hat{M} \leq .80$), the corresponding range of proxies would be be $0.51 \leq F \leq 0.80$.

Restrepo et al (1998) also suggest that "if there is no reliable information to estimate fishing mortality or biomass reference points, it may be reasonable to use the historical average catch as a proxy for MSY, taking care to select a period when there is no evidence that abundance was declining." Using that approach, one could take an average of the last ten years' catch and arrive at a proxy for MSY of Y = 7,204 mt/yr. The choice of ten years is somewhat arbitrary, but the suggestion is to use a recent time period. If the last five years' catch are averaged, the proxy for MSY becomes Y = 8,089 mt/yr.

The benchmark estimates from the surplus production model and their proxy counterparts are comparable, but the production model estimates that a larger sustainable yield might be possible through application of a lower rate of fishing mortality. Unfortunately, current knowledge does not allow a scientific statement about which set of benchmarks is closer to the truth.

A. Maximum Sustainable Yield (MSY)

Option 1. No action. Maximum Sustainable Yield **(**MSY) for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico is between 18.8 and 46.5 million pounds.

Option 2. MSY = 26,986,790 pounds (12,241 mt). This figure is from a production model by Prager (2000) and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 4. Specify MSY separately for the Atlantic at _____ million pounds.

Option 5. Recommended MSY from the Scientific and Statistical Committee (SSC).

OPTION 6. SPECIFY MSY AS 46.5 MILLION POUNDS FOR THE ATLANTIC, U.S. CARIBBEAN, AND GULF OF MEXICO.

Dolphin Wahoo AP Discussion & Recommendations

One AP members supported Option 1. No action. There was no support for Options 2, 3, & 4. Nine AP members supported Option 5. The AP recommended adding Option 6 which is the top end of the current MSY range.

Committee/Council Discussion & Recommendations

The Council approved a motion moving the option for MSY = 15,882,100 – 17,833,190 pounds to Appendix A.

B. Overfishing Level (OFL)

Option 1. No action.

A maximum fishing mortality threshold (MFMT) - In the Atlantic, U.S. Caribbean, and Gulf of Mexico overfishing for dolphin is defined as a fishing mortality rate (F) in excess of F_{MSY} ($F_{30\%Static\ SPR}$).

A minimum stock size threshold (MSST) – In the Atlantic, U.S. Caribbean, and Gulf of Mexico the minimum stock size threshold for dolphin is defined as a ratio of current biomass ($B_{current}$) to biomass at MSY or (1-M)*B_{MSY}, where 1-M should never be less than 0.5. Using the best available estimates of natural mortality (M = 0.68-0.80) in the formula results in a MSST of 50% B_{MSY}. The stock would be overfished if current biomass ($B_{current}$) was less than MSST and would be recovered when current biomass was equal or greater than the biomass at MSY.

Option 2. OFL = F_{MSY} = 0.49 based on a production model (Prager 2000; Table 4).

Option 3. Specify OFL separately for the Atlantic at _____.

Option 4. Value recommended by the SSC.

Dolphin Wahoo AP Discussion & Recommendations
The AP supported Option 4.

Committee/Council Discussion & Recommendations
The Council approved this range of alternatives.

C. Acceptable Biological Catch (ABC)

Option 1. No action. There is no ABC specified for dolphin.

Option 2. A potential ABC range = 17,541,414 – 22,938,772 pounds based on 65% to 85% of MSY Option 2 and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico. This likely ABC range is presented for initial discussions; the SSC will provide their OFL and ABC recommendations at their June or December 2009 meeting.

Option 3. Specify ABC separately for the Atlantic at _____ pounds.

Option 4. The value recommended by the SSC.

Dolphin Wahoo AP Discussion & Recommendations
The AP supported Option 4.

Committee/Council Discussion & Recommendations
The Council approved this range of alternatives.

D. Annual Catch Limit (ACL)

Option 1. No action. There is no ACL specified for dolphin.

Option 2. ACL = 17,541,414 pounds based on 65% of MSY Option 2 and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 3. ACL = 20,240,093 pounds based on 75% of MSY Option 2 and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 4. ACL = 22,938,772 pounds based on 85% of MSY Option 2 and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 5. Specify ACL separately for the Atlantic at _____ pounds.

