

DRAFT

Omnibus Essential Fish Habitat Amendment 2

Amendment 14 to the Northeast Multispecies FMP

Amendment 14 to the Atlantic Sea Scallop FMP

Amendment 4 to the Monkfish FMP

Amendment 3 to the Atlantic Herring FMP

Amendment 2 to the Red Crab FMP

Amendment 2 to the Skate FMP

Amendment 3 to the Atlantic Salmon FMP

Including a

Draft Environmental Impact Statement

Prepared by the

New England Fishery Management Council

In cooperation with the

National Marine Fisheries Service

This document contains excerpts from the DEIS related to description of recreational fishery and analysis of recreational fishing impacts. The full DEIS is available on the Council webpage www.nefmc.org with the materials for the February 25-26 meeting.

Updated February 13, 2014

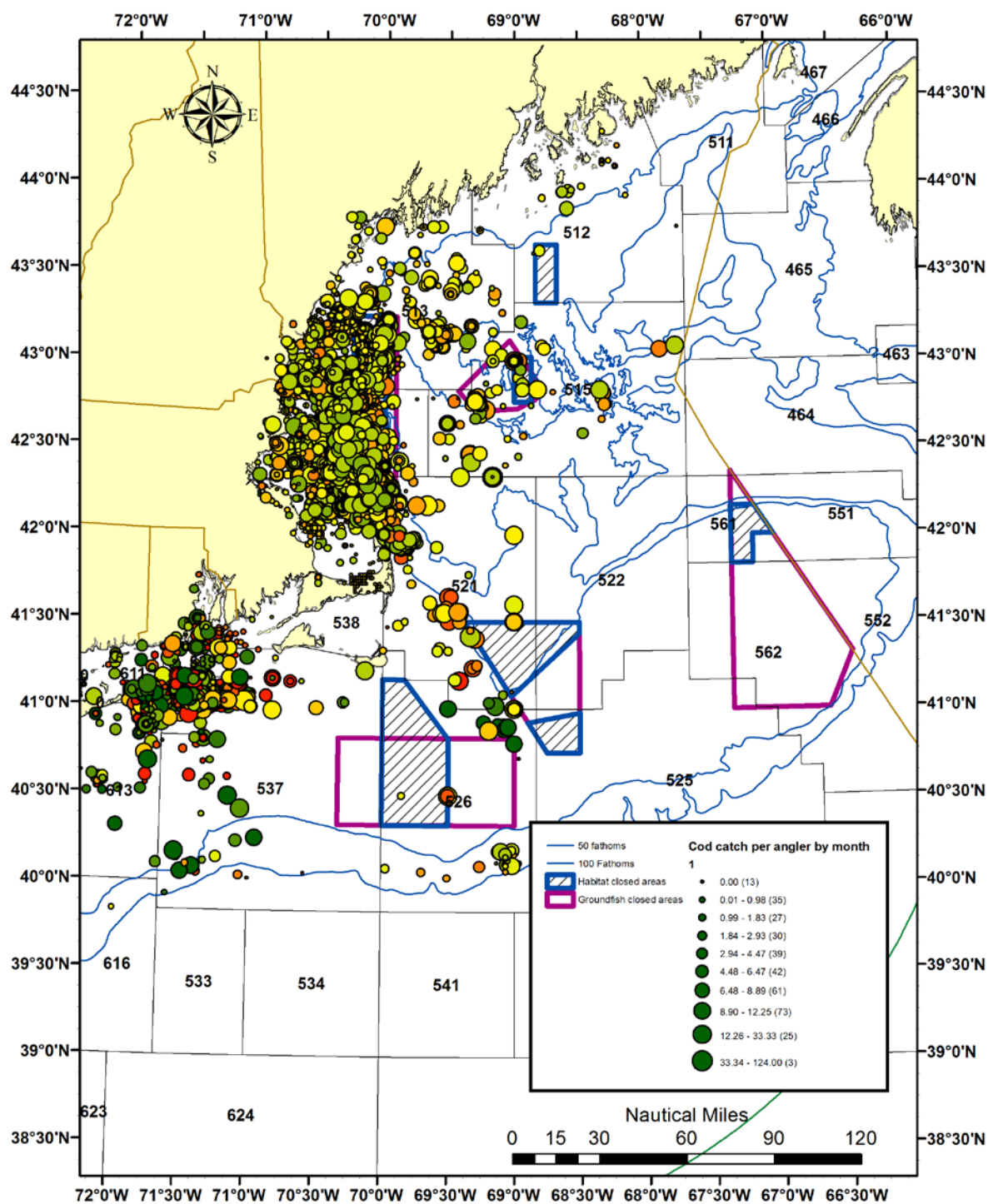
Description of recreational groundfish fishery in affected environment section

Recreational fishing for groundfish is focused primarily Atlantic cod, pollock, haddock, red hake, and winter flounder, although based on comments made during August 2013 informational meetings, redfish are increasingly important to the charter sector as well. Recreational vessels have a closed season from November through April 15, bag limits for some species, and minimum size limits by species. Recreational fishing is conducted by shore-based anglers and anglers with private boats, as well as by anglers aboard party/charter vessels. Amendment 16 to the Multispecies FMP (2009) includes a detailed description of this fishery through 2007. In the New England region, recreational groundfishing is concentrated in the western Gulf of Maine and off the Rhode Island coast (see map below).

