

1.0 ENVIRONMENTAL CONSEQUENCES OF ALTERNATIVES

1.1 ESSENTIAL FISH HABITAT

The following sections summarize the impacts of various alternatives and groups of alternatives on EFH.

1.1.1 No Action

No Action

The No Action alternative maintains, during fishing years 2011 and 2012, the TACs from 2010 and the associated limited access open area DAS, as well as the general category quota allocations. The schedule of access area trips is slightly different than that in place for 2010, due to a predetermined opened/closed schedule for the access areas (specifically, the Nantucket Lightship Access Area will be closed during 2012). The no action alternative is summarized below. EFH impacts for the allocation scenarios are compared to this no action alternative in section 1.1.3.

Table 1 – Summary of No Action alternative.

Allocation	2010	2011	2012
TAC for fishery (includes all landings, set-asides, and incidental catches)	21,445 mt	21,445 mt	21,445 mt
Open area DAS (FT/PT/OCC vessels)	38/15/3	38/15/3	38/15/3
ETA trips (FT/PT/OCC vessels); GC total	2/up to 2/up to 1; 1377	2/up to 2/up to 1; 1,377	2/up to 2/up to 1; 1377
DMV trips (FT/PT/OCC vessels); GC total	1/up to 1/up to 1; 714	1/up to 1/up to 1; 714	1/up to 1/up to 1; 714
NLA trips (FT/PT/OCC vessels); GC total	1/up to 1/up to 1; 714	1/up to 1/up to 1; 714	None – area closed
Turtle restrictions	ETA and DMV closed in September and October; limited number of trips during June 15 – August 31	ETA and DMV closed in September and October; limited number of trips during June 15 – August 31	ETA and DMV closed in September and October; limited number of trips during June 15 – August 31
Compensation if NLA closed for YT	5.8 DAS	5.8 DAS	n/a – area closed

No Action for Framework 22; NMFS Approves Amendment 15

If Amendment 15 is implemented as the Council approved it, the measures below will be implemented mid-2011.

- *ACLs – ABC control rule, flowchart, management uncertainty buffers, AMs*
- *YT AM & monitoring changes*
- *Hybrid OFD*
- *GC measures*
- *EFH change (and resulting change to CAI access boundaries)*

- RSA
- *Third year default measures*

The allocation scenarios described in section 1.1.3 assume that Amendment 15 will be implemented, so the positive or negative effects on EFH impacts are accounted for in those scenarios and will not be discussed separately.

Measures that will be in effect March 1, 2011 until Framework 22 is implemented

If Framework 22 is approved but not implemented for the start of the fishing year, various measures would be implemented to ensure that 2011 catches for various permit categories/areas do not exceed Framework 22 allocations for 2011. Because this alternative is intended to ensure that catches do not exceed appropriate limits, it is expected to have a positive impact on EFH.

1.1.2 Acceptable Biological Catch

This alternative sets Acceptable Biological Catch (ABC) values for 2011-2013 (with the assumption that a subsequent framework action will update the 2013 values in advance of that fishing year). ABC is defined as the maximum catch that is recommended for harvest, consistent with meeting the biological objectives of the management plan. Acceptable Biological Catch for the scallop fishery is 69.0 million lbs. in 2011 and 73.3 million lbs. in 2012. Reduced for discard and incidental catch mortality, the ABC available to the fishery is 60.1 million lbs. for 2011 and 63.8 million lbs. for 2012.

For comparison, the 2010 ABC was set at 65.2 million pounds, including an estimated 7.4 million pounds for non-yield fishing mortality (discards and incidental mortality). Therefore, the overall ABC for the fishery, excluding discards and incidental mortality was 57.8 million pounds during 2010.

Any EFH impacts associated with these ABC values are rolled into the discussion of the allocation scenarios (section 1.1.3), because given similar ABC values available to the fishery each year, biological and EFH impacts will vary according to the timing and spatial distribution of catches, both of which are accounted for in the modeling work done to evaluate the allocation scenarios.

1.1.3 Summary of FW21 Allocation Scenarios

The options under this alternative allocate fishing effort between open and access areas for fishing years 2011 and 2012, as shown in Table 2. Note that for this action, Status Quo is equivalent to 2010 measures, since No Action is actually not the same as 2010 allocations because of the way the access area program is implemented. The Status Quo scenario is shown for reference but as it cannot be implemented, impacts of Status Quo will not be discussed further. Relative impacts on the scallop resource of No Action as compared to Status Quo and each of the three allocation scenarios are detailed in the biological impacts section of this document.

