



**Massachusetts Division of Marine Fisheries  
Technical Report TR-20**

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## **2002 Massachusetts Lobster Fishery Statistics**

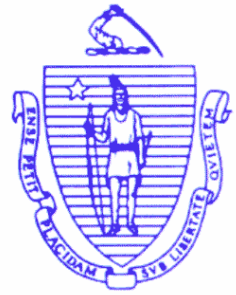
*Micah J. Dean, Kimberly A. Lundy and Thomas B. Hoopes*

**Massachusetts Division of Marine Fisheries  
Department of Fish and Game  
Executive Office of Environmental Affairs  
Commonwealth of Massachusetts**

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Annisquam River Marine Fisheries Station  
30 Emerson Ave.  
Gloucester, MA 01930

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**Massachusetts Division of Marine Fisheries**  
Paul J. Diodati, Director  
**Department of Fish and Game**  
David M. Peters, Commissioner  
**Executive Office of Environmental Affairs**  
Ellen Roy Herzfelder, Secretary  
**Commonwealth of Massachusetts**  
Mitt Romney, Governor

## 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 effort are required to prevent further 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 in 1997. The most current revision at the time these data were collected was Addendum III, Amendment 3 (February, 2002).

The Commission's management plan introduced area management along the coast, with seven separate Lobster Management Areas (LMAs) from Maine to Maryland. Area designations were 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 is to develop management recommendations that achieve the objectives of the plan.

Information provided by a peer-reviewed stock assessment in 2000 indicated a need for an increase in egg production across all Lobster Management Areas. To meet this requirement, ASMFC created a schedule of minimum gauge size increases through Addendum III to Amendment 3 of the FMP. At the

end of 2002, the minimum gauge size was 3  $\frac{1}{4}$ " for LMA 1, and 3  $\frac{5}{16}$ " for LMAs 2,3, and Outer Cape (OC). The schedule calls for an increase of  $\frac{1}{32}$ " per year in LMAs 2,3, and OC, until a final minimum size of 3  $\frac{3}{8}$ " is reached in 2004. Additional increases of  $\frac{1}{32}$ " per year may be required, if necessary, for LMA 3 until a final minimum size of 3  $\frac{1}{2}$ " is reached in 2008.

The basis and success of any such management 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 Division of Marine Fisheries (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 1,531 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 2002 is described on Page 5.

This report is the thirty-sixth 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 sixteenth 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 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, off-shore and seasonal (student)) received a detailed catch report form with their license renewal application. This report, still used today, 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 fished 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 March 2004. 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

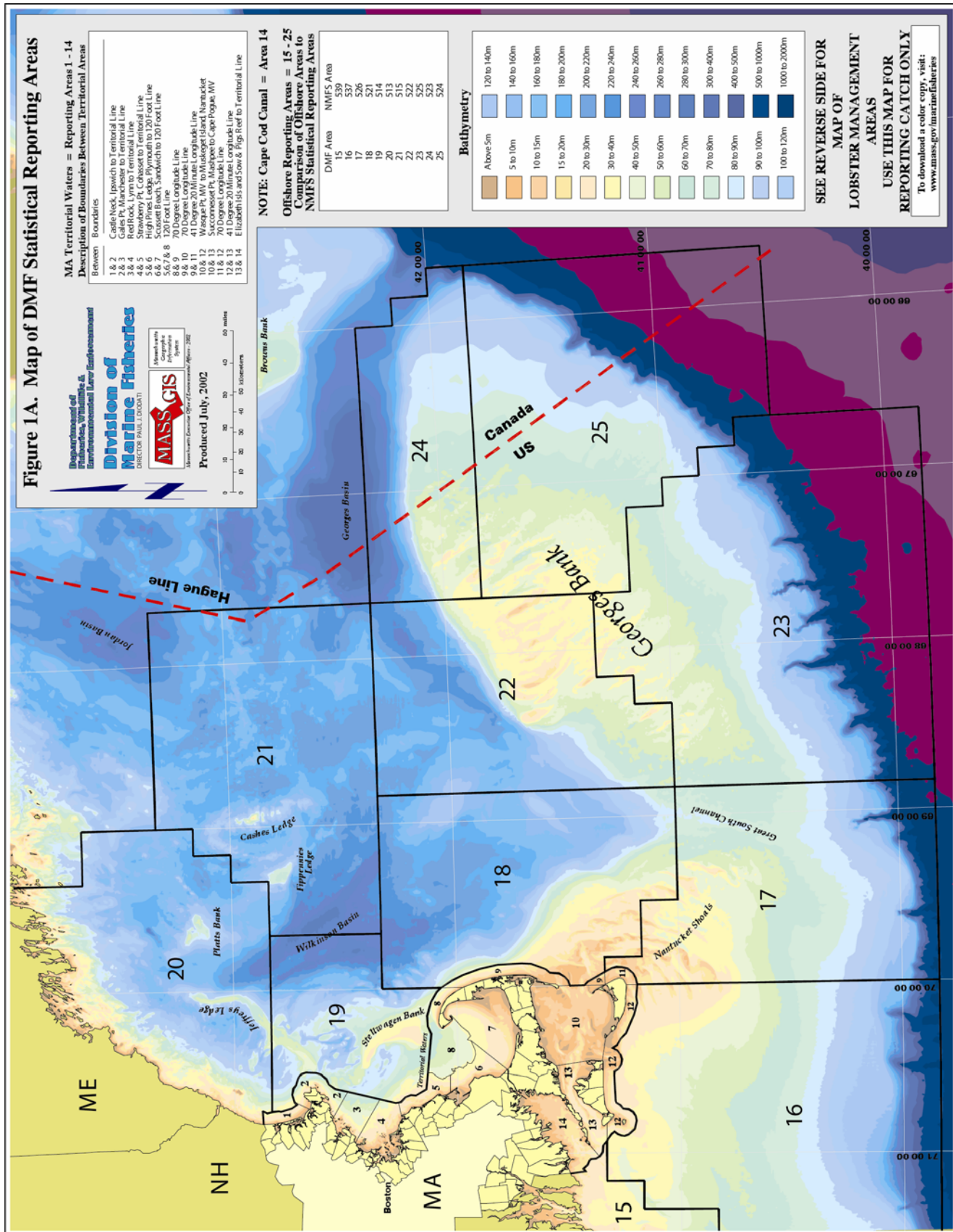
All data presented in this publication are broken down into two basic categories: the first is "territorial" which represents data pertaining to all lobstering activity taking place within the territorial waters (3 mile line) of the Commonwealth (Areas 1-14 on Figure 1A); the second is "non-territorial" 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 designated by the Atlantic States Marine Fisheries Commission.

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.

