2000

Massachusetts Lobster Fishery Statistics

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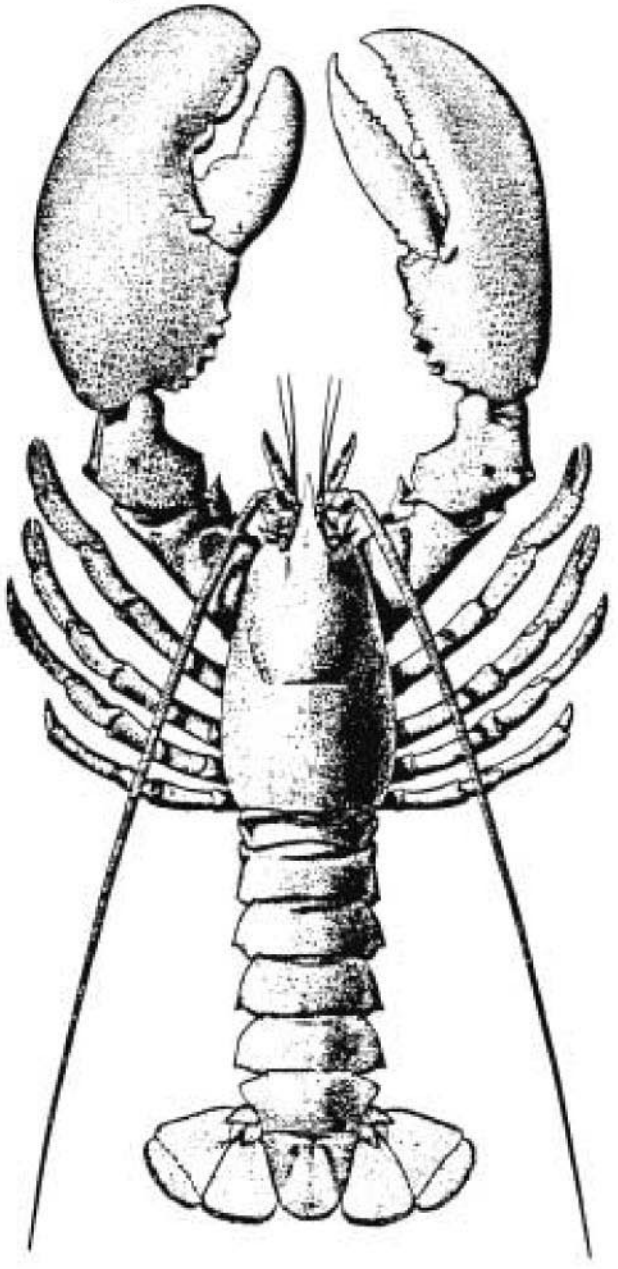

MASSACHUSETTS
DIVISION OF MARINE FISHERIES

2000
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LOBSTER FISHERY
STATISTICS

by

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Executive Office of Environmental Affairs
Bob Durand, Secretary
Department of Fisheries, Wildlife and Environmental Law Enforcement
David M. Peters, Commissioner
Division of Marine Fisheries
Paul J. Diodati, Director

INTRODUCTION

The commercial lobster fishery of Massachusetts is the most economically important fishery conducted within the territorial waters of the Commonwealth. The overall importance of the fishery both in New England and the Mid-Atlantic states, has focused the attention of federal, regional and state fishery managers on this species. In the early 1970's, in an attempt to standardize management of the fishery, the federal and state governments developed an overall lobster fishery management plan under the auspices of the State-Federal Fisheries Management Program. However, with the passage of the Magnuson Fishery Conservation and Management Act in 1976, the New England Fisheries Management Council, in cooperation with the Mid-Atlantic Council, developed and implemented a management plan for the entire Atlantic Coast lobster fishery. The basis and success of any such plan is an accurate statistical database. The Commonwealth of Massachusetts, with funding from the National Marine Fisheries Service, has been collecting annual reports from licensed lobster fishermen since the early 1960's. In the past these data were used primarily for descriptive and informational purposes, and occasionally for management. With the emphasis on Federal management, however, these data have provided the respective management agencies with the information they need to protect the interests of Massachusetts' lobstermen and ensure a productive fishery in the Commonwealth.

During the period 1975 - 1980, the number of coastal commercial lobster permits was limited by law to 1300, with an additional ten percent issued to proven hardship cases each year. In 1981, a statutory change mandated the establishment of a permanent waiting list from which 100 new permits were issued. Thirty special additional permits were also awarded to full-time commercial fishermen who met certain criteria. From 1982 to 1987, 80 list permits and 20 special additional permits were issued each year. In 1988, the issuance of new coastal permits was suspended. From 1988 to 1993, license transfers were allowed only within the immediate family, and if a license was allowed to expire, it was retired. In early 1993, a new regulation was promulgated by the DMF establishing broader eligibility criteria and new procedures for the transfer of Coastal Commercial Lobster Permits. As a result of these measures, the number of permits has declined from an all time high of 1,865 in 1988 to a more manageable 1,549 licenses today. The new system has also allowed for more orderly turnover in the industry. The new transfer procedures provide for transfer to employees (captains, deck hands, etc.) and persons on an established waiting list in addition to transfers within the immediate family. Only those licenses that have been actively fished for four out of the past five years according to catch reports filed with the Division may be transferred. The person to whom the permit is transferred must prove that he/she has at least one year of experience in the commercial lobster pot fishery or two years of experience in commercial fishing. All transferees must be owner/operators of the new business. Transfer activity for calendar year 2000 is described on Page 2.

This report is the thirty-fourth annual publication of data compiled from the catch reports of licensed lobster fishermen. Data were presented in a standardized format through 1979. In 1980, the presentation was enhanced as a result of improved collection and analysis methods. This publication represents the fourteenth year in which the data processing and analysis have been completely automated. Areal data presented in this report conform to the National Marine Fisheries Service statistical reporting areas. This report does not, however, cover the scope of the Project's existing database and computational capability. Requests for expanded information, or questions concerning this publication, should be directed to the Division's Statistics Project in Gloucester, MA: (978) 282-0308.

This report has been prepared by personnel of the Division of Marine Fisheries Information Systems and Fisheries Statistics Project, funded jointly by the Commonwealth and the National Marine Fisheries Service under the Interjurisdictional Fisheries Act (Public Law 11-407). The preparation of this report would not have been possible without the cooperation of licensed lobstermen who provided the information on their

annual reports. Special thanks go to Ann Spires who continues, year after year, to interpret and keypunch, with special care and accuracy, the type of reports that fishermen are likely to fill out. The authors also wish to acknowledge the assistance of Kerry Swallow and Kevin Creighton from our permitting office.

SOURCE OF DATA

"*No person may fish for or take lobster in coastal waters or land lobster in the Commonwealth without a permit issued by the Director of the Division of Marine Fisheries*." (Chapter 130, Mass. G.L., Section 38). Chapter 130, Mass. G.L., Section 33, requires any person so licensed to file an annual report of their catch by January 31 for the preceding calendar year. In 1980, a dual reporting system was established. Commercial lobstermen (coastal, offshore and seasonal(student)) received a detailed catch report form with their license renewal application. This report requests the following information: method of fishing; number and type of gear used; effort data (set-over days, number of trips per month, etc.); pounds of lobster caught; areas fished; principal ports of landing; and information relative to the vessels and traps used in the fishery. Recreational fishermen are asked to report on their license renewal application form the number of lobsters taken during the previous year, hours dived and the maximum number of traps fished. Project personnel sort, edit, tabulate and interpret data from all reports received. Data presented in this publication are based on catch reports actually received as of January 2002 and are not expanded to represent all of the permits issued in 2000.

COASTAL LOBSTER LICENSE TRANSFER

During 1993, the Division promulgated regulations to broaden the criteria for the transfer of a coastal lobster license from one individual to another. The intent of the new legislation was to create more options for lobstermen who wish to retire and leave this limited entry fishery. During calendar year 2000, the Division authorized the transfer of 52 coastal lobster licenses. Twenty of the transfers went to 'captains' who were previously authorized to fish another holder's license and who had fished that holder's license for at least twelve months prior to transfer. Thirteen transfers were allowed within the holder's immediate family (and would also have been allowed prior to the new regulation). Thirteen transfers were made directly from the holder to a sternman with a documented fishing history. Six lobstermen advertised their coastal lobster businesses to persons on a waiting list maintained by the Division and subsequently transferred their permits. Sixteen licenses were forfeited to the Division in 2000; eight of these coastal lobster permits were issued directly to waiting list applicants, and the remaining eight licenses were permanently retired.

EXPLANATION OF TABLES

All data presented in this publication are broken down into two basic categories: the first is **"territorial"** which represents data pertaining to all lobstering activity taking place within the territorial waters (3 mile line) of the Commonwealth (Areas 1-14 on Figure 1A); the second is **"non-territorial"** which represents all data beyond those waters (Areas 15-25 on Figure 1A). In 1990, the statistical reporting map was revised to reflect the territorial / non-territorial breakdown and to conform to the National Marine Fisheries Service's statistical reporting areas. Figure 1A shows the statistical reporting areas used by the Division to collect most commercial fisheries data in the Commonwealth. Figure 1B indicates the Lobster Management Areas (LMAs) designated by the Atlantic State Marine Fisheries Commission.