Each of these scenarios assumes implementation of Amendment 15 and the associated change in the size of the area available for access in CAI. Amendment 15 also includes a provision

allowing for year three (in this instance, 2013) allocations to be developed in specifications frameworks. The 2013 allocations (Table 3) will go into effect March 1, 2013 if the next specifications framework is delayed beyond the start of the 2013 fishing year.

Table 2 – Framework 22 scenarios under consideration

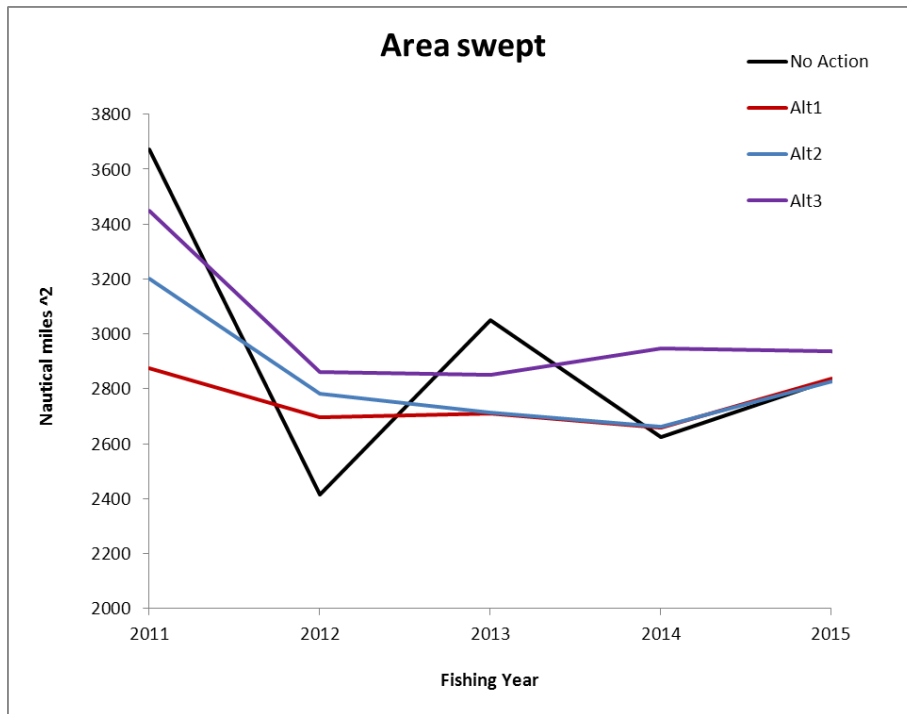
	CA1	CA2	NL	HC	Del	ET	Total	Channel	OA DAS
Option 1									
2011	1.5	0.5	-	1	1	-	4	open	32
2012	0.5	1	0.5	1.5	0.5	-	4	open	34
Option 2									
2011	2	-	-	1	1	-	4	open	32
2012	0	1	1	1	1	-	4	open	34
Option 3									
2011	1.5	0.5	-	1	1	-	4	closed	23
2012	0	1	1	1	1	-	4	open	24
No Action									
2011	-	-	1	-	1	2	4	open	38
2012	-	-	-	-	1	2	3	open	38
SQ - 2010									
2011	1.5	0.5	-	1	1	-	4	open	38
2012	0.5	1	0.5	1.5	0.5	-	4	open	38

Table 3 – Possible allocations for 2013.

	CA1	CA2	NL	HC	Del	ET	Total	Channel	OA DAS
2013	-	1	1	1.5	0.5	-	4	open	26

Figure 1 shows projected area swept for the upcoming fishing years under No Action and each of the allocation scenarios. Area swept is assumed to relate to the relative magnitude of EFH impacts between the various scenarios, with greater area swept indicating relatively increased impacts and lesser area swept indicating relatively decreased impacts. For the next three fishing years (2011-2013), alternative 1 has the best overall performance in terms of area swept/reduction in EFH impacts, followed by alternative 2, and then by alternative 3. No Action has lower LPUE and higher area swept/EFH impacts in the first year. In 2012, No Action has no trips allocated in any of the GB access areas, or in HC, so although area swept/EFH impacts are projected to be much lower, total landings are also lower (17,797 mt for No Action as compared with approximately 25,000 mt for the other three scenarios).