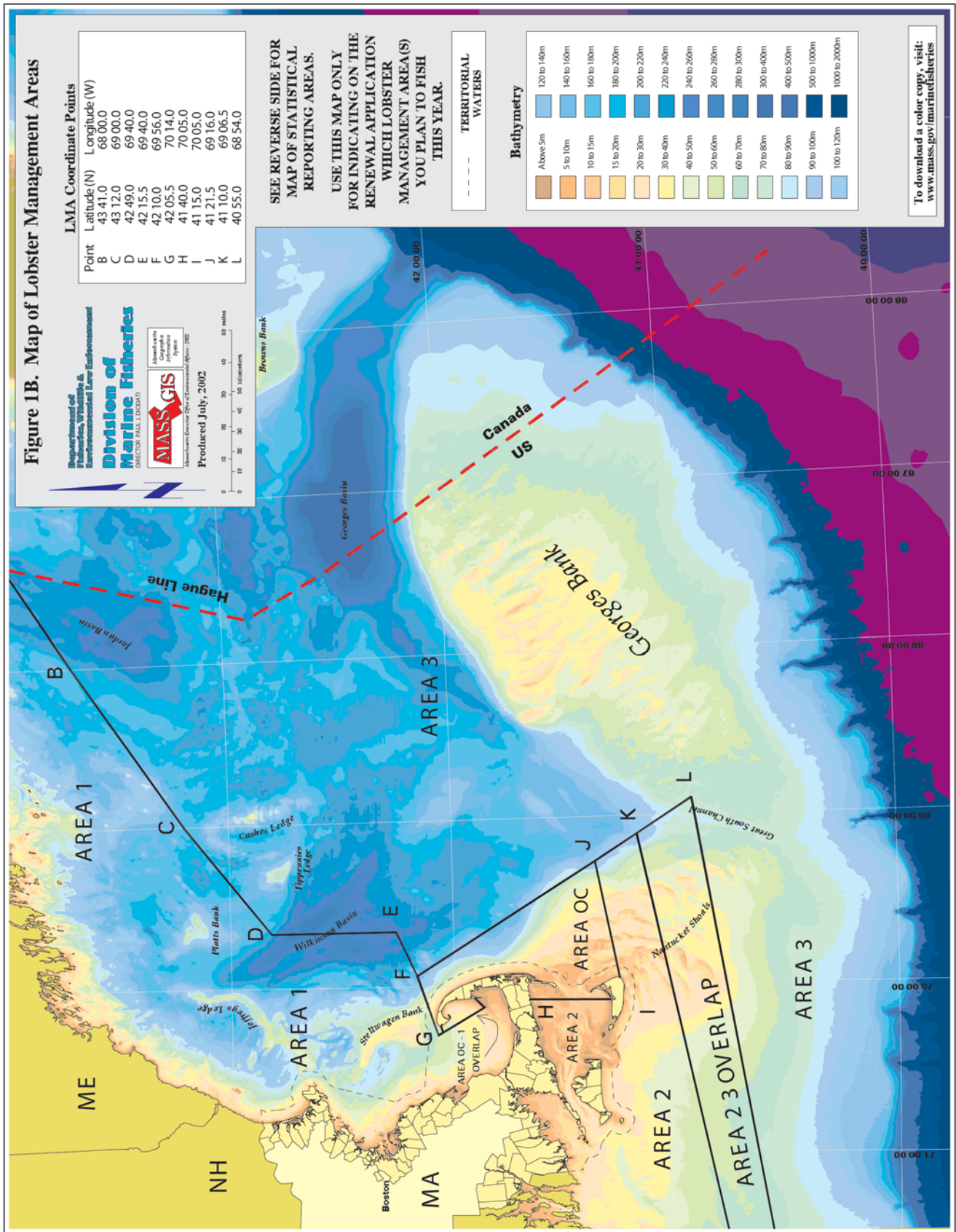
Vessel and SCUBA gear values were calculated on the basis of the fishermen's estimate of its present value and the percentage of the time it is in use specifically for lobstering. When fishermen reported the number of lobsters taken, rather than poundage, a conversion factor of 1.27 pounds per lobster 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.

Figure 1A. Map of DMF Statistical Reporting Areas







## 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 2002, the Division authorized the transfer of 43 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. Twelve 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. Eighteen licenses were forfeited to the Division in 2002. None of these coastal lobster permits were issued directly to waiting list applicants.

### Issued licenses and reporting status

The Division of Marine Fisheries issues four types of lobster licenses:

*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.

*Recreational:* 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.

Table 1 lists the number of commercial and recreational licenses issued in 2002, the dollar value of fees collected and the number that reported catching lobster. There were 2,184 commercial lobster licenses issued during 2002: 1,531 coastal, 555 offshore and 98 seasonal. Non-commercial licenses issued totaled 11,950; breakdown of their reporting status and landings can be found in Table 6.

As of February, 2004 a total of 97 licensed commercial lobstermen (4.4 percent) failed to file a catch report with the Division. Of the 2,087 commercial fishermen who reported, 574 or 27.5 percent claimed they did not catch any lobster during 2002. 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 and seasonal licenses issued increased from 2001 by 4.7 and 2.1 percent, respectively.

**Table 1.** 2002 Massachusetts lobster fishery; reporting status of licenses issued

License Type (Fee)	Licenses	Licensing	Reported		Reported		Not	
	Issued	Revenue	"Catching Lobster"		"No Lobster Catch"		Reporting	
Coastal Commercial (\$260)	1,531	\$400,660	1,084	71%	421	27%	26	2%
Offshore Commercial (\$260)	555	\$173,940	374	67%	137	25%	44	8%
Seasonal (Student) Commercial (\$65)	98	\$6,500	55	56%	16	16%	27	28%
Non-Commercial (\$40)	11,950	\$481,520	6,271	52%	2,713	23%	2,966	25%
Total	14,134	\$1,062,620	7,784	55%	3,287	23%	3,063	22%

**Table 2.** Massachusetts commercial lobster fishery;  
selected licensing information, 1998-2002

	1998	1999	2000	2001	2002	Percent Five Year Change
<b>Coastal Licenses</b>						
Issued	1,570	1,549	1,541	1,538	<b>1,531</b>	-2.48%
% Change		-1.34	-0.52	-0.19	<b>-0.46</b>	
"Caught Lobster"	1,161	1,121	1,125	1,098	<b>1,084</b>	
% Change		-2.14	0.88	-2.21	<b>-0.82</b>	
"Did Not Catch Lobster"	390	417	399	416	<b>421</b>	
% Change		8.37	-3.82	4.46	<b>1.66</b>	
Not Reporting	19	11	17	24	<b>26</b>	
% Change		-41.32	55.35	41.45	<b>8.83</b>	
Percent Not Reporting	1.21%	0.71%	1.10%	1.56%	<b>1.70%</b>	
<b>Offshore Licenses</b>						
Issued	529	536	534	530	<b>555</b>	4.91%
% Change		1.32	-0.37	-0.75	<b>4.72</b>	
"Caught Lobster"	352	350	345	344	<b>374</b>	
% Change		-1.87	-1.06	0.46	<b>3.82</b>	
"Did Not Catch Lobster"	120	123	129	142	<b>133</b>	
% Change		1.16	5.27	10.91	<b>-10.56</b>	
Not Reporting	57	63	60	44	<b>48</b>	
% Change		9.08	-4.41	-26.11	<b>4.18</b>	
Percent Not Reporting	10.78%	11.75%	11.24%	8.30%	<b>8.65%</b>	
<b>Seasonal (Student) Licenses</b>						
Issued	82	89	92	96	<b>98</b>	19.51%
% Change		8.54	3.37	4.35	<b>2.08</b>	
"Caught Lobster"	46	55	53	51	<b>55</b>	
% Change		10.16	-6.78	-7.78	<b>5.64</b>	
"Did Not Catch Lobster"	8	8	17	14	<b>16</b>	
% Change		-7.87	105.57	-21.08	<b>11.95</b>	
Not Reporting	28	26	22	31	<b>27</b>	
% Change		-14.45	-18.14	35.04	<b>-14.68</b>	
Percent Not Reporting	34.15%	29.21%	23.91%	32.29%	<b>27.55%</b>	

