



Technical Report

Massachusetts Division of Marine Fisheries Technical Report TR-23

2003 Massachusetts Lobster Fishery Statistics

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**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. 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. Management of this fishery was transferred to the Atlantic States Marine Fisheries Commission (ASMFC) in 1997. Since its first implementation, the Interstate Management Plan for Atlantic Coast Lobster (FMP) has been modified several times. The most current revision at the time these data were collected was Addendum V (March 2004).

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 2003, the minimum gauge size was 3 $\frac{1}{4}$ " for LMA 1, and 3 $\frac{11}{32}$ " 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 collect-

ing annual reports from permitted 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 mid 1970s, concerns over the ability of the resource to support rapidly expanding effort levels prompted statutory and regulatory measures to limit the number of new commercial lobster permits being issued. The issuance of new Coastal Permits was suspended entirely in 1988. 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 1,504 permits today. The new system has also allowed for more orderly turnover in the industry. Currently, transfers are allowed to employees (captains, deck hands, etc.) and persons on an established waiting list in addition to transfers within the immediate family. Only those permits 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 2003 is described in the Results and Discussion section.

This report is the thirty-seventh annual publication of data compiled from the catch reports of permitted 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 seventeenth 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 permit 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 permit 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 February 2005. 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 permit 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.

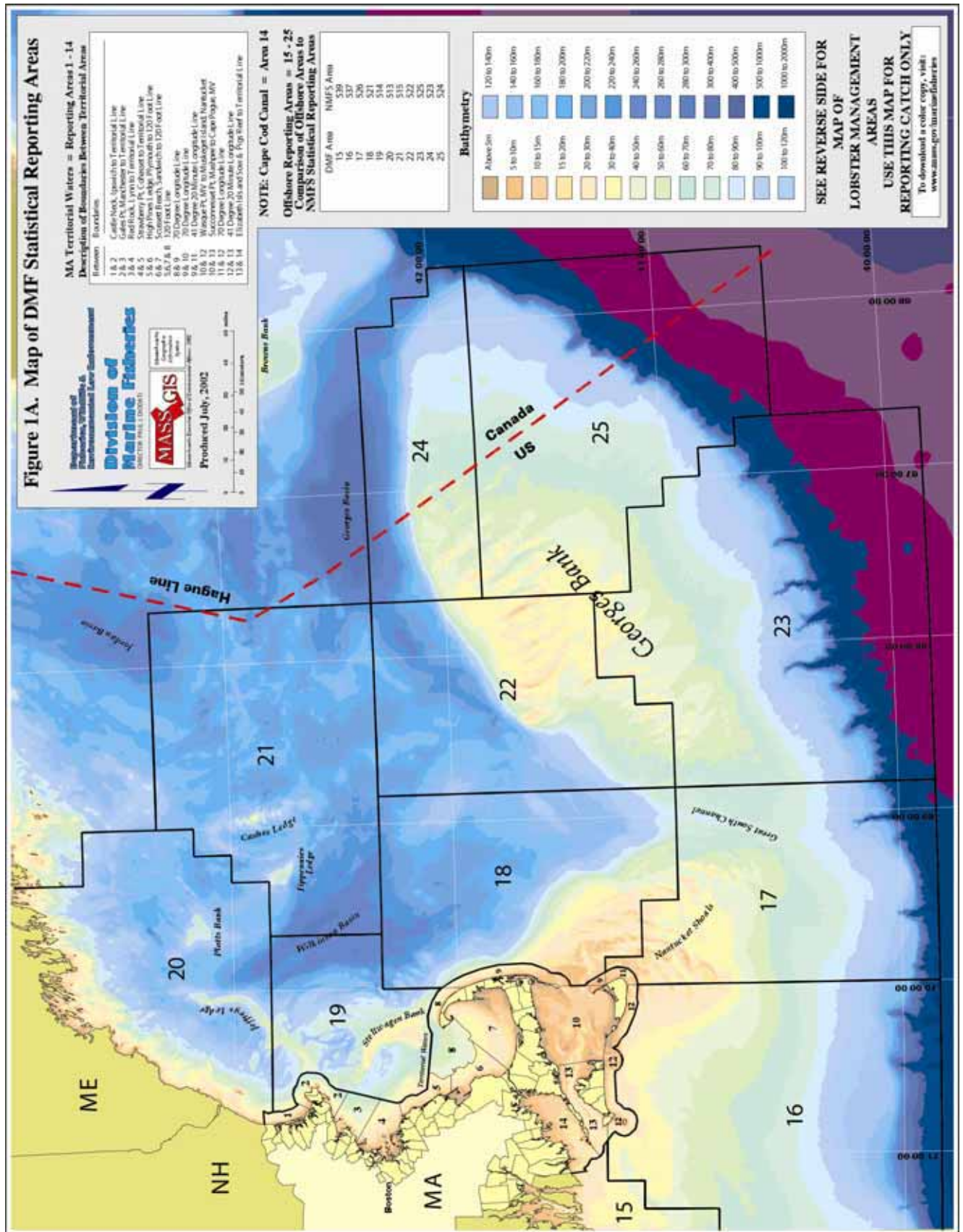
Where tables refer to county, the reader is referred to Figure 10.

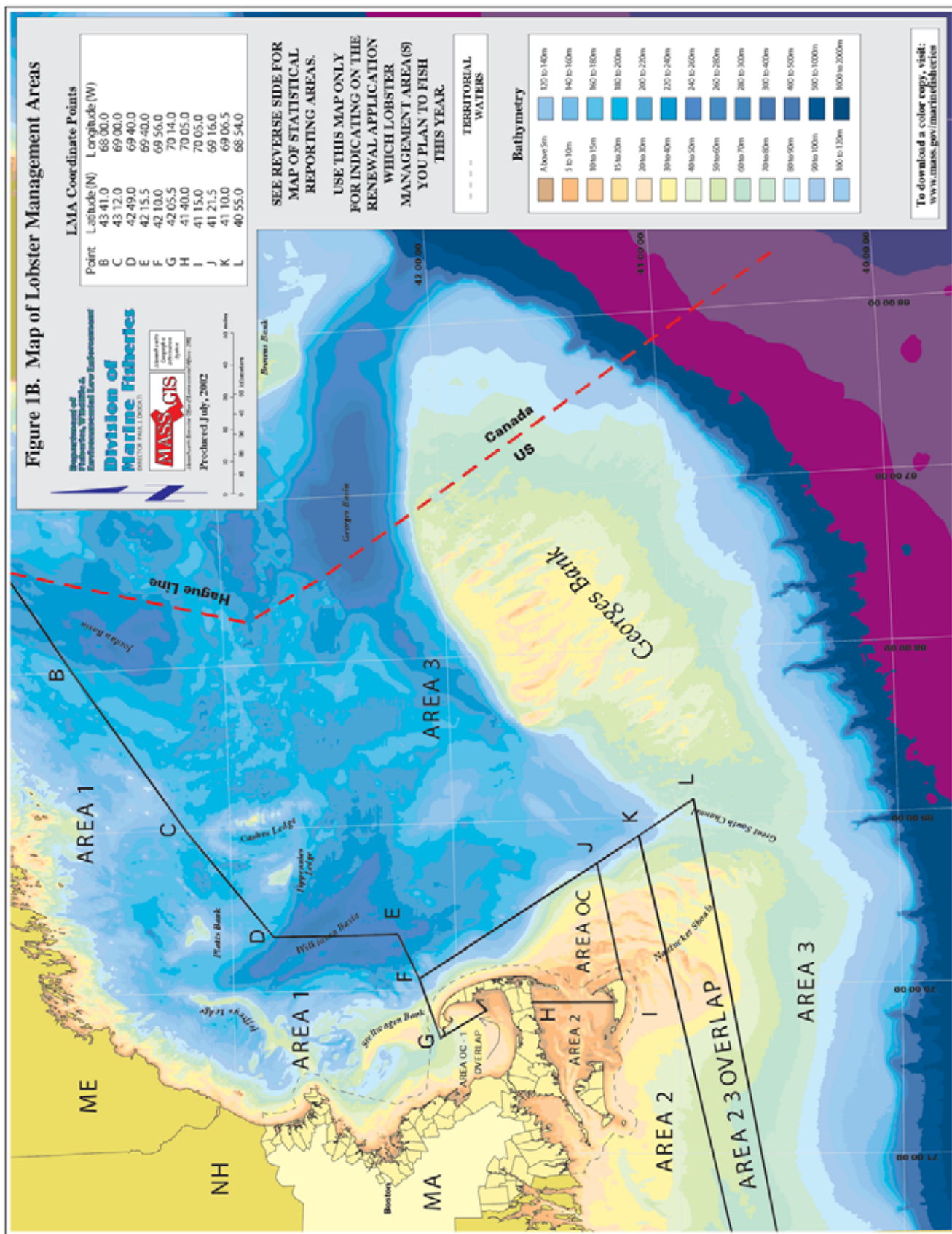
Results and Discussion

Coastal lobster permit 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 2003, the Division authorized the transfer of 27 coastal licenses. 13 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. Eight transfers were allowed within the holder's immediate family (and would have been allowed prior to the new regulation). Five transfers were made directly from the holder to a sternman with a documented fishing history. Thirty-six licenses were forfeited to the Division in 2002. One of these coastal lobster permits were issued directly to waiting list applicants.