Discussion questions:

- *What are key aspects of the recreational groundfish fishery that should be provided as background in the DEIS?*
- *What are the key regulations that govern recreational groundfish fishing that should be noted in this section in order to evaluate impacts?*
- *How does the recreational groundfish fishery overlap with other recreational fisheries? Other recreational fisheries discussed in this background section include bluefish, summer flounder/scup/black sea bass, and tilefish.*
- *What additional maps or figures might be helpful?*

Map 1 – Trip location and cod catch per angler as reported on 2008-2012 Vessel Trip Reports. Increasing circle size indicates amount of catch, and circle color from dark green to red indicates month of the year, starting in January.



Economic and social impacts of Stellwagen DHRA

DHRA Alternative 3 would designate the Stellwagen DHRA with a reference area along the southern border (Option A), a reference area shifted five nm north (Option B), or no reference area (Option C).

Option A excludes recreational groundfish fishing from the southern DHRA reference area. Figure 1 summarizes the number of trips in this southern reference area, grouped by whether groundfish were caught on the trip or not. As can be seen from the graph, the majority of trips reported to have occurred within the southern reference area land at least one groundfish. The results suggest that almost all trips occurring within the reference area would be affected to some extent by this alternative.

Figure 2 presents the total revenue estimated to have been generated from trips within the southern reference area, delineated by a ranked grouping of 5 permit blocks. The graph indicates that the 5 permits with the highest revenue estimated to fall within the southern reference area account for 63% of the total revenue estimates in 2011 and 2012. The revenue in 2010 seems to have been only slightly more diffuse, with 51% of the revenue share generated by the top 5 permits.

Figure 3 indicates the average percentage of each ranked group's total revenue, including commercial revenue, that the recreational revenue within the southern reference area represents. Group 1 generates the highest annual revenue within the reference area, and the percent of total revenue that this fishing represents remains relatively constant 2010 – 2012, between 20-30% of total revenue each year. When 2012 is compared to 2010, there are fewer groups in 2012, and for the groups with the smallest revenue the percentage of total revenue coming from the reference area is lower.

Table 1 presents a longer-term summary of trips falling within the southern reference area. The statistics indicate that a slightly higher number of permit holders are currently using the reference area when compared to the longer-run averages, with an annual average consistently less than 40 permits. However, most of the other statistics are lower in the last three years when compared to longer run averages. In general, there does not seem to be a recent substantial increase in dependence on the reference area from historical patterns.

Taken together, the data suggest that the southern reference area is used intensively, and consistently, by a relatively small number of charter and party permit holders. The recreational revenue generated from the trips in southern reference area catching groundfish is a substantial portion of these individual's total fishing income, and thus the exclusion of these individuals from the reference area is likely to have a large negative impact for these individuals, when compared to no action, or to a designation of the research area without the reference area (Option C).

Table 1 identifies the communities associated with recreational trips in 2012. These are all associated with Massachusetts, however it should be noted that both Gloucester and

Newburyport have a high level of engagement in recreational fishing and are likely to be more affected by these impacts.

Other fisheries are not impacted by the DHRA Alternative 3 Option A, when compared to no action. However, given that Alternatives 2 – 7 in the Western Gulf of Maine could change area management in the WGOM, the designation of the DHRA could have a broad range of economic impacts depending on the final alternative chosen. A sense of these impacts, and their magnitude, can be gleaned from the discussion of the WGOM HMA Alternative 6 economic impacts in the DEIS, with the caveat that commercial non-MBTG capable of catching groundfish would in addition be excluded from fishing in the Large Stellwagen area.

In the long-run, benefits are expected to accrue to all groundfish fisheries through more informed, and ostensibly better, management decisions. Option A is thus expected to generate a net positive benefit when compared to no action, with concentrated costs accruing to a small number of recreational fishermen in the short term, and diffuse positive benefits in the form of improved groundfish management in the long term. The net benefits are expected to be larger than option B, given the higher revenue estimates presented in Table 2 and Figure 5 and Figure 6. However, substantial uncertainty exists regarding both the benefits and costs of these options, as they ultimately depend on the quality and quantity of scientific research being generated from the DHRA and the ability of fishermen to change their fishing practices/location.

The social impacts of Alternative 3 option A in comparison to the no action alternative are expected to be positive. However there may be negative impacts related to the recreational fishery which is heavily reliant on this area. This will particularly impact communities on the South Shore and Cape Cod, MA (Table 1).