Option 6. Others??

Dolphin Wahoo AP Discussion & Recommendations
The AP discussed adding an alternative that would set ACL equal to 65%, 75%, or 85% of 46.5 million pounds (the top end of the current MSY range). The AP could not provide an ACL recommendation at this time given the problems with the landings data. The AP did recommend the Council examine a regional approach to allocating the quotas.

Committee/Council Discussion & Recommendations
The Council approved this range of alternatives.

E. Specify Accountability Measures (AMs) for Dolphin

Option 1 (Status Quo). There is no hard quota for dolphin and there are no AMs in place for dolphin.

Option 2. The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Implement Accountability Measures (AMs) for the recreational sector for this stock. If the ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the sector ACL for the following fishing year. Compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use three-year running average.

Option 3. The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Implement Accountability Measures (AMs) for the recreational sector for this stock. If the ACL is exceeded, the Regional Administrator shall publish a notice to reduce the bag limit by the amount necessary to ensure landings do not exceed the sector ACL for the following fishing year. Compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use three-year running average.

Dolphin Wahoo AP Discussion & Recommendations
The AP does not want to see a closure of the recreational fishery and recommended that Option 3 be modified to provide that the bag limit may be reduced the following fishing year if required.

Committee/Council Discussion & Recommendations

The Council approved motions moving one alternative to Appendix A and adding an alternative with a reduction in the bag limit.

F. Allocations

Alternative 1 (Status Quo). Do not define allocations for dolphin.

Alternative 2. Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on landings from the years 1999-2008. The allocation would be xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 3. Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on landings from the years 2006-2008. The allocation would be xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 4. Define allocations for dolphin based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on the following formula for each sector: Sector apportionment = (50% * average of long catch range (lbs) 1986(or 1999)-2008) + (50% * average of recent catch trend (lbs) 2006-2008). The allocation would be xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 5. Split the allocations for dolphin equally among the two sectors. The allocation would be 50% commercial and 50% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Committee/Council Discussion & Recommendations

The Council directed staff to include allocation alternatives with the formula. The Committee should provide guidance on:

1. Years of data to be used. NMFS has provided landings data from 1999 onwards. Previous allocation discussions looked at 1986 onwards.
2. Headboat data from New England and Mid-Atlantic – should this be included?
3. Are these alternatives sufficient?

G. Specify Management Measure Changes for Dolphin

Option 1. **No action.** Continue to prohibit sale of recreationally caught dolphin in or from the Atlantic EEZ except for allowing for-hire vessels that possess the necessary state and Federal commercial permits to sell dolphin harvested under the bag limit in or from the Atlantic EEZ. Continue with a cap of 1.5 million pounds or 13% of total landings, whichever is greater, for the commercial fishery for dolphin. Should the catch exceed this level, the Council will review the data and evaluate the need for additional regulations which may be established through the framework. Continue with the recreational daily bag limit of 10 dolphin per person per day in or from the EEZ not to exceed 60 dolphin per boat per day whichever is less. Headboats (with a valid certificate of inspection) will be allowed a bag limit of 10 dolphin per paying passenger. Continue the minimum size limit for dolphin of 20 inches fork length off Florida and Georgia and no minimum size limit north of Georgia. Continue to specify allowable gear for dolphin in the Atlantic EEZ as longline; hook and line gear including manual, electric, or hydraulic rod and reels; bandit gear; handline; and spearfishing gear (including powerheads).

Option 2. Prohibit bag limit sales of dolphin from for-hire vessels.

Option 3. Establish minimum size limits off NC & SC.

Discussion

There is a seasonal fishery from fishing piers in North Carolina that harvests mostly smaller fish. Any size limit would have to account for this fishery.

Option 4. Establish minimum size limits in NEFMC and MAFMC.

Option 5. INCREASE THE MINIMUM SIZE LIMIT TO 22 INCHES OR 24 INCHES

OPTION 6. REDUCE THE BOAT LIMIT (e.g. reduce by 1/3)

Discussion

This option is being considered for the private recreational and charter boat sectors but not the headboat sector.