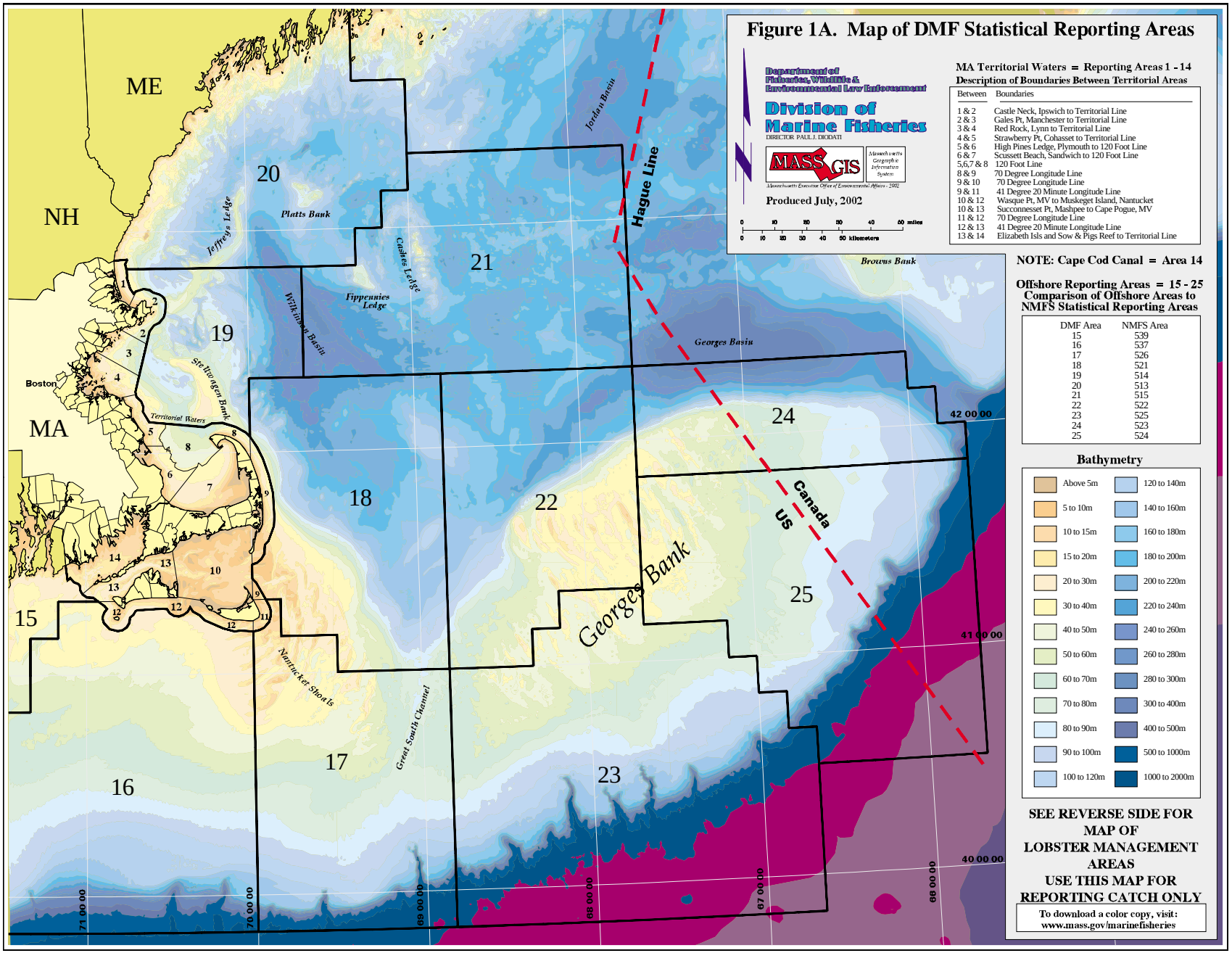
Figure 1A. Map of DMF Statistical Reporting Areas
Department of Fisheries, Wildlife & Environmental Law Enforcement
Division of Marine Fisheries
DIRECTOR PAUL J. DIODATI
MASS GIS
Massachusetts Geographic Information System
Massachusetts Executive Office of Environmental Affairs - 2002
Produced July, 2002
0 10 20 30 40 50 miles
0 10 20 30 40 50 kilometers
MA Territorial Waters = Reporting Areas 1 - 14
Description of Boundaries Between Territorial Areas
Between Boundaries
1 & 2 Castle Neck, Ipswich to Territorial Line
2 & 3 Gales Pt, Manchester to Territorial Line
3 & 4 Red Rock, Lynn to Territorial Line
4 & 5 Strawberry Pt, Cohasset to Territorial Line
5 & 6 High Pines Ledge, Plymouth to 120 Foot Line
6 & 7 Scussett Beach, Sandwich to 120 Foot Line
5,6,7 & 8 120 Foot Line
8 & 9 70 Degree Longitude Line
9 & 10 70 Degree Longitude Line
9 & 11 41 Degree 20 Minute Longitude Line
10 & 12 Wasque Pt, MV to Muskeget Island, Nantucket
10 & 13 Succonnesset Pt, Mashpee to Cape Pogue, MV
11 & 12 70 Degree Longitude Line
12 & 13 41 Degree 20 Minute Longitude Line
13 & 14 Elizabeth Isls and Sow & Pigs Reef to Territorial Line
NOTE: Cape Cod Canal = Area 14
Offshore Reporting Areas = 15 - 25
Comparison of Offshore Areas to NMFS Statistical Reporting Areas
DMF Area NMFS Area
15 539
16 537
17 526
18 521
19 514
20 513
21 515
22 522
23 525
24 523
25 524
Bathymetry
Above 5m
5 to 10m
10 to 15m
15 to 20m
20 to 30m
30 to 40m
40 to 50m
50 to 60m
60 to 70m
70 to 80m
80 to 90m
90 to 100m
100 to 120m
120 to 140m
140 to 160m
160 to 180m
180 to 200m
200 to 220m
220 to 240m
240 to 260m
260 to 280m
280 to 300m
300 to 400m
400 to 500m
500 to 1000m
1000 to 2000m
SEE REVERSE SIDE FOR MAP OF LOBSTER MANAGEMENT AREAS
USE THIS MAP FOR REPORTING CATCH ONLY
To download a color copy, visit: www.mass.gov/marinefisheries
ME
NH
MA
Boston
Territorial Waters
Jeffreys Ledge
Platts Bank
Jordan Basin
Hague Line
Cashes Ledge
Fippennies Ledge
Wilkinson Basin
Stellwagen Bank
Browns Bank
Georges Basin
Georges Bank
Canada
US
Nantucket Shoals
Great South Channel
42 00 00
41 00 00
40 00 00
71 00 00
70 00 00
69 00 00
68 00 00
67 00 00
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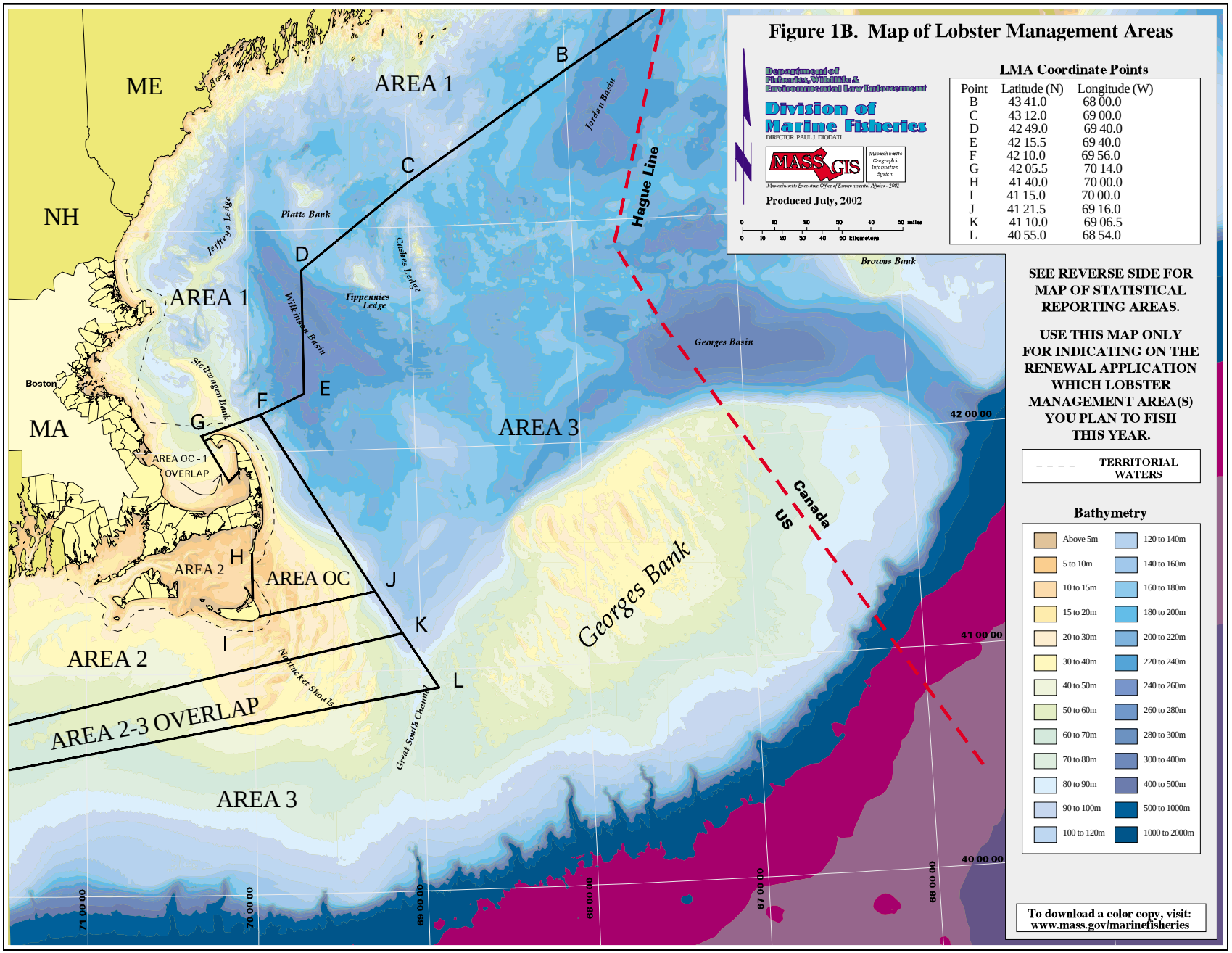


Figure 1B. Map of Lobster Management Areas

LMA Coordinate Points

Point	Latitude (N)	Longitude (W)
B	43 41.0	68 00.0
C	43 12.0	69 00.0
D	42 49.0	69 40.0
E	42 15.5	69 40.0
F	42 10.0	69 56.0
G	42 05.5	70 14.0
H	41 40.0	70 00.0
I	41 15.0	70 00.0
J	41 21.5	69 16.0
K	41 10.0	69 06.5
L	40 55.0	68 54.0

Amendment 3 to the Interstate Fishery Management Plan for American Lobster was approved in December of 1997. This established a framework for area management which includes industry participation through seven lobster Conservation Management Teams, each with it's own lobster management area. A map representing the northern-most areas, is depicted in Figure 11. Since 1998 some Massachusetts lobstermen have been using the LMA map, instead of the statistical reporting map, to report their area(s) fished on their catch report. Considerable effort has been made to filter out and correct these reporting errors, but we feel it is virtually impossible to catch all of them. As a result it is apparent that the areal distributions of catch have changed over the last three years, particularly in areas 1, 2, and 3, and this should be taken into account when comparing data to past years.