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



## Landings and value

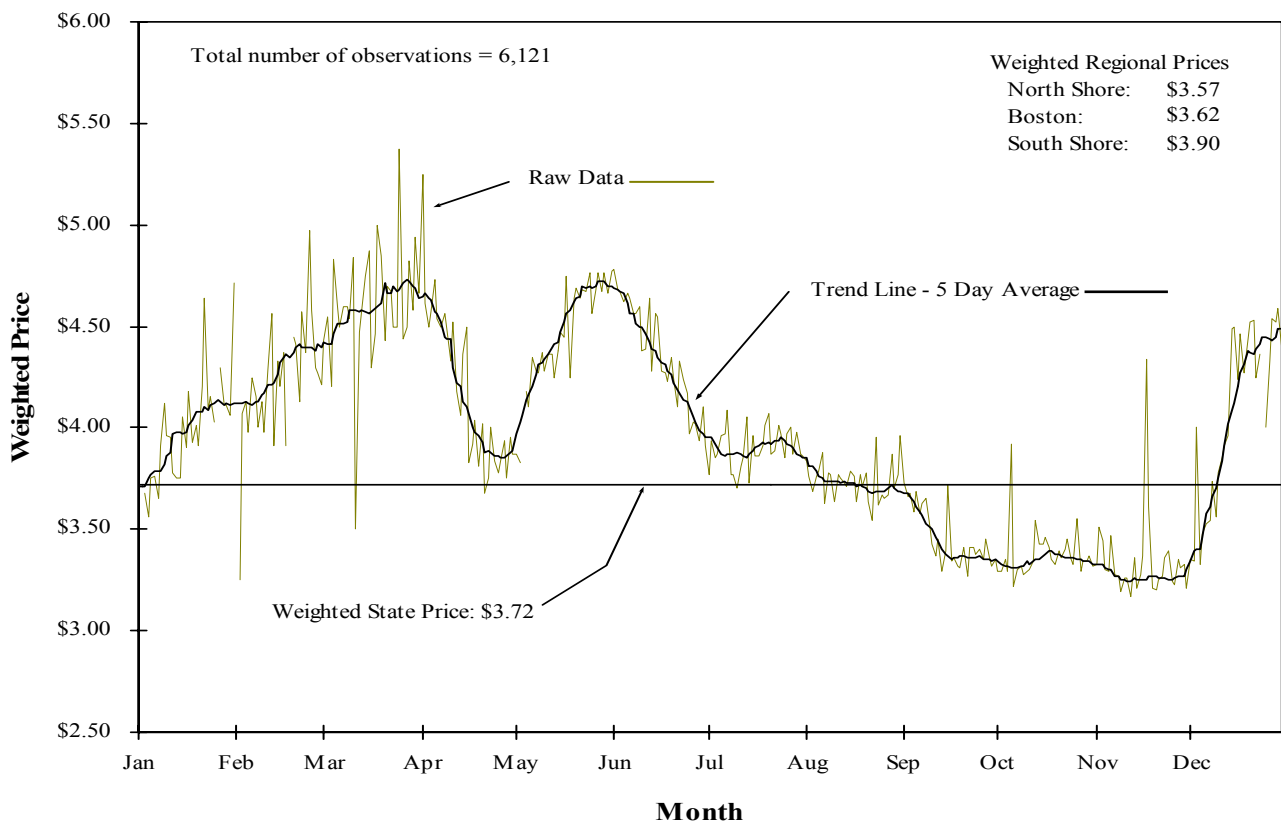
In 2002, 13,745,537 pounds of lobster were reported landed by commercial lobstermen in Massachusetts, a 9.91 percent increase from 2001. Based on an average price of \$3.72 per pound, the commercial catch was valued at \$51,133,397, a 11.76 percent increase from 2001. Figure 2 shows the weighted ex-vessel price for 2002 as derived from audits of lobstermen's records. The weighted average price of \$3.72 decreased 0.53 percent over the average ex-vessel price paid in 2001 (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 13,745,537 pounds of lobster landed commercially, 8,172,984 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 Barn-

stable 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 New Bedford, Sandwich, Fairhaven, and Plymouth in that order. In total numbers of active commercial fishermen, Essex County ranked first with 558, Plymouth County second with 277 and Bristol County third with 233. 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.** 2002 Massachusetts commercial lobster fishery weighted ex-vessel price derived from audited lobstermen's records



**Table 3. 2002 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	----- COASTAL -----			SEASONAL	TOTAL	GRAND
GEAR TYPE:		Pots	Trawl/ Gillnet	Combined*	Pots	INSHORE	Pots	Trawl/ Gillnet	Combined*	Pots	OFFSHORE	TOTAL
--COUNTY -- BARNSTABLE	Fishermen	6	147		11	166 +	10			8	34	54 +
	Pounds	20,610	948,004		1,463	970,595	242,418			712,077	41,416	1,000,560
	Value (\$)	76,668	3,526,573		5,444	3,610,615	901,796			2,648,926	154,068	3,722,085
BRISTOL	Fishermen		70			73 +	12			13	134	160 +
	Pounds		296,405			296,940	272,685			601,910	437,957	1,312,623
	Value (\$)		1,102,625			1,104,615	1,014,390			2,239,103	1,629,200	4,882,957
DUKES	Fishermen		25			26 +				4		8 +
	Pounds		72,477			72,552				17,471		25,309
	Value (\$)		269,615			269,894				64,992		94,151
ESSEX	Fishermen		395	3	31	437	32	5	3	276,577	103,595	118 +
	Pounds		3,470,329	849	5,913	3,557,254	1,040,781	9,427	96,423	1,028,865	385,373	1,527,129
	Value (\$)		12,909,623	3,158	21,996	13,232,984	3,871,704	35,068	358,694			5,680,921
NANTUCKET	Fishermen		5			5						2 +
	Pounds		3,882			3,882						41,208
	Value (\$)		14,440			14,440						153,294
NORFOLK	Fishermen		47			47						1 +
	Pounds		437,298			437,298						90,668
	Value (\$)		1,626,747			1,626,747						337,285
PLYMOUTH	Fishermen		229		7	241 +	15	4		5	7	32 +
	Pounds		2,286,797		1,008	2,294,628	450,070	17,467		44,148	2,345	514,224
	Value (\$)		8,506,884		3,750	8,536,017	1,674,260	64,977		164,231	8,723	1,912,913
SUFFOLK	Fishermen		46			47 +				3	23	27 +
	Pounds		489,943			489,966	460,905			460,905	132,481	646,374
	Value (\$)		1,822,589			1,822,675	1,714,567			1,714,567	492,829	2,404,511
STATE TOTAL	Fishermen	8 +	964	7 +	52 +	1,042	72 +	11 +	3	37 +	274 +	402
	Pounds	20,980	8,005,133	6,210	81,816	8,123,115	2,106,031	27,010	96,423	2,203,755	719,706	5,158,096
	Value (\$)	78,044	29,779,095	23,101	304,354	30,217,986	7,834,437	100,477	358,694	8,197,969	2,677,308	19,188,117
OUT OF STATE	Fishermen					0				6	52	58
	Pounds					0				315,932	148,394	464,326
	Value (\$)					0				1,175,267	552,065	1,727,293

\* Combined gear type means the use of more than one gear type in a year (i.e. pots & dive)  
+ 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 \$3.72, see Figure 2.

**Table 4.** Massachusetts commercial lobster fishery;  
Selected landings (lbs.) and effort statistics, 1998-2002

	1998	1999	2000	2001	2002	Percent Five Year Change
Total Landings	13,247,727	15,911,082	15,031,538	12,233,607	13,745,537	3.76
Percent Change		20.10	-5.53	-18.61	12.36	
Total Traps Fished	503,501	498,497	482,218	473,898	507,613	0.82
Percent Change		-0.99	-3.27	-1.73	7.11	
Total Value	\$47,956,773	\$59,507,447	\$54,865,114	\$45,753,690	\$51,133,396	6.62
Percent Change		24.09	-7.80	-16.61	11.76	
<b>INSHORE (TERRITORIAL - Inside 3 Miles)</b>						
Landings	7,523,578	9,607,646	9,859,453	7,171,821	8,172,984	8.63
Percent Change		27.70	2.62	-27.26	13.96	
Value	\$27,235,353	\$35,932,595	\$35,987,002	\$26,822,609	\$30,403,502	11.63
Percent Change		31.93	0.15	-25.47	13.35	
Trap Landings	7,504,488	9,593,457	9,837,213	7,160,216	8,143,649	8.52
Percent Change		27.84	2.54	-27.21	13.73	
Traps Fished	367,957	375,023	382,711	370,907	407,039	10.62
Percent Change		1.92	2.05	-3.08	9.74	
Non-Trap Landings (Gillnet, Diver)	19,090	14,189	22,240	11,605	29,336	53.67
		-25.67	56.74	-47.82	152.78	
<b>OFFSHORE (NON-TERRITORIAL - Outside 3 Miles)</b>						
Landings	5,724,149	6,303,436	5,172,085	5,061,787	5,572,552	-2.65
Percent Change		10.12	-17.95	-2.13	10.09	
Value	\$20,721,421	\$23,574,851	\$18,878,111	\$18,931,082	\$20,729,894	0.04
Percent Change		13.77	-19.92	0.28	9.50	
Trap Landings	5,065,212	5,602,287	4,468,805	4,293,430	4,667,084	-7.86
Percent Change		10.60	-20.23	-3.92	8.70	
Traps Fished	135,544	123,474	99,507	102,991	100,574	-25.80
Percent Change		-8.90	-19.41	3.50	-2.35	
Non-Trap Landings (Gillnet, Trawler)	658,938	701,149	703,280	768,357	905,468	37.41
		6.41	0.30	9.25	17.84	
Average Price (\$) / Lb	\$3.62	\$3.74	\$3.65	\$3.74	\$3.72	
Percent Change		3.31	-2.41	2.47	-0.53	
Ave. Lbs. / Trap-Haul	0.6616	0.8210	0.7762	0.6697	0.6996	
Percent Change		24.09	-5.45	-13.73	4.47	
Ave. Lbs. / Trap	24.96	30.48	29.67	24.17	25.24	
Percent Change		22.11	-2.68	-18.53	4.42	