Figure 1A. Map of DMF Statistical Reporting Areas





Permits issued and reporting status

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

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 permits issued in 2003, the dollar value of fees collected and the number that reported catching lobster. There were 2,161 commercial lobster permits issued during 2003: 1,504 coastal, 553 offshore and 104 seasonal. Non-commercial permits issued totaled 11,395; breakdown of non-commercial reporting status and landings can be found in Table 6.

As of February, 2005 a total of 101 permitted commercial lobstermen (4.7 percent) failed to file a 2003 catch report with the Division. Of the 2,060 commercial fishermen who reported, 584 or 28.3 percent claimed they did not fish for lobster in 2003. The number of coastal permits issued continues to decline since a 1988 moratorium on the issuance of new permits. The continued decline is driven by fishermen leaving the fishery and the Division's policy to retire half of these permits through attrition.

The number of offshore permits issued decreased from 2002 by less than 1 percent, while the number of seasonal permits increased by 6.1 percent.

Table 1. Reporting status of permits issued for 2003 Massachusetts lobster fishery.

Permit Type (Fee)	Permits Issued	Permitting Revenue	Reported "Catching Lobster"		Reported "No Lobster Catch"		Not Reporting	
Coastal Commercial (\$260)	1,504	\$393,640	1,042	69%	431	29%	31	2%
Offshore Commercial (\$260)	553	\$170,560	380	69%	139	25%	34	6%
Seasonal (Student) Commercial (\$65)	104	\$6,890	54	52%	14	13%	36	35%
Non-Commercial (\$40)	11,395	\$458,960	5,915	52%	2,670	23%	2,810	25%
Total	13,556	\$1,030,050	7,391	55%	3,254	24%	2,911	21%

Table 2. Permit information for Massachusetts commercial lobster fishery, 1999-2003

	1999	2000	2001	2002	2003	Five Year % Change
Coastal Permits						
Issued	1,549	1,541	1,538	1,531	1,504	-2.91%
% Change		-0.52	-0.19	-0.46	-1.76	
"Caught Lobster"	1,121	1,125	1,098	1,085	1,042	
% Change		0.88	-2.21	-0.73	-2.24	
"Did Not Catch Lobster"	417	399	416	423	431	
% Change		-3.82	4.46	2.15	3.72	
Not Reporting	11	17	24	23	31	
% Change		55.35	41.45	-3.73	37.20	
Percent Not Reporting	0.71%	1.10%	1.56%	1.50%	2.06%	
Offshore Permits						
Issued	536	534	530	555	553	3.17%
% Change		-0.37	-0.75	4.72	-0.36	
"Caught Lobster"	350	345	344	376	381	
% Change		-1.06	0.46	4.38	1.70	
"Did Not Catch Lobster"	123	129	142	139	139	
% Change		5.27	10.91	-6.52	0.36	
Not Reporting	63	60	44	40	33	
% Change		-4.41	-26.11	-13.19	-17.20	
Percent Not Reporting	11.75%	11.24%	8.30%	7.21%	5.97%	
Seasonal (Student) Permits						
Issued	89	92	96	98	104	16.85%
% Change		3.37	4.35	2.08	6.12	
"Caught Lobster"	55	53	51	57	54	
% Change		-6.78	-7.78	9.48	-10.73	
"Did Not Catch Lobster"	8	17	14	16	14	
% Change		105.57	-21.08	11.95	-17.55	
Not Reporting	26	22	31	25	36	
% Change		-18.14	35.04	-21.00	35.69	
Percent Not Reporting	29.21%	23.91%	32.29%	25.51%	34.62%	

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

Landings and value

In 2003, 11,386,572 pounds of lobster were reported landed by commercial lobstermen in Massachusetts, a 17.3 percent decrease from 2002. The state-wide weighted average price of \$4.36 increased 17.2 percent over the average ex-vessel price paid in 2002 (Figure 2). However, the total value of the commercial catch, \$49,645,453 (total lbs x avg. price), declined 3.1 percent from 2002. Figure 2 shows the weighted ex-vessel price for 2003 as derived from audits of lobstermen's records. (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 all the lobster landed by commercial fishermen in the Commonwealth, 6,861,897 pounds, or 60.3 percent, were reported taken from the territorial waters. In total pounds of lobster landed, Essex County continues to be ranked first, Plymouth

County second and Barnstable County third. Gloucester was the number one port in total pounds landed followed by Boston, Sandwich and Plymouth, in that order.

In terms of active commercial lobstermen, Essex County ranked first with 558, Plymouth County second with 273 and Bristol County third with 220. 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 Table 3 for a breakdown of pounds landed and number of fishermen by permit type and county and Table 4 for a five-year comparison of selected landings and effort statistics. See Table 5 for total landings and numbers of active lobstermen by port/town.

Figure 2. 2003 weighted ex-vessel price derived from audited lobstermen's records.