Figure 1 – Projected area swept in nm² under No Action and each of the three allocation scenarios.



1.1.4 Measures for Limited Access Vessels - Adjustments when yellowtail flounder catches reach TAC (based on 10% allocation limit)

This alternative allocates open area DAS if the 10% yellowtail flounder (YT) bycatch TAC is reached and the Georges Bank access areas close. The prorated amount is calculated to achieve an equal amount of scallop mortality per DAS. Open area compensation rates will be calculated for NL, CA1, and CA2 once an allocation option is selected by the Council.

It is difficult to predict whether impacts to EFH would be negative, positive, or neutral if one or more of the access areas close and open area fishing occurs. One factor is whether area swept increases when fishing the open area DAS allocation, as compared to the access trip. However, impacts to EFH resulting from the same amount of area swept may vary depending on where those areas are and what types of seabed habitats are present, so another factor is where fishing is displaced to if an access area closes due to bycatch.

1.1.5 Measures for General Category Vessels

Allocation for limited access general category IFQ vessels

This alternative sets allocations for limited access general category IFQ vessels (Table 4). These trips are accounted for in the projections so will not have any additional impacts on the resource or on EFH, in addition to those discussed in 1.1.3. If trips are not taken in these areas, LAGC catch is assumed to be taken in open areas instead. In general, catch rates are higher in access areas and many access areas are relatively close to shore, so it is assumed that most allocated trips will be taken.

Table 4 – General category allocations under option 1.

2011	Option 1
Total TAC (5%)	2,909,950 lbs
LA with LAGC IFQ TAC (0.5%)	290,995 lbs
CA1	*
CA2	None
HC	*
Delmarva	*
NGOM hard TAC	Section 2.6.2
Incidental target TAC	Section 2.6.3
2012	Option 1
Total TAC (5%)	3,093,100 lbs
LA with LAGC IFQ TAC (0.5%)	309,310 lbs
CA1	*
CA2	None
NL	*
HC	*
Delmarva	*
NGOM hard TAC	Section 2.6.2
Incidental target TAC	Section 2.6.3

* Allocated as a fleetwide number of trips based on 600 pound trips

Northern Gulf of Maine (NGOM) Hard-TAC

This alternative approves a separate hard TAC for the NGOM area for 2011 and 2012. Vessels would be restricted to fish in this area under a 200 pound possession limit until the overall hard-TAC was reached. The hard TAC for 2010 was 70,000 pounds; however based on the results of a recent stock assessment, the PDT concludes that the hard-TAC for the NGOM should be lowered to 31,100 pounds, so both alternatives are being considered.

As compared to the current allocation, this lower TAC alternative may reduce the potential for fishing effort, and thus bottom contact and EFH impacts, in this region from this segment of the fishery. However, it is worth noting that it appears unlikely that the TAC will be landed next year, based on landings from 2008-2010. In 2008 the fishery landed 9,939 pounds (14% of TAC), in 2009 catch was 15,534 (22% of TAC), and to date for 2010 catch is at 3,869 through September. Either alternative (70,000 lbs or 33,100 lbs) would allow for more fishing effort and landings in this region compared to what the fishery has recently harvested.

1.1.6 Estimate of catch from LA incidental catch permits

Amendment 11 included a provision that the Scallop FMP should consider the level of mortality from incidental catch and remove that from the projected total catch before allocations are made. This alternative describes the PDT estimate and the value that was removed from the total projected catch before allocations to the limited access and general category fisheries were made.

The 2010 target TAC for LA incidental catch permits was set at 50,000 lb. While catch for this permit type has been substantially lower than this TAC in recent years, the PDT discussed that there may be some level of reporting uncertainty so it may be worth keeping the TAC at 50,000 pounds for now and re-evaluating it in the next framework.

This permit category represents a very small percentage of scallop landings such that any EFH impacts resulting from the harvest of this resource are likely to be minimal. While catches have remained well below the 50,000 lb limit between 2007 and 2009, there was an increase in incidental catch permit landings over that period. Thus, the actual amount of fishing effort and landings for the next two years could be higher than in past years under this alternative.