Here is a brief definition of each lobster license type:

Coastal Commercial: Allows the holder to harvest lobster anywhere, most importantly inside territorial waters.

Offshore Commercial: Allows the holder to harvest lobster outside territorial waters only.

Seasonal Commercial: Allows the holder, if he or she is a student, to harvest lobster anywhere, but with a maximum of 25 traps and only during the months of June - September.

Non-commercial: Allows the holder to harvest lobster anywhere using SCUBA gear, a maximum of 10 traps, or a combination of both. The catch may not be sold.

Regulations promulgated by the New England Fishery Management Council in cooperation with the major lobster harvesting states of the Atlantic Coast, declared 1990 the "off-year" of a 5-year program to increase the minimum legal size from 3 3/16 in 1987 to 3 5/16 inches by January of 1992 through four 1/32 inch increases. The program was suspended at the end of 1990 and the planned increases in 1991 and 1992 were delayed pending a study of the economic impact of the program. The gauge increase program has not resumed and has been superseded by amendment 3 to the lobster Fishery Management.

Tables presenting number of fishermen, number of pots fished, number and value of boats used in the fishery and total landings statewide, by county and license type, and for each city and town were prepared using the catch reports submitted by commercial fishermen. In keeping with Division policy, some of the data are masked or combined to protect the confidentiality of the individual submitting the report. Data referring to the number of fishermen, number and value of gear, and number and value of boats are presented by the home port of the licensee filing the report. Pounds of lobster harvested are presented by the port of landing reported by the fishermen.

Vessel and SCUBA gear values were calculated on the basis of the fishermen's estimate of its present value and the percentage of the time it is in use specifically for lobstering. Average values were used when the information was omitted from an individual report. When fishermen reported the number of lobsters taken, rather than poundage, a conversion factor of 1.27 pounds per lobster was used to calculate poundage figures. This figure is based on information collected by the Division's Coastal Lobster Investigations Project. For information on biological (average carapace length, sex ratios, percent of egg-bearing lobster in catch etc.) and other parameters (mortality, exploitation and catch per unit of effort rates) contact this Project in Pocasset, MA at (508) 563-1779.

Where tables refer to county, the reader is referred to Figure 10.

ISSUED LICENSES AND REPORTING STATUS

Table 1 lists the number of commercial and recreational licenses issued in 2000, the dollar value of fees collected and the number that reported catching lobster. There were 2,167 commercial lobster licenses issued during 2000: 1,541 coastal, 534 offshore and 92 seasonal. Non-commercial licenses issued totaled 11,805; breakdown of their reporting status and landings can be found in Table 6.

As of January, 2002 a total of 104 licensed commercial lobstermen (4.8 percent) failed to file a catch report with the Division. Of the 2,063 commercial fishermen who reported, 545 or 26.4 percent claimed they did not catch any lobster during 2000. The number of coastal licenses issued continues to decline since a 1988 moratorium on the issuance of new licenses. An annual decrease of approximately 1.3 percent per year continued in 2000 driven by fishermen leaving the fishery and the Division's policy to retire half of these licenses through attrition.

The number of offshore licenses issued increased slightly in 2000. Student commercial licenses increased by approximately 3 percent over last year.

Table 1. 2000 Massachusetts Lobster Fishery; Reporting Status of Licenses Issued

License Type (Fee)	Licenses Issued	Licensing Revenue	Reported "Catching Lobster"		Reported "No Lobster Catch"		Not Reporting	
Coastal Commercial ($260)	1,541	$400,660	1,123	73%	396	26%	22	1%
Offshore Commercial ($260)	534	$138,840	344	64%	132	25%	58	11%
Seasonal (Student) Commercial ($65)	92	$5,980	51	55%	17	18%	24	26%
Non-Commercial ($40)	11,805	$472,200	6,564	56%	2,590	22%	2,651	22%
Total	13,972	$1,017,680	8,802	63%	3,315	24%	2,755	20%

Table 2. Massachusetts Commercial Lobster Fishery; Selected Licensing Information, 1995-1999

	1996	1997	1998	1999	**2000**	Percent Five Year Change
Coastal Licenses						
Issued	1,609	1,598	1,591	1,570	**1,541**	*-4.23%*
% Change		-0.68	-0.44	-1.32	***-1.85***	
"Caught Lobster"	1190	1179	1162	1161	**1,123**	
% Change		-0.24	-1.01	1.25	***-1.45***	
"Did Not Catch Lobster"	403	404	407	385	**396**	
% Change		0.94	1.19	-4.14	***4.79***	
Not Reporting	16	15	22	24	**22**	
% Change		-5.60	47.31	10.55	***-6.61***	
Percent Not Reporting		0.94%	1.38%	1.53%	**1.4%**	
Offshore Licenses						
Issued	596	551	554	529	**534**	*-10.40%*
% Change		-7.55	0.54	-4.51	***0.95***	
"Caught Lobster"	439	400	354	350	**344**	
% Change		-1.44	-11.98	3.54	***-2.63***	
"Did Not Catch Lobster"	117	114	117	115	**132**	
% Change		5.39	2.08	2.94	***13.71***	
Not Reporting	49	37	83	64	**58**	
% Change		-18.32	123.11	-19.25	***-10.22***	
Percent Not Reporting		6.72%	14.98%	12.10%	**10.86%**	
Seasonal (Student) Licenses						
Issued	82	65	78	82	**92**	*12.20%*
% Change		-20.73	20.00	5.13	***12.20***	
"Caught Lobster"	42	40	39	41	**51**	
% Change		20.15	-18.75	0.00	***10.87***	
"Did Not Catch Lobster"	12	7	6	7	**17**	
% Change		-26.41	-28.57	10.98	***116.46***	
Not Reporting	28	18	33	34	**24**	
% Change		-18.90	52.78	-2.00	***-37.08***	
Percent Not Reporting		27.69%	42.31%	41.46%	**26.09%**	

Note: All annual percentage changes are normalized to the number of licenses issued for each license type in each year.

LANDINGS AND VALUE

In 2000, 15,022,011 pounds of lobster were reported landed by commercial lobstermen in Massachusetts, a 5.56 percent decrease from 1999. Based on an average price of $3.65 per pound, the commercial catch was valued at $54,830,340, a 7.83 percent decrease from 1999. Figure 2. shows the weighted ex-vessel price for 2000 as derived from audits of lobstermen's records. The weighted average price of $3.65 decreased 2.40 percent over the average ex-vessel price paid in 1999 (Figure 2). (Weighted price means that each price is weighted by the number of pounds that were paid at that price instead of taking a flat average of all prices).

Of the 15,022,011 pounds of lobster landed commercially, 9,855,003 were reported taken within the territorial waters of the Commonwealth. In total pounds of lobster landed, Essex County continues to be ranked first, Plymouth County second and Barnstable County third. See Table 3 for a breakdown of pounds landed and number of fishermen by license type and county and Table 4 for a five-year comparison of selected landings and effort statistics.

Gloucester was the number one port in total pounds landed followed by Marshfield, Plymouth, and Fairhaven in that order. In total numbers of active commercial fishermen, Essex County ranked first with 535, Plymouth County second with 321 and Bristol County third with 248. Among the cities and towns of the Commonwealth, Gloucester ranked first in active fishermen followed by New Bedford, Plymouth and Marshfield in that order. See Tables 3 and 5, (the shaded areas in Table 5 refer to the top 10 cities in at least one of the two categories: pounds landed and number of fishermen).

Figure 2. 2000 Massachusetts Commercial Lobster Fishery
Weighted Ex-Vessel Price Derived from Audited Lobstermen's Records

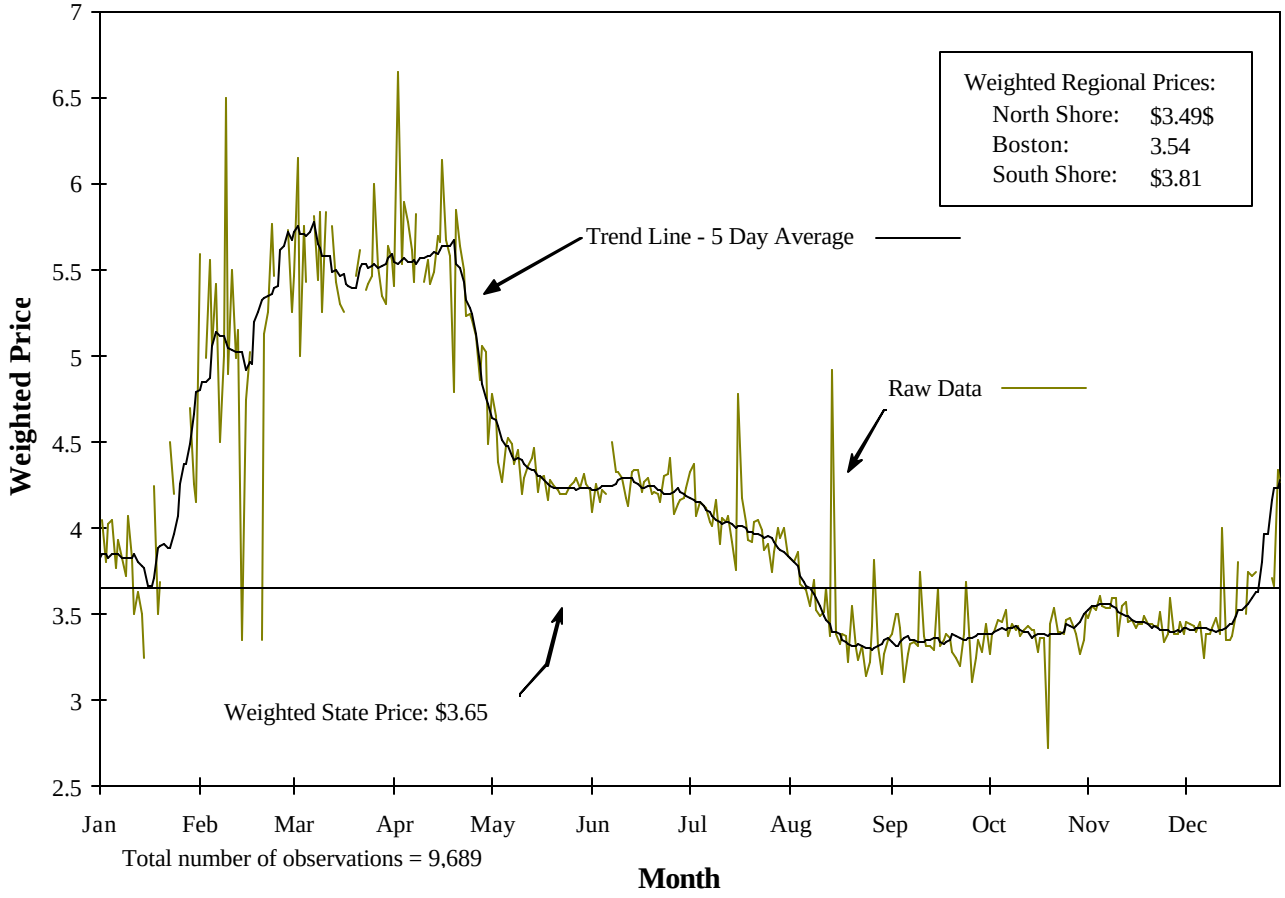


Table 3. 2000 Massachusetts Commercial Lobster Fishery; Number of Fishermen, Harvest (lbs.) and Value of Harvest

