

UNITED STATES
DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
MANAGEMENT DIVISION
STATE-FEDERAL RELATIONS BRANCH



FINAL REPORT

State: Massachusetts

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INTRODUCTION

The Massachusetts Division of Marine Fisheries has collected fisheries statistics since the inception of the Agency. In 1966, the Division began to expand its fisheries statistics collection, analysis and dissemination with the assistance of various Federal Grants from the National Marine Fisheries Service, and its predecessor the Bureau of Commercial Fisheries under The Commercial Fisheries Research Act, and later, The Interjurisdictional Fisheries Act. Since the 1980's the scope of the projects funded have expanded to include computer processing and Management Information Systems. This current project (3-IJ-163), calls for the continued collection of all the statistics previously collected, expansion of collection systems to include new species and fisheries, development of systems to effectively monitor IJ species now being managed by individual state quotas and the development of GIS (Geographic Information Systems) technology and applications that would allow spatial analysis of fisheries data.

JOB 1 – FISHERMAN CATCH REPORTS

A) ANNUAL REPORTS

Objectives: To obtain information on the employment, number, types and value of gear (including vessels), ports of landing, quantity and value of selected Massachusetts fisheries. Note: as annual reports are collected after the end of the calendar year and processed during the following year, this project period details collection efforts during 2001 for the 2000 calendar year. In some cases (gear information and fish trap fishery), 2001 information is collected and available during the project period.

1. Coastal and Offshore Lobster Fishery -- 2000

In accordance with the Massachusetts General Laws, Chapter 130, Section 33, all lobstermen operating in the Commonwealth's territorial waters or landing at Massachusetts ports are required to have a license issued by the Division of Marine Fisheries and to file an annual report on their lobster fishing activities. License renewals are not processed unless the annual report is submitted.

Statistics Project personnel log in and edit all data contained in the catch reports. For 2000, the commercial lobster catch for Massachusetts fishermen was reported to be 15,022,011 pounds. This was a 6% decrease from 1999, when 15,905,731 pounds were landed. The overall value of the catch decreased to a value of \$54,830,340. The value of pots, scuba gear and vessels in the commercial fishery was established to be \$88,872,052. The reported recreational harvest was 327,541 pounds. A graphic summary of selected trends in the lobster fishery is presented in Figures 1 through 4. For detailed statistics and reporting and compilation methods, the reader is referred to the publication entitled "2000 Massachusetts Lobster Fishery Statistics", which is appended to this report (Appendix A).

Edible crab landings were also collected from the 2000 lobster catch reports and totaled 3,903,353 pounds in 2000. Most of the landings were caught in offshore areas by offshore licensed lobstermen.