OPTION 7. EXAMINE HARVEST BY POWERHEADS AND EVALUATE WHETHER IT SHOULD CONTINUE TO BE ALLOWED.

Option 8. Consider a series of trip limits on the commercial fishery (e.g., 4,000 pounds with alternatives higher and lower).

Discussion

The intent would be to keep the fishery open all year and be high enough to be economically feasible. The Council is considering 4,000 pounds with alternatives higher and lower.

Dolphin Wahoo AP Discussion & Recommendations

The AP Chair asked Don Hammond to provide some input on dolphin life history. Mr. Hammond provided the following input:

1. Dolphin annual mortality is very high; about 99.7% of fish spawned die each year.
2. Growth is very rapid reaching 40 pounds within 12 months.
3. Longevity is short with most fish caught being 1-2 years old and the largest/oldest being about 4 years old.
4. Maturity is reached very quickly beginning at 14" fork length and 100% mature at 22" fork length.
5. Dolphins are reproductively active year round and are in a constant state of gonadal development.

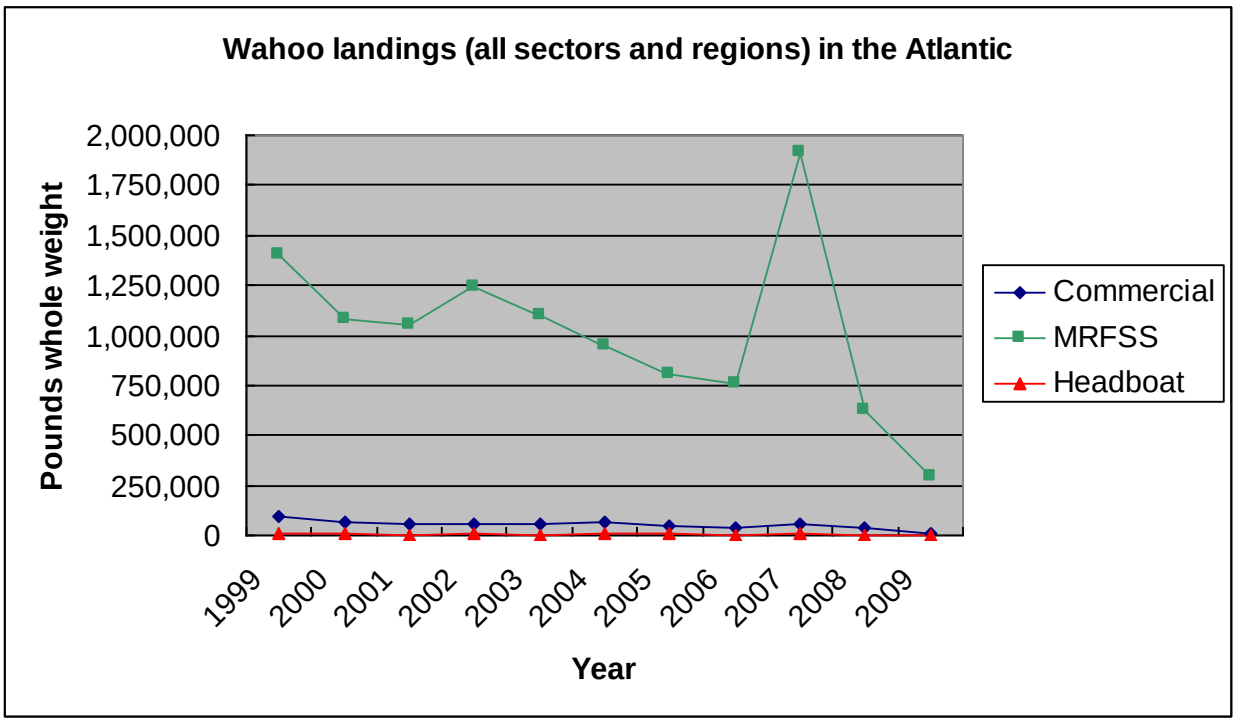
The AP recommended Option 1. No action at this time because there is no problem identified that needs to be addressed. The AP recognized that this will need to be revisited once the Scientific and Statistical Committee presents their Overfishing Level (OFL) and Acceptable Biological Catch (ABC) recommendations. The AP also added Options 6 and 7 and requested that the impacts be examined state by state.