AREA:	TERRITORIAL (Areas 1 - 14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		---- COASTAL -----		---- OFFSHORE ----			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	Potman	TOTAL* INSHORE	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL* OFFSHORE	GRAND* TOTAL
-- COUNTY --												
BARNSTABLE	4	139	11		6	**160**	10		7	32	**49**	**209**
Fishermen	8,863	1,119,440	74,480		863	**1,203,645**	238,448		498,835	42,421	**779,704**	**1,983,349**
Pounds	32,350	4,085,955	271,851		3,150	**4,393,306**	870,334		1,820,748	154,837	**2,845,919**	**7,239,225**
Value ($)												
BRISTOL		66				**67+**	20		17	143	**181+**	**248**
Fishermen		312,408				**312,448**	445,938		753,818	445,684	**1,645,921**	**1,958,369**
Pounds		1,140,289				**1,140,435**	1,627,674		2,751,436	1,626,747	**6,007,613**	**7,148,048**
Value ($)												
DUKES		24			3	**27**	4		5		**11+**	**38**
Fishermen		83,178			350	**83,709**	51,294		62,747		**117,681**	**201,390**
Pounds		303,600			1,278	**305,538**	187,223		229,027		**429,536**	**735,074**
Value ($)												
ESSEX		395	11	4	26	**436**	36		9	68	**113**	**549**
Fishermen		4,311,668	36,558	1,042	6,777	**4,356,045**	1,330,512		320,062	124,412	**1,774,986**	**6,131,031**
Pounds		15,737,588	133,437	3,803	24,736	**15,899,565**	4,856,370		1,168,226	454,103	**6,478,699**	**22,378,264**
Value ($)												
NANTUCKET		3				**4+**					**2+**	**6**
Fishermen		2,792				**2,863**					**48,445**	**51,308**
Pounds		10,190				**10,449**					**176,824**	**187,273**
Value ($)												
NORFOLK		48				**49+**					**1+**	**50**
Fishermen		442,113				**442,188**					**28,715**	**470,903**
Pounds		1,613,712				**1,613,986**					**104,808**	**1,718,794**
Value ($)												
PLYMOUTH		252	8	5	15	**281+**	15	4	3	8	**30**	**311**
Fishermen		2,787,847	30,102	10,044	4,107	**2,832,426**	634,041	15,582	2,680	11,306	**663,609**	**3,496,035**
Pounds		10,175,640	109,873	36,661	14,991	**10,338,354**	2,314,251	56,874	9,782	41,266	**2,422,174**	**12,760,528**
Value ($)												
SUFFOLK		53				**55+**				16	**19+**	**74**
Fishermen		613,689				**614,148**				46,909	**71,970**	**686,119**
Pounds		2,239,966				**2,241,641**				171,218	**262,692**	**2,504,333**
Value ($)												
STATE TOTAL *	**6**	**980**	**33**	**9**	**51**	**1,079**	**88**	**6**	**43**	**269**	**406**	**1,485**
Fishermen	**9,229**	**9,673,134**	**141,851**	**11,086**	**12,172**	**9,847,472**	**2,798,296**	**16,075**	**1,638,142**	**678,519**	**5,131,032**	**14,978,504**
Pounds	**33,686**	**35,306,940**	**517,756**	**40,464**	**44,428**	**35,943,273**	**10,213,780**	**58,674**	**5,979,218**	**2,476,594**	**18,728,266**	**54,671,539**
Value ($)												
OUT OF STATE						**2+**				30	**31+**	**33**
Fishermen						**7,531**				2,999	**35,976**	**43,507**
Pounds						**27,487**				10,947	**131,314**	**158,801**
Value ($)												

* +Row and column totals may not equal the sum of the rows or columns due to masking of the data. Value is based on an ex-vessel price of $3.65, see Figure 2.

Table 4. Massachusetts Commercial Lobster Fishery: Selected Landings (lbs.) and Effort Statistics, 1996-2000

	1996	1997	1998	1999	**2000**	Percent Five Year Change
Total Landings	15,361,045	15,092,015	13,236,091	15,905,731	**15,022,011**	-2.21
Percent Change	-3.69	-1.75	-12.30	20.17	-5.56	
Total Traps Fished	495,651	489,907	505,048	501,097	**473,312**	-4.51
Percent Change	2.79	-1.16	3.09	-0.78	-5.54	
Total Value	$50,077,007	$49,199,969	$47,914,649	$59,487,434	**$54,830,340**	9.49
Percent Change	-1.88	-1.75	-2.61	24.15	-7.83	
INSHORE (TERRITORIAL - Inside 3 Miles)						
Landings	9,109,902	8,434,199	7,660,274	9,603,589	**9,855,003**	8.18
Percent Change	-9.27	-7.42	-9.18	25.37	2.62	
Value	$29,698,281	$27,495,489	$27,730,192	$35,917,423	**$35,970,761**	21.12
Percent Change	-7.57	-7.42	0.85	29.52	0.15	
Trap Landings	9,076,886	8,419,590	7,641,958	9,589,277	**9,834,688**	8.35
	-9.48	-7.24	-9.24	25.48	2.56	
Traps Fished	366,946	351,639	368,451	367,523	**365,846**	-0.30
	2.48	-4.17	4.78	-0.25	-0.46	
Non-Trap Landings	33,016	14,609	18,316	14,189	**20,315**	-38.47
(Gillnet, Diver)	150.92	-55.75	25.37	-22.53	43.17	
OFFSHORE (NON-TERRITORIAL - Outside 3 Miles)						
Landings	6,251,143	6,657,816	5,575,816	6,302,142	**5,167,008**	-17.34
Percent Change	5.80	6.51	-16.25	13.03	-18.01	
Value	$20,378,726	$21,704,480	$20,184,454	$23,570,011	**$18,859,579**	-7.45
Percent Change	7.78	6.51	-7.00	16.77	-19.98	
Trap Landings	5,331,921	6,038,239	4,925,368	5,602,287	**4,469,415**	-16.18
	6.75	13.25	-18.43	13.74	-20.22	
Traps Fished	128,704	138,267	136,596	133,574	**107,466**	-16.50
	3.70	7.43	-1.21	-2.21	-19.55	
Non-Trap Landings	919,222	619,577	650,448	699,978	**697,593**	-24.11
(Gillnet, Trawler)	0.57	-32.60	4.98	7.61	-0.34	
Average Price ($) / Pounc	$3.26	$3.26	$3.62	$3.74	**$3.65**	
Percent Change	1.87	0.00	11.04	3.31	-2.41	
Ave. Lbs. / Trap-Haul	0.7296	0.7721	0.6667	0.8160	**0.7742**	
Percent Change	0.14	5.83	-13.65	22.39	-5.12	
Ave. Lbs. / Trap	29.07	29.51	24.88	30.32	**30.22**	
Percent Change	-6.69	1.52	-15.68	21.83	-0.32	

Table 5. 2000 Massachusetts Commercial Lobster Fishery
Number of Active Commercial Fishermen and Landings by Homeport

