



**Massachusetts Division of Marine Fisheries
Technical Report TR-13**

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2001 Massachusetts Lobster Fishery Statistics

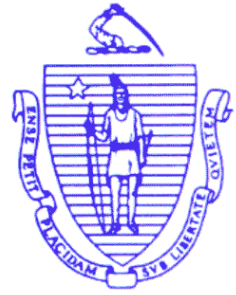
Micah J. Dean, Kimberly A. Lundy and Thomas B. Hoopes

**Massachusetts Division of Marine Fisheries
Department of Fisheries, Wildlife and Environmental Law Enforcement
Executive Office of Environmental Affairs
Commonwealth of Massachusetts**

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Commonwealth of Massachusetts
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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.

Today, the Interstate Fisheries Management Program (ISFMP) of the Atlantic States Marine Fisheries Commission (ASMFC) manages the fishery. Lobster management was transferred to ASMFC in 1997. Recent information about Atlantic coast lobster stocks indicates that more controls on fishing are required to prevent resource depletion and subsequent declines in landings. ASMFC has responded by developing a new Interstate Management Plan for Atlantic Coast Lobster (FMP). The plan has been modified several times since first being implemented with the last revision occurring in 2002 (Amendment 3, Addendum 3). The Commission's management plan introduced area management along the coast, with seven separate management regions from Maine to Maryland. Area designations based primarily on the percent contribution from different stock components, but the manner in which the fisheries have been prosecuted were also taken into consideration. Each area has been designated a Lobster Conservation Management Team (LCMT) composed of fishermen whose task it was to develop management recommendations for their areas that achieve the objectives of the plan.

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 pro-

vided 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 2001 is described on Page 2.

This report is the thirty-fifth 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 informa-

tion, or questions concerning this publication, should be directed to the Division's MIS & Fisheries Statistics Project in Gloucester, MA: (978) 282-0308.

Methods

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 September 2002. Late reports received beyond this point are not represented here but will be entered into our databases and accounted for in future publications.

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 States Marine Fisheries Commission.

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 its own lobster management area. A map representing the northern-most areas, is depicted in Figure 1B. 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 detect 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:

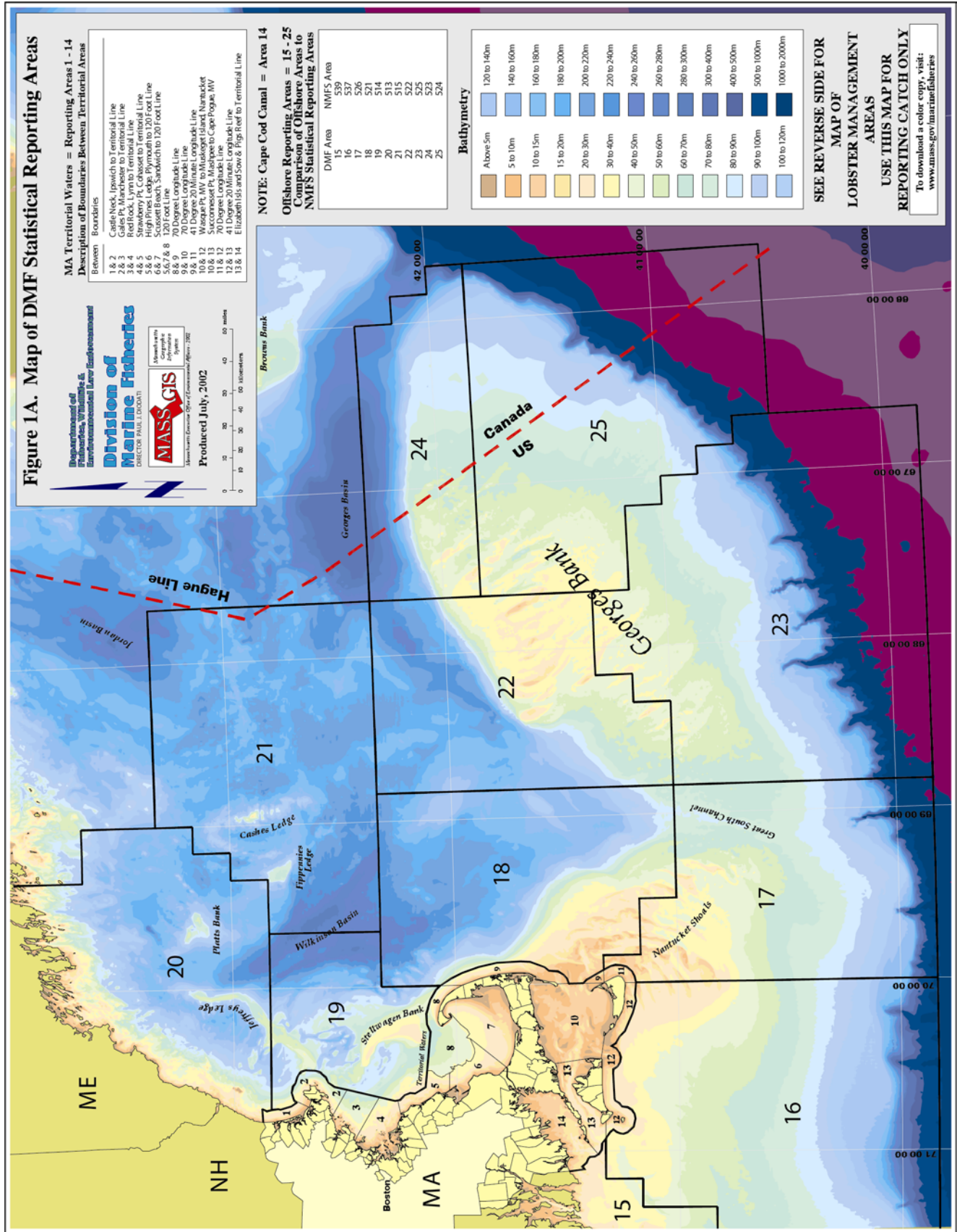
Coastal Commercial: Allows the holder to harvest lobster anywhere, most importantly inside territorial waters.

