be implemented for 15 days, although a DAM may be extended. Also, relatively small areas are most likely to be affected, up to approximately 24 square nautical miles for a group of three whales. If numbers overlapping of DAMs are implemented, the benefits to skates could be more obvious and significant.

5.0 ALTERNATIVES TO THE PROPOSED ACTION

During the development of this FMP, the Council considered a wide range of alternatives to manage the skate complex and its associated fisheries. Some of these alternatives were suggested by the public during the scoping process, some were developed by the Skate Committee and Advisory Panel, and some were developed and analyzed by the Skate PDT. Development of the management measures included in this FMP was an iterative process during which several alternatives were eliminated from further consideration for various reasons.

The alternatives to the proposed action can be divided into three categories: (1) the no action alternative; (2) non-preferred alternatives that were fully analyzed in the DEIS but were not selected by the Council for the Final FMP; and (3) alternatives that were rejected from consideration after scoping because they are not reasonable to consider at this time. The management alternatives in each of these three categories are discussed below, along with the Council's rationale for not selecting them. Although these measures were not selected at this time, the Council may reconsider any of them in a future action for skates, especially as better fishery information becomes available.

5.1 THE NO ACTION ALTERNATIVE

Since this is a new FMP, the true no action alternative represents the regulatory environment that would exist if the Council did not initiate management of the Northeast skate complex and develop this FMP. Skate fishing would occur as it has in the past, that is, indirectly regulated through management measures in groundfish, monkfish, scallop, and other fisheries, and largely under-documented. The lack of species-specific fishery information would continue to hamper efforts to monitor the fisheries and evaluate the status of the skate resources.

The Council rejected the no action alternative because it is not consistent with the requirements of the Magnuson-Stevens Act. Section 304(e)(3) of the M-S Act requires the Council to prepare a fishery management plan (or amendment) for the fishery that has been identified as overfished or approaching an overfished condition within one year of notification regarding the status of the fishery. The fishery management plan must be prepared to end overfishing in the fishery and rebuild the affected stocks of fish. Because skates are not yet managed under a federal FMP, the M-S Act mandates the development of this fishery management plan to address the notification by the Secretary of Commerce that some skate species are considered to be in an overfished condition.

It is difficult to conclude that taking no action would result in a collapse of the skate resources, however, because skate fishing is significantly affected by management measures in other fisheries (see Section 4.16). It is more likely that without a Skate FMP, continued effort reduction in the Multispecies, Monkfish, and Scallop FMPs would provide adequate

conservation to prevent a collapse of species in the skate complex. Closed areas implemented through the Groundfish FMP would likely continue to provide a great deal of protection to some or all of the skate species in the region. Still, it is unlikely that without an FMP for skates, the Council and NMFS could effectively manage skates through other plans so that all species in the complex rebuild to target biomass levels that can produce maximum sustainable yield (MSY) over the long-term.

Similarly, without a mechanism to implement species-specific measures for skates, it is likely that some species in the complex would continue to decline (for example, thorny skate), creating the need for more stringent measures that could have severe impacts not only on skate vessels, but also on vessels in other fisheries that catch skates incidentally. Moreover, if this is the long-term outcome of not establishing an FMP for skates, the Council could be faced with implementing more stringent measures without the important fishery information that this FMP has been created to collect.

In addition to the overall no action alternative (i.e., not developing a Skate FMP), options for no action were included in the Draft FMP for each proposed management measure. The no action options that were considered are described below. The Council rejected these options because they are not consistent with developing a comprehensive fishery management program for skates that addresses the overfished condition of barndoor and thorny skates and the need to rebuild all of the skate species to their target biomass levels.

Management Unit, Fishing Year, MSY/OY, Framework Adjustment Process, FMP Monitoring Process: The no action options for these items fall within the scope of the overall no action alternative (i.e., not developing a Skate FMP).

Overfishing Definitions: The no action option for the skate overfishing definitions was Overfishing Definition Option 4 in the Draft FMP/EIS. This option is inconsistent with the Magnuson-Stevens Act and NMFS' National Standard Guidelines.

Rebuilding Program for Overfished Species: The no action option for the rebuilding programs was Rebuilding Option 5 in the Draft FMP/EIS. This is inconsistent with the Magnuson-Stevens Act and NMFS' National Standard Guidelines.

Essential Fish Habitat: In the Draft FMP/EIS, the no action option for essential fish habitat included not developing text descriptions of EFH and EFH Alternative 1 for the EFH designation methodology. Under Alternative 1, the Council would not designate any areas for skate EFH.

Federal Permit Program: The no action option for the federal permit program was Permit Option 4 in the Draft FMP/EIS. Under this option, the Council would not establish federal permits for skate fishing. There would be no mechanism to identify skate vessels that are currently not permitted in any federal fishery and incorporate them into a permit program. This is inconsistent with all other FMPs in this region.

Catch Reporting Requirements: The no action option for the catch reporting requirements was Reporting Option 1 in the Draft FMP/EIS. Under this option, reporting requirements for skates would remain as they currently are. Vessels would continue to report skate landings and discards as "unclassified skates." No species-specific fishery information would be collected.

Letter of Authorization (LOA) for Direct Sales of Skate Bait: The no action option for the letter of authorization was Option 2 in the Draft FMP/EIS. Under this option, the Council would not require a letter of authorization for vessels engaged in direct vessel-to-vessel sales of skates for bait.

Measures to Protect Barndoor Skates: The no action option for barndoor skates was Option 4 in the Draft FMP/EIS. Under this option, the Council would not implement any kind of prohibition on fishing for barndoor skates. Vessels would be allowed to target and land barndoor skates in the wing fishery as they have in the past. This option would not discourage further development of an export market for barndoor skate wings.

Measures to Protect Thorny Skates: The no action option for thorny skates was Option 4 in the Draft FMP/EIS. Under this option, the Council would not implement any kind of prohibition on fishing for thorny skates. Vessels would be allowed to target and land thorny skates in the wing fishery. This option does not prevent the future expansion of any fisheries for thorny skates.

Measures to Protect Smooth Skates: The no action option for smooth skates was Option 4 in the Draft FMP/EIS. Under this option, the Council would not implement any kind of prohibition on fishing for smooth skates. This option does not prevent future development or expansion of fisheries for smooth skates.

Possession Limits for the Skate Wing Fishery: The no action option for the proposed wing possession limits was Option 4 in the Draft FMP/EIS. Under this option, the Council would not implement a possession limit for the skate wing fishery.

5.2 NON-PREFERRED ALTERNATIVES

The following subsections describe alternatives that were considered by the Council during the development of the Draft Skate FMP/EIS, but were rejected for various reasons. These alternatives were fully analyzed in the Draft Skate FMP/EIS and were presented to the public for comments during the Skate FMP public hearings and the NEPA 45-day comment period on the Draft FMP/EIS. The rationale for not selecting these alternatives also is briefly summarized below.

5.2.1 Skate Overfishing Definitions – Non-Preferred

Four options, including the no action alternative, were considered for skate overfishing definitions. The Council selected Overfishing Definition Option 2 for the Final FMP (described in Section 4.4.3). Options 1 and 3 are summarized below. Additional information about these options is presented in the Draft Skate FMP/EIS. Discussion of Option 4 (no action) can be found in Section 5.1.

Overfishing Definition Option 1 adopts the biomass and fishing mortality reference points developed at SAW 30 as the skate overfishing definitions. The reference points for this option are summarized in Table 11.

Table 11 Overfishing Definition Option 1 Reference Points (Non-Preferred)

SKATE SPECIES	TARGET BIOMASS, B_{target} (kg/tow)	THRESHOLD BIOMASS, $B_{threshold}$ (kg/tow)	TARGET FISHING MORTALITY F_{target}	THRESHOLD FISHING MORTALITY $F_{threshold}$
Winter	6.46	3.23	0.10	0.10
Little	6.54	3.27	0.40	0.40
Barndoor	1.62	0.81	N/A	N/A
Thorny	4.41	2.20	N/A	N/A
Smooth	0.31	0.16	N/A	N/A
Clearnose	0.56	0.28	N/A	N/A
Rosette	0.03	0.01	N/A	N/A

At its September 7, 2001 meeting, the Council's Scientific and Statistical Committee (SSC) reviewed available information about skates and the overfishing definition reference points developed at SAW 30. The SSC concluded that fishing mortality-based reference points currently could not be adequately estimated in a way that can inform management because although it might be possible to calculate F_{MAX}, there is not a reliable time series of fishing mortality estimates to compare with F_{MAX}. The SSC considered but did not recommend that Hoenig-based Fs be used (for winter and little skate) because equilibrium assumptions might not be valid. For this reason, the Council rejected this option. The proposed action (Section 4.4.3) incorporates the Council's SSC's recommendation to not use the fishing mortality reference points proposed in SAW 30, but it does utilize the SAW 30 biomass reference points (targets and thresholds).

Overfishing Definition Option 3 represents a modified version of Options 1 and 2. Instead of using the biomass and fishing mortality thresholds from SAW 30 (Option 1), Option 3 establishes both biomass and fishing mortality thresholds for all seven species based on a percentage decline in the NEFSC trawl survey. This is similar to Option 2 except both the biomass and fishing mortality thresholds (instead of just the fishing mortality thresholds) utilize the survey-based approach. The reference points for Option 3 are summarized in Table 12.

Table 12 Overfishing Definition Option 3 Reference Points (Non-Preferred)

SKATE SPECIES	TARGET BIOMASS, B_{target} (kg/tow)	THRESHOLD BIOMASS, $B_{threshold}$	TARGET FISHING MORTALITY F_{target}	THRESHOLD FISHING MORTALITY $F_{threshold}$
Winter	6.46	A decline of **20% or more** in the three-year moving average of the autumn trawl survey	N/S	A decline of **20% or more** in the three-year moving average of the autumn trawl survey
Little	6.54	A decline of **20% or more** in the three-year moving average of the spring trawl survey	N/S	A decline of **20% or more** in the three-year moving average of the spring trawl survey
Barndoor	1.62	A decline of **30% or more** in the three-year moving average of the autumn trawl survey	N/S	A decline of **30% or more** in the three-year moving average of the autumn trawl survey
Thorny	4.41	A decline of **20% or more** in the three-year moving average of the autumn trawl survey	N/S	A decline of **20% or more** in the three-year moving average of the autumn trawl survey
Smooth	0.31	A decline of **30% or more** in the three-year moving average of the autumn trawl survey	N/S	A decline of **30% or more** in the three-year moving average of the autumn trawl survey
Clearnose	0.56	A decline of **30% or more** in the three-year moving average of the autumn trawl survey	N/S	A decline of **30% or more** in the three-year moving average of the autumn trawl survey
Rosette	0.03	A decline of **60% or more** in the three-year moving average of the autumn trawl survey	N/S	A decline of **60% or more** in the three-year moving average of the autumn trawl survey

The Council does not prefer this option because of technical guidance from the Skate PDT. The Skate PDT noted that while percent declines in the survey may be appropriate as fishing mortality rate reference points, they may not be appropriate as biomass reference points. The shortcomings of this approach can be illustrated through a relatively simple example. Consider a skate species that is "rebuilt" with survey averages that are twice its target biomass level. If the three-year average of the survey declines by more than the specified percentage, applying this

option leads to both determinations that overfishing is occurring and the stock is overfished. While it may be appropriate to conclude that fishing mortality is too high in this scenario, it is not appropriate to conclude that the stock is overfished. Even with a decline in the three-year moving average greater than the specified percentage, the mean weight per tow from the survey could still be above the target level (i.e., the stock could still be considered "rebuilt"), but this approach would lead to the determination that the stock is overfished and requires rebuilding to its target levels. This is an inconsistent and illogical determination. For a stock that is twice its B_{MSY} level, the error embedded in using this approach for the biomass threshold could be as much as 400% (the biomass threshold is a proxy for ½ B_{MSY}).

5.2.2 Rebuilding Programs for Overfished Species – Non-Preferred

Five options, including the no action alternative, were considered to establish rebuilding programs for overfished species in accordance with the M-S Act. The Council selected Rebuilding Option 2, with a slightly modified method for calculating the three-year averages to measure progress towards rebuilding. For this reason, Rebuilding Option 2 is not discussed below. Rebuilding Options 1, 3, and 4 are summarized below. More information about these options is presented in the Draft Skate FMP/EIS. Additionally, analysis of Options 1 and 4 can be found in Section 6.1.2 of this document, as well as Option 2 and the proposed action. Discussion of Rebuilding Option 5 (no action) can be found in Section 5.1.

Rebuilding Option 1 establishes a rebuilding program for overfished species that requires Council action if the three-year moving average of the appropriate survey mean weight per tow declines by a percentage that is outside of its historical variability and is therefore considered to reflect a "real" decline in stock abundance. The Skate PDT would be charged with annually updating NEFSC trawl survey data and stock status determinations for the seven species in the skate complex. The Skate PDT would report any changes in stock status to the Council on an annual basis and will include recommendations for action if necessary. Similarly, and to eliminate the potential to maintain status quo conditions for species in need of rebuilding, the Skate PDT would be charged with informing the Council if it appears that any of the overfished species are not increasing, but instead are maintaining the status quo in terms of survey abundance. As appropriate, the PDT may also recommend management action in these circumstances. The Council may initiate a framework adjustment at any time to address these issues as they arise (see Section 4.8). The proposed language for the rebuilding programs under Option 1 is provided below:

For overfished skate species, the Skate PDT and the Council will monitor the trawl survey index as a proxy for stock biomass. The Skate PDT will report any changes in stock status to the Council on an annual basis, and this report will include recommendations for action if necessary. As long as the three-year moving average of the appropriate survey weight per tow does not decline by more than the historical variability in the trawl survey (as determined for each species individually), it is assumed that the biomass of the overfished species is not continuing to decline. The intent of this rebuilding program is not to maintain the status quo, however, but instead to ensure rebuilding. If the three-year moving average of the appropriate survey mean weight per tow declines by at least a ***specified percentage****, the Council would be required to take management action to ensure that stock rebuilding will continue to target levels.*

The percentage specified for each species reflects its natural, historical variability within the NEFSC trawl survey. The Skate PDT will also inform the Council if it appears that any of the overfished species are maintaining the status quo and not rebuilding. This report also may include PDT recommendations for management action.

Table 13 Percent Declines that Trigger Additional Management Action Under Rebuilding Option 1 (Non-Preferred)

SKATE SPECIES	THRESHOLD FOR ADDITIONAL MANAGEMENT ACTION UNDER REBUILDING PROGRAM
Winter	20% or more in the three-year moving average of the autumn trawl survey
Little	20% or more in the three-year moving average of the spring trawl survey
Barndoor	30% or more in the three-year moving average of the autumn trawl survey
Thorny	20% or more in the three-year moving average of the autumn trawl survey
Smooth	30% or more in the three-year moving average of the autumn trawl survey
Clearnose	30% or more in the three-year moving average of the autumn trawl survey
Rosette	60% or more in the three-year moving average of the autumn trawl survey

This option is not preferred because the Council does not agree that it is precautionary enough, even given the limited information available. This option could essentially maintain the status quo during a rebuilding program, or even worse, allow progressive stock declines to occur during the rebuilding program without triggering additional Council action. For example, consider a situation in which the three-year moving average of survey biomass for barndoor skate declines by 25% annually for five years. In this situation, Council action to promote rebuilding would never be triggered because the annual decline never exceeded 30%, yet the stock decreased more than 75% over the five-year time period.

Rebuilding Option 3 establishes a process for monitoring the rebuilding of overfished species and taking additional Council action as recommended by the Skate PDT. Unlike the other rebuilding options under consideration, this option does not specify any "triggers" or criteria for additional Council action, but instead establishes a monitoring process through the Skate PDT and gives the Skate PDT flexibility to recommend additional Council action as it deems appropriate. The Skate PDT would be charged with annually updating NEFSC trawl survey data and stock status determinations for the seven species in the skate complex. The Skate PDT would report any changes in stock status to the Council on an annual basis, and this report would include PDT recommendations if action is necessary to ensure that the rebuilding of overfished species continues towards target levels. The Council may initiate a framework adjustment at any time to address these issues as they arise (see Section 4.8). The proposed language for the rebuilding programs under this option is provided on the following page:

For overfished skate species, the Skate PDT will be charged with monitoring progress towards rebuilding using the trawl survey index as a proxy for stock biomass. The Skate PDT will annually update NEFSC trawl survey data and stock status determinations to ensure that progress is being made towards the biomass target for all overfished species. The Skate PDT will report any changes in stock status to the Council on an annual basis, and this report will include PDT recommendations if action is deemed necessary to ensure that the rebuilding of overfished species continues to target levels. Based on the annual PDT report and recommendations, the Council would be required to take management action to ensure that stock rebuilding will continue to target levels.

Rebuilding Option 3 was proposed to provide a wide range of options for the Council to consider when selecting the final rebuilding program. The Council does not prefer this option because it does not establish any triggers for additional management action and consequently relies on subjective interpretation to determine progress towards rebuilding. Under this option, the Skate PDT (or other group) would have to annually determine a metric or trigger to evaluate progress towards rebuilding; the *dynamic response problem* discussed in Section 4.5.5 could be exacerbated if the PDT selects a different metric every time an evaluation is completed. This is a possibility, especially if membership on the PDT changes during the rebuilding time period.

Rebuilding Option 4 establishes a rebuilding program for overfished species that requires the Council to take management action if the three-year moving average of the appropriate survey mean weight per tow does not increase annually by a percentage that is more than the species' historical survey variability (see Table 14). Similar to the other rebuilding options under consideration, the Skate PDT would be charged with annually updating NEFSC trawl survey data and stock status determinations for the seven species in the skate complex. The Skate PDT would report to the Council the difference between the most current three-year average and the previous three-year average, and Council action would be required any time that the current three-year average is not higher than the previous three-year average by the percentages specified in Table 14. The proposed language for the rebuilding programs under this option is provided below:

For overfished skate species, the Skate PDT and the Council will monitor the trawl survey index as a proxy for stock biomass. As long as the three-year moving average of the appropriate survey weight per tow increases by at least a ***specified percentage****, it is assumed that the stock is rebuilding to target levels. If the three-year moving average of the appropriate survey mean weight per tow does not increase by at least the specified percentage in any year, the Council would be required to take management action to ensure that stock rebuilding will continue to target levels.*

Table 14 Survey Percent Increases Required Annually Under Rebuilding Option 4 (Non-Preferred)

SKATE SPECIES	REQUIRED INCREASE UNDER REBUILDING PROGRAM
Winter	20% or more in the three-year moving average of the autumn trawl survey
Little	20% or more in the three-year moving average of the spring trawl survey
Barndoor	30% or more in the three-year moving average of the autumn trawl survey
Thorny	20% or more in the three-year moving average of the autumn trawl survey
Smooth	30% or more in the three-year moving average of the autumn trawl survey
Clearnose	30% or more in the three-year moving average of the autumn trawl survey
Rosette	60% or more in the three-year moving average of the autumn trawl survey

The Council does not prefer Rebuilding Option 4 because the lack of flexibility associated with this option could be problematic. The trigger in this option is very rigid; management action is required any time that progress towards rebuilding is not measured at levels above those that may represent survey variability. Consider a stock that rebuilds such that the three-year moving average of the survey increases by 10% every year until it reaches its target level. If the trigger under this option is 20%, then management action would be required during every year of the rebuilding time period even though the stock is rebuilding. These kinds of "false triggers" under the rebuilding program is something that the Council is trying to minimize (see additional discussion and analysis in Section 6.1.2).

5.2.3 Skate EFH – Non-Preferred

5.2.3.1 Non-Preferred Alternatives for EFH Designation

Six alternatives, including no action, were considered for designating EFH for each skate species. The proposed action represents Alternative 2 – NMFS Survey Data – and is described in Section 4.6 of this document.

Alternative 1 – No EFH Designation

Considered the "no action" alternative, this approach would result in there being no EFH designated for skates. According to the 1996 amendments to the Magnuson-Stevens Act, however, the Regional Fishery Management Councils are mandated to designate EFH for each species managed under an FMP. Thus, this alternative would not be in compliance with the Magnuson-Stevens Act. According to the National Environmental Policy Act (NEPA), the full range of alternatives considered in a proposed action should include the no action alternative. Consideration of this alternative fulfills the requirements and intentions of NEPA. Because selection of this alternative would result in the Skate FMP being out of compliance with the Magnuson-Stevens Act, this alternative is not suitable for selection. There would be no EFH Text Descriptions for this alternative.

Alternative 3 – High Percentage of NMFS Survey Data

This alternative uses basically the same approach described above for Alternative 2, but uses different categories of the survey CPUE index. These categories (10, 20, or 25%) would result in much smaller areas designated as EFH for Council-managed skate species. Information from the NOAA ELMR program on bays and estuaries would only be incorporated in the EFH designation when the skates are considered to be "highly abundant" in a particular estuary or embayment.

The resulting EFH designations would be very small, and not necessarily in discrete patches. This alternative, as do several others, relies primarily on the NMFS survey data. During the development of the Omnibus EFH Amendment, NMFS and the Council identified limitations associated with this data source. The bottom trawl survey was designed to monitor changes in stock size and to conduct stock assessments, not to identify essential fish habitat. The survey uses a single gear type (otter trawl) that is most efficient on certain habitat types (relatively flat sand) and less efficient on other habitat types (rough cobble and boulder). Very high catches in an area could mean that the fish are relatively more abundant in that area, but could just as easily mean that the survey gear is relatively more efficient in that area. For example, suppose that the gear is 80% efficient on flat sand (80% of the fish in the path of the survey trawl will be caught) and only 10% efficient on cobble bottom. Five tows in a sandy area result in an average catch per tow of 400 fish, while five tows in a cobble area result in an average catch per tow of 50 fish. Simply looking at the absolute numbers, it would appear that the fish are almost an order of magnitude more abundant in the first area. But, taking gear efficiency into account, it is more likely that the fish are actually present in equal numbers in both areas. While the NMFS survey data help identify areas of important concentrations and can be used as a proxy for EFH designations, there is concern that at very high percentages of abundance gear catchability differences may overwhelm habitat differences.

Using larger percentages of the CPUE index (50 - 100%), the Council is more likely to include all areas where the fish occur in relatively high abundance -- regardless of survey catch efficiency. If the Council used only the smaller percentages (10 - 25%), without adjusting for catch efficiency, the resulting data could be biased toward areas better sampled by the survey gear or could underestimate abundance in important habitats that are not sampled well. While this may not be particularly problematic for species that are associated primarily with habitats where the gear is more efficient, this would be a problem for species more abundant in areas where the gear is less efficient.

Also, as the amount of area designated as EFH decreases due to a more limited approach for EFH designation, there will be a concomitant reduction in EFH consultations. This would minimize the Council's and NMFS' ability to review and provide comments on many activities which may have adverse impacts on habitats important for Council-managed species. As the EFH consultation process is the primary regulatory vehicle for the Council and NMFS to have oversight into decision-making regarding non-fishing activities, a reduction in the extent of this process may be undesirable.

This approach itself is not inappropriate, but the current data do not support their application to such refinement of the EFH designations. The NMFS regulations and technical guidance for designating EFH suggest that when using Levels 1 and 2 data, as we are, the EFH designations should be fairly broad and encompass much of the range of each species. This ensures that important areas are not missed. Given the limitations of the survey data, the approach described in this alternative would be very likely to miss important areas for many resource species. As the level of information available improves and we are better able to identify specific habitat types and account for the differential efficiency of the survey gear, this approach could be utilized to refine the EFH designations. When stocks are at very high levels, it is believed that they will inhabit habitats of less value once space in the higher value habitats becomes the limiting resource. Using fish abundance as a proxy for important habitat could result in lower value habitats being identified simply because there appears to be lots of fish there.

Alternative 4 – Distribution of Physical Characteristics

This alternative will suggest designating EFH based on the *distribution of physical characteristics* rather than based on a survey data index. The previous alternatives all base the areal extent of the EFH designations on a CPUE index of fish abundance and some physical characteristics. An alternative approach could disregard fish abundance altogether and focus entirely on the physical characteristics that comprise the common habitat associations for each resource species. The two principle characteristics which could be used to delineate EFH are depth and benthic characteristics (sediment type, as well as SAV and other biogenic structure). Based on the information provided by NMFS, we have a fairly good understanding of the depth ranges in which species managed by the New England Council occur at their various life history stages. This same information also identified the primary sediment types associated with each species. Using a GIS and available sediment and bathymetric data, EFH could be designated based on these characteristics.

Although other parameters may also be important components of fish habitat (salinity, temperature, DO, etc.) they are too temporally variable to map. It must be understood that the actual habitat utilized by a species may vary within the depth range and benthic characteristics as these other parameters change. As better information becomes available either on the actual distribution of particular benthic characteristics or on the preferred associations of resource species, these EFH designations could be refined.

As evidenced by their use in the text descriptions of EFH for each species, physical characteristics such as depth and benthic characteristics are important components of the essential habitat for many species. Using these characteristics to map the EFH as well as describe the EFH for each species would focus attention on the particular components that appear important for a species -- whether it actually occurs there or not -- rather than simply on the place where the fish are. This would address at least one potential limitation of the fish abundance approach. When a fish stock is at low levels, it is believed to contract within its range to a core area that optimizes its survival, either through protection from predation, availability of food items, increased spawning opportunities, some other factor, or some combination. While the substance of the EFH text descriptions would not change with the selection of this alternative, the ELMR information would not be used under this approach because the ELMR information is based on species abundance rather than on physical characteristics.

By focusing not on where the fish are at any point in time, but on the physical components of habitat, theoretically both the core areas and the expansion areas would be identified. Thus, if some adverse impact to habitat is constraining or preventing the rebuilding and expansion of the species, action could be taken to protect these areas and promote the expansion of the species out of the core areas. Also, when stocks are at very high levels, it is believed that they will inhabit habitats of less value once space in the higher value habitats becomes the limiting resource. Using fish abundance as a proxy for important habitat could result in lower value habitats being identified simply because there appears to be lots of fish there. Delineating EFH solely on habitat characteristics could prevent the designation of less important habitat.

This may be a valid approach and a fine goal for the EFH program, but the data and information necessary to implement the method simply are not available at this time. At present, the distribution of sediment types is poorly known and is not adequate for designating EFH in many areas of the Gulf of Maine and southern New England shelf. EFH designated based on current knowledge of sediment distribution would be unreliable and subject to missing many important areas of habitat.