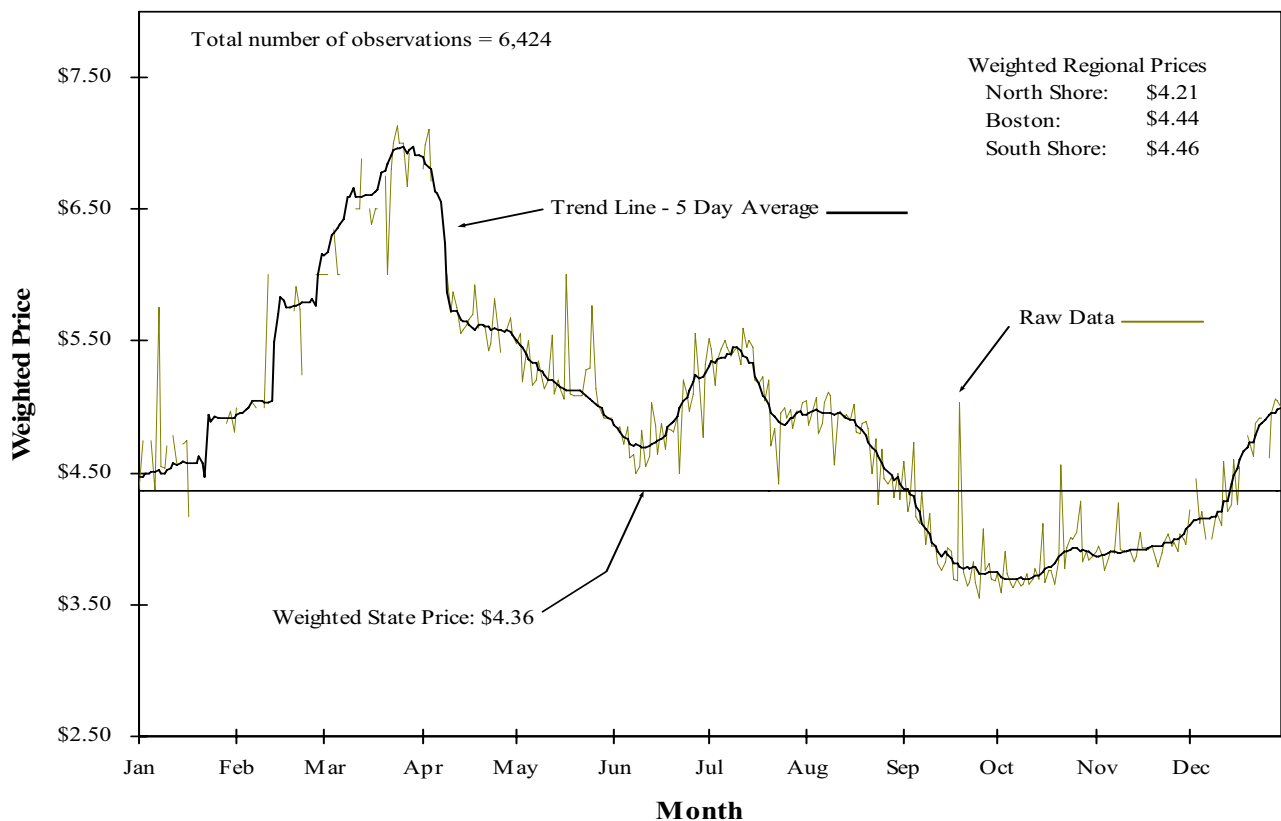


Table 4. Selected landings (pounds) and effort statistics for Massachusetts commercial lobster fishery, 1999-2003

	1999	2000	2001	2002	2003	Percent Five Year Change
Total Landings	15,911,082	15,031,538	12,236,851	13,772,484	11,386,572	-28.44
Percent Change		-5.53	-18.59	12.55	-17.32	
Total Traps Fished	498,497	482,218	473,898	507,641	479,154	-3.88
Percent Change		-3.27	-1.73	7.12	-5.61	
Total Value	\$59,507,447	\$54,865,114	\$45,765,823	\$51,233,640	\$49,645,453	-16.57
Percent Change		-7.80	-16.58	11.95	-3.10	
TERRITORIAL						
Landings	9,607,646	9,859,453	7,175,065	8,184,893	6,861,897	-28.58
Percent Change		2.62	-27.23	14.07	-16.16	
Value	\$35,932,595	\$35,987,002	\$26,834,741	\$30,447,801	\$29,917,870	-16.74
Percent Change		0.15	-25.43	13.46	-1.74	
Trap Landings	9,593,457	9,837,213	7,163,460	8,154,929	6,808,191	-29.03
Percent Change		2.54	-27.18	13.84	-16.51	
Traps Fished	375,023	382,711	370,907	407,067	387,149	3.23
Percent Change		2.05	-3.08	9.75	-4.89	
Non-Trap Landings (Gillnet, Diver)	14,189	22,240	11,605	29,964	53,706	278.50
		56.74	-47.82	158.20	79.24	
NON-TERRITORIAL						
Landings	6,303,436	5,172,085	5,061,787	5,587,591	4,524,675	-28.22
Percent Change		-17.95	-2.13	10.39	-19.02	
Value	\$23,574,851	\$18,878,111	\$18,931,082	\$20,785,839	\$19,727,583	-16.32
Percent Change		-19.92	0.28	9.80	-5.09	
Trap Landings	5,602,287	4,468,805	4,293,430	4,676,663	3,461,151	-38.22
Percent Change		-20.23	-3.92	8.93	-25.99	
Traps Fished	123,474	99,507	102,991	100,574	92,005	-25.49
Percent Change		-19.41	3.50	-2.35	-8.52	
Non-Trap Landings (Gillnet, Trawler)	701,149	703,280	768,357	910,928	1,063,524	51.68
		0.30	9.25	18.56	16.75	
Average Price (\$) / Lb	\$3.74	\$3.65	\$3.74	\$3.72	\$4.36	
Percent Change		-2.41	2.47	-0.53	17.20	
Ave. Lbs. / Trap-Haul	0.8210	0.7763	0.6697	0.7006	0.6043	
Percent Change		-5.45	-13.73	4.61	-13.75	
Ave. Lbs. / Trap	30.48	29.67	24.18	25.28	21.43	
Percent Change		-2.68	-18.51	4.55	-15.21	

Table 5. Number of active commercial fishermen and landings by homeport for 2003; Does not include seasonal (student) licenses

CITY/TOWN	Fishermen		----- Pounds -----			Percent	Rank
	Number	Rank	Territorial	Non-Territorial	Total		
AMESBURY-NEWBURY-ROWLEY	3	48	2,255	0	2,255	0.02%	49
BARNSTABLE-YARMOUTH	12	28	77,622	255,447	333,069	2.99%	13
BEVERLY	39	11	398,400	132,450	530,850	4.77%	8
BOSTON	59	6	373,715	446,396	820,111	7.37%	2
BOURNE	3	48	1,091	0	1,091	0.01%	50
CHATHAM	45	8	160,556	219,773	380,329	3.42%	11
CHILMARK	13	26	12,767	17,474	30,241	0.27%	35
COHASSET	31	15	236,284	42,751	279,035	2.51%	14
DANVERS	7	37	34,679	0	34,679	0.31%	33
DARTMOUTH	10	30	11,800	745	12,545	0.11%	43
DENNIS	19	22	77,369	0	77,369	0.70%	26
DUXBURY	8	34	30,247	11	30,258	0.27%	34
ESSEX	5	42	11,889	0	11,889	0.11%	44
FAIRHAVEN	36	12	92,750	77,033	169,784	1.53%	21
FALMOUTH	11	29	19,223	23,129	42,352	0.38%	32
GLOUCESTER	206	1	877,405	697,904	1,575,309	14.15%	1
GOSNOLD	3	48	2,917	0	2,917	0.03%	48
HARWICH	5	42	5,219	17,158	22,377	0.20%	38
HINGHAM	14	24	163,699	23,038	186,737	1.68%	20
HULL	21	20	210,073	54,118	264,191	2.37%	15
IPSWICH	14	24	22,342	0	22,342	0.20%	39
KINGSTON	4	45	17,357	0	17,357	0.16%	42
LYNN	4	45	21,379	3,895	25,274	0.23%	36
MANCHESTER	28	16	194,299	29,940	224,239	2.01%	17
MARBLEHEAD	40	9	297,676	48,069	345,745	3.11%	12
MARION	4	45	7,786	0	7,786	0.07%	46
MARSHFIELD	66	5	508,853	109,778	618,631	5.56%	6
MATTAPOISETT	9	33	40,494	36,874	77,368	0.70%	27
NAHANT	24	19	216,636	17,477	234,113	2.10%	16
NANTUCKET	6	41	11,424	47,692	59,116	0.53%	29
NEW BEDFORD	140	2	55,156	416,027	471,183	4.23%	9
NEWBURYPORT	20	21	47,901	10,222	58,123	0.52%	30
ORLEANS	19	22	160,284	6,390	166,674	1.50%	22
PLYMOUTH	85	3	636,993	55,716	692,709	6.22%	4
PROVINCETOWN	36	12	197,719	9,425	207,144	1.86%	18
QUINCY	7	37	19,197	0	19,197	0.17%	41
ROCKPORT	67	4	503,276	103,738	607,014	5.45%	7
SALEM	8	34	23,033	0	23,033	0.21%	37
SALISBURY	8	34	20,472	950	21,422	0.19%	40
SANDWICH	40	9	216,229	484,524	700,753	6.30%	3
SAUGUS-REVERE	27	17	196,090	4,962	201,051	1.81%	19
SCITUATE	48	7	221,366	175,120	396,486	3.56%	10
SWAMPSCOTT	26	18	139,491	5,333	144,824	1.30%	23
TISBURY-EDGARTOWN	10	30	6,637	76	6,713	0.06%	47
TRURO	10	30	55,249	4,750	59,999	0.54%	28
WAREHAM	5	42	10,595	0	10,595	0.10%	45
WELLFLEET-EASTHAM	7	37	82,895	0	82,895	0.74%	25
WESTPORT-FALL RIVER	33	14	19,894	636,658	656,552	5.90%	5
WEYMOUTH	7	37	56,786	63,876	120,662	1.08%	24
WINTHROP	13	26	43,315	0	43,315	0.39%	31
STATEWIDE TOTAL	1,365		6,850,786	4,278,917	11,129,703		
OUT OF STATE	58		0	245,038	245,038		

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.