Does not include seasonal (Student) Licenses

CITY/TOWN	FISHERMEN NUMBER	FISHERMEN RANK	POUNDS INSHORE	POUNDS OFFSHORE	POUNDS TOTAL	PERCENT	RANK
BARNSTABLE	8	32	47,089	406,867	453,956	3.02%	14
BEVERLY	41	10	571,257	137,954	709,212	4.72%	6
BOSTON	55	6	418,798	62,360	481,157	3.21%	12
BOURNE	6	39	5,159	0	5,159	0.03%	46
CHATHAM	45	9	173,409	120,031	293,440	1.95%	17
CHILMARK	20	21	63,906	110,270	174,176	1.16%	23
COHASSET	35	14	432,041	25,458	457,499	3.05%	13
DANVERS	7	34	32,999	0	32,999	0.22%	40
DARTMOUTH	10	30	3,591	46	3,637	0.02%	34
DENNIS	18	23	101,874	1,321	103,195	0.69%	27
DUXBURY	8	32	58,285	0	58,285	0.39%	30
EDGARTOWN	3	51	2,005	0	2,005	0.01%	52
ESSEX	5	46	2,960	0	2,960	0.02%	49
FAIRHAVEN	38	13	184,932	604,492	789,424	5.26%	4
FALMOUTH-GOSNOLD	11	28	11,901	3,938	15,839	0.11%	28
GLOUCESTER	202	1	1,537,904	1,354,350	2,892,254	19.27%	1
HARWICH	3	51	3,421	16,082	19,503	0.13%	24
HINGHAM	16	25	255,895	35,354	291,250	1.94%	18
HULL	28	16	266,185	93,603	359,788	2.40%	15
IPSWICH	16	25	40,953	0	40,953	0.27%	38
KINGSTON	4	49	29,051	0	29,051	0.19%	41
LYNN	7	34	52,758	17,676	70,434	0.47%	29
MANCHESTER	27	17	296,269	8,202	304,471	2.03%	16
MARBLEHEAD	46	8	467,357	92,884	560,241	3.73%	10
MARION	3	51	11,747	0	11,747	0.08%	43
MARSHFIELD	75	4	1,011,878	195,491	1,207,369	8.04%	2
MATTAPOISET	9	31	4,992	0	4,992	0.03%	47
NAHANT	24	19	194,052	39,701	233,753	1.56%	21
NANTUCKET	6	39	2,863	48,445	51,308	0.34%	31
NEW BEDFORD	160	2	81,684	564,979	646,663	4.31%	8
NEWBURYPORT	17	24	86,335	17,498	103,833	0.69%	26
NEWBURY-ROWLEY	7	34	3,711	0	3,711	0.02%	48
OAK BLUFFS-GAY HEAD	4	49	2,668	0	2,668	0.02%	50
ORLEANS-EASTHAM	19	22	118,795	13,254	132,050	0.88%	24
PLYMOUTH	92	3	867,264	86,127	953,391	6.35%	3
PROVINCETOW	33	15	228,649	28,414	257,063	1.71%	19
QUINCY	7	34	5,735	0	5,735	0.04%	45
REVERE-CHELSEA-MEDFORD	6	39	102,744	9,611	112,354	0.75%	25
ROCKPORT	65	5	606,088	104,254	710,342	4.73%	5
SALEM	5	46	2,410	0	2,410	0.02%	51
SALISBURY	6	39	3,508	977	4,485	0.03%	33
SANDWICH	40	11	458,582	193,734	652,316	4.35%	7
SAUGUS	26	18	253,274	1,489	254,763	1.70%	20
SCITUATE	54	7	314,339	253,034	567,373	3.78%	9
SWAMPSCOTT	23	20	197,434	0	197,434	1.32%	22
TISBURY	6	39	7,461	3,474	10,935	0.07%	29
TRURO	11	28	27,592	0	27,592	0.18%	42
WAREHAM	7	34	8,683	0	8,683	0.06%	44
WELLFLEET	6	39	33,630	0	33,630	0.22%	39
WESTPORT-SWANSEA-FALL RIVER	40	11	42,241	476,404	518,645	3.46%	11
WEYMOUTH-BRAINTREE	6	39	4,337	3,257	7,594	0.05%	30
WINTHROP	13	27	92,607	0	92,607	0.62%	28
YARMOUTH	5	46	0	0	0	0.00%	53
STATEWIDE TOTAL	**1,434**		**9,835,300**	**5,131,032**	**14,966,332**		
OUT OF STATE	33		7,531	35,976	43,507		

Shaded areas denote towns which rank in the top 10 for number of fishermen or total landings or both.

RECREATIONAL LOBSTER FISHERY

Recreational statistics are shown in Table 6. Licenses issued in 2000 totaled 11,805, up slightly from 1999, with 6,564 or 55.6 percent, reporting that they fished for lobster. In general, reporting rates dropped slightly and the percentage of license holders fishing increased. Landings slightly decreased by approximately 2.31 percent from 1999. The number of traps fished in the recreational fishery increased in 2000. The number of hours dived has increased for the first time since 1993. Landings amounted to 327,541 pounds or only 2.18 percent of the commercial landings. It should be noted that those individuals who did not report, were not able to renew their recreational license for 2001. Twenty-three percent of the licenses in the recreational fishery have turned over in the past year; historically, this turn-over rate is not unusual.

Table 6. 2000 Massachusetts Recreational Lobster Fishery; License Status and Harvest Information

License Type:	Diver	Diver/Pot	Potman	Total	Percent
1) Number of Licenses Issued in 2000	3,709	3,477	4,619	**11,805**	
2) Number that Reported	2,853	2,763	3,538	**9,154**	77.54%
a) Total Number That Fished	1,988	1,946	2,630	**6,564**	55.60%
b) Total Number That Did Not Fish	865	817	908	**2,590**	21.94%
3) Number That Did Not Report	856	714	1,081	**2,651**	22.46%
					%Change
4) Number of Lobsters Reported Landed	47,595	77,767	132,544	**257,906**	from 1999
Pounds of Lobsters (Calculated)*	60,446	98,764	168,331	**327,541**	-2.31%
5) Number Pots Fished		6,765	19,706	**26,471**	2.80%
6) Number of Hours Diving	31,069	25,185		**56,254**	4.36%

* Based on 1.27 Pounds per Lobster.

TERRITORIAL FISHERY

Territorial landings by commercial fishermen were concentrated in the months of July through November when 78 percent of the yearly harvest was landed. A typical yearly scenario is for catches to increase sometime in mid to late July and peak in August and September. Water temperatures rise during this time inducing growth and subsequent recruitment of previously sub-legal lobsters into the legal size category. The bulk of 2000 landings were distributed July through November with concentrated landings in August and September. Landings 2000 differed slightly from 1999 where peak levels occurred in August rather in October. See Table 7 and Figure 3.

The greatest harvest of lobster from territorial waters was from the Boston Harbor vicinity (including the outlying areas which comprise Area 4 on Figure 1A), where approximately 21 percent of the state's territorial harvest was caught.

Table 7. 2000 Massachusetts Commercial lobster Fishery Percent Monthly Territorial Harvest by License Type.

Month	Coastal	Seasonal
January	2.26	0.00
February	0.83	0.00
March	1.07	0.00
April	1.78	0.00
May	3.74	0.00
June	5.38	13.88
July	12.09	35.66
August	18.86	35.89
September	16.11	14.57
October	15.40	0.00
November	15.67	0.00
December	6.82	0.00
Total	100.00	100.00

Figure 3. 2000 Massachusetts Commercial Lobster Fishery Total Monthly Territorial Harvest for Coastal and Seasonal License Types

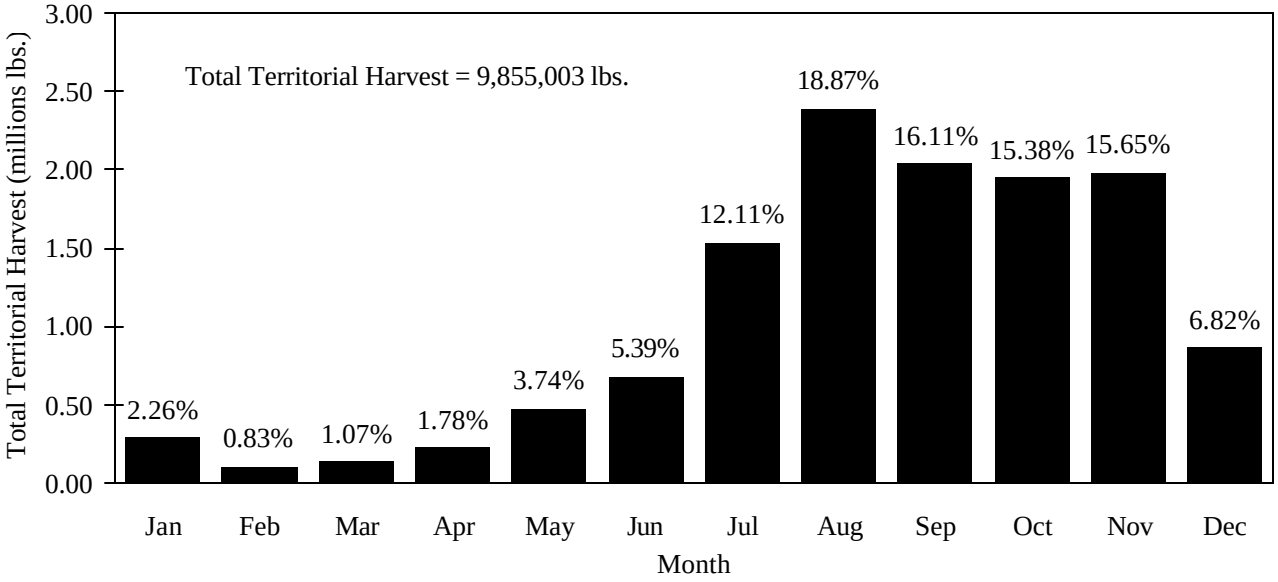


Table 8. 2000 Massachusetts Commercial Lobster Fishery Percent Territorial Harvest by Area License Type

Area Fished	Coastal	Seasonal
1	3.67	10.00
2	20.86	26.05
3	12.63	12.63
4	21.06	13.77
5	10.12	3.92
6	7.17	23.11
7	6.23	5.75
8	10.70	0.00
9	3.00	0.12
10	0.19	0.00
11	0.00	0.00
12	1.79	0.00
13	1.48	1.95
14	1.11	2.71
Total Pounds	9,842,831	12,172

Territorial landings were up 2.62 percent in 2000. See Figure 1A for the map of fishing areas and Figure 4 and Table 8 for a complete breakdown by area for each license type and month.

Offshore license landings are not shown in Figures 3 and 4 because license holders of this type cannot harvest lobsters within territorial waters. Offshore landings are more evenly distributed during the year with offshore potmen landings peaking in autumn and mobile gear landings peaking in the winter months. Figure 5 shows the distribution of all lobster landings by statistical reporting area.

As mentioned previously, distribution of landings in Areas 1, 2, and 3 have been erroneously skewed as a result of lobstermen reporting by lobster management area as opposed to the statistical reporting area.