1.1.7 TAC Set-Asides for Observers (1%) and Research (1.25 million pounds)

Research priorities for 2011

This alternative identifies research priorities for 2012. Those related to most directly to habitat include:

- Identification and evaluation of methods to reduce habitat impacts, including, but not limited to: broader investigation of variability in dredging efficiency across habitats, times, areas, and gear designs; and research on habitat effects from scallop fishing and development of practicable methods to minimize or mitigate those impacts.
- Habitat characterization research including, but not limited to: video and/or photo transects of the bottom within scallop access areas and within closed scallop areas and in comparable fished areas that are both subject and not subject to scallop fishing before and after scallop fishing commences; development of high resolution sediment mapping of scallop fishing areas using Canadian sea scallop industry mapping efforts as an example process; identification of nursery and over-wintering habitats of species that are vulnerable to habitat alteration by scallop fishing; and other research that relates to habitats affected by scallop fishing, including, but not limited to, long-term or chronic effects of scallop fishing on marine resource productivity, other ecosystem effects, habitat recovery potential, and fine scale fishing effort in relation to fine scale habitat distribution. In particular, projects that directly support evaluation of present and candidate EFH closures and HAPCs to assess whether these areas are accomplishing their stated purposes and to assist better definition of the complex ecosystem processes that occur in these areas.

Research priorities for 2012-2013

This alternative identifies research priorities for 2012-2013. The habitat-related priorities listed above for 2011 are also on the 2012-2013 list. Additional habitat-related priorities include:

- [If a habitat research area is identified in a future action, allow RSA funds to be used for projects to enhance scallop production using rotational strategies.](#)
- [Continue scallop dredge environmental impact studies.](#)

For both years, these research priorities may have long term benefits to EFH if the projects approved improve our ability to manage fisheries in a way that reduces impacts to habitat. While these benefits are very difficult to quantify and may only be fully realized over a period of many years, it is expected that setting these research priorities may reduce impacts to EFH.

Research and Observer Set-Asides

This alternative defines the research and observer set-asides for fishing years 2011 and 2012 for each of the three allocation options (Table 5). These are consistent with the modified set-aside approach that will go into effect with Amendment 15 (i.e. fixed poundage of RSA; 1% observer set-aside taken from ACL). The amounts of catch set-aside for these purposes are administrative in nature and are not expected to have significant positive or negative impacts on EFH.

Table 5 – Set-asides under consideration for observer and research set-aside programs (in million pounds)

2011	Option 1
Observer set-aside	601000
Research set-aside	1.25
2012	Option 1
Observer set-aside	638000
Research set-aside	1.25

1.1.8 Consideration of New Rotational Area in the Great South Channel

This alternative would close an area of the Great South Channel to scallop fishing during 2011 and then reopen it as an access area with controlled effort in 2012. After 2012 the area would continue as an access area until growth rates slow down and it reverts back to an open area. Vessels would be allocated 2.5 trips in 2012 (or possibly fewer, see section 1.1.10).

To estimate the EFH impacts from this closure, it is useful to compare the area swept estimates for the alternative that closes the area (alternative 3) and the alternatives that do not (alternatives 1 and 2). Because this alternative would close the area for only one year, compared to a three year GSC option considered in the past, total 2012 catch for all areas combined from alternative 3 is not much higher than total catch under the other scenarios considered. Area swept and presumably EFH impacts are projected to be higher under the GSC alternative (scenario 3) in each of the next three fishing years (2011-2013). Despite good recruitment in the area, since catch rates in the GSC are less than in other areas, it is not advantageous to direct fishing into the area from an EFH perspective, assuming roughly equivalent landings between scenarios (2012 landings are forecast to be similar for all scenarios: 25,964 mt scenario 1; 25,411 mt scenario 2; 25,778 mt scenario 3).

In addition, the GSC area was identified as having vulnerable structural habitat features during development of the Omnibus EFH Amendment. While it remains uncertain whether management action will be taken in the Omnibus EFH Amendment to restrict the type or amount of fishing in portions of the GSC, establishment of a new habitat management area in the GSC has been discussed as a possible option for that action.