Committee/Council Discussion & Recommendations

The Council approved a motion adding a series of commercial trip limits.

Wahoo

History of management and landings data from 1999-2009 are included in Attachment 2. The following figure presents wahoo landings (all sectors and regions) in the Atlantic:



Source: Commercial dolphin landings for VA north are from SEFSC. Commercial landings for NC to FL are from ALS (except 2009). MRFSS data are from the MRFSS web site. Headboat data are from NMFS Headboat Survey.

Figure 4. Annual commercial, MRFSS, and headboat landings (lbs whole weight) of wahoo in the Atlantic, 1999 – 2009. Data are inclusive of all the states within the jurisdiction of the New England, Mid-Atlantic, and South Atlantic Fishery Management Councils. Data are not reported by state due to confidentiality concerns. Data for 2009 are incomplete. Headboat data are from the South Atlantic region.

A. Maximum Sustainable Yield (MSY)

Option 1. No action. The MSY proxy in the Atlantic, U.S. Caribbean, and Gulf of Mexico is between 1.41 and 1.63 million pounds (NMFS SEFSC based on 5-10 year catch history; letter dated 1/8/01).

Option 2. MSY = x.xx – y.yy million pounds. These figures could be based on updated 5-10 year time periods using more recent data and would apply for wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 3. Specify MSY separately for the Atlantic at _____ million pounds.

Option 4. The recommendation from the Scientific and Statistical Committee (SSC).

Dolphin Wahoo AP Discussion & Recommendations
The AP supported Option 4.

Committee/Council Discussion & Recommendations
The Council approved this range of alternatives.

B. Overfishing Level (OFL)

Option 1. No action.

A maximum fishing mortality threshold (MFMT) - In the Atlantic, U.S. Caribbean, and Gulf of Mexico overfishing for wahoo is defined as a fishing mortality rate (F) in excess of F_{MSY} ($F_{30\%Static\ SPR}$).

A minimum stock size threshold (MSST) – In the Atlantic, U.S. Caribbean, and Gulf of Mexico the minimum stock size threshold for wahoo is defined as a ratio of current biomass ($B_{current}$) to biomass at MSY or (1-M)*B_{MSY}, where 1-M should never be less than 0.5. The stock would be overfished if current biomass ($B_{current}$) was less than MSST and would be recovered when current biomass was equal or greater than the biomass at MSY.

Option 2. Specify OFL and MSST separately for the Atlantic at _____ and _____ pounds.

Option 3. The values recommended by the SSC.

Dolphin Wahoo AP Discussion & Recommendations
The AP supported Option 3.

Committee/Council Discussion & Recommendations
The Council approved this range of alternatives.

C. Acceptable Biological Catch (ABC)

Option 1. No action. There is no ABC specified for wahoo.

Option 2. A potential ABC range = a.aa – b.bb million pounds based on 65% to 85% of MSY Option 1 or 2 and would apply for wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico. This likely ABC range is presented for initial discussions; the SSC will provide their OFL and ABC recommendations at their June or December 2009 meeting.

Option 3. Specify ABC separately for the Atlantic at _____ pounds.

Option 4. The value recommended by the SSC.

Dolphin Wahoo AP Discussion & Recommendations
The AP supported Option 4.

Committee/Council Discussion & Recommendations
The Council approved this range of alternatives.

D. Annual Catch Limit (ACL)

Option 1. No action. There is no ACL specified for wahoo.

Option 2. ACL = c.cc million pounds based on 65% of MSY Option 1 or 2 and apply to wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 3. ACL = d.dd million pounds based on 75% of MSY Option 1 or 2 and apply to wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 4. ACL = e.ee million pounds based on 85% of MSY Option 1 or 2 and apply to wahoo in the Atlantic, U.S. Caribbean, and Gulf of Mexico.

Option 5. Specify ACL separately for the Atlantic at _____ pounds.

Dolphin Wahoo AP Discussion & Recommendations
The AP recommended keeping the ACL region-wide.

Committee/Council Discussion & Recommendations
The Council approved this range of alternatives.