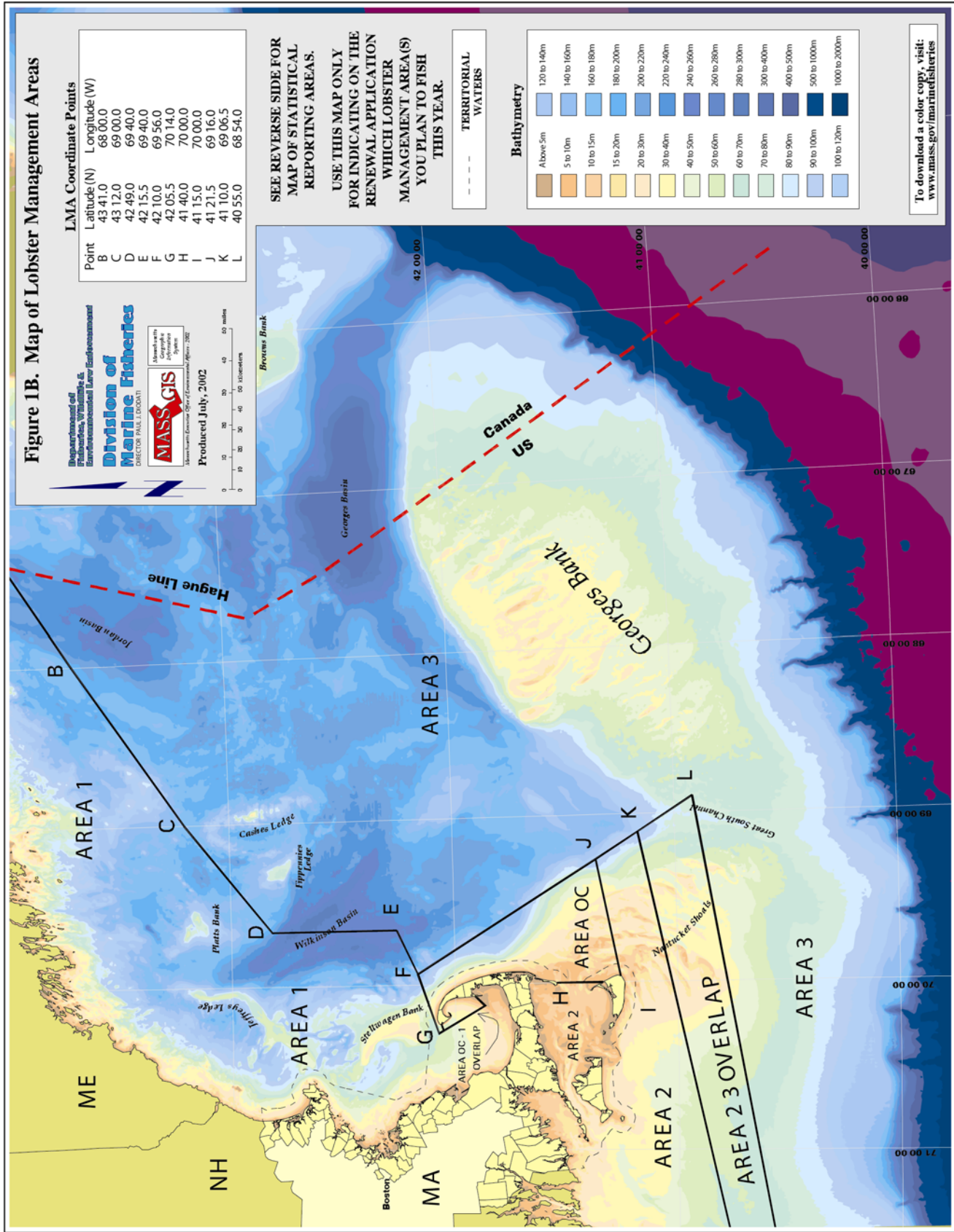
Offshore Commercial: Allows the holder to harvest lobster outside territorial waters only.

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 Plan.





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.

Results and Discussion

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 2001, the Division authorized the transfer of 50 coastal licenses. Sixteen 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 the transfer. Ten transfers were allowed within the holder's immediate family (and would have been allowed prior to the new regulation). Fifteen transfers were made directly from the holder to a sternman with a documented fishing history. Nine lobstermen advertised their coastal lobster businesses to persons on a waiting list maintained by the Division and subsequently transferred their permits. Seventeen licenses were forfeited to the Division in 2001. None of these coastal lobster permits were issued directly to waiting list applicants.

Issued licenses and reporting status

Table 1 lists the number of commercial and recreational licenses issued in 2001, the dollar value of fees collected and the number that reported catching lobster. There were 2,166 commercial lobster licenses issued during 2001: 1,540 coastal, 530 offshore and 96 seasonal. Non-commercial licenses issued totaled 11,961; breakdown of their reporting status and landings can be found in Table 6.

As of September, 2002 a total of 109 licensed commercial lobstermen (5.0 percent) failed to file a catch report with the Division. Of the 2,057 commercial fishermen who reported, 569 or 27.7 percent claimed they did not catch any lobster during 2001. The number of coastal licenses issued continues to decline since a 1988 moratorium on the issuance of new licenses. The continued decline is 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 decreased slightly in 2001. Student commercial licenses decreased by approximately 4 percent over last year.

Table 1. 2001 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)	1,540	\$402,740	1,097	71%	415	27%	28	2%
Offshore Commercial (\$260)	530	\$163,280	343	65%	140	26%	47	9%
Seasonal (Student) Commercial (\$65)	96	\$6,305	48	50%	14	15%	34	35%
Non-Commercial (\$40)	11,961	\$482,320	6,602	55%	4,441	37%	918	8%
Total	14,127	\$1,054,645	8,090	57%	5,010	35%	1,027	7%

Table 2. Massachusetts commercial lobster fishery;
selected licensing information, 1997-2001

	1997	1998	1999	2000	2001	Percent Five Year Change
Coastal Licenses						
Issued	1,598	1,591	1,570	1,541	1,540	-3.63%
% Change		-0.44	-1.32	-1.85	-0.06	
"Caught Lobster"	1179	1162	1161	1,123	1,097	-2.25
% Change		-1.01	1.25	-1.45	-2.25	
"Did Not Catch Lobster"	404	407	385	396	415	4.87
% Change		1.19	-4.14	4.79	4.87	
Not Reporting	15	22	24	22	28	27.36
% Change		47.31	10.55	-6.61	27.36	
Percent Not Reporting	0.94%	1.38%	1.53%	1.43%	1.82%	
Offshore Licenses						
Issued	551	554	529	534	530	-3.81%
% Change		0.54	-4.51	0.95	-0.75	
"Caught Lobster"	400	354	350	344	343	0.46
% Change		-11.98	3.54	-2.63	0.46	
"Did Not Catch Lobster"	114	117	115	132	140	6.86
% Change		2.08	2.94	13.71	6.86	
Not Reporting	37	83	64	58	47	-18.35
% Change		123.11	-19.25	-10.22	-18.35	
Percent Not Reporting	6.72%	14.98%	12.10%	10.86%	8.87%	
Seasonal (Student) Licenses						
Issued	65	78	82	92	96	47.69%
% Change		20.00	5.13	12.20	4.35	
"Caught Lobster"	40	39	41	51	48	-9.80
% Change		-18.75	0.00	10.87	-9.80	
"Did Not Catch Lobster"	7	6	7	17	14	-21.08
% Change		-28.57	10.98	116.46	-21.08	
Not Reporting	18	33	34	24	34	35.76
% Change		52.78	-2.00	-37.08	35.76	
Percent Not Reporting	27.69%	42.31%	41.46%	26.09%	35.42%	

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

Landings and value

In 2001, 12,175,079 pounds of lobster were reported landed by commercial lobstermen in Massachusetts, a 18.95 percent decrease from 2000. Based on an average price of \$3.74 per pound, the commercial catch was valued at \$45,534,795, a 16.95 percent decrease from 2000. Figure 2 shows the weighted ex-vessel price for 2001 as derived from audits of lobstermen's records. The weighted average price of \$3.74 increased 2.46 percent over the average ex-vessel price paid in 2000 (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 12,175,079 pounds of lobster landed commercially, 7,147,102 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, New Bedford, and Fairhaven in that order. In total numbers of active commercial fishermen, Essex County ranked first with 529, Plymouth County second with 273 and Bristol County third with 234. Among the cities and towns of the Commonwealth, Gloucester ranked first in active fishermen followed by New Bedford, Plymouth and Rockport 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. 2001 Massachusetts commercial lobster fishery weighted ex-vessel price derived from audited lobstermen's records