This approach assumes that we understand the particular associations that determine what habitat is essential to any particular species. While we can observe certain associations between a species and its habitat, our knowledge of the "key ingredient" may be lacking. For instance, what appears to be a depth limitation for a species may actually be an association with a persistent pressure gradient that affords the species with a good source of prey. Using an approach for designating EFH based on where the fish are keys in on the relative abundance of fish -- even if we do not know why an area is important to a fish, if there are a lot of fish there we can at least be assured that it is important for some reason. Designating solely on certain physical characteristics could completely miss the important habitat if the actual habitat associations are different from what we perceive them to be.

Alternative 5 – Combination of Survey Data and Physical Characteristics

This alternative will combine Alternatives 2 and 4, using the NMFS survey data to initially define the areas of EFH but then further refining the areas to be mapped based on physical characteristics such as depth and sediment type, rather than relying on the text to refine the designation based on physical characteristics. Combining the approaches described in Alternatives 2 and 4, the full range of EFH would first be identified using the CPUE index data to identify areas where the species occur in relatively high abundance. These areas would then be refined to eliminate those portions of the fish distribution that do not meet the identified depth range and sediment characteristics. The areas actually designated as EFH would be constrained to those areas with relatively high abundances of fish that meet the physical characteristics believed to be important. This approach combines the best features of Alternatives 2 and 4 -- utilizing known fish distributions with depth and sediment characteristics. The ELMR information would be incorporated as described in Alternative 2.

Unfortunately, this approach suffers from many of the same limitations as Alternative 4 -- our knowledge of the distribution of sediment types in the Gulf of Maine and the southern New England shelf are so limited as to make this approach subject to many errors and our perceptions

of the important habitat features may be in error or incomplete. The approach also begs the question that if there are areas identified because of high levels of fish abundance that do not meet the physical parameters established, why are those fish there and are these areas not essential? Are these areas important but we do not yet understand why, or are they important but our information about them is incomplete? This may be an appropriate approach when Level 3 or 4 information becomes available, but until these levels of information on habitat characteristics and associations are available, using this approach may be premature.

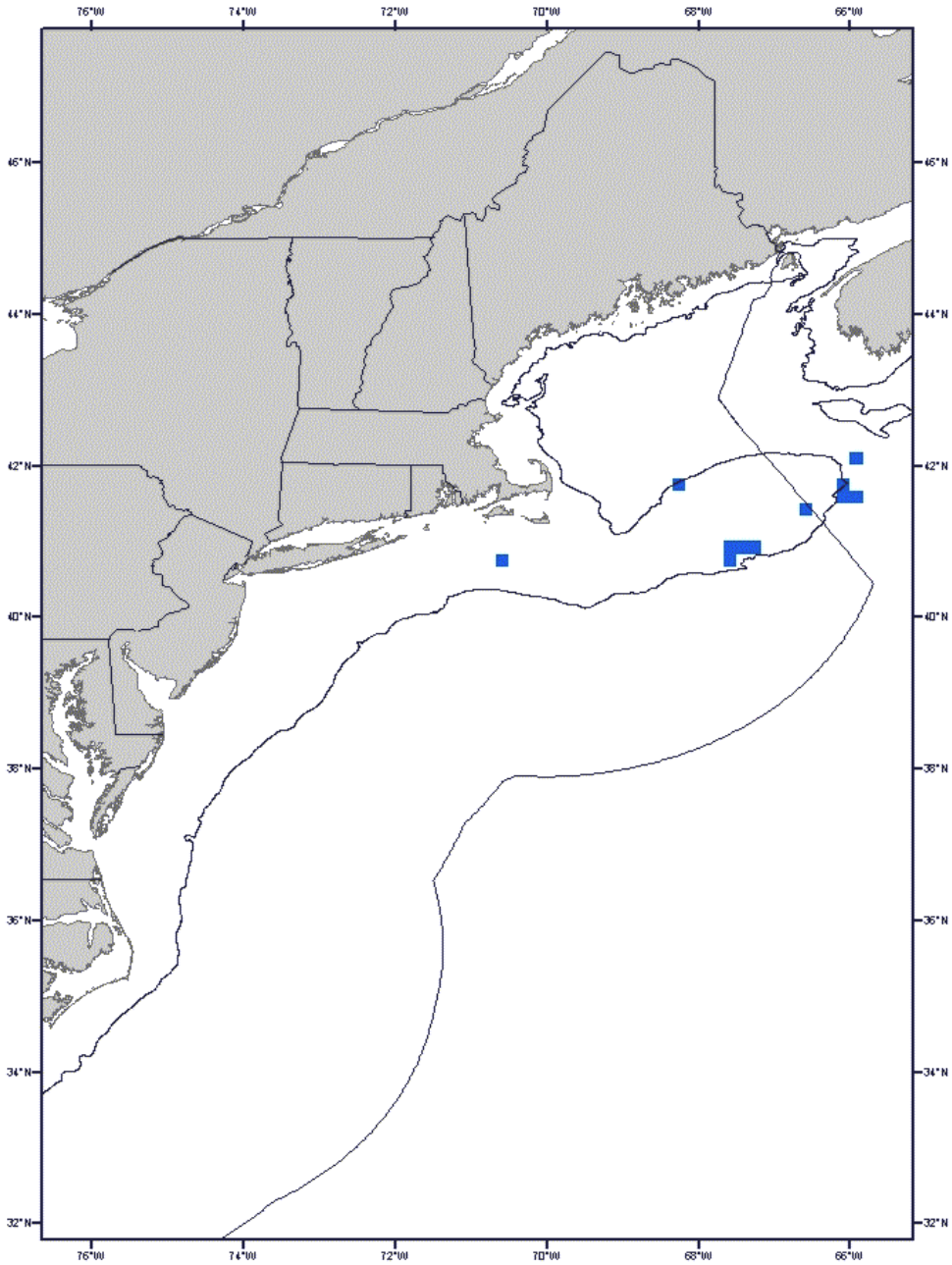
Alternative 6 – EFH is Everywhere

At the other end of the extreme from Alternative 1, this alternative would result in all waters from the shoreline to the EEZ designated as EFH for this species, whether skates occur in all areas or not. This alternative would indicate the most broad EFH designations possible. If all waters out to the EEZ are EFH for this species, then there is no possibility that the EFH designation would miss any important areas (within U.S. waters). However, this approach is not consistent with NMFS regulations and technical guidance, which specify that EFH should be designated within the full range of each species. This approach would actually go beyond this intention and include areas outside of the species' range as EFH.

5.2.3.2 Maps of Non-Preferred EFH Designation Options

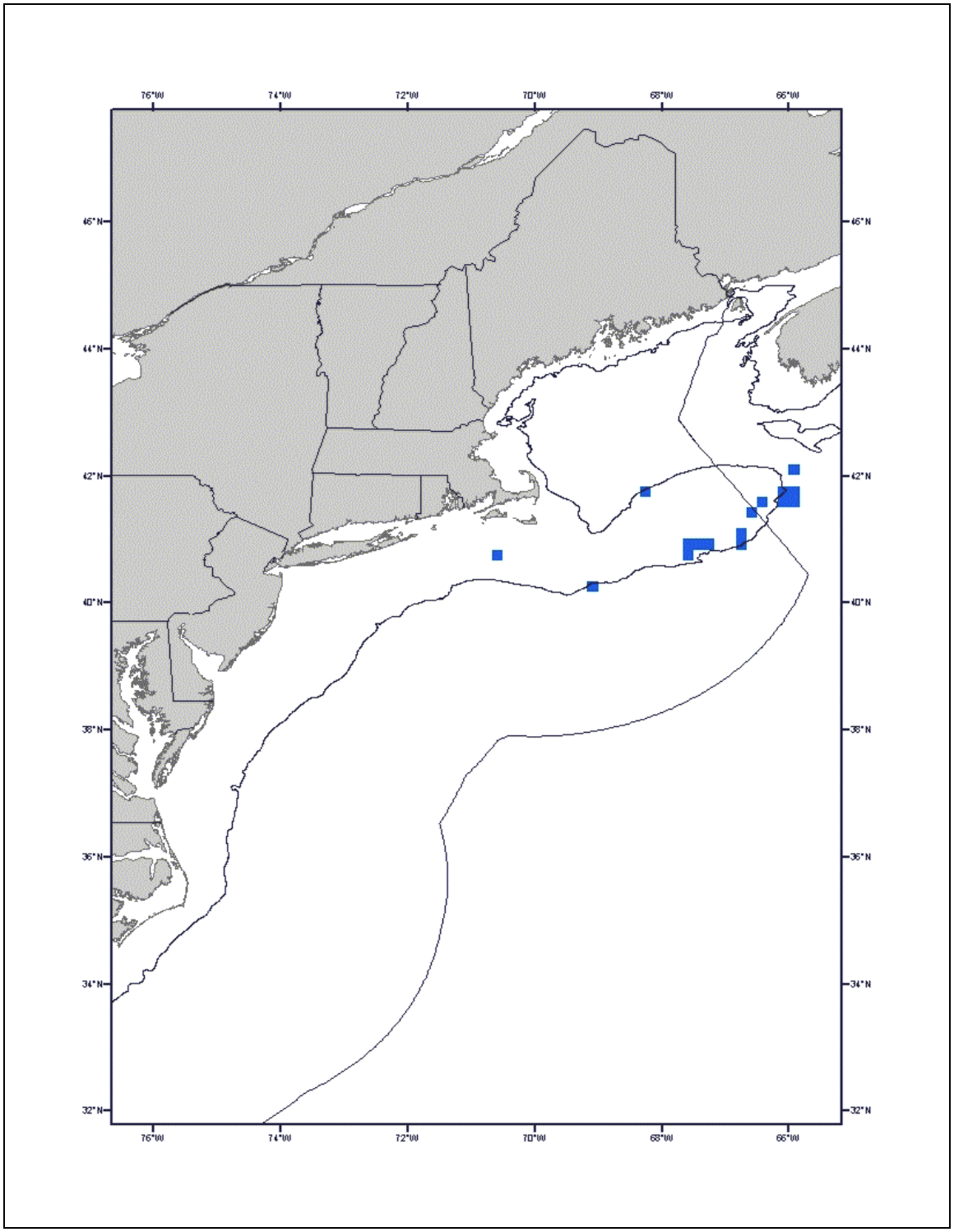
Within the preferred alternative to designate EFH for the skate species based on NMFS survey data, the Council considered four options for using the survey data: (1) 50%; (2) 75%; (3) 90%; and (4) 100%. The Council selected option 4 (100%) for barndoor skate and option 3 (90%) for all other skate species. The non-preferred EFH designation options are depicted in Figure 20 – Figure 61 on the following pages.

Figure 20 Barndoor Skate Juvenile EFH Option 1 – 50% (Non-Preferred)



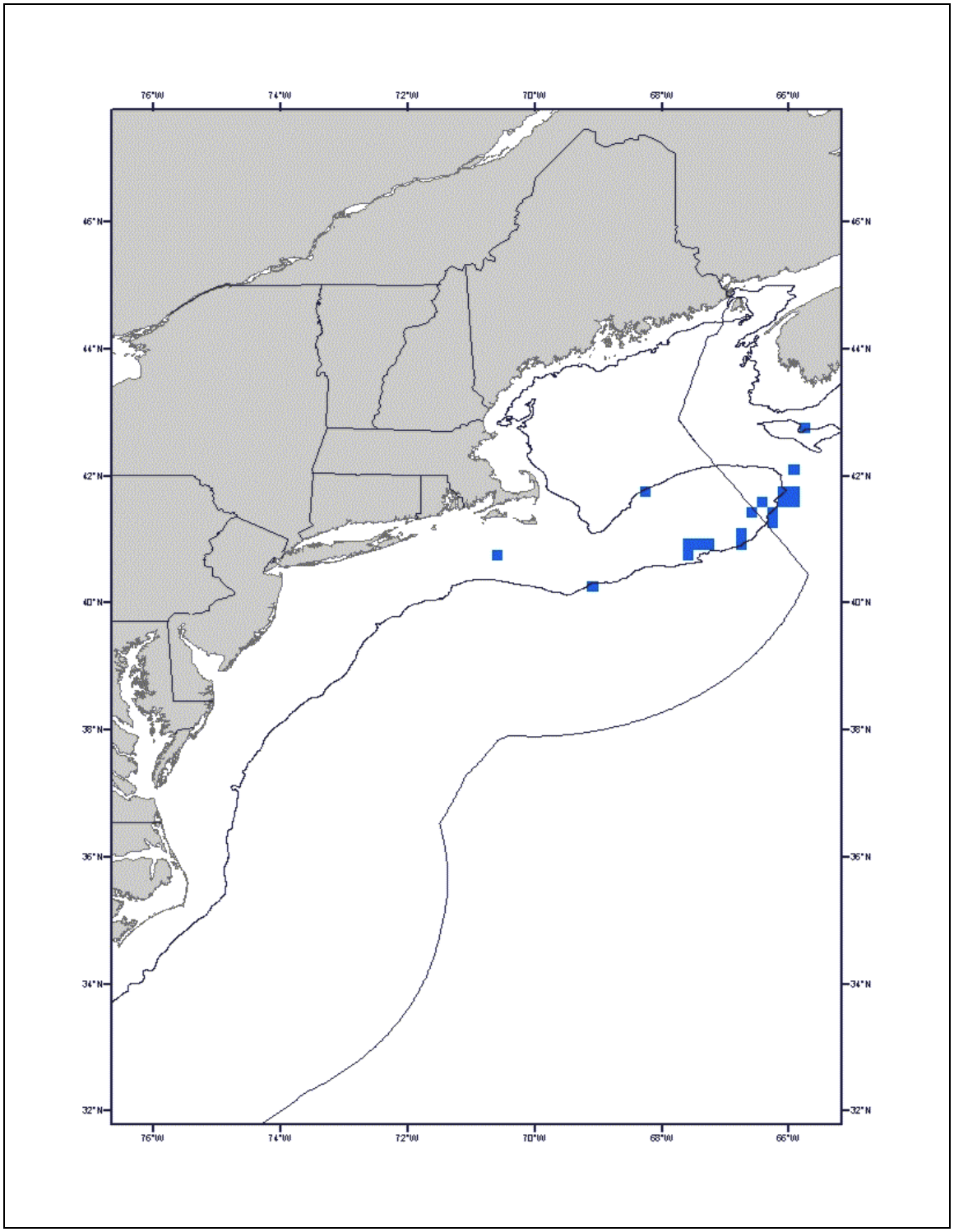
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only bottom habitats with mud, gravel, and sand substrates that occur within the shaded areas would be designated as EFH. This option represents 24% of the observed range of this life stage.

Figure 21 Barndoor Skate Juvenile EFH Option 2 – 75% (Non-Preferred)



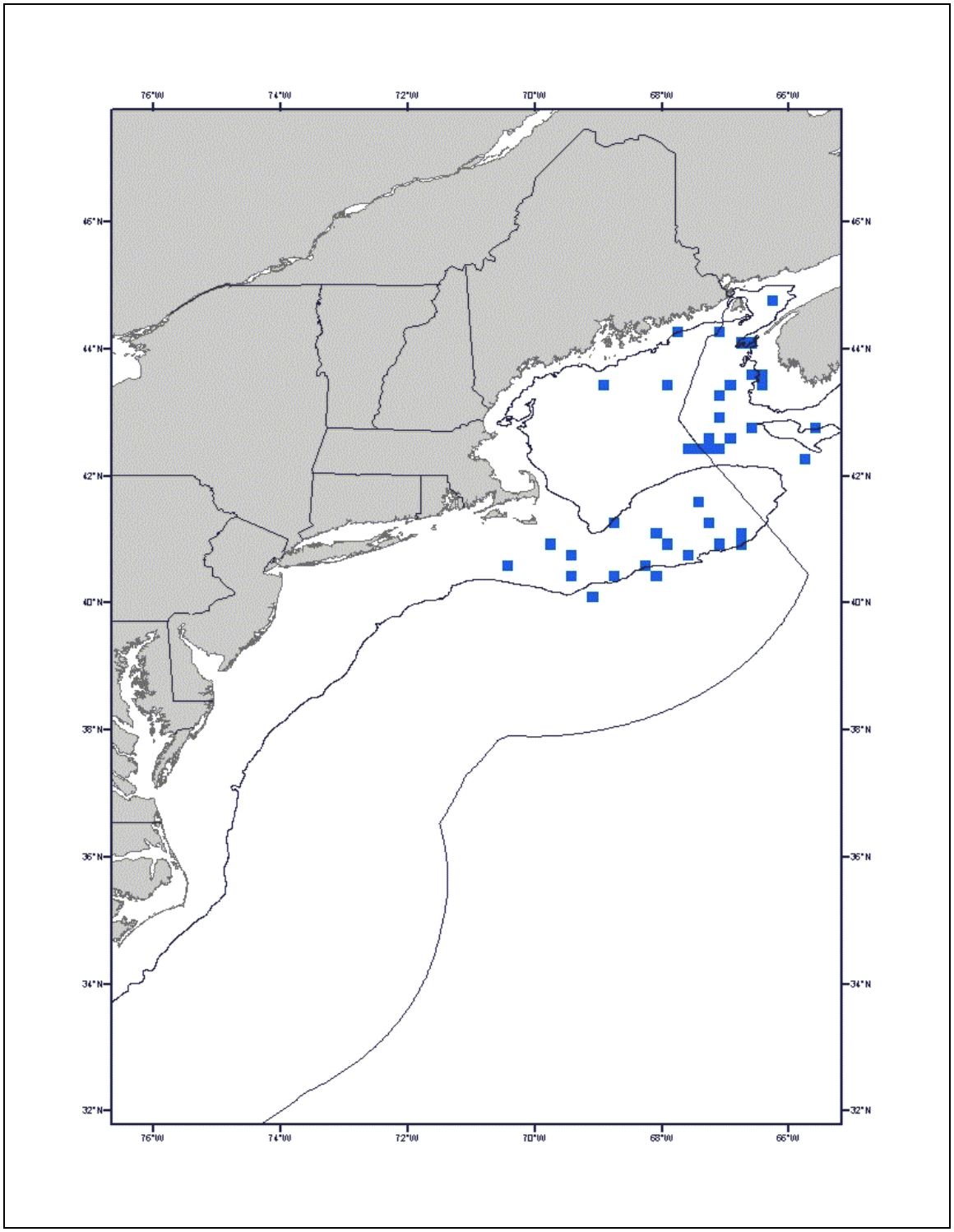
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only bottom habitats with mud, gravel, and sand substrates that occur within the shaded areas would be designated as EFH. This option represents 48% of the observed range of this life stage.

Figure 22 Barndoor Skate Juvenile EFH Option 3 – 90% (Non-Preferred)



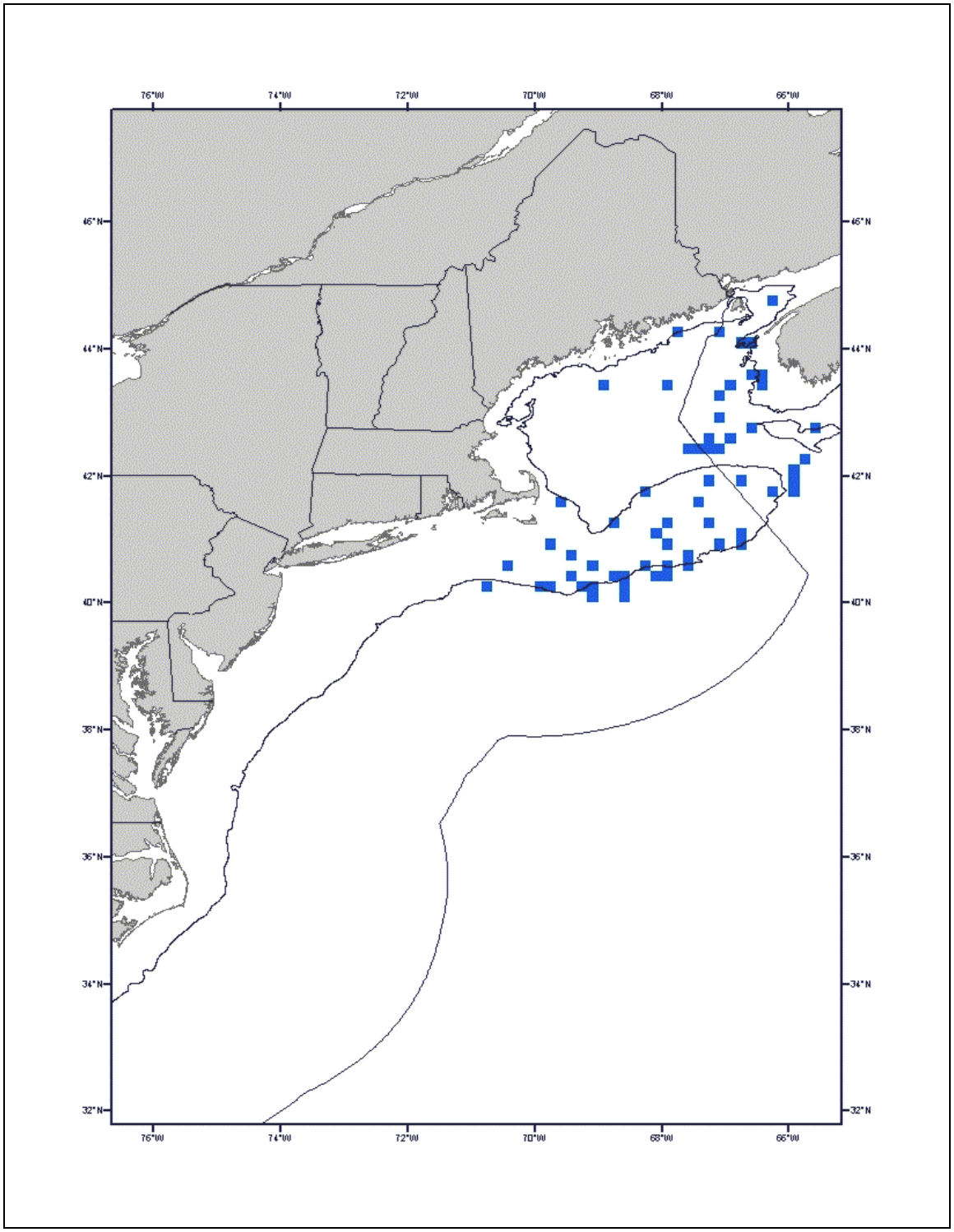
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only bottom habitats with mud, gravel, and sand substrates that occur within the shaded areas would be designated as EFH. This option represents 70% of the observed range of this life stage.

Figure 23 Barndoor Skate Adult EFH Option 1 – 50% (Non-Preferred)



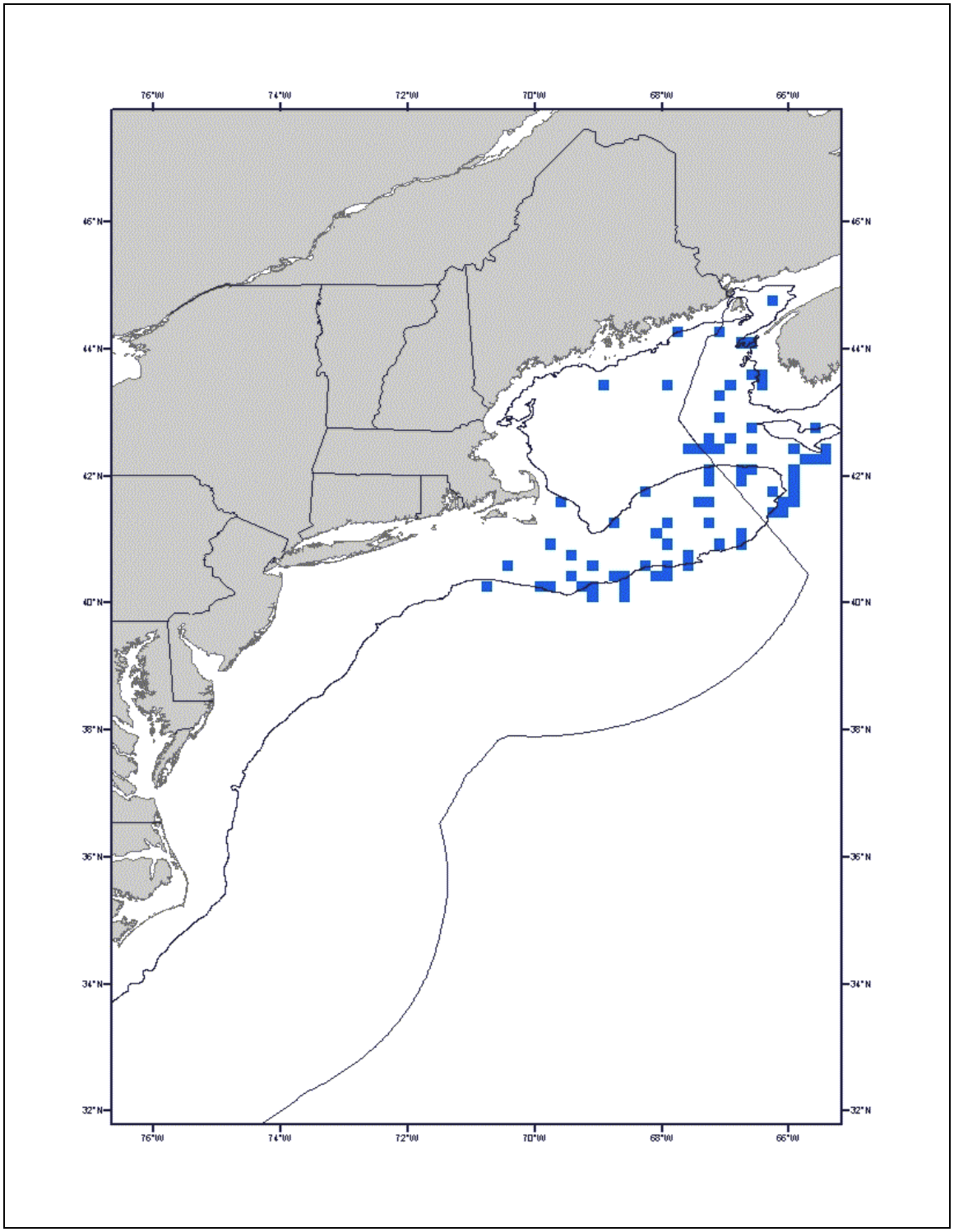
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only bottom habitats with mud, gravel, and sand substrates that occur within the shaded areas would be designated as EFH. This option represents 27% of the observed range of this life stage.

