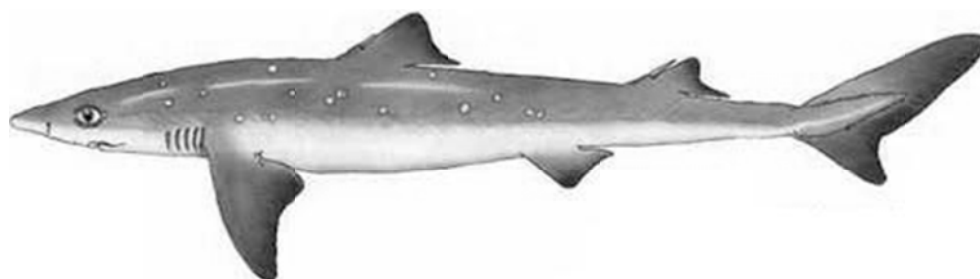


**2012  
Spiny Dogfish Specifications,  
Environmental Assessment,  
and  
Regulatory Impact Review**



January 27, 2012

Prepared by the

Mid-Atlantic Fishery Management Council

in cooperation with the

National Marine Fisheries Service



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## 1.0 EXECUTIVE SUMMARY

This spiny dogfish specifications document was prepared by the Mid-Atlantic Fishery Management Council (Council) under consultation with the National Marine Fisheries Service (NMFS). The document's purpose is to present a range of alternative management measures for the U.S. Atlantic spiny dogfish fishery along with a characterization of the environmental impacts of each of those alternatives. The alternatives consist of restrictions on landings by the commercial fishery for spiny dogfish in 2012 and are needed to prevent the fishery from overfishing the spiny dogfish stock. All of the management measures under consideration would be limited to the 2012 calendar year. This document was developed in accordance with a number of applicable laws and statutes that are described in Section 8.0 (see the Table of Contents to locate document sections).

A comparison of the action alternatives relative to "no action" is a requirement under the implementation of the National Environmental Policy Act (NEPA), however in terms of setting a limit on annual landings, "no action" would be a failure to make effort to prevent overfishing, which is inconsistent with the MSA. Therefore, "no action", in this document, is actually a status quo or baseline alternative that would extend existing 2011 measures into the 2012 fishing year.

Among the three quota alternatives, the landings associated with Alternatives 1a and 1b (35.694 M lb) are expected to result in neutral to positive impacts on the spiny dogfish resource (Table E-1). Although Alternatives 1a and 1b allow for a 78.5% increase in landings compared to the current fishing year, the spiny dogfish stock is expected to increase anyway; and Alternatives 1a and 1b are consistent with the recommendations of the Council's Science and Statistical Committee (SSC). The Alternative 2 quota (30.0 M lb) would allow for a 50% increase in landings and is also expected to result in neutral to positive impacts on spiny dogfish. Alternative 3 (status quo/no action) maintains current landings (20.0 M lb) and is expected to have positive biological impacts overall on spiny dogfish. Alternative 3 is likely to be more restrictive than necessary to prevent overfishing given the advice of the SSC.

Depending upon whether fishing effort increases or decreases the alternatives are expected to have effects on habitat and EFH as well as ESA-listed and MMPA-protected resources that range from neutral to slightly positive (Box ES-1). Additionally, Alternatives 1a/1b, 2 are associated with positive social and economic impacts for the commercial fishery while Alternative 3 is associated with neutral impacts.

**Alternative 1a – (Mid-Atlantic Council Recommendation; Quota = 35.694 M lb and Trip Limit = 4,000 lb):** For FY2012, specify a commercial quota of 35.694 M lb with a trip limit of 4,000 lb (vessels are prohibited from landing more than 4,000 lb in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb).

**Alternative 1b – (New England Council Recommendation; Quota = 35.694 M lb and Trip Limit = 3,000 lb):** For FY2012, specify a commercial quota of 35.694 M lb with a (status quo) trip limit of 3,000 lb (vessels are prohibited from landing more than 3,000 lb in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October

31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb).

**Alternative 2 – (Consistent with ASMFC; Quota = 30.000 M lb and Trip Limit = 3,000 lb):** For FY2012, specify a commercial quota of 30.000 M lb with a (status quo) trip limit of 3,000 lb (vessels are prohibited from landing more than 3,000 lb in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (17.370 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (8.420 M lb).

**Alternative 3 – (“No Action” Set quota to maintain Status Quo 20.000 M lb Quota and 3,000 lb Trip Limit):** For FY2011, specify a (status quo) commercial quota of 20.000 M lb with (status quo) trip limits of 3,000 lb (vessels are prohibited from landing more than 3,000 lb in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (11.580 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (8.420 M lb).

According to CEQ regulations, the No Action Alternative should be used for the purposes of evaluating an environmental baseline. A “true” No Action Alternative for dogfish fishery management, however, is not equivalent to status quo or baseline conditions. If the actions proposed in this document are not taken, some current management measures will remain in place (i.e. 3,000 lb trip limit), but the overall management program will not be identical to that of fishing year 2011 (i.e. there would be no specified quota for FY 2012). The “true” No Action Alternative for this fishery is infeasible and inconsistent with the FMP which requires specifications, or quotas, to be established for the fishery. Therefore, the “true” No Action Alternative is not analyzed in this document.

#### *Impacts of the Management Actions*

Achieving the 35.694 M lb quota under Alternatives 1a and 1b is consistent with preventing overfishing and is based on the SSC and MC recommendations. Alternatives 2 and 3 correspond to harvest levels well below that necessary to prevent overfishing. None of the alternatives are expected to result in significant impacts to non-target species (including fish and protected resources) and habitat. The quota increases under Alternatives 1-2 would result in greater economic benefits compared to Alternative 3. None of the alternatives are associated with significant direct or indirect impacts and all have a positive cumulative impact in the context of other ongoing activities.

Further discussion on the impacts of the alternatives is presented in Section 7.0, and summarized in Table E-1 below. Table E-1 presents a qualitative summary of the direct and indirect impacts of the various management alternatives.

Table E-1. Qualitative summary of the expected impacts of various alternatives considered for the spiny dogfish specifications. A minus sign (-) signifies an expected negative impact, a plus sign (+) a positive impact, and zero indicates a null impact. A “sl” in front of a sign is used to convey a minor effect, such as slight positive (sl+). An ‘S’ indicates short-term, and an ‘L’ indicates long-term impacts. A (u) is used when there is some uncertainty whether the impact will be null or as specified (+ or -).

Alternatives		Biological	EFH	Protected Resources	Economic	Social
<b>Alt. 1a Mid-Atlantic Council Recommendation</b>	Quota: 35.694 M lb Trip Limits: 4,000 lb	0/sl+	0/sl+(u)	0/sl+(u)	sl+	sl+
<b>Alt. 1b New England Council Recommendation</b>	Quota: 35.694 M lb Trip Limits: 3,000 lb	0/sl+	0/sl+(u)	0/sl+(u)	sl+	sl+
<b>Alt. 2 Consistent with states</b>	Quota: 30.000 M lb Trip Limits: 3,000 lb	0/sl+	0/sl+(u)	0/sl+(u)	sl+	sl+
<b>Alt. 3 Status Quo / No Action</b>	Quota: 20.000 M lb Trip Limits: 3,000 lb	+	+(u)	+(u)	+	+

### *Cumulative Impacts*

When the proposed action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative; therefore, there are no significant cumulative effects associated with the action proposed in this document (see section 7.5).

### *Conclusions*

A detailed discussion of the environmental impacts of the alternatives, as well as any cumulative impacts, considered in this specifications document are provided in section 7.0. The preferred action alternative is not associated with significant impacts to the biological, physical, social or economic, environment individually or in conjunction with other actions under NEPA; therefore, a “Finding of No Significant Impact” is determined.

## 2.0 LIST OF ACRONYMS

<b>ABC</b>	Annual Biological Catch	<b>MAFMC</b>	Mid-Atlantic Fishery Management Council
<b>ACL</b>	Annual Catch Limit	<b>MMPA</b>	Marine Mammal Protection Act
<b>ALWTRP</b>	Atlantic Large Whale Take Reduction Plan	<b>MRFSS</b>	Marine Recreational Fisheries Statistical Survey
<b>AM</b>	Accountability Measure	<b>MSA</b>	Magnuson-Stevens Fishery Conservation and Management Act
<b>ASAP</b>	Age Structured Assessment Program	<b>MSY</b>	Maximum Sustainable Yield
<b>ASMFC</b>	Atlantic States Marine Fisheries Commission	<b>NAO</b>	NOAA Administrative Order
<b>CEA</b>	Cumulative Effects Assessment	<b>NEFSC</b>	Northeast Fisheries Science Center
<b>CEQ</b>	Council on Environmental Quality	<b>NEFOP</b>	Northeast Fisheries Observer Program
<b>CFR</b>	Code of Federal Regulations	<b>NEPA</b>	National Environmental Policy Act
<b>CV</b>	Coefficient of Variation	<b>NERO</b>	Northeast Regional Office
<b>CZMA</b>	Coastal Zone Management Act	<b>NMFS</b>	National Marine Fisheries Service
<b>DPS</b>	Distinct Population Segment	<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>DPSWG</b>	Data Poor Stocks Working Group	<b>OFL</b>	Overfishing Limit
<b>EA</b>	Environmental Assessment	<b>OY</b>	Optimal Yield
<b>EEZ</b>	Exclusive Economic Zone	<b>PRA</b>	Paperwork Reduction Act
<b>EFH</b>	Essential Fish Habitat	<b>RFA</b>	Regulatory Flexibility Act
<b>EFP</b>	Exempted Fishing Permit	<b>RIR</b>	Regulatory Impact Review
<b>EIS</b>	Environmental Impact Statement	<b>RSA</b>	Research Set-Aside
<b>EO</b>	Executive Order	<b>SARC</b>	Stock Assessment Review Committee
<b>ESA</b>	Endangered Species Act of 1973	<b>SAW</b>	Stock Assessment Workshop
<b>F</b>	Fishing Mortality Rate	<b>SFA</b>	Sustainable Fisheries Act
<b>FR</b>	Federal Register	<b>SBA</b>	Small Business Administration
<b>FMP</b>	Fishery Management Plan	<b>SSB</b>	Spawning Stock Biomass
<b>FONSI</b>	Finding of No Significant Impact	<b>SSC</b>	Scientific and Statistical Committee
<b>HPTRP</b>	Harbor Porpoise Take Reduction Plan	<b>TED</b>	Turtle Excluder Device
<b>IRFA</b>	Initial Regulatory Flexibility Analysis	<b>US</b>	United States
<b>LNG</b>	Liquefied Natural Gas	<b>VECs</b>	Valued Ecosystem Components
<b>LOF</b>	List of Fisheries	<b>VTR</b>	Vessel Trip Report
<b>LWTRP</b>	Large Whale Take Reduction Plan		



## **4.0 INTRODUCTION AND BACKGROUND OF SPECIFICATION PROCESS**

### **4.1 Purpose and Need for the Action**

The purpose of this action (specification of spiny dogfish management measures) is to implement the 2012 commercial quota for the U.S. Atlantic spiny dogfish fishery. This action is intended to prevent overfishing and ensure that the required annual catch limit (ACL) for spiny dogfish in 2012 is not exceeded. This document, which describes the action and its impacts, was developed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the National Environmental Policy Act of 1969 (NEPA), and the Spiny Dogfish Fishery Management Plan (FMP). The MSA is the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ) and compliance with the MSA requires preventing overfishing on an ongoing basis. Failure to specify spiny dogfish management measures to prevent overfishing in 2012 would be inconsistent with that legislation. As required by the MSA, the Council's Scientific and Statistical Committee (SSC) provides ongoing advice for preventing overfishing and achieving maximum sustainable yield. The Spiny Dogfish Monitoring Committee (MC), created through the FMP, develops specific management measures which constrain spiny dogfish catch at identified levels. The advice of the SSC and MC form the basis for the Council's development of the preferred spiny dogfish management measures.

Figure 1 provides a diagram of the process for determining annual spiny dogfish management measures that was outlined in Amendment 2 to the FMP (MAFMC 2011). Accordingly, the SSC first identifies the catch level above which overfishing is occurring (overfishing limit or OFL) as well as the catch below OFL, called acceptable biological catch or ABC, that adequately accounts for scientific uncertainty in the estimate of OFL and the condition of the stock. Next, the MC determines the annual catch limit (ACL) which, if exceeded, would trigger accountability measures (AMs) such as reductions in future year landings. By accounting for assumed Canadian landings in the upcoming year, the catch limit determined by the MC reflects a "domestic ACL. The MC further determines the catch level at or below ACL called the annual catch target (ACT) that accounts for uncertainty in the efficacy of the management measures. The discarded (as opposed to landed) component of that catch is deducted to arrive at the total allowable landings (TAL). Although not obligated under the FMP, the Council then deducts assumed recreational landings from the TAL in order to arrive at an appropriate commercial quota.

# Spiny Dogfish Flowchart

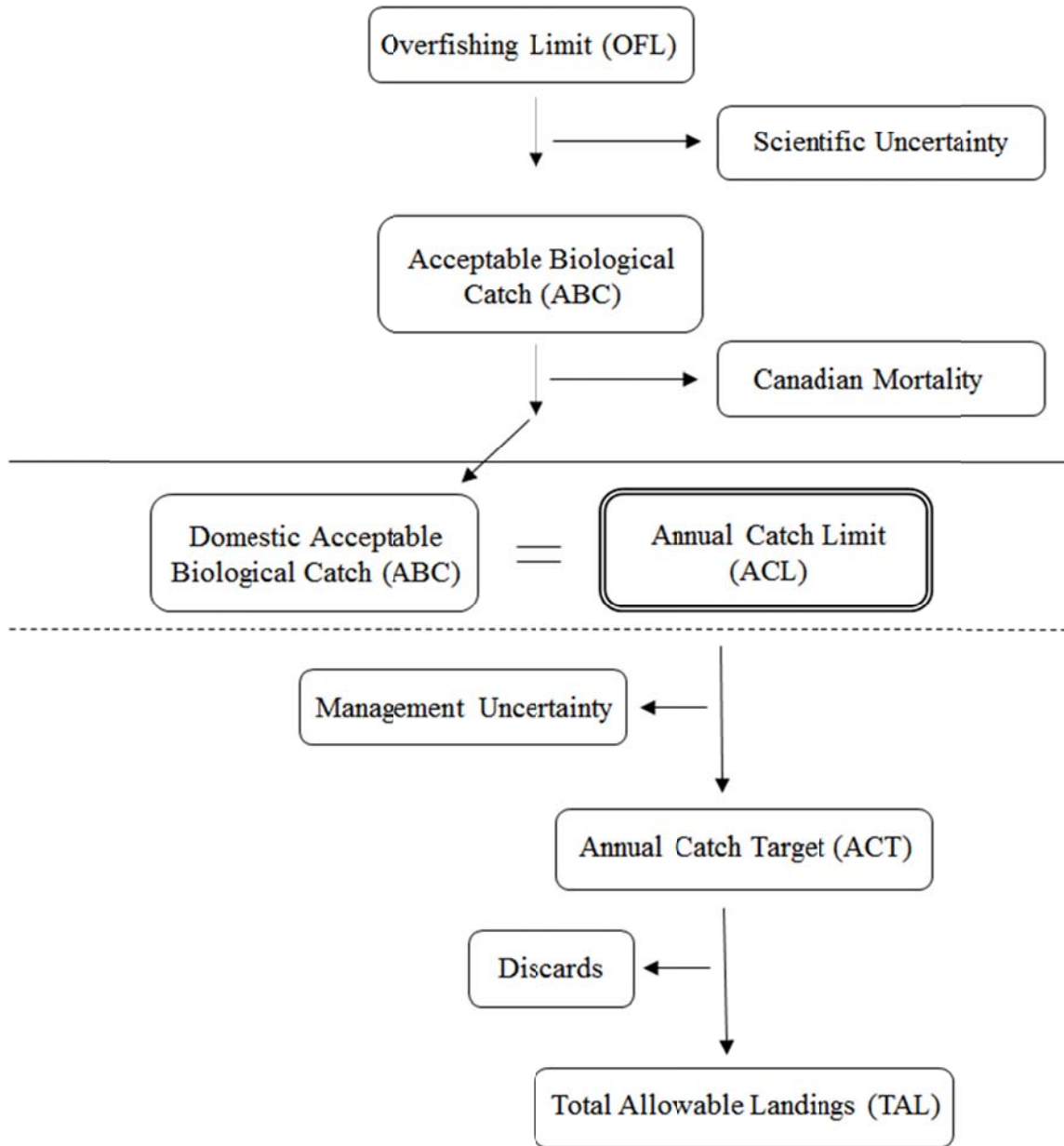


Figure 1. Specification process for spiny dogfish as described in Amendment 2 to the Spiny dogfish FMP (Omnibus ACL/AM Amendment).

The SSC, MC, and Council identified values for the management measures listed above according to their respective responsibilities these are reported at [www.mafmc.org](http://www.mafmc.org). An overview is provided here.

For the 2012 fishing year, the SSC determined OFL for spiny dogfish to be 55.404 M lb and the ABC to be 44.868 M lb. ABC is 80.75 % of OFL and is associated with a 40 % probability of overfishing. According to the Council's risk policy (MAFMC 2011), management measures based on this ABC will adequately ensure that overfishing does not occur (see SSC report). A domestic ABC (44.737 M lb) was determined by reducing the overall ABC by Canadian landings (131,175 lb). *The domestic ABC is referred to hereafter simply as ABC.* According to the FMP, ACL is set equivalent to ABC and, given the historic landings by the fishery the MC concluded that no deduction to accommodate management uncertainty was needed, so for 2012, spiny dogfish ABC = ACL = ACT = 44.737 M lb. Estimated discards for the 2012 fishery are the observed level from 2010 (8.997 M lb). After deducting for discards, the resulting TAL is 35.740 M lb. An additional deduction for recreational landings (46,297 lb) results in a commercial quota of 35.694 M lb.

Besides conveying the Councils' management alternatives to the NMFS Regional Administrator, this specifications document also serves as an environmental assessment (EA) under NEPA and provides the Regional Administrator with a characterization of the impacts of the various management alternatives. Aspects of the affected environment likely to be directly or indirectly affected by the management alternatives are referred to as *valued ecosystem components* (VECs; Beanlands and Duinker 1984). These VECs comprise the affected environment and are specifically defined as the managed resource (spiny dogfish any non-target species); habitat including EFH for the managed resource and non-target species; protected species considered by the endangered species act (ESA) and marine mammal protection act (MMPA); and social and economic aspects of human communities.

The NMFS Regional Administrator will review the alternatives in this document and may make revisions if necessary to achieve FMP objectives and statutory requirements. Because the FMP is jointly managed with the New England Council, when the Councils do not recommend identical management measures, the Regional Administrator may select any management measure not rejected by both Councils. The Mid-Atlantic and New England Councils met in October and November 2011 respectively.

## **5.0 MANAGEMENT ALTERNATIVES**

There are three quota-setting alternatives under consideration in this document. An analysis of Alternatives 1a/1b and 2 relative to "no action" (i.e., Alternative 3) is a requirement under the implementation of NEPA. However, "no action", in this case, would be a failure to make efforts to prevent overfishing, which is inconsistent with the MSA. Therefore, for the purposes of this document, "no action" is actually a status quo or baseline alternative that would extend existing 2011 management measures into the 2012 fishing year.

The ABC, ACL, and ACTs under Alternatives 1a/1b and 2, as well as the commercial quota for all alternatives are given below in Table 1. For no-action (Alternative 3), only a commercial quota and trip limit are considered since provisions requiring specification of ABC, ACL and ACT were only recently implemented through Amendment 2. A comparison of the action

alternatives to “no action” is provided, however, since only commercial quotas and trip limits, which all the alternatives consider, are subject to impact analysis.

**Table 1. Values (M lb spiny dogfish) associated with the management alternatives.**

Alternatives	ABC	ACL	ACT	TAL	Commercial Quota	Trip Limit
Alternative 1a (Mid-Atlantic Council Recommendation)	44.737			35.740	35.694	4,000
Alternative 1b (New England Council Recommendation)					35.694	3,000
Alternative 2 (Consistent with ASMFC)					30.000	3,000
Alternative 3 (Status quo; No Action)	NA	NA	NA	NA	20.000	3,000

**5.1a Alternative 1a – (Mid-Atlantic Council Recommendation – Set Quota at 35.694 M lb and Trip Limit at 4,000 lb)**

For FY2012, specify a commercial quota of 35.694 M lb with trip limits of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb).

In selecting this alternative, the Mid-Atlantic Council is recommending that the maximum 2012 harvest be taken that was identified by the SSC and MC as preventing overfishing and also that the harvest available per trip increase as well (i.e., increased trip limits). This recommendation was intended to maximize economic benefits to fishery participants in 2012 given the substantial biomass of spiny dogfish available for harvest. The recommendation does not attempt to accommodate or reduce conflict with state regulations made by the ASMFC since the Council recommendation (October 2011) was made prior to the ASMFC (November 2011) decision.

**5.1b Alternative 1b – (New England Council Recommendation – Set Quota at 35.694 M lb and Trip Limit at 3,000 lb)**

For FY2012, specify a commercial quota of 35.694 M lb with trip limits of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb).

In selecting this alternative, the New England Council is recommending that the maximum 2012 harvest be taken that was identified by the SSC and MC as preventing overfishing but the rate of harvest be maintained at current levels (i.e., status quo trip limits). This recommendation was

intended to maximize overall economic benefits to fishery participants in 2012 but reduce potential conflict with the ASMFC possession limit measures. The recommendation is sensitive to measures established by the ASMFC since Council deliberation (November 17, 2011) was informed by the ASMFC decision (November 10, 2011).

## **5.2 Alternative 2 – (Consistent with ASMFC – Set Quota at 30.000 M lb and Trip Limit at 3,000 lb)**

For FY2012, specify a commercial quota of 30.000 M lb with trip limits of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (17.370 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (12.630 M lb).

This alternative is included to so that the Councils' recommendations could be evaluated in light of management measures currently established for 2012 by the ASMFC. The lower quota and status quo trip limit established by the ASMFC were intended to prevent oversupply of spiny dogfish to processors and any associated potential for reduced price to harvesters. This potential outcome was described through public testimony to the ASMFC and is not the result of analysis presented in this specifications package.

## **5.3 Alternative 3 – (Status Quo / No Action - Set quota at 20.000 M lb and Trip Limits at 3,000 lb)**

For FY2012, specify a commercial quota of 20.000 M lb with a trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (11.580 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (8.420 M lb).

# **6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES**

## **6.1 Description of the Managed Resource**

### **6.1.1 Description of the Fisheries**

The management unit for spiny dogfish is all spiny dogfish in U.S. waters of the western Atlantic Ocean. The commercial fishery is fully described in Section 2.3 of the FMP (MAFMC 1999). No significant recreational fishery exists for this stock. An overview of the stock and associated commercial fishery landings is provided below.

#### **6.1.1.1 Spiny Dogfish Stock**

Reports on "Stock Status," including annual assessment updates, Stock Assessment Workshop (SAW) reports, Stock Assessment Review Committee (SARC) panelist reports and peer-review panelist reports are available online at the NEFSC website: <http://www.nefsc.noaa.gov>. EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at the following website: <http://www.nefsc.noaa.gov/nefsc/habitat/efh/>.

Figure 2 below provides a snapshot of several relevant characteristics of the spiny dogfish stock that influence management of the commercial fishery. Among these are: 1) Spiny dogfish are slow growing and, therefore, recovery of an overly exploited stock can require prolonged rebuilding. 2) Males and females grow at different rates and to different maximum sizes such that the largest fish in the population are almost all female and these are more valuable to the commercial fishery. 3) Litter size, or fecundity, increases with age such that productivity can be markedly hampered by an absence of large females in the stock. 4) Maturity is delayed (12-21 years) in females such that the immature stock is susceptible to mortality for a prolonged period before contributing to stock production.

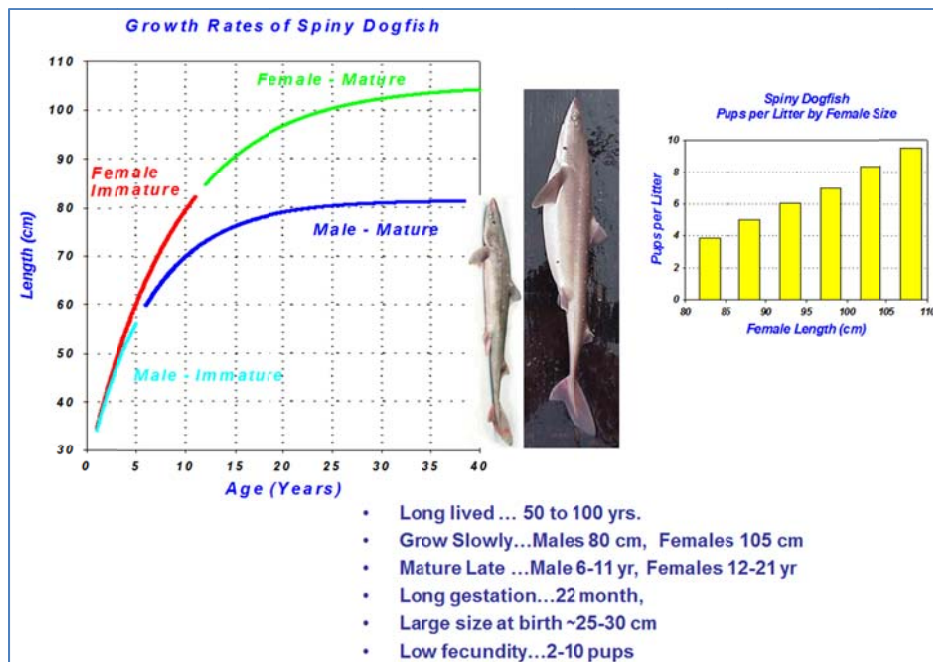


Figure 2. Summary of biological characteristics spiny dogfish relevant to the species' commercial fisheries exploitation (from Rago 2010 unpubl.).

### Historical Stock Condition

At the onset of the domestic commercial fishery in the early 1990's, population biomass for the Northwest Atlantic stock of spiny dogfish was at its highest estimated level (approx. 1.2 billion lb). A large scale unregulated fishery developed and quickly depleted the stock of mature female spiny dogfish such that in 1997 a stock assessment showed that the stock was *overfished* (NEFSC 1997). The Spiny Dogfish FMP was developed in 1998 and implemented in 2000 in order to halt further depletion of mature female spiny dogfish and allow the stock to recover to a sustainable level. Because the directed commercial fishery concentrated on mature females, rebuilding required elimination of that directed fishery. The rebuilding program was highly successful and in 2010 the Northeast Regional Office (NERO) of NMFS communicated the *rebuilt* status of the stock to the Councils.

## Current Stock Condition

### Not Overfished

The Bmsy reference point defines when the stock is rebuilt (above Bmsy) and overfished (below  $\frac{1}{2}$  Bmsy). For spiny dogfish, Bmsy (proxy) is the spawning stock biomass that maximizes recruitment (SSBmax) in a Ricker type (dome-shaped) stock-recruitment model. SSBmax is estimated to be 159,288 mt (351 M lb) with  $\frac{1}{2}$  of that target corresponding to the biomass threshold (79,644 mt; 175.5 M lb). In September 2011, the Northeast Fisheries Science Center (NEFSC) updated their assessment of the spiny dogfish stock using catch data (2010), and results from the 2011 trawl survey. The updated estimate of SSB for 2011 is 169,415 mt (373.496 M lb), about 6% above SSB<sub>max</sub> (159,288 mt). In updating the assessment, the NEFSC estimated a *100% probability that the stock is not overfished*.

### Overfishing not Occurring

A review by the Council's SSC in 2011 was conducted to establish its endorsement of a fishing mortality reference point that defines when overfishing is occurring (Fmsy). The updated fishing mortality reference point provided by the NEFSC is  $F_{msy} = 0.2439$ . All accountable sources of removals contribute to the estimate of fishing mortality (F) under the current assessment. For the most recent assessment year (2010), these include U.S. commercial landings (12.346 M lb), Canadian commercial landings (6 mt), U.S. dead discards (8.997 M lb), and U.S. recreational landings (46,297 lb). Total removals in 2010 were approximately 21.330 M lb corresponding to an F estimate of 0.09, well below  $F_{msy} = 0.2439$ . In updating the assessment, the NEFSC estimated a *100% probability that overfishing was not occurring* ( $F_{2010} < F_{threshold}$ ).

### 6.1.3 Commercial Fishery Landings

Calendar year harvest estimates from 1989 -2010 are provided in Table 2 and Figure 3. These include landings from U.S. commercial and recreational sectors as well as the Canadian commercial fishery. A thorough characterization of the historic (pre-FMP) fishery for spiny dogfish is given in Section 2.3 of the FMP (MAFMC 1999).

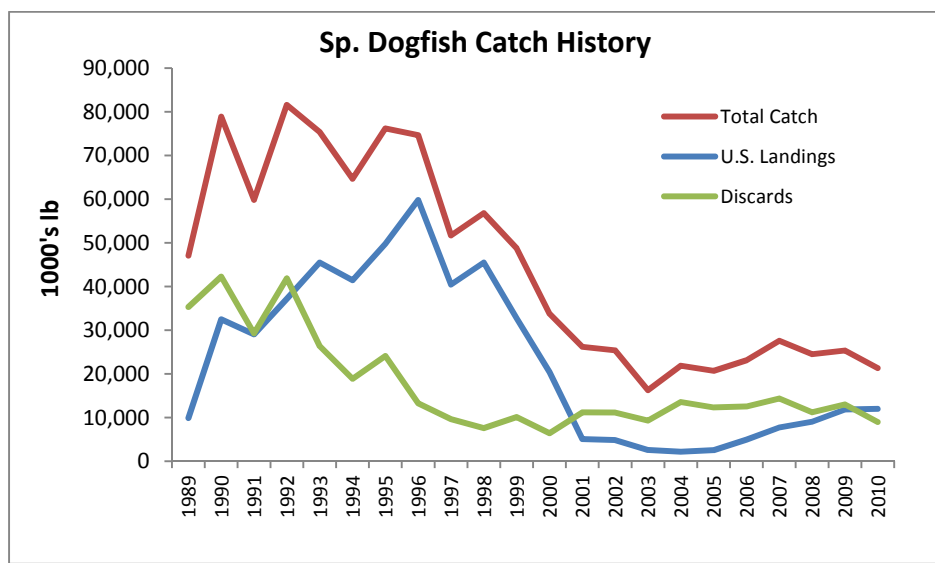


Figure 3. History of spiny dogfish landings and discards and total catch from 1989 – 2010. From NMFS 2011.

**Table 2. Landings of spiny dogfish (1,000s lb) in the Northwest Atlantic Ocean for calendar years 1989 to 2010.**

Year	US Comm	US Rec	Canada	Total (NW Atl.Stock)
1989	9,903	922	368	11,193
1990	32,476	395	2,886	35,757
1991	29,050	289	677	30,016
1992	37,166	474	1,914	39,554
1993	45,510	265	3,164	48,939
1994	41,442	342	4,012	45,796
1995	49,776	150	2,108	52,034
1996	59,825	55	950	60,830
1997	40,457	146	983	41,586
1998	45,477	86	2,326	47,889
1999	32,750	117	4,610	37,477
2000	20,408	11	6,043	26,462
2001	5,057	62	8,422	13,541
2002	4,848	452	7,901	13,201
2003	2,579	88	2,870	5,537
2004	2,165	231	5,207	7,603
2005	2,529	99	5,004	7,632
2006	4,958	207	5,377	10,542
2007	7,723	185	5,256	13,164
2008	9,057	472	3,466	12,995
2009	11,854	75	249	12,178
2010	12,347	35	13	12,395

Source: NMFS Commercial Fisheries Database, MRFSS data, and NAFO data.

*Coastwide Landings Relative to Limits (Quotas)*

Table 3 provides the coastwide quotas and landings for the spiny dogfish fishery since the establishment of the FMP in 2000. Toward the end of the federal rebuilding schedule that ended in 2010, substantial increases in stock biomass allowed for an increase in the federal quota in 2009 to 12 M lb while still maintaining the rebuilding fishing mortality rate. Under the interstate FMP, quota increases began earlier in 2006 – 2008 (Table 3). Note that in 2010-2011, the commercial quota implemented in state waters was lower than for federal waters. Both quotas were based on the same technical advice, however, the state water quota reflects reductions for overages in accordance with Addendum 2 to the ISFMP. Similar accountability measures will be applied in federal waters in accordance with Amendment 2 to the federal FMP.