Figure 1 – The total number of recreational trips (party and charter) reported within the southern reference area, grouped by whether at least one groundfish was caught on the trip

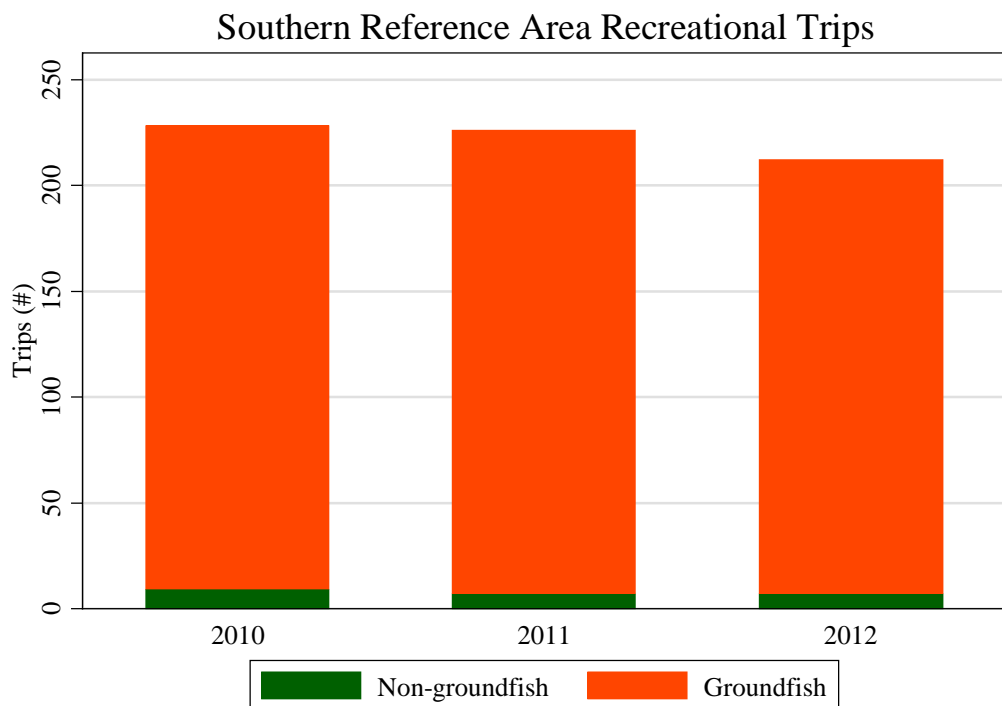


Figure 2 – Recreational revenue estimated to have been generated by trips reported within the southern reference area, with groups representing blocks of 5 permits, ranked by the revenue estimated to fall within the reference area. Note: Groups do not necessarily consist of the same individuals across years.

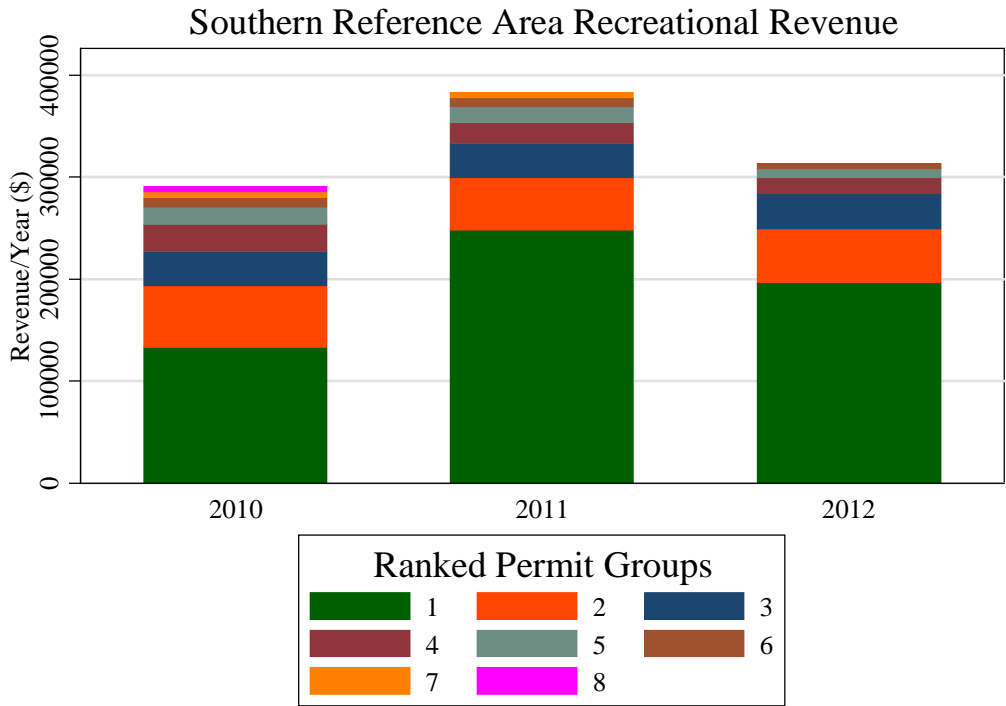


Figure 3 – Percent, averaged across permits, of each ranked group’s total revenue (including commercial revenue) estimated to have been generated by recreational trips within the southern reference area

