Atlantic Sea Scallops

- The fishery is managed by a competent authority and has a management plan in place that incorporates a science-based approach to ensure sustainability.
  - Atlantic Sea Scallops are managed by NMFS and NEFMC, and regulated by the Atlantic Sea Scallop Fishery Management Plan, which utilizes the best available science to set biological reference points and harvest restrictions.

- If stock sizes are below management target levels, whether due to natural or man-made causes, management plans are established that enable rebuilding within a specified timeframe.
  - The 2006 Stock Assessment Workshop (45th SAW) determined that Atlantic sea scallops were not overfished (SSB > \( \frac{1}{2} B_{MSY} \)) and overfishing was not occurring (\( F < F_{MSY} \)). This was confirmed in 2010 Stock Assessment Workshop (50th SAW) which utilized improved biological reference points. These new reference points are expected to be approved to the scallop FMP as of June 2011. The most recent assessment determined that Atlantic sea scallops were not overfished (SSB > \( \frac{1}{2} B_{MSY} \)) and overfishing was not occurring (\( F < F_{MSY} \)) based on data from the 2009 fishing year.

- Sufficient data exists to determine harvest levels.
  - The most recent stock assessment was conducted by the 50th Northeast Regional SAW and was findings were released in July 2010. The assessment utilized fisheries dependent and independent data to determine biological reference points, which are assessed through the Council process. Ultimately, the Council sets the harvest levels based on these data and information, which incorporate uncertainty. As sea scallops were not overfished annual catch limits (ACLs) were not established in 2010, although they will be set when Amendment 15 is implemented in 2011.

- Monitoring and compliance measures are in place to ensure acceptable harvest levels.
  - Monitoring and compliance with the regulatory measures in the sea scallop fishery is achieved through at-sea observers, daily vessel trip reports, weekly dealer reports, VMS, and accountability measures.

- Enforcement exists to ensure that harvesters follow regulations, and to prevent illegal practices and unreported harvest.
  - U.S. Coast Guard, NMFS Office of Law Enforcement agents, and state marine patrol agents enforce the laws and regulations governing the harvest of sea scallops.
I. Definition of Atlantic Sea Scallops

Atlantic sea scallops (Placopecten magellanicus) are distributed in the Northwest Atlantic Ocean from Newfoundland to North Carolina. Sea scallops are divided into three populations: northern Gulf of Maine, Georges Bank, and Mid-Atlantic. This report focuses on the Gulf of Maine population, which occurs primarily in state waters (0-3 nautical miles [nm]), and the Georges Bank population, which primarily occurs in federal waters (3-200 nm). North of Cape Cod, concentrations generally occur in shallow water less than 40 meters (m). The Georges Bank fishery generally occurs at depths between 30 and 200 m. Figure 1 depicts the statistical areas in the Northeast that used to define the stock unit (Hart 2006).

The commercial fishery for sea scallops is conducted from March 1 – February 28, primarily using offshore New Bedford style scallop dredges. There is also a small, primarily inshore fishery for sea scallops in the Gulf of Maine. Digby dredges are sometimes used in near-shore areas in the Gulf of Maine.

![Figure 1. Statistical areas used to define the U.S. Atlantic sea scallop management unit in the Northeast (Hart 2006).](image)

II. Description of the Management Authority and Regulatory Process

Responsibility of Atlantic Sea Scallop management lies within the National Marine Fisheries Service (NMFS), which is a part of the National Oceanic and Atmospheric Administration (NOAA). The New England Fishery Management Council (NEFMC) facilitates the development of Atlantic sea scallop regulations under the Atlantic Sea

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Scallop Fishery Management Plan. The NEFMC consists of 18 voting members, including the Regional Administrator for NMFS, the principal marine resource management official from each New England state, and governor appointees.