**Table 3. Jurisdictional (federal and state) quotas and coastwide landings for fishing years 2000 - 2011.**

Fishing year (May 1 - Apr 30)	Quota (M lb)		Landings (M lb)
	Federal	States'	
2000	4.0	n/a	8.2
2001	4.0	n/a	5.1
2002	4.0	n/a	4.8
2003	4.0	8.8	3.2
2004	4.0	4.0	1.5
2005	4.0	4.0	2.6
2006	4.0	6.0	6.6
2007	4.0	6.0	6.5
2008	4.0	8.0	9.0
2009	12.0	12.0	11.8
2010	15.0	14.4	14.5
2011	20.0	19.5	-

*Landings by Gear*

Certain commercial gear types are associated with the retention of spiny dogfish in federal waters. The catch of spiny dogfish by gear in FY2010 is given in Table 4. Spiny dogfish landings came mostly from sink gillnets (67.58%), bottom otter trawls (20.23%), hook and line (11.58%), as well as unknown or other gear (0.58%).

**Table 4. Commercial gear types associated with spiny dogfish harvest in FY2010. Note that vessels with state issued permits only are not required to complete VTRs so total VTR landings are less than total dealer-reported landings.**

Commercial Gear Type	Landings (lb)	Pct Total
GILL NET	6,943,668	67.58%
TRAWL, OTTER, BOTTOM	2,078,172	20.23%
HOOK AND LINE	1,189,466	11.58%
OTHER	63,064	0.61%
<b>TOTAL</b>	<b>10,274,370</b>	<b>100.00%</b>

Source: Vessel Trip Reports

### Landings by Area

The Northeast Region is divided into 46 statistical areas for federal fisheries management (Figure 4). According to VTR data, six statistical areas collectively accounted for 73.04 % of spiny dogfish landings in 2010, with each contributing greater than 5.0 % of the total (Table 5). These areas also represented 73.5% of the trips that landed spiny dogfish suggesting that resource availability as expressed by catch per trip is fairly consistent through the range where harvest occurs.

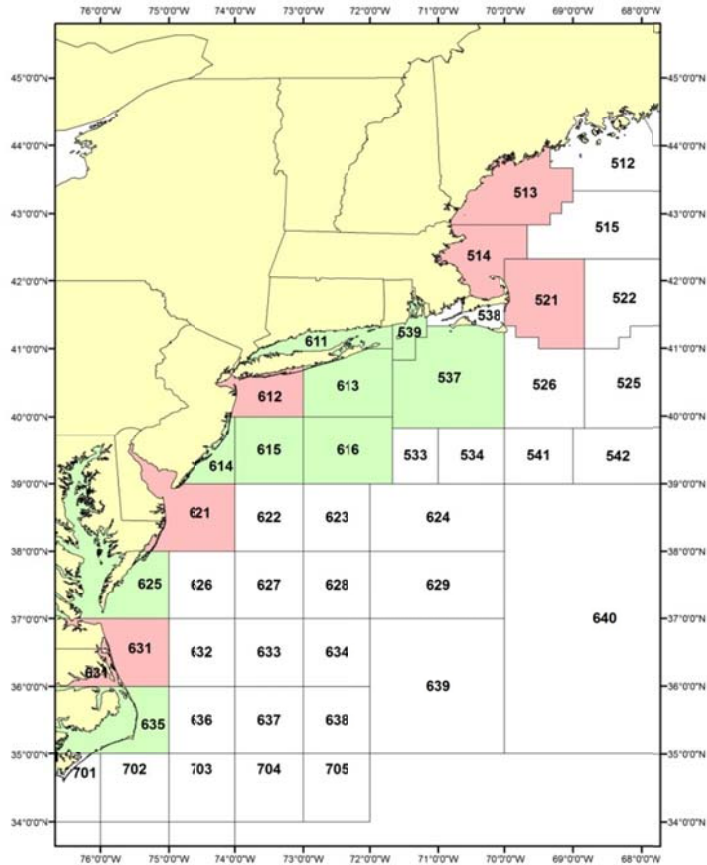


Figure 4. NMFS Northeast statistical areas. Shaded areas indicate where spiny dogfish harvest occurs. Red areas comprise 5% or more of harvest and green areas 1% to 5% of harvest.

**Table 5. Statistical areas that accounted for at least 5 % of the spiny dogfish catch and/or trips in FY2010 VTR data. Shading (red or green) is provided for reference with Figure 4.**

Statistical Area	Catch (%)	Trips (%)
514	26.91%	25.11%
521	17.21%	15.34%
513	15.56%	12.86%
631	4.25%	7.64%
612	5.96%	6.63%
621	3.60%	5.47%
537	4.67%	4.97%
539	4.01%	3.55%
635	1.94%	3.41%
615	2.61%	3.25%
613	3.04%	2.90%
616	1.81%	2.54%
625	1.76%	2.15%
611	2.31%	1.46%
614	1.09%	1.10%

Source: Vessel Trip Report database

### *Canadian Commercial Spiny Dogfish Landings*

Historic Canadian commercial landings have been low relative to landings from the U.S. commercial fishery (Table 1). In 2001, following the implementation of the U.S. Federal FMP, Canadian landings exceeded U.S. landings for the first time. In 2008, Canadian landings were about 3.5 M lb, but in 2009 landings dropped precipitously to about 250,000 lb. In 2010, the increased availability of U.S. spiny dogfish continued to constrain demand for Canadian product (pers. comm. Barndollar<sup>1</sup> and Marder<sup>2</sup> 2011) even though Canada has allowed a directed fishery under a 2,500 mt (5.512 M lb) quota with no trip limits. In 2010 Canadian landings dropped further to 13,000 lb.

### *Recreational Landings*

As previously stated, no significant recreational fishery exists for spiny dogfish. Some retention of recreationally caught spiny dogfish does occur, however. Recreational landings by state for 2010 are provided in Table 6 below.

<sup>1</sup> Steve Barndollar is on the MAFMC's Spiny Dogfish Advisory Panel and is the owner of Seatrade Int'l, one of the primary processors of U.S. and Canadian spiny dogfish on the Atlantic Coast. He attended the Spiny Dogfish Monitoring Committee meeting in September 2011.

<sup>2</sup> Brian Marder is the owner of Marder Trawling, Inc., a major processor of U.S. and Canadian spiny dogfish on the Atlantic Coast. He attended the Spiny Dogfish Monitoring Committee meeting in September 2011.

**Table 6. Recreational landings (lb) of spiny dogfish by state for 2010.**

<b>State</b>	<b>Landings (lb)</b>	<b>Pct of Total</b>
NORTH CAROLINA	16,052	46.43%
SOUTH CAROLINA	7,531	21.78%
NEW JERSEY	4,650	13.45%
DELAWARE	3,521	10.18%
MARYLAND	1,041	3.01%
NEW HAMPSHIRE	977	2.83%
MASSACHUSETTS	443	1.28%
VIRGINIA	359	1.04%
<b>TOTAL</b>	<b>34,574</b>	<b>100.00%</b>

Source: Marine Recreational Fisheries Statistical Survey Data

### **6.1.3 Non-Target Species**

Discards of non-target species in the directed spiny dogfish fishery are difficult to characterize since defining the directed fishery can be done a number of ways. Gear-specific landings data suggest that catch composition varies among gears and that some gear (e.g., bottom longline) are more likely to produce catches that are predominantly spiny dogfish, while other gear (e.g., bottom trawls) are characterized by a more diverse catch. Discards have been tabulated for observed trips in 2010 where any dogfish were retained and are summarized in Table 7. On gillnet trips, spiny dogfish comprised 53.44% of total observed discards, with other major discard species including lobster (15.76%), cod (5.95%), and winter skate (5.35%). All other species combined (56) comprised 19.50% of total discards. On observed bottom longline trips, a total of 17 species besides spiny dogfish were accounted for in the discards. Spiny dogfish comprised 76.9% of total discards, little skate comprised 5.89% and no other species comprised more than 5%. On observed trawl trips, spiny dogfish comprised 41.35% of discards, with a total of 99 other discard species. Among these were little skate (10.73%), and red hake and no other species comprising more than 5%.

**Table 7. Discards associated with the dominant gear types used to harvest spiny dogfish in 2010 as reported in northeast fisheries observer program (NEFOP) data when spiny dogfish were landed. Species comprising 1% or more of the discards by gear are shown. Stock status for each discard species is also indicated (see below)**

Hook and Line			Gill Net, Sink			Trawl, Otter, Bottom		
Discard Species	Discards (lb)	Pct Of Total for this Gear	Discard Species	Discards (lb)	Pct Of Total for this Gear	Discard Species	Discards (lb)	Pct Of Total for this Gear
DOGFISH, SPINY <sup>a,b</sup>	4,694	76.85%	DOGFISH, SPINY <sup>a,b</sup>	11,288	53.44%	DOGFISH, SPINY <sup>a,b</sup>	146,003	41.35%
SKATE, LITTLE <sup>a,b</sup>	360	5.89%	LOBSTER <sup>a,b</sup>	3,329	15.76%	SKATE, LITTLE <sup>a,b</sup>	37,892	10.73%
SKATE, THORNY <sup>a,d</sup>	269	4.41%	COD, ATLANTIC <sup>d,e</sup>	1,257	5.95%	HAKE, RED <sup>a,b</sup>	19,251	5.45%
HALIBUT, ATL. <sup>a,e</sup>	189	3.10%	SKATE, WINTER <sup>a,b</sup>	1,130	5.35%	HAKE, SILVER <sup>a,b</sup>	15,189	4.30%
WOLFFISH, ATL. <sup>n/a</sup>	176	2.87%	RAVEN, SEA <sup>n/a</sup>	819	3.88%	SKATE, WINTER <sup>a,b</sup>	14,459	4.10%
OCEAN POUT <sup>a,c</sup>	101	1.65%	SKATE, THORNY <sup>a,d</sup>	362	1.71%	SKATE, NK <sup>n/a</sup>	14,146	4.01%
SKATE, WINTER <sup>a,b</sup>	81	1.32%	FLOUNDER, WINTER <sup>d,e</sup>	350	1.65%	FISH, NK <sup>n/a</sup>	12,504	3.54%
SCULPIN <sup>n/a</sup>	72	1.18%	MONKFISH <sup>a,b</sup>	291	1.38%	BUTTERFISH <sup>a,d</sup>	11,321	3.21%
OTHER (10 sp.)	168	2.75%	CRAB, JONAH <sup>n/a</sup>	270	1.28%	HAKE, NK <sup>n/a</sup>	7,198	2.04%
			SKATE, LITTLE <sup>a,b</sup>	230	1.09%	FLOUNDER, WINTER <sup>d,e</sup>	6,312	1.79%
			POLLOCK <sup>a,b</sup>	214	1.01%	DOGFISH, SMOOTH <sup>a,b</sup>	5,807	1.64%
			BLUEFISH <sup>a,b</sup>	210	1.00%	SCUP <sup>a,b</sup>	5,614	1.59%
			OTHER (48 sp.)	1,373	5.18%	CRAB, LADY <sup>n/a</sup>	4,958	1.40%
						FLOUNDER, FOURSPOT <sup>n/a</sup>	4,008	1.14%
						HAKE, RED/WHITE MIX <sup>a,b, / d, e</sup>	3,937	1.12%
						FLOUNDER, SUMMER <sup>a,b</sup>	3,554	1.01%
						OTHER (84 sp.)	40,914	11.59%
<b>Total</b>	<b>6,108</b>	<b>100%</b>	<b>Total</b>	<b>21,122</b>	<b>100%</b>	<b>Total</b>	<b>353,066</b>	<b>100%</b>

<sup>a</sup> not overfished, <sup>b</sup> overfishing not occurring, <sup>c</sup> overfished vs. not overfished is unknown, <sup>d</sup> overfished, <sup>e</sup> overfishing is occurring, <sup>f</sup> overfishing unknown, <sup>n/a</sup> not applicable

Source: Northeast Fishery Observer Program, 3<sup>rd</sup> Quarter 2011 NMFS Fish Stock Sustainability Index

## 6.2 Habitat (Including Essential Fish Habitat)

A description of the habitat associated with the spiny dogfish fishery is presented in Section 2.2 of the FMP (MAFMC 1999), and a brief summary of that information is given here. The impact of fishing on spiny dogfish habitat (and EFH) as well as the impact of the fishery on other species' habitats and EFH can also be found in Section 2.2 of the FMP (MAFMC 1999). Potential impacts on habitat (including EFH) associated with the actions proposed in this specifications document are discussed in section 7.2.

### 6.2.1 Physical Environment

A characterization of the physical environment of the Northeast U.S. Shelf was provided in Section 6.2 of the 2011 specifications document (MAFMC 2011). An additional inventory of the physical and biological characteristics of specific habitats found within the jurisdiction of the Northeast Region can be found in Stevenson et al. (2004).

Spiny dogfish are not associated with any particular substrate type or submerged aquatic vegetation (SAV; NMFS 2006).

### 6.2.2 Essential Fish Habitat (EFH)

Information on spiny dogfish habitat requirements can be found in the documents titled, "Essential Fish Habitat Source Document: Spiny Dogfish, *Squalus acanthias*, Life History and Habitat Characteristics" (Stehlik 2007). Electronic versions of these source documents are available at the following website: <http://www.nefsc.noaa.gov/nefsc/habitat/efh/>. The current EFH designation definitions by life history stage for spiny dogfish are available at the following website: <http://www.nero.noaa.gov/hcd/list.htm>.

### 6.2.3 Fishery Impact Considerations

A baseline fishing effects analysis is provided in the FMP (MAFMC 1999). The evaluation of the habitat impacts of bottom otter trawls, gillnets, and longlines used in the commercial spiny dogfish fishery indicated that the baseline impact of the fishery was minimal and temporary in nature. Consequently, adverse effects of the spiny dogfish fishery on EFH did not need to be minimized. Since 82% of spiny dogfish landings in fishing year 2010 were from gillnets (68 %) and longlines (14%), and trawl landings (18%) tend to be non-directed, the adverse impacts of the spiny dogfish fishery have continued to be minimal during 2010. Potential impacts of the proposed 2012 commercial quota are evaluated in section 7.1 of this EA.

### 6.3 ESA Listed Species and MMPA Protected Species

Several species protected under the Endangered Species Act (ESA) of 1973 and the Marine Mammal Protection Act of 1972 (MMPA) inhabit the area covered by the spiny dogfish management unit that are. Table 4 contains the species currently listed as either threatened or endangered under ESA as well as one species proposed for listing and two candidate species.

On October 6, 2010, NMFS proposed listing five distinct population segments (DPSs) of Atlantic sturgeon (*Acipenser oxyrinchus*) as either threatened or endangered (Table 4). The Gulf of Maine DPS is proposed to be listed as threatened, while the New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPSs are proposed as endangered. A final rule is expected by December 2011. Two additional species, cusk (*Brosme brosme*) and Atlantic bluefin tuna (*Thunnus thynnus*), are candidate species for listing under the ESA (Table 4). The NERO Protected Resources Division is reviewing information on the candidate species and conservation measures for those species will follow that review, if necessary. More detailed descriptions of the species in Table 4, including their habitat, ecological relationships, life history, and current stock status are available at: [http://www.nero.noaa.gov/prot\\_res/](http://www.nero.noaa.gov/prot_res/).

Table 8. Species currently or pending listing under the ESA that co-occur with the spiny dogfish fishery.

Species	Common name	Scientific Name	Status
Cetaceans	Northern right whale	<i>Eubalaena glacialis</i>	Endangered
	Humpback whale	<i>Megaptera novaeangliae</i>	Endangered
	Fin whale	<i>Balaenoptera physalus</i>	Endangered
	Blue whale	<i>Balaenoptera musculus</i>	Endangered
	Sei whale	<i>Balaenoptera borealis</i>	Endangered
	Sperm whale	<i>Physeter macrocephalus</i>	Endangered
Sea Turtles	Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered
	Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered
	Green sea turtle	<i>Chelonia mydas</i>	Endangered
	Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered
	Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened
Fishes	Shortnose sturgeon	<i>Acipenser brevirostrum</i>	Endangered
	Atlantic salmon	<i>Salmo salar</i>	Endangered
	Smalltooth sawfish	<i>Pristis pectinata</i>	Endangered
	Atlantic sturgeon	<i>Acipenser oxyrinchus</i>	Threatened
	Cusk	<i>Brosme brosme</i>	Candidate
	Atlantic bluefin tuna	<i>Thunnus thynnus</i>	Candidate

### 6.3.1 Fisheries Interactions with Protected Species

The spiny dogfish commercial fishery uses gillnets, hook-and-line gear, and bottom otter trawls. The hook-and-line and to a lesser extent gillnet fishery tends to target spiny dogfish, the trawl fishery harvests mixed species (Section 6.1.3). NMFS observer data for 2010 do not attribute mortalities for any MMPA-protected or ESA-listed species to activity in the spiny dogfish fishery.

Table 9. Commercial Fisheries Classification based on 2012 List of Fisheries (LOF).

<b>Fishery (Action Area)</b>	<b>Gears</b>	<b>LOF</b>	<b>Potential for Interactions</b>
See section 6.4.2 for a description of the areas fished	Mid-Atlantic Gillnet	Cat. I	bottlenose, common, and white-sided dolphins; harbor porpoise; gray, harbor and harp seals; humpback, short- and long-finned pilot, and minke whales
	Mid-Atlantic bottom trawl fishery	Cat. II	bottlenose, common, and white-sided dolphins; short- and long-finned pilot whales
	Northeast / Mid-Atlantic bottom longline/hook-and-line		None documented within the most recent 5 years

***Special Note on Atlantic Sturgeon***

As noted above, distinct population segments of Atlantic sturgeon along the US Atlantic Coast are pending listing as “threatened” under the ESA. Atlantic sturgeon are an anadromous species that spawn in relatively low salinity, river environments, but spends most of its life in the marine and estuarine environments from Labrador, Canada to the Saint Johns River, Florida (Holland and Yelverton 1973, Dovel and Berggen 1983, Waldman et al. 1996, Kynard and Horgan 2002, Dadswell 2006, ASSRT 2007). Tracking and tagging studies have shown that sub-adult and adult Atlantic sturgeon that originate from different rivers mix within the marine environment, utilizing ocean and estuarine waters for life functions such as foraging and overwintering (Stein et al. 2004, Dadswell 2006, ASSRT 2007, Laney et al. 2007, Dunton et al. 2010). Fishery-dependent data as well as fishery-independent data demonstrate that Atlantic sturgeon use relatively shallow inshore areas of the continental shelf; primarily waters less than 50 m (Stein et al. 2004, ASMFC TC 2007, Dunton et al. 2010). The data also suggest regional differences in Atlantic sturgeon depth distribution with sturgeon observed in waters primarily less than 20 m in the Mid-Atlantic Bight and in deeper waters in the Gulf of Maine (Stein et al. 2004, ASMFC TC 2007, Dunton et al. 2010). Additional information on Atlantic sturgeon and other ESA listed fishes (Table 4) can be found at: <http://www.nmfs.noaa.gov/pr/species/fish/>.

Injury and mortality of Atlantic sturgeon from interactions with commercial fishing gear are a factor in the recovery of the DPSs, and was a primary reason cited for the proposals to list the DPSs under the ESA. Once a listing is issued, the existing Section 7 consultation for the spiny dogfish fishery would be reinitiated. During the re-initiation, the effects of the fishery on the listed DPSs would be fully examined and any bycatch reduction requirements would be addressed, as needed, based on the outcome and recommendations resulting from the re-initiation. Of the gear types known to incidentally capture Atlantic sturgeon, sink gillnets pose



the greatest known risk of mortality for sturgeon (ASMFC TC 2007) and this is the primary gear used to harvest spiny dogfish.

One of the factors cited in NMFS' proposed listing for the five DPSs of Atlantic sturgeon is bycatch. ASMFC analyses (ASMFC TC 2007) concluded that to remain stable or grow, populations of Atlantic sturgeon can sustain only very low mortality. It is apparent, therefore, that reductions in bycatch mortality and the other sources of anthropogenic mortality may be required in order to recover Atlantic sturgeon. With the publication of a final listing rule, a Section 7 consultation would be required. Under that consultation, the effects of the fishery on Atlantic sturgeon populations would be analyzed. At this point, while Atlantic sturgeon remains a proposed species, the question is whether the 2012 specifications enacted for spiny dogfish is likely to jeopardize the continued existence of the proposed species. Based upon the incidence of occurrence in the spiny dogfish fishery, the continued operation of the fishery is unlikely to jeopardize the proposed Atlantic sturgeon DPSs. The number of interactions with the spiny dogfish fishery that will occur between now and the time a final determination will be made is not likely to cause an appreciable reduction in survival and recovery. Nor is it expected that the interactions that occur for the remainder of the 2011 fishing year will cause appreciable reduction in survival and recovery of Atlantic sturgeon.

## **6.4 Human Communities**

A detailed description of historical fisheries for spiny dogfish is presented in Section 2.3 of the FMP. The information presented in this section is intended to briefly characterize recent fisheries trends.

### **6.4.2 Commercial Vessel and Dealer Activity**

According to unpublished NMFS permit file data, 2,942 vessels were issued federal spiny dogfish permits in 2010, while 326 of these vessels contributed to overall landings. The distribution of permitted and active vessels by home port state is given in Table 9. Most of the active vessels were from Massachusetts (31.6%), New Jersey (14.7%), New Hampshire (11.3%), Rhode Island (9.8%), New York (8.0%), North Carolina (6.7%), and Virginia (5.8%). The remaining 39 vessels from all other states comprised 12.0% of the total.

**Table 10. Federally permitted dogfish vessel activity by home port state in FY2010. Active vessels are defined as vessels identified in the dealer reports as having landed spiny dogfish in FY2010.**

State	Permitted Vessels	Pct of Total	State	Active Vessels	Pct of Total
MA	1,087	36.95%	MA	103	31.60%
NJ	422	14.34%	NJ	48	14.72%
ME	341	11.59%	NH	37	11.35%
NY	292	9.93%	RI	32	9.82%
RI	194	6.59%	NY	26	7.98%
NC	160	5.44%	NC	22	6.75%
NH	142	4.83%	VA	19	5.83%
VA	138	4.69%	ME	16	4.91%
CT	50	1.70%	MD	13	3.99%
MD	47	1.60%	CT	8	2.45%
DE	29	0.99%	Other	2	0.61%
PA	18	0.61%	<b>Total</b>	<b>326</b>	<b>100.00%</b>
FL	16	0.54%			
Other	6	0.20%			
<b>Total</b>	<b>2,942</b>	<b>100.00%</b>			

Source: NMFS permit data, Commercial Fisheries Database

NMFS permit data indicate that 495 dealers possessed federal spiny dogfish dealer permits in 2010 while dealer reports indicate 75 of those dealers actually bought spiny dogfish. The distribution of permitted and active dealers by state is given in [Table 9](#). Most of the active dealers were from the states of Massachusetts (29.3%), New York (17.3%), North Carolina (14.7%), Rhode Island (13.3%), Virginia (7.8), New Jersey, (5.3%), New Hampshire (5.3%) with the remaining six dealers in other states comprising 8.0% of the total.

**Table 11. Federally permitted spiny dogfish dealers by state in FY2010. Active dealers are defined as dealers identified in the federal dealer reports as having bought spiny dogfish in FY2010.**

State	Permitted Dealers	Pct of Total	State	Active Dealers	Pct of Total
MA	134	27.07%	MA	22	29.33%
NY	97	19.60%	NY	13	17.33%
NJ	65	13.13%	NC	11	14.67%
RI	46	9.29%	RI	10	13.33%
ME	35	7.07%	VA	5	6.67%
NC	33	6.67%	NJ	4	5.33%
VA	32	6.46%	NH	4	5.33%
MD	18	3.64%	MD	3	4.00%
NH	14	2.83%	Other	3	4.00%
CT	5	1.01%	<b>Total</b>	<b>75</b>	<b>100.00%</b>
DE	5	1.01%			
PA	4	0.81%			
FL	3	0.61%			
Other	4	0.81%			
<b>Total</b>	<b>495</b>	<b>100.00%</b>			

Source: NMFS permit data, Commercial Fisheries Database

### *Landings by State*

Commercial harvest has historically been dominated by Massachusetts (Table 12). Starting in 2007, dogfish landings from Virginia were greater than or approximately equivalent to those of Massachusetts. State-by-state landings since 2007 are influenced by the regional allocation of commercial quota through the ASMFC's Interstate FMP. Currently, that FMP allocates 58% of the annual quota to a northern region (Maine –Connecticut), and the remaining 42% among states from New York – North Carolina (NY 2.707%; NJ 7.644%; DE 0.896%; MD 5.920%; VA 10.795%, NC 14.036%).

In fishing year 2010, Massachusetts accounted for 44.3% of coastwide landings (Table 12). North Carolina (13.0%), Virginia (11.9%), New Hampshire (8.4%), and New Jersey (8.3%) were also important landings states. No other states contributed more than 5% of annual landings.

**Table 12. Commercial landings (1,000s lb) of spiny dogfish by state from fishing years 1989 through 2009.**

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC	Total
1989	4,962	0	5,100	47	24	13	1,434	0	714	18	0	9,903
1990	6,251	185	20,304	2,968	9	44	4,754	0	5,150	62	41	32,475
1991	2,059	0	13,523	1,901	22	74	2,382	6	3,338	165	1,463	29,049
1992	1,818	405	17,457	2,116	9	140	1,493	0	1,877	220	8,635	37,165
1993	3,408	1,639	26,189	1,554	170	100	707	0	1,893	379	8,806	45,509
1994	1,788	2,610	23,181	603	85	475	1,422	63	2,233	665	6,929	41,447
1995	1,683	2,094	28,789	414	408	815	2,581	0	7,752	1,065	9,525	50,068
1996	904	1,135	27,208	1,518	619	1,381	5,833	0	4,820	4,832	10,304	60,055
1997	437	999	21,417	682	282	312	3,831	0	2,105	3,945	5,924	40,460
1998	288	1,935	24,866	1,906	241	1,704	7,091	2	2,199	5,004	3,928	45,476
1999	28	1,233	14,824	1,237	87	2,868	6,586	0	808	1,750	3,601	32,760
2000	1	2,279	5,545	130	12	145	5	0	0	72	12	20,407
2001	0	529	3,912	395	7	62	17	0	0	178	0	5,056
2002	1	349	3,800	455	6	49	1	0	2	114	0	4,839
2003	0	175	2,006	141	2	41	0	0	5	451	520	2,579
2004	3	0	1,094	129	60	42	7	0	1	39	20	2,160
2005	31	162	1,826	173	93	44	1	0	11	66	10	2,535
2006	180	633	2,744	518	62	11	3	0	16	2,286	144	5,212
2007	99	185	2,796	523	23	21	10	0	25	2,575	167	7,723
2008	49	1,370	3,559	239	10	23	50	0	114	2,479	1,416	9,057
2009	594	1,885	3,881	940	92	192	1,342	14	175	1,487	1,708	11,752
2010	229	1,214	6,442	708	107	468	1,208	8	542	1,731	1,887	14,543

Source: NMFS Commercial Fisheries Database.

### *Landings by Month*

Under the federal FMP, the annual commercial quota is allocated seasonally to two half-year periods. Period 1 (May 1 – Oct 31) is allocated 57.9% of the quota and Period 2 is allocated 42.1% of the quota. This allocation scheme was implemented as part of the rebuilding plan in order to match seasonal availability of the resource with the historic landings patterns by communities over the fishing year. Spiny dogfish migratory behavior makes them available to the northern end of the fishery (i.e., MA) during Period 1 and the southern end of the fishery (i.e., (VA and NC) during Period 2.

In fishing year 2010, spiny dogfish were landed in all months with peak landings occurring in June-August of Period 1 and Nov – Jan of Period 2 (Table 13).

**Table 13. Spiny dogfish landings (lb) by month in FY2010.**

	<b>Month</b>	<b>Landings(lb)</b>	<b>Pct of Total</b>
<b>Period 1</b>	May	204,979	1.41%
	Jun	1,700,034	11.69%
	Jul	3,891,882	26.76%
	Aug	3,025,937	20.81%
	Sep	492	0.00%
	Oct	8,955	0.06%
	<b>Total</b>	<b>8,832,279</b>	<b>60.73%</b>
<b>Period 2</b>	Nov	1,185,693	8.15%
	Dec	1,124,308	7.73%
	Jan	2,312,203	15.90%
	Feb	388,917	2.67%
	Mar	699,245	4.81%
	Apr	370	0.00%
	<b>Total</b>	<b>5,710,736</b>	<b>39.27%</b>
	<b>Grand Total</b>	<b>14,543,015</b>	<b>100.00%</b>

Source: NMFS Commercial Fisheries Database

### 6.4.3 Commercial Fishery Value

Unpublished NMFS dealer reports indicate that the total ex-vessel value of commercially landed spiny dogfish in calendar year 2010 was about \$2.674 million, and in fishing year 2007 was about \$3.119 million. The approximate price/lb of spiny dogfish was \$0.22 and \$0.21 in those timeframes, respectively (Table 14).

**Table 14. Ex-vessel value and price per pound of commercially landed spiny dogfish, Maine - North Carolina combined, 2000-2010.**

<b>Calendar Year</b>	<b>Value (\$1,000)</b>	<b>Price (\$/lb)</b>	<b>Fishing Year</b>	<b>Value (\$1,000)</b>	<b>Price (\$/lb)</b>
2000	4,342	0.21	2000	1,989	0.24
2001	1,137	0.22	2001	1,147	0.23
2002	989	0.20	2002	970	0.20
2003	364	0.14	2003	415	0.12
2004	311	0.14	2004	260	0.17
2005	479	0.19	2005	545	0.21
2006	1,188	0.23	2006	1,434	0.22
2007	1,508	0.20	2007	1,360	0.20
2008	2,207	0.24	2008	2,157	0.24
2009	2,544	0.21	2009	2,360	0.22
2010	2,674	0.22	2010	3,119	0.21

Source: NMFS Commercial Fisheries Database

In FY2010, 143 vessels with federal dogfish permits were reported in the dealer data to have had dogfish revenues greater than 5% of total revenue (dogfish revenue range \$23 to 73,634, average = \$11,933; dogfish rev / total rev range 5.0% to 100%, average = 10.0%).

## 6.5.2 Port and Community Description

Spiny dogfish landings were reported from a total of 68 unique ports in the dealer data. Landings by port for FY2010 are given in Table 15. Gloucester, MA accounted for the largest share of total FY2010 landings (16.79%), followed by Chatham, MA (10.95%), Hatteras, NC (9.32%), VA Beach/Lynnhaven, VA (7.04%), Point Pleasant, NJ (5.59%), and New Bedford, MA (4.19%).

Spiny dogfish revenue was calculated as a % of total port revenue and was both greater than \$100,000 and greater than 1% of port revenue in Virginia Beach/Lynnhaven, VA (29.54%), Hatteras, NC (6.97%), Rye, NH (5.33%), Chatham, MA (2.06%), and Ocean City, MD (1.32%). Port descriptions for these ports from the NEFSC's "Community Profiles for the Northeast US Fisheries" are provided in Appendix 1. A complete set of profiles is online: [http://www.nefsc.noaa.gov/read/socialsci/community\\_profiles/](http://www.nefsc.noaa.gov/read/socialsci/community_profiles/)

Table 15. Commercial landings (lb) and value of spiny dogfish by port for fishing year 2010.

Port	Landings (lb)	Pct of Total	Value (\$)	Pct of Total	Total Port Value (\$)	Dogfish Value / Port Value
GLOUCESTER, MASSACHUSETTS	2,437,614	16.79%	511,986	16.50%	53,347,408	0.96%
CHATHAM, MASSACHUSETTS	1,590,193	10.95%	281,041	9.06%	13,634,909	2.06%
VIRGINIA BEACH/LYNNHAVEN, VIRGINIA	1,021,543	7.04%	208,372	6.71%	705,394	29.54%
HATTERAS, NORTH CAROLINA	1,353,608	9.32%	206,196	6.64%	2,956,349	6.97%
NEW BEDFORD, MASSACHUSETTS	607,930	4.19%	168,290	5.42%	312,914,202	0.05%
POINT PLEASANT, NEW JERSEY	812,216	5.59%	161,905	5.22%	26,084,624	0.62%
OTHER VIRGINIA, VIRGINIA	259,017	1.78%	161,002	5.19%	44,988,422	0.36%
OCEAN CITY, MARYLAND	529,926	3.65%	115,718	3.73%	8,741,828	1.32%
RYE, NEW HAMPSHIRE	451,640	3.11%	105,189	3.39%	1,975,089	5.33%
All Others (59)	5,455,628	37.57%	1,183,690	38.14%	469,836,037	0.25%
<b>Total</b>	<b>14,519,315</b>	<b>100.0%</b>	<b>3,103,389</b>	<b>100.0%</b>	<b>935,184,262</b>	<b>0.33%</b>

Source: Unpublished NMFS dealer reports

## 7.0 ENVIRONMENTAL CONSEQUENCES – ANALYSIS OF DIRECT AND INDIRECT IMPACTS

This section presents an analysis of the impacts of the proposed actions (Section 5.0) on the VECs (Section 6.0). Table 16, below, is provided to re-iterate the management measures that correspond to each of the alternatives.