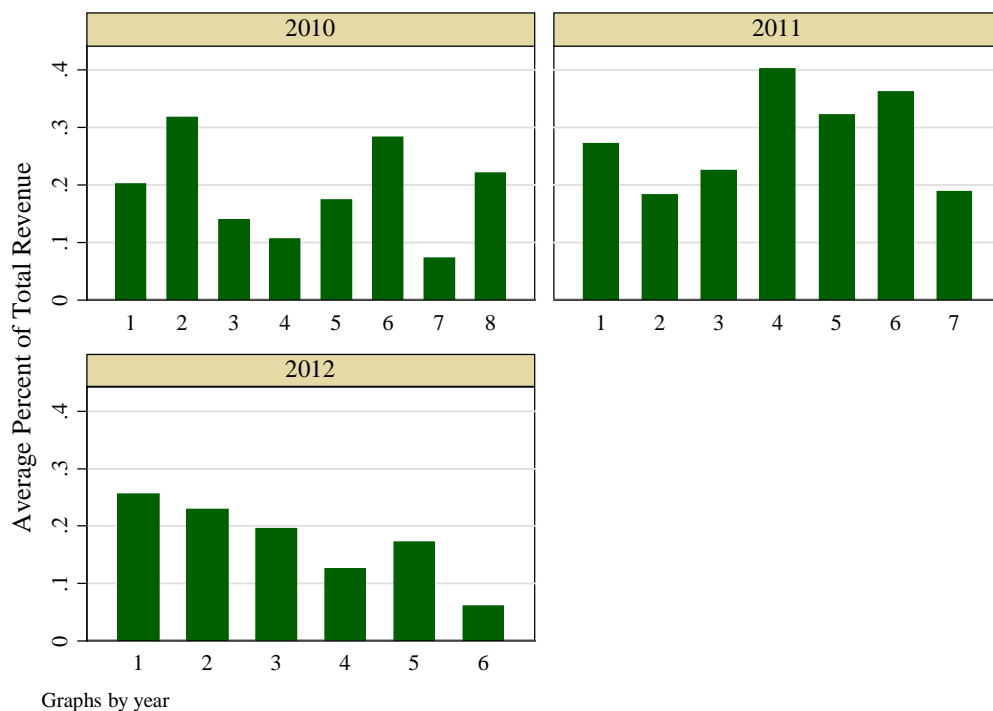


Table 1 – Recreational fishing revenue currently associated with the Southern Reference area. Revenue generated from MRIP data, using average annual revenue per angler by state. Annual Revenue is the mean annual revenue, Individuals represents the average number of permit holders fishing in the area, and Anglers represents the Average number of anglers per year. All other statistics are estimates at the trip level. Dashes indicate information censored due to privacy concerns.

Area	Years	Annual Revenue	Individuals	Anglers	Mean Revenue	Median Revenue	SD Revenue
Southern Reference	2006 - 2012	387,262.61	34.14	2,094.43	1,742.18	1,117.74	2,215.63
Southern Reference	2008 - 2012	349,076.66	35.00	1,887.40	1,578.10	1,117.74	1,895.38
Southern Reference	2010 - 2012	328,839.68	36.67	1,768.00	1,481.26	1,117.74	1,737.60

Option B excludes recreational groundfish fishing from the northern DHRA reference area. Figure 4 graphs the total number of charter and party boat trips in the northern reference area, grouped by whether or not at least a single groundfish was caught on the trip. The vast majority of trips reported to fall within the northern reference area catch groundfish.

Figure 5 presents the total revenue estimated to have been generated from trips within the northern reference area, delineated by a ranked grouping of 5 permit blocks. The graph indicates that the 5 permits with the highest revenue estimated to fall within the northern reference area account for 63%, 62%, and 51% of the total revenue estimates in 2012, 2011, and 2010 respectively. This is a very similar pattern to the estimates for the southern reference area, although the total revenues in 2012 are roughly \$125,000 higher in the northern area.

Figure 6 graphs the average percentage of each ranked group's total revenue, including commercial revenue, that the recreational revenue within the northern reference area represents. The importance of the northern reference area seems to be increasing for individuals fishing in this area, as defined by the percentage of total revenue generated. This seeming trend is in contrast to the southern reference area in which the percentages were relatively constant across 2010 – 2012.

Table 2 details the longer-term trends in trips within the northern reference area. Although the number of permit holders is lower than the number fishing within the southern reference area, the other statistics are consistently higher for the northern, when compared to the southern, reference area.

When compared to No Action or Option C, Option B is expected to generate a large negative impact for the charter and party boats fishing within these waters. Although the VTR data are unlikely to classify trips inside versus outside these small reference areas with any precision, they should accurately represent general trends of intensity. Thus, although some of the trips reporting latitude/longitude within the northern reference area likely expended effort in the southern reference area and vice versa, the relative magnitude should indicate which of the areas are more heavily fished. In all indicators, save the number of permit holders, the northern reference area looks to be more intensively fished when compared to the southern reference area. The magnitude of the negative impact of Option B on recreational fishermen is thus expected to be larger than Option A.

Other fisheries are not impacted by the DHRA Alternative 3 Option B, when compared to no action. However, given that Alternatives 2 – 7 in the Western Gulf of Maine could change area management in the WGOM, the designation of the DHRA could have a broad range of economic impacts depending on the final alternative chosen. A sense of these impacts, and their magnitude, can be gleaned from the discussion of the WGOM HMA Alternative 6 economic impacts, with the caveat that commercial non-MBTG capable of catching groundfish would in addition be excluded from fishing in the Large Stellwagen area.