For Atlantic Sea Scallop management, the NEFMC is advised by the Scallop Oversight Committee that currently consists of representatives from state and federal management agencies, the fishing industry, and environmental groups, including two representatives from the Mid-Atlantic Fishery Management Council (MAFMC). This committee is responsible for the development of the fishery management plan and regulations that are consistent with the ten national standards outlined in the **Magnuson Stevens Act (MSA)**, which dictate that conservation and management measures shall:

1. Prevent overfishing while achieving optimum yield.
2. Be based upon the best scientific information available.
3. Manage individual stocks as a unit throughout their range, to the extent practicable; interrelated stocks shall be managed as a unit or in close coordination.
4. Not discriminate between residents of different states; any allocation of privileges must be fair and equitable.
5. Where practicable, promote efficiency, except that no such measure shall have economic allocation as its sole purpose.
6. Take into account and allow for variations among and contingencies in fisheries, fishery resources, and catches.
7. Minimize costs and avoid duplications, where practicable.
8. Take into account the importance of fishery resources to fishing communities to provide for the sustained participation of, and minimize adverse impacts to, such communities (consistent with conservation requirements).
9. Minimize bycatch or mortality from bycatch.

To help the oversight committee meet these requirements a Scallop Advisory Panel, made up of representatives from the fishing industry, scientists, and conservation organizations and provides input to management measures. The chairs of the oversight committee provide detailed guidance (terms of reference) to a Plan Development Team (PDT), which consists of scientists, managers and other experts on biology and/or management of sea scallops. Then the PDT provides reports to the oversight committee in response to the terms of reference. The PDT meets regularly to provide analysis of species-related information and to develop issue papers, alternatives, and other documents as appropriate. Figure 2 provides a visual of this process. There is also a Scallop Survey Advisory Panel (SSAP), which brings together industry, scientists, and government representatives, as well as members of NEFMC and MAFMC to collaborate on gear and protocols for the sea scallop surveys.
III. Management of Atlantic Sea Scallops in state waters

The state of Maine is the only state in the Gulf of Maine region with a prevalent state water scallop fishery. The state scallop fishery is managed under a harvesting season that typically extends from December to March. The state of Maine also utilizes management measures such as gear size restrictions, enforced closed fishing areas, daily possession limits, and minimum scallop size requirements (DMR 2010). The regulations are implemented in accordance with federal scallop regulations.

IV. Atlantic Sea Scallop Data

Stock Status

The most recent stock assessment and peer review for Atlantic sea scallops was conducted in 2010 by the 50th Northeast Regional Stock Assessment Workshop (50th SAW), and the assessment report was published in July 2010 (NEFSC 2010). Data used in the assessment consisted of Northeast Fisheries Science Center (NEFSC) sea scallop dredge and trawl surveys, UMASS School for Marine Science and Technology camera survey, commercial landings, observer data, and shell growth data (NEFSC 2010).

The NEFSC sea scallop survey data used in the assessment to estimate fishing mortality and biomass are from 1982-2009 for Georges Bank and 1975-2009 for the Mid-Atlantic. The assessment determines overfished and overfishing status for the stock as a whole.
even though the fishery was modeled separately for Georges Bank and the Mid-Atlantic Bight stocks. The assessment does not include data from the southern New England fishery, as it only accounts for limited biomass and landings.

Because of limited biomass and landings, the northern Gulf of Maine (NGOM) scallop fishery had not been assessed until the 2009 fishing year. Biomass of NGOM sea scallops was estimated to be 100 metric tons (mt) of meats in 2009 with an exploitation rate (reported landings in weight / estimated biomass) of 0.065, but overfishing and overfished statuses were not evaluated. The 2010 total allowable catch (TAC) for the NGOM was set at 31.8 mt meats (75 FR 36559).