Territorial landings by commercial lobstermen showed a distinct seasonal trend (Figure 3; Table 6). Landings increased steadily from a low of 24,969 pounds in February to a high of 1,377,447 pounds in September and then dropped off again to 392,191 pounds in December.

Commercial landings from non-territorial waters showed a slightly different seasonal trend. Non-territorial landings were lowest in February, but peaked in November, as opposed to September. These annual patterns in territorial and non-territorial landings are consistent with previous years.

The greatest harvest of lobster from territorial waters came from the Cape Ann vicinity (Statistical Reporting Area 2), where approximately 22 percent of the state's territorial harvest was caught (Figure 4). Reporting Areas 4, 3 and 5 had the next highest territorial landings, respectively, with over 80 per-

cent of the territorial harvest came from areas north of Cape Cod (Statistical Reporting Areas 1-7). In all, territorial landings were down 16.5 percent from 2002.

Reporting area 19 saw the highest non-territorial landings, which were dominated by Coastal permit holders (Figure 5; Table 7). Offshore permit holders, which are not permitted to harvest lobsters from territorial waters, had their highest landings from Georges Bank (reporting areas 25, 22 and 23 in decreasing order).

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

Figure 3. 2003 Commercial lobster harvest by month for territorial and non-territorial areas

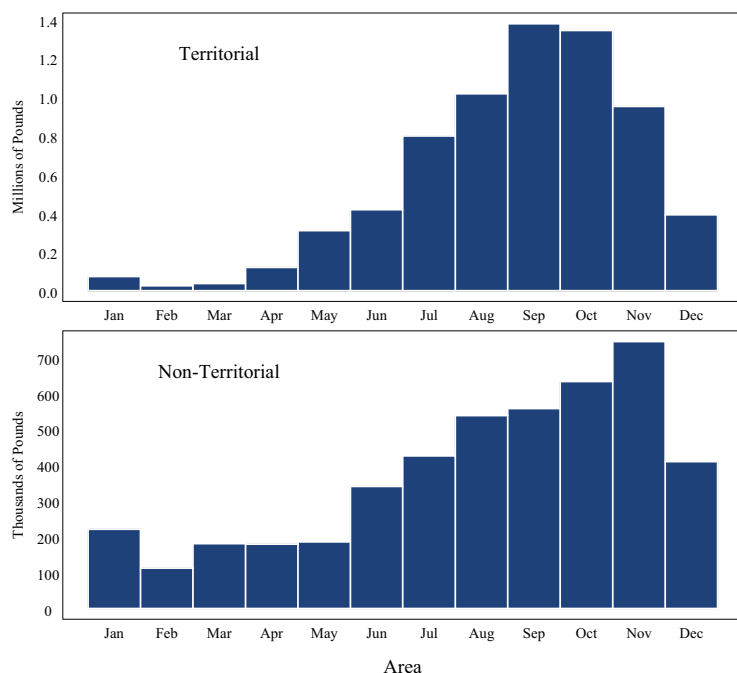


Table 6. 2003 Commercial lobster harvest by month for territorial and non-territorial areas

Month	Territorial	Non-Territorial
January	73,578	221,172
February	24,969	112,340
March	37,043	180,592
April	120,885	179,389
May	309,322	185,495
June	417,713	340,599
July	797,732	425,311
August	1,016,597	537,176
September	1,377,447	556,795
October	1,343,196	632,595
November	951,223	743,692
December	392,191	409,519
Total	6,861,897	4,524,675

Figure 4. 2003 total commercial lobster landings from all permit types by statistical reporting area (A - territorial areas; B- non-territorial areas).

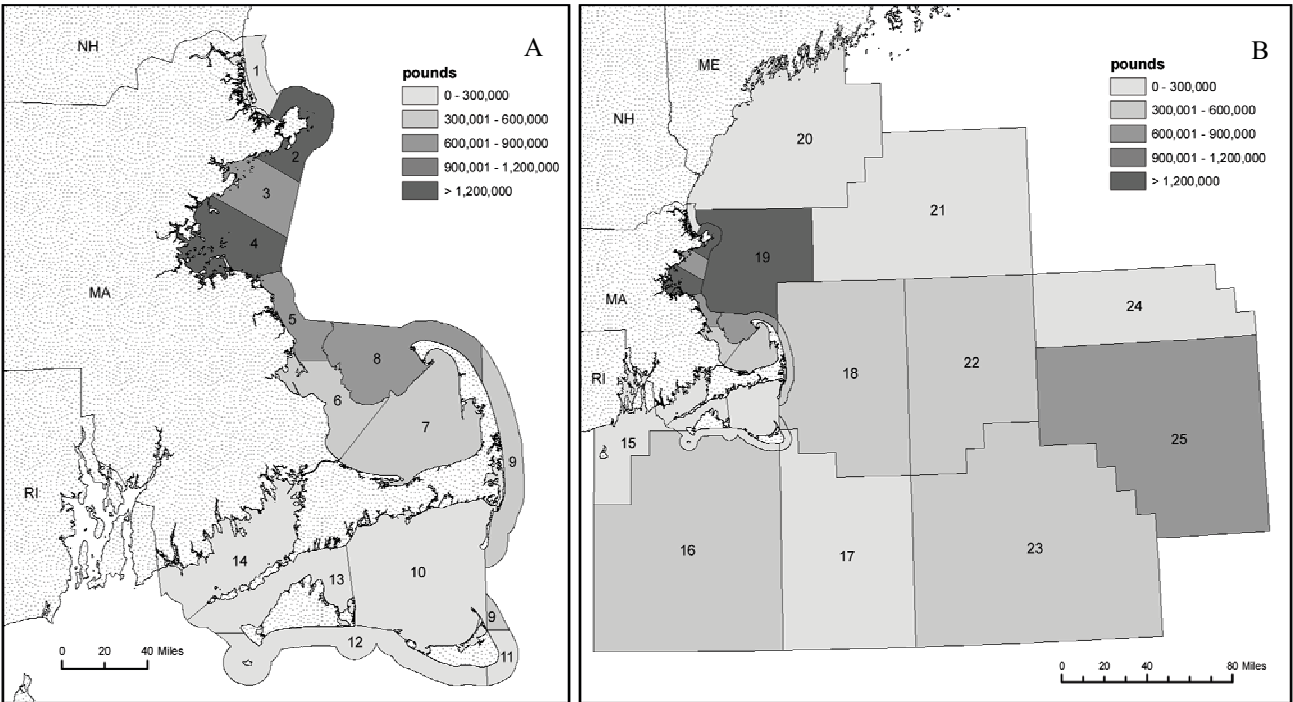


Figure 5. 2003 Commercial lobster landings by permit type and area

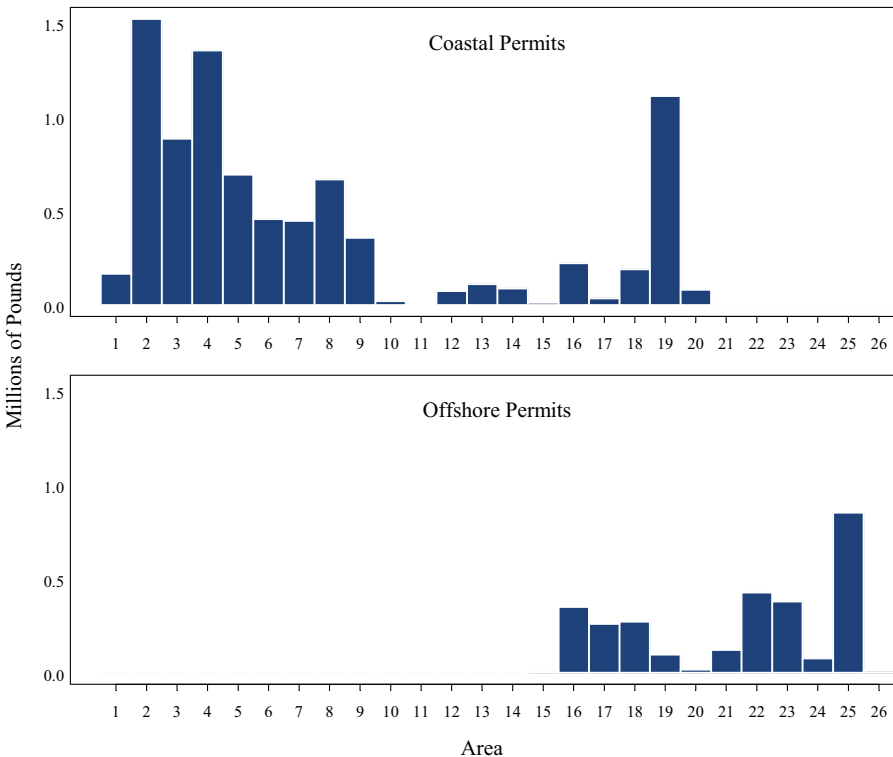


Table 7. 2003 Commercial lobster landings by permit and area.