In the long-run, benefits are expected to accrue to all groundfish fisheries through more informed, and ostensibly better, management decisions. Option B is thus expected to generate a net positive benefit when compared to no action, with additional concentrated costs accruing to a small number of recreational fishermen in the short term, and diffuse positive benefits in the form of improved groundfish management in the long term. The net benefits are expected to be smaller than option A and C, given the higher revenue estimates within the northern reference area and the expected difficulty of identifying the impact of fish removal on such a small scale.

The social impacts of Alternative 3 option B in comparison to the no action alternative are expected to be positive. However there may be negative impacts related to the recreational fishery which is heavily reliant on this area. This will particularly impact communities on the South Shore and Cape Cod, MA (Table 121).

However, substantial uncertainty exists regarding both the benefits and costs of these options, as they ultimately depend on the quality and quantity of scientific research being generated from the DHRA and the ability of fishermen to change their fishing practices/location.

Option C would not restrict recreational groundfishing and is thus expected to have similar impacts to No Action in terms of the party and charter recreational groundfishing industry. For reference, Table 3 summarizes recreational revenue for the entire Stellwagen DHRA area, including both reference areas and the portion of the DHRA outside the reference areas. Given the expected difficulties in identifying the effect of removals on such a small area, the magnitude of benefits derived from Option C is expected to be larger than Options A and B.

Figure 4 – The total number of recreational trips (party and charter) reported within the northern reference area, grouped by whether at least one groundfish was caught on the trip

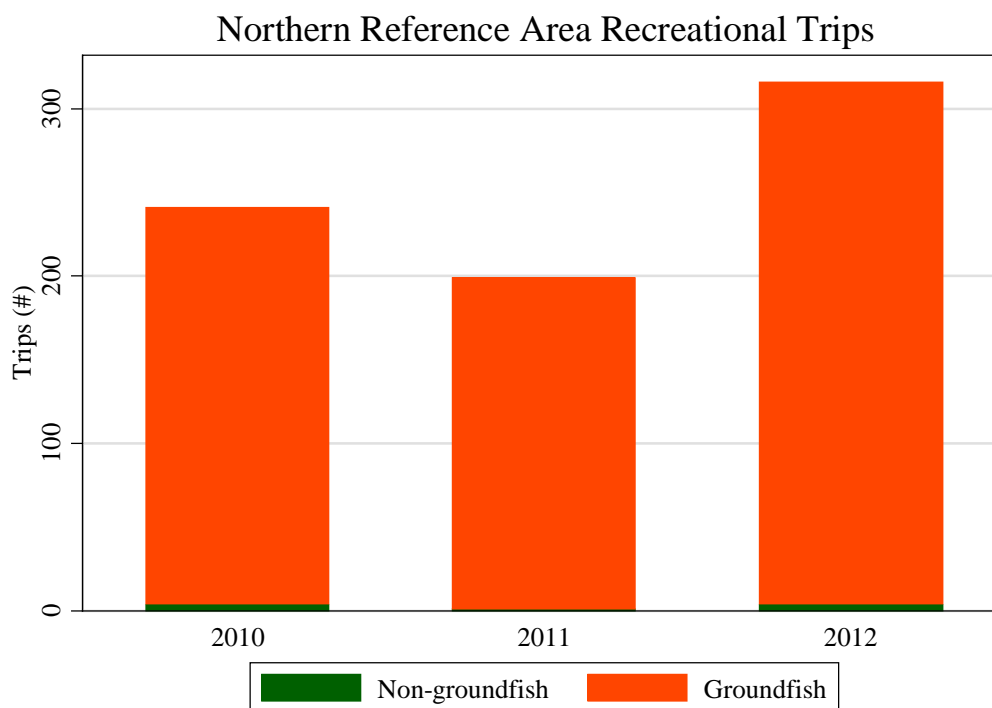


Figure 5 – Recreational revenue estimated to have been generated by trips reported within the northern reference area, with groups representing blocks of 5 permits, ranked by the revenue estimated to fall within the reference area. Note: Groups do not necessarily consist of the same individuals across years