Figure 24 Barndoor Skate Adult EFH Option 2 – 75% (Non-Preferred)



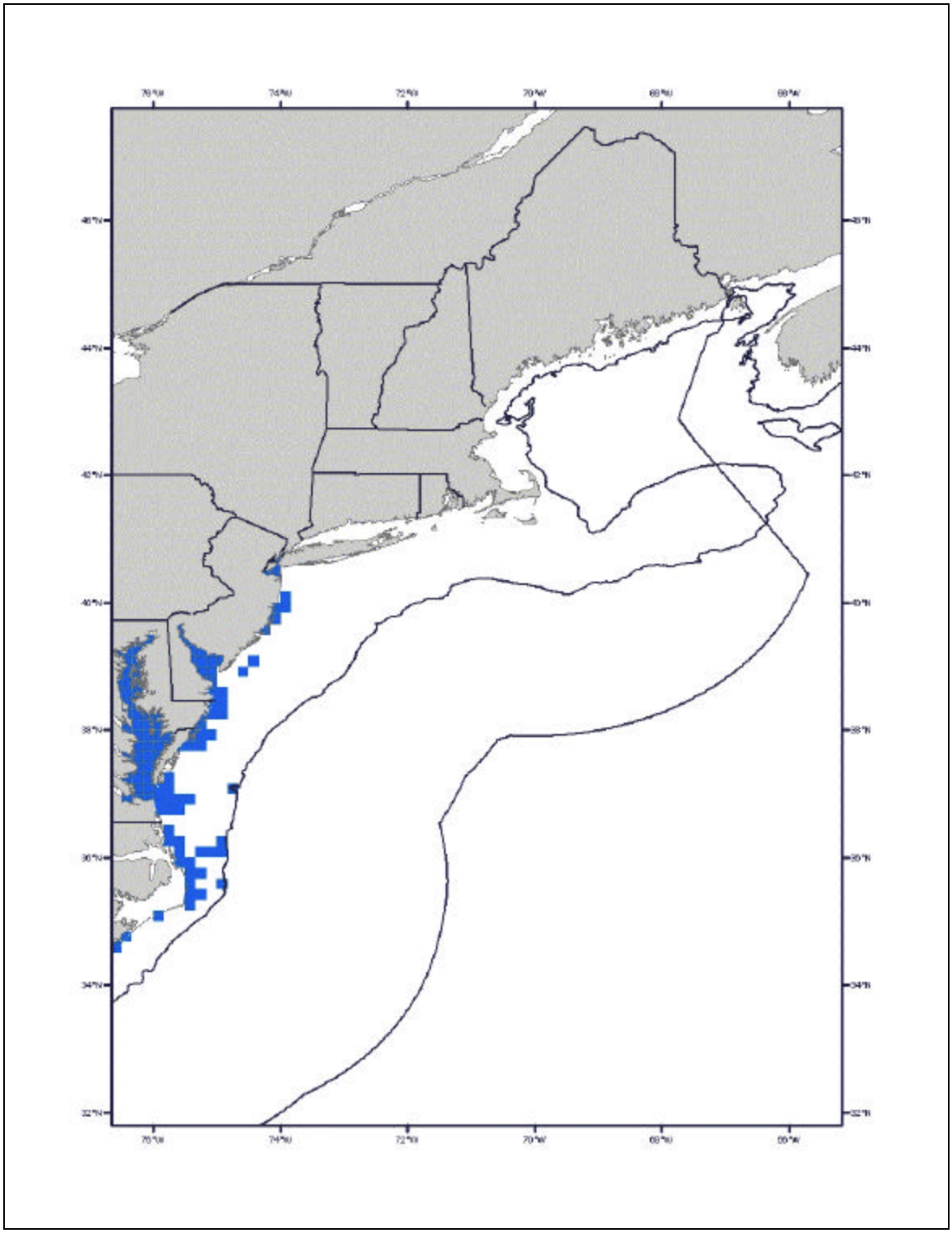
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only bottom habitats with mud, gravel, and sand substrates that occur within the shaded areas would be designated as EFH. This option represents 51% of the observed range of this life stage.

Figure 25 Barndoor Skate Adult EFH Option 3 – 90% (Non-Preferred)



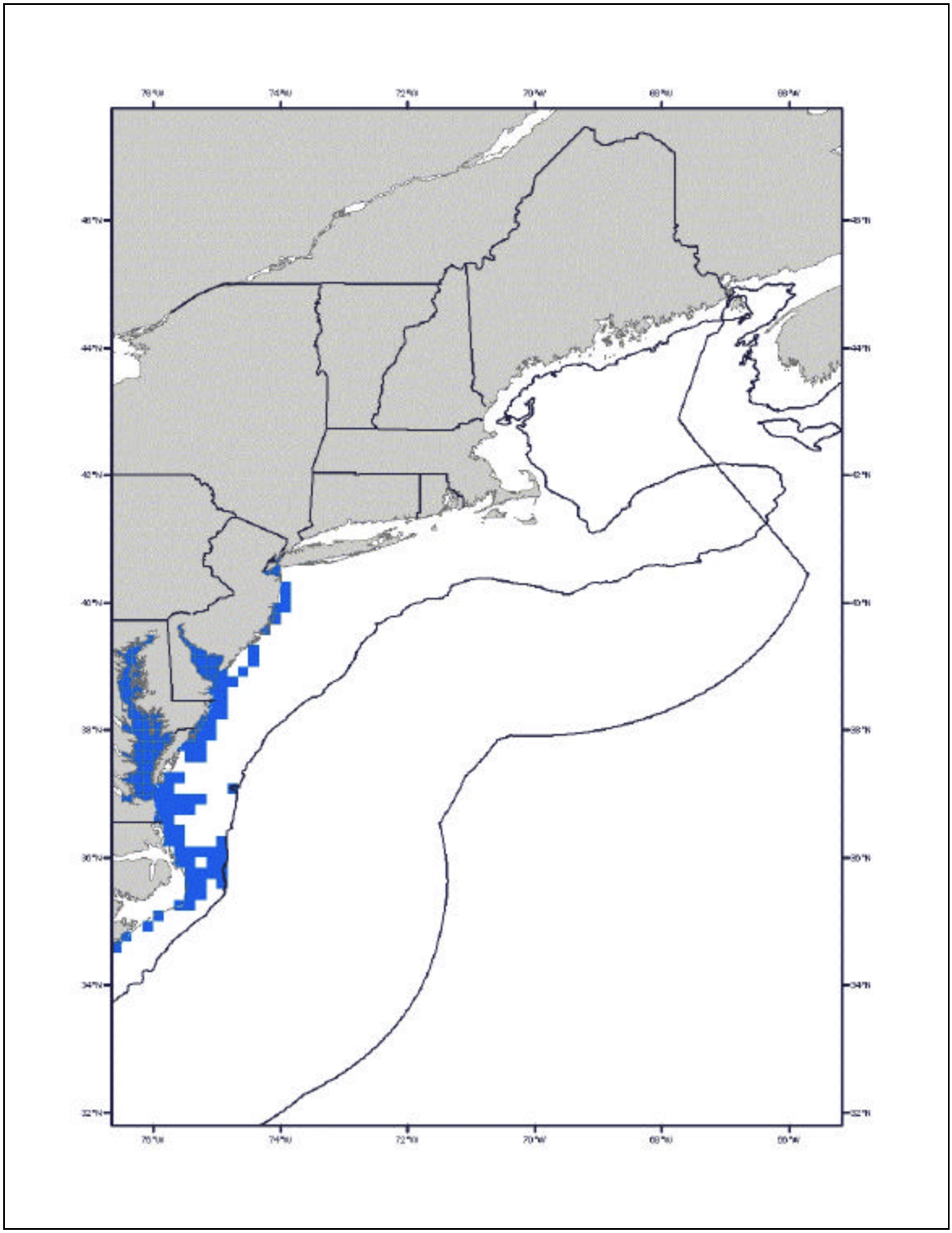
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only bottom habitats with mud, gravel, and sand substrates that occur within the shaded areas would be designated as EFH. This option represents 75% of the observed range of this life stage.

Figure 26 Clearnose Skate Juvenile EFH Option 1 – 50% (Non-Preferred)



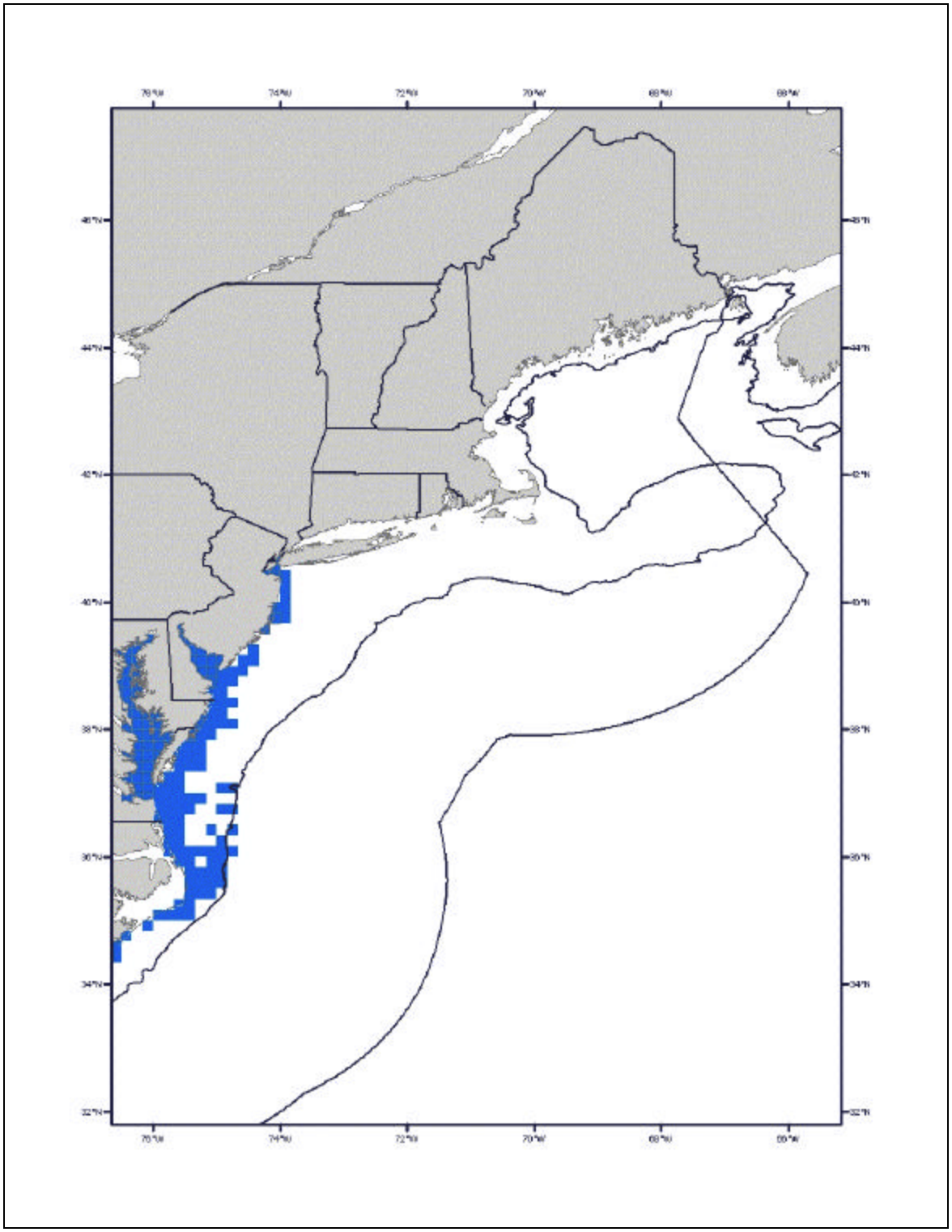
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with soft bottom, rocky or gravelly substrates that occur within the shaded areas would be designated as EFH. This option represents 23% of the observed range of this life stage.

Figure 27 Clearnose Skate Juvenile EFH Option 2 – 75% (Non-Preferred)



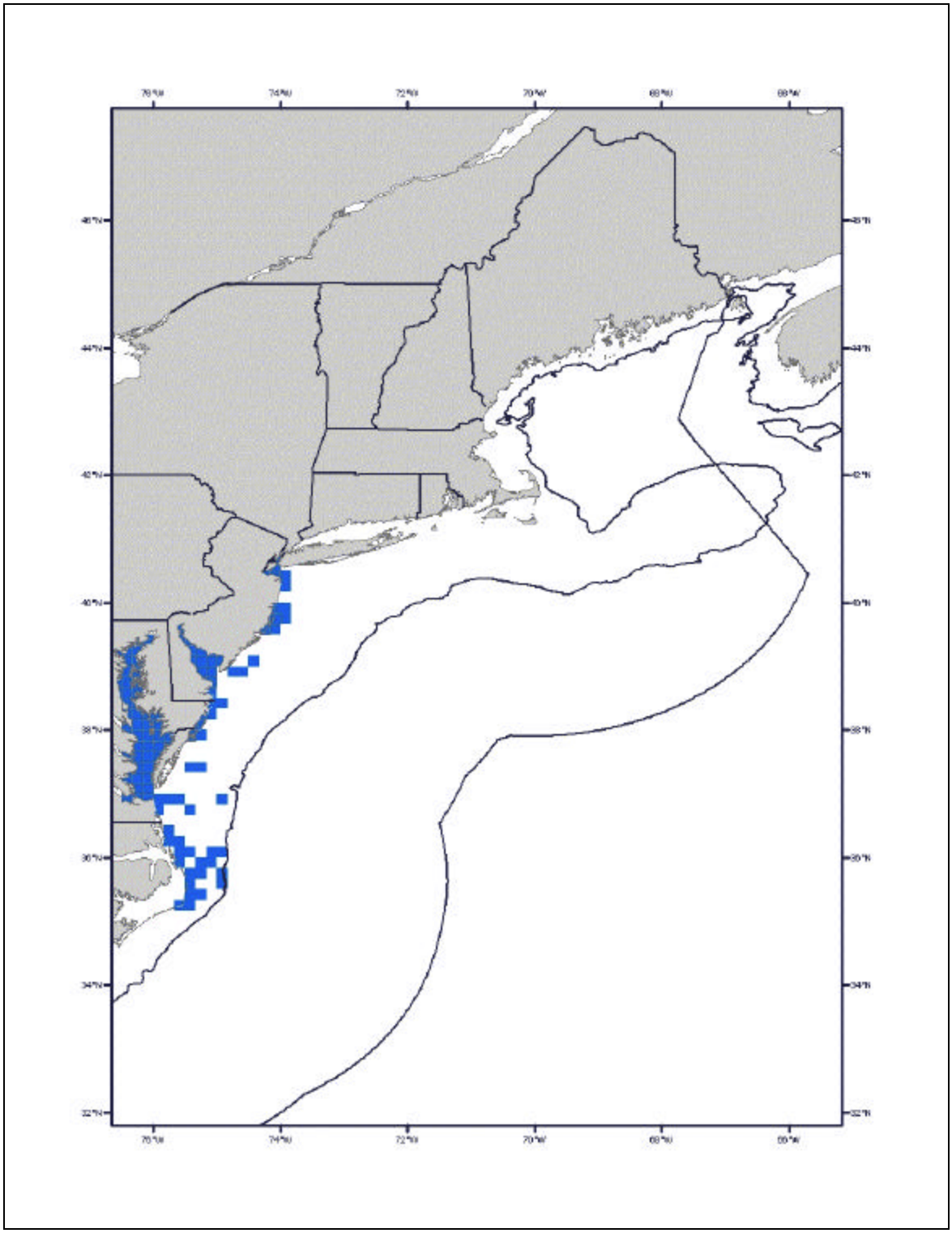
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with soft bottom, rocky or gravelly substrates that occur within the shaded areas would be designated as EFH. This option represents 40% of the observed range of this life stage.

Figure 28 Clearnose Skate Juvenile EFH Option 4 – 100% (Non-Preferred)



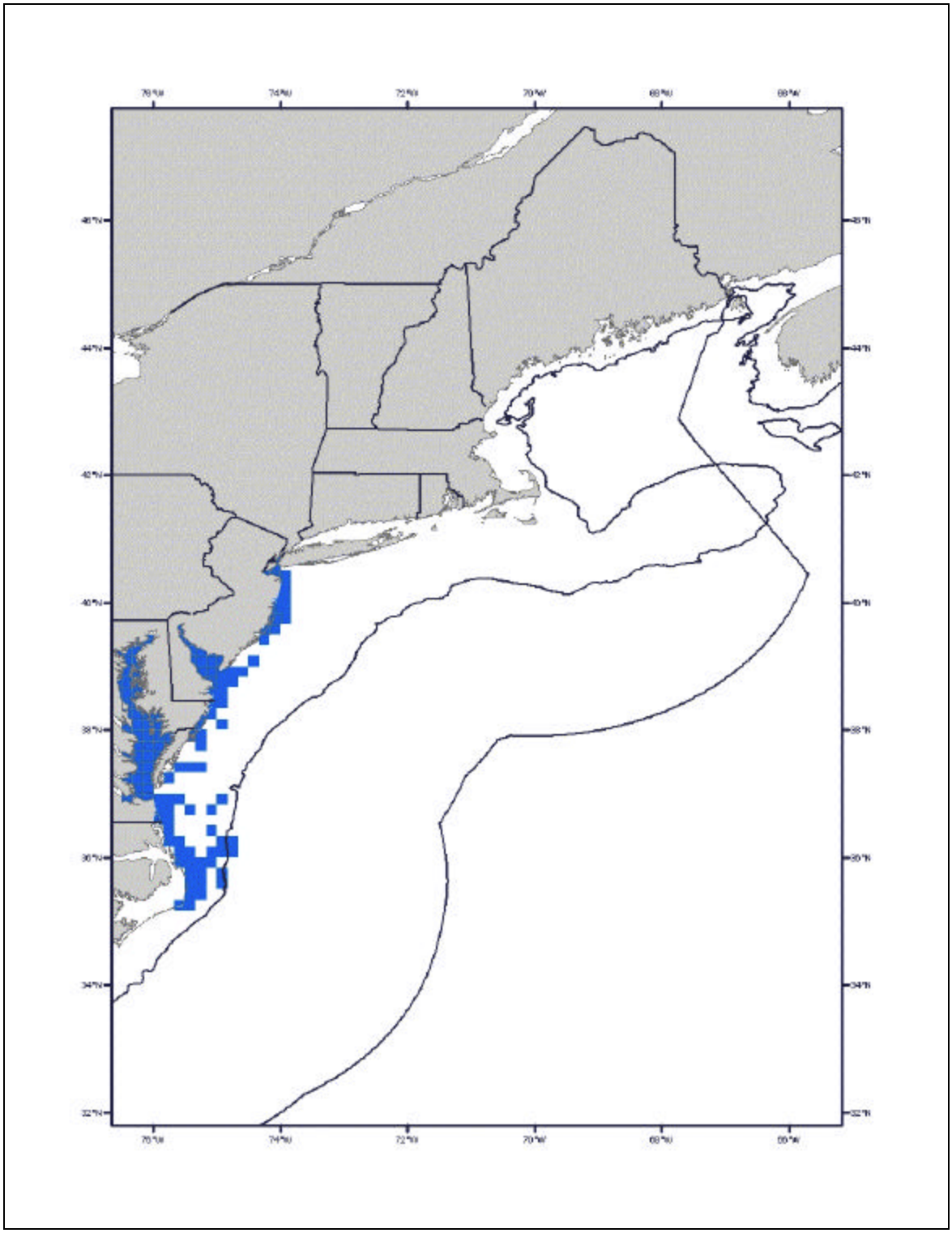
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with soft bottom, rocky or gravelly substrates that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 29 Clearnose Skate Adult EFH Option 1 – 50% (Non-Preferred)



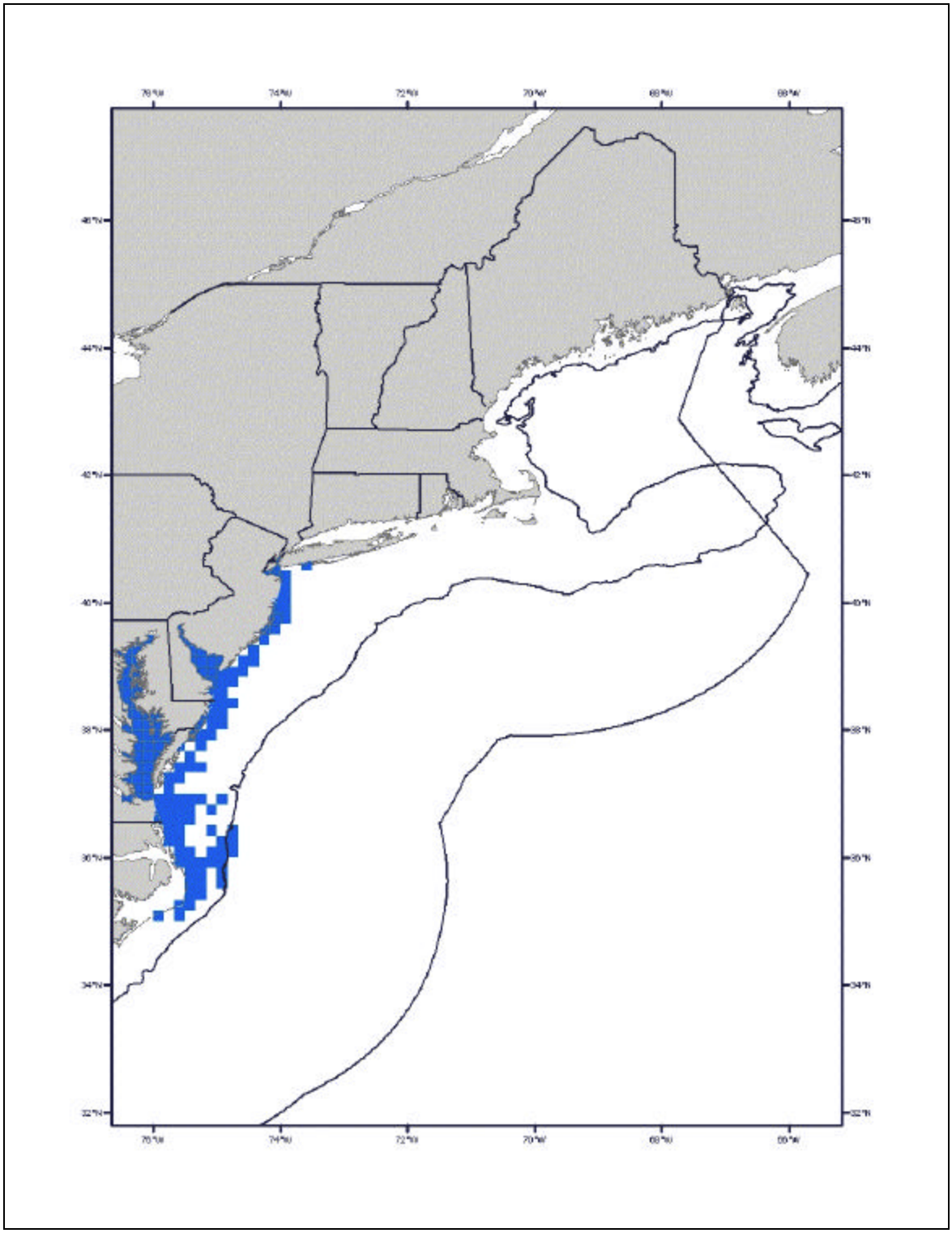
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with soft bottom, rocky or gravelly substrates that occur within the shaded areas would be designated as EFH. This option represents 25% of the observed range of this life stage.

Figure 30 Clearnose Skate Adult EFH Option 2 – 75% (Non-Preferred)



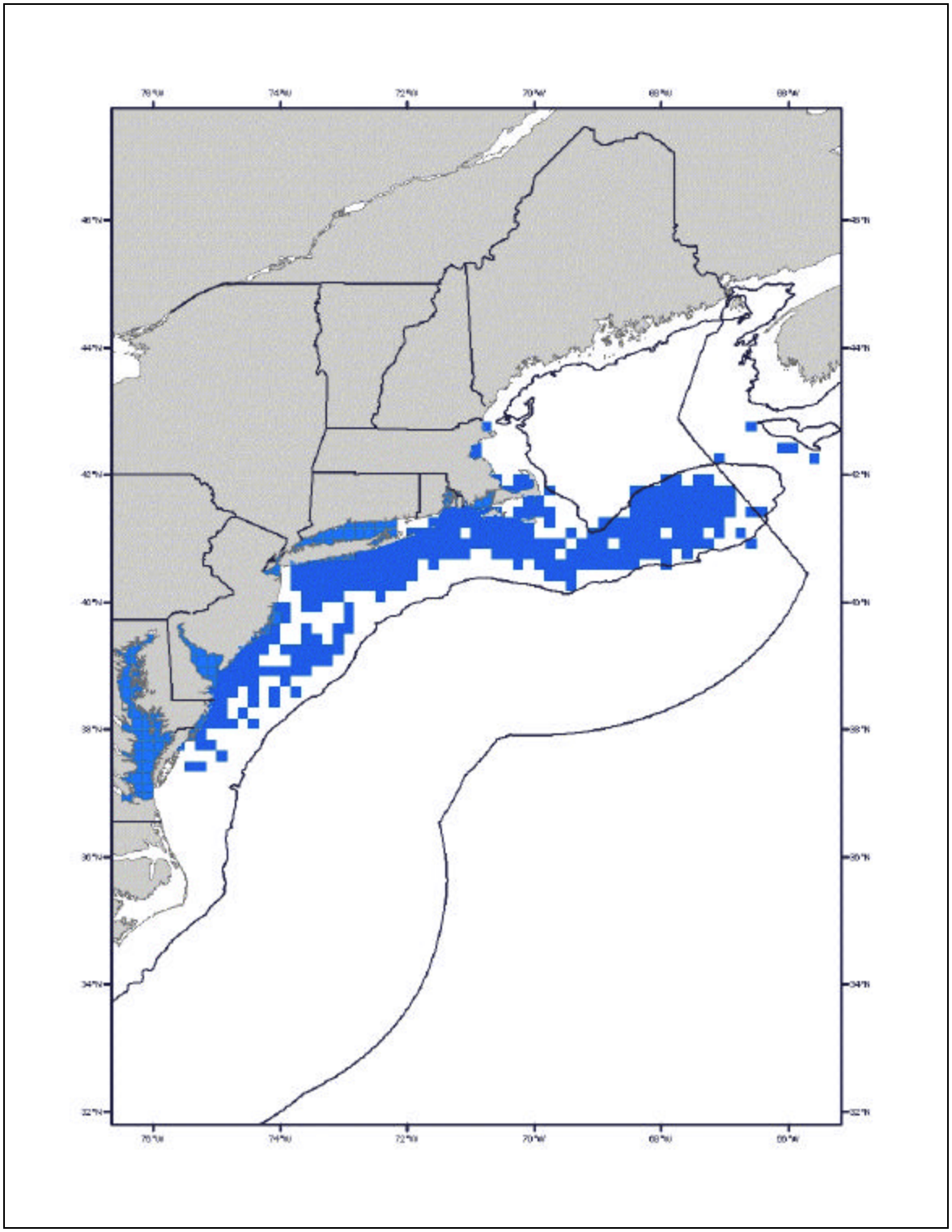
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with soft bottom, rocky or gravelly substrates that occur within the shaded areas would be designated as EFH. This option represents 45% of the observed range of this life stage.