1.1.9 Efforts to Minimize Incidental Take of Sea Turtles as per the March 14, 2008 Scallop Biological Opinion

On March 14, 2008, NMFS completed an ESA Section 7 Consultation on the Atlantic Sea Scallop Fishery Management Plan. One RPM requires a limit of effort in the Mid-Atlantic during times when sea turtle distribution is expected to overlap with fishing activity; the other four are related to ongoing research needs and identification of measures to reduce interactions

and/or the severity of such interactions. These alternatives and their potential impacts to EFH are discussed below.

No action

Under the No Action alternative, there would be no specific measures in FW22 to comply with RPM1 in the Biological Opinion. No action is expected to have the least impacts on EFH of all the RPM measures because it allows the scallop fleet to harvest the resource at the optimum times from economic, meat yield, weather, and other perspectives. In particular, harvesting scallops when meat yields are higher results in lower area swept per trip (given fixed trip limits), and thus lower impacts to EFH. However, the influence of the various turtle measures on fishing behavior, and thus on EFH impacts, are difficult to predict with any precision.

Restrict the number of open area DAS a vessel can use between July and September in the Mid-Atlantic

This alternative would set a maximum on the number of allocated open area DAS each limited access vessel can use in the area defined as the Mid-Atlantic from July 1 through September 30. It is difficult to predict the impacts of this measure on EFH because impacts are based on how vessels react to this restriction. If vessels respond by fishing in similar areas but shift effort to spring and summer when meat weight yields are higher, then impacts on EFH will be minimal, even positive. But if vessels fish these open area DAS in times of the year that have lower meat weight yields, impacts on the resource are likely to be negative. In addition, if effort shifts to GB during this season instead, impacts on fishing mortality, and thus on EFH, in that area may be higher than expected in the biomass projections.

Restrict the number of access area trips in the MA that can be used between June 15 and Oct 31

This alternative would restrict the number of allocated access area trips that can be taken in the Mid-Atlantic between June 15 and October 31. Because the total number of trips allocated for the year will not change, these access trips would be shifted into the spring, between March 1 and June 14, or into the winter, between Nov 1 and February 28/29. Since meat weights are highest in spring and summer, this alternative is likely to increase the amount of fishing effort required to catch the trip limits, and thereby increase impacts to EFH as compared to no action. Again, it is difficult to predict the impacts of this measure on EFH because impacts are based on how vessels react to this restriction.

Seasonal closure for Delmarva

These alternatives would consider a seasonal closure of the entire access area to both general category and limited access scallop vessels. The first option under this alternative would close the area during September and October, which is consistent with the range of time the area was closed in 2010 under FW21. The second option would close the area during July, August, September and October, in order to encompass months with high estimated turtle interaction rates within the Delmarva area.

Again, since the total number of Delmarva access trips is fixed, these options would shift fishing effort away from the closure periods (either September and October or July through October) and into the remainder of the fishing year. Given that it overlaps more closely with months when

meat yields are highest, the July through October option will have the greatest negative impacts on the scallop resource, catch rates, and thus on EFH. The September and October option will have lesser impacts on scallops and EFH. Again, it is difficult to predict the impacts of this measure on EFH because impacts are based on how vessels react to this restriction.

Seasonal closure in Hudson Canyon for 2012 and 2013 only

These alternatives would consider a seasonal closure of the entire access area to both general category and limited access scallop vessels during fishing years 2012 and 2013. Since Framework 22 will not be implemented before June 2011, the area will continue to be closed to all scallop fishing until that time.

The first option under this alternative would close the area during August and September, the time period when most observed turtle takes occurred balanced with the months when scallop meat weights are lower. The second option would close the area during July, August and September.

Again, since the total number of Hudson Canyon access trips is fixed, these options would shift fishing effort away from the closure periods (either August and September or July through September) and into the remainder of the fishing year. Given that it has greater overlap with months when meat yields are highest, the July through September option will have the greatest negative impacts on the scallop resource, catch rates, and thus on EFH. The August and September option will have lesser impacts on scallops and EFH. Again, it is difficult to predict the impacts of this measure on EFH because impacts are based on how vessels react to this restriction.