**Table 5.** 2002 Massachusetts commercial lobster fishery;  
number of active commercial fishermen and landings by homeport  
Does not include seasonal (student) licenses

CITY/TOWN	FISHERMEN		----- POUNDS -----			PERCENT	RANK
	NUMBER	RANK	INSHORE	OFFSHORE	TOTAL		
AMESBURY-NEWBURY-ROWLEY	3	48	3,171	0	3,171	0.02%	47
BARNSTABLE-YARMOUTH	8	33	24,320	265,197	289,517	2.18%	16
BEVERLY	42	10	441,991	169,807	611,798	4.61%	8
BOSTON	58	6	401,714	656,036	1,057,750	7.97%	2
BOURNE	4	46	951	0	951	0.01%	48
CHATHAM	49	7	190,279	225,968	416,247	3.14%	12
CHILMARK	20	23	31,496	33,203	64,699	0.49%	30
COHASSET	33	15	300,119	41,298	341,417	2.57%	13
DANVERS	8	33	56,392	0	56,392	0.42%	34
DARTMOUTH	9	31	14,663	0	14,663	0.11%	46
DENNIS	17	24	59,495	0	59,495	0.45%	32
EDGARTOWN-OAK BLUFFS	3	48	750	0	750	0.01%	49
ESSEX	6	42	22,547	5,736	28,283	0.21%	38
FAIRHAVEN	40	11	190,812	116,160	306,972	2.31%	14
FALMOUTH	12	28	28,341	16,725	45,066	0.34%	36
GLOUCESTER	195	1	1,015,385	836,248	1,851,633	13.95%	1
GOSNOLD	4	46	14,619	1,585	16,203	0.12%	44
HARWICH	6	42	7,331	18,735	26,066	0.20%	39
HINGHAM	13	26	195,167	26,546	221,713	1.67%	19
HULL	24	19	218,761	53,860	272,621	2.05%	17
IPSWICH	13	26	34,367	0	34,367	0.26%	37
KINGSTON-DUXBURY	8	33	57,639	2	57,641	0.43%	33
LYNN	6	42	71,420	5,154	76,574	0.58%	28
MANCHESTER	26	18	224,610	22,364	246,974	1.86%	18
MARBLEHEAD	45	9	363,044	178,619	541,663	4.08%	9
MARSHFIELD	72	4	648,104	100,392	748,496	5.64%	6
MATTAPOISETT	12	28	73,433	63,545	136,978	1.03%	25
NAHANT	27	16	271,014	32,153	303,167	2.28%	15
NANTUCKET	7	39	5,591	39,499	45,090	0.34%	35
NEW BEDFORD	144	2	85,448	411,476	496,923	3.74%	10
NEWBURY PORT	23	21	79,083	17,851	96,935	0.73%	26
ORLEANS	21	22	152,257	5,339	157,596	1.19%	24
PLYMOUTH	86	3	788,647	97,266	885,912	6.68%	3
PROVINCETOWN	35	14	153,161	10,049	163,210	1.23%	23
QUINCY	7	39	23,309	0	23,309	0.18%	40
ROCKPORT	67	5	630,318	155,452	785,770	5.92%	5
SALEM	5	45	18,712	0	18,712	0.14%	42
SALISBURY	9	31	7,350	12,184	19,534	0.15%	41
SANDWICH	40	11	265,465	409,765	675,230	5.09%	7
SAUGUS-REVERE	27	16	213,732	4,907	218,639	1.65%	20
SCITUATE	46	8	248,924	218,386	467,310	3.52%	11
SWAMPSCOTT	24	19	166,381	18,273	184,654	1.39%	21
TISBURY	7	39	15,396	738	16,135	0.12%	45
TRURO	10	30	59,532	400	59,932	0.45%	31
WAREHAM-MARION	8	33	16,979	0	16,979	0.13%	43
WELLFLEET-EASTHAM	8	33	76,381	0	76,381	0.58%	29
WESTPORT	38	13	47,544	742,944	790,487	5.96%	4
WEYMOUTH	8	33	71,000	92,239	163,240	1.23%	22
WINTHROP	17	24	77,029	1,441	78,470	0.59%	27
STATEWIDE TOTAL	1,400		8,164,173	5,107,540	13,271,713		
OUT OF STATE	58		0	464,326	464,326		

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 2002 totaled 11,950, down slightly from 2001, with 6,271 or 52.5 percent, reporting that they fished for lobster. In general, reporting rate and the percentage of license holders fishing decreased slightly. Landings decreased by approximately 4.9 percent from 2001. The number of traps fished decreased by 4.8 percent and the number of hours dived decreased by 10.4 percent. Landings amounted to 279,147 pounds or approximately 2

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 2003. Twenty-five 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.** 2002 Massachusetts recreational lobster fishery; license status and harvest information

License Type:	Diver	Diver/Pot	Potman	Total	Percent of Total
Number of Licenses Issued in 2002	3,556	3,655	4,739	<b>11,950</b>	
Number that Reported	2,588	2,806	3,590	<b>8,984</b>	75.18%
Total Number That Fished	1,779	1,897	2,595	<b>6,271</b>	52.48%
Total Number That Did Not Fish	809	909	995	<b>2,713</b>	22.70%
Number That Did Not Report	968	849	1,149	<b>2,966</b>	24.82%
Number of Lobsters Reported Landed	33,492	66,968	119,341	<b>219,801</b>	percent change from 2001
Pounds of Lobsters (Calculated)*	42,535	85,049	151,563	<b>279,147</b>	-4.90%
Number Pots Fished		7,245	19,054	<b>26,299</b>	-4.84%
Number of Hours Diving	25,229	23,143		<b>48,372</b>	-10.40%

\* Based on 1.27 Pounds per Lobster.

## Territorial fishery

Territorial landings by commercial fishermen were concentrated in the months of July through November when 79 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 2002 landings were distributed July through November with peak landings occurring in September (Table 7; Figure 3). Landings in 2002 differed slightly from 2001 where the peak occurred in October rather than September.

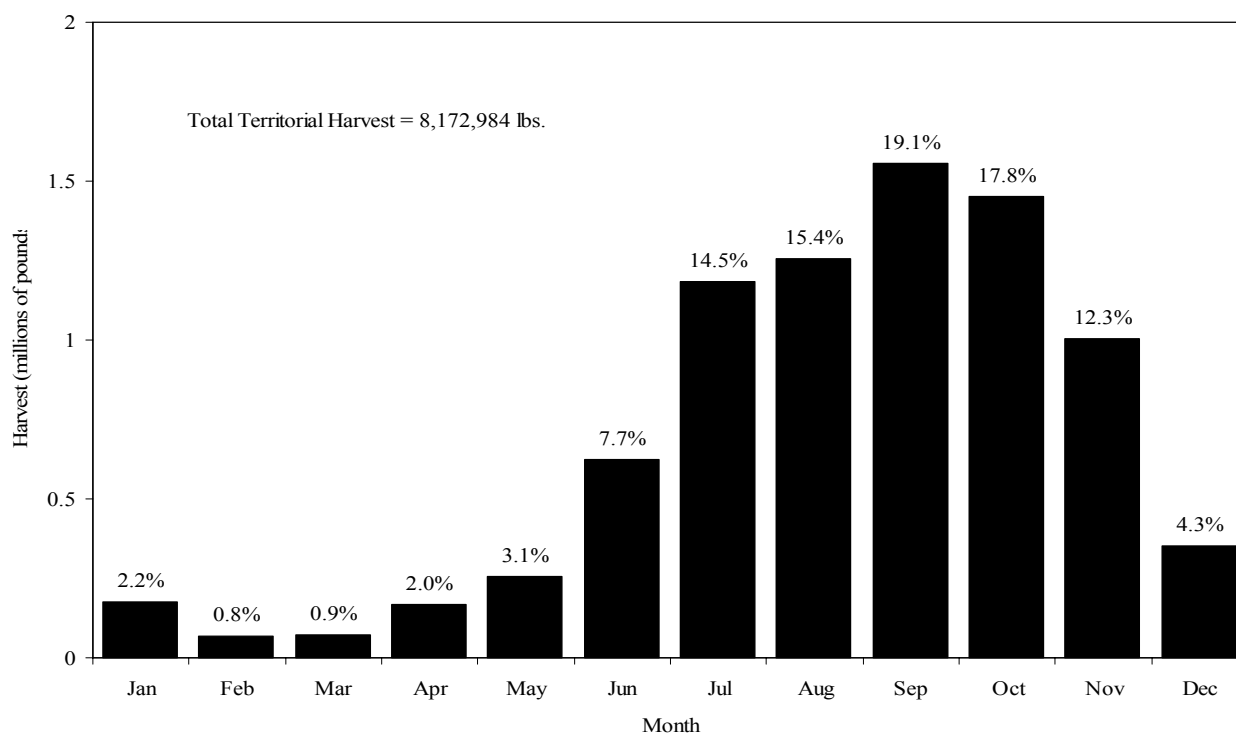
The greatest harvest of lobster from territorial waters came from the Cape Ann vicinity (Area 2 on Figure 1A), where approximately 22 percent of the state's territorial harvest was caught.