Figure 31 Clearnose Skate Adult EFH Option 4 – 100% (Non-Preferred)



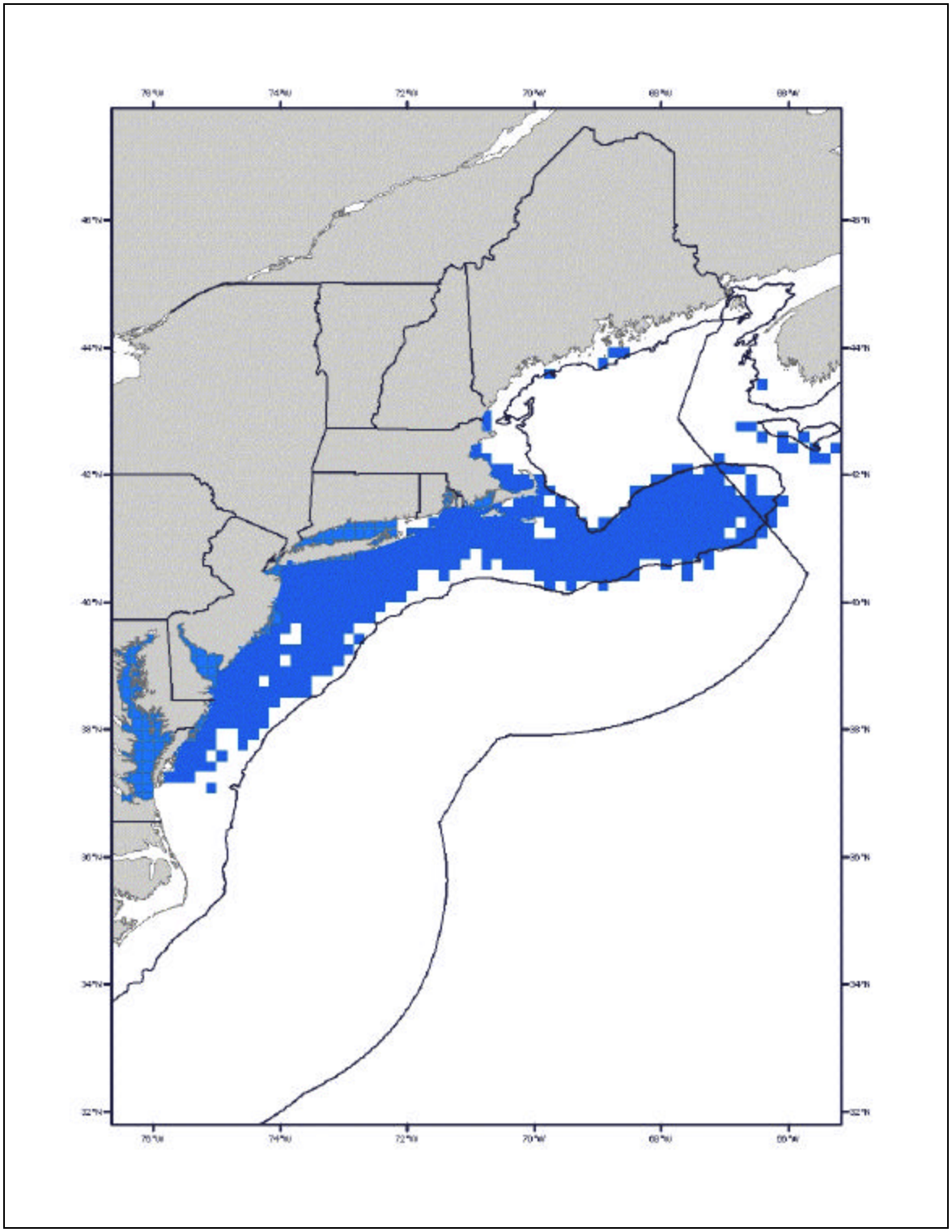
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with soft bottom, rocky or gravelly substrates that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 32 Little Skate Juvenile EFH Option 1 – 50% (Non-Preferred)



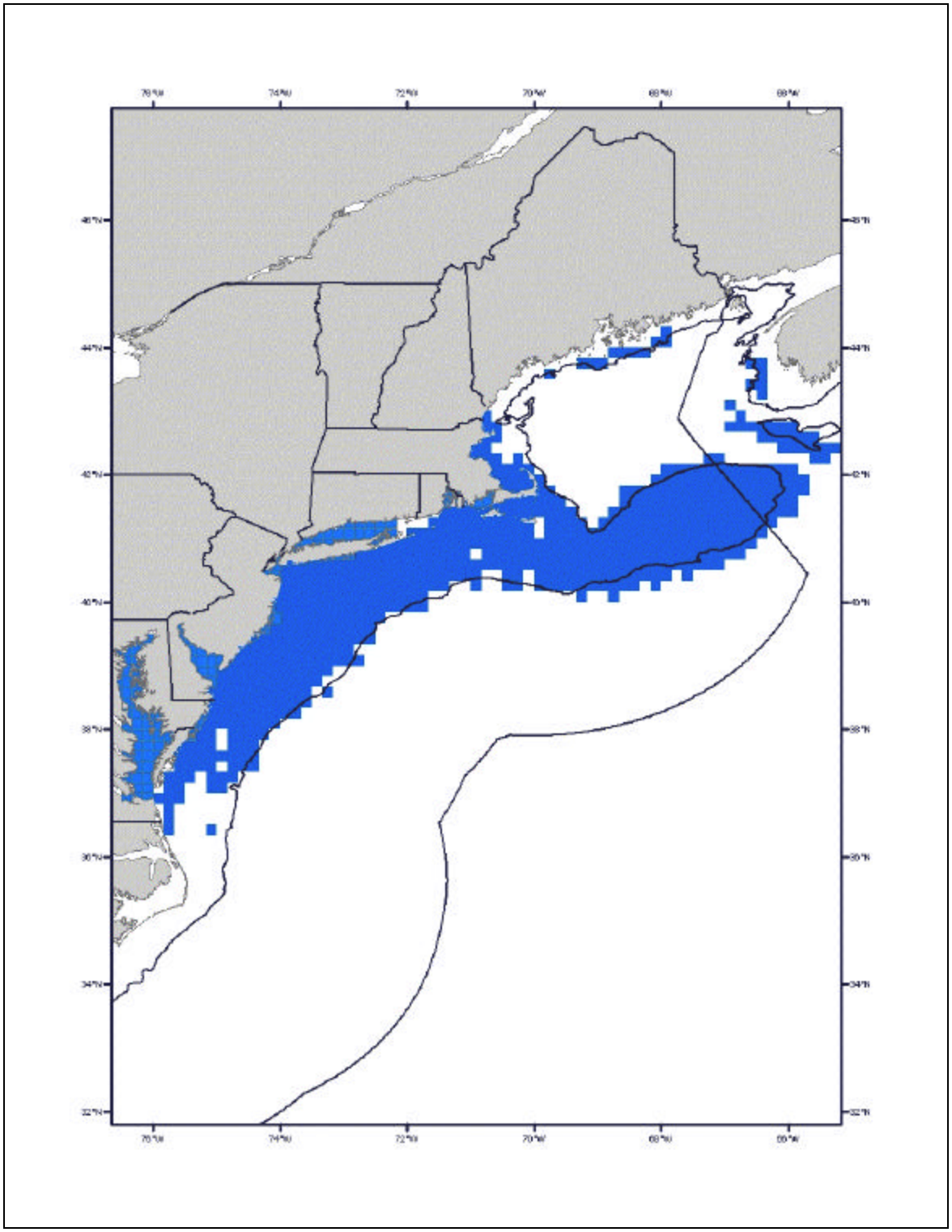
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with sandy, gravelly, or mud substrates that occur within the shaded areas would be designated as EFH. This option represents 24% of the observed range of this life stage.

Figure 33 Little Skate Juvenile EFH Option 2 – 75% (Non-Preferred)



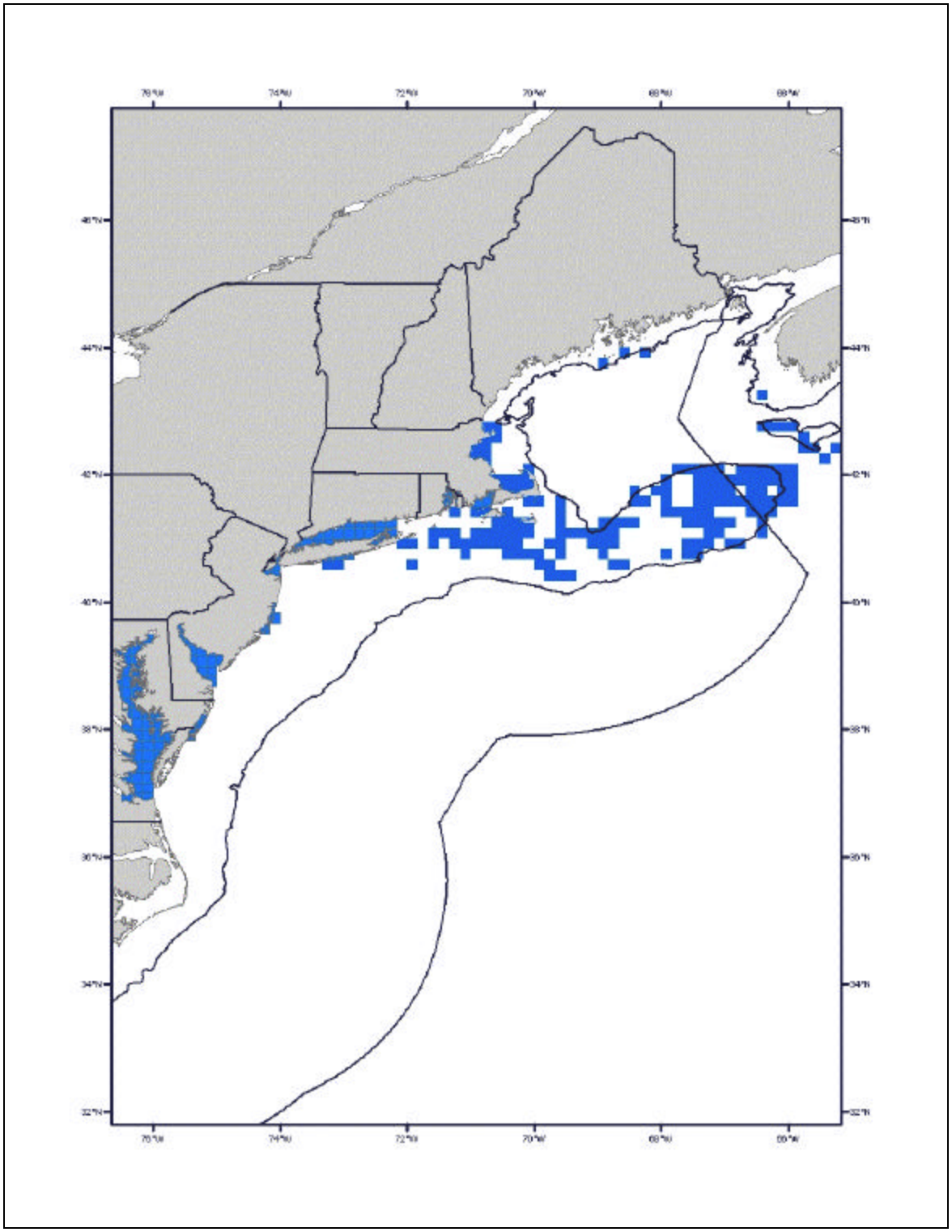
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with sandy, gravelly, or mud substrates that occur within the shaded areas would be designated as EFH. This option represents 42% of the observed range of this life stage.

Figure 34 Little Skate Juvenile EFH Option 4 – 100% (Non-Preferred)



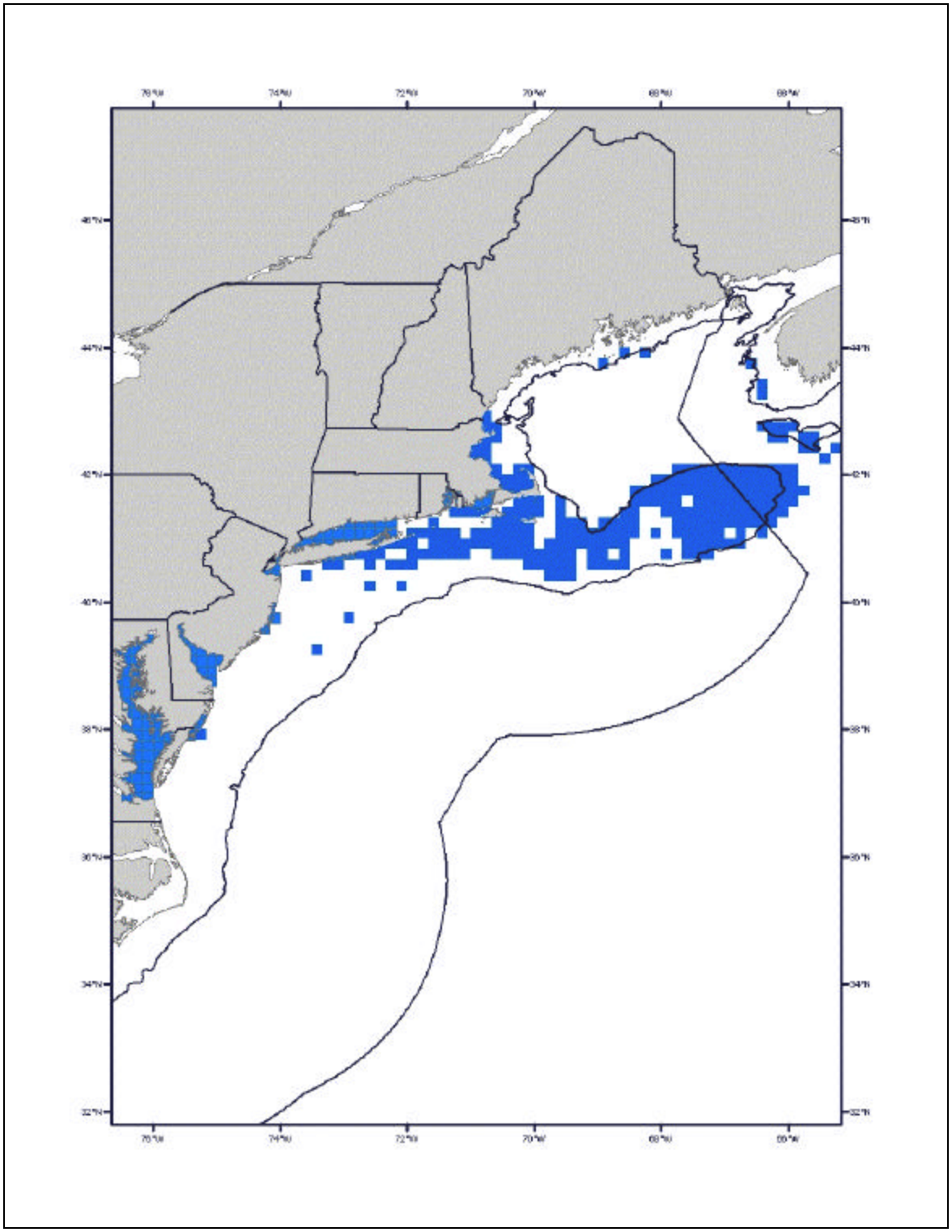
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with sandy, gravelly, or mud substrates that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 35 Little Skate Adult EFH Option 1 – 50% (Non-Preferred)



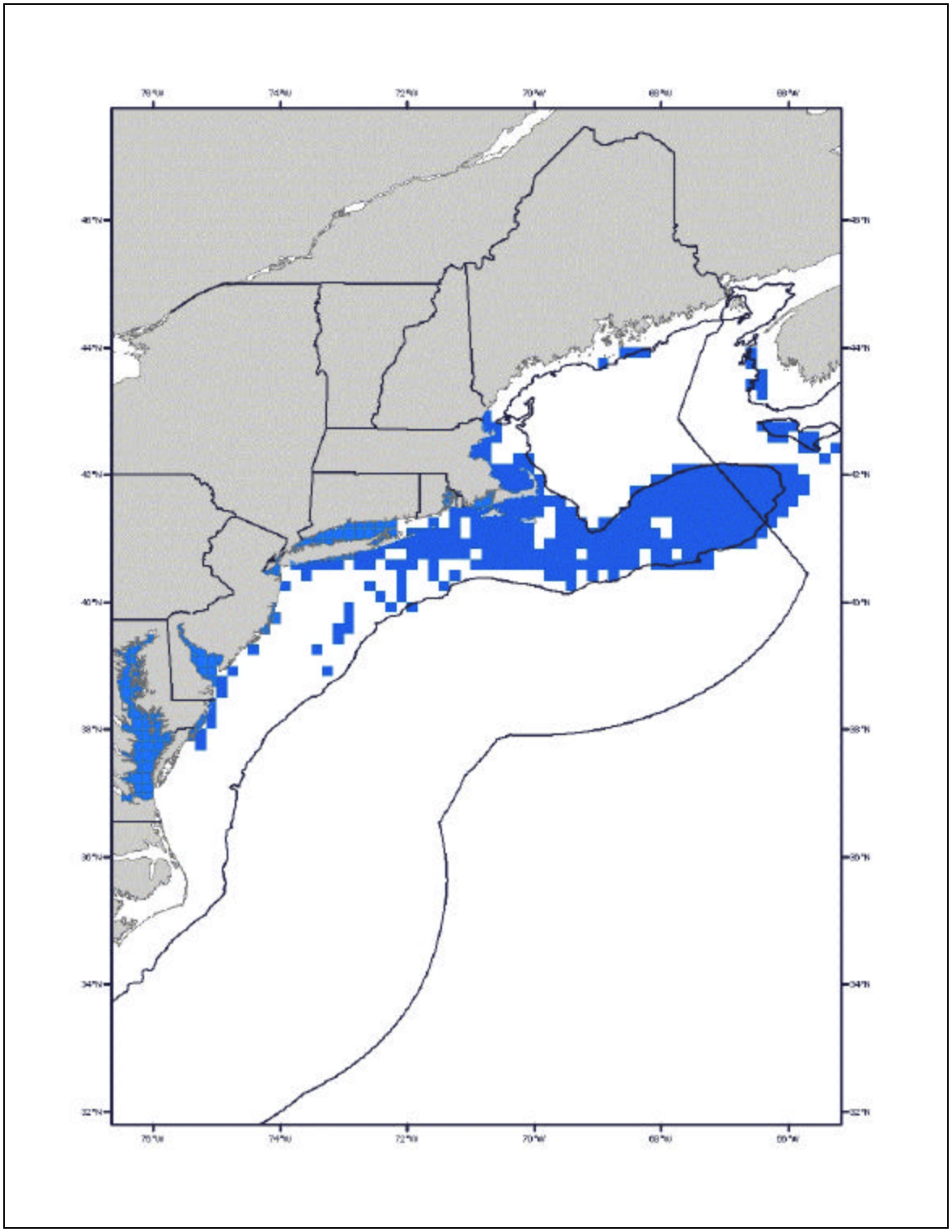
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with sandy, gravelly, or mud substrates that occur within the shaded areas would be designated as EFH. This option represents 19% of the observed range of this life stage.

Figure 36 Little Skate Adult EFH Option 2 – 75% (Non-Preferred)



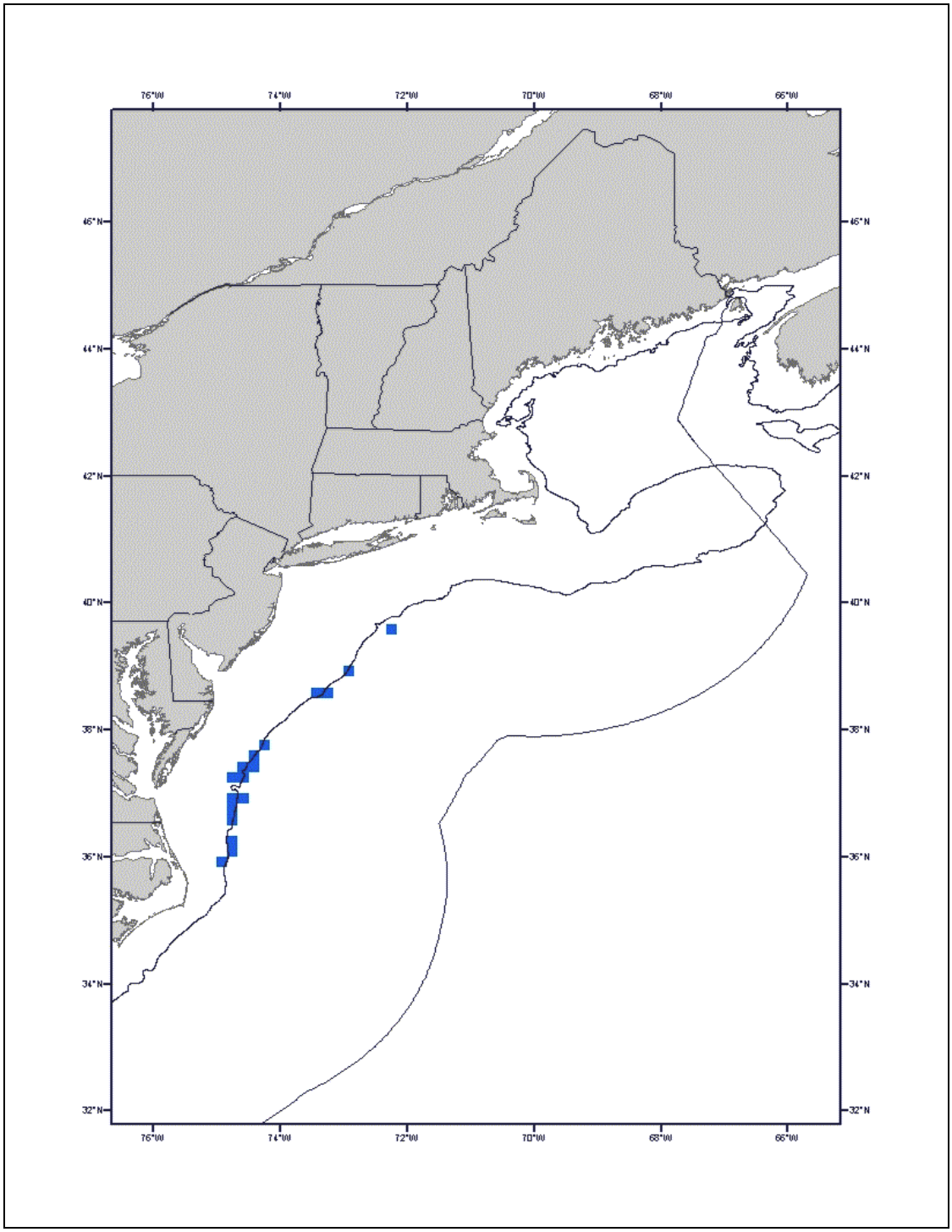
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with sandy, gravelly, or mud substrates that occur within the shaded areas would be designated as EFH. This option represents 36% of the observed range of this life stage.