**Table 16. Catches and landings for the management alternatives.**

Alternatives	ABC	ACL	ACT	TAL	Commercial Quota	Trip Limit
Alternative 1a (Mid-Atlantic Council Recommendation)	44.737			35.740	35.694	4,000
Alternative 1b (New England Council Recommendation)					35.694	3,000
Alternative 2 (Consistent with ASMFC)					30.000	3,000
Alternative 3 (Status quo; No Action)	NA	NA	NA	NA	20.000	3,000

In comparing the alternatives, the proposed 2012 allowable landings under each alternative are compared to the 2011 landings limits as well as the 2010 realized landings. The relative increase or decrease under the alternatives is then expressed as a percentage (Table 17).

**Table 17. Percent difference in 2012 landings limits for each alternative relative to 2011 limits and 2010 landings.**

		Alternative 1a (Maximum Quota and Trip Limit)	Alternative 1b (Maximum Quota and Status Quo Trip Limit)	Alternative 2 (ASMFC Quota)	Alternative 3 (Status quo)
<b>2011 limits</b>	<b>Quota</b>	+78.47%	+78.47%	+50.00%	0.0
	<b>Trip Limit</b>	+50.00%	0.0	0.0	0.0
<b>2010 landings</b>	<b>Commercial Landings</b>	+145.44%	+145.44%	+106.28%	+37.52%

Changes in landings limits can produce changes in fishing effort and interactions between fishing gear and habitat, non-target species and protected species is related to these changes in fishing effort. The direction (increase or decrease) and magnitude (how much) of the change is also dependent on other factors such as the availability of fish to the fleet. Availability may be a

function of both spatial distribution and abundance. While the magnitude of any change in effort is difficult to quantify, general expectations exist about the directionality of changes in effort in response to changes in landings limits and availability (Table 18).

**Table 18. Expected changes in fishing effort that result from changes to landings limits and fish availability.**

Change in quota	Fish abundance/availability		
	Decrease in availability	No change in availability	Increase in availability
<b>Decrease in quota</b>	Fishing effort (number of trips) may decrease as a result of a decrease in quota; however, because of the decrease in availability (trips catching fewer fish), fishermen may need to take additional trips to offset the lower cpue; managers may reduce trip limits or adjust regulations that extend the fishing season and affect effort; therefore fishing effort may be the same or increase.	Fishing effort may decrease as a result of a decrease in quota under similar availability (trips catching similar amounts of fish); however, managers may reduce trip limits or adjust regulations that extend the fishing season and affect effort; therefore fishing effort may be the same or decrease.	Fishing effort may decrease as a result of a decrease in quota; likewise under increased availability (trips catching more fish), effort may decrease; however, managers may reduce trip limits or adjust regulations that extend the fishing season and affect effort; therefore fishing effort may be the same or decrease.
<b>No change in quota</b>	Fishing effort may remain the same as the quota has not changed; however, because of the decrease in availability (trips catching fewer fish), fishermen may need to take more trips to catch the same amount of fish; therefore fishing effort may be the same or increase.	Fishing effort may remain the same given the quota has not changed and availability is expected to be similar.	Fishing effort may remain the same as the quota has not changed; however, because of the increase in availability (trips catching more fish), fishermen may be able to catch the same amount of fish with fewer trips thus decreasing effort; therefore fishing effort may be the same or decrease.
<b>Increase in quota</b>	Fishing effort may increase in response to the increase in quota; because of the decrease in availability (trips catching fewer fish), fishermen may need to take more trips to catch the same amount of fish; however, managers may increase trip limits or adjust regulations in response to the higher quota allowing fewer trips to catch more fish; therefore, fishing effort may be the same or increase.	Fishing effort may increase in response to the increase in quota under similar fish availability due to fishermen taking more trips to catch quota; however, managers may increase trip limits or adjust regulations in response to the higher quota allowing fewer trips to catch more fish; therefore, fishing effort may be the same or increase.	Fishing effort may increase in response to the increase in quota; because of the increase in availability (trips catching more fish), fishermen may be able to catch the same amount of fish with fewer trips thus decreasing effort; managers may increase trip limits or adjust regulations, but this may be offset by higher cpue; therefore, fishing effort may be the same or decrease, depending on the combination of factors.

A decrease in effort may result in positive impacts (+) as a result of fewer encounter rates with non-targets or ESA listed and MMPA protected species and fewer habitat gear impacts, and an increase in effort may result in a negative impact (-). Similar effort result in neutral impacts (0).

The commercial fishery may avoid non-target species, particularly those that cannot be landed because commercial fishermen do not find it lucrative to spend additional fuel costs and resources sorting/processing species that the commercial vessels do not have permits to land or a market to sell.

While a general evaluation of effort in response to these two important factors (i.e., quota levels, fish availability) is generalized in Table 18; however, fishing effort does not always respond as expected (increase or decrease) as a result of consideration of only the quota or fish availability. Fishing demand models are used to forecast the demand for trips as well as to determine the value that commercial fishermen place on the various factors that affect their behavior. Models can attempt to predict how changes in fishing site characteristics (travel costs, catch rates, available species, etc.), fishery management policies, and other characteristics affect the demand for fishing trips. Limited data is available to address many of these factors. This makes evaluation of changes in fishing behavior difficult and complex and therefore makes it difficult to predict how fishing effort will change each year.

### **7.1. Biological Impacts**

Independent of the alternatives, spiny dogfish abundance (and, therefore, availability to the fleet) is expected to increase in 2012 according to projections from the latest assessment update (NEFSC 2011). The overall catch limits under Alternatives 1a and 1b are expressly intended to prevent overfishing and would result in corresponding positive impacts on the spiny dogfish population. It follows, then that lower catches under Alternatives 2 and 3 would correspond to even greater positive impacts. An increase in fish availability would have a neutral to slightly positive effect on non-target and protected species (Table 18). All three alternatives have impacts that range from neutral to positive, however, the greatest potential for positive biological impacts are associated with Alternative 3 (status quo), followed by Alternative 2 (50% quota increase). Alternative 1 (maximum quota) has the potential for the least positive biological impacts.

### **7.2 Habitat Impacts**

As stated above, spiny dogfish abundance (and, therefore, availability) has the potential to increase in 2012. Nevertheless, the threshold level of availability necessary to completely offset increases in effort is not known. The gear types more commonly associated with directed fishing for spiny dogfish are gillnets and hook-and-line and are not generally associated with negative gear impacts. This combination of factors (low impact gear and increased resource availability) makes it likely that Alternatives 1a/1b and 2 will result in generally neutral impacts on habitat and EFH. Alternative 2 includes a smaller increase in commercial quota (50 %) and is expected to result in impacts on habitat that range from neutral to positive (Table 18). Alternative 3 (status quo) is identical to the 2011 quota and is also expected to result in neutral to positive impacts on habitat (Table 18).



### **7.3 Endangered Species and MMPA Protected Resource Impacts**

Section 6.2 describes the ESA listed and MMPA protected species VEC and other related impact considerations. All fishing gears are required to meet gear restrictions as required under the Atlantic Large Whale Take Reduction Plan (ALWTRP) and Harbor Porpoise Take Reduction Plan (HPTRP). These plans contain measures designed to reduce interactions/impacts associated with fishing gears. Interaction between endangered / protected resources and spiny dogfish fishing gear is also affected by species' abundances.

As stated above, spiny dogfish availability is expected to increase in 2012, however, the threshold level of availability necessary to completely offset increases in effort is not known. The spiny dogfish fishery was not implicated in any protected resource interactions in 2010. This combination of factors (low fishery interaction and increased resource availability) makes it likely that Alternatives 1a/1b and 2 will result in generally neutral impacts on these species. Alternative 2 includes a smaller increase in commercial quota (50 %) and is expected to result in neutral to positive impacts on ESA listed and MMPA protected species (Table 18). Alternative 3 (status quo) is identical to the 2011 quota and is expected to result in impacts on ESA listed and MMPA protected species that range from neutral to positive (Table 18).

In summary, none of these alternatives is expected to affect ESA listed and MMPA protected species in any manner not considered in a prior consultation on this fishery and will have no adverse impacts on protected resources, relative to 2011.

### **7.5 Human Community Impacts**

As noted in Section 6.4, the dealer data associate a very limited number of fishing communities with a high (> 5%) proportion of spiny dogfish revenue to total commercial landings revenue. Additionally, none of the alternatives proposes to decrease revenue relative to the baseline by decreasing the quota. Alternatives 1a/1b and 2 would be increase revenue levels and Alternative 3 would maintain status quo revenue from dogfish landings. As such, positive or null economic impacts are expected under any of the scenarios under consideration.

By itself, maintaining the status quo trip limit (3,000 lb under Alternatives 1b, 2, 3) should result in null impacts to human communities. The larger trip limit proposed under Alternative 1a could result in greater immediate revenue per trip but a shorter fishing under Alternative 1a than under 1b which have identical trip limits. Nevertheless, the increases in quota under Alternatives 1a/1b and 2 is expected to prolong the fishing season and positive impacts to human communities over the course of the fishing year compared to the status quo (Alternative 3).

Total spiny dogfish revenue from the last complete fishing year (FY2010) was reported as \$3.119 million. Using the average FY2010 price/lb (\$0.21) landing the full FY2012 quota under Alternatives 1a/1b corresponds to \$7.655 million. Using the same approach, revenue would be expected to increase to \$6.434 million under Alternative 2 and \$4.289 million under Alternative 3. Assuming the distribution of landings by port is consistent with FY2010 (Section 6.5), the increases in dogfish revenue should benefit those ports that are more heavily dependent on dogfish revenue than other communities, assuming all other revenue sources do not change (e.g., Virginia Beach / Lynnhaven, VA, Hatteras, NC, Rye, NH, Chatham, MA, and Ocean City, MD – Table 15).

## **7.5 Cumulative Effects Analysis**

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ) (40 CFR part 1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective, but rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required as part of an EA under NEPA as long as the significance of cumulative impacts have been considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed spiny dogfish fishery.

### **7.5.1 Consideration of the VECs**

In section 6.0 (Description of the Affected Environment), the VECs that exist within the spiny dogfish fishery environment are identified. Therefore, the significance of the cumulative effects will be discussed in relation to the VECs listed below.

1. Managed resource (spiny dogfish)
2. Non-target species
3. Habitat including EFH for the managed resource and non-target species
4. ESA listed and MMPA protected species
5. Human communities

### **7.5.2 Geographic Boundaries**

The analysis of impacts focuses on actions related to the harvest of spiny dogfish. The core geographic scope for each of the VECs is focused on the Western Atlantic Ocean (section 6.0). The core geographic scopes for the managed resources are the range of the management units (section 6.1). For non-target species, those ranges may be expanded and would depend on the biological range of each individual non-target species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by spiny dogfish and non-target species in the Western Atlantic Ocean. The core geographic scope for endangered and protected resources can be considered the overall range of these VECs in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities directly involved in the harvest or processing of the managed resources, which were found to occur in coastal states from Maine through North Carolina (section 6.4).

### **7.5.3 Temporal Boundaries**

The temporal scope of past and present actions for VECs is primarily focused on actions that have occurred after FMP implementation (1990). For endangered and other protected resources, the scope of past and present actions is on a species-by-species basis (section 6.3) and is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments for marine mammals and sea turtles that inhabit waters of the U.S. EEZ. The temporal scope of future actions for all five VECs extends about three years (2014) into the future. This period was chosen because the dynamic nature of resource management for these three species and lack of information on projects that may occur in the future make it very difficult to predict impacts beyond this timeframe with any certainty.

#### **7.5.4 Actions Other Than Those Proposed in this Amendment**

The impacts of each of the alternatives considered in this specifications document are given in section 7.1 through 7.4. Table 23 presents meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions to be considered other than those actions being considered in this specifications document. These impacts are described in chronological order and qualitatively, as the actual impacts of these actions are too complex to be quantified in a meaningful way. When any of these abbreviations occur together (i.e., P, Pr, RFF), it indicates that some past actions are still relevant to the present and/or future actions.

##### ***Past and Present Actions***

The historical management practices of the Council have resulted in positive impacts on the health of the spiny dogfish stock (section 6.1). Actions have been taken to manage the commercial fisheries for this species through amendment actions. In addition, the annual specifications process is intended to provide the opportunity for the Council and NMFS to regularly assess the status of the fishery and to make necessary adjustments to ensure that there is a reasonable expectation of meeting the objectives of the FMP. The statutory basis for federal fisheries management is the MSA. To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can often have negative short-term socioeconomic impacts. These impacts are usually necessary to bring about long-term sustainability of a given resource, and as such, should, in the long-term, promote positive effects on human communities, especially those that are economically dependent upon the spiny dogfish stock.

Non-fishing activities that introduce chemical pollutants, sewage, changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment pose a risk to all of the identified VECs. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include, but are not limited to agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and, as such, may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability would tend to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that would reduce fishing effort could then negatively impact human communities. The overall impact to the affected species and its habitat on a population level is unknown, but likely neutral to low negative, since a large portion of this species has a limited or minor exposure to these local non-fishing perturbations.

In addition to guidelines mandated by the MSA, NMFS reviews these types of effects through the review processes required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for certain activities that are regulated by federal, state, and local authorities. The jurisdiction of these activities is in "waters of the U.S." and includes both riverine and marine habitats.

### ***Reasonably Foreseeable Future Actions***

For many of the proposed non-fishing activities to be permitted under other federal agencies (such as beach nourishment, offshore wind facilities, etc.), those agencies would conduct examinations of potential impacts on the VECs. The MSA (50 CFR 600.930) imposes an obligation on other federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH. The eight Fishery Management Councils are engaged in this review process by making comments and recommendations on any federal or state action that may affect habitat, including EFH, for their managed species and by commenting on actions likely to substantially affect habitat, including EFH.

In addition, under the Fish and Wildlife Coordination Act (Section 662), “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the U.S., or by any public or private agency under federal permit or license, such department or agency first shall consult with the U.S. Fish and Wildlife Service (USFWS), Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular state wherein the” activity is taking place. This act provides another avenue for review of actions by other federal and state agencies that may impact resources that NMFS manages in the reasonably foreseeable future.

In addition, NMFS and the USFWS share responsibility for implementing the ESA. ESA requires NMFS to designate "critical habitat" for any species it lists under the ESA (i.e., areas that contain physical or biological features essential to conservation, which may require special management considerations or protection) and to develop and implement recovery plans for threatened and endangered species. The ESA provides another avenue for NMFS to review actions by other entities that may impact endangered and protected resources whose management units are under NMFS’ jurisdiction.

### **7.5.5 Magnitude and Significance of Cumulative Effects**

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section discusses the effects of these actions on each of the VECs.

**Table 19. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).**

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
<sup>P, Pr</sup> Original FMP and subsequent Amendments and Frameworks to the FMP	Established commercial management measures	<b>Indirect Positive</b> Regulatory tool available to rebuild and manage stocks	<b>Indirect Positive</b> Reduced fishing effort	<b>Indirect Positive</b> Reduced fishing effort	<b>Indirect Positive</b> Reduced fishing effort	<b>Indirect Positive</b> Benefited domestic businesses
<sup>P, Pr</sup> Spiny dogfish Specifications	Establish annual quotas, trip limits	<b>Indirect Positive</b> Regulatory tool to specify catch limits, and other regulation; allows response to annual stock updates	<b>Indirect Positive</b> Reduced effort levels and gear requirements	<b>Indirect Positive</b> Reduced effort levels and gear requirements	<b>Indirect Positive</b> Reduced effort levels and gear requirements	<b>Indirect Positive</b> Benefited domestic businesses
<sup>P, Pr</sup> Developed and Applied Standardized Bycatch Reporting Methodology	Established acceptable level of precision and accuracy for monitoring of bycatch in fisheries	<b>Neutral</b> May improve data quality for monitoring total removals of managed resource	<b>Neutral</b> May improve data quality for monitoring removals of non-target species	<b>Neutral</b> Will not affect distribution of effort	<b>Neutral</b> May increase observer coverage and will not affect distribution of effort	<b>Potentially Indirect Negative</b> May impose an inconvenience on vessel operations
<sup>Pr, RFF</sup> Omnibus Amendment ACLs/AMs Implemented	Establish ACLs and AMs for all three plan species	<b>Potentially Indirect Positive</b> Pending full analysis	<b>Potentially Indirect Positive</b> Pending full analysis	<b>Potentially Indirect Positive</b> Pending full analysis	<b>Potentially Indirect Positive</b> Pending full analysis	<b>Potentially Indirect Positive</b> Pending full analysis
<sup>P, Pr, RFF</sup> Agricultural runoff	Nutrients applied to agricultural land are introduced into aquatic systems	<b>Indirect Negative</b> Reduced habitat quality	<b>Indirect Negative</b> Reduced habitat quality	<b>Direct Negative</b> Reduced habitat quality	<b>Indirect Negative</b> Reduced habitat quality	<b>Indirect Negative</b> Reduced habitat quality negatively affects resource
<sup>P, Pr, RFF</sup> Port maintenance	Dredging of coastal, port and harbor areas for port maintenance	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Direct Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Mixed</b> Dependent on mitigation effects

**Table 19 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).**

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF Offshore disposal of dredged materials	Disposal of dredged materials	<b>Indirect Negative</b> Reduced habitat quality	<b>Indirect Negative</b> Reduced habitat quality	<b>Direct Negative</b> Reduced habitat quality	<b>Indirect Negative</b> Reduced habitat quality	<b>Indirect Negative</b> Reduced habitat quality negatively affects resource viability
P, Pr, RFF Beach nourishment	Offshore mining of sand for beaches	<b>Indirect Negative</b> Localized decreases in habitat quality	<b>Indirect Negative</b> Localized decreases in habitat quality	<b>Direct Negative</b> Reduced habitat quality	<b>Indirect Negative</b> Localized decreases in habitat quality	<b>Mixed</b> Positive for mining companies, possibly negative for fishing industry
	Placement of sand to nourish beach shorelines	<b>Indirect Negative</b> Localized decreases in habitat quality	<b>Indirect Negative</b> Localized decreases in habitat quality	<b>Direct Negative</b> Reduced habitat quality	<b>Indirect Negative</b> Localized decreases in habitat quality	<b>Positive</b> Beachgoers like sand; positive for tourism
P, Pr, RFF Marine transportation	Expansion of port facilities, vessel operations and recreational marinas	<b>Indirect Negative</b> Localized decreases in habitat quality	<b>Indirect Negative</b> Localized decreases in habitat quality	<b>Direct Negative</b> Reduced habitat quality	<b>Indirect Negative</b> Localized decreases in habitat quality	<b>Mixed</b> Positive for some interests, potential displacement for others
P, Pr, RFF Installation of pipelines, utility lines and cables	Transportation of oil, gas and energy through pipelines, utility lines and cables	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Direct Negative</b> Reduced habitat quality	<b>Potentially Direct Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Mixed</b> Dependent on mitigation effects
P, Pr, RFF National Offshore Aquaculture Act of 2007	Bill that would grant DOC authority to issue permits for offshore aquaculture in federal waters	<b>Potentially Indirect Negative</b> Localized decreases in habitat quality possible	<b>Potentially Indirect Negative</b> Localized decreases in habitat quality possible	<b>Direct Negative</b> Localized decreases in habitat quality possible	<b>Potentially Indirect Negative</b> Localized decreases in habitat quality possible	<b>Uncertain – Likely Mixed</b> Costs/benefits remain unanalyzed

**Table 19 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).**

<b>Action</b>	<b>Description</b>	<b>Impacts on Managed Resource</b>	<b>Impacts on Non-target Species</b>	<b>Impacts on Habitat and EFH</b>	<b>Impacts on Protected Species</b>	<b>Impacts on Human Communities</b>
<b>RFF</b> Offshore Wind Energy Facilities (within 3 years)	Construction of wind turbines to harness electrical power (Several proposed from ME through NC, including NY/NJ, DE, and VA)	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Potentially Direct Negative</b> Localized decreases in habitat quality possible	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Mixed</b> Dependent on mitigation effects
<b>Pr, RFF</b> Liquefied Natural Gas (LNG) terminals (within 3 years)	Transport natural gas via tanker to terminals offshore and onshore (1 terminal built in MA; 1 under construction; proposed in RI, NY, NJ and DE)	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Potentially Direct Negative</b> Localized decreases in habitat quality possible	<b>Uncertain – Likely Indirect Negative</b> Dependent on mitigation effects	<b>Uncertain – Likely Mixed</b> Dependent on mitigation effects
<b>RFF</b> Convening Gear Take Reduction Teams (within next 3 years)	Recommend measures to reduce mortality and injury to marine mammals	<b>Indirect Positive</b> Will improve data quality for monitoring total removals	<b>Indirect Positive</b> Reducing availability of gear could reduce bycatch	<b>Indirect Positive</b> Reducing availability of gear could reduce gear impacts	<b>Indirect Positive</b> Reducing availability of gear could reduce encounters	<b>Indirect Negative</b> Reducing availability of gear could reduce revenues
<b>RFF</b> Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (w/in next 3 years)	May recommend strategies to prevent the bycatch of sea turtles in commercial fisheries operations	<b>Indirect Positive</b> Will improve data quality for monitoring total removals	<b>Indirect Positive</b> Reducing availability of gear could reduce bycatch	<b>Indirect Positive</b> Reducing availability of gear could reduce gear impacts	<b>Indirect Positive</b> Reducing availability of gear could reduce encounters	<b>Indirect Negative</b> Reducing availability of gear could reduce revenues

### 7.5.5.1 Managed Resources

Those past, present, and reasonably foreseeable future actions, whose effects may impact the managed resources and the direction of those potential impacts, are summarized in Table 23. The indirectly negative actions described in Table 23 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on the managed resource is expected to be limited due to a lack of exposure to the population at large.

Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of the managed resources is unquantifiable. As described above (section 7.5.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on the managed resource. It is anticipated that the future management actions, described in Table 24, will result in additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which spiny dogfish productivity depends. The 2012 fishing year will be the first year of implementation for an Amendment which requires specification of ACLs/AMs and catch accountability. This represents a major change to the current management program and is expected to lead to improvements in resource sustainability over the long-term. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to spiny dogfish have had a positive cumulative effect.

Commercial quotas for the managed resource have been specified to ensure the stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from annual specification of management measures established in previous years on the managed resource are largely dependent on how effective those measures were in meeting their intended objectives (i.e., preventing overfishing, achieve OY) and the extent to which mitigating measures were effective. The proposed action in this document would positively reinforce the past and anticipated positive cumulative effects on the spiny dogfish stock, by achieving the objectives specified in the FMP. Therefore, the proposed action would not have any significant effect on the managed resources individually or in conjunction with other anthropogenic activities (see Table 24).



**Table 20. Summary of the effects of past, present, and reasonably foreseeable future actions on the managed resource.**

<b>Action</b>	<b>Past to the Present</b>	<b>Reasonably Foreseeable Future</b>
Original FMP and subsequent Amendments and Frameworks to the FMP	<b>Indirect Positive</b>	
Spiny dogfish Specifications	<b>Indirect Positive</b>	
Developed and Implement Standardized Bycatch Reporting Methodology	<b>Neutral</b>	
Amendment to address ACLs/AMs implemented		<b>Potentially Indirect Positive</b>
Agricultural runoff	<b>Indirect Negative</b>	
Port maintenance	<b>Uncertain – Likely Indirect Negative</b>	
Offshore disposal of dredged materials	<b>Indirect Negative</b>	
Beach nourishment – Offshore mining	<b>Indirect Negative</b>	
Beach nourishment – Sand placement	<b>Indirect Negative</b>	
Marine transportation	<b>Indirect Negative</b>	
Installation of pipelines, utility lines and cables	<b>Uncertain – Likely Indirect Negative</b>	
National Offshore Aquaculture Act of 2007	<b>Potentially Indirect Negative</b>	
Offshore Wind Energy Facilities (within 3 years)		<b>Uncertain – Likely Indirect Negative</b>
Liquefied Natural Gas (LNG) terminals (within 3 years)		<b>Uncertain – Likely Indirect Negative</b>
Convening Gear Take Reduction Teams (within 3 years)		<b>Indirect Positive</b>
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)		<b>Indirect Positive</b>
<b>Summary of past, present, and future actions excluding those proposed in this specifications document</b>	<b>Overall, actions have had, or will have, positive impacts on the managed resources * See section 7.5.5.1 for explanation.</b>	

### **7.5.5.2 Non-Target Species or Bycatch**

Those past, present, and reasonably foreseeable future actions, whose effects may impact non-target species and the direction of those potential impacts, are summarized in Table 23. The effects of indirectly negative actions described in Table 23 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on non-target species is expected to be limited due to a lack of exposure to the population at large.

Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of non-target resources and the oceanic ecosystem is unquantifiable. As described above (section 7.5.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. At this time, NMFS can consider impacts to non-target species (federally-managed or otherwise) and comment on potential impacts. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources within NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on non-target species. Implementation and application of a standardized bycatch reporting methodology would have a particular impact on non-target species by improving the methods which can be used to assess the magnitude and extent of a potential bycatch problem. Better assessment of potential bycatch issues allows more effective and specific management measures to be developed to address a bycatch problem. It is anticipated that future management actions, described in Table 25, will result in additional indirect positive effects on non-target species through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which the productivity of many of these non-target resources depend. The impacts of these future actions could be broad in scope, and it should be noted the managed resource and non-target species are often coupled in that they utilize similar habitat areas and ecosystem resources on which they depend. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful have had a positive cumulative effect on non-target species.

Commercial quotas and trip limits for the managed resource have been specified to ensure the stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document have impacts that range from neutral to positive or negative impacts, and would not change the past and anticipated positive cumulative effects on non-target species and thus, would not have any significant effect on these species individually or in conjunction with other anthropogenic activities (Table 25).

**Table 21. Summary of the effects of past, present, and reasonably foreseeable future actions on the non-target species.**

<b>Action</b>	<b>Past to the Present</b>	<b>Reasonably Foreseeable Future</b>
Original FMP and subsequent Amendments and Frameworks to the FMP	<b>Indirect Positive</b>	
Spiny dogfish Specifications	<b>Indirect Positive</b>	
Developed and Implement Standardized Bycatch Reporting Methodology	<b>Neutral</b>	
Amendment to address ACLs/AMs implemented		<b>Potentially Indirect Positive</b>
Agricultural runoff	<b>Indirect Negative</b>	
Port maintenance	<b>Uncertain – Likely Indirect Negative</b>	
Offshore disposal of dredged materials	<b>Indirect Negative</b>	
Beach nourishment – Offshore mining	<b>Indirect Negative</b>	
Beach nourishment – Sand placement	<b>Indirect Negative</b>	
Marine transportation	<b>Indirect Negative</b>	
Installation of pipelines, utility lines and cables	<b>Uncertain – Likely Indirect Negative</b>	
National Offshore Aquaculture Act of 2007	<b>Potentially Indirect Negative</b>	
Offshore Wind Energy Facilities (within 3 years)		<b>Uncertain – Likely Indirect Negative</b>
Liquefied Natural Gas (LNG) terminals (within 3 years)		<b>Uncertain – Likely Indirect Negative</b>
Convening Gear Take Reduction Teams (within 3 years)		<b>Indirect Positive</b>
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)		<b>Indirect Positive</b>
<b>Summary of past, present, and future actions excluding those proposed in this specifications document</b>	<b>Overall, actions have had, or will have, positive impacts on the non-target species * See section 7.5.5.2 for explanation.</b>	

### **7.5.5.3 Habitat (Including EFH)**

Those past, present, and reasonably foreseeable future actions, whose effects may impact habitat (including EFH) and the direction of those potential impacts, are summarized in Table 23. The direct and indirect negative actions described in Table 23 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on habitat is expected to be limited due to a lack of exposure to habitat at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on habitat and EFH is unquantifiable. As described above (section 7.5.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on habitat and EFH. The actions have constrained fishing effort at a large scale and locally, and have implemented gear requirements, which may reduce habitat impacts. As required under these FMP actions, EFH and HAPCs were designated for the managed resources. It is anticipated that the future management actions, described in Table 26, will result in additional direct or indirect positive effects on habitat through actions which protect EFH for federally-managed species and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All of the VECs are interrelated; therefore, the linkages among habitat quality and EFH, managed resources and non-target species productivity, and associated fishery yields should be considered. For habitat and EFH, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and it is anticipated will continue to be, taken to improve the condition of habitat. There are some actions, which are beyond the scope of NMFS and Council management such as coastal population growth and climate changes, which may indirectly impact habitat and ecosystem productivity. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had a neutral to positive cumulative effect.

Commercial quotas and trip limits for the managed resource have been specified to ensure the stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document would not change the past and anticipated cumulative effects on habitat and thus, would not have any significant effect on habitat individually or in conjunction with other anthropogenic activities (Table 26).

**Table 22. Summary of the effects of past, present, and reasonably foreseeable future actions on the habitat.**

<b>Action</b>	<b>Past to the Present</b>	<b>Reasonably Foreseeable Future</b>
Original FMP and subsequent Amendments and Frameworks to the FMP	<b>Indirect Positive</b>	
Spiny dogfish Specifications	<b>Indirect Positive</b>	
Developed and Implement Standardized Bycatch Reporting Methodology	<b>Neutral</b>	
Amendment to address ACLs/AMs implemented		<b>Potentially Indirect Positive</b>
Agricultural runoff	<b>Direct Negative</b>	
Port maintenance	<b>Uncertain – Likely Direct Negative</b>	
Offshore disposal of dredged materials	<b>Direct Negative</b>	
Beach nourishment – Offshore mining	<b>Direct Negative</b>	
Beach nourishment – Sand placement	<b>Direct Negative</b>	
Marine transportation	<b>Direct Negative</b>	
Installation of pipelines, utility lines and cables	<b>Uncertain – Likely Direct Negative</b>	
National Offshore Aquaculture Act of 2007	<b>Direct Negative</b>	
Offshore Wind Energy Facilities (within 3 years)		<b>Potentially Direct Negative</b>
Liquefied Natural Gas (LNG) terminals (within 3 years)		<b>Potentially Direct Negative</b>
Convening Gear Take Reduction Teams (within 3 years)		<b>Indirect Positive</b>
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)		<b>Indirect Positive</b>
<b>Summary of past, present, and future actions excluding those proposed in this specifications document</b>	<b>Overall, actions have had, or will have, neutral to positive impacts on habitat, including EFH * See section 7.5.5.3 for explanation.</b>	

#### **7.5.5.4 ESA Listed and MMPA Protected Species**

Those past, present, and reasonably foreseeable future actions, whose effects may impact the protected resources and the direction of those potential impacts, are summarized in Table 23. The indirectly negative actions described in Table 23 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on protected resources, relative to the range of many of the protected resources, is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on protected resources either directly or indirectly is unquantifiable. As described above (section 7.5.4), NMFS has several means, including ESA, under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' protected resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on protected resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on ESA listed and MMPA protected species through the reduction of fishing effort (potential interactions) and implementation of gear requirements. It is anticipated that the future management actions, specifically those recommended by the ALWTRT and the development of strategies for sea turtle conservation described in Table 27, will result in additional indirect positive effects on the protected resources. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to protected resources have had a positive cumulative effect.

Commercial quotas and trip limits for the managed resource have been specified to ensure the stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document would not change the past and anticipated cumulative effects on ESA listed and MMPA protected species and thus, would not have any significant effect on protected resources individually or in conjunction with other anthropogenic activities (Table 27).