E. Specify Accountability Measures (AMs) for Wahoo

Option 1 (Status Quo). There is no hard quota for wahoo and there are no AMs in place for wahoo.

Option 2. The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Implement Accountability Measures (AMs) for the recreational sector for this stock. If the ACL is exceeded, the Regional Administrator shall publish a notice to reduce the length of the following fishing year by the amount necessary to ensure landings do not exceed the sector ACL for the following fishing year. Compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use three-year running average.

Option 3. The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Implement Accountability Measures (AMs) for the recreational sector for this stock. If the ACL is exceeded, the Regional Administrator shall publish a notice to reduce the bag limit by the amount necessary to ensure landings do not exceed the sector ACL for the following fishing year. Compare recreational ACL with recreational landings over a range of years. For 2011, use only 2011 landings. For 2012, use the average landings of 2011 and 2012. For 2013 and beyond, use three-year running average.

Dolphin Wahoo AP Discussion & Recommendations

The AP does not want to see a closure of the recreational fishery and recommended that Option 3 be modified to provide that the bag limit may be reduced the following fishing year if required.

Committee/Council Discussion & Recommendations

The Council approved motions moving one alternative to Appendix A and adding an alternative with a reduction in the bag limit.

F. Allocation

Alternative 1 (Status Quo). Do not define allocations for wahoo.

Alternative 2. Define allocations for wahoo based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on landings from the years 1999-2008. The allocation would be xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 3. Define allocations for wahoo based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on landings from the years 2006-2008. The allocation would be xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 4. Define allocations for wahoo based upon landings from the ALS, MRFSS, and headboat databases. The allocation would be based on the following formula for each sector: Sector apportionment = (50% * average of long catch range (lbs) 1986(or 1999)-2008) + (50% * average of recent catch trend (lbs) 2006-2008). The allocation would be xx% commercial and yy% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Alternative 5. Split the allocations for wahoo equally among the two sectors. The allocation would be 50% commercial and 50% recreational. Beginning in 2011, the commercial allocation would be _____ lbs gutted weight and the recreational allocation would be _____ fish (_____ lbs gutted weight). The commercial and recreational allocation specified for 2011 would remain in effect beyond 2011 until modified.

Committee/Council Discussion & Recommendations

The Council directed staff to include allocation alternatives with the formula. The Committee should provide guidance on:

1. Years of data to be used. NMFS has provided landings data from 1999 onwards. Previous allocation discussions looked at 1986 onwards.
2. Headboat data from New England and Mid-Atlantic – should this be included?
3. Are these alternatives sufficient?

G. Specify Management Measure Changes for Wahoo

Option 1. **No action.** Continue to prohibit sale of recreationally caught wahoo in or from the Atlantic EEZ. Continue the 500 pound commercial trip limit for wahoo (landed head and tail intact) with no transfer at sea allowed. Continue the recreational bag limit of 2 wahoo per person per day in the Atlantic EEZ. Continue to specify allowable gear for wahoo in the Atlantic EEZ as longline; hook and line gear including manual, electric, or hydraulic rod and reels; bandit gear; handline; and spearfishing gear (including powerheads).

Option 2. Others???

<u>Dolphin Wahoo AP Discussion & Recommendations</u>

The AP recommended Option 1. No action at this time because there is no problem identified that needs to be addressed. The AP recognized that this will need to be revisited once the Scientific and Statistical Committee presents their Overfishing Level (OFL) and Acceptable Biological Catch (ABC) recommendations.

APPENDIX A. ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSES

1. Dolphin MSY: **Option 3. MSY = 15,882,100 – 17,833,190 pounds.** This range is based on average landings from a 10 year and 5 year period respectively (Prager 2000) and would apply for dolphin in the Atlantic, U.S. Caribbean, and Gulf of Mexico.
2. Dolphin Accountability Measures: **Option 2.** The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Do not implement AMs for the recreational sector.
3. Wahoo Accountability Measures: **Option 2.** The commercial AM for this stock is to prohibit harvest, possession, and retention when the quota is met. All purchase and sale is prohibited when the quota is met. Do not implement AMs for the recreational sector.