Figure 37 Little Skate Adult EFH Option 4 – 100% (Non-Preferred)



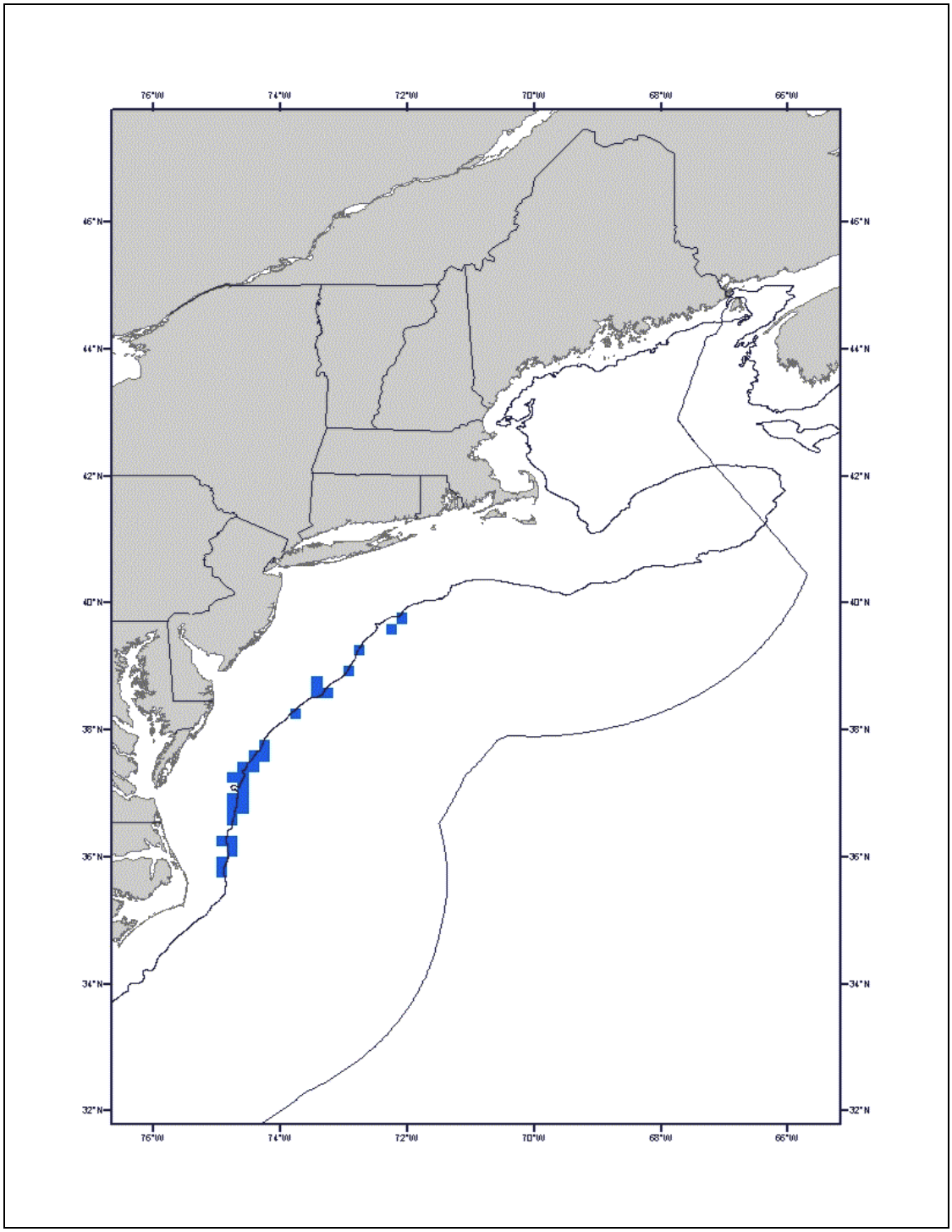
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with sandy, gravelly, or mud substrates that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 38 Rosette Skate Juvenile EFH Option 1 – 50% (Non-Preferred)



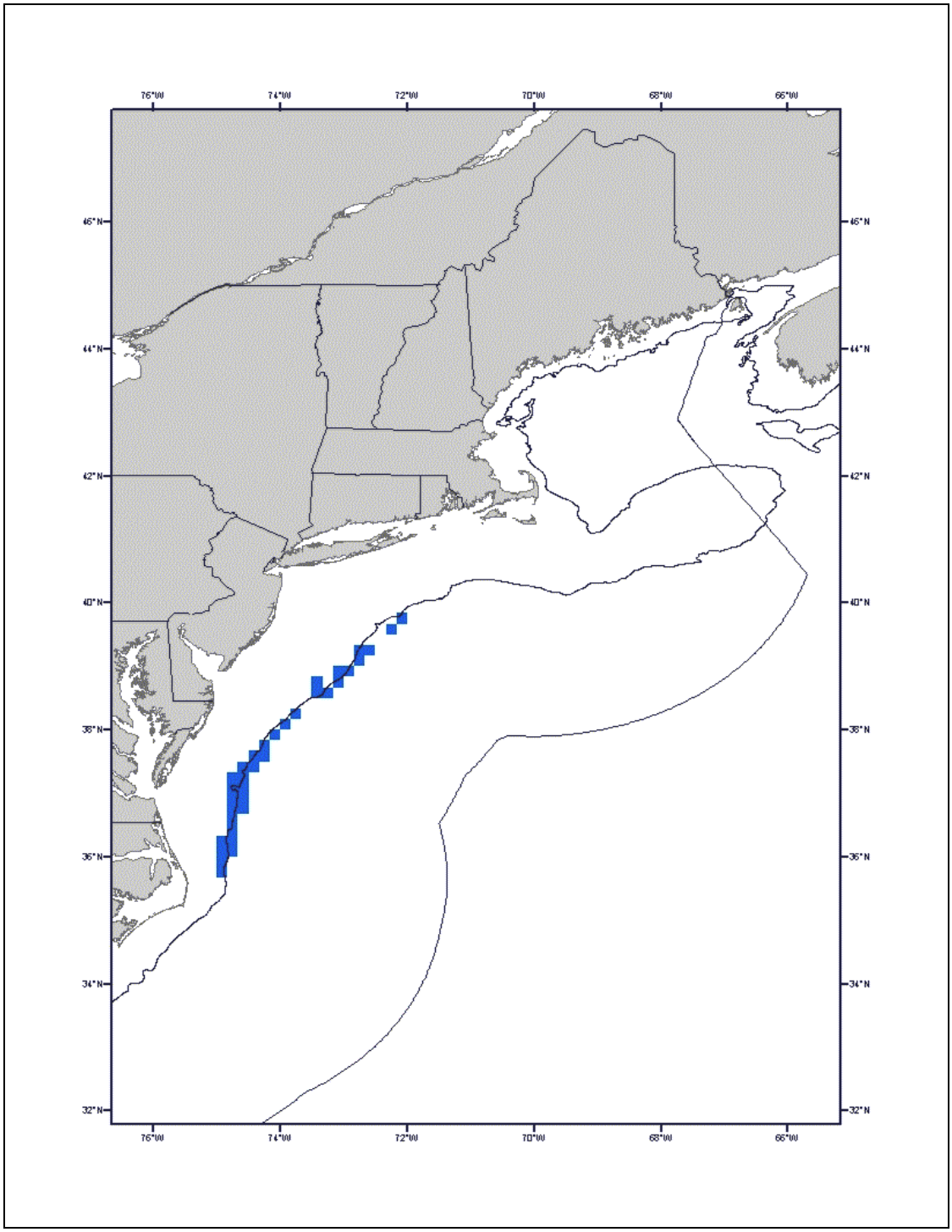
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a soft substrate, including sand/mud bottoms, mud with echinoid and ophuiroid fragments, and shell and pteropod ooze that occur within the shaded areas would be designated as EFH. This option represents 20% of the observed range of this life stage.

Figure 39 Rosette Skate Juvenile EFH Option 2 – 75% (Non-Preferred)



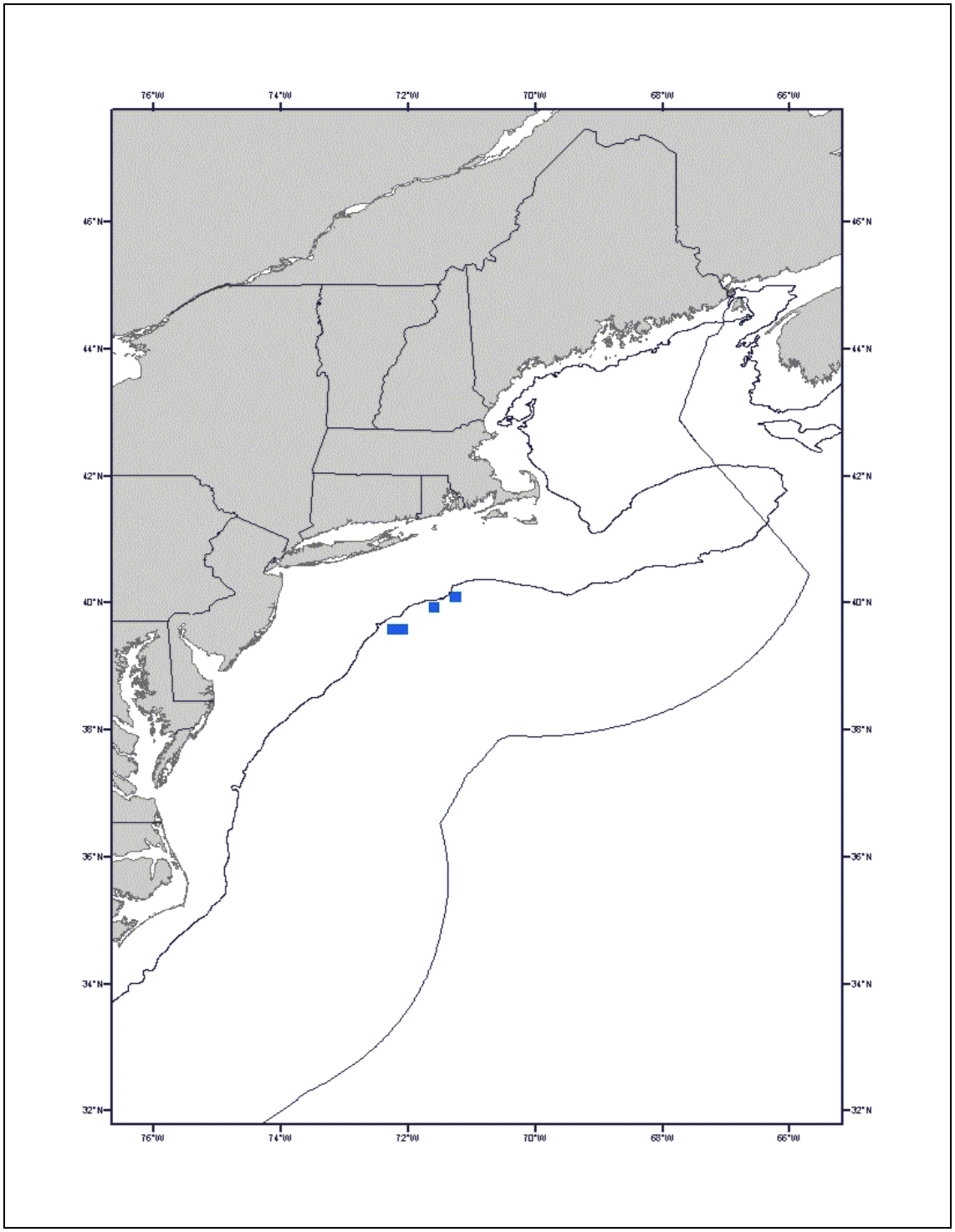
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a soft substrate, including sand/mud bottoms, mud with echinoid and ophuiroid fragments, and shell and pteropod ooze that occur within the shaded areas would be designated as EFH. This option represents 41% of the observed range of this life stage.

Figure 40 Rosette Skate Juvenile EFH Option 4 – 100% (Non-Preferred)



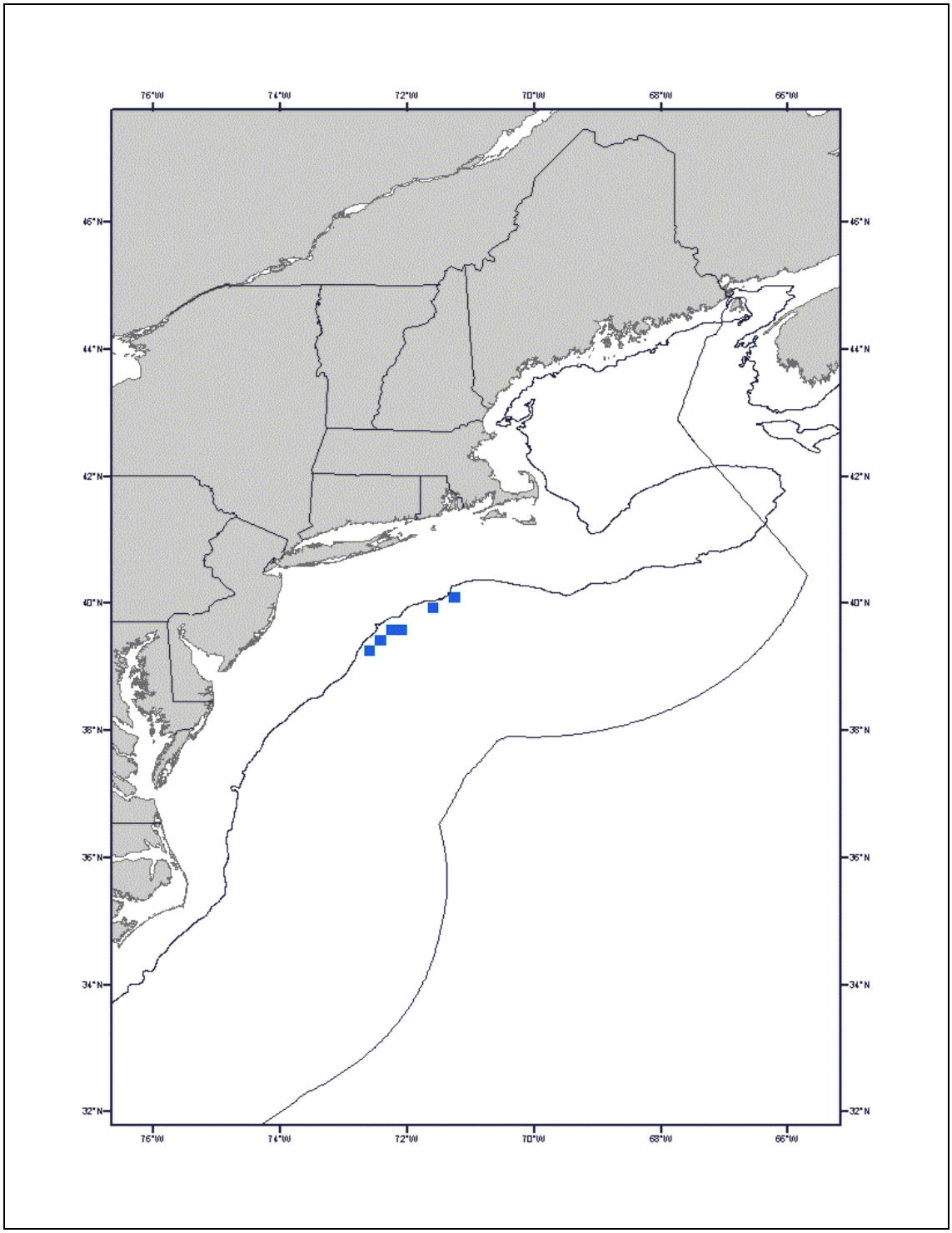
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a soft substrate, including sand/mud bottoms, mud with echinoid and ophuiroid fragments, and shell and pteropod ooze that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 41 Rosette Skate Adult EFH Option 1 – 50% (Non-Preferred)



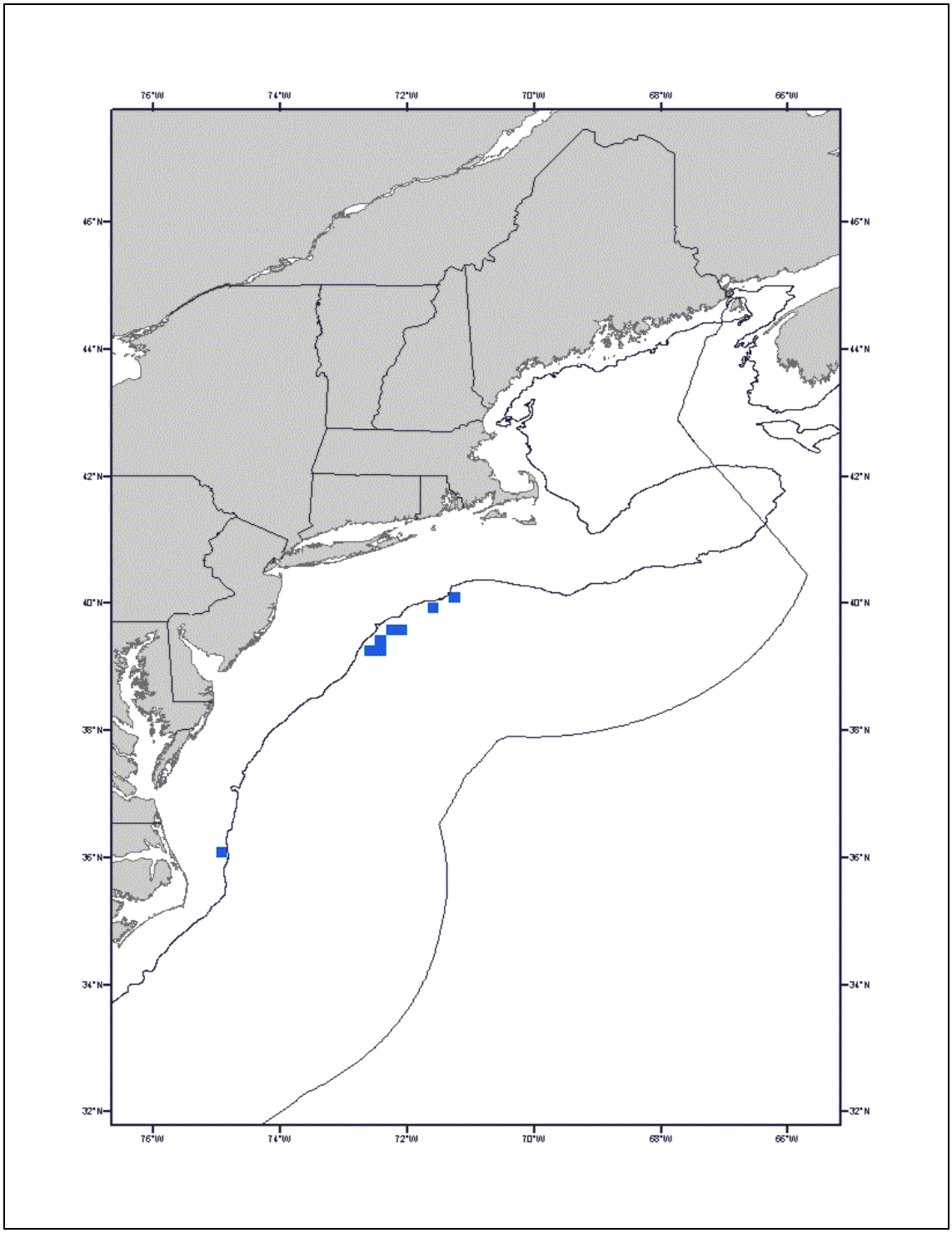
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a soft substrate, including sand/mud bottoms, mud with echinoid and ophuiroid fragments, and shell and pteropod ooze that occur within the shaded areas would be designated as EFH. This option represents 20% of the observed range of this life stage.

Figure 42 Rosette Skate Adult EFH Option 2 – 75% (Non-Preferred)



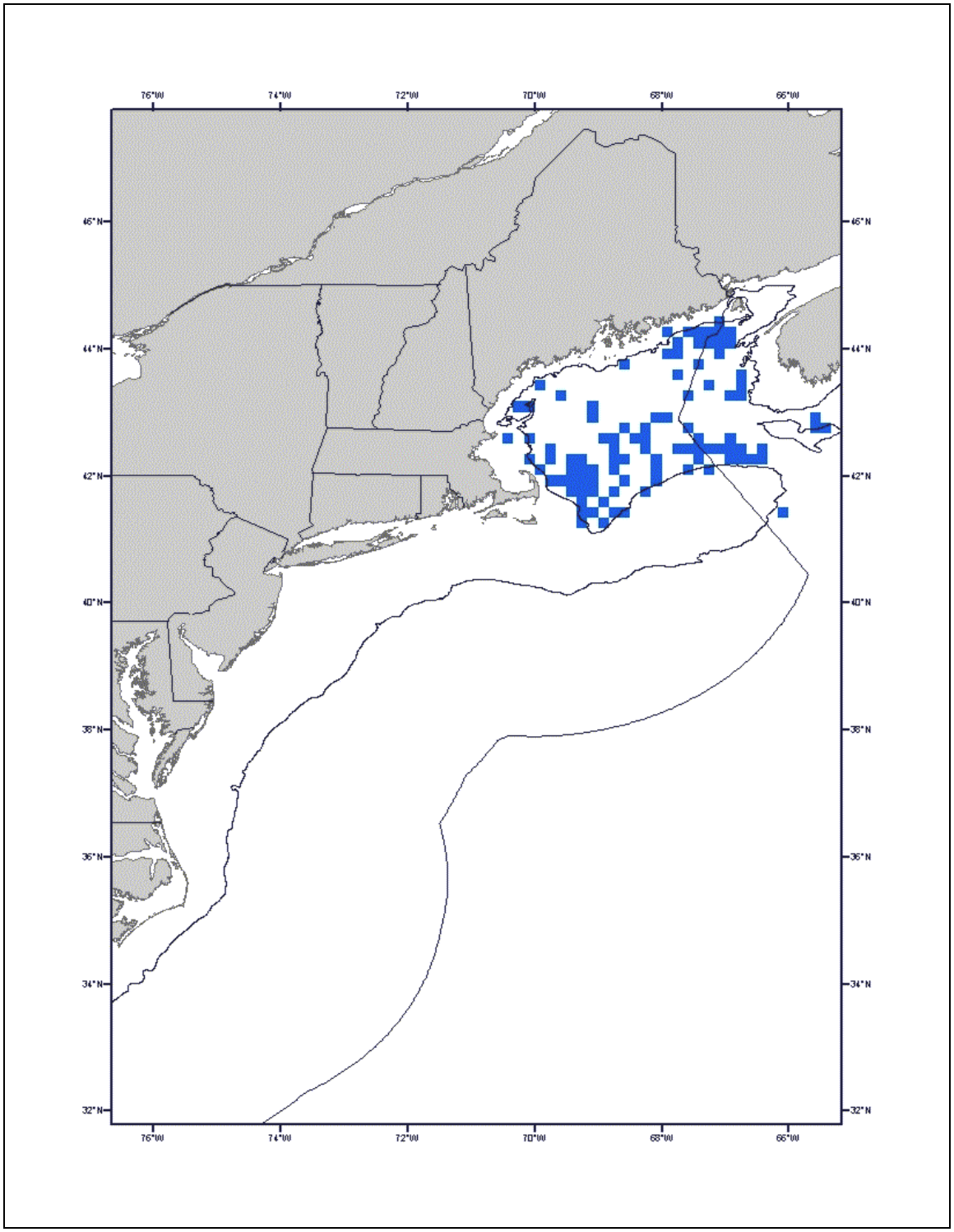
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a soft substrate, including sand/mud bottoms, mud with echinoid and ophuiroid fragments, and shell and pteropod ooze that occur within the shaded areas would be designated as EFH. This option represents 50% of the observed range of this life stage.

Figure 43 Rosette Skate Adult EFH Option 4 – 100% (Non-Preferred)



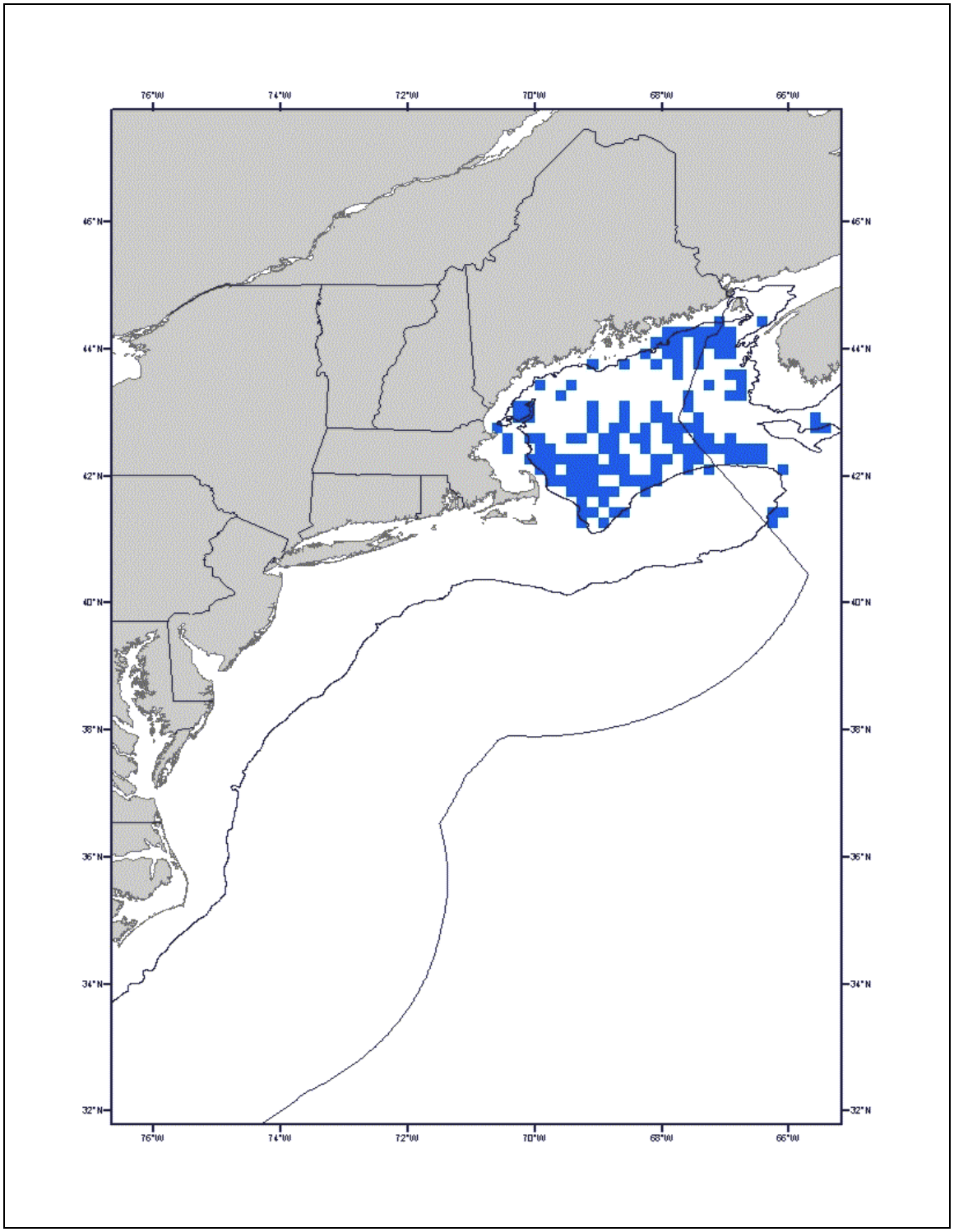
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a soft substrate, including sand/mud bottoms, mud with echinoid and ophuiroid fragments, and shell and pteropod ooze that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 44 Smooth Skate Juvenile EFH Option 1 – 50% (Non-Preferred)



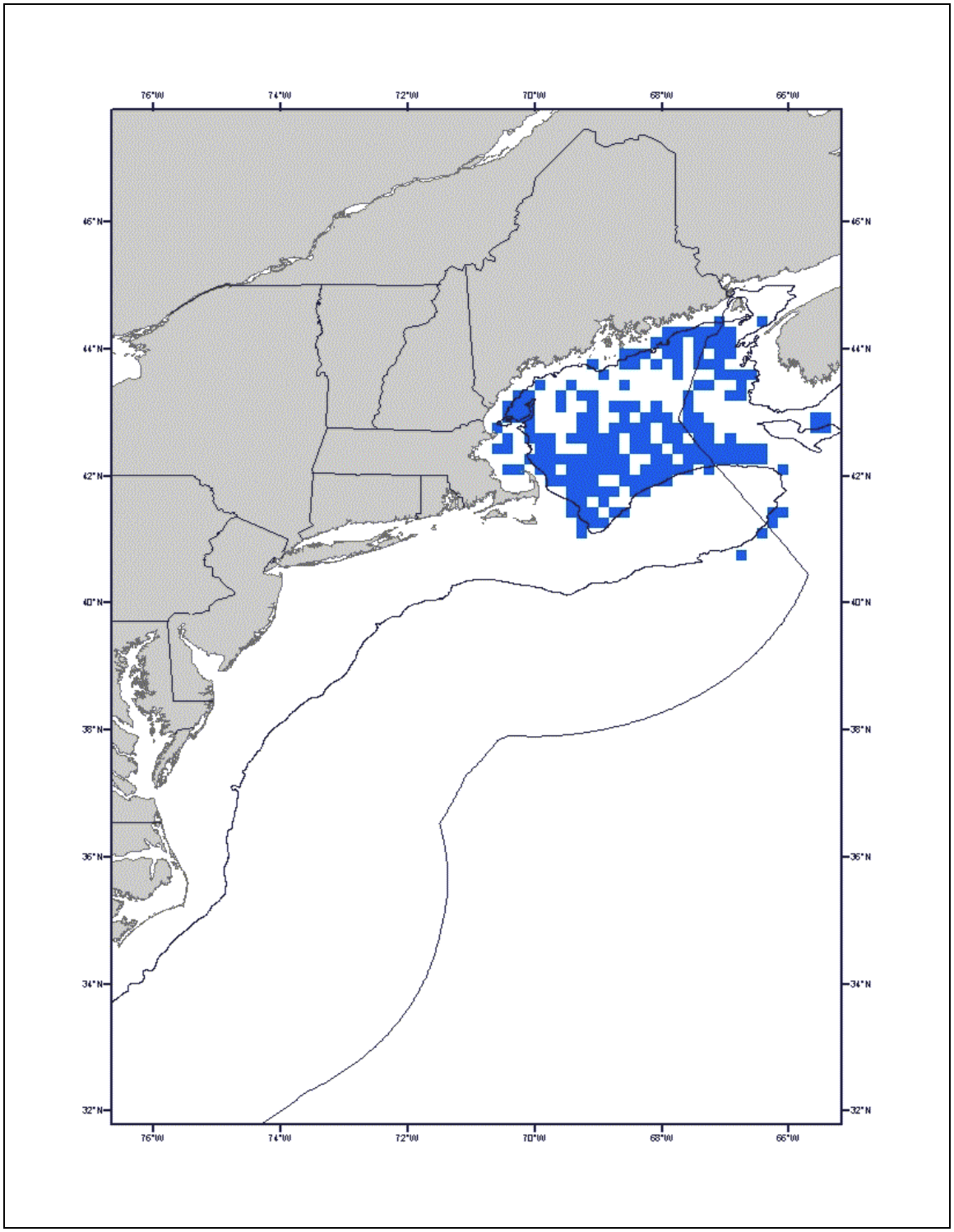
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of soft mud and also on sand, broken shells, gravel and pebbles that occur within the shaded areas would be designated as EFH. This option represents 22% of the observed range of this life stage.