Area	Coastal	Offshore
1	165,420	0
2	1,523,587	0
3	885,286	0
4	1,355,868	0
5	693,870	0
6	457,271	0
7	448,124	0
8	668,664	0
9	357,500	0
10	20,808	0
11	577	0
12	74,338	0
13	110,379	0
14	88,493	0
15	12,254	4,641
16	222,299	351,056
17	35,362	260,164
18	190,173	273,165
19	1,112,767	97,048
20	80,944	16,654
21	0	120,928
22	0	427,443
23	0	379,571
24	0	76,030
25	0	853,880
26*	0	10,176
Total	8,503,984	2,870,756

* Area 26 includes any landings from outside the MA Statistical Reporting Areas

Recreational lobster fishery

Recreational lobster permits issued in 2003 totaled 11,395, down 4.6 percent from 2002, with 51.9 percent reporting that they fished for lobster (Table 8). Of those that reported fishing, approximately 26 percent used dive gear, 42 percent used pots, and 32 percent used a combination of the two.

Total landings decreased by 12.8 percent from 2002. The number of traps fished decreased by 3.9 percent and the number of hours dived decreased by 6.6 percent. Although recreational landings are reported in numbers of lobsters harvested, a rough

estimate of total pounds harvested can be made by multiplying by an average size of 1.27 pounds per lobster. Therefore, estimated recreational landings of 243,854 pounds represents approximately 2.2 percent of the total commercial landings

Of all the individuals who were issued a recreational permit, only 75.3 percent submitted a catch report in 2003. It should be noted that individuals who did not report were not able to renew their recreational permit for 2004. Historically, an annual turn-over rate of 25 percent is not unusual in this fishery.

Table 8. Permit status and harvest information for 2003 Massachusetts recreational lobster fishery.

Permit Type:	Diver	Diver/Pot	Potman	Total	Percent of Total
Number of Permits Issued in 2003	3,275	3,594	4,526	11,395	
Number that Reported	2,356	2,762	3,461	8,579	75.3%
Total Number That Fished	1,565	1,861	2,485	5,911	51.9%
Total Number That Did Not Fish	791	901	976	2,668	23.4%
Number That Did Not Report	919	832	1,065	2,816	24.7%
Number of Lobsters Reported Landed	26,432	65,207	100,372	192,011	percent change from 2002
Pounds of Lobsters (Calculated)*	33,569	82,813	127,472	243,854	-12.8%
Number Pots Fished		7,105	18,213	25,318	-3.9%
Number of Hours Diving	22,128	23,117		45,245	-6.6%

* Based on 1.27 Pounds per Lobster.

Catch rates

The average catch per trap-haul for coastal lobstermen in 2003 was 0.648 pounds, a 2.2% decrease from 2002. Catch rates gradually increased with respect to set-over-days, up to about approximately 1 week (Figure 6). Beyond the first week, it appears additional soak time does not appreciably increase the catch per unit effort. This relationship between catch rate and soak time is consistent with years past.

For offshore lobstermen, the average catch per trap-haul was 1.858 pounds, a 12.4% increase from 2002. Catch rates for offshore lobstermen were higher than those of their coastal counterparts, yet

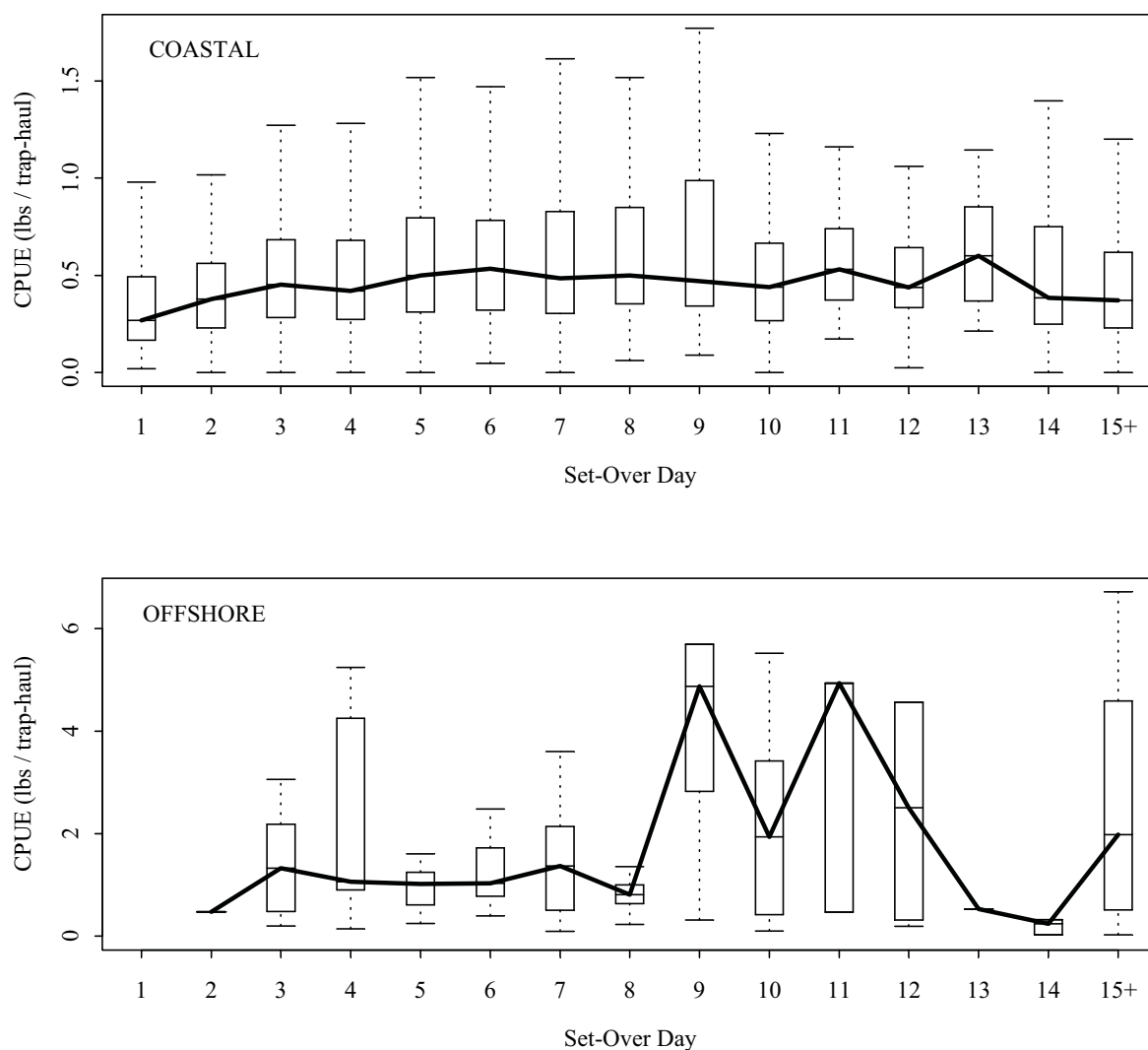
far more variable. In consequence, the relationship between catch rates and soak time is less well defined for offshore permit holders

Figures 7 through 9 show the average catch rate with set-over-day factored into the effort (pounds per trap-haul*set-over-day).

The average catch per trap-haul*set-over-day for offshore lobstermen was 0.245 pounds, a 15.6% increase from 2002 (Figure 7). This represents the first increase in offshore catch rates since 1997. Coastal lobstermen experienced their worst catch rates in 10 years, at 0.142 pounds per trap-haul*set-over-day.