As recommended by the Stock Assessment Review Committee (SARC), the 2010 assessment refined existing biological reference points (BRPs), with new BRPs of $F_{MSY}$ ($F_{MSY}$=0.38) and $1/2B_{MSY}$ ($1/2B_{MSY}$=62,679 mt) as determined by the Stochastic Yield Model (SYM) analysis. The 50th SAW recommended that $F_{MSY}$ should be the fishing mortality target used in determining if overfishing is occurring, as opposed to the reference point $F_{MAX}$ (a proxy for $F_{MSY}$, where the fishing mortality rate for fully-recruited scallops generates the maximum yield-per-recruit), which was applied in previous stock assessments. The biological threshold ($B_{THRESHOLD}$=$1/2B_{MSY}$) should be the reference point to determine if the fishery is overfished

<table>
<thead>
<tr>
<th>Table 1. Biological Reference Points for Atlantic Sea Scallops</th>
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<tr>
<td><strong>B</strong>$_{MSY}$</td>
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<tr>
<td>125,358 mt</td>
</tr>
<tr>
<td>1/2$B_{MSY}$ (overfished threshold)</td>
</tr>
<tr>
<td>62,679 mt</td>
</tr>
<tr>
<td>$F_{MSY}$ (overfishing threshold)</td>
</tr>
<tr>
<td>0.38</td>
</tr>
<tr>
<td>B during 2009</td>
</tr>
<tr>
<td>129,700 mt</td>
</tr>
<tr>
<td>1/2 B in 2009</td>
</tr>
<tr>
<td>64,850 mt</td>
</tr>
<tr>
<td>F during 2009</td>
</tr>
<tr>
<td>0.37</td>
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</table>

The 2010 assessment determined biomass reference points of $B_{THRESHOLD}$ = $1/2B_{MSY}$ = 62,679 mt meats and $B_{TARGET}$=B$_{MSY}$=125,358 mt meats, while Atlantic sea scallops were not overfished as $1/2B$ = 64,850 mt meats (Table 1). Fishing mortality during 2009 was 0.37 and below the recommended target fishing mortality rate, thus overfishing was not occurring in (NEFSC 2010). Figure 3 depicts the historical sea scallop biomass and overfished threshold.

The SYM model was incorporated into the assessment in order to account for uncertainty in fishing mortality and recruitment, while parameters were established to ensure consistency with the Catch-At-Size-Analysis (CASA) which is also utilized in the assessment. According the SARC, the additional analysis will better calculate yield from the scallop fishery and aid in preventing overfishing (NESFC 2010). These updated BRPs are currently in the process of being adopted to the FMP by the NEFMC.

Framework 22 proposes that these new BRPs be used in determining future management strategies of FMP and has been submitted to NMFS for final approval.

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Framework 21 set a hard TAC of 70,000lbs for the limited entry program in NGOM management area. Figure 4 depicts the NGOM management area, which is managed in the Atlantic sea scallop FMP.

Landings
The following excerpt from the 50th SAW and report describes the trends in landings (Fig. 5) since 1980:

Annual landings increased from about 8000 mt meats in the mid-1980s to over 17,000 mt meats in 1990-1991, then fell to between 5000 and 8000 mt meats during 1993-1998. Landings increased considerably from 1998-2003 and have remained at high and relatively stable levels since then. US landings during 2003-

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2009 exceeded 24,000 mt meats during each year, and were roughly twice the long-term mean.


Figure 5. U.S. Sea scallop landings by area, 1975-2009.

V. Atlantic Sea Scallop Fishery Management Plan

The NEFMC established the Atlantic Sea Scallop FMP in 1982. A number of Amendments and Framework Adjustments have been implemented since that time to adjust the original FMP. Some of the significant amendments and framework adjustments are summarized here (NEFMC 2010e):

- Amendment 4, which was implemented in 1994, introduced major changes in management, including a limited access program, a days-at-sea (DAS) reduction plan, new gear regulations, and vessel monitoring system, and an annual framework adjustment process. This Amendment also created a general category scallop permit for vessels that did not qualify for a limited access permit.
- Amendment 7 was implemented in 1999, and changed the overfishing definition, the DAS schedule, and measures to meet new lower mortality targets. In addition, this Amendment established two new scallop closed areas in the Mid-Atlantic and reduced DAS allocations. (Framework adjustments 12, 14, 15, and 16 also adjusted DAS allocations.)
- In 2004, Amendment 10 introduced rotation area management and changed the way that the FMP allocates fishing effort for limited access scallop vessels.
- Framework 16 was also implemented in 2004 to address scallop area management in parts of the groundfish closed areas for Fishing Year 2004
and 2005. This Framework also focuses on allocations of fishing effort and scallop TACs, provisions to fund observers and research, enforcement provisions, monitoring requirements and measures to minimize or control bycatch.