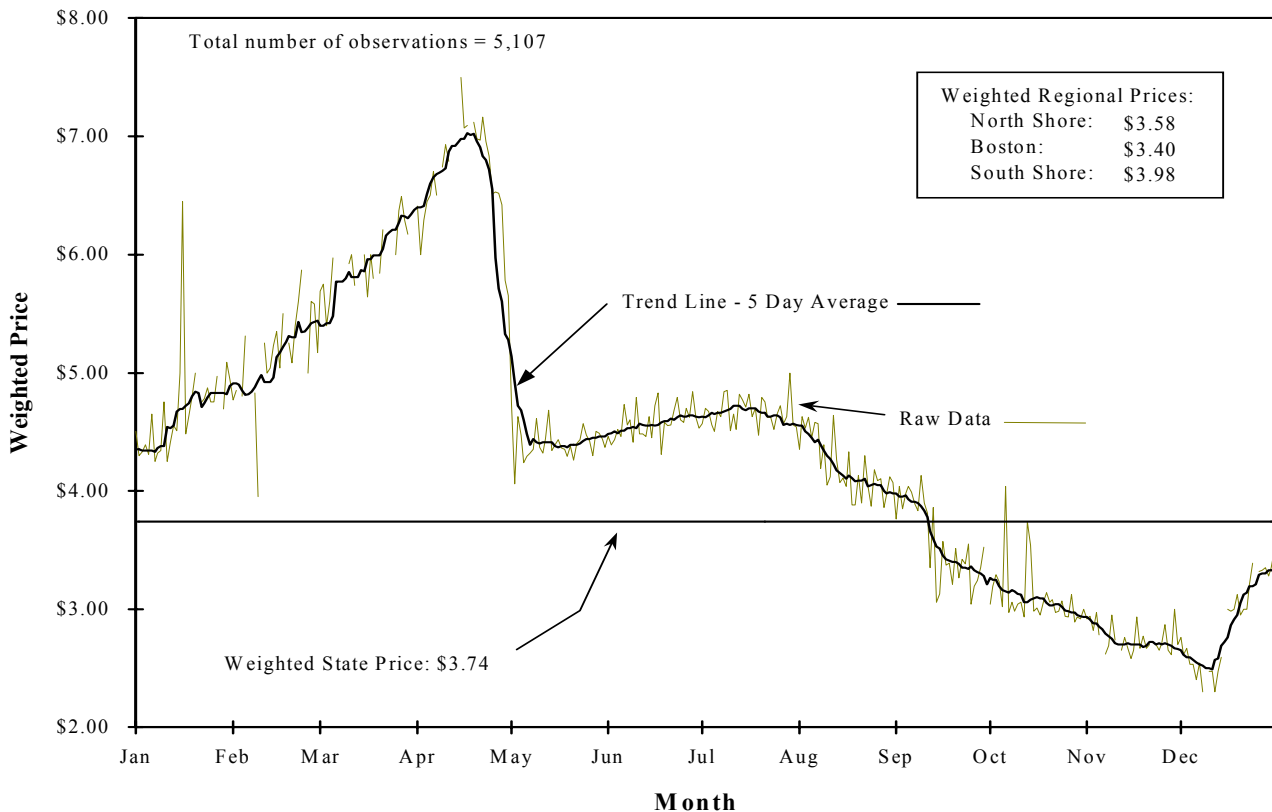


Table 3. 2001 Massachusetts commercial lobster fishery; number of fishermen, harvest (lbs.) and value of harvest

AREA:		INSHORE (Areas 1 - 14)					OFFSHORE (Areas 15 - 25)					
LICENSE TYPE:		----- COASTAL -----			SEASONAL	TOTAL INSHORE	---- COASTAL ----		----- OFFSHORE ----		TOTAL OFFSHORE	GRAND TOTAL
GEAR TYPE:	-- COUNTY --	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	Potman	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet		
BARNSTABLE												
Fishermen		4	140	8	4		8		7	37	52	208
Pounds		3,180	988,121	42,827	666		238,881		745,562	52,407	1,036,850	2,071,644
Value (\$)		11,893	3,695,574	160,174	2,491		893,416		2,788,402	196,001	3,877,819	7,747,950
BRISTOL												
Fishermen			63				18		14	136	170 +	234 *
Pounds			321,006				411,000		802,908	451,153	1,665,478	1,986,535
Value (\$)			1,200,564				1,537,141		3,002,877	1,687,314	6,228,887	7,429,641
DUKES												
Fishermen			21		3		4		4		10 +	34 *
Pounds			68,850		425		37,090		18,178		55,453	124,728
Value (\$)			257,500		1,590		138,717		67,986		207,395	466,484
ESSEX												
Fishermen			398	8	23		36	5	6	71	118	552
Pounds			2,802,065	50,036	5,414		866,819	14,822	323,693	159,280	1,364,614	4,223,212
Value (\$)			10,479,724	187,134	20,248		3,241,903	55,434	1,210,611	595,707	5,103,655	15,794,815
NANTUCKET												
Fishermen			4								2 +	9 *
Pounds			8,528								55,552	64,759
Value (\$)			31,895								207,766	242,200
NORFOLK												
Fishermen			45								1 +	48 *
Pounds			328,180								25,898	354,262
Value (\$)			1,227,393								96,858	1,324,939
PLYMOUTH												
Fishermen			233	7	15		19		4	5	30 +	288 *
Pounds			1,978,719	26,740	2,844		478,469		13,222	4,489	522,895	2,538,400
Value (\$)			7,400,410	100,008	10,637		1,789,475		49,450	16,788	1,955,627	9,493,614
SUFFOLK												
Fishermen			53							14	16 +	69 *
Pounds			502,711							42,348	49,071	551,902
Value (\$)			1,880,139							158,383	183,527	2,064,115
STATE TOTAL *												
Fishermen		7	957	26	47		87	10	36	265	398	1,442 *
Pounds		3,737	6,998,182	120,443	9,403		2,116,229	42,036	1,903,563	713,982	4,775,811	11,915,443
Value (\$)		13,976	26,173,199	450,457	35,167		7,914,698	157,215	7,119,326	2,670,294	17,861,533	44,563,758
OUT OF STATE												
Fishermen									3	37	40	41
Pounds									246,191	5,976	252,167	259,636
Value (\$)									920,754	22,349	943,103	971,037

* + 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 \$3.74, see Figure 2.

Table 4. Massachusetts commercial lobster fishery;
Selected landings (lbs.) and effort statistics, 1997-2001

	1997	1998	1999	2000	2001	Percent 5-yr change
Total Landings	15,085,389	13,219,131	15,910,989	15,032,341	12,178,739	-19.27
Percent Change		-12.37	20.36	-5.52	-18.98	
Total Traps Fished	489,004	503,401	498,497	482,268	472,238	-3.43
Percent Change		2.94	-0.97	-3.26	-2.08	
Total Value	\$49,178,368	\$47,853,255	\$59,507,099	\$54,868,045	\$45,548,484	-7.38
Percent Change		-2.69	24.35	-7.80	-16.99	
INSHORE (TERRITORIAL - Inside 3 Miles)						
Landings	8,433,893	7,500,292	9,607,676	9,860,226	7,147,288	-15.26
Percent Change		-11.07	28.10	2.63	-27.51	
Value	\$27,494,492	\$27,151,058	\$35,932,707	\$35,989,824	\$26,730,855	-2.78
Percent Change		-1.25	32.34	0.16	-25.73	
Trap Landings	8,419,285	7,484,630	9,593,487	9,837,986	7,135,683	-15.25
		-11.10	28.18	2.55	-27.47	
Traps Fished	355,485	367,857	375,023	382,761	370,047	4.10
		3.48	1.95	2.06	-3.32	
Non-Trap Landings (Gillnet, Diver)	14,609	15,662	14,189	22,240	11,605	-20.56
		7.21	-9.40	56.74	-47.82	
OFFSHORE (NON-TERRITORIAL - Outside 3 Miles)						
Landings	6,651,496	5,718,839	6,303,313	5,172,115	5,031,452	-24.36
Percent Change		-14.02	10.22	-17.95	-2.72	
Value	\$21,683,876	\$20,702,197	\$23,574,391	\$18,878,221	\$18,817,629	-13.22
Percent Change		-4.53	13.87	-19.92	-0.32	
Trap Landings	6,030,287	5,063,146	5,602,164	4,468,805	4,268,483	-29.22
		-16.04	10.65	-20.23	-4.48	
Traps Fished	133,519	135,544	123,474	99,507	102,191	-23.46
		1.52	-8.90	-19.41	2.70	
Non-Trap Landings (Gillnet, Trawler)	621,209	655,693	701,149	703,310	762,969	22.82
		5.55	6.93	0.31	8.48	
Average Price (\$) / Pound	\$3.26	\$3.62	\$3.74	\$3.65	\$3.74	
Percent Change		11.04	3.31	-2.41	2.47	
Ave. Lbs. / Trap-Haul	0.7726	0.6663	0.8159	0.7742	0.6678	
Percent Change		-13.75	22.44	-5.10	-13.75	
Ave. Lbs. / Trap	29.55	24.93	30.48	29.67	24.15	
Percent Change		-15.65	22.29	-2.68	-18.60	