Figure 1. Total Lobster Harvest & Percent Change; 1993 - 2000

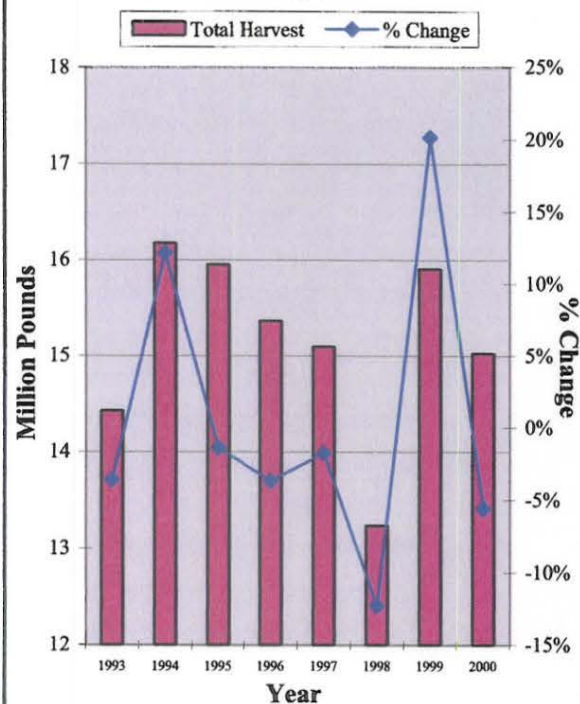


Figure 2. Total Commercial Value & Percent Change; 1993 - 2000

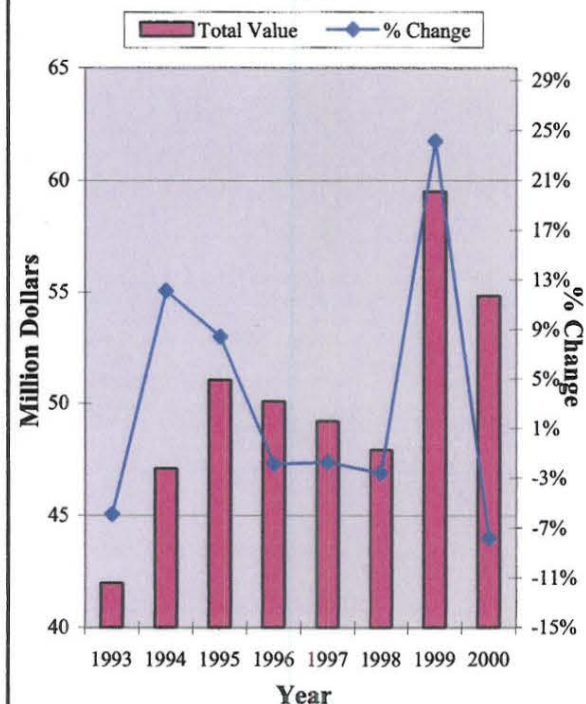


Figure 3. Total Traps Fished & Percent Change; 1993 - 2000

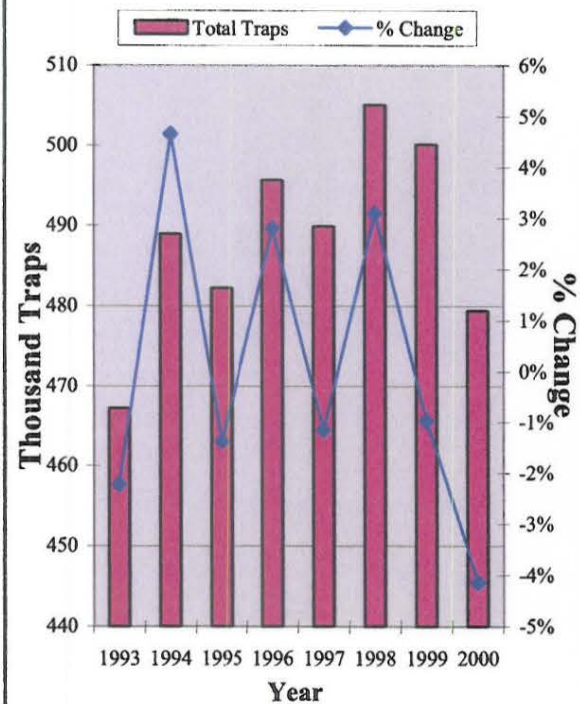
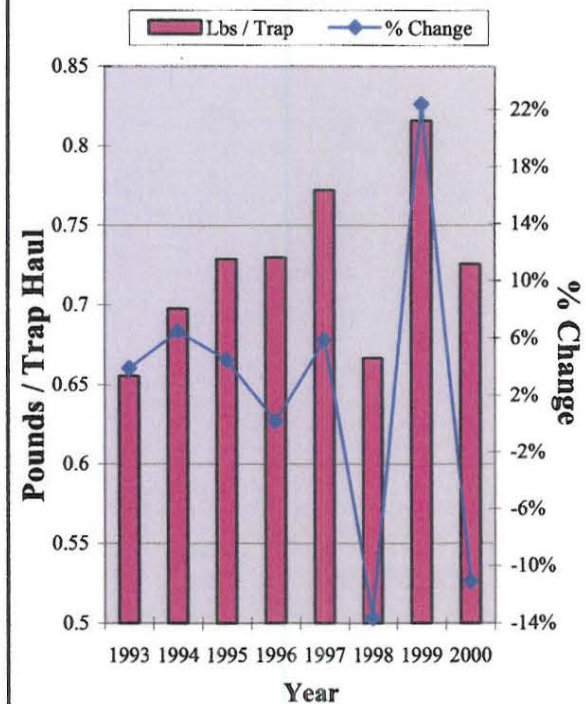


Figure 4. Ave Catch per Trap Haul & Percent Change; 1993 - 2000



Audit of Commercial Coastal Lobster Catch Reports

Since 1977, the Division has randomly selected a predetermined number (roughly 10% of the total licenses issued) of commercial coastal lobster catch reports for audit. It was anticipated that the audit program would provide a basis for determining the validity and accuracy of the data obtained from the individual catch reports.