- In 2008, Amendment 11 implemented a limited entry program for the general category fishery. The objective of this action was to control capacity and mortality in the general category scallop fishery. The amendment also approved a hard TAC for the limited entry program in the NGOM management area.

- Amendment 12 was implemented in February 2008, and is an omnibus amendment to all FMPs in the region that focuses on defining a standardized bycatch reporting methodology (SBRM).

- Amendment 13 was implemented in June 2007, and permanently re-activated the industry-funded observer program in the Scallop FMP through a scallop total allowable catch (TAC) and DAS set-aside program that helps vessel owners defray the cost of carrying observers.

- Framework 19 implemented measures for fishing year 2008 and 2009, including the access area schedule, DAS allocations, and general category measures.

The current regulations for the scallop fishery are described in the existing amendments and framework adjustments described above. These regulations will be revised by the final rules for Framework 21 and Amendment 15. The final rule for Framework 21 was implemented on June 28, 2010 (75 FR 36559), and Amendment 15 is expected to be implemented by June 1, 2011. Measures for the 2010 fishing year are described in a Small Entity Compliance Guide for sea scallop permit holders, dated February 24, 2010 (NMFS 2010). The remainder of this section focuses on objectives for Amendment 15 and proposed regulations under Framework 21.

**Amendment 15**

The primary objective of Amendment 15 is to bring the Scallop FMP into compliance with the Magnuson-Stevens Reauthorization Act (MSRA) by 2011. This Amendment will propose measures to implement annual catch limits (ACLs) and accountability measures (AMs). Other objectives include the following:

- Address excess capacity in the limited access (LA) scallop fishery and provide more flexibility for efficient utilization of the resource.
- Adjust several aspects of the overall program to make the scallop management plan more effective.
- Consider measures to address the essential fish habitat (EFH) closed areas under the Scallop FMP if Phase II of the EFH Omnibus Amendment is delayed (see Table 1 in June 2010 version of the A15 DEIS for additional details on these purposes and needs) (NEFMC 2010b).

The Council initially selected preferred alternatives for some of these objectives in September 2009. For the objective to address excess capacity in the LA scallop...
fishery and provide more flexibility for efficient utilization of the resource, the Council identified both and compared both permit stacking and leasing alternatives. Stacking options considered allowing a single limited access vessel to have more than one LA scallop permit, but limiting the “stacking” of two permits per vessel. After considerable feedback from the public and Council members, the measures to allow stacking on permits was voted down by the Council in September 2010, during finalization of Amendment 15. Reasoning for the removal was based on concerns that voluntary stacking could result in excessive consolidation, loss of jobs, and other negative socio-economic impacts on coastal communities (NEFMC 2010c).

For the objective to address EFH closed areas, the preferred alternative would modify the EFH closed areas in the Scallop FMP by removing the four scallop-fishery-specific EFH closed areas that were implemented in Amendment 10 to the Scallop FMP (portion of closed area (CA) II, two areas within CA I, portion of Nantucket Lightship (NL) Closure and area to the north, most of the western GOM closure, eastern portion of Cashes Ledge Closure and area over Jeffreys Bank), and it would instead implement identical areas closed for EFH under Multispecies Amendment 13(NEFMC 2010c).

Framework 21
The final rule for Framework 21 (FW21), which sets the TAC and other management measures for fishing year (FY) 2010, was published on June 28, 2010 (75 FR 36559). The primary objectives of FW21 are:

A. Set an acceptable biological catch (ABC): For 2010, the ABC will be set at 29,578 mt, including an estimated 3,363 mt for non-yield fishing mortality (discards and incidental mortality). Therefore, the overall ABC for the fishery, excluding discards and incidental mortality is 26,219 mt.