Figure 45 Smooth Skate Juvenile EFH Option 2 – 75% (Non-Preferred)



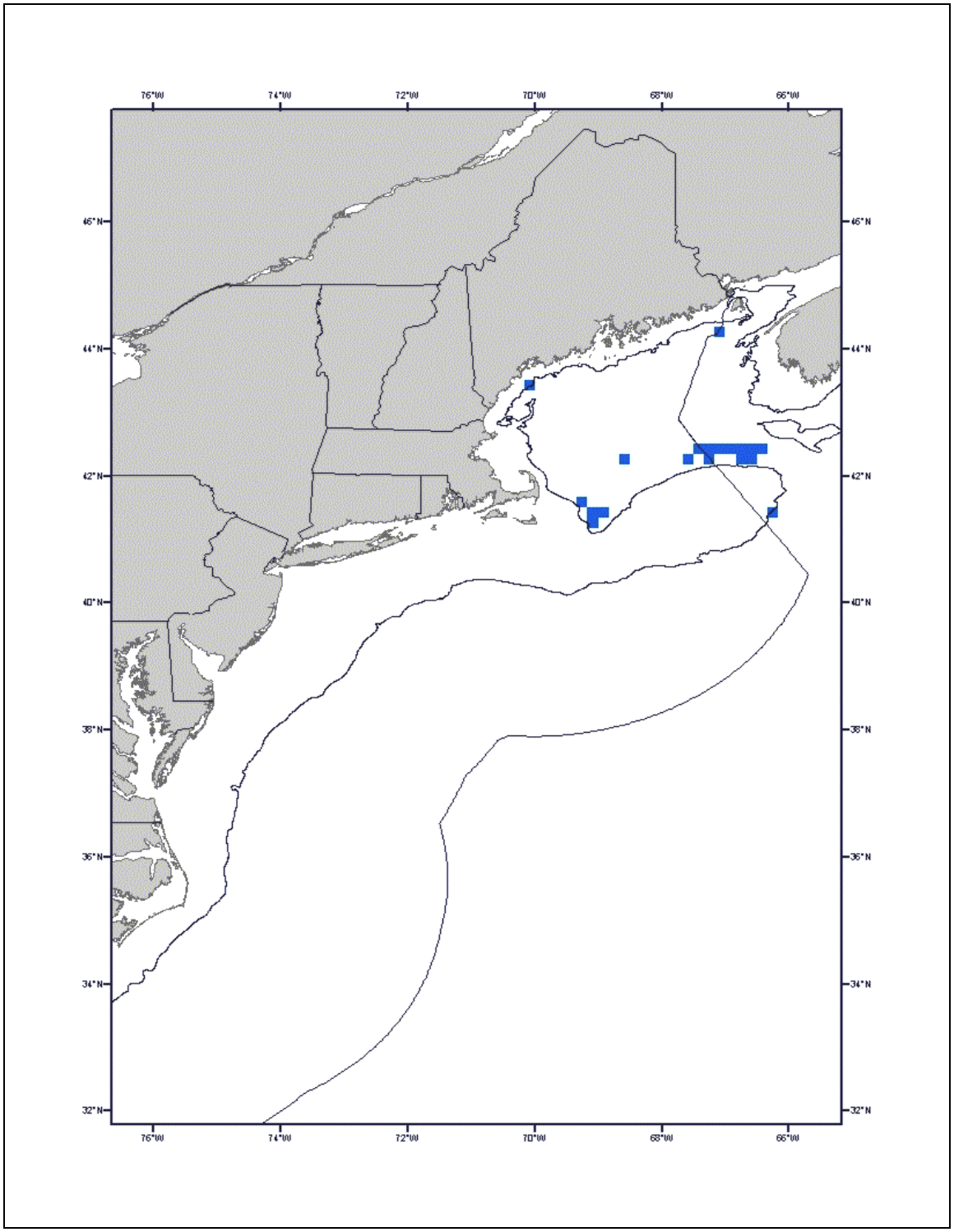
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of soft mud and also on sand, broken shells, gravel and pebbles that occur within the shaded areas would be designated as EFH. This option represents 41% of the observed range of this life stage.

Figure 46 Smooth Skate Juvenile EFH Option 4 – 100% (Non-Preferred)



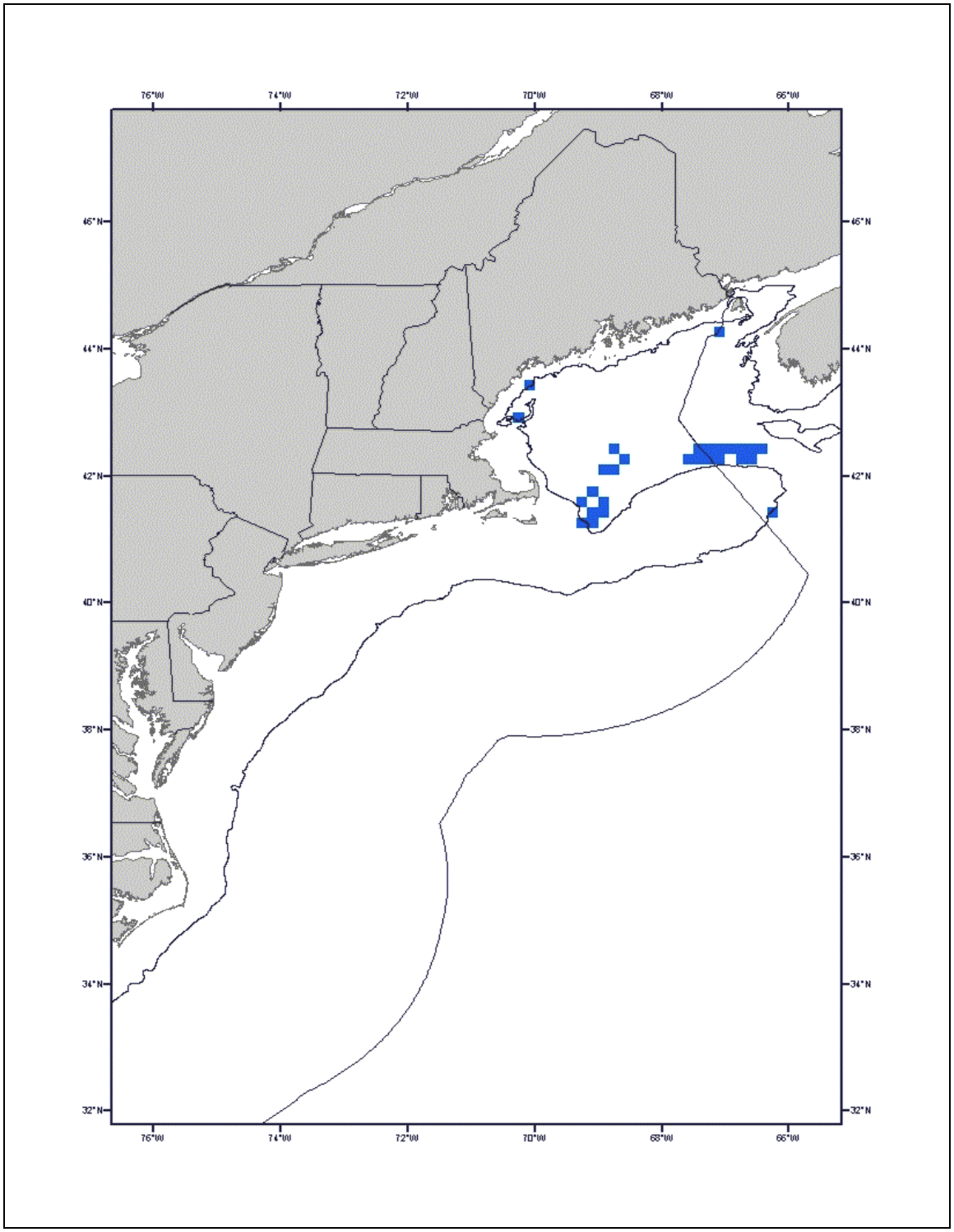
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of soft mud and also on sand, broken shells, gravel and pebbles that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 47 Smooth Skate Adult EFH Option 1 – 50% (Non-Preferred)



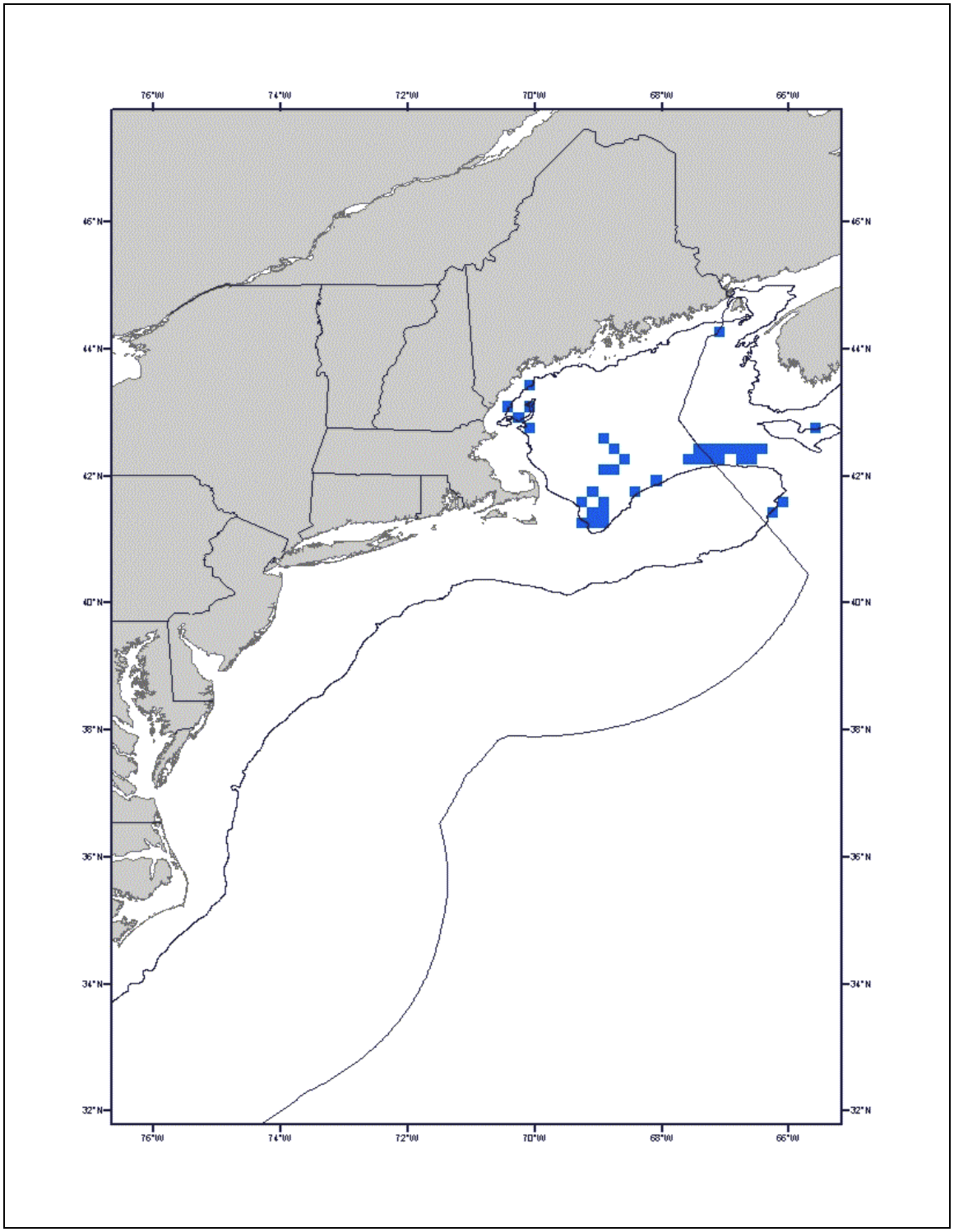
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of soft mud and also on sand, broken shells, gravel and pebbles that occur within the shaded areas would be designated as EFH. This option represents 20% of the observed range of this life stage.

Figure 48 Smooth Skate Adult EFH Option 2 – 75% (Non-Preferred)



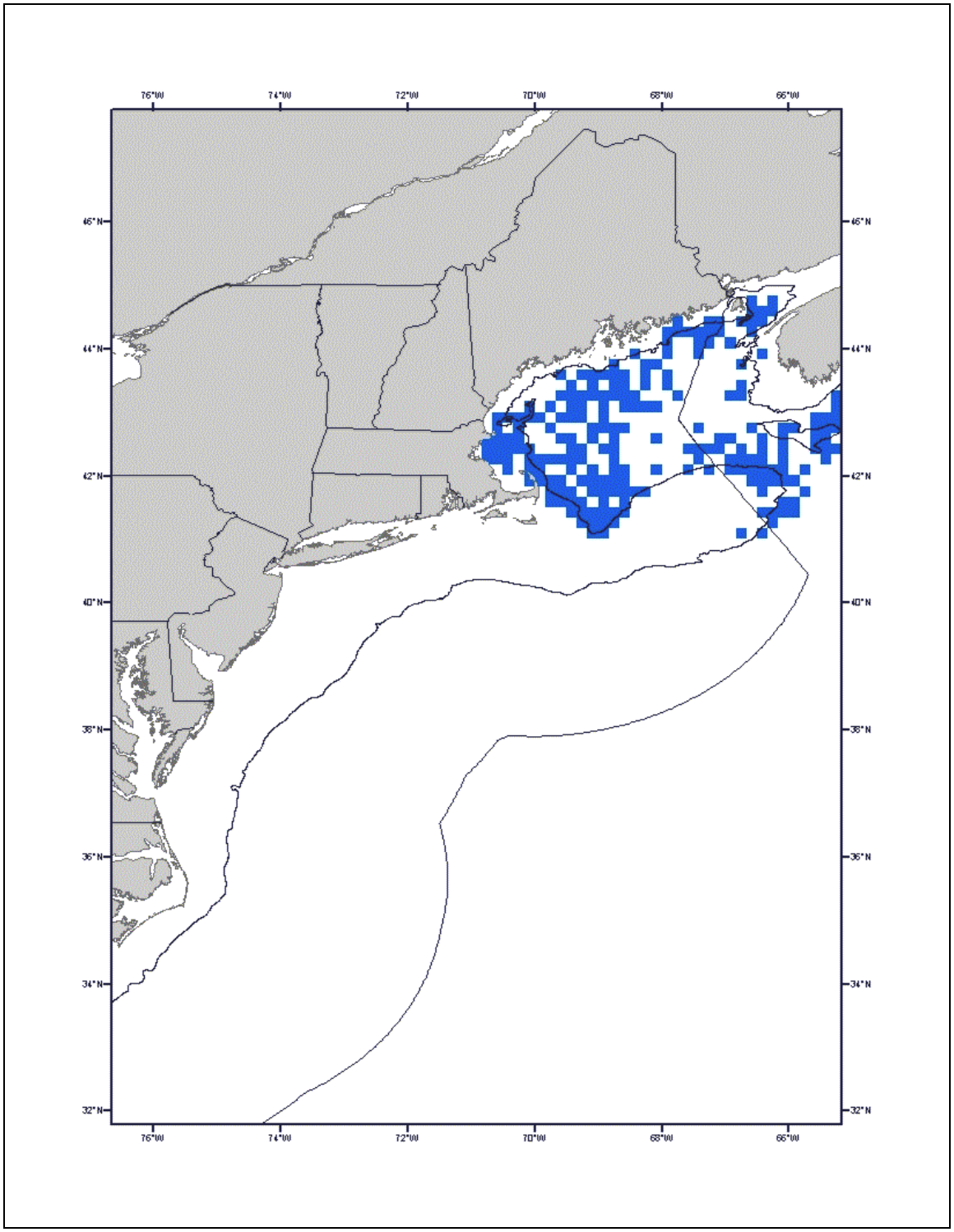
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of soft mud and also on sand, broken shells, gravel and pebbles that occur within the shaded areas would be designated as EFH. This option represents 46% of the observed range of this life stage.

Figure 49 Smooth Skate Adult EFH Option 4 – 100% (Non-Preferred)



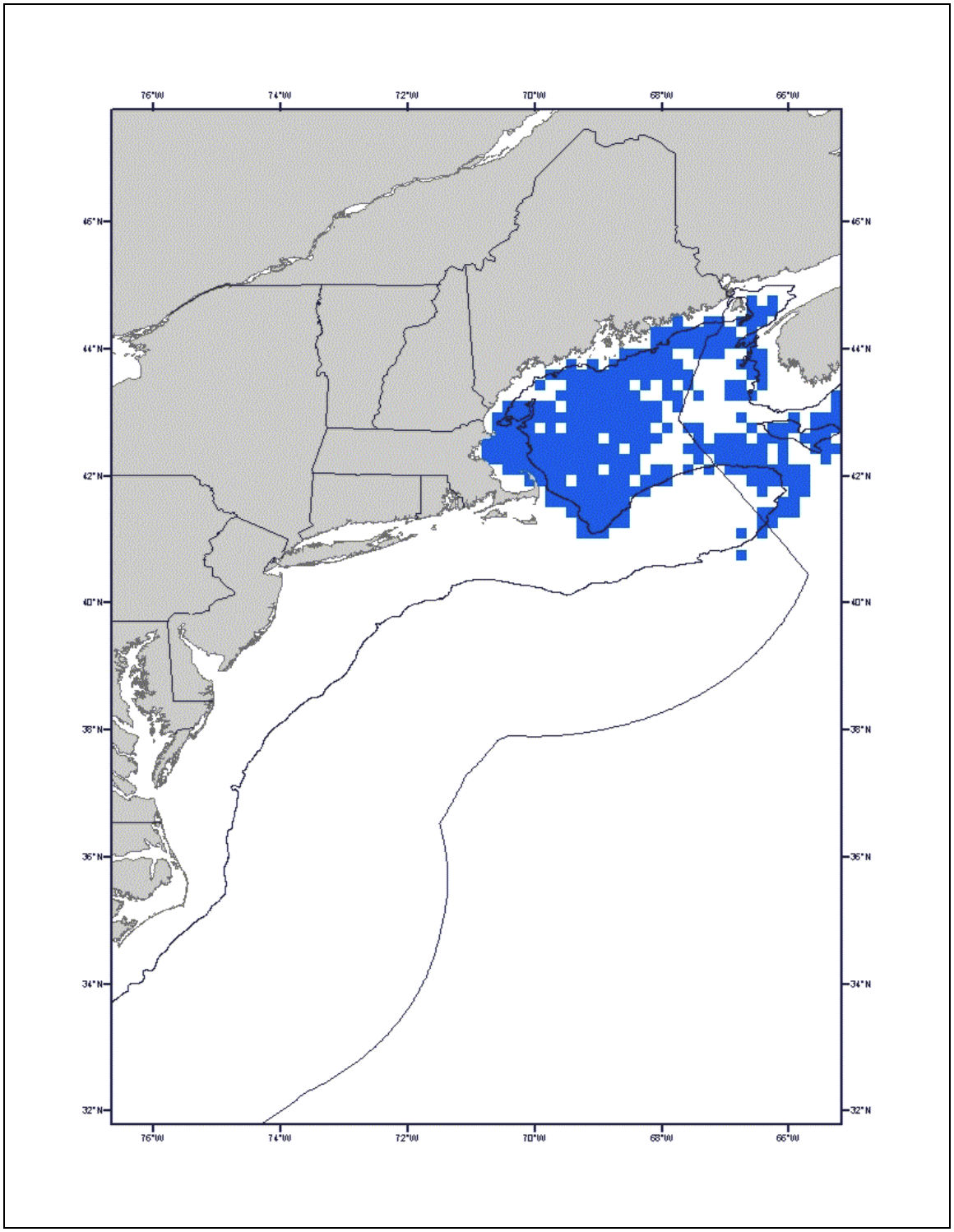
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of soft mud and also on sand, broken shells, gravel and pebbles that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 50 Thorny Skate Juvenile EFH Option 1 – 50% (Non-Preferred)



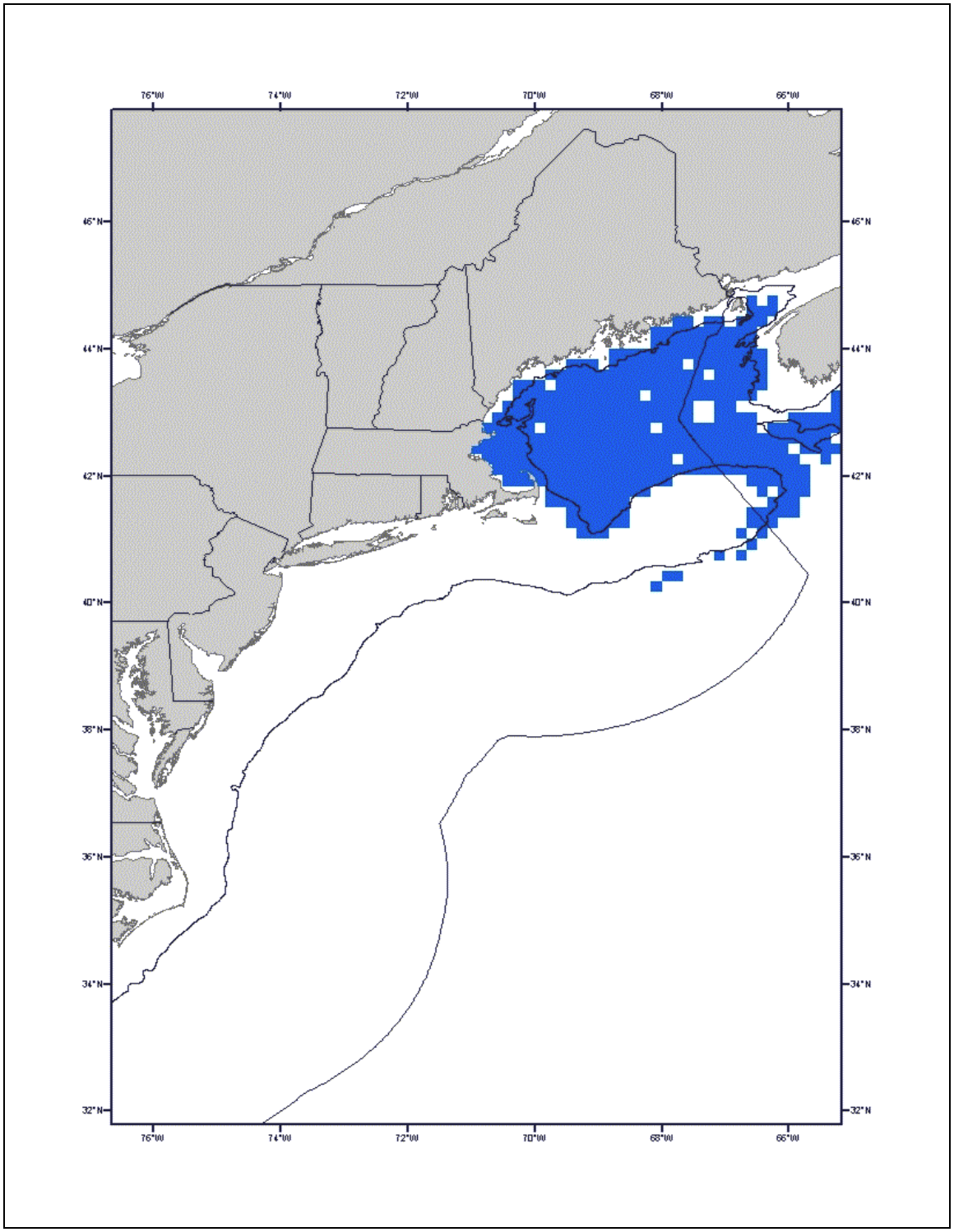
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of sand, gravel, broken shell, pebbles, and soft mud that occur within the shaded areas would be designated as EFH. This option represents 28% of the observed range of this life stage.