Territorial landings were up 8.63 percent in 2002. See Figure 1A for the map of fishing areas and Figure 4 and Table 8 for a complete break-

**Table 7.** 2002 Massachusetts commercial lobster fishery; percent monthly territorial harvest by license type.

Month	Coastal	Seasonal
January	2.2%	0.0%
February	0.8%	0.0%
March	0.9%	0.0%
April	2.1%	0.0%
May	3.1%	0.0%
June	7.6%	15.8%
July	14.5%	38.5%
August	15.4%	32.4%
September	19.1%	13.3%
October	17.8%	0.0%
November	12.3%	0.0%
December	4.3%	0.0%
Total	100.0%	100.0%

**Figure 3.** 2002 Massachusetts commercial lobster fishery total monthly territorial harvest for coastal and seasonal license types





**Table 8.** 2002 Massachusetts commercial lobster fishery; percent territorial harvest by area and license type

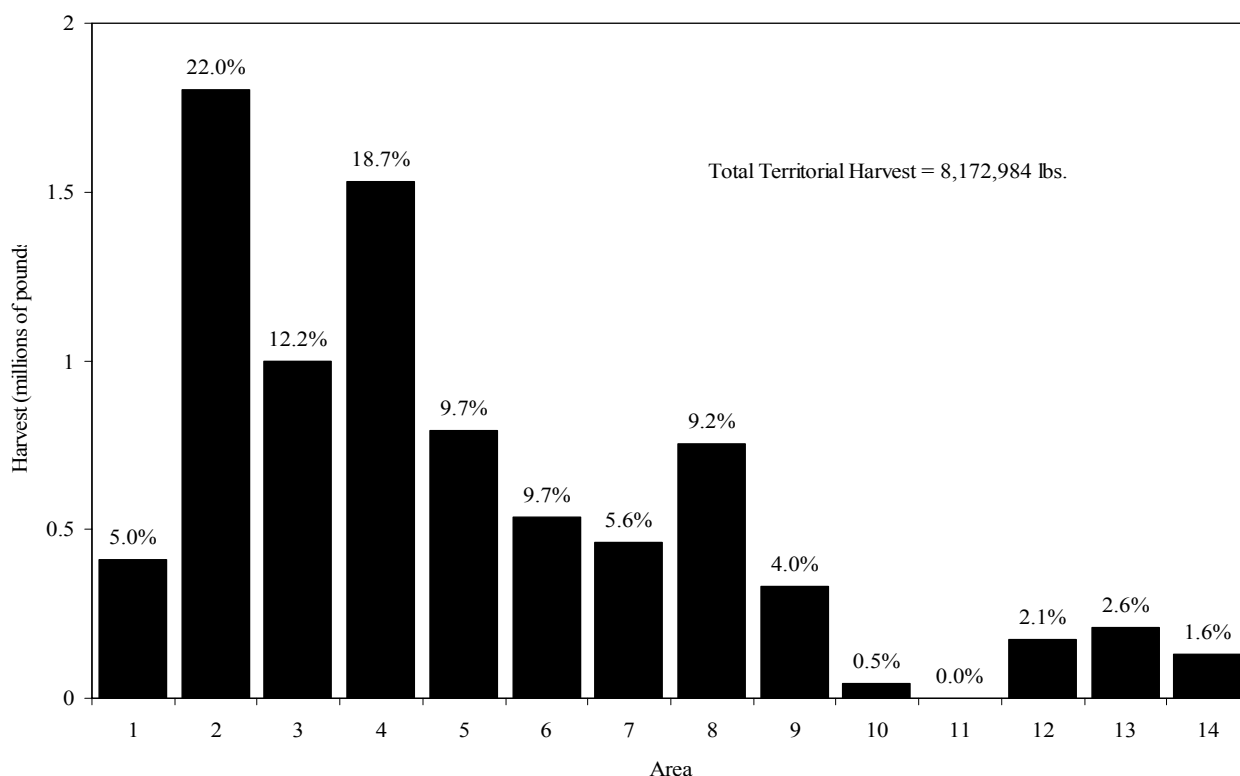
Area	Coastal	Seasonal
1	5.0%	44.7%
2	22.0%	23.7%
3	12.2%	1.2%
4	18.7%	3.8%
5	9.7%	1.3%
6	6.6%	8.3%
7	5.6%	12.6%
8	9.2%	0.0%
9	4.0%	2.4%
10	0.5%	0.0%
11	0.0%	0.0%
12	2.1%	0.0%
13	2.6%	0.2%
14	1.6%	1.8%
Total Pounds	8,164,008	8,976

down by area for each license type and month.

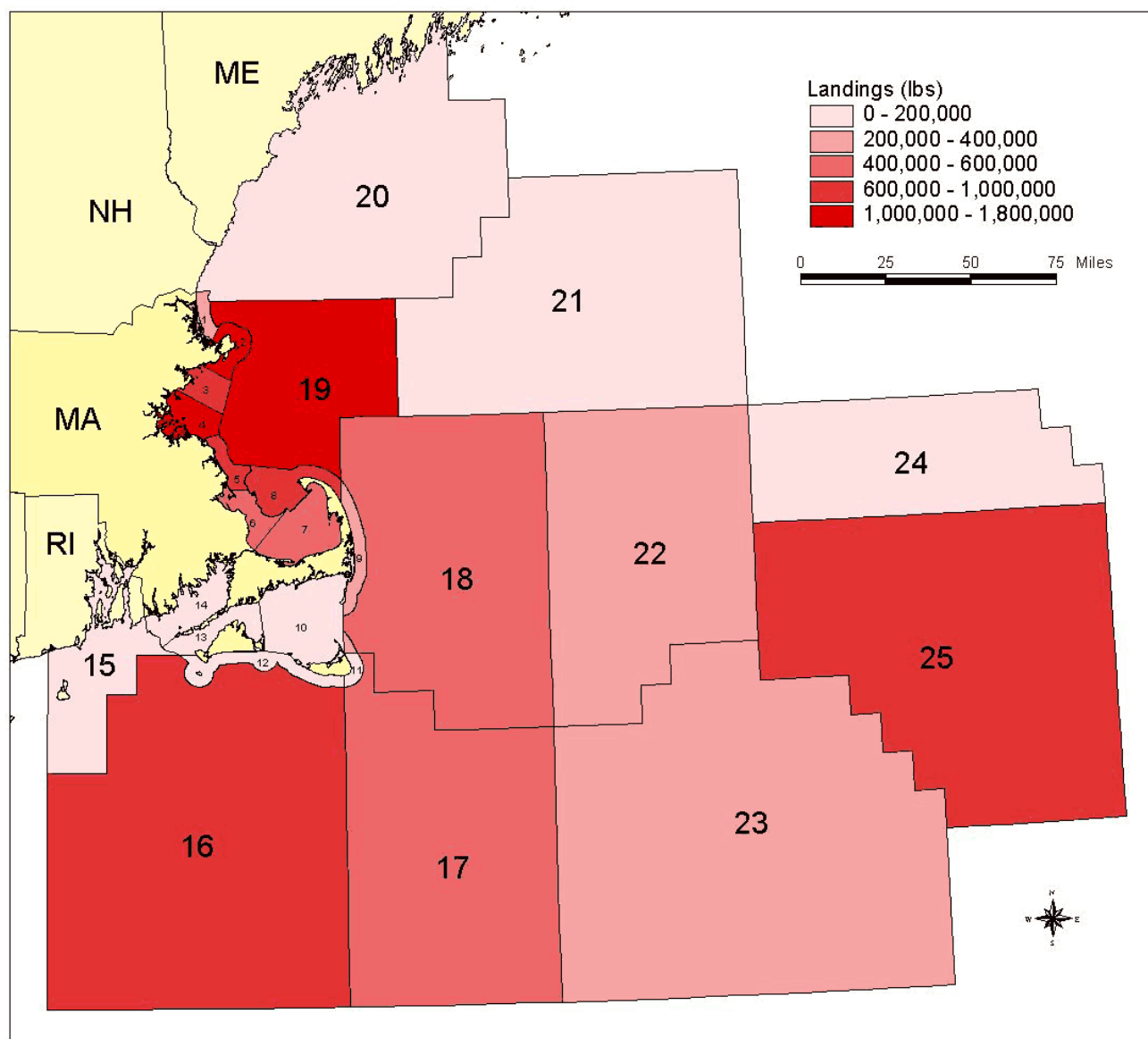
Offshore license landings are not shown in Figures 3 and 4 because license holders of this type cannot harvest lobsters within territorial waters. Offshore landings are more evenly distributed during the year with offshore potmen landings peaking in autumn and mobile gear landings peaking in the winter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