B. Set TAC specifications for the 2010 fishing year: The TAC is set at 21,445 mt, of which 94.5 percent would be allocated to the limited access fishery, 5.0 percent would be allocated to IFQ scallop vessels, and 0.5 percent would be allocated to limited access vessels with IFQ scallop permits that are operating under general category regulations.
   - Open area DAS allocations - Full-time vessels are allocated 38 DAS, part-time vessels are allocated 15 DAS, and occasional vessels are allocated 3 DAS.
   - Open area DAS adjustment if access area yellowtail flounder TAC is attained – Under the Northeast Multispecies FMP, 10% of the southern New England yellowtail flounder TAC is allocated to scallop vessels fishing in the Nantucket Lightship Access Area (NLAA). For FY 2010, this equates to 103,617 lbs. Once this TAC is attained, the NLAA will be closed to scallopers for the remainder of the fishing year.
   - Individual access area trips and possession limits for limited access vessels – Full-time scallop vessels are allocated one trip in the NLAA, two trips in the Elephant Trunk Access Area (ETAA), and one trip in the

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Delmarva access area (with a possession limit of 18,000 lbs). Part-time vessels only have two access area trips (with a possession limit of 14,400 lbs), and occasional vessels have one trip (with a possession limit of 6,000 lbs).

- **IFQ allocations, including access area allocations, to vessels with Limited Access General Category (LAGC) IFQ permits** –
  - The FY 2010 TAC for this segment of the fishery has been set at 2,326,700 lbs.
  - The fleet-wide trip allocations for the LAGC IFQ fishery are 1,377 trips in the ETAA and 714 trips in both the NLAA and Delmarva. (The trip limit is 400-lbs per trip.)
  - The FY 2010 TAC for limited access scallop vessels with IFQ permits is 232,670 lbs.
  - The FY 2010 TAC for the northern Gulf of Maine (NGOM) fishery is at 70,000 lbs.
  - The FY 2010 TAC for incidental scallop catch is 50,000 lbs.

- **Research and observer set-asides** – Two percent of each scallop access area quota and two percent of the DAS allocation are set aside for the scallop research set-aside (RSA). One percent of each scallop access area quota and one percent of the DAS allocation are set aside as part of the observer set-aside.

C. **Allow general category (LAGC) vessels with IFQ permits to lease a portion of their quota to other IFQ-permitted vessels:** Partial IFQ leases would be a minimum of 100 lbs., except in circumstances where a vessel owner has previously leased some or all of their IFQ allocation and the remaining allocation is less than 100 lbs. In this case, the remaining IFQ could be transferred in full to another vessel.

D. **Minimize impacts of incidental take of sea turtles:** For FY 2010, the Delmarva access area would be closed from September 1 – October 31. In addition, limited access vessels would be restricted to taking two of the access area trips allocated to those areas from June 15 – August 31, 2010. The trip limit for these access areas would be a maximum of 36,000 lbs.

E. **Improve the observer set-aside program:** The amount of observer compensation LAGC IFQ vessels can possess would be limited to 180-lbs per observed trip in access areas. Therefore, a vessel may land its regular possession limit (400 lbs), plus an additional 180 lbs, for a total of 580 lbs, to offset the cost of an observer. Providers may charge a prorated fee (on an hourly basis) for vessels fishing in access areas if the observer set aside has been fully harvested.

**Framework 22**
The final rule for Framework 22 is expected to be published and implemented in May of 2011. The primary purpose of the Framework is to prevent overfishing and improve yield-per-recruit. Framework 22 will achieve these objectives and other management issues through:

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• Determining fishery specifications for FY2011 and FY2012 including setting of reauthorized MSA required acceptable biological catch that based on modified BRPs. Also, establishing default fishery specifications for the start of FY 2013, in the event subsequent framework action for future fishing years is delayed (Table 2).