Table 5. 2001 Massachusetts commercial lobster fishery;
number of active commercial fishermen and landings by homeport
Does not include seasonal (student) licenses

CITY/TOWN	FISHERMEN		POUNDS				RANK
	NUMBER	RANK	INSHORE	OFFSHORE	TOTAL	PERCENT	
BARNSTABLE	7	35	47,179	495,765	542,944	4.56%	7
BEVERLY	45	8	387,494	89,031	476,525	4.00%	8
BOSTON	47	7	356,018	49,071	405,089	3.40%	12
BOURNE	4	47	4,111	0	4,111	0.03%	49
CHATHAM	43	9	140,045	163,041	303,086	2.54%	15
CHILMARK	18	23	52,493	52,499	104,992	0.88%	24
COHASSET	32	15	284,373	24,377	308,751	2.59%	14
DANVERS	7	35	40,429	0	40,429	0.34%	30
DARTMOUTH	10	28	4,712	30	4,742	0.04%	46
DENNIS	19	22	76,944	0	76,944	0.65%	25
DUXBURY	9	31	36,749	0	36,749	0.31%	31
ESSEX	5	43	2,510	0	2,510	0.02%	51
FAIRHAVEN	38	12	149,711	605,846	755,556	6.34%	4
FALMOUTH-GOSNOLD	10	28	8,033	0	8,033	0.07%	42
GLOUCESTER	208	1	941,455	1,103,909	2,045,365	17.17%	1
HARWICH	4	47	2,909	4,389	7,298	0.06%	43
HINGHAM	14	25	188,183	56,694	244,877	2.06%	16
HULL	24	18	139,664	49,302	188,966	1.59%	19
IPSWICH	14	25	24,508	0	24,508	0.21%	36
KINGSTON	3	51	25,750	0	25,750	0.22%	35
LYNN	6	40	17,000	19,325	36,324	0.30%	33
MANCHESTER	26	17	208,797	6,280	215,077	1.81%	18
MARBLEHEAD	42	11	325,079	56,329	381,408	3.20%	13
MARION	4	47	3,871	0	3,871	0.03%	50
MARSHFIELD	69	5	713,339	170,402	883,741	7.42%	2
MATTAPOISETT	10	28	10,628	0	10,628	0.09%	39
NAHANT	27	16	147,166	12,971	160,136	1.34%	21
NANTUCKET	8	34	9,204	55,963	65,167	0.55%	28
NEW BEDFORD	150	2	126,547	686,110	812,657	6.82%	3
NEWBURY-ROWLEY	6	40	4,475	0	4,475	0.04%	47
NEWBURYPORT	14	25	49,713	7,232	56,946	0.48%	29
OAK BLUFFS-EDGARTOWN	5	43	3,193	2,941	6,134	0.05%	45
ORLEANS-EASTHAM	23	19	130,114	12,343	142,457	1.20%	22
PLYMOUTH	88	3	671,803	38,361	710,164	5.96%	6
PROVINCETOWN	37	13	208,924	20,101	229,025	1.92%	17
QUINCY	9	31	8,959	0	8,959	0.08%	40
REVERE-CHELSEA-MEDFORD	6	40	73,255	0	73,255	0.61%	27
ROCKPORT	71	4	377,435	60,161	437,596	3.67%	9
SALEM	5	43	4,386	0	4,386	0.04%	48
SALISBURY	9	31	7,152	3,559	10,712	0.09%	38
SANDWICH	43	9	375,404	341,212	716,616	6.02%	5
SAUGUS	22	21	175,886	4,840	180,725	1.52%	20
SCITUATE	49	6	216,353	208,136	424,489	3.56%	10
SWAMPSCOTT	23	19	139,700	1,952	141,651	1.19%	23
TISBURY	7	35	8,429	13	8,441	0.07%	41
TRURO	7	35	14,429	0	14,429	0.12%	37
WAREHAM	3	51	6,320	0	6,320	0.05%	44
WELLFLEET	5	43	30,772	0	30,772	0.26%	34
WESTPORT-FALL RIVER	35	14	40,037	378,250	418,287	3.51%	11
WEYMOUTH	7	35	35,031	1,521	36,552	0.31%	32
WINTHROP	16	24	73,558	0	73,558	0.62%	26
YARMOUTH	4	47	0	0	0	0.00%	52
STATEWIDE TOTAL	1,397		7,130,230	4,781,954	11,912,183		
OUT OF STATE	41		7,469	253,166	260,635		

Shaded areas denote towns which rank in the top 10 for number of fishermen or total landings or both.
Certain cities and towns are combined to protect the confidential nature of the data.

Recreational lobster fishery

Recreational statistics are shown in Table 6. Licenses issued in 2001 totaled 11,963, up slightly from 2000, with 6,603 or 55.2 percent, reporting that they fished for lobster. In general, reporting rates increased and the percentage of license holders fishing decreased slightly. Landings decreased by approximately 5.01 percent from 2000. The number of traps fished in the recreational fishery increased by 9.17% in 2001. The number of hours dived de-

creased slightly. Landings amounted to 311,121 pounds or only 2.55 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 2002. Twenty-four 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. 2001 Massachusetts recreational lobster fishery; license status and harvest information

License Type:	Diver	Diver/Pot	Potman	Total	Percent of Total
Number of Licenses Issued in 2001	3,701	3,564	4,698	11,963	
Number that Reported	2,724	2,780	3,627	9,131	76.33%
Total Number That Fished	1,932	1,970	2,701	6,603	55.20%
Total Number That Did Not Fish	798	812	930	2,540	21.23%
Number That Did Not Report	977	784	1,071	2,832	23.67%
Number of Lobsters Reported Landed	40,117	74,276	130,584	244,977	<div>percent change from 2000</div>
Pounds of Lobsters (Calculated)*	50,949	94,331	165,842	311,121	-5.01%
Number Pots Fished		7,638	21,261	28,899	9.17%
Number of Hours Diving	29,811	24,404		54,215	-3.62%

* Based on 1.27 Pounds per Lobster.

Territorial fishery

Territorial landings by commercial fishermen were concentrated in the months of July through November when 76 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 2001 landings were distributed July through November with concentrated landings in October. Landings in 2001 differed slightly from 2000 where peak levels occurred in October rather in August. See Table 7 and Figure 3.

The greatest harvest of lobster from territorial waters came from the Cape Ann vicinity (Area 2 on Figure 1A), where approximately 20 percent of the state's territorial harvest was caught.

Table 7. 2001 Massachusetts commercial lobster fishery; percent monthly territorial harvest by license type.

Month	Coastal	Seasonal
January	2.5%	0.0%
February	0.7%	0.0%
March	0.6%	0.0%
April	2.3%	0.0%
May	4.3%	0.0%
June	6.3%	17.5%
July	12.4%	34.5%
August	15.8%	35.5%
September	15.4%	12.5%
October	18.2%	0.0%
November	14.0%	0.0%
December	7.4%	0.0%
Total	100.0%	100.0%

Figure 3. 2001 Massachusetts commercial lobster fishery total monthly territorial harvest for coastal and seasonal license types