**Table 23. Summary of the effects of past, present, and reasonably foreseeable future actions on the protected resources.**

<b>Action</b>	<b>Past to the Present</b>	<b>Reasonably Foreseeable Future</b>
Original FMP and subsequent Amendments and Frameworks to the FMP	<b>Indirect Positive</b>	
Spiny dogfish Specifications	<b>Indirect Positive</b>	
Developed and Implement Standardized Bycatch Reporting Methodology	<b>Neutral</b>	
Amendment to address ACLs/AMs implemented		<b>Potentially Indirect Positive</b>
Agricultural runoff	<b>Indirect Negative</b>	
Port maintenance	<b>Uncertain – Likely Indirect Negative</b>	
Offshore disposal of dredged materials	<b>Indirect Negative</b>	
Beach nourishment – Offshore mining	<b>Indirect Negative</b>	
Beach nourishment – Sand placement	<b>Indirect Negative</b>	
Marine transportation	<b>Indirect Negative</b>	
Installation of pipelines, utility lines and cables	<b>Potentially Direct Negative</b>	
National Offshore Aquaculture Act of 2007	<b>Potentially Indirect Negative</b>	
Offshore Wind Energy Facilities (within 3 years)		<b>Uncertain – Likely Indirect Negative</b>
Liquefied Natural Gas (LNG) terminals (within 3 years)		<b>Uncertain – Likely Indirect Negative</b>
Convening Gear Take Reduction Teams (within 3 years)		<b>Indirect Positive</b>
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)		<b>Indirect Positive</b>
<b>Summary of past, present, and future actions excluding those proposed in this specifications document</b>	<b>Overall, actions have had, or will have, positive impacts on protected resources * See section 7.5.5.4 for explanation.</b>	

#### **7.5.5.5 Human Communities**

Those past, present, and reasonably foreseeable future actions, whose effects may impact human communities and the direction of those potential impacts, are summarized in Table 23. The indirectly negative actions described in Table 23 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on human communities is expected to be limited in scope. It may, however, displace fishermen from project areas. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude. This may result in indirect negative impacts on human communities by reducing resource availability; however, this effect is unquantifiable. As described above (section 7.5.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on human communities.

Past fishery management actions taken through the FMP and annual specification process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices, while at the same time potentially reducing the availability of the resource to all participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions, described in Table 28, will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on the human communities could occur through management actions that may implement gear requirements or area closures and thus, reduce revenues. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had an overall positive cumulative effect.

Commercial quotas and trip limits for the managed resource have been specified to ensure the stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from annual specification measures established in previous years on the managed resources are largely dependent on how effective those measures were in meeting their intended objectives and the extent to which mitigating measures were effective. Overages may alter the timing of commercial fishery revenues (revenues realized a year earlier), and there may be impacts on some fishermen caused by unexpected reductions in their opportunities to earn revenues in the commercial fisheries in the year during which the overages are deducted.

Despite the potential for neutral to positive short-term effects on human communities, the expectation is that there would be a positive long-term effect on human communities due to the long-term sustainability of spiny dogfish. Overall, the proposed actions in this document would not change the past and anticipated cumulative effects on human communities and thus, would not have any significant effect on human communities individually, or in conjunction with other anthropogenic activities (Table 28).



**Table 24. Summary of the effects of past, present, and reasonably foreseeable future actions on human communities.**

<b>Action</b>	<b>Past to the Present</b>	<b>Reasonably Foreseeable Future</b>
Original FMP and subsequent Amendments and Frameworks to the FMP	<b>Indirect Positive</b>	
Spiny dogfish Specifications	<b>Indirect Positive</b>	
Developed and Implement Standardized Bycatch Reporting Methodology	<b>Potentially Indirect Negative</b>	
Amendment to address ACL/AMs implemented		<b>Potentially Indirect Positive</b>
Agricultural runoff	<b>Indirect Negative</b>	
Port maintenance	<b>Uncertain – Likely Mixed</b>	
Offshore disposal of dredged materials	<b>Indirect Negative</b>	
Beach nourishment – Offshore mining	<b>Mixed</b>	
Beach nourishment – Sand placement	<b>Positive</b>	
Marine transportation	<b>Mixed</b>	
Installation of pipelines, utility lines and cables	<b>Uncertain – Likely Mixed</b>	
National Offshore Aquaculture Act of 2007	<b>Uncertain – Likely Mixed</b>	
Offshore Wind Energy Facilities (within 3 years)		<b>Uncertain – Likely Mixed</b>
Liquefied Natural Gas (LNG) terminals (within 3 years)		<b>Uncertain – Likely Mixed</b>
Convening Gear Take Reduction Teams (within 3 years)		<b>Indirect Negative</b>
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)		<b>Indirect Negative</b>
<b>Summary of past, present, and future actions excluding those proposed in this specifications document</b>	<b>Overall, actions have had, or will have, positive impacts on human communities * See section 7.5.5.5 for explanation.</b>	

### 7.5.6 Preferred Action on all the VECs

The Council has identified its preferred action alternatives in section 5.0. The cumulative effects of the range of actions considered in this document can be considered to make a determination if significant cumulative effects are anticipated from the preferred action.

The direct and indirect impacts of the proposed action on the VECs are described in sections 7.1 through 7.4. The magnitude and significance of the cumulative effects, which include the additive and synergistic effects of the proposed action, as well as past, present, and future actions, have been taken into account throughout this section 7.5. The action proposed in this annual specifications document builds off action taken in the original FMP and subsequent amendments and framework documents. When this action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative. Based on the information and analyses presented in these past FMP documents and this document, there are no significant cumulative effects associated with the action proposed in this document (Table 29).

**Table 25. Magnitude and significance of the cumulative effects; the additive and synergistic effects of the preferred action, as well as past, present, and future actions.**

<b>VEC</b>	<b>Status in 2011</b>	<b>Net Impact of P, Pr, and RFF Actions</b>	<b>Impact of the Preferred Action</b>	<b>Significant Cumulative Effects</b>
<b>Managed Resource</b>	Complex and variable (Section 6.1)	Positive (Sections 7.5.4 and 7.5.5.1)	Neutral to positive (Sections 7.1)	<b>None</b>
<b>Non-target Species</b>	Complex and variable (Section 6.1)	Positive (Sections 7.5.4 and 7.5.5.2)	Slight negative to slight positive (Sections 7.1)	<b>None</b>
<b>Habitat</b>	Complex and variable (Section 6.2)	Neutral to positive (Sections 7.5.4 and 7.5.5.3)	Slight negative to slight positive (Sections 7.2)	<b>None</b>
<b>Protected Resources</b>	Complex and variable (Section 6.3)	Positive (Sections 7.5.4 and 7.5.5.4)	Slight negative to slight positive (Sections 7.3)	<b>None</b>
<b>Human Communities</b>	Complex and variable (Section 6.4)	Positive (Sections 7.5.4 and 7.5.5.5)	Negative (highly uncertain) to short-term Positive (Sections 7.4)	<b>None</b>

## **8.0 APPLICABLE LAWS**

### **8.1 National Environmental Policy Act of 1969 (NEPA)**

#### **8.1.1 Finding of No Significant Environmental Impact (FONSI)**

National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of “context” and “intensity.” Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

*1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?*

The proposed action is intended to prevent overfishing and maintain spiny dogfish biomass above the biomass target. This action is not expected to jeopardize the sustainability of any target species that may be affected by the action. As discussed in Section 6.1.2, the spiny dogfish stock is rebuilt, is not overfished, and overfishing is not occurring.

*2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?*

The proposed action is not expected to jeopardize the sustainability of any non-target species. The proposed measure is not expected to significantly alter fishing methods or activities. There is limited directed fishing for spiny dogfish using gear that incidentally catches other species. The proposed action should not significantly increase directed dogfish fishing in the EEZ. As such, the incidental catch of non-target species should not increase significantly.

*3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?*

The proposed action is not expected to cause substantial damage to the ocean, coastal habitats, and/or EFH as defined under the MSA and identified in the FMP. There has been an overall decline in bottom trawling activity for groundfish in the Northeast region in recent years and management measures (closed areas) are in place for minimizing the adverse habitat impacts of bottom trawling and dredging. Therefore, fishing activity in the limited spiny dogfish trawl fishery is not expected to increase existing levels of minimal adverse impacts to EFH and do not require any mitigation.

*4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?*

No changes in fishing behavior that would affect safety are anticipated. The overall effect of the proposed action would not adversely impact public health or safety.

*5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?*

The proposed action is not reasonably expected to have an adverse impact on endangered or threatened species, marine mammals, or critical habitat for these species. While there may be some adverse impacts by maintaining fishing effort through the proposed action, that impact is not expected to be significant. Because the abundance of dogfish has increased greatly, effort is unlikely to increase significantly. In addition, measures in place to protect endangered or threatened species, marine mammals, and critical habitat for these species would remain in place.

*6) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?*

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area. The action is not expected to significantly alter fishing methods or activities or fishing effort or the spatial and/or temporal distribution of current fishing effort.

*7) Are significant social or economic impacts interrelated with natural or physical environmental effects?*

The proposed action is not expected to have a substantial impact on the natural or physical environment. The proposed action is not expected to significantly alter fishing methods or activities, fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, there are no social or economic impacts interrelated with natural or physical environmental effects.

*8) Are the effects on the quality of the human environment likely to be highly controversial?*

The proposed action could result in disagreement between federal and state regulations with regard to quota and possession limits. If offshore (federal) possession limits are greater than nearshore (state water) possession limits, the inconsistency could be somewhat controversial. Individual state agencies may take actions that are more restrictive than the proposed action, and that could cause some controversy in specific states. Although there has been some controversy over the setting of dogfish specifications in the past, the effects of this action are not highly controversial.

*9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?*

This action addresses the commercial quota and trip limit for spiny dogfish. This fishery is not known to be prosecuted in any unique areas such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas. Therefore, the proposed action is not expected to have a substantial impact on any of these areas.

*10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?*

The impacts of the proposed action on the human environment are described in Section 7.0 of the EA. The proposed action addresses the commercial quota and trip limit for the spiny dogfish fishery. The proposed action is not expected to significantly alter fishing methods or activities, and is not expected to significantly increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The measures contained in this action are not expected to have highly uncertain, unique, or unknown risks on the human environment.

*11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?*

As discussed in Section 7.5, the proposed action is not expected to have cumulatively significant impacts when considered with the impacts from other fishing and non-fishing activities. The improvements in the condition of the stock are expected to generate cumulative positive impacts overall. The proposed action, together with past and future actions are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

*12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?*

The proposed action addresses the commercial quota and trip limit for the spiny dogfish fishery. This fishery is not known to be prosecuted in any areas that might affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause the loss or destruction of significant scientific, cultural or historical resources. Therefore, the proposed action is not expected to affect any of these areas.

*13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?*

The proposed action addresses the commercial quota and trip limit for the spiny dogfish fishery. There is no evidence or indication that this fishery has ever resulted in the introduction or spread of nonindigenous species. The proposed action is not expected to

significantly alter fishing methods or activities, and is not expected to significantly increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, it is highly unlikely that the proposed action would be expected to result in the introduction or spread of a non-indigenous species.

*14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?*

The proposed action addresses the commercial quota and trip limit for the spiny dogfish fishery. The proposed action is not expected to significantly alter fishing methods or activities, and is not expected to significantly increase fishing effort or the spatial and/or temporal distribution of current fishing effort. When new stock assessment or other biological information about these species becomes available in the future, then the specifications may be adjusted according to the FMP. The proposed action will not result in significant effects, nor does it represent a decision in principle about a future consideration.

*15) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?*

The proposed action addresses the commercial quota and trip limit for the spiny dogfish fishery. The proposed action is not expected to alter fishing methods or activities such that they threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment. The proposed action has been found to be consistent with other applicable laws (see Sections 9.2 - 9.10 below).

*16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?*

The impacts of the proposed action on the biological, physical, and human environment are described in Section 7.0. The cumulative effects of the proposed action on target and non-target species are detailed in Section 7.6. The proposed action is not expected to significantly increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The improvements in the condition of the stock through implementation of quotas based on the fishing mortality target contained in the FMP are expected to generate positive impacts overall.

## **DETERMINATION**

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment, it is hereby determined that the proposed actions in this specification package will not significantly impact the quality of the human environment as described above and in the Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.

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Regional Administrator, Northeast Region, NMFS

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Date

## **8.2 Marine Mammal Protection Act**

The MAFMC has reviewed the impacts of the proposed spiny dogfish specifications on marine mammals and has concluded that the proposed management actions are consistent with the provisions of the MMPA, and will not alter existing measures to protect the species likely to inhabit the spiny dogfish management unit. For further information on the potential impacts of the fishery and the proposed management action on marine mammals, see Section 7.4 of this document.

## **8.3 Endangered Species Act**

Section 7 of the Endangered Species Act requires federal agencies conducting, authorizing, or funding activities that affect threatened or endangered species to ensure that those effects do not jeopardize the continued existence of listed species. The MAFMC has concluded, using information available, that the proposed spiny dogfish specifications are not likely to jeopardize any ESA-listed species or alter or modify any critical habitat, based on the discussion of impacts in this document (Section 7.4).

## **8.4 Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals. The Council has developed this specifications document and will submit it to NMFS; NMFS must determine whether this action is consistent to the maximum extent practicable with the CZM programs for each state (Maine through North Carolina).

## **8.5 Administrative Procedures Act**

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process and to give the public notice and an opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of a fishery management plan and subsequent amendments and framework adjustments. Development of this specifications document provided many opportunities for public review, input, and access to the rulemaking process. This proposed specifications document was developed as a result of a multi-stage process that involved review of the source document (2012 Specifications and Management Measures) by affected members of the public. The public had the opportunity to review and comment on management measures during a meeting of the Council's Scientific and Statistical Committee on September 21, 2011, a Spiny Dogfish MC Meeting on September 23, 2010, a Joint Spiny Dogfish Committee meeting held on October 12, 2010, a MAFMC meeting held October 12, 2010, and an NEFMC meeting

held on November 17, 2010. In addition, the public will have further opportunity to comment on this specifications package once NMFS publishes a proposed rule in the Federal Register (FR) requesting comments.

## **8.6 Data Quality Act**

### ***Utility of Information Product***

The proposed document includes: A description of the proposed specifications, description of the alternatives considered, and the reasons for selecting the proposed management measures. This action proposes commercial quotas and other management measures for spiny dogfish in 2011. This proposed specifications document implements the FMP's conservation and management goals consistent with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as well as all other existing applicable laws.

This proposed specifications document was developed as a result of a multi-stage process that involved review of the source document (2011 Specifications and Management Measures) by affected members of the public. The public had the opportunity to review and comment on management measures during a meeting of the Council's Scientific and Statistical Committee on September 21, 2011, a Spiny Dogfish MC Meeting on September 23, 2010, a Joint Spiny Dogfish Committee meeting held on October 12, 2010, a MAFMC meeting held October 12, 2010, and an NEFMC meeting held on November 17, 2010.

The Federal Register notice that announces the proposed rule and the implementing regulations will be made available in printed publication and on the website for the Northeast Regional Office. The notice provides metric conversions for all measurements.

### ***Integrity of Information Product***

The information product meets the standards for integrity under the following types of documents:

Other/Discussion (e.g., Confidentiality of Statistics of the Magnuson-Stevens Fishery Conservation and Management Act; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR 229.11, Confidentiality of information collected under the Marine Mammal Protection Act.)

### ***Objectivity of Information Product***

The category of information product that applies for this product is "Natural Resource Plans."

In preparing specifications documents, the Council must comply with the requirements of the Magnuson-Stevens Act, the National Environmental Policy Act, the Regulatory Flexibility Act, the Administrative Procedure Act, the Paperwork Reduction Act, the Coastal Zone Management Act, the Endangered Species Act, the Marine Mammal



Protection Act, the Data Quality Act, and Executive Orders 12630 (Property Rights), 12866 (Regulatory Planning), 13132 (Federalism), and 13158 (Marine Protected Areas).

This specifications document has been developed to comply with all applicable National Standards, including National Standard 2. National Standard 2 states that the FMP's conservation and management measures shall be based upon the best scientific information available. Despite current data limitations, the conservation and management measures proposed to be implemented under this specifications document are based upon the best scientific information available. This information includes NMFS commercial fisheries data for fishing year 2010, which was used to characterize the economic impacts of the management proposals. These data, as well as the NMFS Observer program database, were used to characterize historic landings, species co-occurrence in the spiny dogfish catch, and discarding. The specialists who worked with these data are familiar with the most recent analytical techniques and with the available data and information relevant to the spiny dogfish fishery. Marine Recreational Fisheries Statistical Survey (MRFSS) data were used to characterize the recreational fishery for this species.

The policy choices (i.e., management measures) proposed to be implemented by this specifications document are supported by the available scientific information and, in cases where information was unavailable, proxy reference points are based on observed trends in survey data. The management measures contained in the specifications document are designed to meet the conservation goals and objectives of the FMP, and prevent overfishing and rebuild overfished resources, while maintaining sustainable levels of fishing effort to ensure a minimal impact on fishing communities.

The supporting materials and analyses used to develop the measures in the proposed rule are contained in the specifications document and to some degree in previous specifications and/or FMPs as specified in this document.

The review process for this specifications package involves the Mid-Atlantic Fishery Management Council, the Northeast Fisheries Science Center, the Northeast Regional Office, and NOAA Fisheries headquarters. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, demersal resources, population biology, and the social sciences. The Council review process involves public meetings at which affected stakeholders have opportunity to provide comments on the specifications document. Review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Final approval of the specifications document and clearance of the rule is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

## **8.7 Paperwork Reduction Act**

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the federal paperwork burden for individuals, small businesses, state and local governments, and other persons as well as to maximize the

usefulness of information collected by the federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the Paperwork Reduction Act.

## **8.8 Impacts Relative to Federalism/E.O. 13132**

This specifications document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

## **8.9 Environmental Justice/Executive Order (E.O.) 12898**

This EO provides that “each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” EO 12898 directs each federal agency to analyze the environmental effects, including human health, economic, and social effects of federal actions on minority populations, low-income populations, and Indian tribes, when such analysis is required by NEPA. Agencies are further directed to “identify potential effects and mitigation measures in consultation with affected communities, and improve the accessibility of meetings, crucial documents, and notices.”

The proposed actions are not expected to affect participation in the spiny dogfish fishery. Since the proposed action represents no changes relative to the current opportunity to participate in this fishery, no negative economic or social effects are anticipated as a result (Section 7.0). Therefore, the proposed action under the preferred alternatives is not expected to cause disproportionately high and adverse human health, environmental or economic effects on minority populations, low-income populations, or Indian tribes.

## **8.10 Regulatory Flexibility Act/E.O. 12866**

### **8.10.1 Regulatory Impact Review (RIR) and Initial Regulatory Flexibility Analysis (IRFA)**

This section provides the analysis and conclusions to address the requirements of Executive Order 12866 and the Regulatory Flexibility Act (RFA). Since many of the requirements of these mandates duplicate those required under the MSA and NEPA, this section contains references to other sections of this document. The following sections provide the basis for concluding that the proposed action is not significant under E.O. 12866 and will not have a significant economic impact on a substantial number of small entities under the RFA.

### **8.10.2 Description of Management Objectives**

The goals and objectives of the management plan for the spiny dogfish resource are stated in Section 1.1.3 of the Spiny Dogfish FMP. The proposed action is consistent with, and does not modify those goals and objectives.

### **8.10.3 Description of the Fishery**

Section 2.3 of the Spiny Dogfish FMP contains a detailed description of the historic spiny dogfish fishery. Updated fishery activity is given in Section 6.5 of this document.

### **8.10.4 Statement of the Problem**

The purpose and need for this action is identified in Section 4.1 of this document. The Spiny Dogfish FMP requires that the Councils and the Regional Administrator review the best available stock and fishery data when developing specifications for the upcoming fishing year(s).

### **8.10.5 Description of the Alternatives**

#### **Alternative 1a – (Mid-Atlantic Council Recommendation – Set Quota at 35.694 M lb and Trip Limit at 4,000 lb)**

For FY2012, specify a commercial quota of 35.694 M lb with trip limits of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb).

#### **Alternative 1b – (New England Council Recommendation – Set Quota at 35.694 M lb and Trip Limit at 3,000 lb)**

For FY2012, specify a commercial quota of 35.694 M lb with trip limits of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb).

#### **Alternative 2 – (Consistent with ASMFC – Set Quota at 30.000 M lb and Trip Limit at 3,000 lb)**

For FY2012, specify a commercial quota of 30.000 M lb with trip limits of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (17.370 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (12.630 M lb).

#### **Alternative 3 – (Status Quo / No Action - Set quota at 20.000 M lb and Trip Limits at 3,000 lb)**

For FY2012, specify a commercial quota of 20.000 M lb with a trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (11.580 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (8.420 M lb).

### **8.10.6 Economic Analysis**

The economic impacts of the proposed actions are discussed in Section 7.0 of this document. Higher quotas and constant or increased trip limits (Alternatives 1a/1b, 2 and 3) are expected to result in positive economic impacts by increasing or maintaining revenue from the dogfish fishery. In general, no significant economic impacts are expected because the alternatives are consistent with the goals of the FMP and are unlikely to result in significant deviation (negatively) from the status quo.

### **8.10.7 Determination of Significance under E.O. 12866**

NMFS Guidelines provide criteria to be used to evaluate whether a proposed action is significant. A significant regulatory action means any regulatory action that is likely to result in a rule that may:

1. *Have an annual effect on the economy of \$100 million or more, or adversely effect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities.*

The proposed action will not have an effect on the economy in excess of \$100 million. The proposed action is not expected to have any adverse impacts on the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local or tribal governments or communities.

2. *Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.*

The proposed action will not create a serious inconsistency with, or otherwise interfere with, an action taken or planned by another agency. No other agency has indicated that it plans an action that will affect the spiny dogfish fishery in the EEZ.

3. *Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof.*

The proposed action will not materially alter the budgetary impact of entitlements, grants, user fees or loan programs, or the rights and obligations of their participants.

4. *Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.*

The proposed action does not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866.

### **8.10.8 Initial Regulatory Flexibility Analysis**

The following sections contain analyses of the effect of the proposed action on small entities. Under Section 603(b) of the RFA, each initial regulatory flexibility analysis is required to address:

1. Reasons why the agency is considering the action,
2. The objectives and legal basis for the proposed rule,
3. The kind and number of small entities to which the proposed rule will apply,
4. The projected reporting, record-keeping and other compliance requirements of the proposed rule, and
5. All federal rules that may duplicate, overlap, or conflict with the proposed rule.

### **8.10.9 Reasons for Considering the Action**

The purpose and need for this action is identified in Section 4.1 of this document. The Spiny Dogfish FMP requires that the Council and the Regional Administrator annually review the best available stock and fishery data when developing specifications for the upcoming fishing year.

### **8.10.10 Objectives and Legal Basis for the Action**

The objective of the proposed action is to implement specifications for the spiny dogfish fishery, as required under the regulations implementing the Spiny Dogfish FMP, which are provided in 50 CFR 648, Subpart L.

### **8.10.11 Description and Number of Small Entities to Which the Rule Applies**

All of the potentially affected businesses are considered small entities under the standards described in NOAA Fisheries guidelines because they have gross receipts that do not exceed \$3.5 million annually. A discussion of vessel activity during the 2010 fishing year is given in Section 6.5.1 of this document.

### **8.10.12 Recordkeeping and Reporting Requirements**

The proposed action does not introduce any new reporting, recordkeeping, or other compliance requirements.

### **8.10.13 Duplication, Overlap, or Conflict with Other Federal Rules**

The proposed action does not duplicate, overlap or conflict with any other federal rules.

### **8.10.14 Economic Impacts on Small Entities**

Section 7.0 of this document contains the economic analysis of the alternatives that were considered during the specification process.

## 10.0 LITERATURE CITED

- ASMFC. 2007. Estimation of Atlantic Sturgeon Bycatch in Coastal Atlantic Commercial Fisheries of New England and the Mid-Atlantic. Special Report to the ASMFC Atlantic Sturgeon Management Board.
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## **11.0 LIST OF AGENCIES AND PERSONS CONSULTED**

This document was prepared by the Mid-Atlantic Fishery Management Council in consultation with the National Marine Fisheries Service and the New England Fishery Management Council.

Additional (final) copies of this EA can be obtained via the NMFS NERO website:

<http://www.nero.noaa.gov/nero/regs/com2011.html>

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In addition, the following organizations/agencies were consulted during the development of the spiny dogfish specifications, either through direct communication/correspondence and/or participation in Council public meetings:

NOAA Fisheries, National Marine Fisheries Service, Northeast Regional Office,  
Gloucester MA

Northeast Fisheries Science Center, Woods Hole, MA

Atlantic States Marine Fisheries Commission



## APPENDIX 1

### Relevant Port and Community Descriptions

(The contents of this appendix are taken from the NEFSC's "Community Profiles for the Northeast US Fisheries" for Virginia Beach/Lynnhaven, VA; Hatteras, NC; Rye, NH; Chatham, MA; Ocean City, MD for which spiny dogfish comprised greater than 1% of total port ex-vessel revenue according to the federal dealer report database. They are also available on the internet at:

[http://www.nefsc.noaa.gov/read/socialsci/community\\_profiles/](http://www.nefsc.noaa.gov/read/socialsci/community_profiles/) )

<b>Port</b>	<b>Page</b>
Virginia Beach/Lynnhaven, VA	58
Hatteras, NC	68
Rye, NH	79
Chatham, MA	89
Ocean City, MD	99

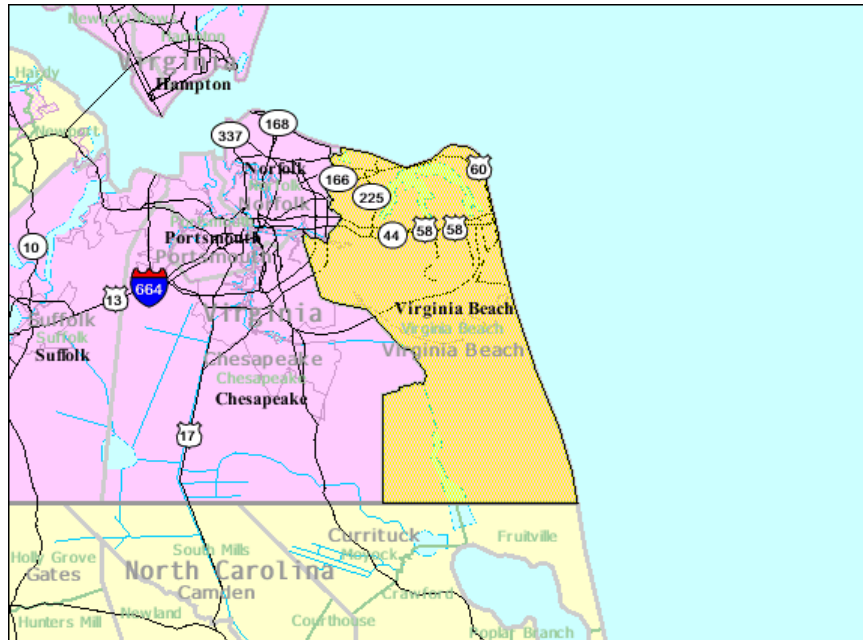
# VIRGINIA BEACH, VA<sup>1</sup>

## Community Profile<sup>2</sup>

### PEOPLE AND PLACES

#### Regional orientation

Virginia Beach, Virginia (36.85°N, 75.97°W) is located in the southeast part of the state on the Atlantic coastline. The city is independent and is not part of any county. The city of Virginia Beach is nestled between North Carolina to the south, the Atlantic Ocean to its east, the Chesapeake Bay on the north, and in the southeastern region of Hampton Roads (USGS 2008).



Map 1. Location of Virginia Beach, VA (US Census Bureau 2000)

#### Historical/Background

The rich history of Virginia Beach dates back nearly 400 years, when English Colonists landed in Chesapeake Bay in Virginia on April 26, 1607. The colonists spent three days at the site of their first landing, erecting a cross and naming the spot Cape Henry. From Cape Henry they sailed across the bay and up the river, ultimately settling the colony of Jamestown. Later colonists settled around Cape Henry and the lands beyond. Princess Anne County was formed from the eastern section of Lower Norfolk County in 1691 and was named in honor of the youngest daughter of King James (City of Virginia Beach n.d.).

<sup>1</sup> These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

<sup>2</sup> For purposes of citation please use the following template: “Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact [Lisa.L.Colburn@noaa.gov](mailto:Lisa.L.Colburn@noaa.gov).”

Commerce grew as an industry in the 1700s. A resolution was passed to build a permanent lighthouse at Cape Henry to guide merchant ships safely to Virginia Beach shores. The Cape Henry Lighthouse was the first lighthouse to be authorized, completed and lighted by the Federal Government and now stands as a Historic Landmark (National Park Service 2001).

### Demographics<sup>3</sup>

According to Census 2000 data, Virginia Beach had a total population of 425,257 up from the reported population of 363,069 in 1990. Of this 2000 total, 49.5% were males and 50.5% were females. The median age was 38.9 years and 72.6% of the population was 21 years or older while 20.7% was 62 years or older.

Virginia Beach's age structure (see Figure 1) shows the highest percentage of the population was between 30 and 39 years of age. This statistic suggests that professionals (post-graduates) are moving to Virginia Beach to live and work. There were also a large number of residents in all age categories through 40-49, after which the populations began to drop off, indicating that Virginia Beach was a family-oriented community.

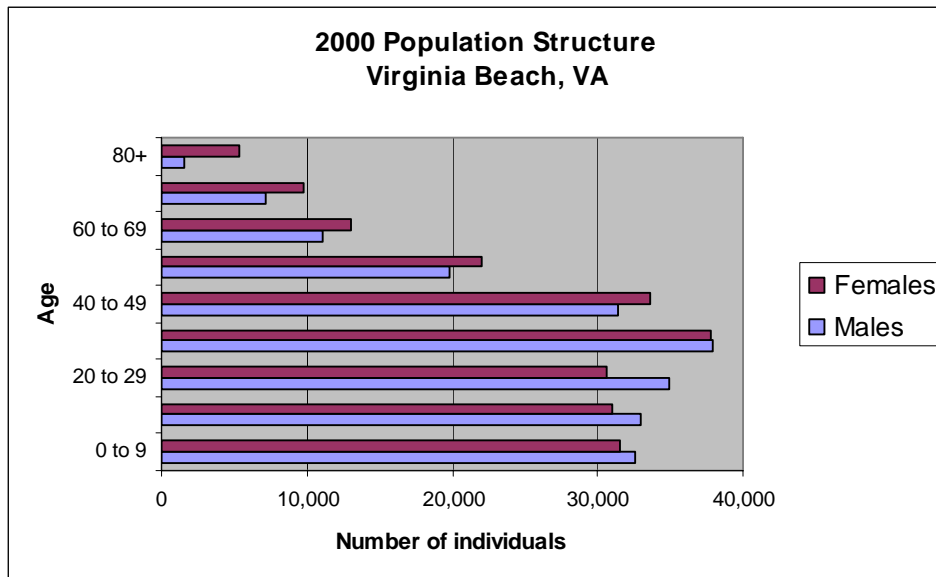


Figure 1. Virginia Beach's population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population was white (70.4%) with 18.7% of residents black or African American, 4.8% Asian, 0.4% Native American, and 0.1% Pacific Islander or Hawaiian (see Figure 2). Only 4.1% of the population identified themselves as Hispanic/Latino (see Figure 3). Residents linked their backgrounds to a number of different ancestries including: German (13.7%), Irish (12.4%), and Italian (5.6%). With the regard to region of birth, 37.7% were born in Virginia, 53.0% were born in a different state and 6.6% were born outside of the U.S. (including 2.4% who were not United States citizens).

<sup>3</sup> While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

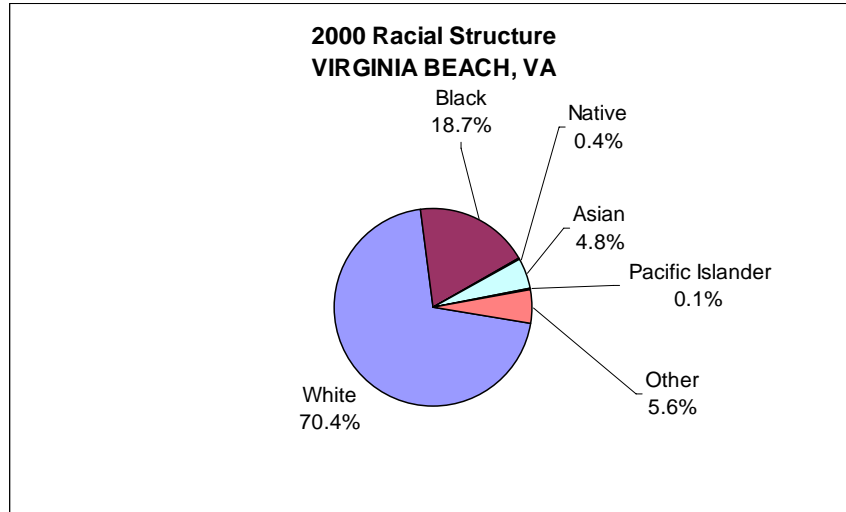


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

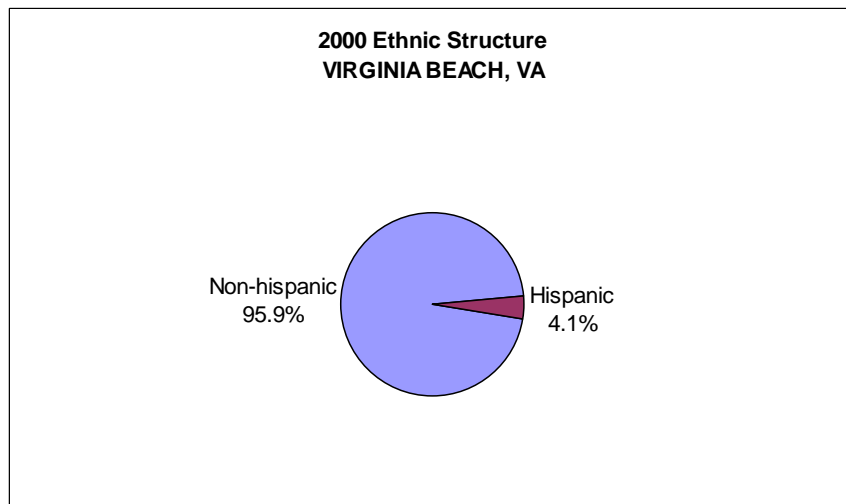


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 89.7% of the population, only English was spoken in the home, leaving 10.3% in homes where a language other than English was spoken, including 3.3% of the population who spoke English less than ‘very well’ according to the 2000 Census.