Catch rates also followed a distinct annual

Figure 6. Catch per unit of effort (pounds per trap-haul) by set-over day for coastal and offshore potmen in 2003. The solid line represents the median values, the boxes represent 50% of the observations at each SOD, and the “whiskers” indicate the minimum and maximum values; outliers are not shown.



trend. Both coastal and offshore lobstermen experienced their highest catch rate in late summer / early fall and their lowest in late winter / early spring (Figure 8). Although offshore permit holders had higher catch rates for most of the year, coastal permit holders were more productive in April and May. This annual pattern in catch rates has been consistent for the past 3 years.

The highest catch rates occurred in non-territorial waters in 2003 (Figure 9). However, catch rates in these areas were more variable than in territorial waters, as is indicated by the width of the box and whisker plots in Figure 9. Within territorial waters, the highest catch rates occurred in areas 11 (Southeast Nantucket), 9 (Outer Cape Cod) and 8 (Cape Cod Bay) (Figure 10).

Figure 7. Average catch per unit of effort (pounds per trap-haul * set-over-day) for coastal and offshore potmen for the last 10 years.

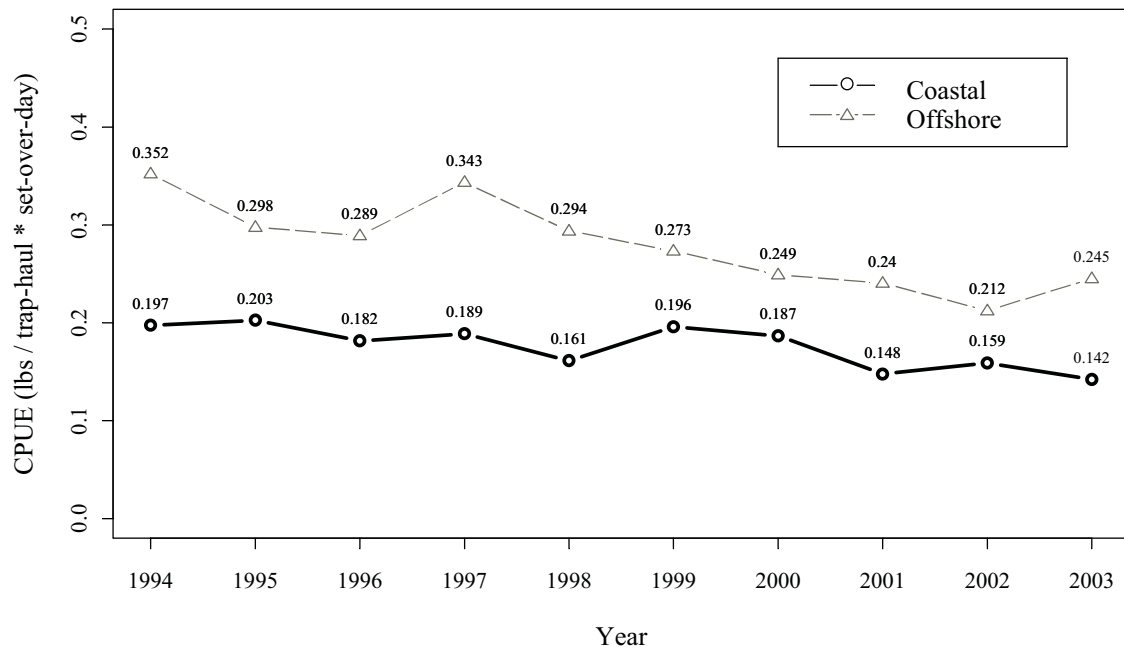


Figure 8. Average catch per unit of effort (pounds per trap-haul * set-over-day) for coastal and offshore potmen by month in 2003

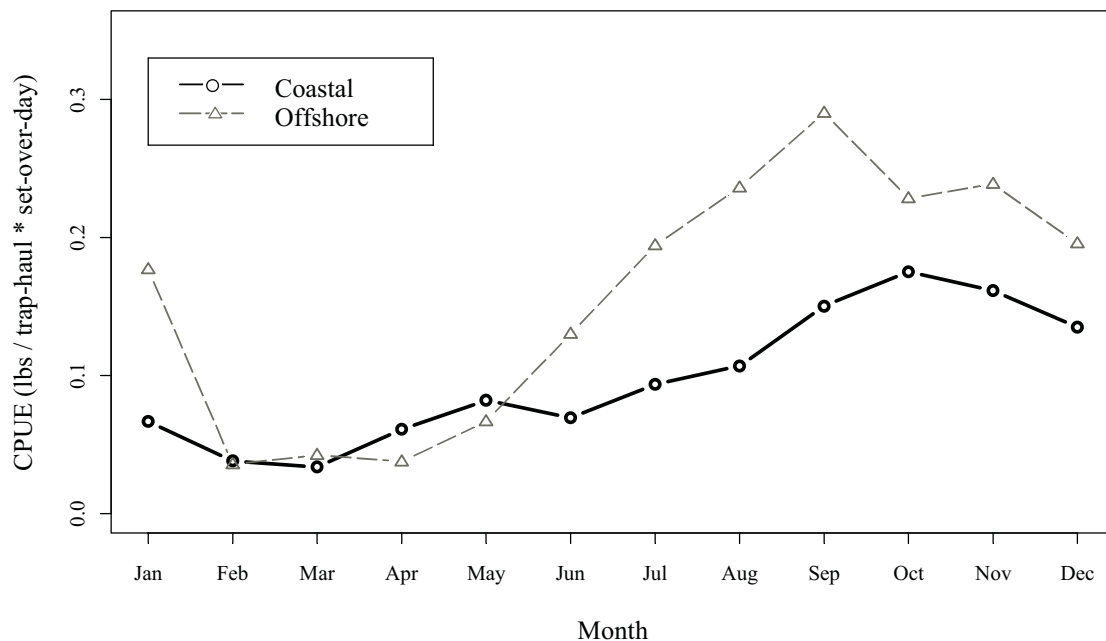


Figure 9. 2003 catch per unit of effort (pounds per trap-haul * set-over-day) for all license types by area fished. The center line of each box represents the median value for that area. The box represents 50% of the observed values, while the “whiskers” show the minimum and maximum values; outliers are not shown.