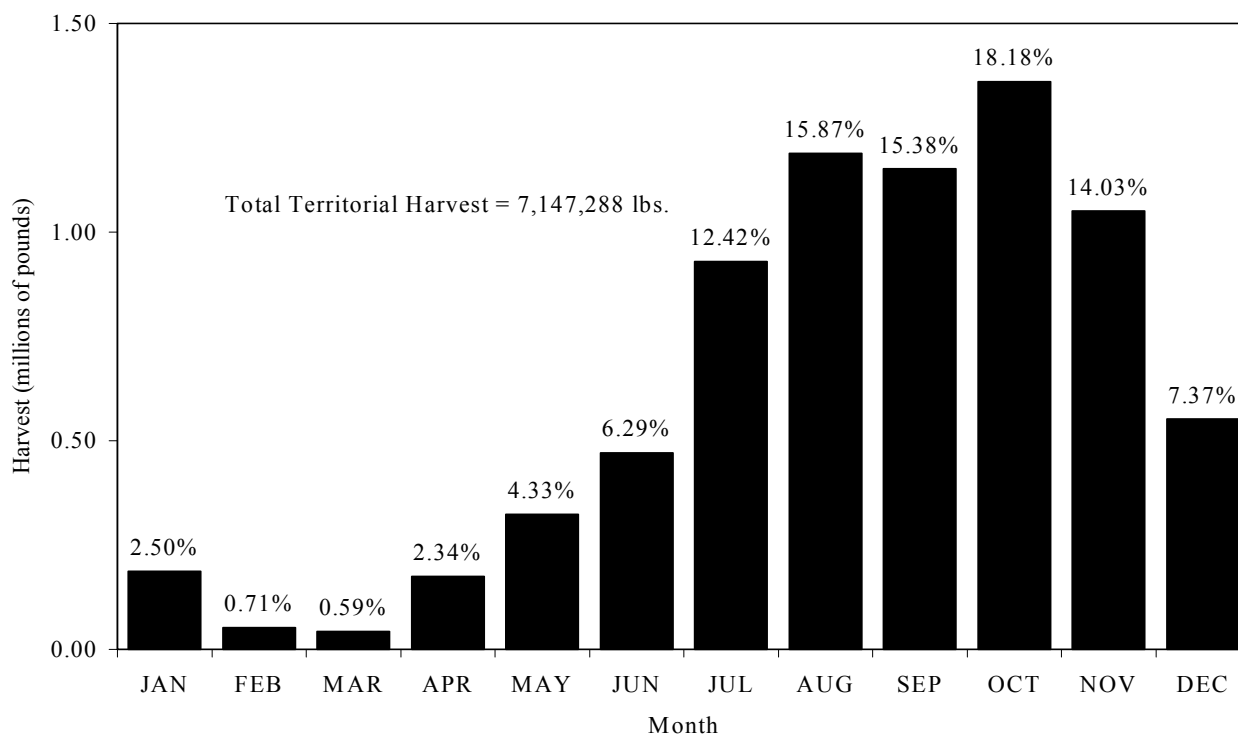


Table 8. 2001 Massachusetts commercial lobster fishery; percent territorial harvest by area and license type

Area	Coastal	Seasonal
1	3.1%	7.1%
2	19.6%	49.8%
3	12.4%	1.7%
4	18.9%	2.1%
5	8.9%	8.3%
6	8.3%	21.3%
7	6.9%	5.2%
8	11.8%	0.0%
9	3.9%	0.0%
10	0.3%	0.0%
12	1.9%	0.0%
13	2.5%	2.8%
14	1.6%	1.7%
Total Pounds	7,137,699	9,589

Territorial landings were down 27.5 percent in 2001. 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. 2001 Massachusetts commercial lobster fishery total territorial harvest for coastal and seasonal license types by area fished

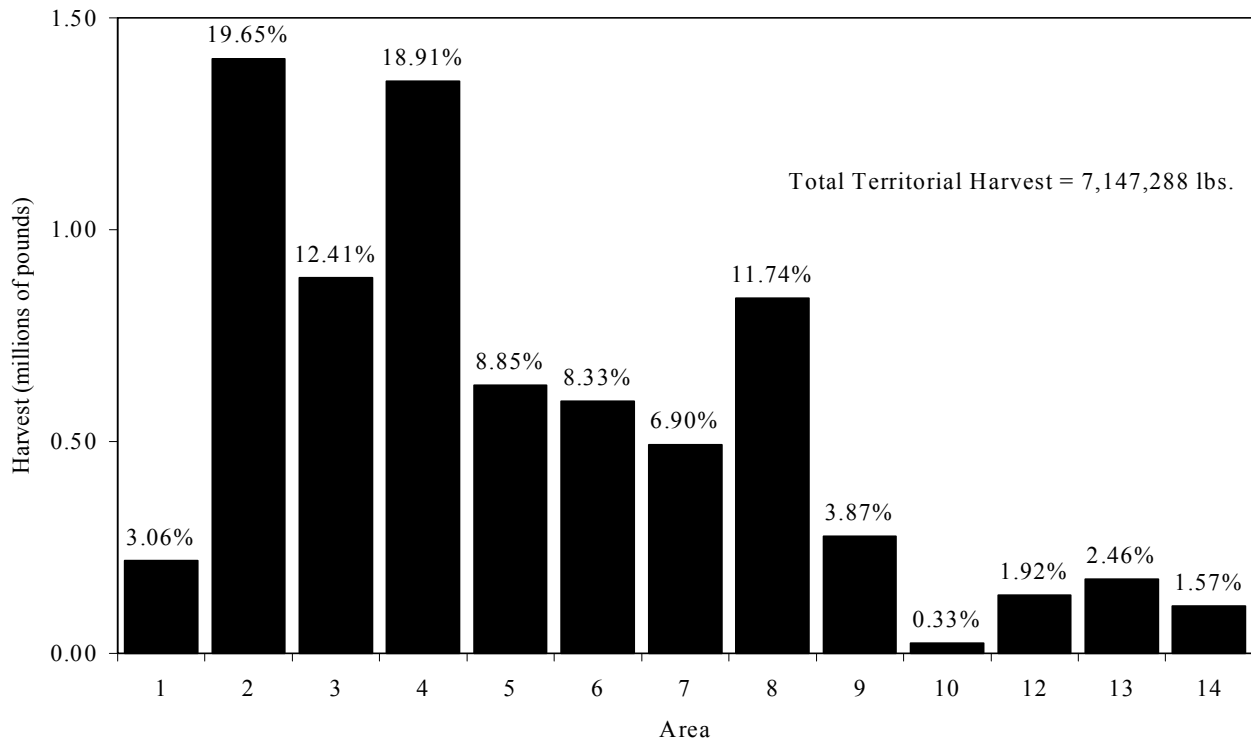


Figure 5. 2001 Massachusetts lobster fishery; landings by statistical reporting area
(see Figure 1A for references to reporting areas)