Of the population 25 years and over, 90.4% were high school graduates or higher and 28.1% had a bachelor’s degree or higher. Again of the population 25 years and over, 2.4% did not reach ninth grade, 7.1% attended some high school but did not graduate, 25.9% completed high school, 28.9% had some college with no degree, 7.5% received an associate’s degree, 19.2% earned a bachelor’s degree, and 8.9% received either a graduate or professional degree.

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives in 2000, the religion with the highest number of congregations and adherents in Virginia Beach County was Catholic with 12 congregations and 40,922 adherents. Other prominent congregations in the county were Southern Baptist Convention (30 with 19,804 adherents), United Methodist (24 with 19,506 adherents), and Independent, Charismatic Churches (Evangelical Protestant) (3 with 17,525 adherents). The total number of adherents to any religion was down 8.2% from 1990 (ARDA 2000).

## **Issues/Processes**

In August 2006, Omega Protein Corp agreed to a five year limit on its commercial catch of menhaden. The annual catch limit of 109,020 metric tons is the average annual harvest from 2001 through 2005. The decision, approved by Atlantic States Marine Fisheries Commission (ASMFC), is hailed as a “wonderful balance between conservation and commerce” by the Chesapeake Bay Foundation (Barisic 2006).

Discussion has ensued over Virginia Beach’s oceanfront image, which has degraded due to inappropriate behavior and public safety threats from young delinquents. A committee consisting of business owners, residents and other community leaders has been formed to address the issues. Amongst the possible solutions discussed are to create more activities that exclude alcohol, learning more about the interests of young adults, and even hiring a consultant to develop a master plan for Virginia Beach (City of Virginia Beach nd).

The Oceana Naval Air Station, Virginia Beach’s largest employer, may be closed down. City and state officials have said saving the base will protect the area’s economy; however, jet noise and other hazards have made Oceana increasingly controversial with some residents (Galuszka 2001).

Beach erosion has been an issue in Virginia Beach for years. Every year between 1949 and 2001, Virginia Beach added sand to its resort strip at Sandbridge beach and underwent restoration in 2003. As much as 8 feet of Sandbridge beach a year disappears due to heavy wave energy on the shore, and replenishment takes the beach back to 200 feet. Sandbridge landowners pay extra taxes of 12 cents per \$100 of assessed value for sand replenishment (Virginian Pilot 1998).

## **Cultural attributes**

There are several cultural facilities located within the city limits of Virginia Beach. The Chesapeake Bay Center is an interactive visitor’s center with a main attraction being a historical exhibition displaying scenes and artifacts of the 1607 Virginia Bay Colony settlement. The center also displays fine art and has an aquarium and environmental exhibitions which are accompanied with classroom space, a wet lab and touch tank developed by the Virginia Aquarium and Marine Science Center. Visitors to the Chesapeake Bay Center can participate in various hands-on programs such as kayaking in the Chesapeake Bay (VBCVB nd).

The Town Center project is underway downtown and includes a Westin Hotel with conference center, luxury condominiums, retail space, and parking facilities. The project will also include the eventual building of Sandler Center for the Performing Arts, a seafood restaurant, and a large commercial building.<sup>4</sup>

## **INFRASTRUCTURE**

### **Current Economy**

In the last fiscal year (June 2007), the city experienced “good, steady growth”, according to the Department of Economic Development.<sup>5</sup>

“Four military bases in Virginia Beach have a tremendous economic impact on the region, with the Department of Defense spending \$11 billion in 2002, and increasing in following years due to the War with Iraq.” The bases include Oceana Naval Air Station, the

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<sup>4</sup> Community Review comments, Mary Luskey, Research Manager, Dept. of Economic Development, 222 Central Park Ave, Suite 1000, Virginia Beach, VA 23462, October 19, 2007

<sup>5</sup> Community Review comments, Mary Luskey, Research Manager, Dept. of Economic Development, 222 Central Park Ave, Suite 1000, Virginia Beach, VA 23462, October 19, 2007

largest master jet base in the United States, employing 12,000; Little Creek Naval Amphibious Base, which employs 13,000; Fort Story, which conducts amphibious training operations and employs approximately 1,200 military and civilian personnel; and Dam Neck, a training base for combat direction and control systems, which employs 4,700 persons. Businesses serving soldiers, sailors, and their families employ even more area residents. Military Exchanges and PX's accounted for \$123.8 million in sales in 2002.

The City of Virginia Beach has the lowest overall tax rates of any locality in the Hampton Roads on real estate, personal property, and utilities. There is also a reportedly plentiful supply of labor, with military spouses numbering over 40,000. A vast majority of these spouses work in full or part time in office and customer service positions. Other components of the work force include students (80,000) and active duty personnel (over 10,000).<sup>6</sup>

“In 2002 over 3 million sun-loving visitors spent more than \$700 million during their stays at the resort city for accommodations, meals, entertainment, and other services, resulting in about 11,000 new service jobs.” The city received \$29 million in net direct revenue from tourist activity.

“About one-third of Virginia Beach's labor force is employed in retail and wholesale business. The city had more than 7,800 retail/wholesale businesses with total taxable sales of over \$3.9 billion in 2002, an increase of 4.3 percent from the previous year” (City-date nd).

According to the US Census 2000<sup>7</sup>, 72.9% (234,257 individuals) of the total population 16 years of age or over were in the labor force (see Figure 4), of which 2.6% were unemployed, 9.7% were in the Armed Forces, and 60.7% were employed.

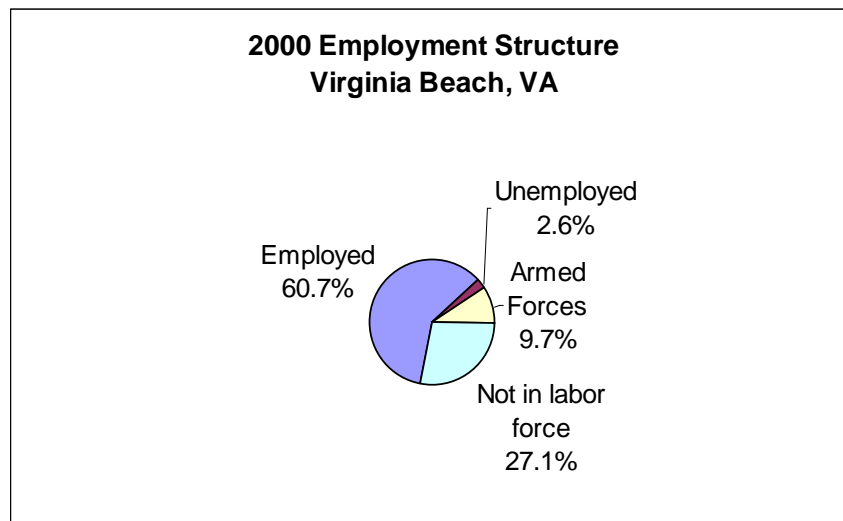


Figure 4. Employment structure in 2000 (US Census Bureau 2000)

According to the Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 421 positions or 0.2% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 8.8% of jobs. Education, health and social services (20.5%), retail trade (13.7%), professional,

<sup>6</sup> Community Review comments, Mary Luskey, Research Manager, Dept. of Economic Development, 222 Central Park Ave, Suite 1000, Virginia Beach, VA 23462, October 19, 2007

<sup>7</sup> Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

scientific, management, administrative, and waste management services (10.9%), and arts, entertainment, recreation, accommodation and food services (8.9%) were the primary industries.

Median household income in Virginia Beach was \$48,705 (up 144.8% from \$19,894 in 1990 [US Census Bureau 1990]) and median per capita income was \$22,365. For full-time year round workers, males made approximately 23.0% more per year than females.

The average family in Virginia Beach consisted of 2.70 persons. With respect to poverty, 5.1% of families (less than 6.2% in 1990 [US Census Bureau 1990]) earned below the U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 12.1% of all families (of any size) earned less than \$35,000.

In 2000, Virginia Beach had a total of 162,277 housing units of which 95.2% were occupied and 56.5% were detached one unit homes. Only 1.3% of these homes were built before 1940. Mobile homes, boats, RVs, vans, etc. accounted for 1.5% of the total housing units; 89.1% of detached units had between 2 and 9 bedrooms. In 2000, the median cost for a home in this area was \$123,200. Of vacant housing units, 1.4% were used for seasonal, recreational, or occasional use. Of occupied units, 34.4% were renter occupied.

## **Government**

The Virginia Beach government consists of a City Council, Mayor, and several Boards of Commission. The Virginia Beach City Council meets the first, second and fourth Tuesday of each month to discuss various concerns and agendas (City of Virginia Beach n.d.).

### *Fishery involvement in government*

The Virginia Marine Resources Commission (VMRC) is a State Agency established in 1875 to preserve Virginia's marine and aquatic resources, including all tidal waters. The VMRC's Fisheries Management Division aids in the planning of state, interstate, and federal management organizations. Its Fisheries Advisory Council helps agencies create and implement management plans for both commercial and recreational fishery species. The Commission's headquarters are located in Newport News (VMRC nd).

## **Institutional**

### *Fishing associations*

The Virginia Beach Angler's Club offers the residents of Virginia Beach and surrounding communities a family oriented club that promotes the education and promotion of fresh and salt water fishing around the Chesapeake Bay area. The Club meets the first Thursday of each month at the Virginia Beach Fire Station to discuss local fisheries. Each month a guest speaker speaks on fishing and the variety of species found in and around the waters of Chesapeake Bay (TidalFish.com nd).

### *Fishing assistance centers*

Information on fishing assistance centers in Virginia Beach is unavailable through secondary data collection.

### *Other fishing related organizations*

Information on other fishing related organizations in Virginia Beach is unavailable through secondary data collection.

## **Physical**

The city of Virginia Beach is very accessible through all types of major transportation. In fact, “distribution greatly benefits from the fact that Virginia Beach is within 750 miles of three-fourths of the country's industrial activity and two-thirds of its population. An integrated system of highway, air, rail, and sea services provides easy access to national and international markets” (City-Data.com nd). By automobile Virginia Beach can be reached by interstate 264, Route 60 and Route 149. The closest airport is the Norfolk International Airport which is 13.11 miles away and the closest train station is Dale’s Train Station located just 12.5 miles away from the city’s downtown area. Virginia Beach is 18 miles from Norfolk, 30 miles from Hampton, 37 miles from Newport News, and 208 miles from Washington, DC by car (MapQuest 2005).

Rudee Inlet at the south end of the Virginia Beach oceanfront opens on the Atlantic Ocean. Two major public marinas are located in Virginia Beach, Bubba’s Marina and Lynnhaven Waterway Marina. These public marinas provide boat launching for a fee, and ramps open 24 hours (VaBeach.com nd). Lynnhaven Inlet is home to most of the commercial fishing fleet in Virginia Beach.

## **INVOLVEMENT IN NORTHEAST FISHERIES<sup>8</sup>**

### **Commercial**

The commercial fishing industry in Virginia has practiced aquaculture over the past ten years. Numerous products are raised in Virginia; the largest in quantity is hard clams (Kirkley et al. 2005). Sea Gate Marketing is one wholesale and processing facility listed for Virginia Beach.

Landings and vessel data provided for Virginia Beach combine data listed under Virginia Beach and Lynnhaven/Lynnhaven Inlet; all landings are listed under Virginia Beach/Lynnhaven as this is the name of the harbor within the city where landings are made. On average for 1997-2006, the most valuable landings were of “other” species, valued at over \$2.5 million on average for those ten years, although worth just \$555,000 in 2006. The summer flounder, scup, and black sea bass species grouping was second in averaged value at over \$500,000; the value of this category was less in 2006 as well. Overall, landings in Virginia Beach increased from 1997-2000 to a high of \$4.4 million in 2000, but then declined to just over \$1 million by 2006. The number of vessels home ported in Virginia Beach/Lynnhaven varied from a high of 43 in 1999 down to 25 in 2006, and generally showed a declining trend. The level of home port fishing for these vessels was much lower than the level of landings overall, indicating that vessels from other ports land their catch here. The number of vessels with owners living in Virginia Beach exceeds the number of home ported vessels in all years; some vessel owners likely keep their boats in other nearby ports.

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<sup>8</sup> In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.



## Landings by Species

Table 1. Dollar value by Federally Managed Groups of Landings in Virginia Beach

	Average from 1997-2006	2006 only
Other <sup>9</sup>	2,668,790	555,304
Summer Flounder, Scup, Black Sea Bass	541,683	458,351
Dogfish	86,708	73,223
Scallop	33,902	0
Squid, Mackerel, Butterfish	24,930	419
Bluefish	23,904	2,134
Red Crab	15,737	0
Monkfish	2,007	43
Lobster	423	3,528
Herring	90	0
Tilefish	76	13
Skate	73	0
Smallmesh Groundfish <sup>10</sup>	36	38
Largemesh Groundfish <sup>11</sup>	19	0

## Vessels by Year<sup>12</sup>

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	27	39	249,822	2,703,777
1998	36	48	493,604	4,272,786
1999	43	54	693,717	4,347,932
2000	37	50	912,987	4,452,079
2001	35	52	918,173	3,990,595
2002	35	50	708,893	3,844,617
2003	33	46	564,337	3,636,945
2004	33	45	390,455	2,823,176
2005	31	44	473,379	2,818,818
2006	25	32	256,266	1,093,053

(Note: # Vessels home ported = No. of permitted vessels with location as homeport

# Vessels (owner's city) = No. of permitted vessels with location as owner residence<sup>13</sup>

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location)

<sup>9</sup> "Other" species includes any species not accounted for in a federally managed group

<sup>10</sup> Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

<sup>11</sup> Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

<sup>12</sup> Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

<sup>13</sup> The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

## **Recreational**

The city of Virginia Beach is known as the Striped Bass capital of the world. Virginia Beach has two major inlets for fishing and numerous boat ramps; Rudee Inlet found at the south end of Virginia Beach and Lynnhaven Inlet which is found on the west side of Virginia Beach, making access easy for visiting anglers towing a boat (VaBeach.com nd).

Charter fishing is also very popular in the community. The Virginia Beach Fishing Center located at the Rudee Inlet has the largest charter and party boat fleet on the Virginia coast (Virginia Tourism Corporation nd). Between 2001- 2005, there were 24 charter and party vessels making 2,364 total trips by charter and party vessels in Virginia Beach. These trips carried a total of 61,896 anglers.

## **Subsistence**

Information on subsistence fishing in Virginia Beach is either unavailable through secondary data collection or the practice does not exist.

## **FUTURE**

The future of Virginia Beach looks as promising as its past. However, the overall landscape of Virginia Beach is changing dramatically. The demographics of the city have changed over the years on a consistent basis to create a much more culturally diverse city. The city is also working to mature into a more diverse community. To understand and embrace this dramatic change, the City of Virginia Beach Department of Economic Development has and continues to implement strategies to create a diversified, growing, and dynamic economy through new business and the enhancement of existed businesses (City of Virginia Beach nd). The city also aims to become a year-round destination for business and pleasure. With a new Convention Center which opened in 2007, there have been 146 conventions and meetings and bookings made for future events up through the year 2012.<sup>14</sup>

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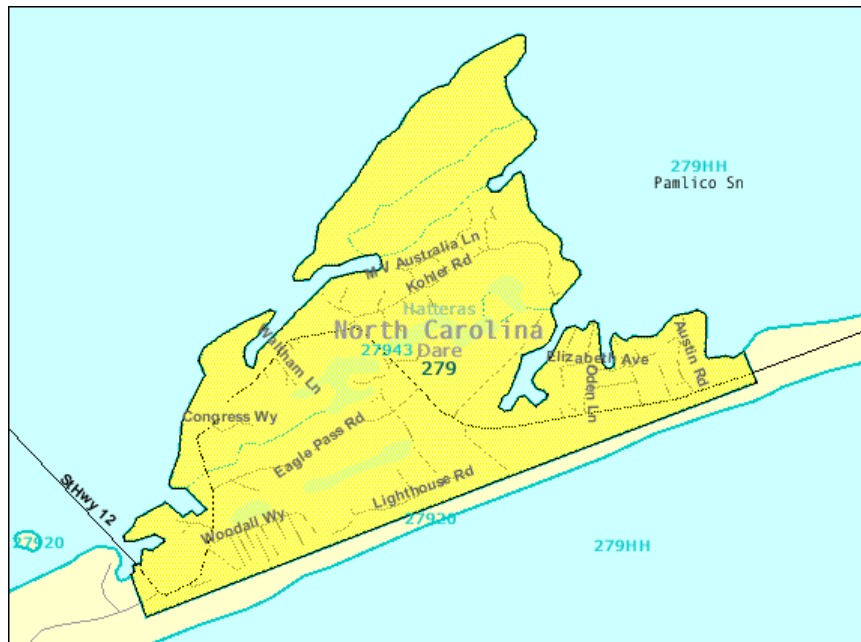
# HATTERAS, NC<sup>1</sup>

## Community Profile<sup>2</sup>

### PEOPLE AND PLACES

#### Regional orientation

Hatteras (35.22°N, 75.69°W) is in Dare County, in the Kill Devil Hills metro area in the state of North Carolina. Hatteras is located on Hatteras Island, part of North Carolina's Outer Banks (USGS 2008). It separates Pamlico Sound from the Atlantic Ocean and Hatteras Inlet, to the south, joins the two.



Map 1. Location of Hatteras, NC (US Census Bureau 2000)

#### Historical/Background

Hatteras is a village in Dare County, North Carolina. The area's name comes from the Pamlico Algonquian Hattorask tribe term for "less vegetation." Hatteras, unlike many of the other communities on the island, retained its original name. To avoid confusing the community with Hatteras Inlet, which is 4 miles south, or Cape Hatteras, located 13 miles to the north, "Village" is often added to the community name. In September of 1846, the Hatteras inlet was enlarged by a strong storm. The new Hatteras Inlet was created strategically to connect the Atlantic Ocean and the Pamlico Sound, making it easier to navigate from the north, as boats would not have to battle against the strong Gulf Stream. Soon after the inlet was created, a fishing and a shipping village developed near the inlet. A post office was established in Hatteras Village in 1858.

<sup>1</sup> These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

<sup>2</sup> For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact [Lisa.L.Colburn@noaa.gov](mailto:Lisa.L.Colburn@noaa.gov)."

In 1861, the Hatteras area became the first part of the Confederacy to fall to the Union in The Civil War. In 1861, Fort Clark and Fort Hatteras which had guarded the inlet, fell to the Union as well. After the conclusion of the Civil War in 1878, the Durant’s lifesaving station was built near the village. In the mid-1930s, the Army Corps of Engineers created a channel which allowed for better access from Pamlico Sound to the Hatteras Inlet. Soon after, a substantial fishing fleet began to develop in Hatteras.

During World War II, the Hatteras area became known a "Torpedo Junction." The nickname was given because of the heavy loss of ships attacked by German submarines. By the end of the war, over 100 ships were lost off the coast of Hatteras. After World War II, a free ferry began operating across the inlet to connect Hatteras to Ocracoke Island. NCDOT began ferry operations in February 1947. The ferry continues to operate today. The closest major highway, Highway 12, did not reach Hatteras until the 1950s (ICW-NET 2006). One website claims that today “Hatteras is probably best-known for its world-famous offshore fishing fleet” (Discover Hatteras 2006). It is often called the “blue marlin capital of the world” (Carlson 2005).

### Demographics<sup>3</sup>

According to Census 2000 data, Hatteras had a total population of 634. The 1990 Census data for Hatteras was not available. Of this 2000 total, 53.8% were males and 46.2% were females. The median age was 43.4 years and 77.9% of the population was 21 years or older while 18.6% was 62 or older.

The age structure for Hatteras (Figure 1) shows that there were far more males than females for the age range 10-19 and 20-29. This may indicate females leaving the community in search of jobs or for school, while males are remaining. The largest age range was 40-49, and there were also a fair number of older residents.

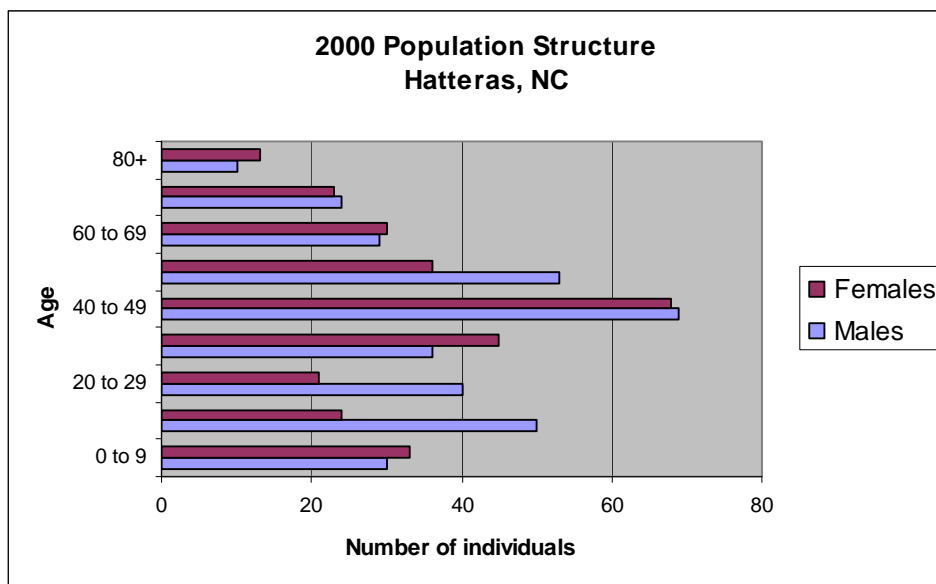


Figure 1. Hatteras’s population structure by sex in 2000

The majority of the population was white (99.4%), with 0.2% black or African American, none Asian, 0.4% Native American, and none Pacific Islander or Hawaiian (Figure 2). Only

<sup>3</sup> While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

0.3% of the population identified themselves as Hispanic/Latino (Figure 3). Residents linked their backgrounds to a number of different ancestries including: English (43.4%), German (6.5%), Irish (5.7%), and United States or American (8.0%). With regard to region of birth, 59.0% were born in North Carolina, 39.7% were born in a different state and 1.2% were born outside of the U.S., all of whom were United States citizens.

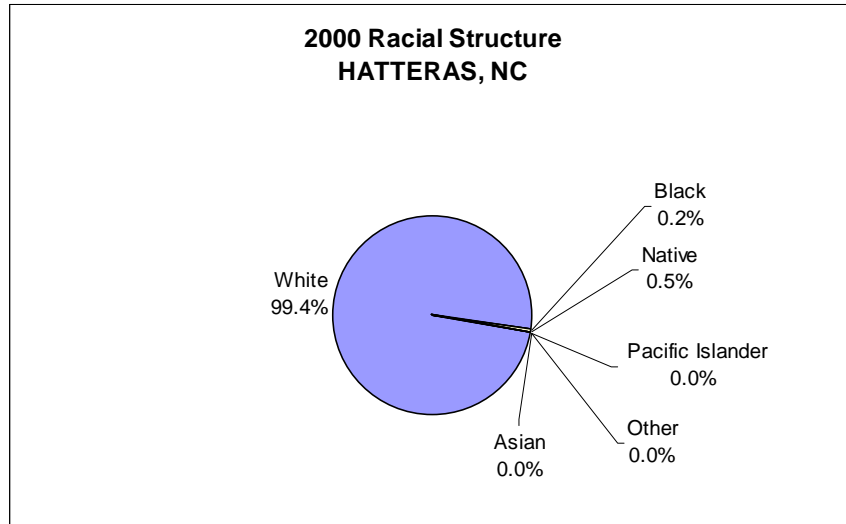


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

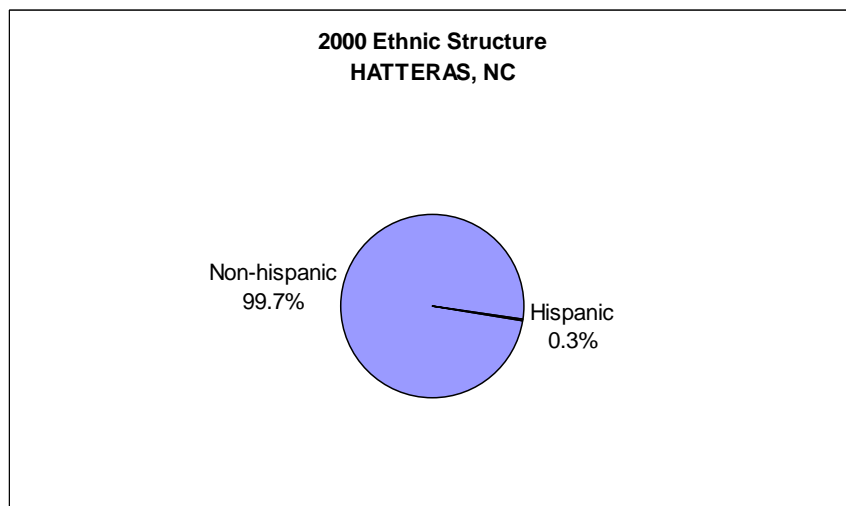


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 96.0% of the population, only English was spoken in the home, leaving 4.0% in homes where a language other than English was spoken, and none of the population who spoke English less than ‘very well’ according to the 2000 Census.

Of the population 25 years and over, 85.5% were high school graduates or higher, and 25.2% had a bachelor’s degree or higher. Again of the population 25 years and over, 2.9% did not reach ninth grade, 11.6% attended some high school but did not graduate, 38.2% completed high school, 17.2% had some college with no degree, 4.8% received an associate’s degree, 22.5% earned a bachelor’s degree, and 2.7% received a graduate or professional degree.

Although religion percentages are not available through U.S. Census data, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest

number of congregations in Dare County was The United Methodist Church with 14 congregations and 4,686 adherents. Other prominent congregations in the county were Assemblies of God (8 with 1,184 adherents), Southern Baptist Convention (6 with 1,783 adherents), Catholic (4 with 2,097 adherents), and Presbyterian (USA) (2 with 525 adherents). The total numbers of adherents to any religion was up 36.4% from 1990 (ARDA 2000).

Hatteras has two churches in the village: the Hatteras United Methodist church and Hatteras Assembly of God church (Hatteras Village 2006).

### **Issues/Processes**

The destruction from Hurricane Isabel in 2003 intensified a debate over rebuilding and developing the coast. Critics contend that rebuilding and developing alters the rate of natural erosion and growth of the islands. More than half of the Outer Bank's 30,000 residents have full-time jobs directly related to tourism, making development an important issue for many (Kleckley 2006). Hurricane Isabel literally divided the villages of Hatteras and Frisco, creating a new inlet just north of Hatteras. It took two months and 400,000 cubic yards of sand to repair this hole in the barrier island (McGrath 2006).

Although it still remains less developed than many other communities on the Outer Banks, sprawl and overdevelopment is an ongoing issue in Hatteras, with two large condominium developments in the works. Residents are considering incorporation as a village; doing so would allow them to write their own zoning laws, and quell some of the spread of large developments, but would also require the community to arrange its own municipal services (Carlson 2005).

The small gillnetter vessels who fish commercially out of Hatteras are forced to compete with larger trawlers for croaker and other species (Carlson 2005).

Shrimp fishermen along the North Carolina coast have suffered because of decreasing prices of shrimp, resulting from an increase of foreign farmed shrimp on the market. North Carolina shrimp fishermen are working to promote their wild-caught shrimp to create a niche market and higher prices for their product (NCSG 2005). The North Carolina Division of Marine Fisheries was discussing minimum size limits for the shrimp that could be taken by trawlers, noting that foreign imports have cornered the market on small shrimp (Smith 2005). Crab fishermen along North Carolina's eastern coast have also seen an increase in competition from the global market, with an influx of imported crab meat from around the world. Many local Crab processors are unable to compete and are losing profit (NCSG 2002).

### **Cultural attributes**

Hatteras Village hosts the [Day at the Docks](#), a celebration of Hatteras Island Watermen that includes competitions, displays, and exhibitions by watermen and fishing-related businesses and organizations. This day got its start after Hurricane Isabel, when Hatteras was cut off from the rest of the island; the festival celebrates the resiliency of the local watermen, who were the first residents able to get back to working after the hurricane. This festival is held as part of the annual Spirit of Hatteras Weekend. There is also a Blessing of the Fleet held at the event.

At 210 feet<sup>4</sup>, the Cape Hatteras Lighthouse is the tallest in the nation. It was endangered by the Atlantic Ocean but was saved in 1999 by moving the entire structure away from the sea. [The Cape Hatteras National Seashore](#) is one of the country's most visited National Parks. [The Graveyard of the Atlantic Museum](#) in Hatteras is dedicated to this area's reputation for having one of the highest densities of shipwrecks in the world. The museum is focused on preserving

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<sup>4</sup> Community review comments; Helen Hudson, Hatteras Library, 57690 NC Highway 12, Hatteras, NC 27943, September 25, 2007



the maritime heritage of the Outer Banks. Until Hurricane Isabel, the village had a display of a commercial fishing vessel, the *Jackie Fay*, in a shed for public viewing as visitors drove into the town. The boat was, however, lost during the hurricane (Carlson 2005).

## INFRASTRUCTURE

### Current Economy

Hatteras' proximity to the Gulf Stream provides for large recreational and commercial fisheries. A growing offshore charter boat industry has operated on the Outer Banks since 1937, and pursues bluewater gamefish such as tuna, billfish, wahoo and dolphin. A growing private boat fleet also seeks the same species (Currin and Ross 2002). Hatteras relies on these nearby fishing grounds to support its economy, both through commercial fishing and through a booming sportfishing industry (Hatteras Village 2006). The charter fishing industry in Hatteras began in 1937 (Carlson 2005). Most of Hatteras Island remains protected due to the National Seashore, so development has not been extensive (ICW-NET 2006). Three national wildlife refuges also protect portions of the Outer Banks from development. Many residents of Hatteras and the Outer Banks area have jobs related to tourism.

According to the U.S. Census 2000<sup>5</sup>, 64.8% (individuals) of the total population 16 years of age and over were in the labor force (Figure 4), of which 2.1% were unemployed, 1.4% were in the Armed Forces, and 61.3% were employed.

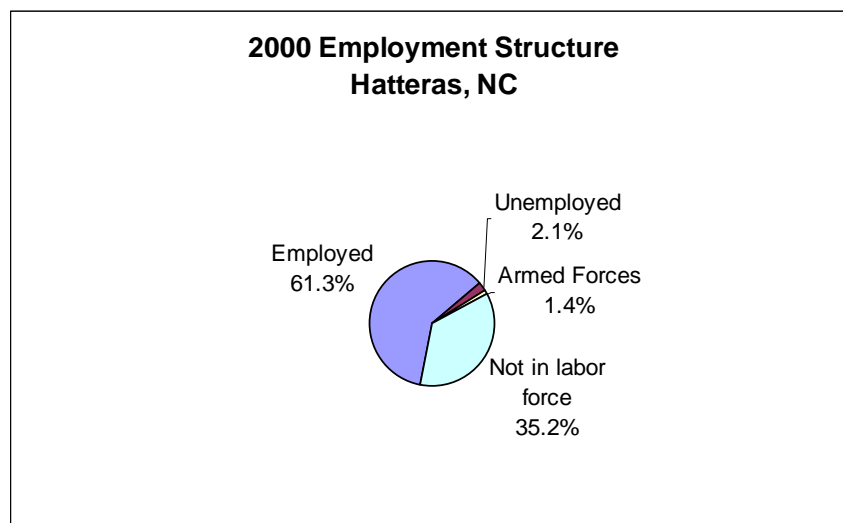


Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 71 positions or 22.6% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 94 positions or 29.9% of jobs. Educational, health and social services (13.1%), retail trade (11.1%), wholesale trade (10.5%), professional, scientific, management, administrative, and waste management services (9.9%), construction (7%), and transportation and warehousing, and utilities (6.7%) were the primary industries.