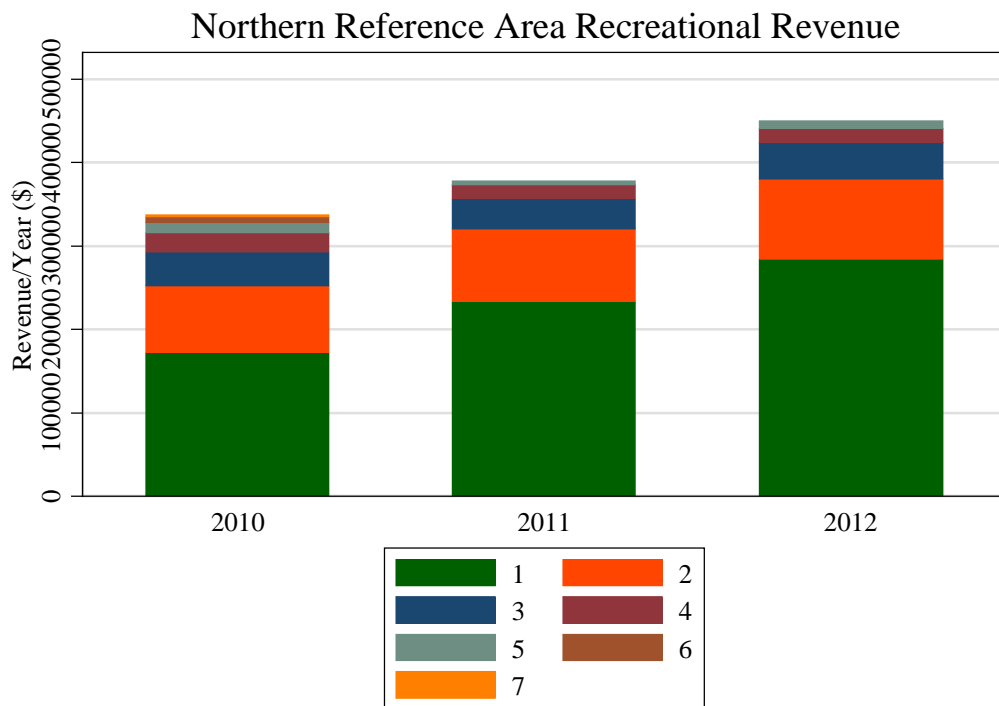


Figure 6 – Percent, averaged across permits, of each ranked group's total revenue (including commercial revenue) estimated to have been generated by recreational trips within the northern reference area

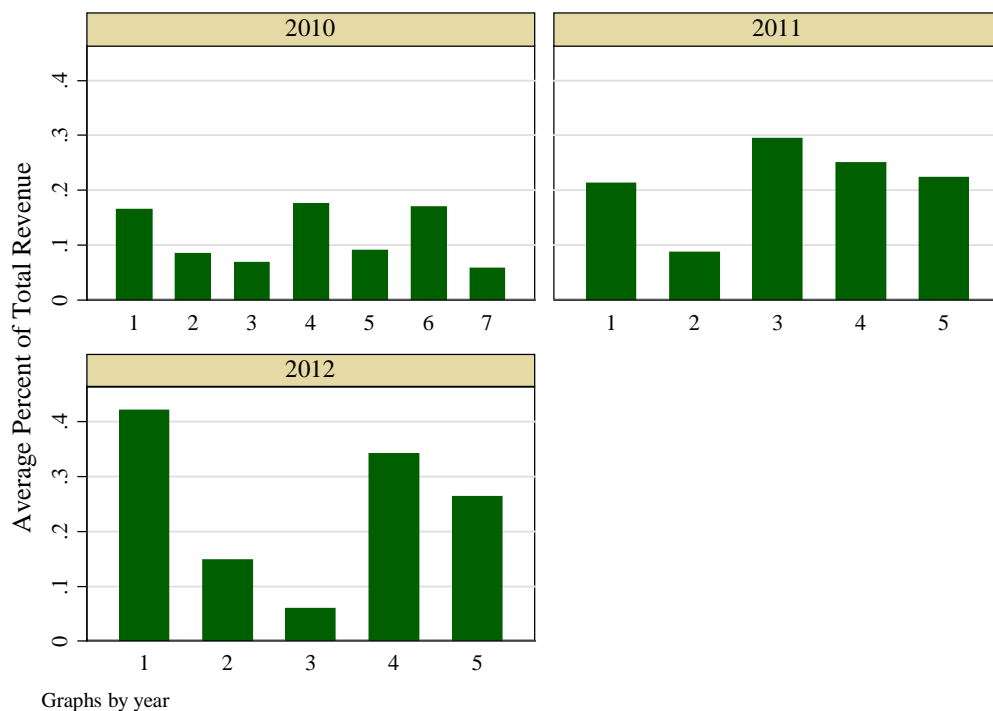


Table 2 – Recreational fishing revenue currently associated with the Northern Reference area. Revenue generated from MRIP data, using average annual revenue per angler by state. Annual Revenue is the mean annual revenue, Individuals represents the average number of permit holders fishing in the area, and Anglers represents the Average number of anglers per year. All other statistics are estimates at the trip level.

Area	Years	Annual Revenue	Individuals	Anglers	Mean Revenue	Median Revenue	SD Revenue
Northern Reference	2006 - 2012	556,480.9	30.71	3,003.00	2,077.53	1,117.74	2,665.28
Northern Reference	2008 - 2012	382,553.7	28.80	2,060.00	1,606.02	1,117.74	1,948.86
Northern Reference	2010 - 2012	388,290.5	29.00	2,084.33	1,540.84	1,117.74	1,874.70

Table 3 – Recreational fishing revenue currently associated with the entire Stellwagen DHRA. Revenue generated from MRIP data, using average annual revenue per angler by state. Annual Revenue is the mean annual revenue, Individuals represents the average number of permit holders fishing in the area, and Anglers represents the Average number of anglers per year. All other statistics are estimates at the trip level.

Area	Years	Annual Revenue	Indiv.	Anglers	Mean Revenue	Median Revenue	SD Revenue
------	-------	----------------	--------	---------	--------------	----------------	------------

StellwagenDHRA	2006 - 2012	2,101,074	72.86	12,070.71	2,466.05	1,117.74	2702.337
StellwagenDHRA	2008 - 2012	1,785,023	70.6	10,352	2,252.11	1,117.74	2429.294
StellwagenDHRA	2010 - 2012	1,767,647	71.67	10,052.33	2,213.25	1,117.74	2443.019

Table 4 - Total number of permits by port of landing or city of registration associated with at least three permits conducting recreational fishing trips associated with the Northern and Southern Reference Areas.