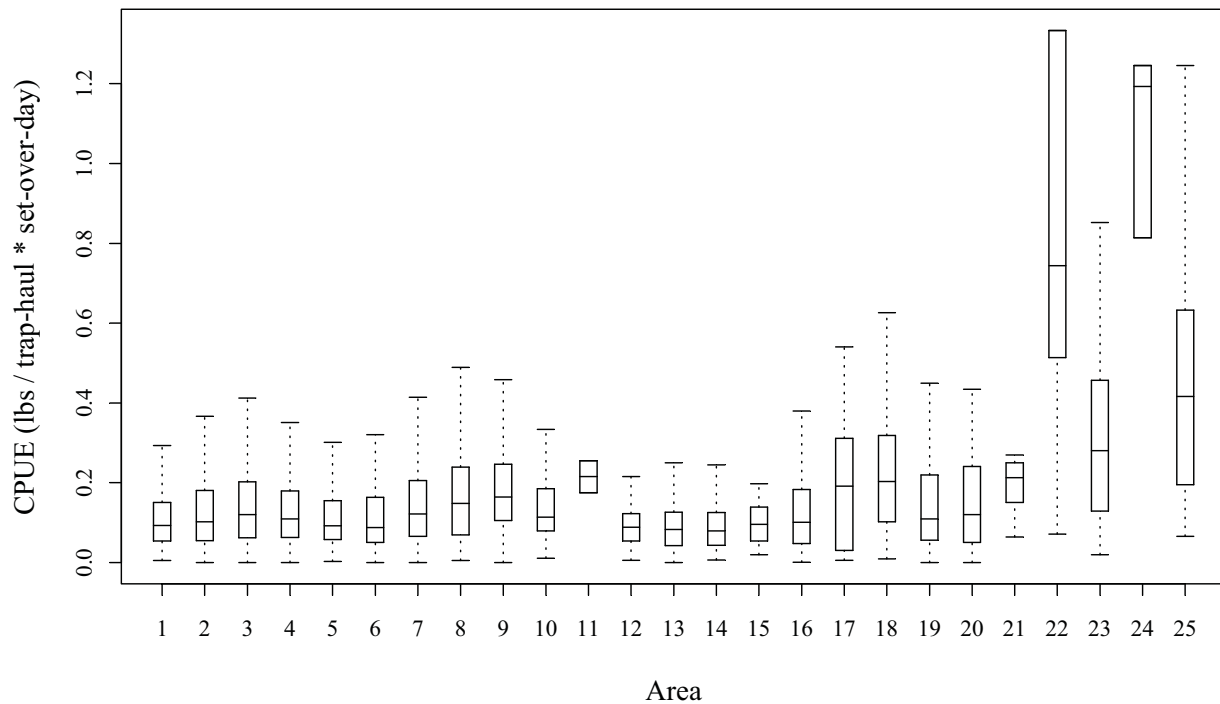
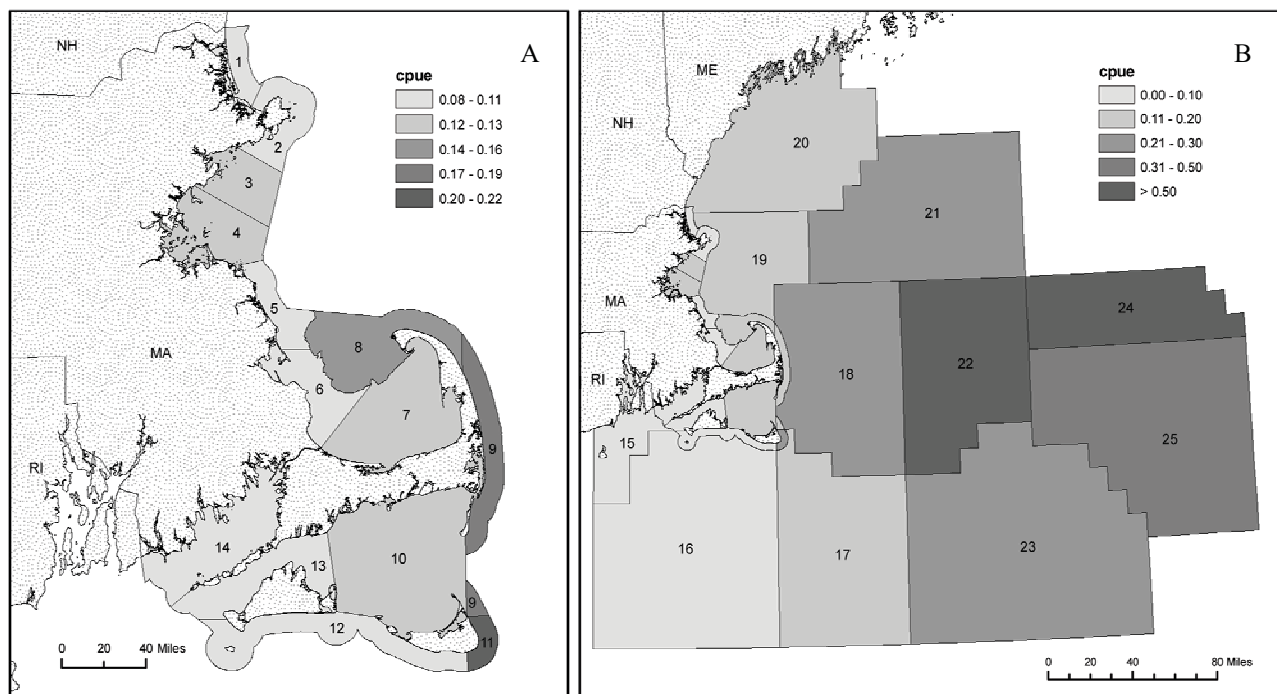


Figure 10. 2003 median catch per unit of effort (pounds per trap-haul * set-over-day) for all license types by area fished (A - territorial areas; B- non-territorial areas).



Fishing gear and vessels

In the commercial fishery, traps were valued at \$31,530,194, diving gear at \$57,375 and power and non-power boats at \$64,518,467 yielding a total gear value of \$96,106,036. Combined with the ex-vessel value of lobster sold, \$49,645,453, this gives a total fishery value of \$145,751,489. See Tables 9, 10 and 11.

Overall, 93.89 percent of the traps fished in the commercial fishery were wire framed, with 5.33 percent being wooden framed and approximately 0.78 percent categorized as "other". Average value (including warp and buoy) ranged anywhere from \$48.33 to \$153.00 with an overall average value of \$66.05. See Table 9.

Table 9. Types of lobster traps fished and value by permit type for 2003

	Coastal	Offshore	Seasonal	Total for Trap Type	Percent of Total
Wooden Framed Traps	23,191	2,206	27	25,424	5.33%
Value	\$1,429,112	\$257,774	\$1,283	\$1,688,169	
Value/Trap	\$60.14	\$127.43	\$48.33	\$66.40	
Wire Framed Traps	409,573	37,483	1,116	448,172	93.89%
Value	\$25,619,991	\$3,869,331	\$88,598	\$29,577,920	
Value/Trap	\$60.15	\$92.68	\$81.28	\$66.00	
Other Trap Types	2,740	999	0	3,739	0.78%
Value	\$134,100	\$130,005	\$0	\$264,105	
Value/Trap	\$76.67	\$153.50	\$0.00	\$70.64	
Total for License Type	435,504	40,688	1,143	477,335	
Value	\$27,183,203	\$4,257,110	\$89,881	\$31,530,194	
Value/Trap	\$62.42	\$104.63	\$78.64	\$66.05	

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

Table 10. Number of fishing vessels and pots fished for 2003 Massachusetts commercial lobster fishery

AREA:	INSHORE (Areas 1 - 14)					OFFSHORE (Areas 15 - 25)					SEASONAL Pots	TOTAL OFFSHORE	GRAND TOTAL
	LICENSE TYPE:	GEAR TYPE:	COASTAL	Trawl/ Gillnet	Combined*	TOTAL INSHORE	Pots	Trawl/ Gillnet	Combined*	Pots	Trawl/ Gillnet	Combined*	
BARNSTABLE	Pots Fished		0	56,193	0	0	113	56,306	0	0	10,700	0	75,796
	Power Boat		4	160	1	0	6	171	0	0	9	44	235
	Non Power Boat		1	40	0	0	0	41	0	0	0	0	52
BRISTOL	Pots Fished		0	18,546	0	0	25	18,571	0	0	12,545	0	40,348
	Power Boat		0	63	0	0	1	64	1	0	11	112	202
	Non Power Boat		0	2	0	0	0	2	0	0	0	0	2
DUKES	Pots Fished		0	4,248	0	0	27	4,275	0	0	400	0	5,125
	Power Boat		0	23	0	0	3	26	1	0	1	1	29
	Non Power Boat		0	2	0	0	0	2	0	0	0	0	2
ESSEX	Pots Fished		0	156,014	0	2,730	720	159,464	0	3,500	3,966	0	184,900
	Power Boat		1	419	7	7	30	464	3	6	5	74	580
	Non Power Boat		0	125	0	1	1	127	0	0	0	0	130
NANTUCKET	Pots Fished		0	938	0	0	0	938	0	0	0	0	1,738
	Power Boat		0	6	0	0	0	6	0	0	0	1	8
	Non Power Boat		0	0	0	0	0	0	0	0	0	0	1
NORFOLK	Pots Fished		0	17,491	0	0	0	17,491	0	0	1,800	0	20,291
	Power Boat		0	48	0	0	0	48	0	0	1	0	51
	Non Power Boat		0	15	0	0	0	15	0	0	0	0	15
PLYMOUTH	Pots Fished		0	106,800	0	425	181	107,406	0	1,400	2,009	0	121,640
	Power Boat		1	258	2	1	9	271	4	2	5	8	310
	Non Power Boat		0	74	0	1	0	75	0	1	1	0	80
SUFFOLK	Pots Fished		0	22,642	0	0	31	22,673	0	0	3,948	0	26,621
	Power Boat		0	47	0	0	2	49	0	0	3	26	78
	Non Power Boat		0	4	0	0	0	4	0	0	0	0	4
STATE TOTAL	Pots Fished		0	382,872	0	3,155	1,097	387,124	0	4,900	35,368	0	476,459
	Power Boat		6	1,024	10	8	51	1,099	8	8	35	266	1,493
	Non Power Boat		1	262	0	2	1	266	0	1	1	4	286
OUT OF STATE	Pots Fished		0	0	0	0	0	0	0	0	0	0	2,695
	Power Boat		0	0	0	0	0	0	0	0	0	3	59
	Non Power Boat		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. Value of fishing vessels and diving gear for 2003 Massachusetts commercial lobster fishery.