Some misreporting has occurred in the past due to lobstermen reporting by Lobster Management Area as opposed to Statistical Reporting Area, thereby artificially inflating landings in Reporting Areas 1, 2 and 3. However, we feel this problem has been minimized for the 2002 data, due to redesigned catch reports and visual screening of effort data prior to data entry.

**Figure 4.** 2002 Massachusetts commercial lobster fishery total territorial harvest for coastal and seasonal license types by area fished



**Figure 5.** 2002 Massachusetts lobster fishery; landings by statistical reporting area  
(see Figure 1A for references to reporting areas)



### Catch rates

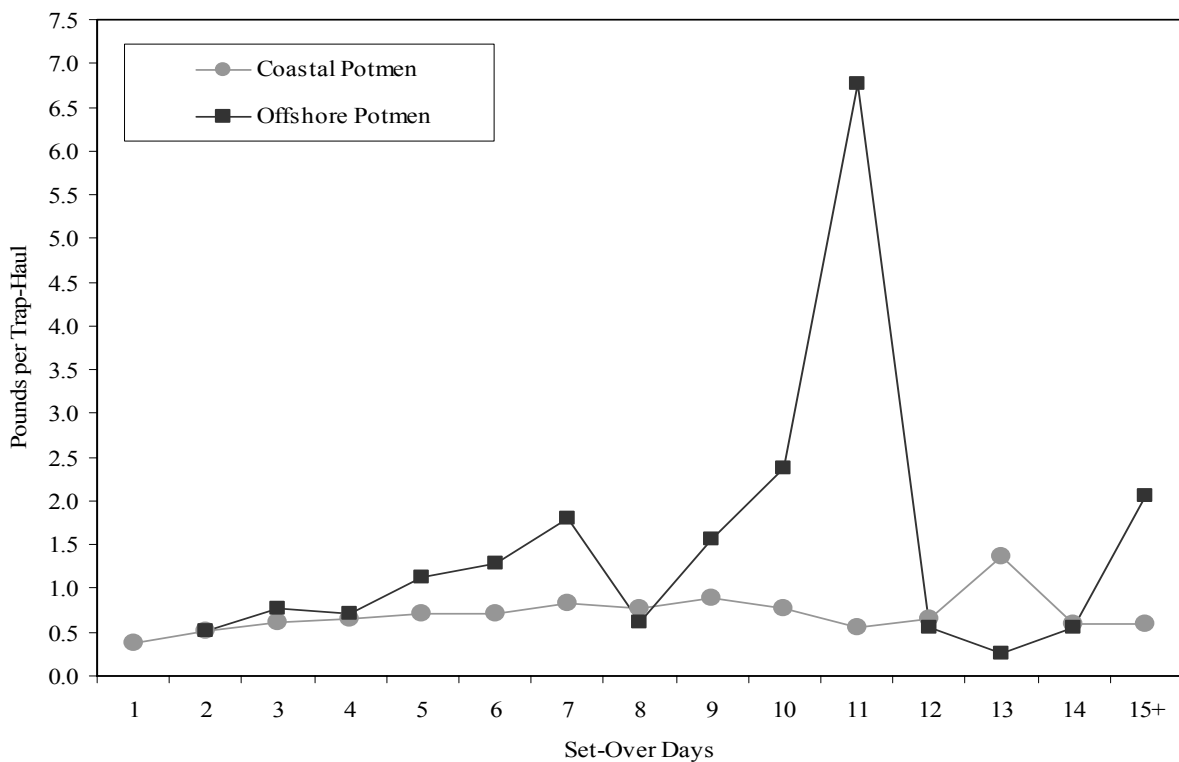
The average catch per trap haul for coastal lobstermen was 0.6624 pounds. For traps fished one set-over day the average was 0.3749; for those fished two days, 0.5065; for three days, 0.6045; and for four days, 0.6578. See Figure 6 for catch per unit effort by set-over day.

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 all potmen in 2002 was 0.1675. Overall these figures should be viewed as approximates since, in many cases, fisherman will estimate the number of traps hauled per trip for each month. If a fisherman left this informa-

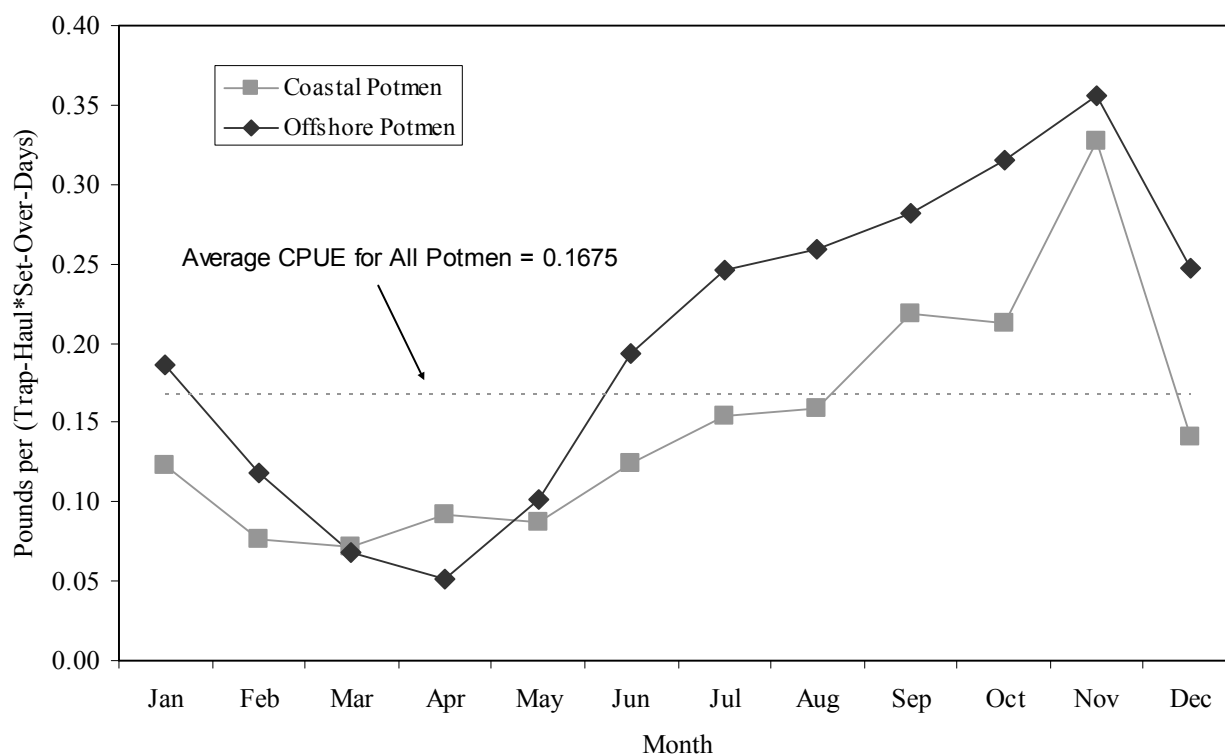
tion blank, the catch report was returned for corrections. If the combination of maximum traps, set-over days, average traps hauled per trip and number of trips per month was an unreasonable or unattainable value, the individual's data was omitted from the catch rate calculation.