Stellwagen		Option A (Southern)		Option B (Northern)	
State	Community	Port	City	Port	City
MA		30	29	27	26
	Gloucester	7	3	6	3
	Marshfield	16	6	13	6
	Newburyport				
	Plymouth		3		3
	Scituate			3	

Discussion questions:

- *Does this analysis make sense to you?*
- *What other information would you like to see included, if possible?*

Additional summary tables – recreational fishing effort by area

These tables are based on Vessel Trip Reports submitted by Charter or Party recreational vessels. Each VTR includes a single fishing position (latitude and longitude); if this point fell within the boundaries of a particular management area, the trip was considered to have occurred in the area. In reality, on a given trip, vessels may be fishing both within and outside an area. Revenues were assigned to each trip based on the number of anglers per trip as reported VTR, with the charter fee paid per angler taken from the MRIP database. Specifically, the 2011 price paid per angler was used; these values vary by state.

The Cashes Ledge results are for the existing Cashes Ledge habitat and groundfish closures combined. Although some recreational fishing has been reported for the current Jeffreys Bank closed area, the data cannot be presented due to privacy concerns. In Closed Areas I and II, dashes indicate information censored due to privacy concerns.

Table 5 – Recreational fishing revenue associated with various management areas. Revenue generated from MRIP data, using average annual revenue per angler by state. Annual Revenue is the mean annual revenue, Individuals represents the average number of permit holders fishing in the area, and Anglers represents the average number of anglers per year. All other statistics are estimates at the trip level.

Eastern Gulf of Maine							
Area	Years	Annual Revenue	Individuals	Anglers	Mean Revenue	Median Revenue	SD_Revenue
EMaineL	2006 - 2012	1249.764	0.571429	7.857143	2187.088	1970.975	2206.69
EMaineL	2008 - 2012	1719.84	0.6	10.8	2866.4	3430.45	2129.654
EMaineL	2010 - 2012	1722.917	0.666667	10.33333	2584.375	2584.375	2931.488
Central Gulf of Maine							
Area	Years	Annual Revenue	Individuals	Anglers	Mean Revenue	Median Revenue	SD Revenue
Platts Bank	2006 - 2012	29355.19	3.142857	197.4286	1360.836	1193.2	583.5898
Platts Bank	2008 - 2012	25704.98	3	173.2	1460.51	1416.925	663.2817
Platts Bank	2010 - 2012	22507.52	3	152.3333	1534.603	1491.5	731.2774
Cashes Ledge	2006 - 2012	70130.55	5.14	405.86	4631.26	4537.7	2776.84
Cashes Ledge	2008 - 2012	66321.63	4	374	4670.54	5029.83	2589.67
Cashes Ledge	2010 - 2012	62794.66	4.67	360	3844.57	4098.38	2321.80
Western Gulf of Maine							
Area	Years	Annual Revenue	Individuals	Anglers	Mean Revenue	Median Revenue	SD Revenue

Habitat Omnibus Amendment DEIS – draft sections relative to recreational fishery

BigelowL	2006 - 2012	1,118,180.22	41.14	10,085.86	2,196.20	1,790.25	1,736.98
BigelowL	2008 - 2012	1,011,674.03	40.20	9,287.00	2,215.67	1,875.50	1,698.56
BigelowL	2010 - 2012	915,081.68	36.67	8,174.00	2,314.71	2,046.00	1,723.44
BigelowS	2006 - 2012	796,808.50	35.14	7,903.57	2,022.36	1,534.50	1,715.14
BigelowS	2008 - 2012	780,816.36	35.20	7,712.40	2,118.33	1,705.00	1,734.67
BigelowS	2010 - 2012	687,350.03	32.67	6,629.00	2,226.84	1,875.50	1,763.07
WGOM	2006 - 2012	4,401,368.01	104.29	33,601.14	2,284.56	1,117.74	2,122.40
WGOM	2008 - 2012	3,836,231.91	99.20	29,995.40	2,159.80	1,117.74	1,905.85
WGOM	2010 - 2012	3,581,579.90	97.33	28,521.67	2,081.10	1,117.74	1,855.08
StellwagenL	2006 - 2012	1,937,635.30	70.14	11,176.00	2,446.51	1,117.74	2,685.22
StellwagenL	2008 - 2012	1,556,208.63	66.80	9,099.40	2,196.17	1,117.74	2,360.07
StellwagenL	2010 - 2012	1,386,290.43	65.33	7,964.67	2,104.69	1,117.74	2,318.12
JeffreysLedge	2006 - 2012	2,349,754.80	50.57	21,758.14	2,236.95	1,960.75	1,630.08
JeffreysLedge	2008 - 2012	2,169,797.99	48.40	20,269.40	2,205.98	2,046.00	1,547.31
JeffreysLedge	2010 - 2012	2,130,533.06	48.33	20,245.00	2,121.34	1,875.50	1,509.67
StellwagenS	2006 - 2012	1,646,086.23	58.00	8,965.71	2,440.71	1,117.74	2,778.78
StellwagenS	2008 - 2012	1,303,553.52	54.20	7,111.80	2,146.83	1,117.74	2,424.74
StellwagenS	2010 - 2012	1,162,954.24	52.00	6,319.33	2,041.46	1,117.74	2,362.64
Georges Bank							
Area	Years	Annual Revenue	Individuals	Anglers	Mean Revenue	Median Revenue	SD Revenue
CAI	2006 - 2012	13,120.14	1.29	70.43	3,401.52	1,117.74	3,141.37
CAI	2008 - 2012	17,511.26	1.00	94.00	4,169.35	4,098.38	3,166.64
CAI	-	-	-	-	-	-	-
CAII	-	-	-	-	-	-	-
CAII	-	-	-	-	-	-	-
CAII	-	-	-	-	-	-	-
Great South Channel and Southern New England							
Area	Years	Annual Revenue	Individuals	Anglers	Mean Revenue	Median Revenue	SD Revenue
GreatSChannel East	2006 - 2012	80,829.54	9.14	459.14	2,595.44	1,117.74	2,598.89
GreatSChannel East	2008 - 2012	35,831.25	6.80	198.40	1,905.92	931.45	2,161.29
GreatSChannel East	2010 - 2012	9,438.69	4.67	50.67	884.88	838.31	428.48
CoxLedge	2006 - 2012	105,303.00	12.00	974.14	2,340.07	2,034.52	1,755.97
CoxLedge	2008 - 2012	109,873.91	11.40	1,016.00	2,357.81	2,034.52	1,765.19
CoxLedge	2010 - 2012	106,187.16	12.33	971.00	2,123.74	1,820.36	1,615.31
GreatSChannel	2006 - 2012	64,469.76	6.00	365.86	3,049.25	1,117.74	2,709.01