Median household income in Hatteras was \$39,479 (1990 Census data was unavailable) and median per capita income was \$18,677. The median household income, however, was

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<sup>5</sup> Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.



reported as lower than the Census estimates by a community member.<sup>6</sup> For full-time year round workers, males made approximately 20.1% more per year than females.

The average family in Hatteras consisted of 2.79 persons. With respect to poverty, none of the families (1990 Census data was unavailable) and 3% of individuals earned below the official U.S. Census poverty threshold, although this figure was reported as higher by a community member source.<sup>7</sup> This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 19.1% of all families (of any size) earned less than \$35,000 per year.

In 2000, Hatteras had a total of 698 housing units of which 41.4% were occupied and 84.7% were detached one unit homes. Only 5.2% of these homes were built before 1940. Mobile homes accounted for 4.9% of housing units; 93.7% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$151,800. Of vacant housing units, 59.1% were used for seasonal, recreational, or occasional use. Of occupied units, 26.1% were renter occupied (US Census Bureau 2000).

## **Government**

Hatteras is an unincorporated village in Dare County. Dare County is governed by a seven-member Board of Commissioners, elected at large in countywide elections to serve four-year staggered terms (Dare County 2006).

### *Fishery involvement in government*

The Dare County Parks and Recreation Department offers a fishing school for children on Hatteras Island (Dare County 2006a).

## **Institutional**

### *Fishing associations*

[The North Carolina Fisheries Association](#) has been supporting fishing families since 1952, with the goal “to celebrate and preserve commercial fishing families, heritage, and seafood” in North Carolina. This is achieved through lobbying federal, state, and local legislators and through public awareness projects. There is a local [Hatteras/Ocracoke chapter of the NCFA](#). Hatteras Island and its townships are also part of a [Bill Fish Fishery Association](#). The association is trying to manage the Bill Fish through management plans.

### *Fishing assistance centers*

Information on fishing assistance centers in Hatteras is unavailable through secondary data collection. However, according to a community member source, fishermen depend on the NC Division of Marine Fisheries and the NC Fisheries Association for assistance. There are also reportedly members of the fishing industry who are participating in the process of preserving fishing as a way of life.<sup>8</sup>

The Trade Adjustment Assistance for Farmers (TAA) program has provided business education to shrimpers in the state to assist them in recent changes in the market of shrimp, and also provided some training to shrimpers to exit the business if they chose (NCSG 2005).

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<sup>6</sup> Community review comments; Helen Hudson, Hatteras Library, 57690 NC Highway 12, Hatteras, NC 27943, September 25, 2007

<sup>7</sup> Community review comments; Helen Hudson, Hatteras Library, 57690 NC Highway 12, Hatteras, NC 27943, September 25, 2007

<sup>8</sup> Community review comments; Helen Hudson, Hatteras Library, 57690 NC Highway 12, Hatteras, NC 27943, September 25, 2007

### *Other fishing related organizations*

[The Hatteras Marlin Club](#) is a sportfishing club in Hatteras which sponsors tournaments, including the annual Hatteras Marlin Club Billfishing Tournament. Other clubs in the area include: Cape Hatteras Anglers Club, the NC Beach Buggy Association (surf fishing), and the Outer Banks Preservation Association (surf fishing) (Insiders.com 2006).

### **Physical**

Hatteras is bordered by the Cape Hatteras National Seashore, the Pamlico Sound and the Atlantic Ocean. The Cape Hatteras National Seashore includes over 75 miles of beautiful, undeveloped beaches, marshes, dunes, and flatlands. The Cape Hatteras National Seashore was the first national seashore in the nation. Three national wildlife refuges protect portions of the Outer Banks from development (Insiders.com 2006). Cape Hatteras projects eastward into the Atlantic Ocean. The cape is the closest land-mass to the Gulf Stream north of Florida (Currin Ross 2002). The Pitt-Greenville Airport is roughly 100 miles west of Hatteras, and the Craven County Regional Airport is 112 miles west. Most people who visit the area by plane use private planes via the Billy Mitchell Airport in Frisco or fly to Norfolk and rent a car.<sup>9</sup> Hatteras is 142 miles southeast of Norfolk, Virginia. Raleigh is roughly 252 miles east of Hatteras. A free state-run ferry takes travelers between Hatteras and Ocracoke Island (Discoverhatteras.com 2006).

Many of the commercial fishermen in Hatteras use the docks off Altoona Lane, particularly the crabbing boats (McCay Cieri 2000). The charter fishing boats are generally found at five different docks including [Hatteras Harbor Marina](#), [Teach's Lair Marina](#), [Hatteras Landing](#), and [Oden's Dock](#). Most marinas have bait and tackle shops and fish cleaning businesses. [Oden's Dock](#) is also where many of the commercial fishermen spend their time when not at sea (Carlson 2005).

## **INVOLVEMENT IN NORTHEAST FISHERIES<sup>10</sup>**

### **Commercial**

Hatteras has three fish houses. Avon Seafood is adjacent to the Hatteras Marlin Club (Carlson 2005). Another seafood wholesaler is Jeffrey's Seafood, located at Hatteras Harbor Marina, with another location on Altoona Lane.<sup>11</sup> Crabbing, while not evident in the federal data, is a common fishery in Hatteras (McCay and Cieri 2000). Gray trout is another species targeted commercially, especially during the winter months. Around 70% of gray trout caught on the east coast comes from Hatteras, where it is sent to be processed the Fulton Fish Market in

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<sup>9</sup> Community review comments; Helen Hudson, Hatteras Library, 57690 NC Highway 12, Hatteras, NC 27943, September 25, 2007

<sup>10</sup> In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

<sup>11</sup> Community review comments; Helen Hudson, Hatteras Library, 57690 NC Highway 12, Hatteras, NC 27943, September 25, 2007

New York City.<sup>12</sup> King mackerel is fished both recreationally and commercially in Hatteras, although more frequently commercially. Some of the commercial boats also catch menhaden to sell to the bait shops in and around Hatteras. Much of the commercial fishing in Hatteras is by small gillnetters. Some of the charter boats in Hatteras fish commercially during the winter months, although this practice is less common than it once was (Carlson 2005).

The top landings for Hatteras in 2006 were species in the “Other” category, followed by bluefish. Many of the other species landed in Hatteras showed lower 2006 values than the ten year average, with the exception of “Other” and tilefish (Table 1). Landings for Hatteras were not recorded at the port level until 1999; landings were over \$1 million in every year for which data are provided with the exception of 1999. Landings decreased between 2000 and 2003, but rose again in 2004. Overall, the level of port landings was more than the value of landings for home ported vessels, indicating that most of the vessels landing their catch in Hatteras do not list Hatteras as their home port. The number of vessels with Hatteras as their home port changed only slightly while the level of fishing for home ported vessels were slightly more erratic (Table 2).

### Landings by Species

Table 1. Dollar value of Federally Managed Groups of landing in Hatteras

	Average from 1999-2006	2006 only
<b>Other<sup>13</sup></b>	1,614,995	2,136,774
<b>Bluefish</b>	40,600	31,359
<b>Dogfish</b>	27,379	55
<b>Summer Flounder, Scup, Black Sea Bass</b>	22,345	5,051
<b>Monkfish</b>	6,085	1,995
<b>Squid, Mackerel, Butterfish</b>	6,030	20
<b>Tilefish</b>	1,830	3,102
<b>Skate</b>	93	2
<b>Largemouth Groundfish<sup>14</sup></b>	21	70
<b>Smallmouth Groundfish<sup>15</sup></b>	14	0

<sup>12</sup> Community review comments; Helen Hudson, Hatteras Library, 57690 NC Highway 12, Hatteras, NC 27943, September 25, 2007

<sup>13</sup> “Other” species includes any species not accounted for in a federally managed group

<sup>14</sup> Largemouth groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

<sup>15</sup> Smallmouth multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

## Vessels by Year<sup>16</sup>

Table 1. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	13	13	100,067	NOT RECORDED
1998	4	6	120,628	NOT RECORDED
1999	7	6	355,513	963,948
2000	14	9	424,585	1,944,969
2001	13	8	425,991	1,746,258
2002	14	7	434,144	1,393,895
2003	12	7	374,491	1,127,905
2004	13	8	442,299	2,180,696
2005	10	5	376,366	2,485,012
2006	8	5	352,692	2,178,428

# Vessels home ported = No. of permitted vessels with location as homeport

# Vessels (owner's city) = No. of permitted vessels with location as owner residence<sup>17</sup>

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location

## Recreational

Recreational fishing is prominent in Hatteras, which is known as the “world’s blue marlin capital”. Six marinas offer charter and party fishing boats to take visitors out fishing (Discover Hatteras 2006). There are twenty three charter boats listed at Hatteras Harbor Marina, three listed at Oden’s Dock, three at Hatteras Landing, and twelve at Teach’s Lair Marina.<sup>18</sup> There are also two head boats at Oden’s and three Charter boats, and one head boat at Teach’s Lair.<sup>19</sup>

Different kinds of fishing are accessible depending upon the time of year. Dolphin, wahoo, tuna, king mackerel, or billfish may be caught in the spring, summer, or fall, while giant bluefin tuna are caught in the winter. At one time, it was common for charter boats to take passengers out for sportfishing from May through September, and fish commercially through the rest of the year, but today this is less common. [Charter boats](#) now fish through most of the year, serving tourists who want to fish inshore during the summer months, and “real fishermen” who come during the fall to fish stripers, big drum, and king mackerel (Outerbeaches.com 2006a). Risky Business Seafood Market offers complete processing of catches, including cleaning, vacuum packaging, and freezing. They also serve seafood as take out for those who do not want to cook themselves (Outerbeaches.com 2006).

[The Hatteras Village Offshore Open Fishing Tournament](#) is a major fishing tournament held each year in May as part of the Governor’s Cup. There is also a [Hatteras Village Invitational Surf Fishing Tournament](#) held in September.

<sup>16</sup> Numbers of vessels by owner’s city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

<sup>17</sup> The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

<sup>18</sup> Community review comments; Helen Hudson, Hatteras Library, 57690 NC Highway 12, Hatteras, NC 27943, September 25, 2007

<sup>19</sup> Community review comments; Helen Hudson, Hatteras Library, 57690 NC Highway 12, Hatteras, NC 27943, September 25, 2007

## **Subsistence**

Information on subsistence fishing in Hatteras is either unavailable through secondary data collection or the practice does not exist.

## **FUTURE**

The North Carolina Department of Transportation is studying hot spots along the Outer Banks where the barrier island is likely to be breached again in the event of a storm. They are identifying sources of sand near the hotspots to be able to repair the gaps quickly, as they did in Hatteras after Hurricane Isabel (McGrath 2006).

Many commercial fishermen in Hatteras are anxious about the future, because they see their industry being forced out by “federal regulations”<sup>20</sup>, tourism and recreational fishing (McCay and Cieri 2000).

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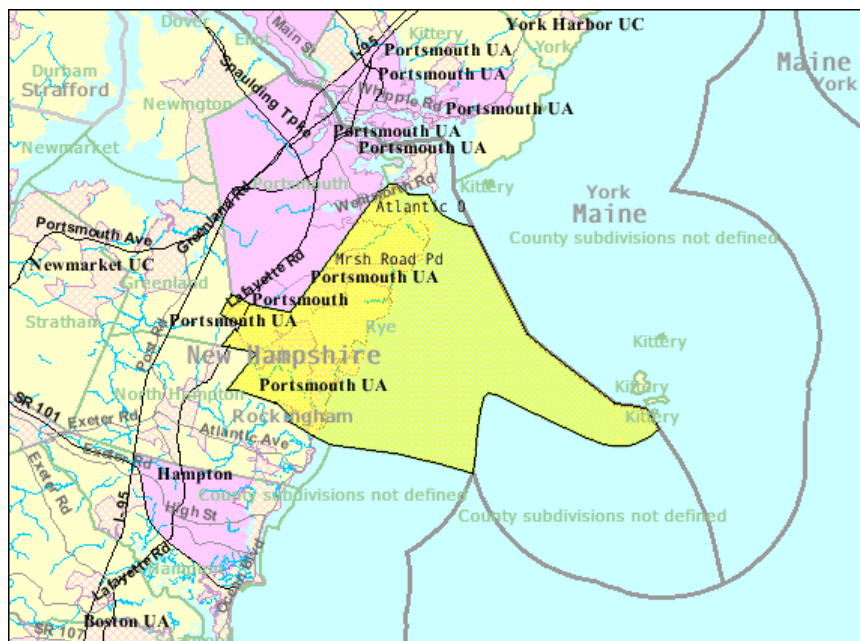
# RYE, NH<sup>1</sup>

## Community Profile<sup>2</sup>

### PEOPLE AND PLACES

#### Regional orientation

The town of Rye, New Hampshire (43.01° N, 70.77° W) (USGS 2008) is located in the New Hampshire Seacoast region, on the Atlantic Ocean's coast in Rockingham County (Map 1). Rye contains 12.6 square miles of land area and 0.5 square miles of inland water area (ELMIB 2007).



Map 1. Location of Rye, NH (US Census Bureau 2000)

#### Historical/Background

Originally named Pannaway, Rye was the first settlement in New Hampshire and the receiving station for the first Atlantic cable (1874) (NH 2000). Established by David Thompson in 1623 at Odiorne's Point, and named for the borough of Rye, a town on the English Channel, it was part of Portsmouth then later incorporated as a parish of New Castle in 1726. The town includes the villages of Cable Road, Fairhill Manor, Foyes Corner, Langs Corner, Rye, Rye Beach, Rye Harbor, Rye North Beach, Wallis Sands, and West Rye. It holds 8 miles of Atlantic coastline, and is the only NH town with Atlantic islands. These, the four Isles of Shoals, were annexed in 1876 (EMLIB 2007).

<sup>1</sup> These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

<sup>2</sup> For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact [Lisa.L.Colburn@noaa.gov](mailto:Lisa.L.Colburn@noaa.gov)."



The increasing reliance on a tourism industry in Rye, as in the rest of the Seacoast, has decreased the economy's reliance on a fishing industry. Rye is a significant as a fishing port because of its proximity to fertile fishing grounds of the region (Hall-Arber et al. 2001). Tourist destinations include Ordione Point, Wallis Sands, Jenness and Rye state parks, and Rye harbor. Tourism activities include pleasure cruises, whale watching, and deep sea fishing trips departing from Rye Harbor (Seacoast 2004). Whale watching trips often access Jeffrey's Ledge and Stellwagen Bank National Marine Sanctuary (Blue Ocean 2004; ELMIB 2007). Rye harbor is one of the stat's largest saltwater fishing locations (Stedman and Hanson nd).

### Demographics<sup>3</sup>

According to US Census Bureau 2000 data, Rye had a total population of 5,182, down 0.1% from the reported population of 5,188 in 1990 (US Census Bureau 1990). Of this 2000 total, 47.6% were males and 52.4% were females. The median age was 44.4 years and 77.8% of the population was 21 years or older while 22.1% of the population was 62 or older.

Rye's population structure by age group (see Figure 1) shows that the highest percentage of the population was between 40 and 49 years, and the percentages subtly decreased as age groups increased by decade. As is common in smaller fishing towns and cities, there was a dip in the ages 20-29.

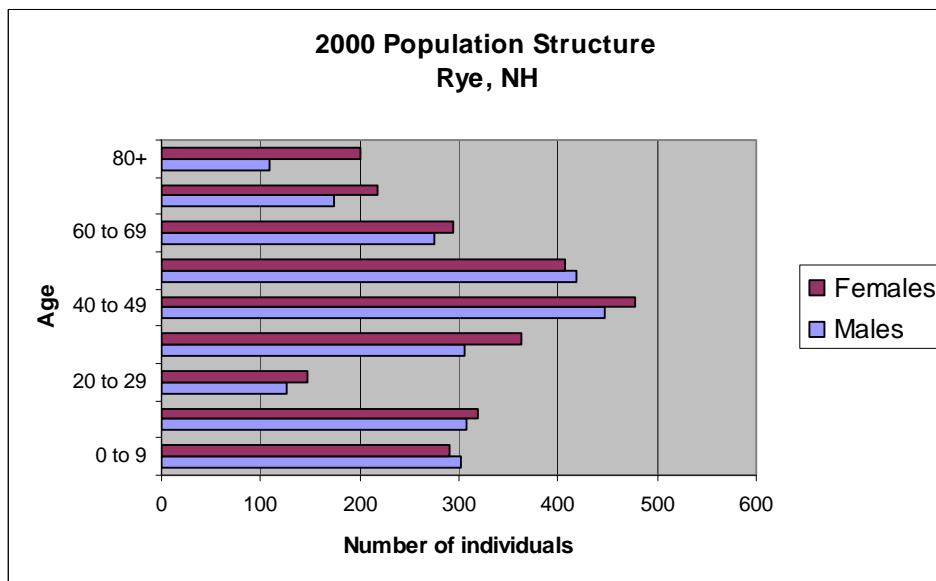


Figure 1. Rye's population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population in Rye was white (98.7%), with 0.2% black or African American, 0.3% Native American, 0.6% Asian, and no residents Pacific Islander or Hawaiian (see Figure 2). Only 0.6% of residents identified themselves as Hispanic/ Latino (see Figure 3). Residents linked their heritage to a number of different ancestries including: English (21.4%), Irish (18.4%), Italian (11.8%), German (11.5%), and French (7.8%).

<sup>3</sup> While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.



With regard to region of birth, 36.4% were born in New Hampshire, 58.2% were born in a different state and 4.3% were born outside the U.S. (including 1.5% who were not United States citizens).

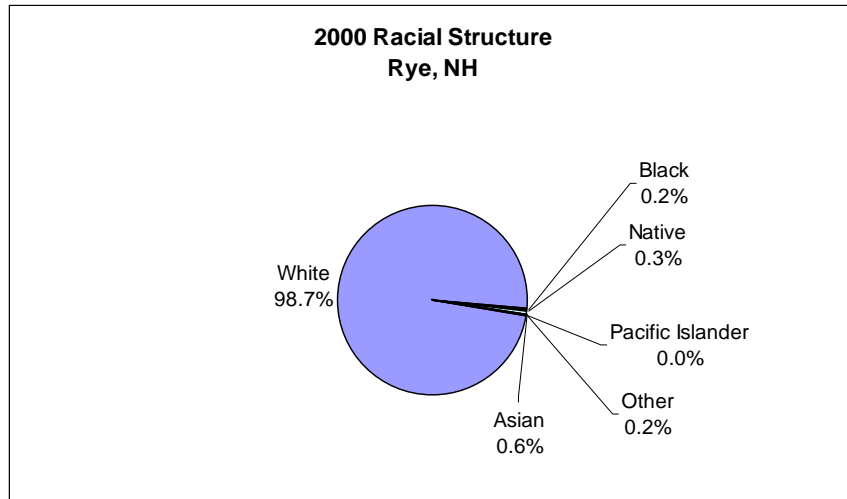


Figure 2. Racial structure in 2000 (US Census Bureau 2000)

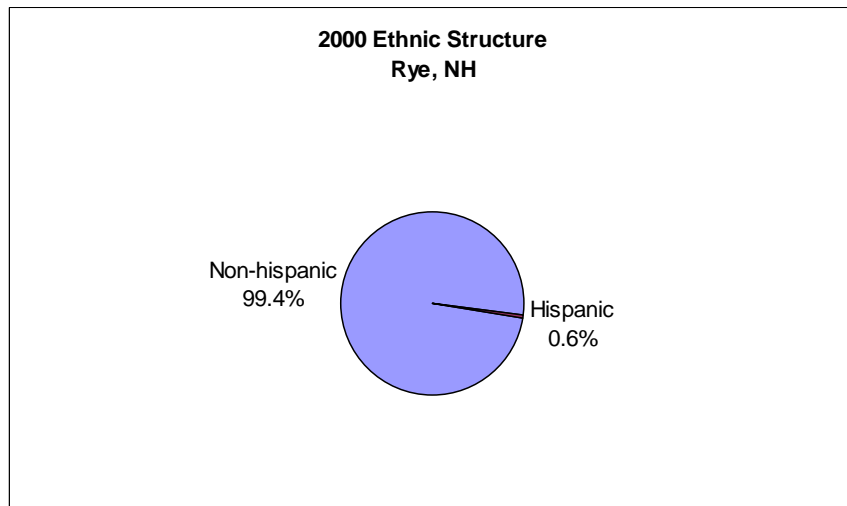


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 94.7% of the population, only English was spoken in the home, leaving 5.3% in homes where a language other than English was spoken, including 1.0% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 94.5% were high school graduates or higher and 53.3% had a bachelor’s degree or higher. Of the population 25 years and over, 0.4% did not reach ninth grade, 5.0% attended some high school but did not graduate, 16.7% completed high school, 15.3% had some college with no degree, 9.3% received their associate’s degree, 32.2% earned their bachelor’s degree, and 21.1% received either a graduate or professional degree.

Although religious percentages are not available through U.S. Census data, according to the American Religious Data Archive the religion with the highest number of congregations in Rockingham County was Catholic, with 25 congregations and 117,542 adherents. Other

prominent congregations in the county were United Church of Christ (23 with 6,352 adherents), and American Baptist (21 with 4,449 adherents). The total number of adherents to any religion was up 70.5% from 1990 (ARDA 2000).

### Issues/Processes

Rye beaches, like others in New England, are infrequently closed do to unhealthy amounts of *coliform* bacteria. Water and stock closures often result from high levels of bacteria that accumulate in coastal waters during excessive runoff periods. The bacteria, primarily *E. coli*, are harmful to humans through swimming and consumption of bivalves, such as quahogs and oysters (Record 2006).

### Cultural attributes

Rye has a large surfing population that is active all months of the year. Many tourists also use the waters in and around the town. Annual Rye Lion’s Club Car Show has been held in Rye for over 23 years. The fundraiser is attended by car enthusiasts throughout New England. The [Seacoast Science Center](#) is located in Ordiorne State Park, Rye. The center provides the public with an educational resource on coastal environmental history and its importance to the region’s culture.

## INFRASTRUCTURE

### Current Economy

According to the U.S. Census 2000<sup>4</sup>, 59.9% (2,487 individuals) of the total population 16 years of age and over were in the labor force (see Figure 4), of which 2.8% were unemployed, none were in the Armed Forces, and 57.1% were employed.

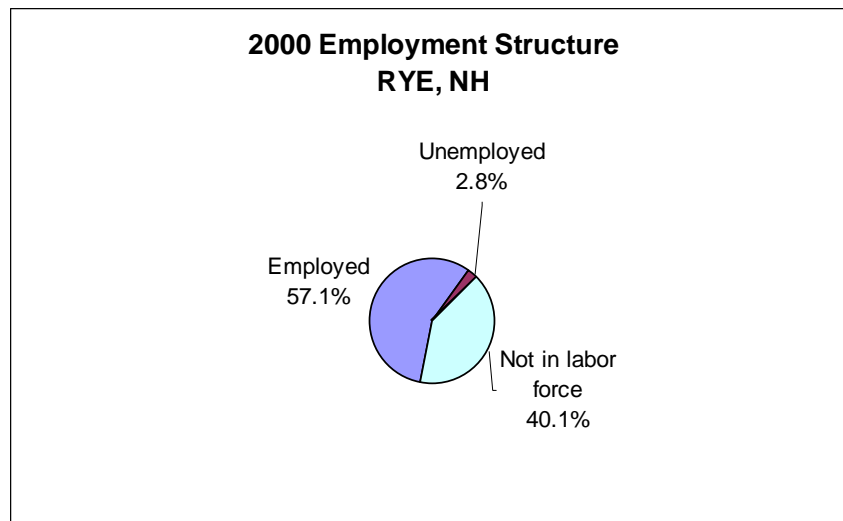


Figure 4. Employment structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 41 positions or 1.7% of all jobs. Self

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<sup>4</sup> Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

employed workers, a category where fishermen might be found, accounted for 381 positions or 16.1% of jobs. Educational health and social services (16.6 %), retail trade (15.2%), professional, scientific, management, administrative employments, waste management services (13.6%), and manufacturing (11.4%) were the primary industries.

Major employers in the town include the municipal government (56 employees), Petey's Restaurant (seasonal), Rye Airfield (skate park), Wentworth by the Sea (country club), Ice House Restaurant (seasonal) and the Rye public schools (ELMIB 2007).

Median household income in Rye in 2000 was \$63,152, up 49.9% from \$42,143 in 1990 (US Census Bureau 1990) and median per capita income was \$36,746. For full-time year round workers, males made approximately 49.0% more per year than females.

The average family in Rye consisted of 2.87 persons. With respect to poverty, 1.6% of families, down from 3.0% in 1990 (US Census Bureau 1990) and 3.5% of individuals were below the U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 18.3% of all families (of any size) earned less than \$35,000 per year.

In 2000, Rye had a total of 2,645 housing units of which 82.3% were occupied and 83.7% were detached one unit homes. Close to a third (31.7%) of these homes were built before 1940. Mobile homes and boats accounted for 2.8% of the total housing units; 81.8% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$311,100. Of vacant housing units, 82.3% were used for seasonal, recreational, or occasional use. Of occupied units, 19.3% were renter occupied.

## **Government**

Rye is governed by a three-member Board of Selectmen (Town of Rye 2008).

### *Fishery involvement in government*

Rye has an active Harbormaster, Leo Axtin (2007). The Harbormaster falls under the jurisdiction of the New Hampshire State Port Authority (DPH 2003).

## **Institutional**

### *Fishing associations*

The New Hampshire Commercial Fishermen's Association represents both lobstering and groundfishing, the major components of New Hampshire's commercial fishing industry. It has been an active advocate for industry issues at both the state and federal level with members participating as representatives on boards, commissions, and councils.<sup>5</sup> The New Hampshire Commercial Fishermen's Association is based in Rye (Stevenson 2005).

### *Fishing assistance centers*

When NMFS proposed Amendment 13, which closed vast areas to fishing, this reduced the number of days fishermen can fish, and required fishermen to purchase new and expensive gear. New Hampshire Senator Judd Gregg (R) asked Senate Appropriations for more than \$11 million in economic assistance for New England fishing communities (Davidson 2002). As a result of Senator Gregg's efforts, a revolving loan fund was made available to the fishing

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<sup>5</sup> Profile review comment, Erik Anderson, President, New Hampshire Commercial Fishermen's Association, September 28, 2007

industry. Fund activity has been sporadic because of the decline in economic investment in the industry resulting from regulatory conditions.<sup>6</sup>

#### *Other fishing related organizations*

[Coastal Conservation Association](#) (CCA) is an organization composed of recreational fishermen and that addresses conservation issues nationally and at the state level. The main objective of the association is to protect and sustain fishing resources in the present and future. The New Hampshire chapter was formed in 1998.

The Interstate Passenger Boat Association, located in Rye Harbor, responds to administrative and legislative activity affecting the passenger vessel industry. The association is also carrying out ongoing whale research (DES nd).

#### **Physical**

Rye is 57 miles from Portland, 48 miles northeast of Boston, and 40 miles from Manchester. Rye is accessible via personal vehicle through I-95 (exit 3) and state routes 1 and 1A. There is no public transportation of rail or bus with in the town. The nearest airport is Pease Commercial Airport located 8 miles away, in Newington, New Hampshire (ELMIB 2007). The next closest is Manchester-Boston Regional Airport located in Manchester, NH (40 miles).

Rye has an elementary school (grades K-5), junior high school (grades 6-8), 1 private school, and a public library. Stratham is the nearest technical college, and McIntosh and UNH are the nearest universities. The nearest hospital is Portsmouth Regional, located 5 miles away (ELMIB 2007). The town has full-time and part-time police and fire departments.

Rye has a harbor including a marina with a commercial pier. The harbor, located off Route 1A, contains a boat launch, fueling station (Atlantic Fuels Inc.) (DPH 2003), marina and fishing options (ELMIB 2007, Dwyer 2008), and a whale watch (Blue Ocean 2004). Boat repair is available in Rye by Beaver's Boat Repair, or in nearby North Hampton by [Powers Motor Company](#) and [Accutech Marine Propeller Inc.](#)

### **INVOLVEMENT IN NORTHEAST FISHERIES<sup>7</sup>**

#### **Commercial**

Commercial fishing presence in Rye is strengthened by the capital flow connections with Portsmouth. In effect it is linked to the larger regional fisheries economy. With the increase "beach culture" in the region Rye's contribution to the regional market has decreased (Hall-

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<sup>6</sup> Profile review comment, Erik Anderson, President, New Hampshire Commercial Fishermen's Association, September 28, 2007

<sup>7</sup> In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

Arber et al. 2001). Rye harbor contains a commercial fishing pier. The Division of Ports and Harbors (DPH) has jurisdiction over the facility. The DPH mandates that no long-term or overnight berthing is available due to physical limitations. Commercial fishermen wishing to use the facility must first acquire a “Pier Use” permit (DPH 2003). Rye’s commercial fishing industry in 2000 had 24 or more boats, 8-10 groundfish and over 12 lobster boats using the commercial pier (Hall-Arber et al. 2001).

The most valuable species landed in Rye averaged for 1997-2006 was largemouth groundfish, followed by lobster and “other” species (see Table 1). In 2006, lobster responsible for the most landed value after groundfish. Overall, the number of boats homeported in Rye has increased, from a low of 25 in 2000 to 39 in 2006 (see Table 2). The value of home port fishing also showed a net increase from 1997 to 2006. The level of home port fishing was higher in all years than the level of landings, indicating that some fishermen from Rye land their catch elsewhere, perhaps in one of the other ports along the New Hampshire sea coast.

### Landings by Species

Table 1. Rank Value of Landings for Federally Managed Groups

Species	Rank Value of Average Landings from 1997-2006
Largemouth Groundfish <sup>8</sup>	1
Monkfish	2
Other <sup>9</sup>	3
Lobster	4
Dogfish	5
Scallop	6
Smallmouth Groundfish <sup>10</sup>	7
Bluefish	8
Herring	9
Skate	10
Squid, Mackerel, Butterfish	11
Surf Clams, Ocean Quahog	12

*(Note: Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.)*

<sup>8</sup> Largemouth Groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

<sup>9</sup> “Other” species includes any species not accounted for in a federally managed group

<sup>10</sup> Smallmouth Multi-species : red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

## Vessels by Year<sup>11</sup>

Table 1. Federal Vessel Permits Between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)
1997	32	29
1998	31	29
1999	29	28
2000	25	25
2001	30	28
2002	32	28
2003	32	28
2004	37	32
2005	37	30
2006	39	30

(Note: # Vessels home ported = No. of permitted vessels with location as homeport, # Vessels (owner's city) = No. of permitted vessels with location as owner residence<sup>12</sup>)

### Recreational

Recreational fishing in Rye is a substantial portion of the town's tourism. Charters depart from Rye Harbor for a variety of local fishing spots (Seacoast 2004). A wide variety of recreationally caught fish are found in New Hampshire waters, including bluefish, striped bass, mackerel, cod, pollock, cusk, ocean catfish, haddock, tuna, and lobster (Fish & Game n.d.). Rye Harbor is home to five or more fishing charter boats including the Atlantic Fleet's *M/V Atlantic Queen II*, Clandestino Fishing Charters' *F/V Marriane*, and Tontine Fishing Inc.'s *F/V Tontine* and *F/V Shenanigans*. Two additional charters in Rye are Mindy's Fishing Parties and Cap'n Sav's Charters. Numerous other fishing charters also depart from the neighboring towns on the Seacoast, Massachusetts and Maine (Seacoast NH 2003). Between 2001-2005 there were a total of 13 charter and party boats which logged trips in Rye, carrying a total of 26,246 anglers on 1,995 different trips.

### Subsistence

Information on subsistence fishing in Rye is either not available through secondary data collection, or the practice does not exist.

### FUTURE

Rye's Master Plan was drafted in 1995. Its general goals are to maintain the town's semi-rural condition while also granting citizens the technological advancement of services (Rye 2008). Areas of Rye, including Rye harbor and Odium State Park, are often locations included in subprojects of the New Hampshire Estuaries Project's (NHEP) Comprehensive Conservation and

<sup>11</sup> Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

<sup>12</sup> The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Management Plan. The NHEP was formed in 1995 as the U.S. Environmental Protection Agency's National Estuary Program. The aim of the project is to improve water quality in New Hampshire's Estuaries (NHEP 2008).

New Hampshire's Southeast Land Trust has recently (2006) been created through the merge of the state's Rockingham Land Trust and Seacoast Land Trust. The idea was to create a single organization more powerful than the individuals, to continue protecting land and conserving natural resources in southeastern New Hampshire (Anon. 2006).