<p>| Table 2. Scallop Overfishing Limits (OFL) and Acceptable Biological Catch Limits (ACL) |
|--------------------------------------|-----------------|-----------------|-----------------|</p>
<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
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<tbody>
<tr>
<td>OFL</td>
<td>32,387 mt</td>
<td>34,382 mt</td>
<td>34,081 mt</td>
</tr>
<tr>
<td>ACL</td>
<td>27,269 mt</td>
<td>28,961 mt</td>
<td>28,700 mt</td>
</tr>
</tbody>
</table>

• Minimizing impacts of incidental take of sea turtles by restricting the number of scallop trips to certain times of year and continuing seasonal closures.
• Assessing the possibility of area rotation adjustments (if necessary) including consideration of a new scallop access area on Georges Bank, if high concentrations of biomass present in 2010 surveys and only if the area is either smaller and/or closed for a shorter period of time (NEFMC 2010b).

VI. Monitoring

Scallop catch is monitored throughout the year. Vessels are required to report landings after each trip, and dealers are required to report landings each week.

In compliance with the reauthorization of MSA, all fisheries are required to implement ACLs and AMs. AMs are management controls implemented for stocks to ensure that the ACL is not exceeded, where possible, and corrected or mitigated if it overage occurs. The annual catch target (ACT) is an amount of annual catch of a stock or stock complex that is the management target of the fishery and accounts for management uncertainty. A stock’s ACT should usually be less than its ACL. Since fishing effort will be allocated based on the ACT, the ACT itself will serve as the primary in-season AM due to the buffer between ACT and ACL; lower allocations are given to the fishery in an effort to prevent the ACL from being exceeded. There will be separate ACTs for the two sub-ACLs: one for the limited access fishery and one for the general category fishery. Both are set below the sub-ACL to account for management uncertainty (NEFMC 2010a). The AMs for the limited access, general category, and NGOM fisheries are as follows:

  o **Limited access AMs**: The primary AM for the limited access fishery is the use of an ACT. If the sub-ACL for the limited access fleet is exceeded the AM would be an overall DAS reduction in the subsequent year to account for any overages.

  o **General Category AMs**: The primary AM for the limited access general category ACL is the use of an ACT. If an individual vessel exceeds their IFQ
or leased IFQ in a given fishing year, their IFQ the following fishing year would be reduced by the same amount.

- **NGOM AMs:** The in-season AM is that the fishery is closed if the hard TAC is predicted to be reached. If this component of the fishery exceeds the overall hard TAC (equal to the NGOM ACL) after all data is final, then the hard TAC the following year could be reduced by that amount the following fishing year, or by mid season the following fishing year if data are not available.

At-sea observers are one method of monitoring compliance with ACLs and other regulatory measures. Limited access vessels are required to notify the observer program prior to all open area and access area trips. LAGC vessels are required to notify the observer program prior to all access area trips. This program is partially subsidized by the observer set-aside program, although it is primarily an industry-funded program.

- All scallop vessels fishing in sea scallops access areas are required to submit daily reports of scallops kept and yellowtail flounder caught on each trip through VMS.
- Vessels issued an IFQ or northern Gulf of Maine (NGOM) scallop permit must report through VMS using the Scallop Pre-Landing Notification Form.

**VII. Enforcement**

In general, enforcement of the Atlantic Sea Scallop FMP is coordinated through NOAA’s Office of Law Enforcement (OLE). OLE Special Agents and Enforcement conduct complex criminal and civil investigations, board vessels fishing at sea, inspect fish processing plants, and conduct patrols on land, in the air and at sea. In addition to this enforcement work, the OLE administers the Cooperative Enforcement Program (CEP), which authorizes certain coastal state and territorial marine conservation law enforcement agencies to enforce federal laws and regulations in the Exclusive Economic Zone (EEZ). OLE also partners with the U.S. Coast Guard (USCG) and various other federal agencies, fishery management councils, and non-governmental organizations. Enforcement of state regulations in Maine is conducted by the Maine Marine Patrol.

**VII. References**


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“Fisheries of the Northeastern United States; Atlantic Sea Scallop Fishery; Amendment 10”. Federal Register 69 (23 June 2004): 35194-35224.


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