AREA :		INSHORE (Areas 1 - 14)					OFFSHORE (Areas 15 - 25)							
LICENSE TYPE:		COASTAL			SEASONAL	TOTAL INSHORE	COASTAL			OFFSHORE		SEASONAL	TOTAL OFFSHORE	GRAND TOTAL
GEAR TYPE:	Dive	Pots	Trawl/ Gillnet	Combined*	Pots		Pots	Trawl/ Gillnet	Combined*	Pots	Trawl/ Gillnet	Combined*	Pots	
-- COUNTY --														
BARNSTABLE														
Diving Gear	10,200	17,500	0	0	0	27,700	5,000	0	0	0	0	0	0	32,700
Power Boat	19,600	5,697,435	2,500	0	39,960	5,759,495	724,150	0	0	3,656,750	188,750	516,000	0	10,845,145
Non Power Boat	45	17,953	0	0	0	17,998	1,905	0	0	0	100	0	0	20,003
BRISTOL														
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	2,001,805	0	0	2,500	2,004,305	1,200,500	1,000	0	3,202,500	1,658,100	0	0	8,066,405
Non Power Boat	0	10,100	0	0	0	10,100	0	0	0	0	0	0	0	10,100
DUKES														
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	795,350	0	0	10,900	806,250	40,000	0	0	21,250	2,500	0	0	870,000
Non Power Boat	0	700	0	0	0	700	0	0	0	0	0	0	0	700
ESSEX														
Diving Gear	2,000	18,675	0	0	0	20,675	0	0	0	0	0	0	0	20,675
Power Boat	20,000	14,300,128	123,800	353,700	135,310	14,932,938	2,985,000	103,000	470,300	746,500	1,033,400	20,000	15,000	20,306,138
Non Power Boat	0	65,708	0	400	300	66,408	500	0	0	0	0	0	0	66,908
NANTUCKET														
Diving Gear	0	4,000	0	0	0	4,000	0	0	0	0	0	0	0	4,000
Power Boat	0	143,250	0	0	0	143,250	120,000	0	0	0	155,000	0	0	418,250
Non Power Boat	0	0	0	0	0	0	1,250	0	0	0	0	0	0	1,250
NORFOLK														
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	1,610,650	0	0	0	1,610,650	179,400	0	0	500,000	0	0	0	2,290,050
Non Power Boat	0	8,550	0	0	0	8,550	0	0	0	0	0	0	0	8,550
PLYMOUTH														
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	16,000	9,946,820	1,000	10,000	24,770	9,998,590	2,267,900	156,250	200,000	371,000	82,000	0	0	13,075,740
Non Power Boat	0	56,983	0	200	0	57,183	6,300	0	0	5,000	0	0	0	68,483
SUFFOLK														
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	1,931,020	0	0	2,625	1,933,645	250,000	0	0	1,020,000	3,369,300	0	0	6,572,945
Non Power Boat	0	4,200	0	0	0	4,200	0	0	0	0	0	0	0	4,200
STATE TOTAL														
Diving Gear	12,200	40,175	0	0	0	52,375	5,000	0	0	0	0	0	0	57,375
Power Boat	55,600	36,426,458	127,300	363,700	216,065	37,189,123	7,766,950	260,250	670,300	9,518,000	6,489,050	536,000	15,000	62,444,673
Non Power Boat	45	164,194	0	600	300	165,139	9,955	0	0	5,000	100	0	0	180,194
OUT OF STATE														
Diving Gear	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Power Boat	0	0	0	0	0	0	10,000	0	0	0	355,000	1,528,600	0	1,893,600
Non Power Boat	0	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)

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 7,116,208 pounds. The audit of their records revealed a harvest of 7,033,821 pounds or a difference of 1.16 percent.

Last year the fishermen selected for audit reported harvesting 1,174,505 pounds of lobster on their 2003 catch reports. The audit of actual records showed total landings of 1,148,119 pounds, a difference of 26,385 pounds or 2.25 percent. Five 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 MIS 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-NA04NMF4070188). The preparation of this report would not have been possible without the cooperation of licensed lobstermen who provided the information on their annual reports. The authors also wish to acknowledge the efforts of Beth Shanks, who interpreted and key-punched the catch reports, as well as the assistance of Kerry Swallow and Cecil French from our permitting office.

Figure 11. Frequency distribution of the percent difference between fishermen's reported catch and their audited records for 2003 commercial lobster fishery.

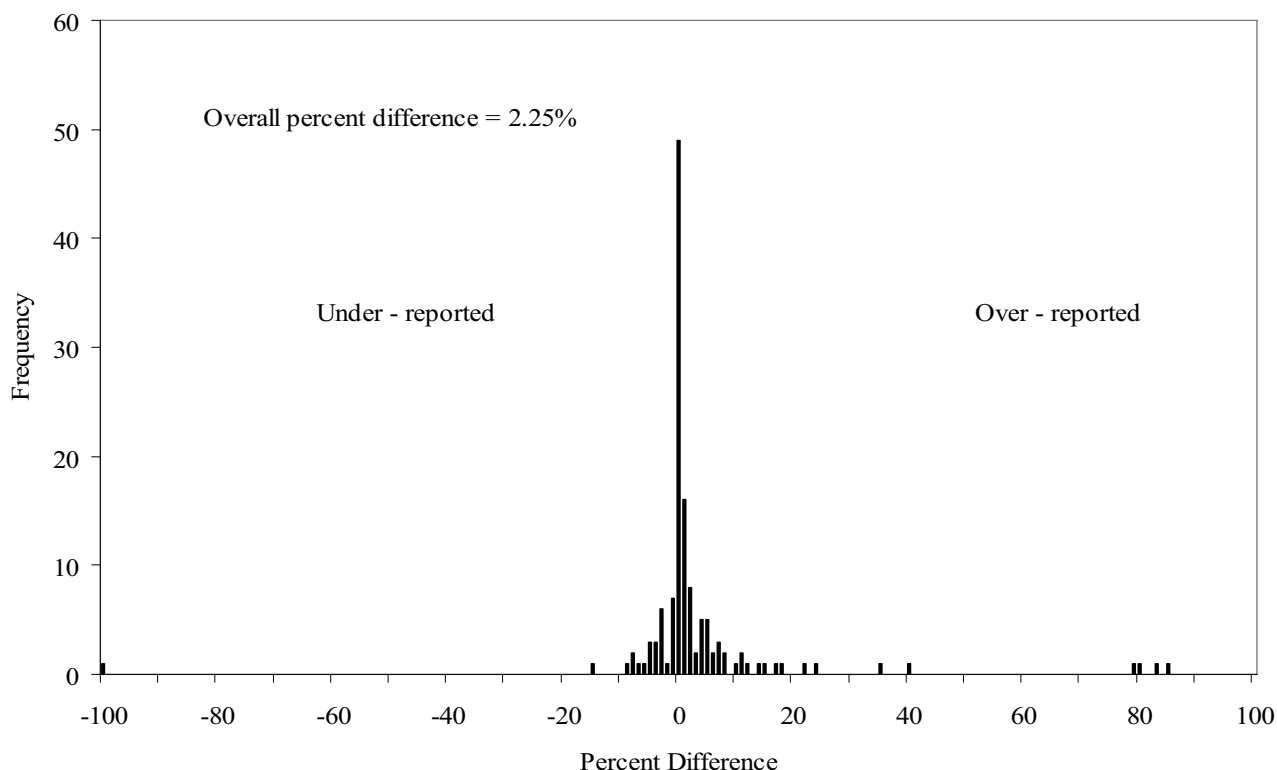


Figure 12. Map of coastal Massachusetts showing county boundaries and statistical reporting areas.