Figure 51 Thorny Skate Juvenile EFH Option 2 – 75% (Non-Preferred)



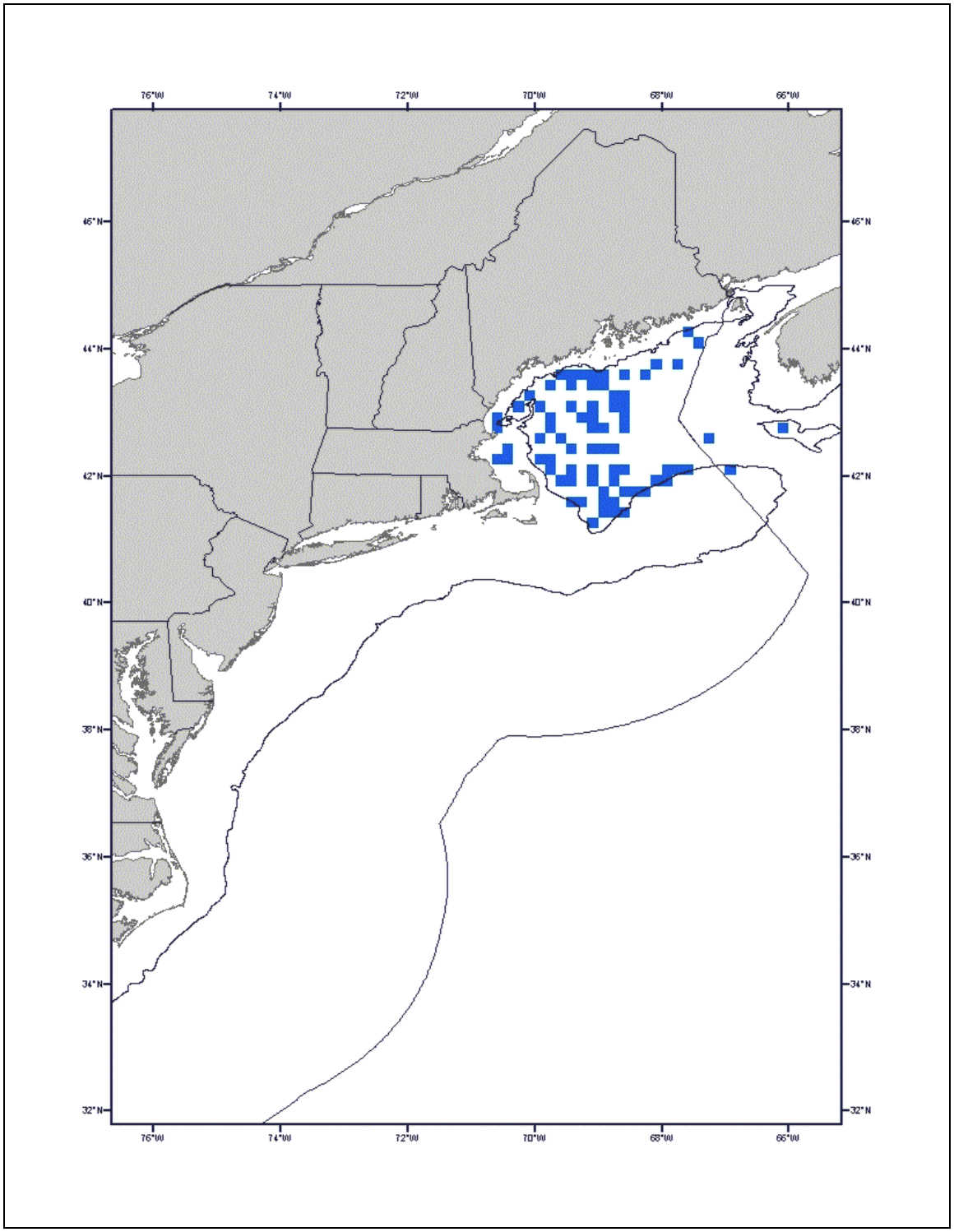
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of sand, gravel, broken shell, pebbles, and soft mud that occur within the shaded areas would be designated as EFH. This option represents 49% of the observed range of this life stage.

Figure 52 Thorny Skate Juvenile EFH Option 4 – 100% (Non-Preferred)



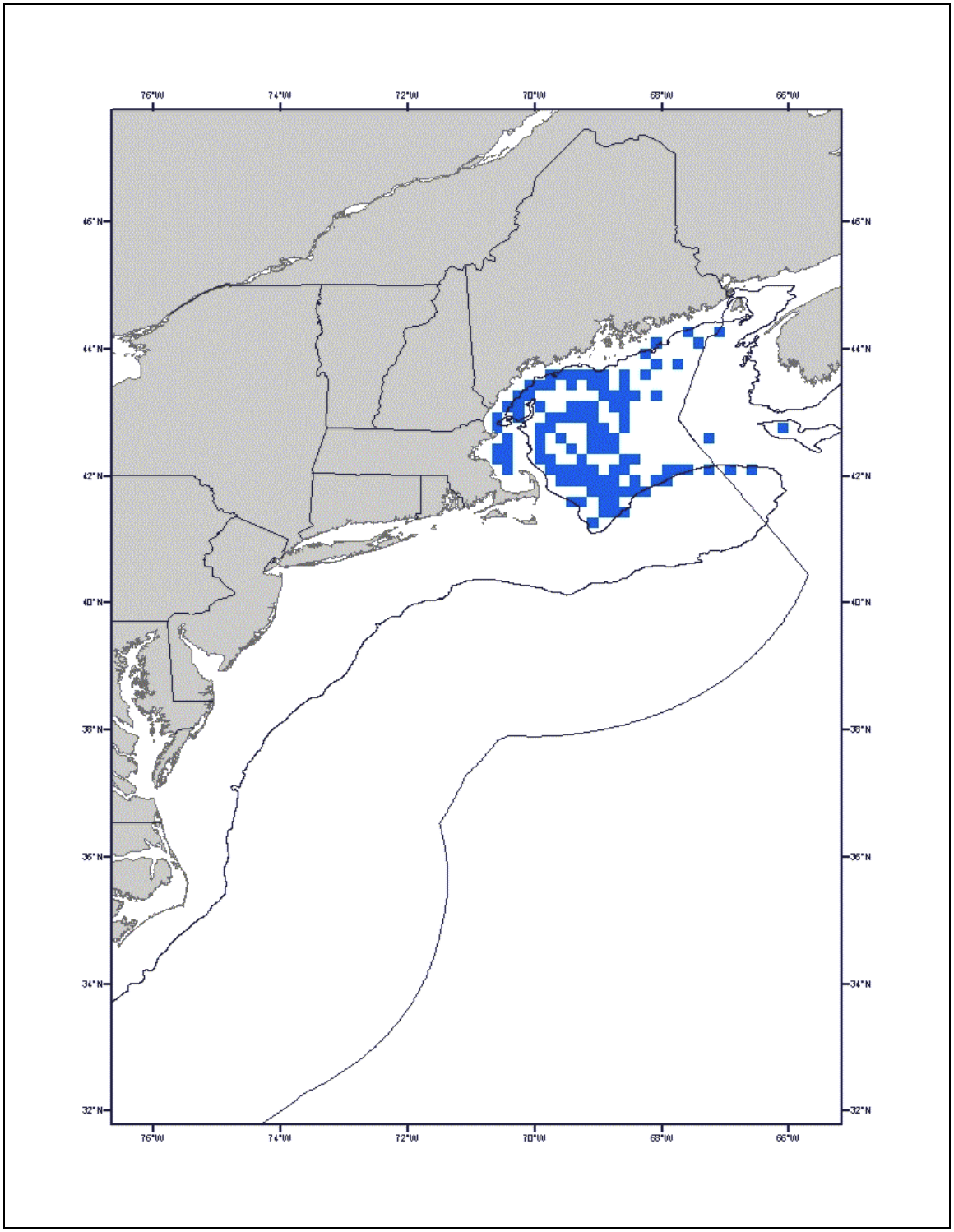
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of sand, gravel, broken shell, pebbles, and soft mud that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 53 Thorny Skate Adult EFH Option 1 – 50% (Non-Preferred)



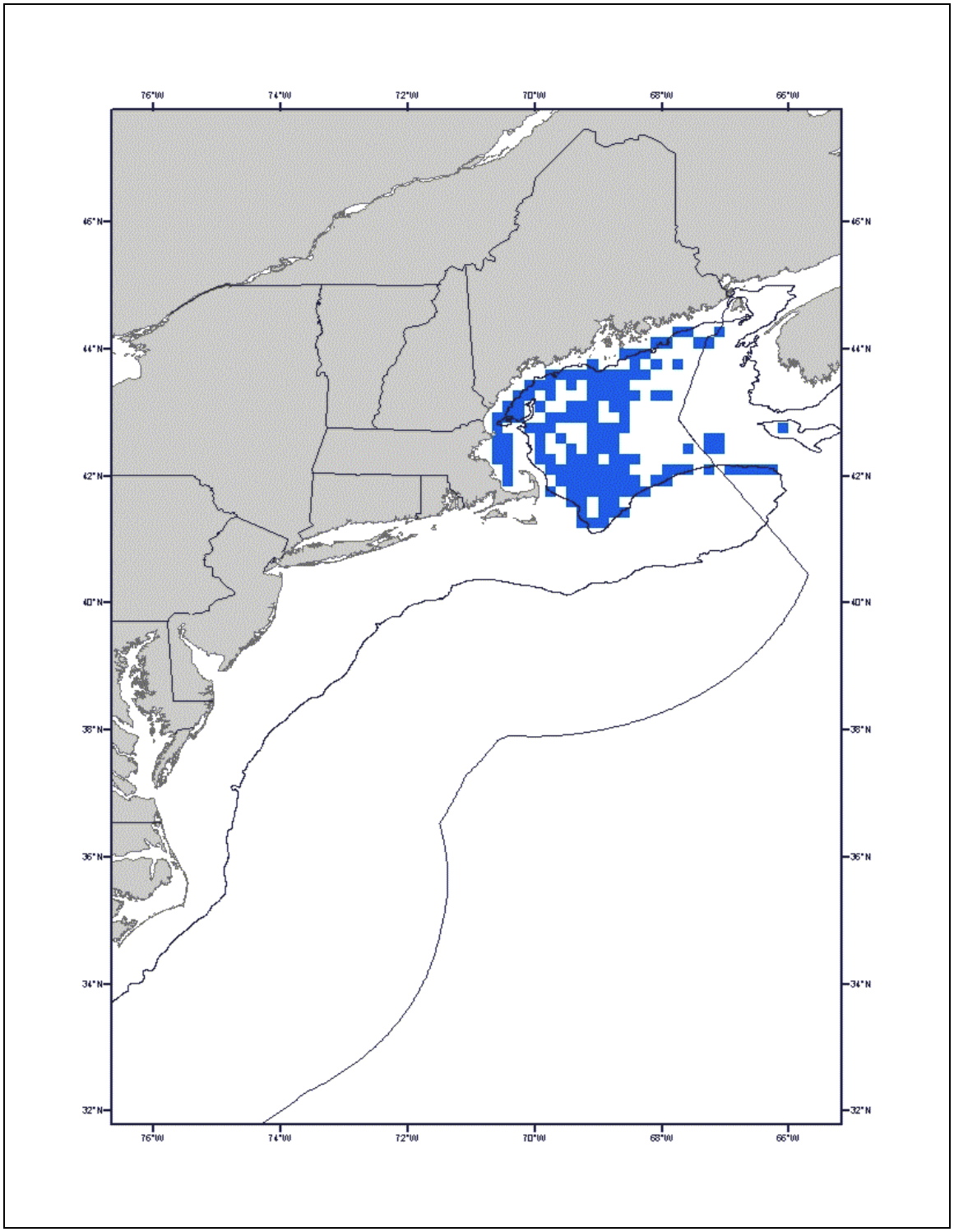
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of sand, gravel, broken shell, pebbles, and soft mud that occur within the shaded areas would be designated as EFH. This option represents 25% of the observed range of this life stage.

Figure 54 Thorny Skate Adult EFH Option 2 – 75% (Non-Preferred)



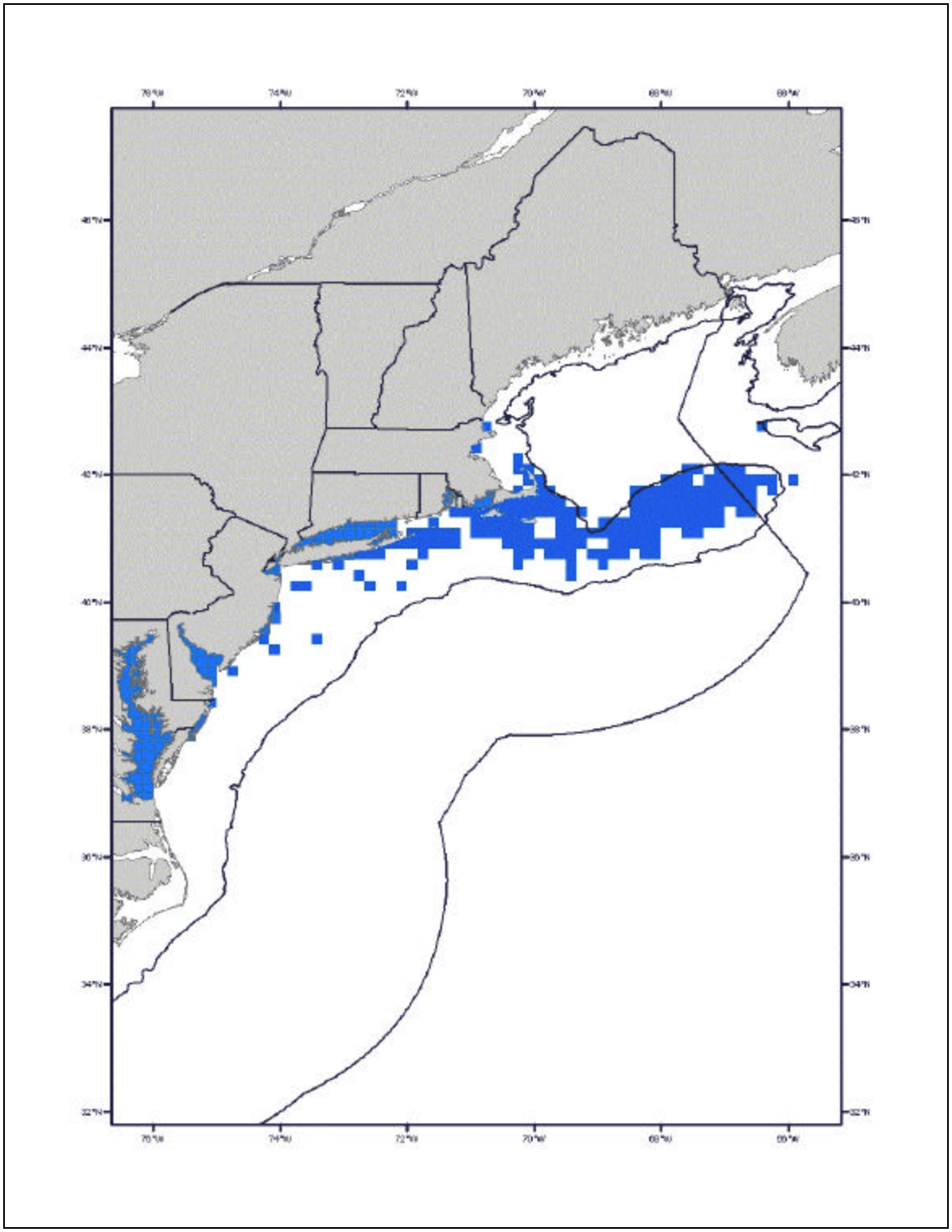
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of sand, gravel, broken shell, pebbles, and soft mud that occur within the shaded areas would be designated as EFH. This option represents 45% of the observed range of this life stage.

Figure 55 Thorny Skate Adult EFH Option 4 – 100% (Non-Preferred)



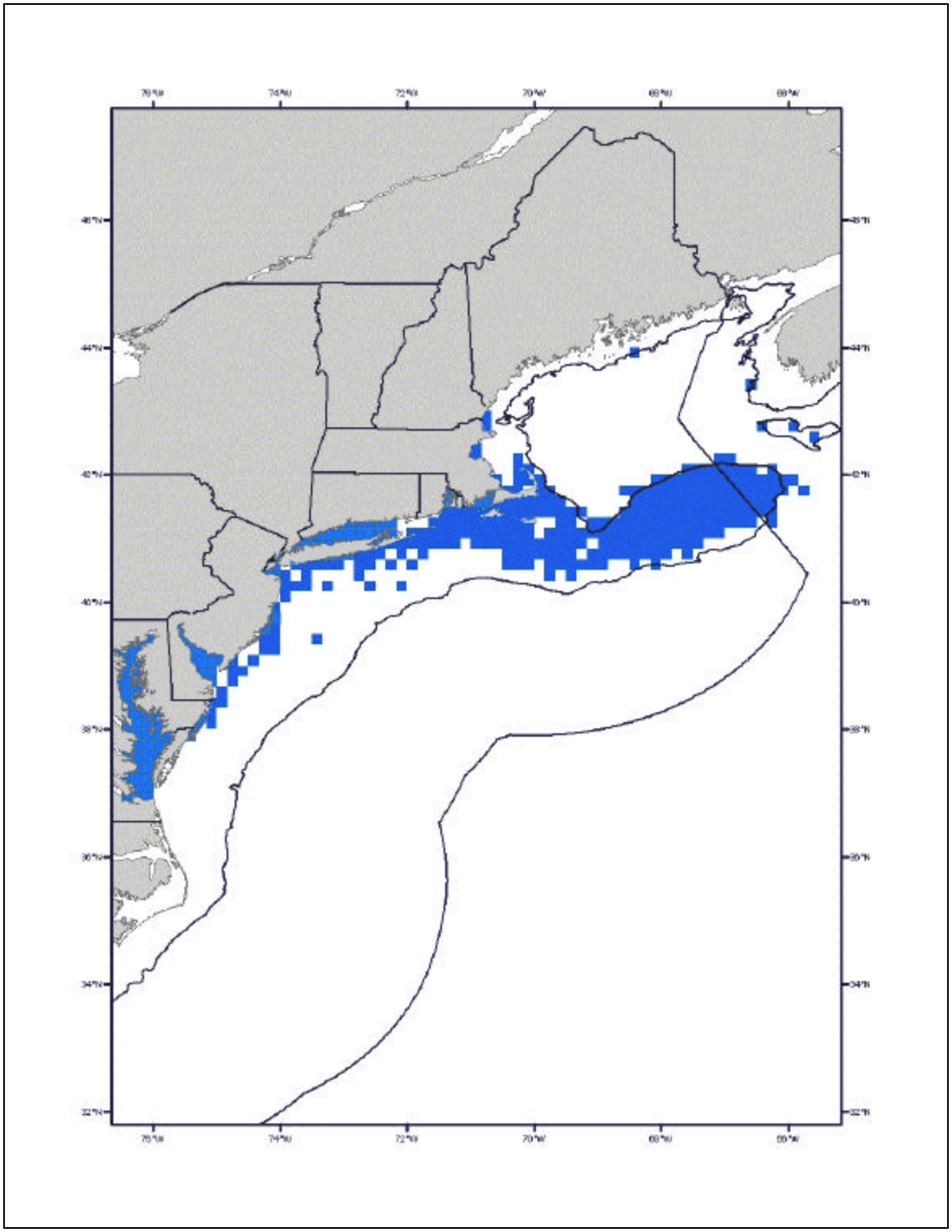
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999). Only habitats with a substrate of sand, gravel, broken shell, pebbles, and soft mud that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 56 Winter Skate Juvenile EFH Option 1 – 50% (Non-Preferred)



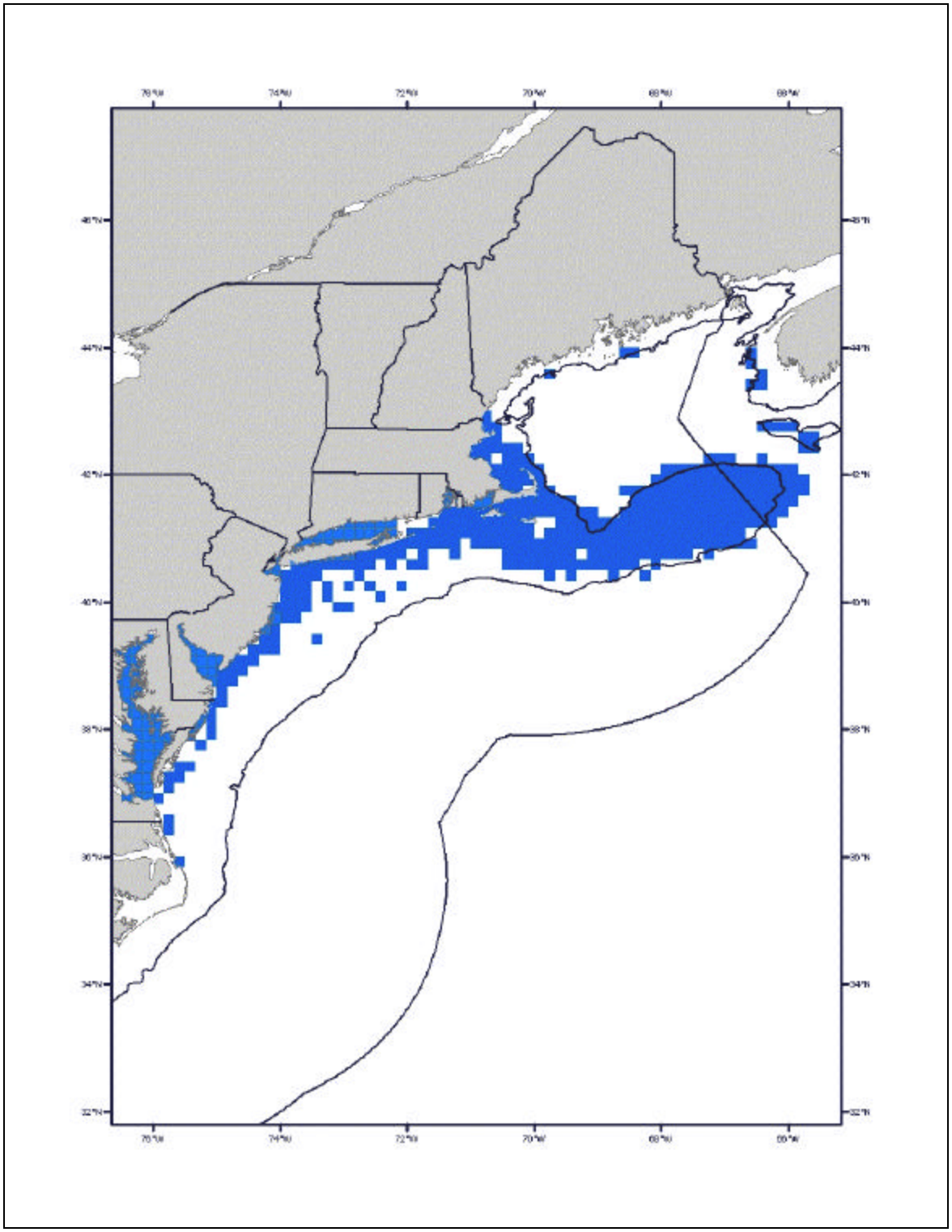
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with a substrate of sand and gravel or mud that occur within the shaded areas would be designated as EFH. This option represents 14% of the observed range of this life stage.

Figure 57 Winter Skate Juvenile EFH Option 2 – 75% (Non-Preferred)



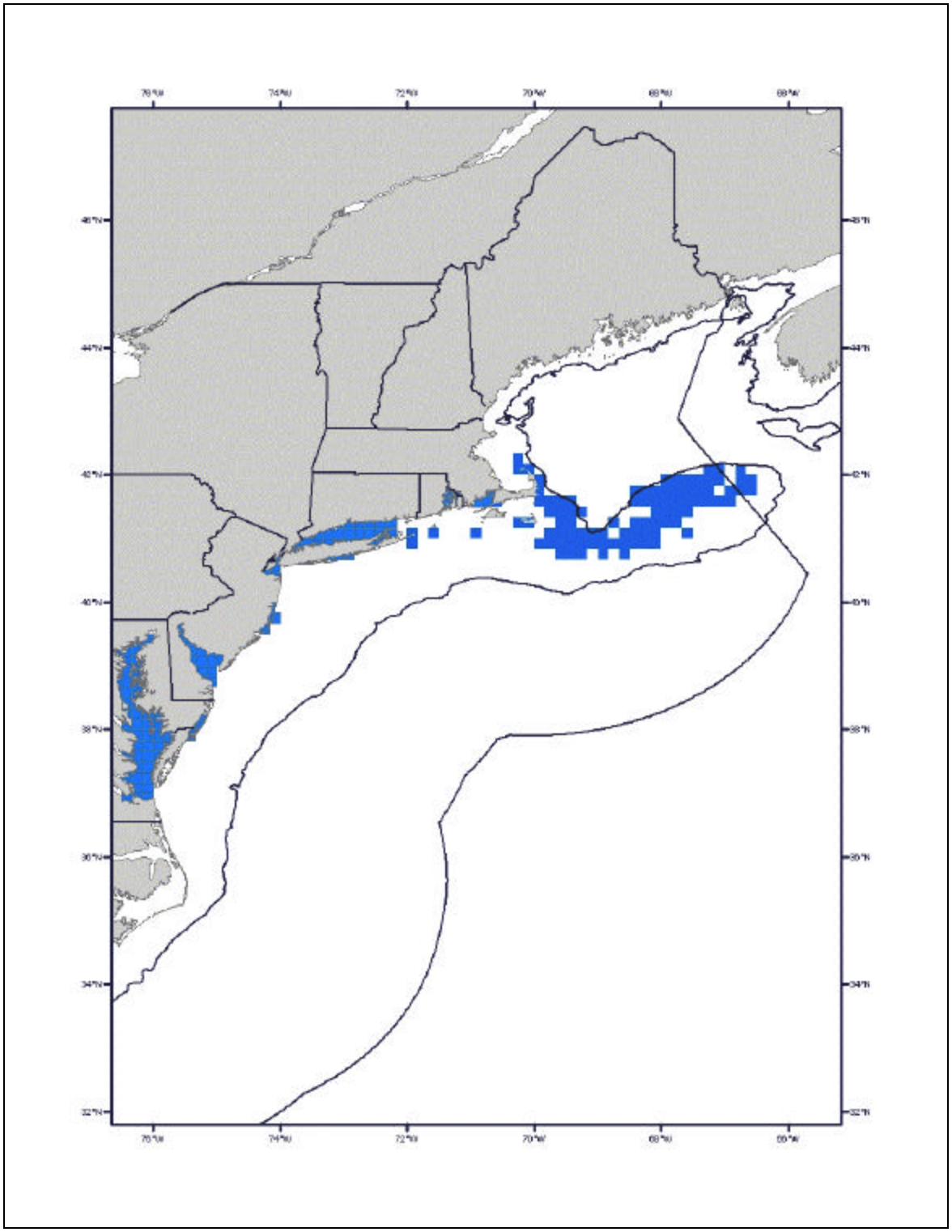
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with a substrate of sand and gravel or mud that occur within the shaded areas would be designated as EFH. This option represents 28% of the observed range of this life stage.