1.1.10 Procedures to Reduce Fishing Mortality in Year Two Based on Updated Biomass Estimates

This alternative would allow for reductions in allowable trips during 2012 or 2013 if updated biomass estimates warrant a reduction. The PDT discussed that the only measure necessary to be considered here is a reduction of trips for the Channel, if Option 3 is selected. If updated biomass in 2011 shows that biomass in the Channel area is lower than projected the number of allocated trips in 2012 will be reduced. Similarly, if updated biomass estimates in 2012 find that biomass is lower than projected, allocated trips in 2013 will be reduced.

This alternative is expected to reduce impacts to EFH as compared to no action, because it will reduce the possibility of allocating trips when the resource does not adequately support it. This reduces the chances of fishing at low CPUE. Assuming that vulnerability of the underlying habitats being fished does not vary substantially, the same amount of landings captured with lower catch rates will result in greater area swept and greater habitat impacts.

1.1.11 Revisit the Possession Limit of In-Shell Scallops Seaward of the Demarcation Line

This alternative would reduce the possession limit seaward of the VMS demarcation line from 100 bu to something less (i.e. 65 or 75bu). However, since this alternative was first proposed, Amendment 15 increased the meat weight possession (trip) limit from 400 pounds to 600 pounds. The current 100 bu in-shell possession limit is more closely in line with the new 600 lb

trip limit (see biological impacts section for observer data basket weight estimates to support this).

Any measure that reduces the incentive to shell-stock is viewed as having positive impacts on the scallop resource, and presumably on EFH as well, as scallops are not being caught and possibly discarded unnecessarily. Because the new higher trip limit of 600 lb already reduces the incentive to shell stock under a 100 bu in-shell possession limit, both no action and the lower in-shell possession limit proposed by this alternative are expected to have minimal effects on the magnitude of impacts on EFH.

1.1.12 Extension of unused Elephant Trunk Access Area trips through May 30, 2011

This alternative would allow full-time vessels to use any unused FY 2010 ETA trips through May 30, 2011. This extension would only apply to vessels that have one or two fully unused trip(s) at the end of 2010.

It is assumed that this alternative would result in a temporal shift in effort in the ETA from now through March 28, 2011 until the spring of 2011 before May 31. Later in the spring, scallop meat yields are higher, such that the ETA trip limit should be achievable with less fishing effort. If implemented, this alternative has the potential to reduce impacts to EFH if vessel owners choose to delay using their 2010 ETA trips.

1.1.13 Eliminate schedule of Georges Bank access areas in regulations

This alternative would eliminate any reference to the two years closed/one year open schedule of access areas on GB. Openings should be based primarily on scallop resource and other factors like YT bycatch available, and not a default schedule that may not match current schedules and biological constraints.

In the past, this automatic schedule for the GB access area openings has resulted in less fishing effort under the no action scenario until the delayed framework is eventually implemented. Thus, implementing this alternative might be expected to decrease EFH impacts because fishing effort and thus area swept decrease. However, since a correcting framework is typically implemented a few months into the fishing year, and the GB access areas do not open until June, so there not likely to be a change in the timing or location of fishing if this alternative is implemented, and thus changes to EFH impacts are not likely.

1.1.14 Summary of Impacts to EFH

As compared to the no action alternative, the proposed action is expected to result in reduced impacts of the scallop fishery on EFH. The primary reason for this is that fishing effort allocation scenarios 1-3 are expected to have reduced area swept in comparison with no action. Other proposed measures are administrative in nature, or affect only a small portion of fishing activity, and thus their implementation is not expected to alter substantially the EFH impacts of the scallop fishery. The potential effects on area swept and thus on EFH due to time/area closures for turtles, or due to shifting GB access fishing to open area DAS due to yellowtail bycatch, are very difficult to predict.

Given that increased impacts on EFH are not expected to result from the proposed action, and that there have been no major changes to the fishery that would substantively alter the conclusions about adverse effects reached during the baseline evaluation of scallop fishery effects on EFH prepared for Amendment 10, no EFH consultation is required for this action. As EFH consultation is not required, an EFH Assessment is not included in the Framework 22 submission. Furthermore, adverse impacts of the scallop fishery on EFH were minimized to the extent practicable via measures implemented in Amendment 10, will continue to be minimized to the extent practicable once the proposed measures are implemented. Thus, no additional measures to minimize the impacts of the fishery on EFH are required by, or proposed by, this action.