Figure 4. 2000 Massachusetts Commercial Lobster Fishery Total Territorial Harvest for Coastal and Seasonal License Types by Area Fished

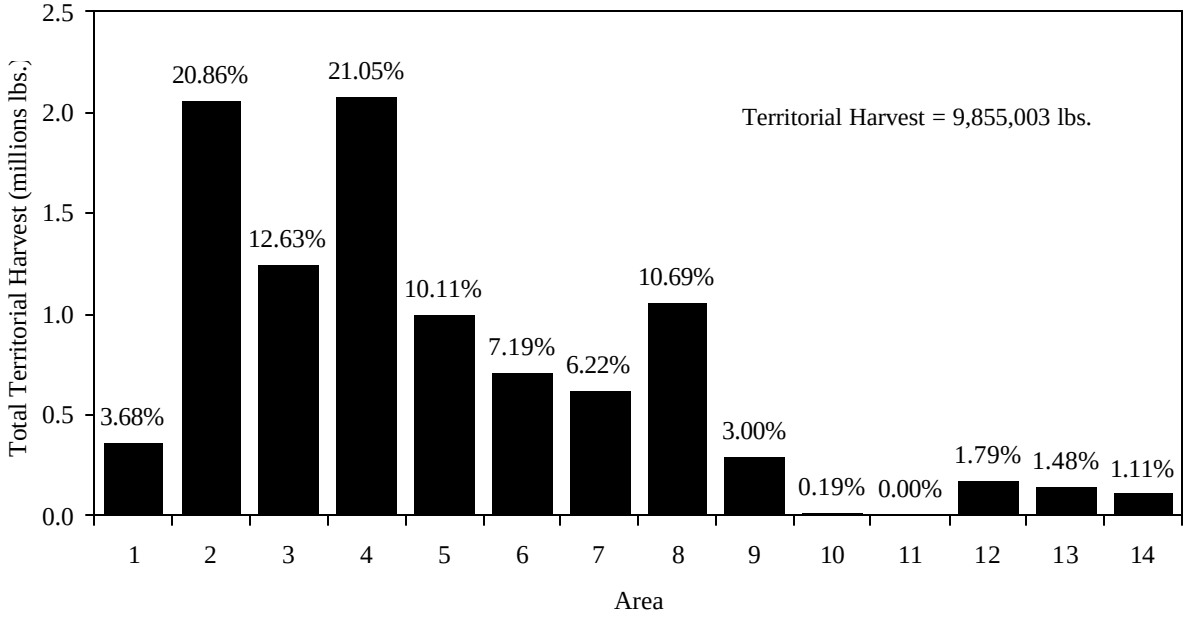
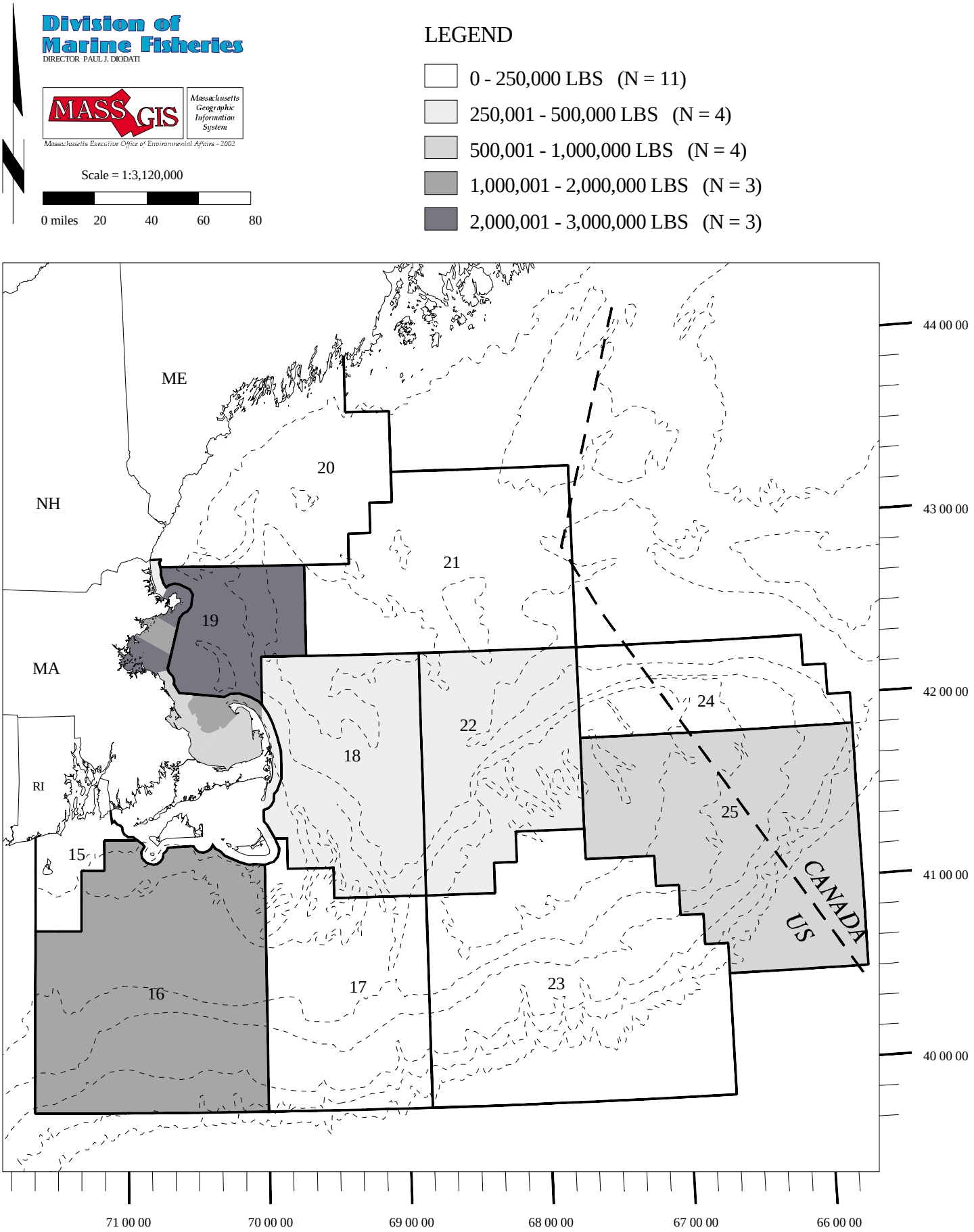


Figure 5. 2000 Massachusetts Lobster Fishery; Landings by Statistical Reporting Area - (See Figure 1A For References to Reporting Areas)



CATCH RATES

The average catch per trap haul for coastal lobstermen was 0.7256 pounds, a decrease from 1999. For traps fished one set-over day the average was, 0.4670; for those fished two days, 0.6569, for three days, 0.7270, and for four days, 0.7516. See Figure 6 for catch effort by set-over day.

Figures 7 and 8 show the average catch per trap-haul - set-over day for area fished and month, where set-over day is factored into the effort. The average catch per trap haul - set-over day for 2000 was 0.1878, a 13.47 percent increase from 1999 and a eight percent decrease from 1996. Overall these figures should be categorized as "estimates" since, in many cases, fishermen will estimate the number of traps hauled per trip for each month. If a fisherman leaves this information blank, the catch report is returned for corrections. If the combination of maximum traps, set-over days, average traps hauled per trip and number of trips per month is out of range for a particular month, the information is interpolated by Division statistics personnel and then factored into the analysis.

Figure 6. 2000 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort by Set-Over Day for Coastal Potmen and All Potmen

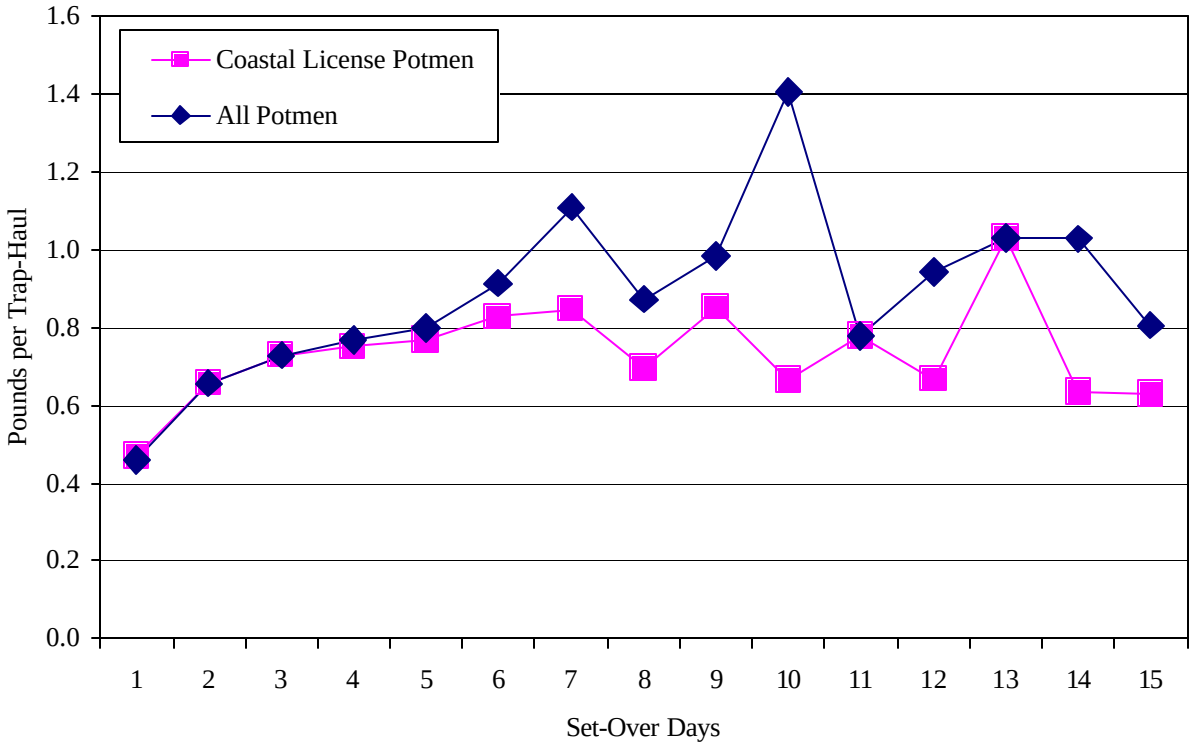


Figure 7. 2000 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort for Coastal and All Potman by Month