Figure 58 Winter Skate Juvenile EFH Option 4 – 100% (Non-Preferred)



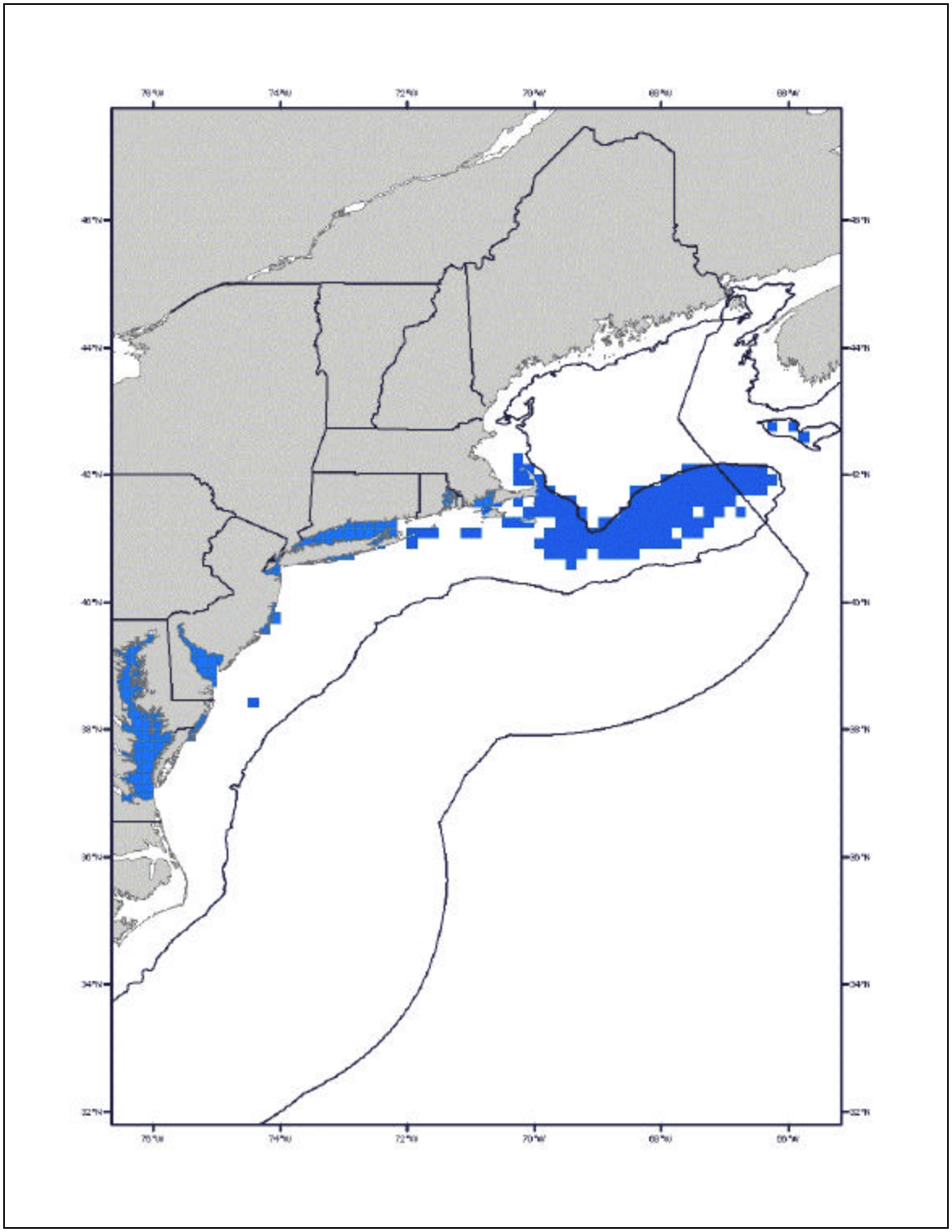
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with a substrate of sand and gravel or mud that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

Figure 59 Winter Skate Adult EFH Option 1 – 50% (Non-Preferred)



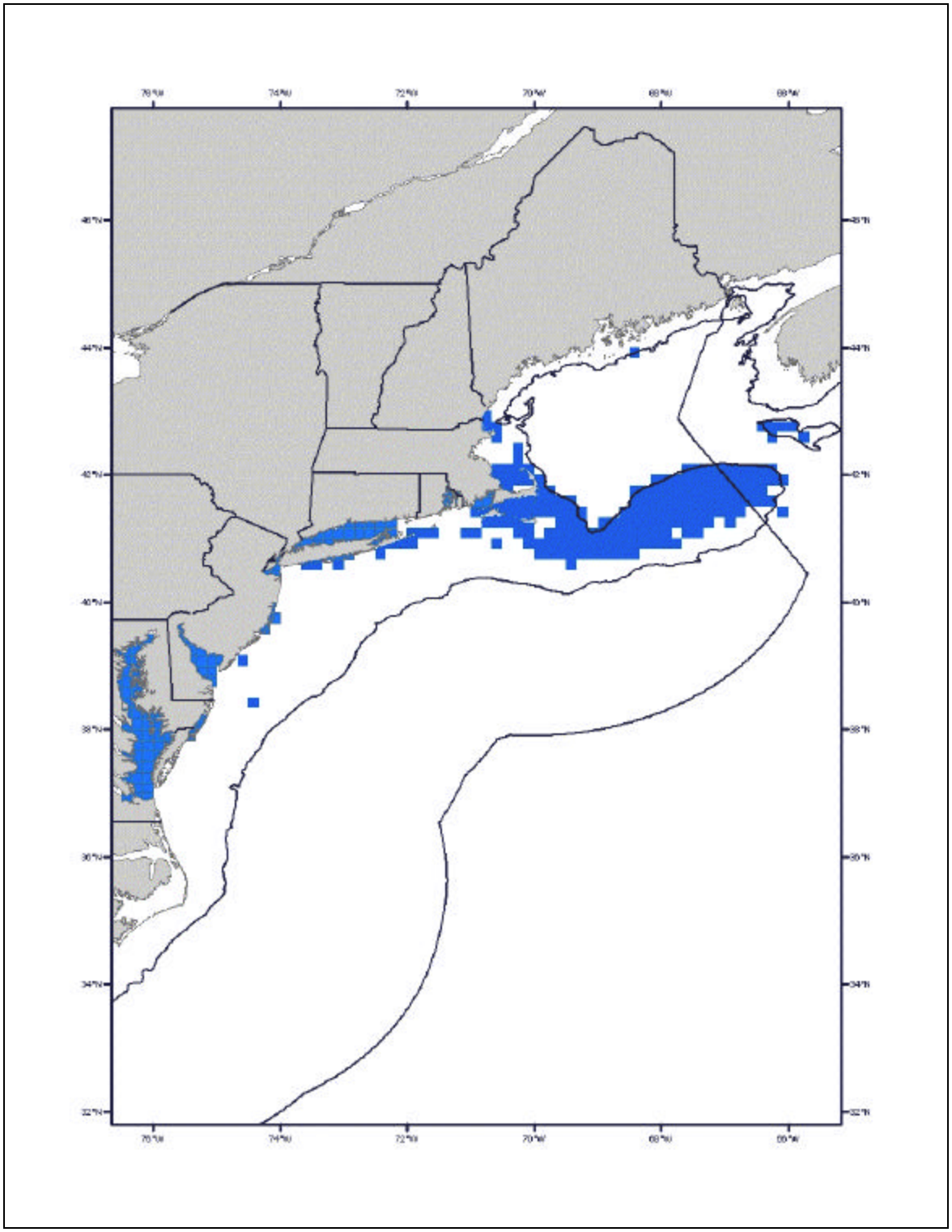
This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with a substrate of sand and gravel or mud that occur within the shaded areas would be designated as EFH. This option represents 12% of the observed range of this life stage.

Figure 60 Winter Skate Adult EFH Option 2 – 75% (Non-Preferred)



This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with a substrate of sand and gravel or mud that occur within the shaded areas would be designated as EFH. This option represents 26% of the observed range of this life stage.

Figure 61 Winter Skate Adult EFH Option 4 – 100% (Non-Preferred)



This map represents an option for the designation of EFH for this life history stage based on the areas of highest relative abundance of this species, based on the NMFS trawl survey (1963 - 1999) and ELMR data presented in Table 5. Only habitats with a substrate of sand and gravel or mud that occur within the shaded areas would be designated as EFH. This option represents 100% of the observed range of this life stage.

5.2.4 Federal Permit Program (Non-Preferred)

The Council considered four options, including the no action alternative, for establishing federal permits for vessels, operators, and dealers engaged in the skate fisheries. The Council selected Permit Option 1A as the proposed action (Section 4.9). Permit Options 1B, 2, and 3 are summarized below. The no action alternative is discussed in Section 5.1.

Permit Option 1B would require all vessels fishing for or landing skates in the EEZ to obtain a general skate fishery permit. Vessels that never possess more than 100 pounds of skates on board (bait and/or wings) would not be required to obtain a skate permit. The Council rejected this option because it does not incorporate all vessels that catch any amount of skates into the permit and catch reporting system. Although the extent to which catch reporting under Option 1B would be incomplete, it is inconsistent with the objectives of this FMP to not include all vessels and dealers in the permit and catch reporting systems.

Permit Option 2 would establish two permits for skates: (1) a Directed Skate Permit and (2) an Incidental Catch Skate Permit. (The terms "directed" and "incidental catch" are being applied loosely, recognizing that the vast majority of the skate wing fishery is an incidental catch fishery.) Vessels would be required to select either a directed or incidental catch skate permit on an annual basis.

- Vessels that obtain a **Directed Skate Permit** would be required to comply with ***all*** provisions of the Skate FMP, including any skate possession limits, gear restrictions, and other measures (seasons and closures) that may be implemented in the future.
- Vessels that obtain an **Incidental Catch Skate Permit** would be limited to a ***1,000 pound possession limit of skates (wings or bait)*** and would be required to comply with any species prohibitions in the Skate FMP.

The Council does not prefer Permit Option 2 because there are no incentives in the FMP at this time to encourage vessels to obtain an incidental skate permit rather than a directed permit. The PDT anticipated that without incentives, the vast majority of vessels would obtain directed permits, thereby defeating the objective of this option. If this is the case, the additional cost of administering a two-tier permit system would not be offset by any benefits related to better fishery information. The incidental catch limit may also create regulatory discards.

Permit Option 3 would allow vessels and dealers that possess any northeast federal fisheries permits that include logbook and dealer reporting requirements to use these other federal permits to land, sell, and purchase skates. Vessels and dealers that do not possess any northeast federal fisheries permits that include logbook and dealer reporting requirements would be required to obtain a general open access skate fishery permit. This ensures that all skate fishing activity will still be subject to reporting requirements even if some vessels do not possess a specific skate permit. The Council does not prefer Permit Option 3 because it is not consistent with permit programs in all other fisheries in the Northeast Region and could therefore complicate administration, monitoring, and enforcement.

5.2.5 Catch Reporting Requirements (Non-Preferred)

Table 15 summarizes the various options that the Council considered for modifying current reporting requirements for vessels and dealers to collect more specific skate fishery information. The options outlined in Table 15 were presented to the public to provide a general framework for various modifications to current reporting requirements that the Council may implement through the Skate FMP and did not represent an exhaustive list of possible options under consideration. It was noted in the Draft FMP/EIS and the public hearing document that the options in Table 15 could be "mixed and matched" in several other ways to construct various other options for catch reporting requirements. The Council ultimately selected Reporting Option 4 as the proposed action.

Table 15 Summary of Options to Modify Reporting Requirements

OPTION NUMBER	Report **LANDINGS** by Species	Report **LANDINGS** by Bait/Wing Category	Report **DISCARDS** by Species	Report **DISCARDS** by Large/Small Category	**DESCRIPTION**
#1					Status Quo reporting, most as "uncl. skates" and "uncl. wings"
#2		vessel		vessel	Mandatory reporting by general size and market categories
		dealer			
#3	vessel		vessel		Mandatory reporting by species
	dealer				
#4	vessel		Sea Sampling and study fleets	vessel	Relies on sea sampling and study fleets for species-specific discard data
	dealer				
#5	vessel		Volunteer program for vessels	Non-volunteer vessels	Relies on volunteer program for species-specific discard data
	dealer				
#6	Volunteer program for vessels	Non-volunteer vessels	Volunteer program for vessels	Non-volunteer vessels	Relies on volunteer program for species-specific landings and discard data
		dealer			
#7		vessel		vessel	Mandatory species-specific reporting for dealers
	dealer				

The Council felt that Reporting Option 4 was the most feasible and realistic option to collect much-needed fishery information without imposing an unreasonable burden on the industry. The no action alternative (Reporting Option 1) does not address the objectives of the Skate FMP because it does not provide a mechanism to collect detailed skate fishery data for monitoring the fishery and measuring the effectiveness of management. The Council does not prefer the options that required discards to be reported by individual species because this requirement could increase discard mortality if skates stay on deck longer for identification purposes. Also,

difficulty in identification of species could affect the accuracy of the data. The Council does not prefer options that rely on a volunteer program for species-specific reporting because there currently are no incentives in the FMP to encourage vessels to participate in the voluntary data collection program. Therefore, volunteers would be hard to recruit into the reporting program and would require training to improve their ability to differentiate species.

5.2.6 Management Measures to Protect Barndoor, Thorny, and Smooth Skates (Non-Preferred)

In addition to the no action alternatives for barndoor, thorny, and smooth skates (Section 5.1), the Council considered prohibiting the possession (Option 1), landing (Option 2), and sale (Option 3) of each of these species. In general:

- A prohibition on the possession of a species means that ***no*** federally-permitted vessels or dealers will be allowed to possess the prohibited species. This includes all vessels and dealers with any federal permits, not just those permitted for the skate fishery. In the regulations, prohibitions on possession are comprehensive and refer to: fish for, harvest, possess, or land. Terms like catch, take, and retain may also be added to the regulatory language for a prohibition on possession. Similar to the prohibition on the possession of salmon, language may be added to the regulation that requires all of the prohibited species to be released in such a manner as to insure maximum probability of survival.
- A prohibition on the landing= of a species means that ***no*** federally-permitted vessels will be allowed to land the prohibited species, and ***no*** federally-permitted dealers will be allowed to purchase the prohibited species. "Land" is defined in the regulations as to begin offloading fish, to offload fish, or to enter port with fish. Dealer prohibitions usually refer to: purchase, possess or receive for a commercial purpose, or attempt to purchase possess or receive for a commercial purpose.
- A prohibition on the sale of a species means that ***no*** federally-permitted dealers will be allowed to purchase the prohibited species, and no federally-permitted vessels will be allowed to sell the prohibited species. In the regulations, prohibitions on sale usually refer to: sell, barter, trade, or otherwise transfer; or attempt to sell, barter, trade, or otherwise transfer for a commercial purpose.

The trade-offs associated with these options are discussed in Section 6.1.4 of this document. The Council selected prohibitions on possession for barndoor, thorny and smooth skates because these are the most proactive and precautionary measures that the Council can take at this time, and all three species are in need of protection to ensure that they rebuild to their long-term target levels. In addition, there are significant enforcement problems associated with prohibitions on landing and sale. The Council established a geographical limit on the prohibition on possession of smooth skate (GOM) to avoid overlap and potential species identification problems in the southern New England bait fishery. The majority of smooth skate is distributed in the GOM, so this geographical limitation should not compromise the biological benefits of the proposed action.

5.2.7 Possession Limits for the Skate Wing Fishery (Non-Preferred)

The Council considered four options for possession limits for the skate wing fishery, including the no action alternative. The no action alternative (Option 4) is discussed in Section 5.1 of this document. Options 1-3 are summarized below. The Council adopted a combination of Options 1 and 2 as the proposed action in this FMP.

Option 1. 10,000 pounds of skate wings (22,700 pounds whole weight)
Option 2. 20,000 pounds of skate wings (45,400 pounds whole weight)
Option 3. 30,000 pounds of skate wings (68,100 pounds whole weight)

Analyses of the impacts of all three of the above possession limit options is presented in Section 6.0 of this document. The Council does not prefer Option 3 because analysis showed that only a very small conservation benefit could be expected with such a high possession limit. Options 1 and 2, when combined, could produce a conservation benefit (i.e., reduction in landings) up to 14%. The benefits of a wing possession limit include not only fishing mortality reductions for winter skate, but also long-term benefits to the wing species if the possession limit can discourage expansion of the fishery and/or an influx of new entrants into the fishery. Also, it is very likely that management measures in other fisheries, especially additional effort reductions in the groundfish fishery, will continue to reduce effort in the skate wing fishery and allow winter skate to rebuild to its long-term target level.

5.3 REJECTED ALTERNATIVES

The following subsections describe alternatives that were rejected by the Council during the development of the Draft Skate FMP/EIS. These were identified in the Draft FMP as "rejected alternatives" and were not fully analyzed in the Draft EIS. The rationale for the Council's rejection also is briefly summarized below.

5.3.1 Management Unit

As discussed in Section 4.1 of this document, the Council considered establishing a management unit based on the geographic extent of the ranges of all the species in the skate complex.

Two of the skate species in the northeast complex are distributed significantly farther south than the other species: clearnose and rosette skates. The ranges of these two species extend from the Southern New England area southward, well beyond the extent of the NEFSC trawl survey and into waters off the coast of Florida. For this reason, the Council discussed the possibility of managing these species throughout the extent of their ranges, that is, from Maine – Florida. However, it seems neither practical nor prudent for the New England Council to attempt to manage skate resources as far south as Florida. During the development of this FMP, the Council requested that the National Marine Fisheries Service remove clearnose and rosette skates from the northeast complex to diminish concerns about the possibility of the New England Council developing management measures for the southeast region. NMFS' response suggested that this matter could be addressed through the specification of an appropriate management unit in the Skate FMP. Therefore, the management unit proposed in Section 4.1 is defined not as the area that incorporates the geographic range of all seven skate species, but as the area that

incorporates the range of the New England Council's jurisdiction over management of the resource.

5.3.2 Skate-Specific Days-at-Sea (DAS)

The Council discussed the possibility of developing a separate DAS program for skates and controlling effort in the skate fishery through DAS management. This approach was rejected at this time for several reasons:

- Establishing another DAS program is administratively burdensome, and it does not appear that current administrative resources could absorb the increased burdens.
- The vast majority of skate fishing in federal waters is already managed through the Multispecies DAS program, since vessels must be using Multispecies DAS to catch skates unless they are fishing in an exempted fishery.
- Because most skate fishing occurs under Multispecies DAS and because of the lack of skate fishery information, it would be very difficult at this time to determine appropriate allocations of skate-specific DAS and appropriate reductions in DAS to achieve skate rebuilding objectives.

5.3.3 Requirement to Land All Skates Whole

Skates that are landed for the wing fishery are almost always landed only as wings and not whole skates. In some cases, this makes it difficult to attribute the wings to a particular skate species (although barndoor wings are easily identified). The Council considered requiring vessels to land all skates whole in order to improve species identification. This measure was rejected at this time for several reasons:

- It would create a significant amount of shoreside waste (skate carcasses) that would require disposal at an additional and potentially significant cost. If this cost were to be incurred by processors, it would likely result in a significant decrease in the ex-vessel price for skates. This measure could therefore impose significant economic burdens throughout the industry with no apparent or direct positive biological impact.
- Processors indicated that requiring wing skates to be landed whole could compromise the quality of the wing meat, especially on long/multi-day trips.

5.3.4 Limiting the Bait Fishery to Little Skate Only

The Council considered limiting the bait fishery to little skate only as a possible means of reducing fishing mortality on winter skate. Juvenile winter skates are thought to compose about 5-10% of landings in the skate bait fishery. This measure was rejected at this time for several reasons:

- Distinguishing little skates from juvenile winter skates is very difficult and requires examining each skate individually. The skate bait fishery is a high-volume fishery with some trips exceeding 50,000 pounds. It is not reasonable to expect bait catches to be sorted and examined to determine which skates are juvenile winter skates. In addition, the extra time

required to sort the catch would likely increase the mortality of any juvenile skates that would be discarded.

- Species identification issues with little skates and juvenile winter skates would make this requirement very difficult to enforce.
- This measure is unlikely to significantly reduce fishing mortality on winter skate because of the small proportion of total bait catch that winter skate represents.

5.3.5 TACs

The Council considered implementing both "hard" (quota) and "soft" (target) Total Allowable Catches for the species in the skate complex as a general management approach for both directed and incidental skate fisheries. This measure was rejected at this time for several reasons:

- Lack of species-specific information hampers the ability to develop appropriate catch levels, even if these levels are just target levels. There is no information available to determine what amount of any species in the skate complex has historically been landed in any fishery.
- Absolute biomass for any of the skate species cannot be estimated at this time, so it is not possible to establish TACs at appropriate levels based on current biomass.
- The species composition of incidental catches in other fisheries (scallops, monkfish, etc.) is currently unknown, so it is not possible to establish appropriate bycatch TACs in other fisheries at this time.

5.3.6 Possession Limits for the Bait Fishery

The Council considered establishing possession limits in the bait fishery as a way to control effort in the bait fishery. This measure was rejected at this time for several reasons:

- The little skate resource, which constitutes the vast majority of the skate bait fishery, is abundant (above the biomass target) and increasing. It does not appear that there is a need to control effort in the skate fishery at this time.
- This measure would impact the vessels most economically dependent on skate bait fishing and would have significant negative impacts.
- This measure could affect the supply of bait for the lobster fishery, thereby producing additional negative impacts.

5.3.7 Skate-Specific Area Closures

Because skates are relatively sedentary and appear to benefit from closed area protection, the Council considered establishing skate-specific area closures to protect the species in need of management attention. This measure was rejected at this time for several reasons:

- Skates are already benefiting significantly from the numerous area closures implemented in other fisheries. For additional discussion, please see Section 6.1.6 of this document.
- Lack of information precludes an accurate analysis of the biological impacts of any skate-specific closures on the species in need of management attention.

- Lack of information precludes a comprehensive and accurate analysis of the impacts of any skate-specific area closures on skate vessels as well as vessels engaged in other fisheries in the areas proposed for closure.
- Some ports in the Northeast Region are already disproportionately impacted by the numerous groundfish area closures (year-round and seasonal), and the Council does not want to exacerbate difficulties these communities are experiencing as they try to maintain access to some fisheries for some part of the year.

5.3.8 Minimum Sizes

The Council considered establishing minimum sizes for skates as a general management approach for both the bait and wing fisheries. This measure was rejected at this time for several reasons:

- The lack of size selectivity information for skates precludes the development of appropriate minimum sizes.
- This approach may not be feasible in the high-volume bait fishery and could increase discard mortality if the time that skates remain on deck to be sorted increases.
- Processors indicated that they already self-regulate the size of skate wings based on a preferred wing weight. It would be difficult to translate the processors preferred wing weight into an appropriate minimum size for skates cut for wings.
- Skate wings are cut at sea and are cut differently depending on the vessel and the crew member. It would be difficult to establish an appropriate minimum size for skate wings that addresses individual cutting techniques.

5.3.9 Limited Access

The Council considered implementing a limited access permit program in this FMP as a mechanism to control effort and expansion in the skate fisheries. This measure was rejected at this time for several reasons:

- There is no complete, reliable database from which to develop limited access qualification criteria and/or analyze the impacts of any limited access program.
- The current composition of the fleet and capacity in the skate and wing fisheries is unknown, so it is difficult to determine whether or not a limited access program is warranted.
- A significant percentage of skate fisheries are already limited access in that they are indirectly managed through the multispecies effort reduction program. Skate fishing in federal waters must occur under Multispecies DAS (and therefore only by limited access multispecies permit holders) unless it occurs in an exempted fishery.

5.3.10 Gillnet Gear Requirements

The Council considered a requirement for heavier twine (0.90 mm) in sink gillnet fisheries to reduce the incidental catch of skates. This measure was rejected at this time for several reasons:

- No information is available to quantify the conservation benefits of this measure, and this measure would impose a significant cost for monkfish and groundfish gillnet vessels throughout the region.
- The impacts of this measure on other species caught in gillnet fisheries is unknown.
- Skate landings from gillnet vessels represent a relatively small proportion of total skate landings (less than 20%), so the costs of this measure may outweigh the benefits. In addition, similar measures for otter trawl vessels, which land more than 80% of all skates, are not being considered at this time.

6.0 ENVIRONMENTAL IMPACTS

6.1 BIOLOGICAL IMPACTS

6.1.1 Introduction

This section describes the biological impacts likely to result from the proposed action as well as the alternatives that the Council considered during the development of this FMP. This discussion focuses on the potential benefits of the proposed management measures on the species in the Northeast Region skate complex. The analyses below is severely limited by lack of information and is therefore primarily a qualitative assessment of the potential biological impacts of the measures proposed in this FMP.

As previously discussed, fishery information necessary to perform a quantitative biological analysis, including projections of future landings under a formal rebuilding program, is not available at this time. Moreover, it is currently not possible to estimate MSY for any of the species in the skate complex (see Section 4.3). There is no reliable time series of commercial fishery landings or discards for any of the individual species, and the time series for the complex as a whole is considered to be incomplete. In addition, very little reliable and current growth and maturity information is available for any of the species in the complex. Very little information is available on the length composition of the landings and discards. One of the primary objectives of this FMP is to collect information towards these ends so that the Council will be able to better monitor the effectiveness of skate management measures in the future.