Rye along with other small ports of the region has seen a decrease in the reliance of commercial fishing in the local economy. Despite the modern changes to fishing of the region from tourism and management regulations, most people feel this is not a substantial threat to its existence (Hall-Arber et al. 2001).

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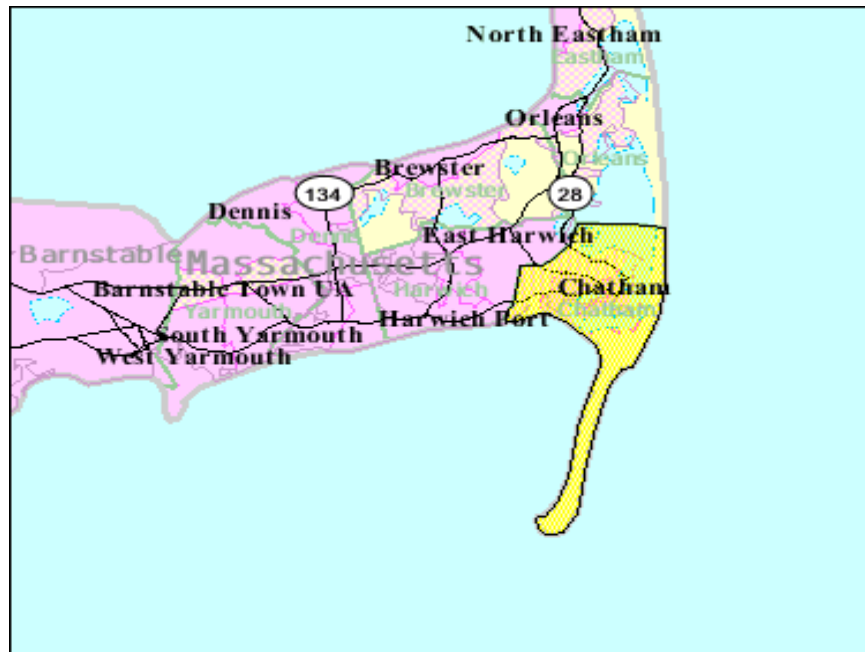
# CHATHAM, MA<sup>1</sup>

## Community Profile<sup>2</sup>

### PEOPLE AND PLACES

#### Regional Orientation

Chatham, Massachusetts is located at the southeastern tip of Cape Cod in Barnstable County, approximately 89 miles from Boston. To the east is the Atlantic Ocean, to the south is Nantucket Sound, and to the north is Pleasant Bay. The only adjacent town (located at both the north and west town line boundaries) is Harwich. Major geographical features of the town are hills, wooded uplands, extensive barrier beaches and spits, harbors, numerous small estuaries, and salt and freshwater ponds (Town of Chatham nd).



Map 1. Location of Chatham, MA (US Census Bureau 2000)

#### Historical/Background

Chatham was an English settlement in the mid 1600s. William Nickerson, a name that is still prominent in the town today, acquired nearly the entire town's area at that time. Because of Chatham's geography and lack of developed transportation, the town's economy and living conditions were vulnerable to warships. The population began to stabilize with the fishing trade, ship building, fishing, and salt making in the mid 18<sup>th</sup> century. With the building of the railroad in 1887, Chatham quickly became a summer resort destination for wealthy people. By 1950, the

<sup>1</sup> These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

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summer season population was more than double the year round population. According to the Town of Chatham website, Chatham now receives from 20-25,000 visitors each summer (Town of Chatham nd). Although the cost of living is increasing in Chatham from the dominant tourism industry, there is still a fishing community using a range of harvest techniques from the more traditional hook and line and weir fishing to the more modern trawling, gillnetting, scalloping, etc., as well as an important shellfishing industry. While the fishing industry exists and is determined to survive through the difficult period of stock depletion and strict fishery regulations, many changes both in and out of the town are putting pressure on the industry.

### Demographics<sup>3</sup>

According to Census 2000 data (US Census Bureau 2000), Chatham had a total population of 1,667, down 12.9% from the reported population of 1,916 in 1990 (US Census Bureau 1990). Of this 2000 total, 52.3% were female and 47.7% were male. The median age was 53.3 years and 86.4% of the population was 18 years or older while 32.5% was 65 or older.

The population structure for Chatham (Figure 1) shows an abnormal age group distribution compared to other small fishing towns in the Northeast. There is a very small percentage of the total population between 30 and 39 years and between 0 and 9 years, but a large number of females between the ages of 40-49. Overall, there are more adults than younger age groups in Chatham and more males than females between the ages of 10-19, 30-39 and 60-69. This larger portion of males in these age groups may indicate fishermen working out of Chatham.

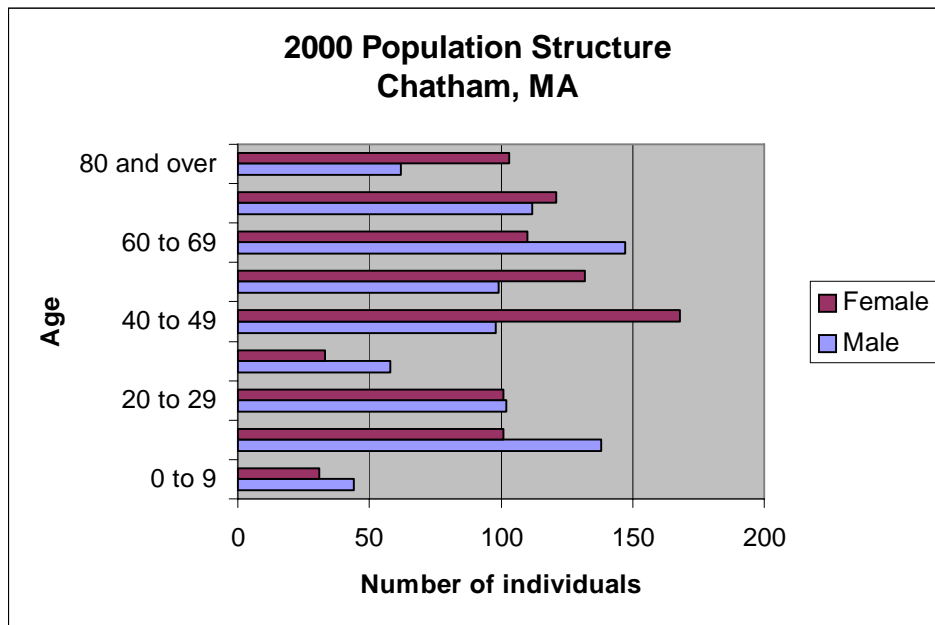


Figure 1. Chatham's Population Structure by sex in 2000 (US Census Bureau 2000)

The majority of the population was white (95.2%), with 2.2% of residents black or African American, 0.3% Asian, 0.2% Native American, and none Pacific Islander or Hawaiian

<sup>3</sup> While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

(Figure 2). Only 1.9% of the total population identified themselves as Hispanic/Latino (Figure 3). Residents linked their backgrounds to a number of different ancestries including: Irish (27.5%), English (26%), German (6.5%), and Italian (6.8%). With regard to region of birth, 54.3% were born in Massachusetts, 36.4% were born in a different state and 8.8% were born outside of the United States (including 4.1% who were not United States citizens).

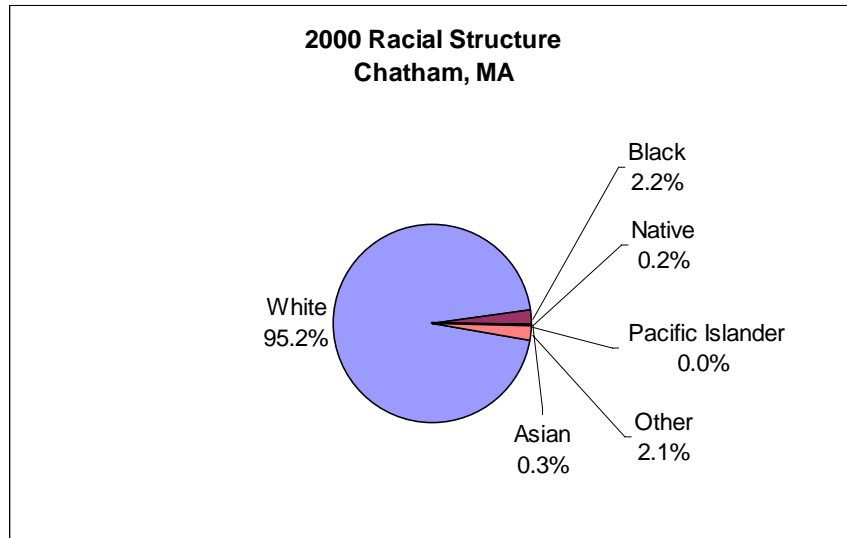


Figure 2. Chatham's Racial Structure in 2000 (US Census Bureau 2000)

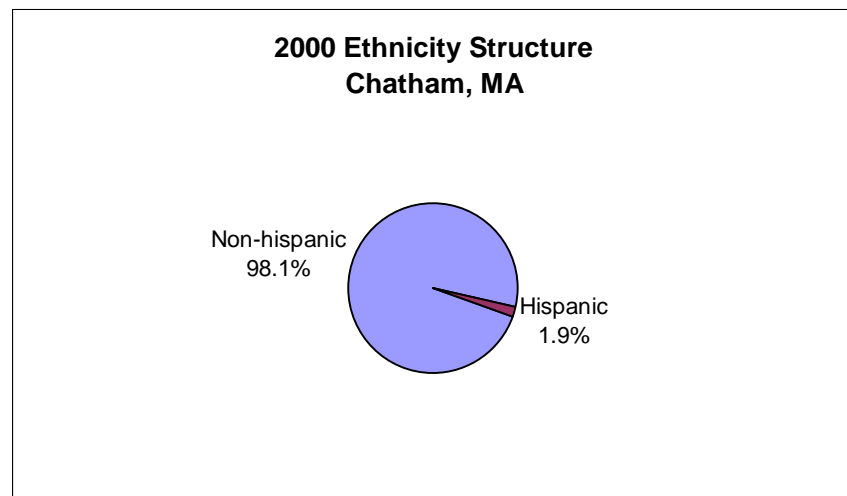


Figure 3. Chatham's Ethnic Structure in 2000 (US Census Bureau 2000)

For 95.1% of the population, only English was spoken in the home, leaving 4.9% in homes where a language other than English was spoken, including 2.9% of the population who spoke English less than 'very well' according to the 2000 Census.

Of the population 25 years and over, 89.9% were high school graduates or higher and 45.1% had a bachelor's degree or higher. Again of the population 25 years and over, 5.0% did not reach ninth grade, 5.1% attended some high school but did not graduate, 22.2% completed high school, 14.1% had some college with no degree, 8.4% received their associate's degree,

32.8% earned their bachelor's degree, and 12.3% received either their graduate or professional degree.

Although the religion percentages are not available through U.S. Census data, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations in Barnstable County was Catholic with 29 congregations and 89,000 adherents. Other prominent congregations in the county were Episcopal (11 with 8,028 adherents) and Baptist (7 with 1,387 adherents). The total numbers of adherents to any religion was down 20.7% from 1990 (ARDA 2000).

### **Issues/Processes**

Information gathered during a visit to the Cape Cod Commercial Hook Fishermen's Association (CCCHFA) in 2004 revealed that the fishing industry in Chatham faces similar challenges to other fishing port communities in the Northeast. With tourism and the increase of gentrification, the fishing industry is threatened by a lack of mooring space and the threat of land-based fishing infrastructure closing down. At the same time many believe that the history of fishing has been a large part of the allure that draws tourists to Chatham, so it could lose its cultural appeal if the fisheries really did fade away. With a group such as the CCCHFA, the fishermen appear to be fighting the challenges of stricter catch regulations and decreased catches by finding alternative ways to keep their fishing industry alive. Also refer to section "Fisheries involvement in the government" for more information on CCCHFA sector allocation.

The Cape Cod Regional Economic Development Council (CCREDC) has not recognized the importance of commercial fishing on Cape Cod, however; they rely on census data which hides fishermen's incomes in the self employment and agricultural categories. Melissa Weidman of CCCHFA estimated that there are 10,000 fishermen on Cape Cod, while the CCREDC reported only 50 fishermen. One example of an important business to fishing in Chatham is Cape Fish Supply. It is the biggest supplier for the entire Cape. People come here from Provincetown with the next biggest supplier in New Bedford.<sup>4</sup>

The Town of Chatham has made many significant financial investments in the commercial fishing industry. In early 2006, the taxpayers invested \$1 million in the Chatham Municipal Fish Pier. The Town dredges the channel and the harbor at the fish pier twice a year due to the constant shifting shoals in the area.<sup>5</sup>

There is controversy over the harvesting of shellfish in the National Seashore Wilderness Sanctuary (Monomoy). Some people are trying to organize against the extraction of shellfish in this area. This is the most important shellfishery in New England. A few years ago Chatham had \$4.5 million industry from shellfish, while the entire state of Maine had only \$9 million. The process of turning the clam beds (a result of extraction) actually releases sulfates from the soil producing a more conducive environment for other creatures, including more shellfish.<sup>6</sup>

### **Cultural attributes**

The [Cape Cod Commercial Hook Fishermen's Association](#) plays a major role in the Chatham community. Each year they host their annual Hookers Ball gala in the summer. The event's proceeds help support the work of the grassroots sustainable fishery organization. The

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<sup>4</sup> Personal Communication, Melissa Roberts Weidman, Cape Cod Commercial Hook Fishermen's Association, 210 E. Orleans Road, North Chatham, MA 02650, August 2004

<sup>5</sup> Profile review comment, Susan Rocanello, Chatham Assistant Harbormaster, 594 Main St. Chatham, MA 02633, September 12, 2007

<sup>6</sup> Personal Communication, Personnel Manager, Chatham Bars Inn, Shore Rd., Chatham, MA 02633, August 2004

CCCHFA also started a [Chatham Fish Pier Program](#), where local retired fishermen explain details about the boats as they unload their catch. Another way the community remembers its maritime history is through the [Chatham Maritime Festival](#), which celebrates Chatham’s maritime heritage with an exciting day of contests, races and a fishing parade. There are web cams ([TeleCAM](#)) for the Chatham fish pier and Stage Harbor, where visitors can go online to view boat activity and get panorama’s of the harbor. The TeleCAMs are updated every half hour from sunrise to sunset.

## INFRASTRUCTURE

### Current Economy

The economy of Chatham drives the population fluctuation as tourists and seasonal residents come in and out for the summer. Representative of this is the fact that the two businesses in Chatham that employ the most people are summer resorts (Chatham Bars Inn and Chatham Wayside Inn). [Chatham Bars Inn](#), established in 1914, is the largest employer in Chatham with approximately 200 year-round employees and 550-600 summer employees. The resort provides housing for some of its seasonal employees, the majority of which are from other countries or are college students.<sup>7</sup> Chatham is also notable in that it has “twice the Cape Cod average of self-employed persons, a higher-than-regional average number of fishermen, and more highly valued residential properties” (Town of Chatham nd).

According to the U.S. Census 2000<sup>8</sup>, 51.6% of the total population 16 years of age and over were in the labor force (Figure 4), of which 2.0% were unemployed, 2.0% were in the Armed Forces, and 47.6% were employed.

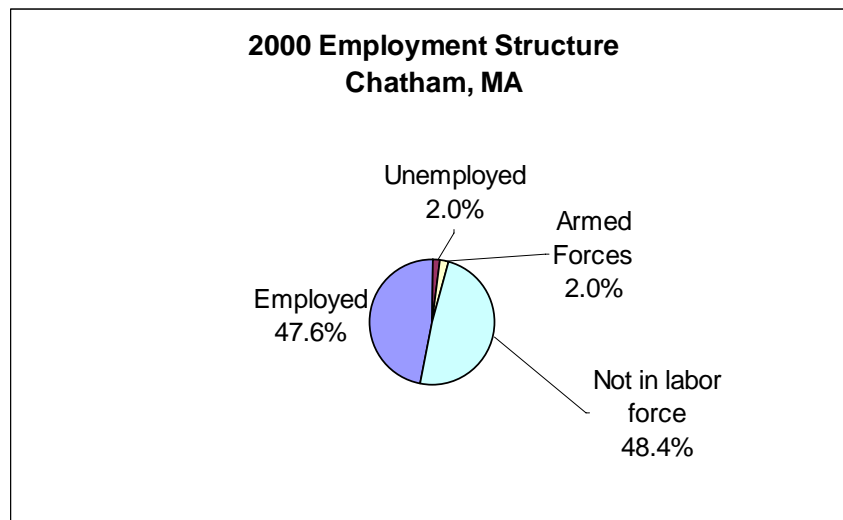


Figure 4. Employment structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 26 positions or 3.6% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 122 positions or 16.8% of jobs. Educational, health and social services (19.1%), arts, entertainment, recreation,

<sup>7</sup> Personal Communication, Personnel Manager, Chatham Bars Inn, Shore Rd., Chatham, MA 02633, August 2004

<sup>8</sup> Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

accommodation and food services (17.9%), retail trade (17.3%), construction (10.7%), and finance, insurance, real estate, and rental and leasing (10.2%) were the primary industries.

Median household income in Chatham was \$47,037 (up 76.1% from \$26,716 in 1990 [US Census Bureau 1990]) and median per capita income was \$28,542. For full-time year round workers, men made approximately 3.3% more per year than females.

The average family in Chatham consisted of 2.52 persons. With respect to poverty, 0.9% of families (down from 9.5% in 1990 [US Census Bureau 1990]) and 7.8% of individuals were below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 23.9% of all families (of any size) earned less than \$35,000 per year.

In 2000, Chatham had a total of 1,891 housing units of which 43.1% were occupied and 85.4% were detached one unit homes. Over one third (36%) of these homes were built before 1940. Mobile homes, boats, RVs, and vans accounted for no housing units; 98.9% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$372,900. Of vacant housing units, 89.5% were used for seasonal, recreational, or occasional use. Of occupied units 27.2% were renter occupied.

## **Government**

The town of Chatham was incorporated as a town in 1730. The town is operated by a Town Manager, a Board of Selectmen, and an Open Town Meeting (Town of Chatham 2007).

### *Fishery involvement in government*

The Town owns and operates a shellfish upwelling system in Stage Harbor as part of their shellfish program.<sup>9</sup> They also have a harbor master's office.

NOAA Fisheries, [Fisheries Statistics Office](#), has a port agent based off Main Street in Chatham. Port agents sample fish landings and provide a 'finger-on-the-pulse' of their respective fishing communities.

## **Institutional**

### *Fishing associations*

The Chatham maritime community is supported by the Cape Cod Commercial Hook Fishermen's Association (CCCHFA). The association began in 1993 with a small group of commercial hook and line fishermen who got together to discuss problems in the industry. Their purpose is to address problems by building sustainable fisheries for the future, and representing the traditional fishing communities. One of the programs that the CCCHFA created is the S.S. Shanty Community Fisheries Action Center (CCCHFA 2005). They also spearheaded the creation of and received the first sector allocation for the groundfish fishery (Plante 2004). This initiative has encouraged other sectors to form in the area and region. The purpose of the Action Center is to empower fishermen, educate concerned residents, and facilitate collaboration between conservation, fishing and community organizations to generate a more active and effective marine community on Cape Cod (CCCHFA 2005).

The Massachusetts Fisherman's Partnership focuses on issues for fishermen in different ports in Massachusetts. The Partnership responded to the need of health care for fishermen and their families by developing the Fishing Partnership Health Insurance Plan with federal and state

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<sup>9</sup> Profile review comment, Stuart Smith, Harbormaster, 594 Main St. Chatham, MA 02633, September 19, 2007



aid. This plan has been in place since 1997 and reduces the amount of money that fishermen's families have to pay to be covered by health insurance (Hall-Arber et al. 2001).

#### *Fishing assistance centers*

No fishing assistance centers that provide monetary support were identified in Chatham during this research; however, the CCCHFA could be classified as an assistance center.

#### *Other fishing-related organizations*

Hook and line fishermen of Cape Cod established the [CCCHFA](#) in 1993. This grassroots organization now has 2,500 members and several programs to support Cape Cod traditional maritime communities and increase awareness about the fishing culture in the area. Another organization that is vital to the Chatham community is the [Friends of Chatham Waterways](#). The association has an interest in the broader municipal issues that may have an impact on Chatham's maritime heritage or upon the natural environment of the community.

### **Physical**

Chatham is 17 miles east of Hyannis, 89 miles southeast of Boston, and 223 miles away from New York City (State of Massachusetts 2007). Chatham is supported by the State Routes 28 and 137. There is no freight rail service, but the network of intermodal facilities serving eastern Massachusetts and Rhode Island is easily accessible. Chatham is a member of the [Cape Cod Regional Transit Authority](#) (CCRTA), which operates a b-bus demand response service. The b-bus is a convenient, low-cost public transportation system, picking residents up at their homes on Cape Cod. The CCRTA provides this door-to-door, ride-by-appointment service for people of all ages for trips for any purpose, including school, work, shopping, college, doctor's appointments, visiting friends and even Boston medical trips. B-buses carry up to 19 passengers and are all lift-equipped. The Chatham Municipal Airport is a General Aviation (GA) facility located 2 miles NW of town, and scheduled airline flights are available at the Hyannis Municipal Airport in the neighboring town of Barnstable (State of Massachusetts 2007). The nearest international airports are Logan International in Boston (90 miles away) and T.F Green Airport in Warwick, RI (100 miles away) (MapQuest nd). There are three commercial piers located in Stage Harbor, all of which are privately owned.<sup>10</sup>

## **INVOLVEMENT IN NORTHEAST FISHERIES<sup>11</sup>**

### **Commercial**

Cod had the highest landings in pounds within state waters for 2003. Shellfishing is also very important in Chatham. Approximately 150 people depend on the shell fishing in

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<sup>10</sup> Profile review comment, Stuart Smith, Harbormaster, 594 Main St. Chatham, MA 02633, September 19, 2007

<sup>11</sup> In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

Chatham.<sup>12</sup> Federal landed value data reveals that largemesh groundfish were the highest value catch between the years 1997 and 2006. There are a variety of landed groups in Chatham, with largemesh groundfish, “Other”, and lobster yielding the highest values (Table 1). The number of vessels whose home port was Chatham stayed relatively consistent over the 1997-2006 time period, with a small spike in 2002 and a significant decline in 2006. Likewise, the level of fishing home port value stayed consistent during the same time. The number of vessels whose owner’s city was Chatham fluctuated between 61 and 94 vessels, showing the same decline in 2006. The level of fishing landed port was also stable, with a spike in 2001 (Table 2).

### Landings by Species

Table 1 Rank Value of Landings for Federally Managed Groups

	Rank Value of Average Landings from 1997-2006
Largemesh Groundfish <sup>13</sup>	1
Other <sup>14</sup>	2
Lobster	3
Scallop	4
Monkfish	5
Dogfish	6
Skate	7
Squid, Mackerel, Butterfish	8
Summer Flounder, Scup, Black Sea Bass	9
Bluefish	10
Smallmesh Groundfish <sup>15</sup>	11
Surf Clams, Ocean Quahog	12
Tilefish	13
Herring	14

(Note: Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.)

### Vessels by Year<sup>16</sup>

Table 2. Federal Vessel Permits Between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)
1997	146	87
1998	131	75
1999	130	77
2000	131	79
2001	135	81
2002	162	94
2003	161	94
2004	145	82
2005	136	72
2006	117	61

(Note: # Vessels home ported = No. of permitted vessels with location as homeport, # Vessels (owner's city) = No. of permitted vessels with location as owner residence<sup>17</sup>)

<sup>12</sup> Personal communication, Stuart Moore, Chatham Department of Coastal Resources, 549 Main Street, Chatham, MA 02633, (508) 945-5184, August 2004

<sup>13</sup> Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

<sup>14</sup> “Other” species includes any species not accounted for in a federally managed group

<sup>15</sup> Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

<sup>16</sup> Numbers of vessels by owner’s city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.



## Recreational

There are at least 27 charter fishing businesses located in Chatham, five of which work from the Chatham Fish Pier.<sup>18</sup> Due to restricted Days at Sea regulations, especially for groundfish, and to limits on striped bass (as of August 2004), some commercial fishermen use their fishing boats as day charters. This allows fishermen to still make money at sea even when they cannot catch and sell fish commercially. Thursday through Saturday fishermen cannot sell their catches, so catch and release fishing is practiced by the few that are combination commercial/recreational charter fishermen.<sup>19</sup>

## Subsistence

Information on subsistence fishing in Chatham is either unavailable through secondary data collection or the practice does not exist.

## FUTURE

During a field visit to Chatham by the NEFSC Social Science Branch community profilers (August 2004), the CCCHFA mentioned that intense pressure exists on the coastal fishing infrastructure due to gentrification and increasing costs. In Stage Harbor, there are three commercial piers which are privately owned; two by families and the third by the Stage Harbor Yacht Club. While all are presently used for commercial off-loading, any of these piers could easily be converted to a use inconsistent with the needs of the commercial fishing industry in Chatham.<sup>20</sup>

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<sup>17</sup> The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

<sup>18</sup> Profile review comment, Stuart Smith, Harbormaster, 594 Main St. Chatham, MA 02633, September 19, 2007

<sup>19</sup> pers. com. Captain Mike during field visit to Chatham, August 4, 2004 with JE, PS, and LS.

<sup>20</sup> Profile review comment, Stuart Smith, Harbormaster, 594 Main St. Chatham, MA 02633, September 19, 2007

US Census Bureau. 1990. Decennial Census [cited Aug 2004]. Available from:

<http://factfinder.census.gov>

US Census Bureau. 2000. Fact Sheet: Chatham town, Barnstable County, Massachusetts. [cited August 2004]. Available from: <http://factfinder.census.gov>

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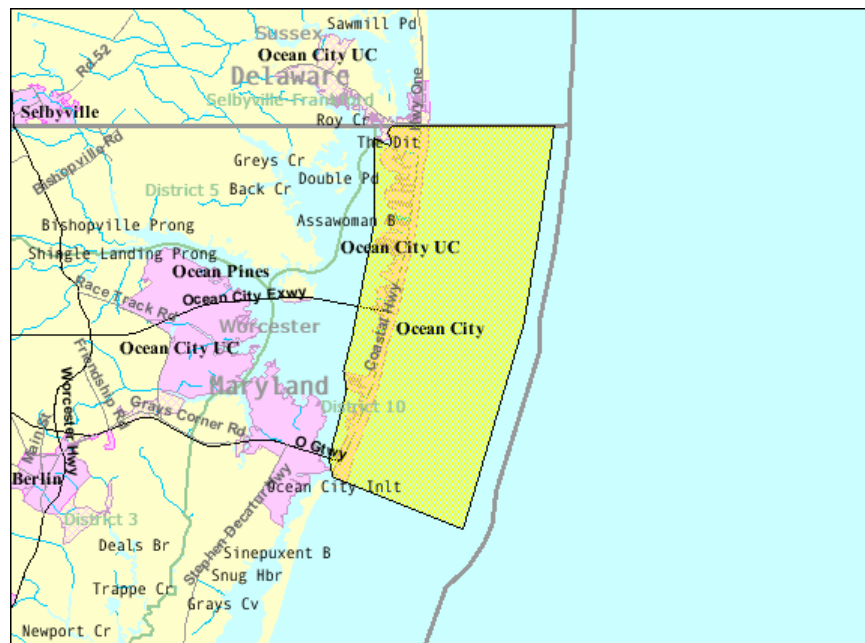
# OCEAN CITY, MD<sup>1</sup>

## Community Profile<sup>2</sup>

### PEOPLE AND PLACES

#### Regional orientation

Ocean City, Maryland (38.33° N, 75.09° W) is a town located in Worcester County, in Ocean Pines, an unincorporated area in the County. It is bordered to the east by the Atlantic Ocean and to the west by the Assawoman Bay and Isle of Wight Bays. The town has a total area of 36.4 mi<sup>2</sup>, 4.6 mi<sup>2</sup> of that is land and 31.8 mi<sup>2</sup> is water (USGS 2008). West Ocean City is across the bay from the southern portion of Ocean City.



Map 1. Location of Ocean City, MD (US Census Bureau 2000a)

#### Historical/Background

The first European came to Ocean City in 1524 from France, but the town wasn't truly settled until the late 17<sup>th</sup> century with an influx of Virginians from the Eastern Shore. The area of land belonging today to Worcester county Maryland changed many times over the years, belonging at times to Delaware and Somerset County, Maryland. In 1869, a man named Isaac Coffin came to Ocean City and built a cottage to house guests who wanted to go to the beach or to fish. People quickly came and the area became a popular summer resort, eventually adding dancing and amusements. In 1933, a storm formed the Ocean City Inlet and engineers decided to make this act of nature permanent. This decision helped to establish Ocean City as an important

<sup>1</sup> These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

<sup>2</sup> For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact [Lisa.L.Colburn@noaa.gov](mailto:Lisa.L.Colburn@noaa.gov)."

fishing port, offering easy access to both the bay and the Atlantic Ocean (OCCVB n.d.). Most of the fishing today is offshore, however there are substantial inshore and coastal bay fisheries (blue crabs, hard clams, and gillnetting for spot, bunker, trout, and striped bass).<sup>3</sup> West Ocean City, while on the other side of the bay and not part of the town, is generally not considered by locals to be a distinct entity from Ocean City.<sup>4</sup>

### Demographics<sup>5</sup>

Ocean City – According to the Census 2000 data, Ocean City town had a population of 7,173, up 41.4% from a reported population of 5,074 in 1990 (US Census Bureau 1990). Of this 2000 total, 51.3% were males and 48.7% were females. The median age was 47.2 years and 86.5% of the population was 21 years or older while 30.0% of the population was 62 or older.

The population structure for Ocean City (see Figure 1) showed an older population, with the largest percentage of residents between the ages 60-69, and significant numbers of residents in the 50-59 and 70-79 age categories. This indicates that many people may retire to Ocean City. There were also, however, a significant number of residents between the ages of 20-49 as well. Ocean City had surprisingly few children in the 0-9 and 10-19 age categories.

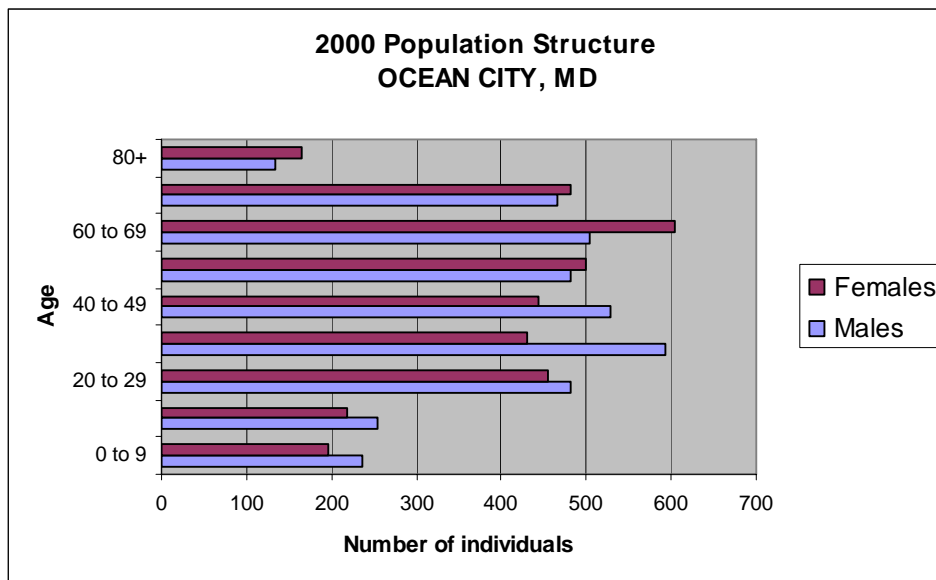


Figure 1. Ocean City's population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population was white (96.3%) with 2.5% black or African America, 0.7% Asian, 0.1% Native American, and 0.01% Native Hawaiian or Pacific Islander (see Figure 2). Of the total population, 1.2% identified themselves as Hispanic/Latino (see Figure 3). Residents linked their backgrounds to a number of different ancestries including: German (25.6%), Irish (21.0%), English (16.0%), and Italian (8.7%).

<sup>3</sup> Community Review comments, Dave Blazer, Executive Director, Maryland Coastal Bays, 9199 Stephen Decatur Highway, Suite 4, Ocean City, MD 21842, October 12, 2007

<sup>4</sup> Personal communication, Vincent Malkoski, Division of Marine Fisheries, 1213 Purchase Street New Bedford, MA 02740.

<sup>5</sup> While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

With regard to region of birth, 51.5% were born in Maryland, 43.7% were born in a different state and 4.5% were born outside of the U.S. (including 3.0% who were not United States citizens).