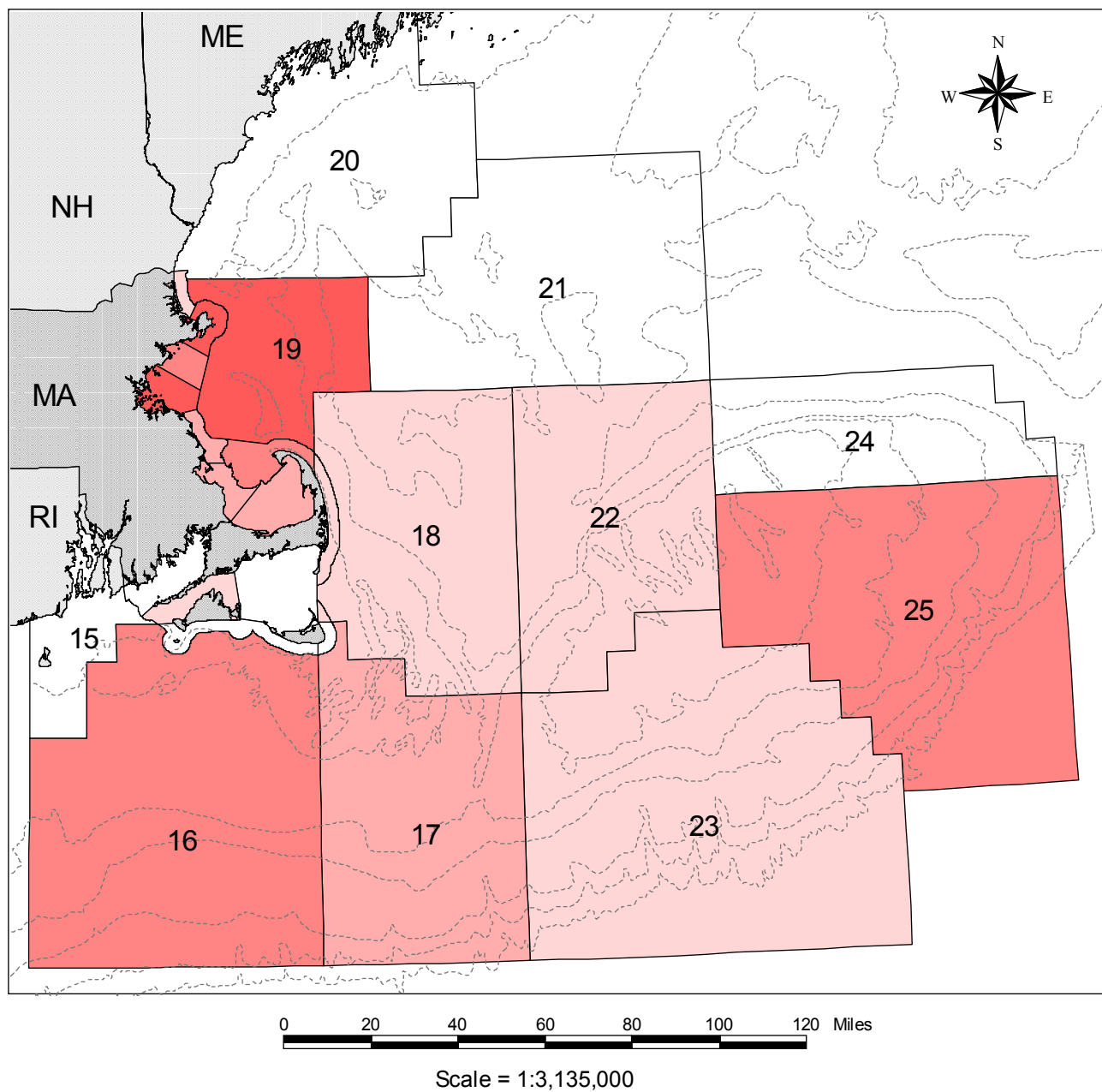
**Division of
Marine Fisheries**



Massachusetts
Geographic
Information
System

LEGEND (Lbs)

	0 - 100000	n = 5
	100000 - 400000	n = 10
	400000 - 600000	n = 3
	600000 - 1000000	n = 4
	1000000 - 1500000	n = 5



Catch rates

The average catch per trap haul for coastal lobstermen was 0.6790 pounds, a decrease from 2000. For traps fished one set-over day the average was, 0.3759; for those fished two days, 0.4935, for three days, 0.5463, and for four days, 0.5749. 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 2001 was 0.1929, a 2.72 percent increase from 2000 and a 15 percent decrease from 1997. 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 or left blank.

Figure 6. 2001 Massachusetts commercial lobster fishery; catch per unit of effort by set-over day for coastal potmen and All potmen

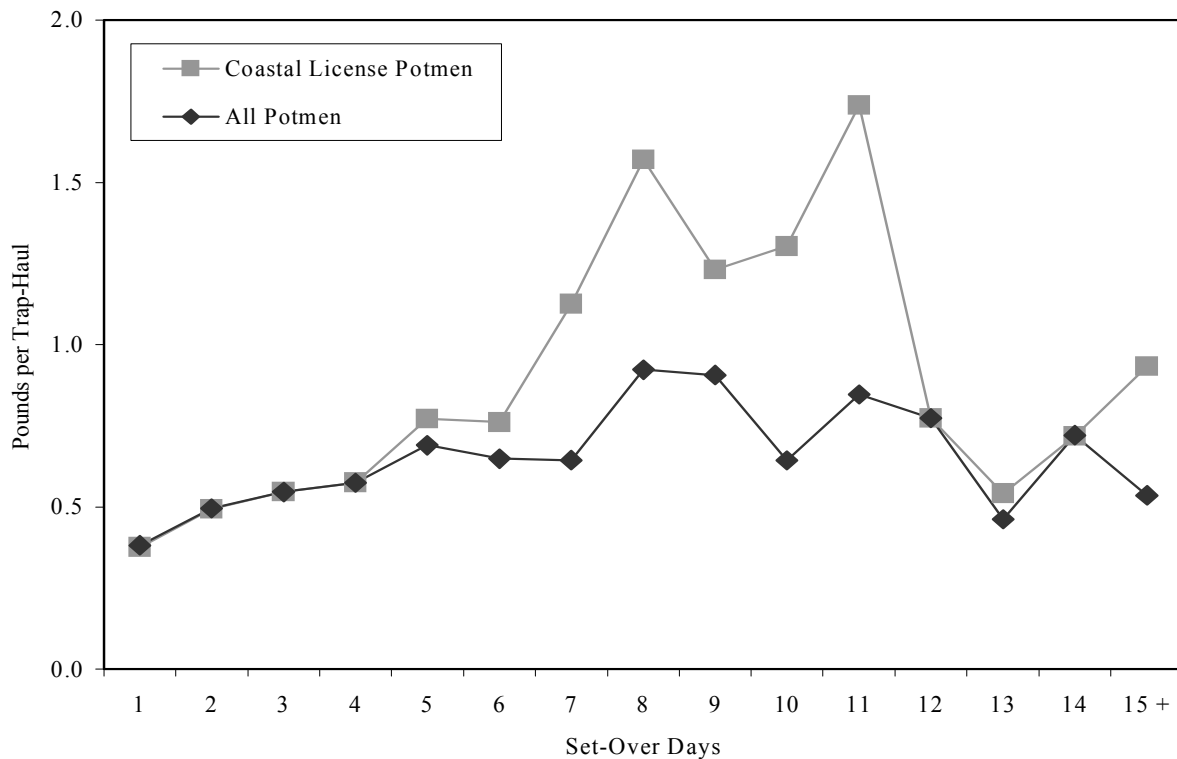


Figure 7. 2001 Massachusetts commercial lobster fishery; catch per unit of effort for coastal and all potmen by month