In some instances, where the number of observations in a particular break-down of the data is small, exceptionally high or low values have a large influence on the calculated CPUE. For instance, only 1 individual fished their gear for 11 set-over-days (Figure 6), and only 1 individual reported fishing in area 11 (Figure 8)

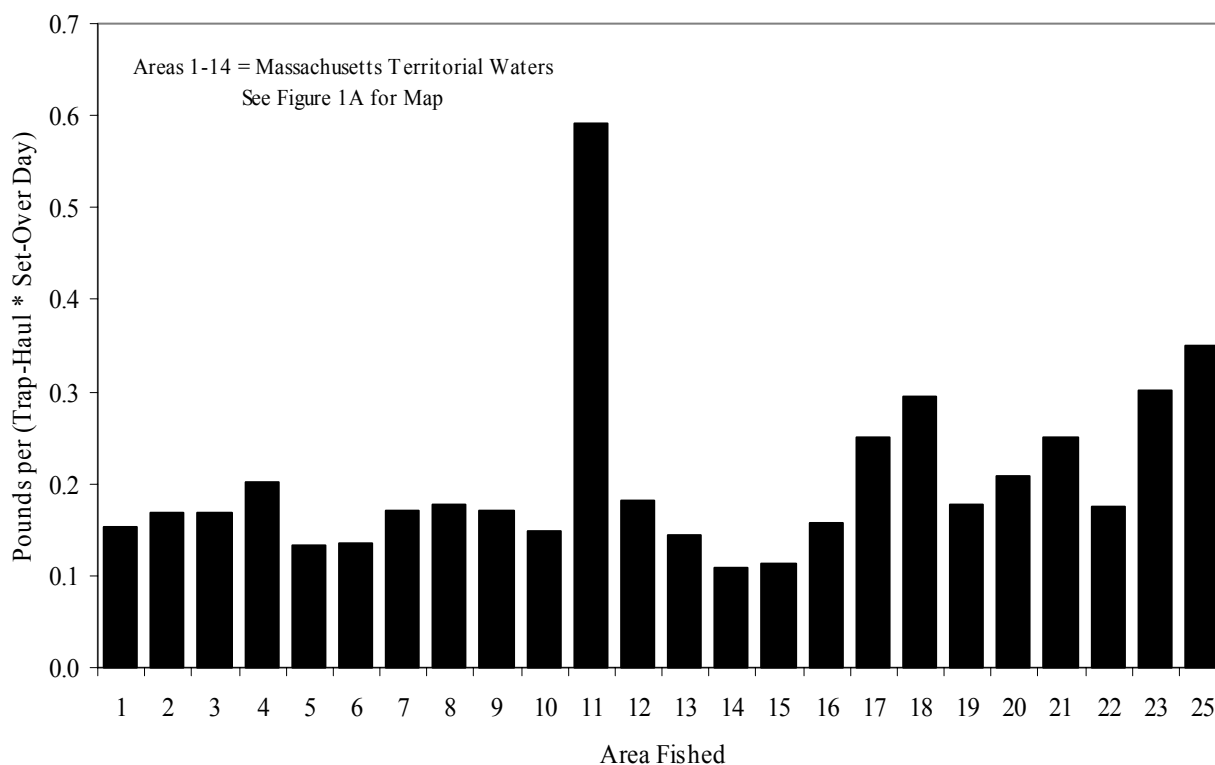
**Figure 6.** 2002 Massachusetts commercial lobster fishery; catch per unit of effort (pounds per trap-haul) by set-over day for coastal and offshore potmen



**Figure 7.** 2002 Massachusetts commercial lobster fishery; catch per unit of effort (pounds per trap-haul \* set-over-day) for coastal and offshore potmen by month



**Figure 8.** 2002 Massachusetts commercial lobster fishery; catch per unit of effort (pounds per trap-haul \* set-over-day) for all license types by area fished



**Fishing gear, vessels, and value**

In the commercial fishery, traps were valued at \$30,312,407, diving gear at \$35,020 and power and non-power boats at \$62,753,898 yielding a total gear value of \$93,101,325. Combined with the ex-vessel value of lobster sold, \$51,133,397, this gives a total fishery value of \$144,234,722. See Tables 9, 10 and 11.

Overall, 92.20 percent of the traps fished in the commercial fishery were wire framed, with 6.82 percent being wooden framed and approximately 0.97 percent categorized as "other". Average value (including warp and buoy) ranged anywhere from \$40.50 to \$164.00 with an overall average value of \$59.72. See Table 9.

**Table 9.** 2002 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	31,585	3,008	47	<b>34,640</b>	6.82%
Value	\$1,684,156	\$333,861	\$1,693	<b>\$2,019,710</b>	
Value/Trap	\$57.60	\$121.33	\$40.50	<b>\$58.31</b>	
Wire Framed Traps	428,150	38,796	1,097	<b>468,043</b>	92.20%
Value	\$24,224,890	\$3,700,344	\$48,193	<b>\$27,973,427</b>	
Value/Trap	\$57.13	\$85.95	\$45.87	<b>\$59.77</b>	
Other Trap Types	1,710	3,220	0	<b>4,930</b>	0.97%
Value	\$103,750	\$215,520	\$0	<b>\$319,270</b>	
Value/Trap	\$58.75	\$164.00	\$0.00	<b>\$64.76</b>	
Total for License Type	<b>461,445</b>	<b>45,024</b>	<b>1,144</b>	<b>507,613</b>	
Value	<b>\$26,012,796</b>	<b>\$4,249,725</b>	<b>\$49,886</b>	<b>\$30,312,407</b>	
Value/Trap	<b>\$56.37</b>	<b>\$94.39</b>	<b>\$43.61</b>	<b>\$59.72</b>	

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

**Table 10. 2002 Massachusetts commercial lobster fishery; number of fishing vessels and pots fished**

AREA:		INSHORE (Areas 1 - 14)					OFFSHORE (Areas 15 - 25)							
LICENSE TYPE:	GEAR TYPE:	COASTAL			SEASONAL	TOTAL INSHORE	COASTAL			OFFSHORE		SEASONAL	TOTAL OFFSHORE	GRAND TOTAL
		Dive	Pots	Trawl/ Gillnet			Combined*	Pots	Trawl/ Gillnet	Combined*	Pots			
-- COUNTY -- BARNSTABLE Pots Fished Power Boat Non Power Boat		0	57,387	0	15	237	57,639	6,765	0	0	10,700	0	18,015	75,654
		6	163	1	0	10	180	14	0	0	9	2	59	239
		2	41	1	0	0	44	9	0	0	0	0	10	54
BRISTOL Pots Fished Power Boat Non Power Boat		0	23,437	0	0	49	23,486	8,162	0	0	14,137	0	22,299	45,785
		0	75	1	0	2	78	12	1	0	13	0	138	216
		0	2	0	0	0	2	0	0	0	0	0	0	2
DUKES Pots Fished Power Boat Non Power Boat		0	5,820	0	0	20	5,840	450	0	0	1,125	0	1,575	7,415
		0	26	0	0	1	27	1	1	0	4	0	8	35
		0	2	0	0	0	2	0	0	0	0	0	0	2
ESSEX Pots Fished Power Boat Non Power Boat		0	157,508	0	3,845	631	161,984	23,510	0	2,400	4,400	0	30,353	192,337
		0	428	3	9	31	471	35	5	3	3	70	117	588
		0	109	1	1	1	112	2	0	0	0	0	2	114
NANTUCKET Pots Fished Power Boat Non Power Boat		0	876	0	0	0	876	800	0	0	0	0	800	1,676
		0	7	0	0	0	7	2	0	0	0	1	3	10
		0	2	0	0	0	2	0	0	0	0	0	0	2
NORFOLK Pots Fished Power Boat Non Power Boat		0	20,242	0	0	0	20,242	0	0	0	1,800	0	1,800	22,042
		0	55	0	0	0	55	0	0	0	1	0	1	56
		0	13	0	0	0	13	0	0	0	0	0	0	13
PLYMOUTH Pots Fished Power Boat Non Power Boat		0	112,563	0	650	139	113,352	11,595	0	0	1,636	0	13,256	126,608
		2	274	2	1	7	286	22	4	0	5	7	39	325
		0	52	0	0	0	52	0	0	0	0	0	0	52
SUFFOLK Pots Fished Power Boat Non Power Boat		0	23,620	0	0	0	23,620	1,800	0	0	4,386	0	6,186	29,806
		1	48	0	0	0	49	1	0	0	3	22	26	75
		0	7	0	0	0	7	0	0	0	0	0	0	7
STATE TOTAL Pots Fished Power Boat Non Power Boat		0	401,453	0	4,510	1,076	407,039	53,082	0	2,400	38,184	0	94,284	501,323
		9	1,076	7	10	51	1,153	87	11	3	38	248	391	1,544
		2	228	2	1	1	234	11	0	0	0	1	12	246
OUT OF STATE Pots Fished Power Boat Non Power Boat		0	0	0	0	0	0	0	0	0	0	0	6,290	6,290
		0	0	0	0	0	0	0	0	0	0	0	51	57
		0	0	0	0	0	0	0	0	0	0	0	0	0