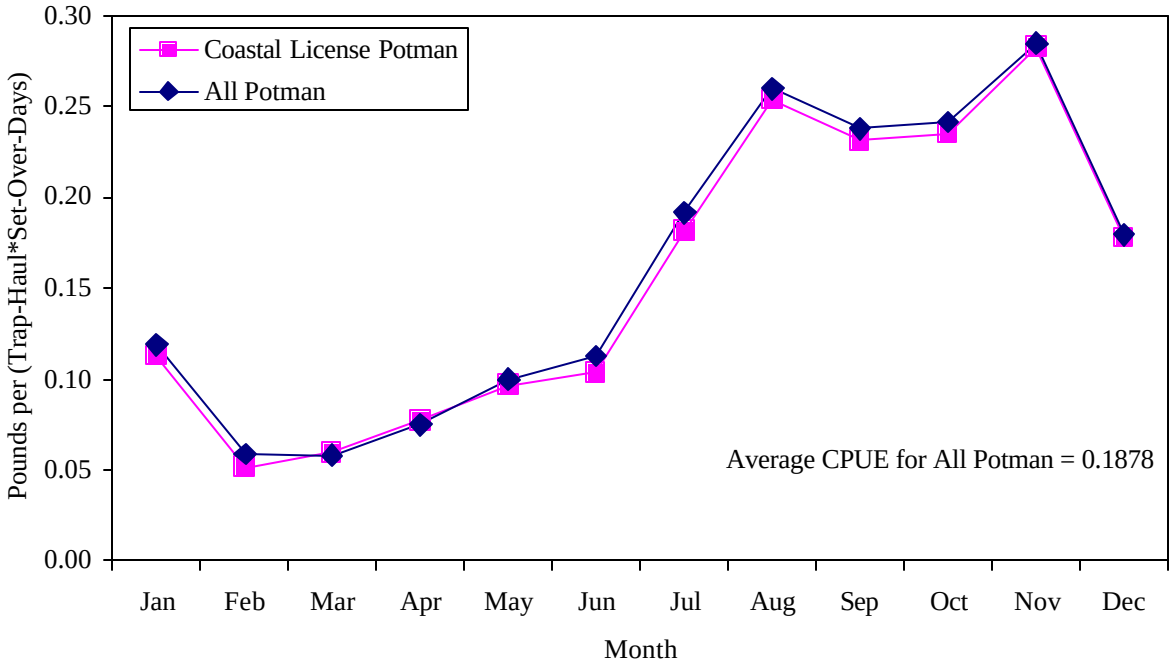
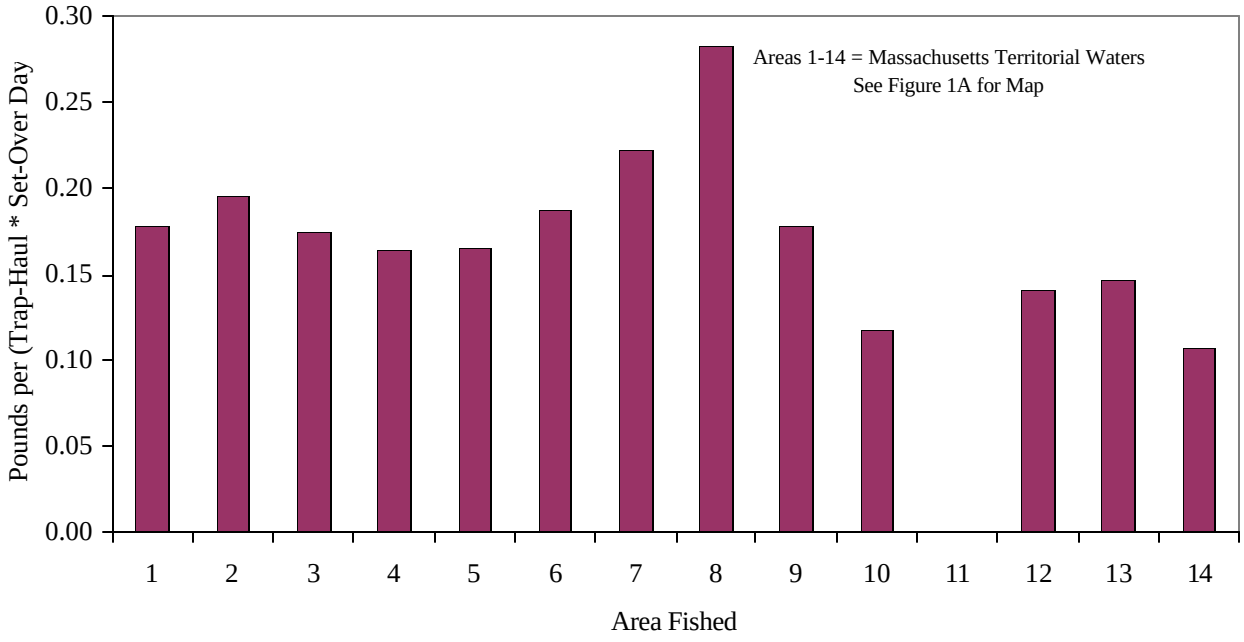


Figure 8. 2000 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort for All License Types by Area Fished



FISHING GEAR, VESSELS AND VALUE

In the commercial fishery, traps were valued at $29,912,519, diving gear at $40,884 and power and non-power boats at $58,918,649 yielding a total gear value of $88,872,052. Combined with the ex-vessel value of lobster sold, $54,830,340, this gives a total fishery value of $143,702,392. See Tables 9, 10 and 11.

Overall, 90.34 percent of the traps fished in the commercial fishery were wire framed, with 8.60 percent being wooden framed and approximately 1.06 percent categorized as "other". Average value (including warp and buoy) ranged anywhere from $44.11 to $129.60 with an average value of $62.40. See Table 9.

Table 9. 2000 Massachusetts Commercial Lobster Fishery
Trap Types Fished and Value by License Type

	Coastal	Offshore	Seasonal	Total Trap Type	Percent of Total
Wooden Framed Traps	38,809	2,378	43	**41,230**	8.60%
Value	$2,212,206	$308,184	$2,552	**$2,522,943**	
Value/Trap	$57.00	$129.60	$59.35	**$61.19**	
Wire Framed Traps	398,727	33,280	1,060	**433,067**	90.34%
Value	$24,018,645	$3,038,337	$46,758	**$27,103,739**	
Value/Trap	$60.24	$91.30	$44.11	**$62.59**	
Other Trap Types	3,229	1,872	0	**5,101**	1.06%
Value	$180,718	$105,120	$0.00	**$285,838**	
Value/Trap	$55.97	$56.15	$0.00	**$56.04**	
Total for License Type	**440,765**	**37,530**	**1,103**	**479,398**	
Value	**$26,411,569**	**$3,451,641**	**$49,310**	**$29,912,519**	
Value/Trap	**$59.92**	**$91.97**	**$44.70**	**$62.40**	

Table 10: 2000 Massachusetts Commercial Lobster Fishery; Number of Fishing Vessels and Pots Fished

AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		--- COASTAL ---		--- OFFSHORE ---			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	(Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRITORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Pots Fished	0	50,654	3,235	0	137	**54,026**	6,625	0	5,536	0	12,161	66,187
Power Boat	5	155	13	0	5	**178**	12	0	6	31	49	227
Non Power Boat	1	28	8	0	1	**38**	8	0	0	0	8	46
BRISTOL												
Pots Fished	0	18,142	0	0	0	**18,142**	12,362	0	19,302	0	31,664	49,806
Power Boat	1	65	0	0	0	**66**	22	1	17	108	148	214
Non Power Boat	0	2	0	0	0	**2**	0	0	0	0	0	2
DUKES												
Pots Fished	0	4,685	0	0	56	**4,741**	2,180	0	980	0	3,160	7,901
Power Boat	0	26	0	0	3	**29**	5	1	5	1	12	41
Non Power Boat	0	1	0	0	0	**1**	0	0	0	0	0	1
ESSEX												
Pots Fished	0	148,372	2,021	0	541	**150,934**	27,840	0	7,285	0	35,125	186,059
Power Boat	0	414	14	4	26	**458**	40	0	9	59	108	566
Non Power Boat	0	99	1	0	1	**101**	2	0	0	0	2	103
NANTUCKET												
Pots Fished	0	440	4	0	0	**444**	800	0	0	0	800	1,244
Power Boat	0	4	1	0	0	**5**	1	0	0	1	2	7
Non Power Boat	0	17	0	0	0	**17**	0	0	0	0	0	17
NORFOLK												
Pots Fished	0	17,202	0	0	20	**17,222**	550	0	0	0	550	17,772
Power Boat	0	52	0	0	0	**52**	1	0	0	0	1	53
Non Power Boat	0	1	0	0	0	**1**	1	0	0	0	1	2
PLYMOUTH												
Pots Fished	0	108538	1571	0	349	**110,458**	9,820	0	327	0	10,147	120,605
Power Boat	2	293	9	4	15	**323**	21	4	4	7	36	359
Non Power Boat	0	57	1	0	2	**60**	1	0	0	0	1	61
SUFFOLK												
Pots Fished	0	25424	900	0	0	**26,324**	1,800	0	2,300	0	4,100	30,424
Power Boat	0	54	2	0	0	**56**	1	0	2	16	19	75
Non Power Boat	0	7	1	0	0	**8**	0	0	0	0	0	8
STATE TOTAL												
Pots Fished	**0**	**373,457**	**7,731**	**0**	**1,103**	**382,291**	**61,977**	**0**	**35,730**	**0**	**97,707**	479,998
Power Boat	**8**	**1,063**	**39**	**8**	**49**	**1,167**	**103**	**6**	**43**	**223**	**375**	1,542
Non Power Boat	**1**	**212**	**11**	**0**	**4**	**228**	**12**	**0**	**0**	**0**	**12**	240
OUT OF STATE												
Pots Fished	0	285	0	0	0	**285**	0	0	1,800	0	**1,800**	2,085
Power Boat	0	2	0	0	0	**2**	0	0	1	30	**31**	33
Non Power Boat	0	1	0	0	0	**1**	0	0	0	0	**0**	1

Table 11. 2000 Massachusetts Commercial Lobster Fishery; Value of Fishing Vessels and Diving Gear

AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	---------- COASTAL ----------				SEASONAL		--- COASTAL ---		--- OFFSHORE ---			
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	(Student) Potman	TOTAL TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL NON-TERRITORIAL	GRAND TOTAL
-- COUNTY --												
BARNSTABLE												
Diving Gear	11,515	0	9,620	0	0	**21,135**	0	0	0	0	**0**	**21,135**
Power Boat	49,800	4,457,895	391,130	0	22,250	**4,921,075**	897,000	0	2,018,500	183,250	**3,098,750**	**8,019,825**
Non Power Boat	100	9,595	1,663	0	120	**11,478**	3,850	0	0	0	**3,850**	**15,328**
BRISTOL												
Diving Gear	0	0	500	0	0	**500**	0	0	0	0	**0**	**500**
Power Boat	10,000	2,270,750	0	0	0	**2,280,750**	1,502,975	3,500	2,977,500	1,564,660	**6,048,635**	**8,329,385**
Non Power Boat	0	350	0	0	0	**350**	0	0	0	0	**0**	**350**
DUKES												
Diving Gear	0	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Power Boat	0	576,650	0	0	73,392	**650,042**	260,550	2,500	91,900	2,000	**356,950**	**1,006,992**
Non Power Boat	0	50	0	0	0	**50**	0	0	0	0	**0**	**50**
ESSEX												
Diving Gear	10,900	0	0	0	0	**10,900**	0	0	0	0	**0**	**10,900**
Power Boat	0	14,418,384	396,725	72,500	114,905	**15,002,514**	3,773,510	0	1,069,000	622,430	**5,464,940**	**20,467,454**
Non Power Boat	0	41,586	600	0	300	**42,486**	1,200	0	0	0	**1,200**	**43,686**
NANTUCKET												
Diving Gear	2,250	0	0	0	0	**2,250**	0	0	0	0	**0**	**2,250**
Power Boat	0	73,750	100	0	0	**73,850**	140,000	0	0	21,000	**161,000**	**234,850**
Non Power Boat	0	100	0	0	0	**100**	0	0	0	0	**0**	**100**
NORFOLK												
Diving Gear	0	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Power Boat	0	1,998,345	0	0	0	**1,998,345**	40,000	0	0	0	**40,000**	**2,038,345**
Non Power Boat	0	21,400	0	0	0	**21,400**	600	0	0	0	**600**	**22,000**
PLYMOUTH												
Diving Gear	3,272	0	2,700	0	0	**5,972**	0	0	0	0	**0**	**5,972**
Power Boat	17,800	9,913,948	167,050	16,710	43,325	**10,158,833**	1,372,050	49,450	82,100	106,800	**1,610,400**	**11,769,233**
Non Power Boat	0	35,725	200	0	630	**36,555**	1,800	0	0	0	**1,800**	**38,355**
SUFFOLK												
Diving Gear	128	0	0	0	0	**128**	0	0	0	0	**0**	**128**
Power Boat	0	2,292,210	45,000	0	0	**2,337,210**	300,000	0	450,000	3,060,750	**3,810,750**	**6,147,960**
Non Power Boat	0	2,215	250	0	0	**2,465**	0	0	0	0	**0**	**2,465**
STATE TOTAL												
Diving Gear	**28,064**	**0**	**12,820**	**0**	**0**	**40,884**	**0**	**0**	**0**	**0**	**0**	**40,884**
Power Boat	**77,600**	**36,001,932**	**1,000,005**	**89,210**	**253,872**	**37,422,619**	**8,286,085**	**55,450**	**6,689,000**	**5,560,890**	**20,591,425**	**58,014,044**
Non Power Boat	**100**	**111,021**	**2,713**	**0**	**1,050**	**114,884**	**7,450**	**0**	**0**	**0**	**7,450**	**122,334**
OUT OF STATE												
Diving Gear	0	0	0	0	0	**0**	0	0	0	0	**0**	**0**
Power Boat	0	53,500	0	0	0	**53,500**	0	0	450,000	278,471	**728,471**	**781,971**
Non Power Boat	0	300	0	0	0	**300**	0	0	0	0	**0**	**300**

VALIDITY OF DATA

Each year 150 coastal license holders are selected for audit and asked to submit the records they used to complete the harvest portion of their catch report. The Division does this to help estimate the amount of error involved in the reporting process. Selection is done randomly except when fishermen fail an audit. In these cases, they are audited again the following year. The audit was first instituted in 1977 for the 1976 catch reports. Over the last five years the lobstermen selected for audit reported landing 8,431,631 pounds. The audit of their records revealed a harvest of 8,377,949 pounds or a difference of 0.63 percent.

Last year the fishermen selected for audit reported harvesting 1,689,196 pounds of lobster on their 2000 catch reports. The audit of actual records showed total landings of 1,682,261 pounds, a difference of 6,935 pounds or 0.41 percent. Two of the randomly selected fishermen have yet to respond to the audit request. Figure 9 shows the distribution of the percent difference between the selected fishermen's reported catch and their audited records. In general, reported landings are very well documented by dealer receipts and/or personal records, especially by the so-called "high-liners" in the fishery. Most of the lobstermen have had licenses for several years and know what is required in terms of reporting their fishing activities and have been informed of the value of accurate reporting in the development of management plans. They also know that their reported information is kept strictly confidential and published only in aggregate form. These factors all contribute to a conscientious and responsible reporting constituency.

Figure 9. Massachusetts Commercial Lobster Fishery Frequency Distributioon of Percent Difference Between Fishermen's Reported Catch and Their Audited Records

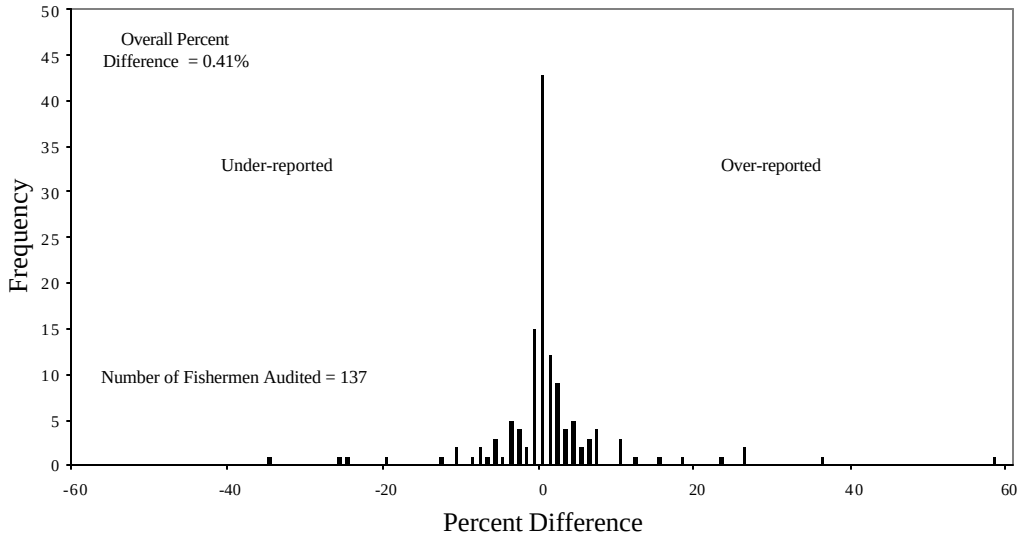
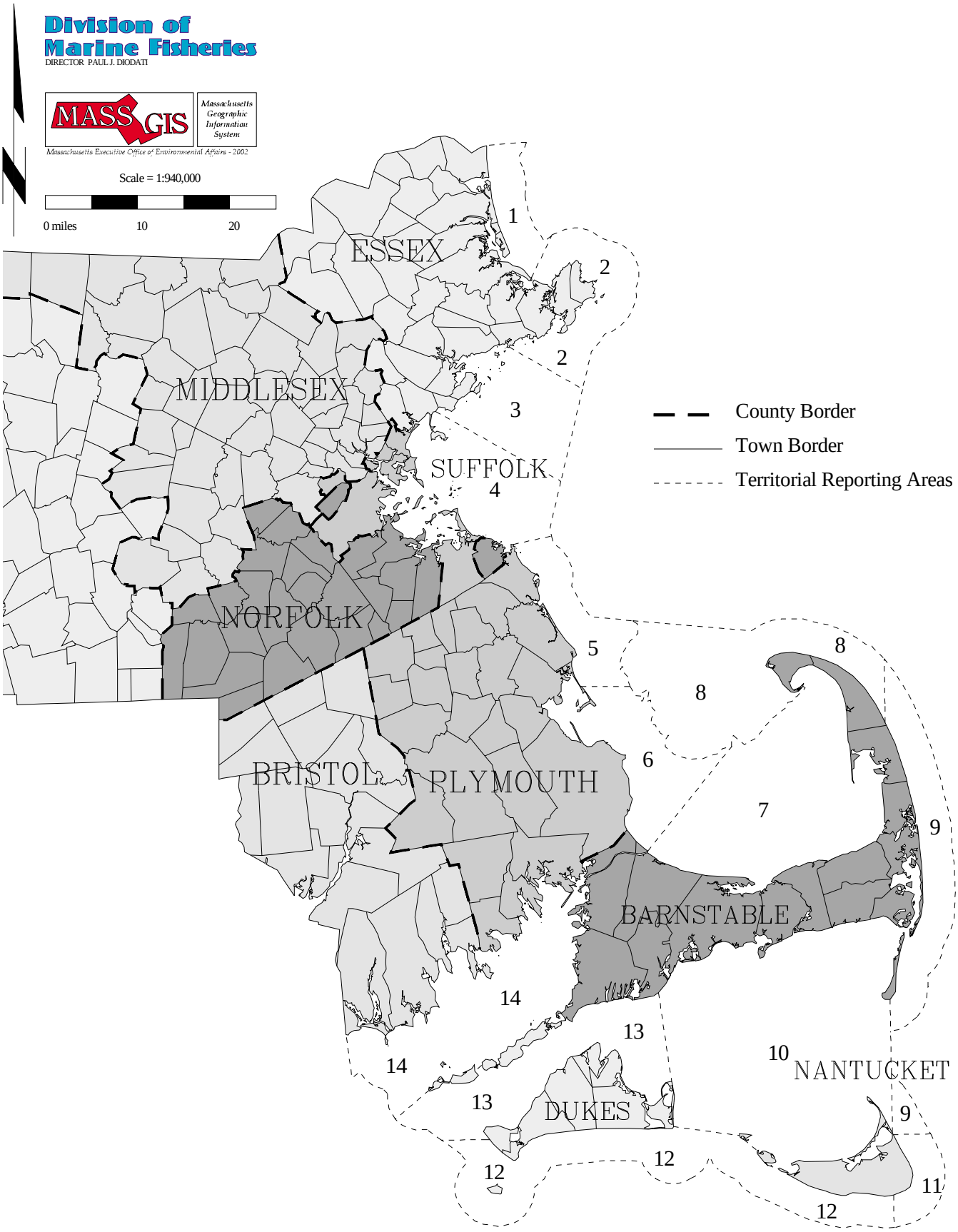



Figure 10. Coastal Map of Massachusetts Showing County Boundaries