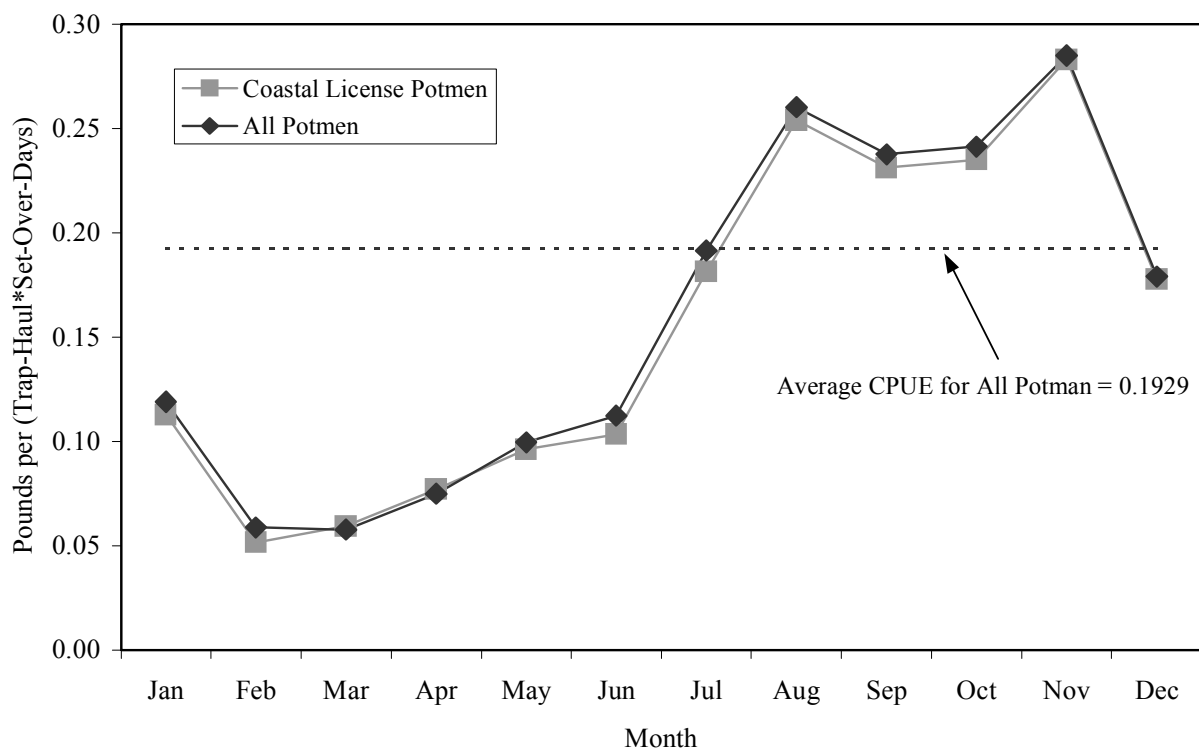
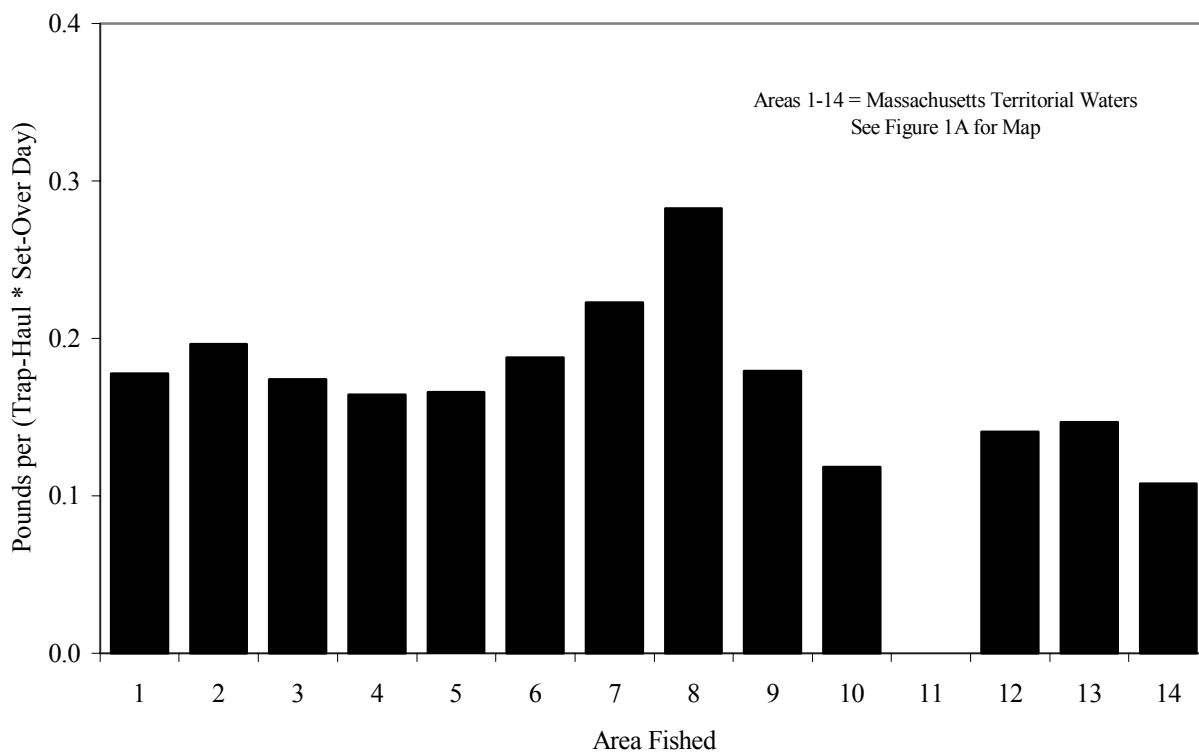


Figure 8. 2001 Massachusetts commercial lobster fishery; catch per unit of effort for all license types by area fished



Fishing gear, vessels, and value

In the commercial fishery, traps were valued at \$29,574,607, diving gear at \$37,122 and power and non-power boats at \$61,453,492 yielding a total gear value of \$91,165,221. Combined with the ex-vessel value of lobster sold, \$45,548,484, this gives a total fishery value of \$136,613,705. See Tables 9, 10 and 11.

Overall, 91.57 percent of the traps fished in the commercial fishery were wire framed, with 7.67 percent being wooden framed and approximately 0.75 percent categorized as "other". Average value (including warp and buoy) ranged anywhere from \$35.39 to \$104.17 with an average value of \$62.70. See Table 9.

Table 9. 2001 Massachusetts commercial lobster fishery; trap types fished and value by license type

	Coastal	Offshore	Seasonal	Total for Trap Type	Percent of Total
Wooden Framed Traps	33,737	2,353	84	36,174	7.67%
Value	\$1,984,320	\$236,200	\$2,957	\$2,223,477	
Value/Trap	\$58.82	\$100.38	\$35.39	\$61.47	
Wire Framed Traps	396,670	34,030	937	431,637	91.57%
Value	\$23,962,624	\$3,063,801	\$44,719	\$27,071,143	
Value/Trap	\$60.41	\$90.03	\$47.70	\$62.72	
Other Trap Types	2,502	1,050	0	3,552	0.75%
Value	\$170,568	\$109,419	\$0	\$279,987	
Value/Trap	\$68.17	\$104.17	\$0.00	\$78.82	
Total for License Type	432,909	37,433	1,021	471,363	
Value	\$26,117,512	\$3,409,420	\$47,675	\$29,574,607	
Value/Trap	\$60.33	\$91.08	\$46.69	\$62.74	

Value of trap includes warp and buoy. These figures include out-of-state fishermen.

Table 10. 2001 Massachusetts commercial lobster fishery; number of fishing vessels and pots fished

AREA:		TERRITORIAL (Areas 1-14)					NON-TERRITORIAL (Areas 15 - 25)					GRAND TOTAL
LICENSE TYPE:		----- COASTAL -----			SEASONAL (Student)		--- COASTAL ---			--- OFFSHORE ---		TOTAL NON-TERRITORIAL
GEAR TYPE:		Diver	Potman	Potman/ Diver	Trawl/ Gillnet	Potman	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet		
-- COUNTY --												
BARNSTABLE												
Pots Fished		0	54,067	2,451	0	93			5,285	0	7,540	0
Power Boat		4	163	9	0	4			9	0	7	40
Non Power Boat		1	25	5	0	0			7	0	1	1
BRISTOL												
Pots Fished		0	17,013	0	0	21			12,757	0	16,430	0
Power Boat		0	61	0	0	1			18	2	14	118
Non Power Boat		0	4	0	0	0			0	0	0	0
DUKES												
Pots Fished		0	3,687	0	0	54			2,446	0	1,020	0
Power Boat		0	22	0	0	3			4	1	5	1
Non Power Boat		0	1	0	0	1			1	0	0	0
ESSEX												
Pots Fished		0	144,188	3,033	0	523			25,970	0	5,940	0
Power Boat		0	429	10	5	23			38	5	6	74
Non Power Boat		0	108	3	0	3			2	0	1	0
NANTUCKET												
Pots Fished		0	620	212	0	8			800	0	0	0
Power Boat		0	5	2	0	1			1	0	0	1
Non Power Boat		0	0	0	0	0			0	0	0	0
NORFOLK												
Pots Fished		0	18,706	25	0	0			0	0	0	0
Power Boat		1	48	0	0	0			0	0	0	0
Non Power Boat		0	20	0	0	0			0	0	0	0
PLYMOUTH												
Pots Fished		0	99,078	1,810	0	322			14,300	0	903	0
Power Boat		2	290	6	2	16			21	2	5	5
Non Power Boat		0	50	0	0	2			3	0	1	0
SUFFOLK												
Pots Fished		0	23,546	0	0	0			1,800	0	1,700	0
Power Boat		0	59	0	0	0			1	0	1	14
Non Power Boat		0	9	0	0	0			0	0	0	0
STATE TOTAL												
Pots Fished		0	360,905	7,531	0	1,021			63,358	0	33,533	0
Power Boat		7	1,077	27	7	48			92	10	38	253
Non Power Boat		1	217	8	0	6			13	0	3	1
OUT OF STATE												
Pots Fished		0	350	0	0	0			0	0	3,800	0
Power Boat		0	1	0	0	0			0	0	3	38
Non Power Boat		0	1	0	0	0			0	0	0	0