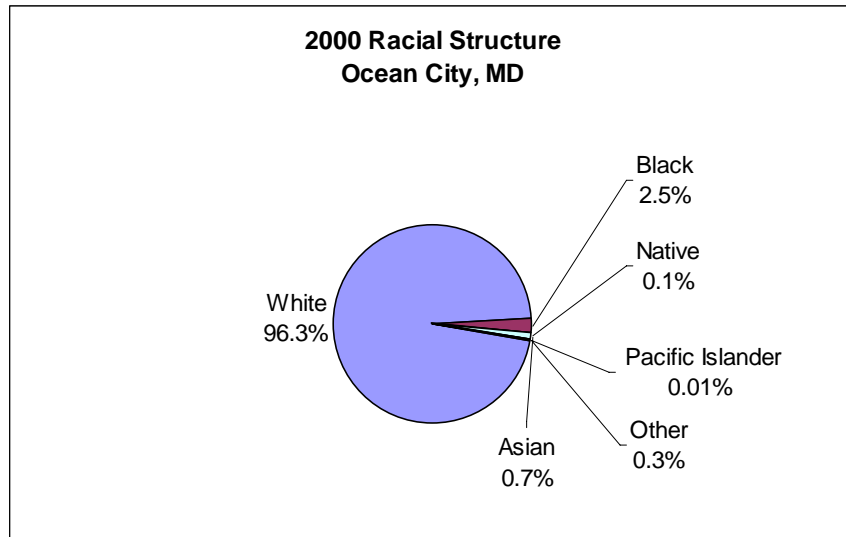


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

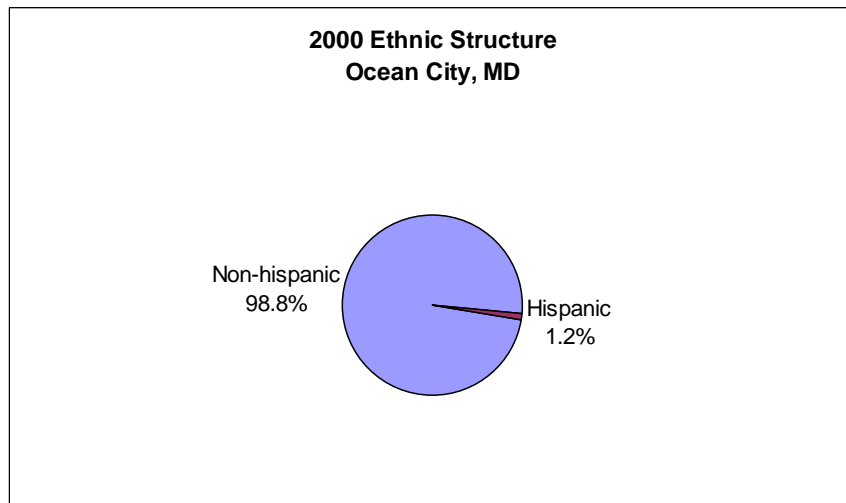


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 93.0% of the population in 2000, only English was spoken in the home, leaving 7.0% in homes where a language other than English was spoken, including 2.9% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 87.1% were high school graduates or higher and 28.0% had a bachelor’s degree or higher. Again of the population 25 years and over, 2.6% did not reach ninth grade, 10.3% attended some high school but did not graduate, 31.7% completed high school, 22.7% had some college with no degree, 4.8% received their associate’s degree, 20.1% earned their bachelor’s degree, and 7.9% received either their graduate or professional degree.

West Ocean City CDP – According to the Census 2000 data, West Ocean City CDP had a population of 3,311, up 65.5% from a reported population of 2,000 in 1990 (US Census Bureau 1990). Of this total in 2000, 49.3% were males and 50.7% were females. The median age was 43.5 years and 77.9% of the population was 21 years or older while 23.3% of the population was 62 or older.

The population structure for West Ocean City (see Figure 4) showed essentially two peaks; the first was between ages 30-39, and the second between ages 60-69. Interestingly, men between the ages of 30-39 outnumbered women of the same age, and conversely women aged 60-69 out-numbered their male counterparts. This patterns suggests two possible trends; one is that younger adults, and particularly males without children aged 20-39 are moving to West Ocean City, and the other is that many people are retiring here, judging by the large number of residents in the 60-69 and 70-79 age categories. There were not many children in West Ocean City, compared to what one might expect to see considering the number of residents here.

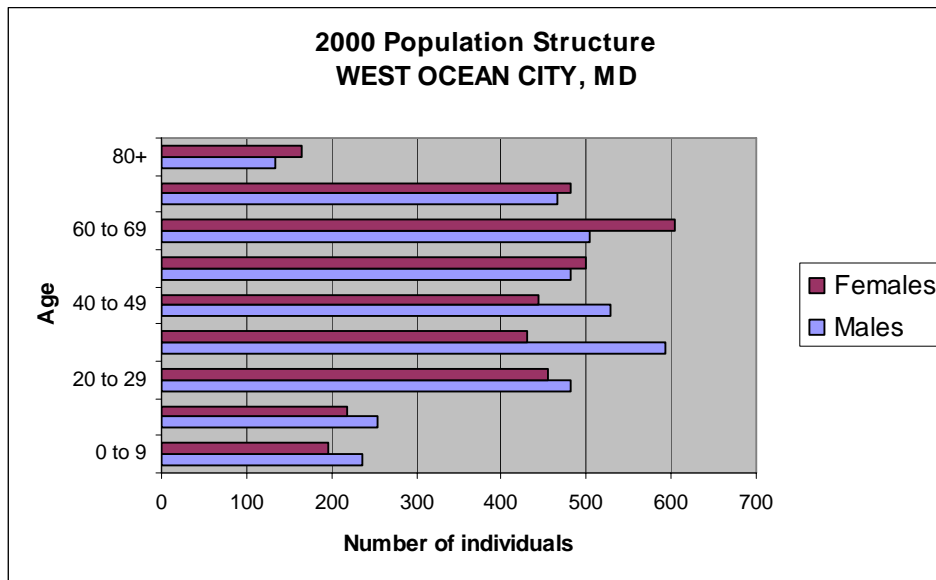


Figure 4. Ocean City's population structure by sex in 2000

The majority of the population of West Ocean City in 2000 was white (95.9%) with 2.0% of residents black or African American, 0.8% Native American, 1.0% Asian, and 0.1% Pacific Islander or Hawaiian (see Figure 5). Of the total population, only 1.4% identified themselves as Hispanic/Latino (see Figure 6). Residents linked their backgrounds to a number of different ancestries including: German (22.1%), English (19.0%), and Irish (16.7%).

With regard to region of birth, 57.2% were born in Maryland, 38.2% were born in a different state and 4.4% were born outside of the U.S. (including 2.2% who were not United States citizens).

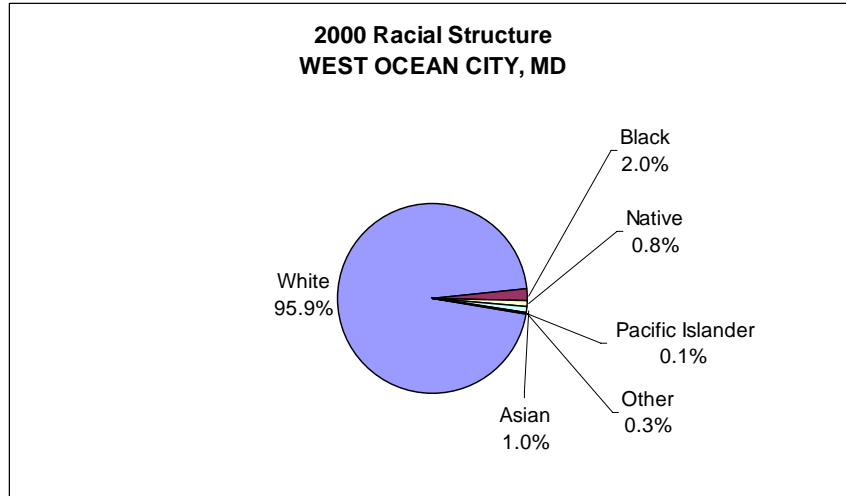


Figure 5. Racial Structure in 2000 (US Census Bureau 2000)

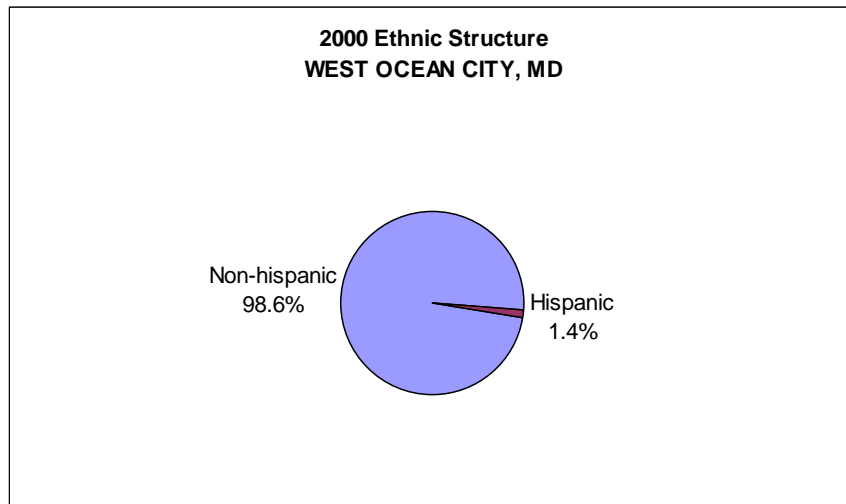


Figure 6. Ethnic Structure in 2000 (US Census Bureau 2000)

For 93.2% of the population, only English was spoken in the home, leaving 6.8% in homes where a language other than English was spoken, including 2.8% of the population who spoke English less than “very well” according to 2000 Census.

Of the population 25 years and over, 81.2% were high school graduates or higher and 20.7% had a bachelor’s degree or higher. Again of the population 25 years and over, 3.6% did not reach ninth grade, 15.2% attended some high school but did not graduate, 31.5% completed high school, 21.1% had some college with no degree, 7.9% received their associate’s degree, 12.6% earned their bachelor’s degree, and 8.1% received either their graduate or professional degree.

Although religious percentages are not available through U.S. Census data, according to the Association of Religion Data Archives (ARDA) in 2000, the religions with the highest number of congregations in Worcester County included Catholic with 5 congregations and 7,700 adherents. Other prominent congregations in the county were United Methodist (39 with 7,628 adherents) and Southern Baptist Convention (8 with 3,009 adherents). The total number of adherents to any religion was up 59.6% from 1990 (ARDA 2000).

## **Issues and Processes**

Ocean City is primarily a resort town. The real estate market has long been a problem for those seeking to buy a first home, especially blue collar workers (Lerner 2002, Guy 2003, Vandiver 2004). Many people are also concerned about aquaculture developing in the area. They are concerned that if it does develop, it will be run by the large poultry companies in the area, as has happened in areas further to the south (McCay and Cieri 2000:90). Also a concern with respect to aquaculture is competition for space and resources. Concerns are also present regarding allocation of marine resources between the commercial and recreational sectors, as well as potential commercial fishing gear impacts on habitat in the area.<sup>6</sup>

Dock space in West Ocean City, where the commercial fishing fleet is based, is limited; fortunately protective zoning by Worcester County means the docks are not immediately threatened. Some processing plants and a clam dock in the area recently closed as a result of a consolidation of surf clam and ocean quahog boats, particularly a decline in owner-operated boats, after the implementation of ITQs in this fishery (Oles 2003).

## **Cultural attributes**

Ocean City hosts many fishing tournaments each year. In 2006, the tournaments began in June with the Mako Mania Shark Tournament. In July comes the Ocean City Tuna Tournament, which features nightly weigh-ins as well as food, entertainment, crafts and fishing related games for children. In August, the town hosts the world's largest billfish tournament, the White Marlin Open, which offers cash prizes for white marlin, blue marlin, tuna, wahoo, dolphin and shark; nightly weigh-ins are a popular event. In 2006, \$2.3 million was given away in prizes. Later in the month is the only local Ladies Only fishing tournament, Captain Steve Harman Poor Girl's Open Fishing Tournament. In September the Mid-Atlantic Bartenders Open Fishing Tournament is another popular event (Ocean City 2008). Other tournaments are held as well, many hosted by [The Ocean City Marlin Club](#).

Each year the [Maryland Watermen's Association](#) sponsors the East Coast Commercial Fishermen's and Aquaculture Trade Exposition in Ocean City, which features aquaculture and commercial fishing seminars, gear, equipment, and boats. The Seaside Boat Show is held in February. May brings the Annual White Marlin Festival and Crab Soup Cookoff (Town of Ocean City 2008). One of the fish docks in West Ocean City sponsored a "Mid-Atlantic Commercial Fishing Skills Contest", which included competitions in rope tying, net mending, rope splicing, survival suit-donning, and other fishing-related activities (Oles 2003). January brings the Nautical and Wildlife Art Festival and October brings Harbor Day at the Docks ~ a Waterfront Heritage Festival and Phillips Annual Seafood Dinner (OCCVB nd).

## **INFRASTRUCTURE**

### **Current Economy**

Many of the people in the Ocean City area work in restaurants and hotels that have made this area popular with tourists. In fact, the six major employers in Ocean City are all in tourism and property management/development industries: Harrison Group (hotels), Phillips

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<sup>6</sup> Community Review comments, Dave Blazer, Executive Director, Maryland Coastal Bays, 9199 Stephen Decatur Highway, Suite 4, Ocean City, MD 21842, October 12, 2007



(restaurants/seafood), Bayshore Development (hotels, amusements), OC Seacrets, Inc. (night club), KTG LLC (restaurants), and Clarion Resort Fountainbleu (hotels).<sup>7</sup>

There are three packing houses in West Ocean City, which combined employ about sixteen people. There are probably at least 230 people employed on the charter and party boats in Ocean City, not including additional support staff or those that work at related businesses like bait and tackle shops. Recreational fishing is one of the more important aspects of Ocean City's tourist economy (Oles 2003). "Worcester County's 2,040 businesses employ 20,300 workers; an estimated 13 of these businesses have 100 or more workers. Chicken growing and processing is the major industry in Worcester County. Major private sector employers include Bel-Art Products [plastic components, laboratory equipment], Perdue Farms [poultry processing], and Tyson Foods, Inc [poultry processing]" (Worcester County 2008) [Tyson's was located in Berlin but closed down<sup>8</sup>]. Other major employers include Harrison Hotels, Atlantic General Hospital and Walmart (Worcester County 2008).

Ocean City – According to the U.S. Census 2000<sup>9</sup>, 60.4% (3,909 individuals) of the total population 16 years of age and over were in the labor force (see Figure 7), of which 5.6% were unemployed, 0.2% were in the Armed Forces, and 54.6% were employed.

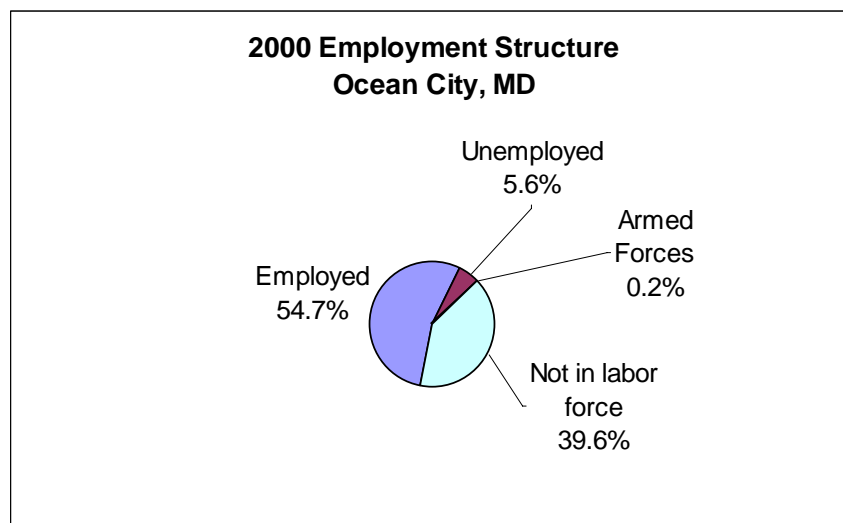


Figure 7. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 12 positions or 0.3% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 392 positions or 11.1% of jobs. Arts, entertainment, recreation, accommodation and food services (29.5%), retail trade (12.9%), finance, insurance, real estate, and rental and leasing (12.0%), and educational, health, and social services (11.1%) were the primary industries.

<sup>7</sup> Community Review comments, Jesse Houston, Director of Planning and Community Development, PO Box 158, Ocean City, MD 21843, October 10, 2007

<sup>8</sup> Community Review Comment, Donna Abbott, Public relations, Ocean City Department of Tourism, 4001 Coastal Highway, Ocean City, MD 21842, October 22, 2007

<sup>9</sup> Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

Median household income in Ocean City was \$35,772, up 37.8% from \$25,959 in 1990 (US Census Bureau) and median per capita income was \$26,078. For full-time year round workers, males made approximately 4.2% more per year than females.

The average family in Ocean City consisted of 2.47 persons. With respect to poverty, 6.0% of families, down 6.4% from 1990 (US Census Bureau 1990) and 8.4% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 37.7% of all families of any size earned less than \$35,000 per year.

In 2000, Ocean City had a total of 26,317 housing units of which 14.2% were occupied and 9.4% were detached one unit homes. A few (2.2%) of these homes were built before 1940. Mobile homes, boats, RVs, vans, etc. accounted for 6.9% of the total housing units; 96.9% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$152,200. Of vacant housing units, 54.3% were used for seasonal, recreational, or occasional use. Of occupied units, 32.6% were renter occupied.

West Ocean City CDP – According to the U.S. Census 2000, 61.9% (1,724 individuals) of the total population 16 years of age and over were in the labor force (see Figure 7), of which 4.2% were unemployed, none were in the Armed Forces, and 57.7% were employed.

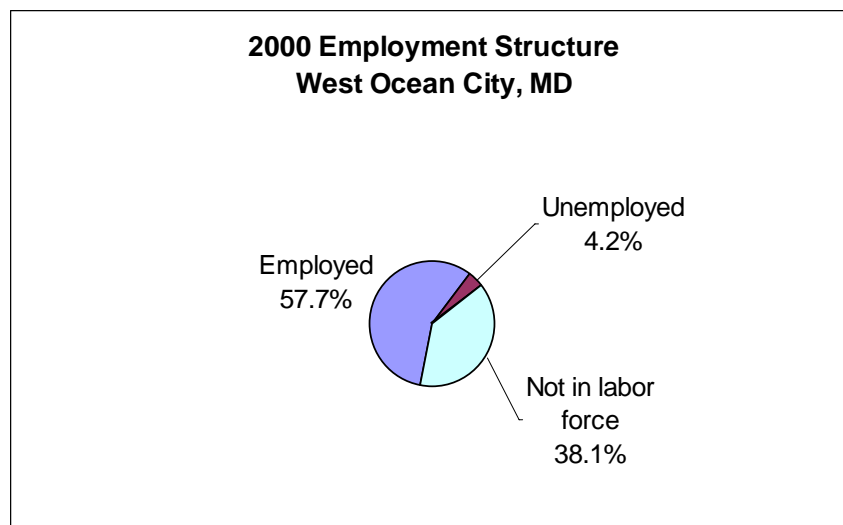


Figure 8. Employment structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 15 positions or 0.9% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 145 positions or 9.0% of jobs. Arts, entertainment, recreation, accommodation and food services (24.1%), retail trade (15.8%), finance, insurance, real estate, and rental and leasing (11.6%), educational, health, and social services (10.7%), and construction (10.7%) were the primary industries.

Median household income in West Ocean City was \$42,279, up 33.7% from \$31,632 in 1990 (US Census Bureau 1990) and median per capita income was \$28,132. For full-time year round workers, males made approximately 11.8% more per year than females.

The average family in West Ocean City consisted of 2.77 persons. With respect to

poverty, 3.0% of families, down from 9.3% in 1990 (US Census Bureau 1990) and 5.0% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 27.1% of all families (of any size) earned less than \$35,000 per year.

In 2000, West Ocean City had a total of 2,075 housing units of which 68.7% were occupied and 77.0% were detached one unit homes. Less than 5% (3.1%) of these homes were built before 1940. Mobile homes accounted for 10.1% of the total housing units; 88.6% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$157,500. Of vacant housing units, 14.2% were used for seasonal, recreational, or occasional use. Of occupied units, 20.1% were renter occupied.

## **Government**

Ocean City is run by a City Manager and Council form of government. The mayor and Town Council include a Council President, Council Secretary and five general Council Members (Town of Ocean City 2008). West Ocean City is governed by Worcester County, which has a seven-member board of County Commissioners (Worcester County 2008).

### *Fishery involvement in government*

Worcester County manages a commercial dock in West Ocean City. The Worcester County Commission has zoned the harbor area here as a commercial marine district, to protect commercial fishing operations from being pushed out by condominiums and other private development. The Worcester County Comprehensive Development Plan (WCPC 2006) also recognizes commercial fishing as one of the County's economic assets (p. 31) and has a goal of preserving fisheries and their nurseries (p. 33) and has 5 goals specifically aimed at retaining commercial fishing and seafood processing in the County (p. 60). Ocean City's comprehensive plan encourages water uses on the bay and marina construction (Oles 2003). It also recognizes the importance of water quality and commercial fishing to the town (OCPB 2007).

The State of Maryland Division of Natural Resources (DNR) manages fisheries in Ocean City and West Ocean City. The DNR has a Coastal Fisheries Advisory Committee which provides advice on fishery issues, preparing management plans, and works to develop objectives and management options for specific fisheries. The Committee has representation from Ocean City, West Ocean City, and different fishing groups.<sup>10</sup> Ocean City also has a harbor master.

## **Institutional**

### *Fishing associations*

There is a statewide fishermen's organization called the [Maryland Watermen's Association](#) (MWA) but few of the ocean fishermen belong to it because it emphasizes helping the Chesapeake Bay fishermen rather than the ocean fishermen. The organization focuses more on the Bay fishermen because there are more bay crabbers, clammers, and gill netters than there are ocean fishermen. However, the MWA still broadly represent all those who work on the water in/of Maryland. The President of the Association also serves on the Mid-Atlantic Fishery

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<sup>10</sup> Community Review comments, Dave Blazer, Executive Director, Maryland Coastal Bays, 9199 Stephen Decatur Highway, Suite 4, Ocean City, MD 21842, October 12, 2007

Management Council (MAFMC) which focuses on bay and ocean fisheries issues.<sup>11</sup> The ocean fishermen are concerned that they are not prepared for what may happen and they lack representation (McCay and Cieri 2000). The Maryland Saltwater Sport Fishermen's Association also has a Chapter in Ocean City.<sup>12</sup>

There are some sportfishing groups in Ocean City that work to promote sportfishing in the area. One is the [Ocean City Marlin Club](#), which began in 1936. The club is primarily a social one, although they are becoming increasingly political. They also host several tournaments. The OC Surf Anglers hosts surf fishing tournaments. The Ocean Pines Fishing Club is made up of members of Ocean Pines, a planned community in West Ocean City. The captains of the charter boats located at the Ocean City Fishing Center are all members of the Ocean City Charter Captain's Association (Oles 2003).

#### *Fishing assistance centers*

Information on fishery assistance centers in Ocean City is unavailable through secondary data collection.

#### *Other fishing related organizations*

The [Marine Trades Association of Maryland](#) is involved in providing information for boaters and fishermen in the state of Maryland. They hold safety classes and have a wide variety of information for boaters in their website. They represent marine issues in front of the state legislature, participate on governmental boards and committees related to boating and fishing, they also provide information and host boat shows in the area. The OC Reef Foundation is working to provide artificial reefs around Ocean City for the area's recreational fishermen (Oles 2003). A Coast Guard Auxiliary is located in Ocean City and holds safety classes as well as its normal duties.

### **Physical**

Ocean City is located about 30 minutes from the Salisbury-Wicomico County Regional Airport and has locally the Ocean City Municipal Airport for private flights (Worcester County 2008; OCCVB nd). It is accessible from Routes 50 and 90 from the west, and Delaware Route 1 from the north. Ocean City is located about 4.5 hours from New York City, about 3 hours from Washington D.C. and about 3 hours from Philadelphia, PA. A large park and ride facility has been established outside of Ocean City which allows visitors to park here and catch a bus into town (Oles 2003; OCCVB nd).

The commercial fishing industry in Ocean City is actually located in West Ocean City, an unincorporated segment of Worcester County just across the bay from Ocean City. The harbor here has a commercially-owned dock, a recreational fishing marina, and three commercial packing houses. Some private dock owners also lease space to the commercial vessels (Oles 2003). The [Sunset Marina](#) has a sheltered 18 acre deep water basin that can accommodate vessels up to 100 feet in length. There are 20 charter boats located here, as well as a bait and tackle shop and marine supplies shop. The [Ocean City Fishing Center](#), also located in West

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<sup>11</sup> Community Review Comments, Kelly Clements Barnes, Administrative Assistant, Maryland Watermen's Association, 1805A Virginia Street, Annapolis, MD 21401, September 13, 2007

<sup>12</sup> Community Review comments, Dave Blazer, Executive Director, Maryland Coastal Bays, 9199 Stephen Decatur Highway, Suite 4, Ocean City, MD 21842, October 12, 2007

Ocean City, has 170 slips, free parking and security. It is home to the largest charter fleet in the town, comprising 30 boats. It also has a bait shop, restaurant and repair service.

There are nine recreational marinas located in Ocean City and West Ocean City; 75% of the charter boats are found in three marinas, along with two of the largest ocean-going party boats. There are also a number of places along the shore frequented by anglers, including three pay piers (the Ocean Pier and the Oceanic Pier), the Route 50 Bridge, a number of public piers and bulkheads, and a public crabbing and fishing area on Isle of Wight. There are four public boat launches found in West Ocean City harbor. The Ocean City area also has a number of fish cleaning businesses (Oles 2003). The government of Ocean City owns the Bayside Boardwalk/9th St Fishing Pier and the Bering Road Boat Ramp (WCPC 2006).

## **INVOLVEMENT IN NORTHEAST FISHERIES<sup>13</sup>**

### **Commercial**

The commercial fishing industry in Ocean City is actually located in West Ocean City (McCay and Cieri 2000:89). However, the landings are declared for Ocean City and most vessels are listed as having their home port in Ocean City. The most valuable species in Ocean City in 2006 was scallops, followed by the surf clam and ocean quahogs. Overall, the landings values for 2006 were higher than the 10-year average values for the surf clam and ocean quahog category, and for scallops but were lower for the “other” category (see Table 1).

The number of vessels listing Ocean City as their home port was highly variable from 1997 to 2006, ranging from a low of 17 in 1999 to a high of 47 in 2006. There were more boats listing Ocean City as their home port than there were vessels with owners residing in Ocean City, indicating that many people from outside Ocean City dock their boats there. Overall, the value of landings to home ported vessels showed a consistent increase for the years provided as did the level of fishing landed port (see Table 2). The level of home port fishing for Ocean City vessels was less in most years than the level of landings for Ocean City, pointing to the fact that many people from outside Ocean City are dropping off their catches in the town.

Ocean City is a popular place for fishermen in the area to unload their catches because it is the only major ocean port between Cape May, NJ and Hampton Roads, VA. Even the people who are considered to be locals do not live in Ocean City itself but live about 30 minutes away on the land side of the harbor (McCay and Cieri 2000). Some of the fishermen who land their catch here are from Delaware, as there are no packing facilities in Delaware (Oles 2003).

In 2003 West Ocean City was home to five surf clam and ocean quahog boats, at least seven draggers, and at least fifteen small boats that engaged in potting, gillnetting, dredging, and/or handlining. Conching is a common practice among the smaller vessels. Twenty years

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<sup>13</sup> In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

ago, there were 30 surf clam and ocean quahog boats docked here, but consolidation resulting from the use of ITQs drastically reduced this number. Most of these are small, owner-operated vessels with the exception of four surf clam and ocean quahog boats owned by J.H. Miles Co., a clam harvesting and processing operation based in Norfolk, VA. There are three fish and shellfish packing facilities here, one of which is a satellite operation of J.H. Miles. Two of these fish houses opened recently, however one of these was a “re-opening” of an older fish house.<sup>14</sup> Another fish house has existed there since 1957. The older packing house mostly buys from local boats, and has two draggers that land here. Some of the seafood here is sold at their retail market or to local restaurants, but most is sold to buyers in Hampton, VA, Philadelphia, or New York City (Oles 2003).

### Landings by Species

Table 1. Dollar value of Federally Managed Groups of landings in Ocean City

	<b>Rank Value of Average Landings from 1997-2006</b>
<b>Other<sup>15</sup></b>	1
<b>Surf Clams, Ocean Quahog</b>	2
<b>Scallop</b>	3
<b>Summer Flounder, Scup, Black Sea Bass</b>	4
<b>Monkfish</b>	5
<b>Dogfish</b>	6
<b>Lobster</b>	7
<b>Squid, Mackerel, Butterfish</b>	8
<b>Bluefish</b>	9
<b>Skate</b>	10
<b>Smallmesh Groundfish<sup>16</sup></b>	11
<b>Largemesh Groundfish<sup>17</sup></b>	12
<b>Tilefish</b>	13
<b>Herring</b>	14
<b>Red Crab</b>	15

*(Note: Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.)*

<sup>14</sup> Community Review comments, Dave Blazer, Executive Director, Maryland Coastal Bays, 9199 Stephen Decatur Highway, Suite 4, Ocean City, MD 21842, October 12, 2007

<sup>15</sup> “Other” species includes any species not accounted for in a federally managed group

<sup>16</sup> Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

<sup>17</sup> Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

## Vessels by Year<sup>18</sup>

Table 1. Federal Vessel Permits Between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)
1997	28	18
1998	19	16
1999	17	14
2000	20	10
2001	25	9
2002	23	7
2003	27	9
2004	27	8
2005	40	12
2006	47	15

(Note: # Vessels home ported = No. of permitted vessels with location as homeport, # Vessels (owner's city) = No. of permitted vessels with location as owner residence<sup>19</sup>)

### Recreational

Ocean City is famous for its recreational fishing and hosts many fishing tournaments every year. The most popular species to fish are bigeye and yellowfin tuna, mako and dolphin, white marlin, blue marlin and sailfish (OCCVB nd). Ocean City is known as the “White Marlin Capital of the World” (McCay and Cieri 2000). There are also many sportfishing associations such as the [Ocean City Marlin Club](#) and the [Maryland Saltwater Sport Fishing Association](#). Ocean City has at least five large ocean-going party boats and around six party boats that fish in the bay. There are an estimated 100 charter boats in Ocean City’s six major marinas. Tuna fishing is especially popular here; marlin tends to be a more elite fishery targeted by more expensive and exclusive charter boats. Ocean City is also popular with recreational anglers who fish from their own boats, from rental boats, or from shore; many of these are targeting summer flounder. There are numerous jetties, pay piers, and bridges from which anglers may fish, in addition to surf fishing from the beach. Crabbing and clamming are also important recreational activities. According to NMFS VTR data, between the years 2001-2005 there were a total of 31 charter and party boats which logged trips in Ocean City, carrying a total of 83,505 anglers on 3,137 different trips.

### Subsistence

Fishing for something to take home for dinner is less common in Ocean City now than it once was, and catch-and-release fishing is increasingly popular (Oles 2003).

### FUTURE

The Ocean City Development Corporation, appointed by the Mayor and Council, has many plans for the Downtown area of Ocean City. Current plans include more parking and mass transportation such as busses to help bring people to the downtown area. They are also planning

<sup>18</sup> Numbers of vessels by owner’s city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

<sup>19</sup> The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.



on building a new wraparound boardwalk. A bayfront public park was completed in 2006.<sup>20</sup> New zoning will help to bring in more businesses and improvement of the roadways and signs will make getting around much easier (OCPB 2007).

Some people who live in the Ocean City area have been worried about being priced out because the area is a resort destination, though recent drops in real estate prices may at least temporarily mitigate that (Latshaw 2007, 2008; Shane 2008).

Fishermen in the area are also concerned about rezoning in the harbor. One major concern is that the docks will become non-conforming meaning that replacement or fixing of the structures will be impeded. The fishermen are interpreting this rezoning to mean that people in the area are trying to force out the fishermen; much of the rezoning has been because of new condominiums being built in the area (McCay and Cieri 2000). Despite protective zoning measures, gentrification of the waterfront is a concern. Commercial fishing here does, however, serve as a tourist attraction and is important to the community in that respect (Oles 2003; OCPB 2007).

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<sup>20</sup> Community Review Comment, Donna Abbott, Public relations, Ocean City Department of Tourism, 4001 Coastal Highway, Ocean City, MD 21842, October 22, 2007



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