\* Combined gear type means the use of more than one gear type in a year (i.e. pots & dive)



**Table 11. 2002 Massachusetts commercial lobster fishery; value of fishing vessels and diving gear**

AREA:	INSHORE (Areas 1 - 14)					OFFSHORE (Areas 15 - 25)					SEASONAL	TOTAL OFFSHORE	GRAND TOTAL
	LICENSE TYPE:	COASTAL			SEASONAL	TOTAL INSHORE	COASTAL			OFFSHORE	Pots		
GEAR TYPE:	Dive	Pots	Trawl/ Gillnet	Combined*	Pots		Pots	Trawl/ Gillnet	Combined*	Pots	Trawl/ Gillnet	Combined*	
-- COUNTY --													
BARNSTABLE	12,600	9,250	0	0	0	21,850	12	0	0	0	0	0	21,862
Diving Gear	57,950	4,990,930	50,000	0	65,250	5,164,130	1,045,450	0	0	2,702,620	715,900	31,250	9,659,350
Power Boat	345	14,013	500	0	0	14,858	2,715	0	0	0	10	0	17,583
Non Power Boat													
BRISTOL													
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	2,302,345	5,000	0	5,650	2,312,995	915,000	3,000	0	2,625,000	1,216,228	0	7,072,223
Non Power Boat	0	200	0	0	0	200	0	0	0	0	0	0	200
DUKES													
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	828,150	0	0	7,600	835,750	40,000	3,000	0	146,500	4,500	0	1,029,750
Non Power Boat	0	325	0	0	0	325	0	0	0	0	0	0	325
ESSEX													
Diving Gear	0	6,505	0	0	0	6,505	0	0	0	0	0	0	6,505
Power Boat	0	14,812,322	12,350	347,500	199,625	15,371,797	3,528,500	60,000	190,000	1,010,000	713,775	0	20,878,972
Non Power Boat	0	49,860	0	400	0	50,260	500	0	0	0	0	0	50,760
NANTUCKET													
Diving Gear	0	1,000	0	0	0	1,000	0	0	0	0	0	0	1,000
Power Boat	0	153,500	0	0	0	153,500	125,000	0	0	0	25,000	0	303,500
Non Power Boat	0	950	0	0	0	950	0	0	0	0	0	0	950
NORFOLK													
Diving Gear	0	20	0	0	0	20	0	0	0	0	0	0	20
Power Boat	0	2,033,400	0	0	0	2,033,400	0	0	0	54,000	0	0	2,087,400
Non Power Boat	0	4,750	0	0	0	4,750	0	0	0	0	0	0	4,750
PLYMOUTH													
Diving Gear	2,700	933	0	0	0	3,633	0	0	0	0	0	0	3,633
Power Boat	17,800	10,737,650	13,000	20,000	15,650	10,804,100	2,017,900	78,500	0	142,500	57,400	0	13,100,400
Non Power Boat	0	32,585	0	0	0	32,585	0	0	0	0	0	0	32,585
SUFFOLK													
Diving Gear	2,000	0	0	0	0	2,000	0	0	0	0	0	0	2,000
Power Boat	20,000	2,042,050	0	0	0	2,062,050	250,000	0	0	400,000	3,432,750	0	6,144,800
Non Power Boat	0	3,700	0	0	0	3,700	0	0	0	0	0	0	3,700
STATE TOTAL													
Diving Gear	17,300	17,708	0	0	0	35,008	12	0	0	0	0	0	35,020
Power Boat	95,750	37,900,347	80,350	367,500	293,775	38,737,722	7,921,850	144,500	190,000	7,080,620	6,165,553	31,250	60,276,595
Non Power Boat	345	106,383	500	400	0	107,628	3,215	0	0	0	10	0	110,853
OUT OF STATE													
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	0	0	0	0	0	0	0	0	0	1,445,000	921,650	2,366,650
Non Power Boat	0	0	0	0	0	0	0	0	0	0	0	0	0

\* Combined gear type means the use of more than one gear type in a year (ie. pots & dive)

### 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 7,748,868 pounds. The audit of their records revealed a harvest of 7,710,381 pounds or a difference of 0.50 percent.

Last year the fishermen selected for audit reported harvesting 1,334,431 pounds of lobster on their 2002 catch reports. The audit of actual records showed total landings of 1,321,170 pounds, a difference of 13,261 pounds or 1.00 percent. Three 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.

### 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-NA03NMF4070141). 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 Beth Shanks who, with special care and accuracy, interprets and keypunches 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 2002 catch and their audited records.

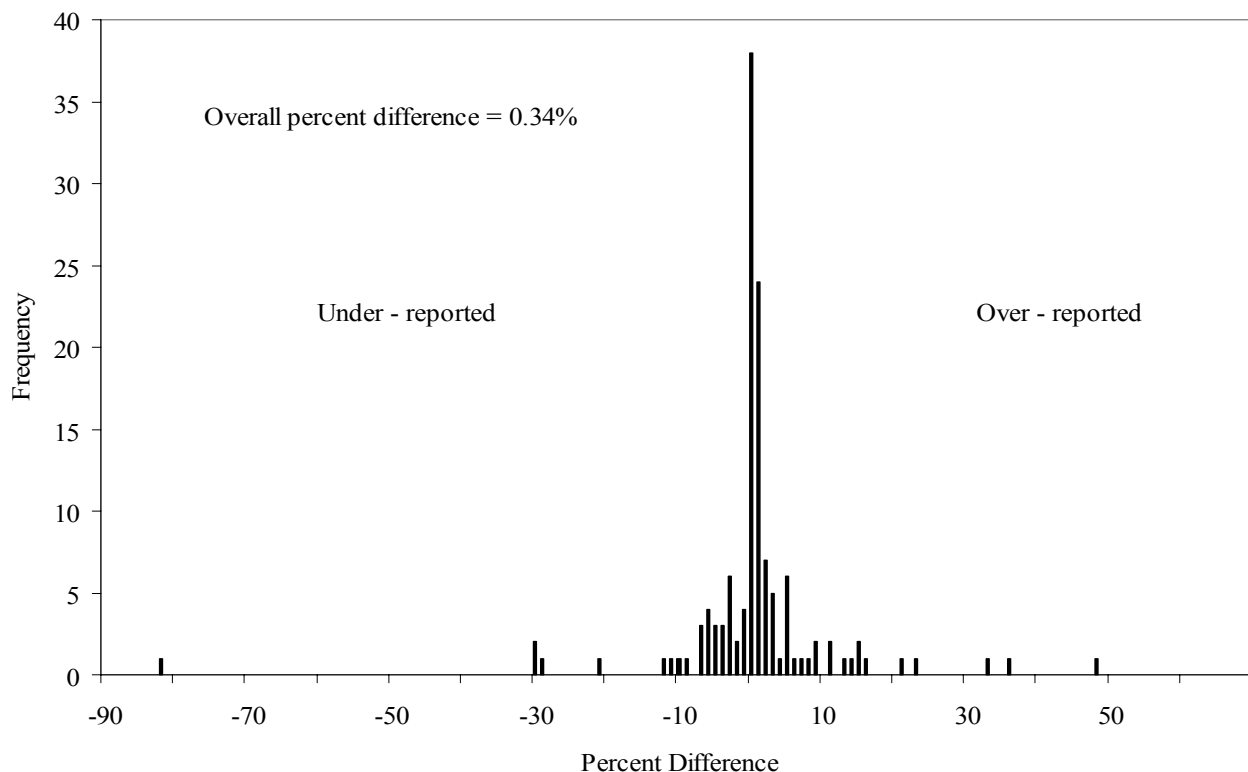


Figure 10. Coastal Map of Massachusetts Showing County Boundaries