Table 11. 2001 Massachusetts commercial lobster fishery; value of fishing vessels and diving gear

AREA:	TERRITORIAL (Areas 1-14)					NON-TERRITORIAL (Areas 15 - 25)					GRAND TOTAL
LICENSE TYPE:	----- COASTAL -----					SEASONAL (Student)	--- COASTAL ---			TOTAL TERRITORIAL	TOTAL NON-TERRITORIAL
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	Potman	Potman	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TOTAL TERRITORIAL
-- COUNTY --											
BARNSTABLE											
Diving Gear	8,980	0	11,585	0	0	0	0	0	0	0	20,565
Power Boat	12,150	4,762,865	229,950	0	13,688	5,018,653	581,200	0	2,083,500	299,862	7,983,215
Non Power Boat	48	12,989	1,549	0	0	14,585	2,423	0	1,500	2	18,510
BRISTOL											
Diving Gear	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	2,328,870	0	0	0	2,328,870	1,599,250	3,000	2,839,000	1,966,605	8,736,725
Non Power Boat	0	800	0	0	0	800	0	0	0	0	800
DUKES											
Diving Gear	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	505,791	0	0	5,750	511,541	289,500	3,500	155,700	3,000	963,241
Non Power Boat	0	20	0	0	20	40	35	0	0	0	75
ESSEX											
Diving Gear	0	0	6,244	0	0	6,244	0	0	0	0	6,244
Power Boat	0	14,249,285	244,350	47,150	101,600	14,642,385	3,549,154	153,000	1,177,500	2,186,340	21,708,379
Non Power Boat	0	46,843	3,504	0	1,050	51,397	1,200	0	1,500	0	54,097
NANTUCKET											
Diving Gear	0	0	1,620	0	0	1,620	0	0	0	0	1,620
Power Boat	0	176,000	6,500	0	500	183,000	130,000	0	0	8,000	321,000
Non Power Boat	0	0	0	0	0	0	0	0	0	0	0
NORFOLK											
Diving Gear	1,505	0	5	0	0	1,510	0	0	0	0	1,510
Power Boat	4,500	2,181,927	0	0	0	2,186,427	0	0	0	0	2,186,427
Non Power Boat	0	9,701	0	0	0	9,701	0	0	0	0	9,701
PLYMOUTH											
Diving Gear	2,700	0	4,483	0	0	7,183	0	0	0	0	7,183
Power Boat	17,800	9,137,544	147,600	64,000	37,100	9,404,044	2,262,440	70,000	106,800	54,200	11,897,484
Non Power Boat	0	29,235	470	0	152	29,857	3,333	0	650	0	33,840
SUFFOLK											
Diving Gear	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	2,472,998	0	0	0	2,472,998	500,000	0	800,000	2,497,500	6,270,498
Non Power Boat	0	4,753	0	0	0	4,753	0	0	0	0	4,753
STATE TOTAL											
Diving Gear	13,185	11,585	12,352	0	0	37,122	0	0	0	0	37,122
Power Boat	34,450	28,953,495	7,490,185	111,150	158,638	36,747,918	8,911,544	229,500	7,162,500	7,015,507	60,066,969
Non Power Boat	48	92,100	17,763	0	1,222	111,133	6,991	0	3,650	2	121,775
OUT OF STATE											
Diving Gear	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	50,000	0	0	0	50,000	0	0	1,330,000	1,446,441	2,826,441
Non Power Boat	0	300	0	0	0	300	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 8,937,988 pounds. The audit of their records revealed a harvest of 8,680,359 pounds or a difference of 2.88 percent.

Last year the fishermen selected for audit reported harvesting 893,566 pounds of lobster on their 2001 catch reports. The audit of actual records showed total landings of 880,760 pounds, a difference of 12,806 pounds or 1.43 percent. Twenty-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 fish-

ery. 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.

Acknowledgements

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; Project IJ-NA16FI1088). 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 and Beth Shanks who, with special care and accuracy, interpret and keypunch 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.

Figure 9. Massachusetts commercial lobster fishery frequency; distribution of the percent difference between fishermen's reported catch and their audited records.

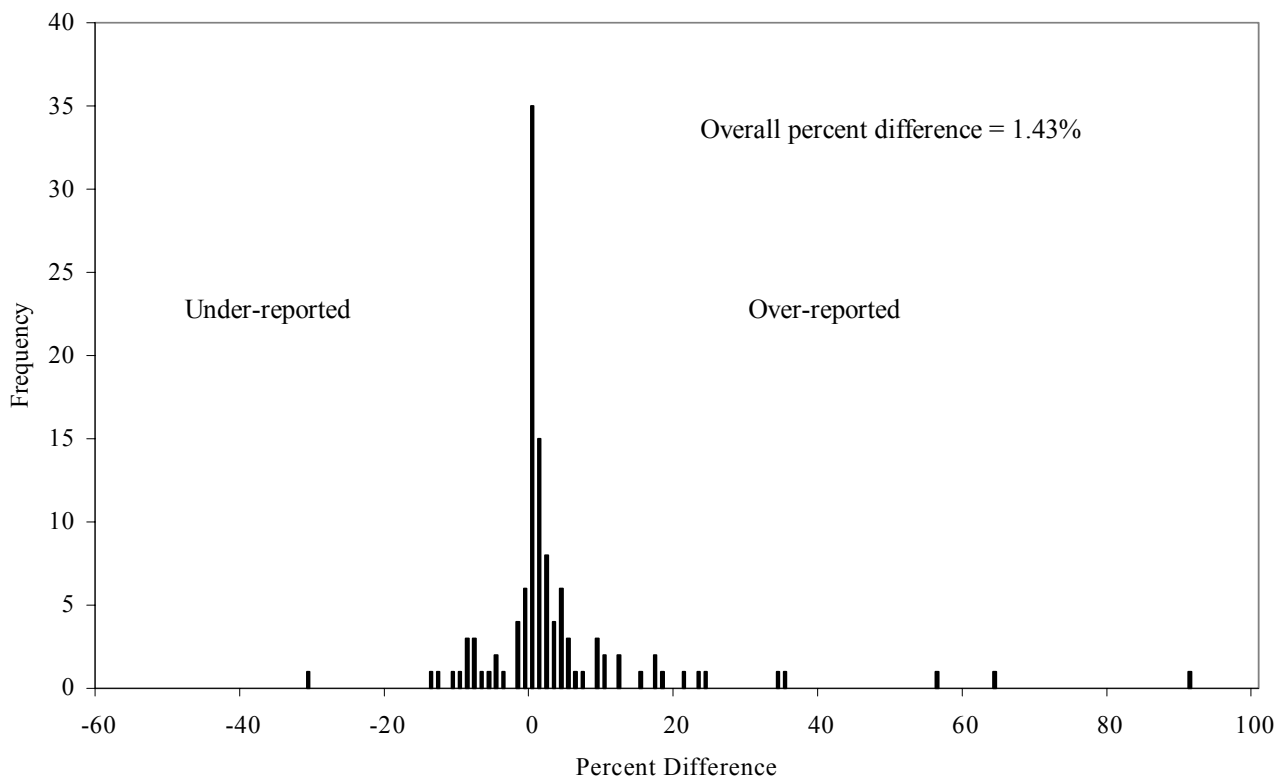


Figure 10. Coastal Map of Massachusetts Showing County Boundaries