Habitat Omnibus Amendment DEIS – draft sections relative to recreational fishery

GreatSChannel	2008 - 2012	31,024.97	4.20	172.60	2,543.03	1,117.74	2,455.78
GreatSChannel	2010 - 2012	6,458.05	2.67	34.67	1,019.69	931.45	462.06
NantucketShoalsS	2006 - 2012	40,207.49	6.43	221.57	1,481.33	1,117.74	1,605.44
NantucketShoalsS	2008 - 2012	36,047.85	5.40	195.80	1,802.39	931.45	2,016.68
NantucketShoalsS	2010 - 2012	9,252.40	3.00	49.67	957.15	931.45	184.45
GSC GMA	2006 - 2012	96,898.40	5.14	538.14	4,743.28	5,588.70	2,772.29
GSC GMA	2008 - 2012	46,132.36	3.60	251.40	4,271.51	5,047.22	2,834.63
GSC GMA	2010 - 2012	24,466.09	3.33	131.33	2,823.01	1,117.74	2,193.29
NantucketShoalsL	2006 - 2012	55,776.01	7.71	305.14	1,323.50	931.45	1,428.93
NantucketShoalsL	2008 - 2012	49,050.89	6.80	265.60	1,459.85	931.45	1,693.14
NantucketShoalsL	2010 - 2012	22,603.19	5.00	121.33	1,027.42	931.45	828.13
NantucketLightship	2006 - 2012	21,544.43	3.00	127.00	2,600.19	1,117.74	2,373.03
NantucketLightship	2008 - 2012	19,068.30	1.80	105.00	4,540.07	5,216.12	2,496.65
NantucketLightship	2010 - 2012	16,472.45	1.67	89.00	4,492.49	5,216.12	2,628.00

Table 6 – Recreational fishing revenue associated with the GOM Spawning Alternative 2 in the relevant time frames being considered for closure. Revenue generated from MRIP data, using average annual revenue per angler by state. Annual Revenue is the mean annual revenue, Individuals represents the average number of permit holders fishing in the area, and Anglers represents to Average number of anglers per year. All other statistics are estimates at the trip level.

Area	Years	Annual Revenue	Individuals	Anglers	Mean Revenue	Median Revenue	SD Revenue
MassBay	2006 - 2012	185,770.82	7.29	998.14	5,703.49	5,029.83	3,839.85
MassBay	2008 - 2012	162,435.41	6.40	872.60	5,601.22	5,029.83	3,641.90
MassBay	2010 - 2012	162,817.46	5.00	874.00	5,956.74	5,681.85	3,489.34
April	2006 - 2012	1,079,749.20	68.14	7,695.29	2,523.62	1,117.74	2,424.28
April	2008 - 2012	1,054,411.55	70	7,562	2,411.74	1,117.74	2,297.45
April	2010 - 2012	966,533.19	66.67	7,005.67	2,334.62	1,117.74	2,208.30
May	2006 - 2012	1,188,660.21	60.71	10,378.71	2,313.86	1,789.8	1,957.86
May	2008 - 2012	1,247,564.94	60	10,929.8	2,345.05	1,790.25	1,970.24
May	2010 - 2012	1,331,199.46	59	11,388.33	2,392.81	1,790.25	2,050.06
June	2006 - 2012	196,061.85	23.43	1,418.14	1,506.51	894.9	1,180.85
June	2008 - 2012	188,064.71	22.6	1,380.2	1,536.48	937.75	1,146.55
June	2010 - 2012	182,662.07	22.33	1,339	1,565.68	1,023	1,124.79