In 2001, 167 catch reports were selected for audit of their 2000 harvest records. Of these, 135 were chosen randomly and 32 were selected because they had either failed the audit in previous years or were excused from that audit by the Director of the Division. Of the 32 lobsterman eligible for reaudit, 15 reported that they fished during 2000 and thus were all selected for the audit. The remaining 150 fishermen reported harvesting 1,841,945 pounds of lobster during 2000.

Five licensees relied on unofficial documentation such as personal logs or ledgers to substantiate their reported catch. These fishermen reported landing 25,107 pounds, while the audit of their records revealed a harvest of 25,910 pounds, a difference of -3.19 percent. One fisherman in this group documented their harvest exactly, and none of the fishermen had a discrepancy exceeding ten percent and were considered to have failed the audit.

One hundred and thirty six of the auditees were able to provide official documentation (dealer transaction slips, tax records, etc.) to back up their catch reports. The fishermen in this group reported landing 1,701,766 pounds, while the audit showed that they landed 1,703,520 pounds, a difference of -0.10 percent. Eleven lobstermen in this group were able to document their harvest exactly, while 20 had discrepancies exceeding ten percent of their total harvest. Most of these 20 will be reaudited in 2002. Seven of the lobstermen chosen for audit were unable to provide any records to substantiate their reported catch. All of them had their audit officially postponed by the Director for cause.

2. Coastal Shellfishery -- 2000

Although the Interjurisdictional Fisheries Act of 1986 does not allow for reimbursement of work done on shellfish, the Division does still collect data on the Massachusetts shellfisheries. NMFS is not invoiced for staff time spent on this activity. In the spirit of cooperation, we have included data on the shellfisheries to ensure that those who have become dependent on the time series established by the publication of Project Progress and Final Reports do not lose this valuable data.

Under regulations promulgated by the Division, Shellfish Officers from each coastal city and town are required to submit annual reports of the shellfish harvest in their respective communities. In the past, this reporting requirement had to be satisfied before any of the \$300,000 that the Division had available for direct assistance to local shellfish programs was dispensed. However, due to severe State budgetary problems since 1990, no money has been available for distribution to the cities and towns for their shellfish programs. Lacking the "carrot" of State-aid, catch reports were sent to the Shellfish Officers requesting their voluntary compliance. Report distribution and compliance follow-up was handled by the Division's Shellfish Technical Assistance Project.

Information requested from the shellfish officers included the types and numbers of shellfish licenses issued as well as the town's commercial and family (recreational) harvest by species. The 2000 reports submitted by the shellfish officers are summarized Table 1. Five-year trends in total landings of selected species are presented in Figure 5.

In addition to the data collected from the Shellfish Officer's reports, the Project collects data from individual fishermen. All commercial shellfishermen are required to have a permit issued by the Division and to file an annual report of their shellfishing activities. The catch report form is mailed to each commercial fisherman at the end of each calendar year along with their permit renewal form. A new permit is not issued unless the catch report form is submitted with the renewal application. During 2000, 2,812 commercial shellfishermen filed catch reports on their fishing activities. Of the individuals submitting reports, 1,443 said that they did not participate in the shellfishery during 2000. Detailed statistics for the 1,369 individuals who actively participated in the fishery, separated by county, are presented in Table 2.

Table 1. 2000 Massachusetts Shellfish Statistics Based on Reports from Local Shellfish Officers.*

Number of Permits Issued by Cities and Towns

Total Family (Recreational) Permits	15,038
Resident Family Permits	12,568
Non-resident Family Permits	2,470
Commercial Permits	1,564
Senior Citizen Permits	2,720

Total of All Permits	19,322
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Shellfish Harvest (in pounds).

Species	Recreational	Commercial
Quahog	635,587	3,147,697
Mixed	540,483	1,021,430
Chowder	15,103	372,651
Cherrystone	11,780	531,160
Littleneck	68,221	1,222,456
Ocean Quahog	0	0
Soft Shell Clam	567,886	3,073,408 **
Oyster	107,717	515,506
Bay Scallop	80,248	164,620
Razor Clam	4,350	23,883
Surf Clam	24,760	192,000
Mussel	6,525	41,625
Conch	700	37,500
Eel	268	3,341
Total Pounds	1,428,041	7,199,580

* Figures are from 29 municipalities.

** Commercial soft shell clams includes moderately contaminated clams processed at the DMF Shellfish Plant (1,811,340 lbs.)

**Figure 5. Massachusetts Shellfish Fishery
Commercial Landings for Selected Species
1994 - 2000**

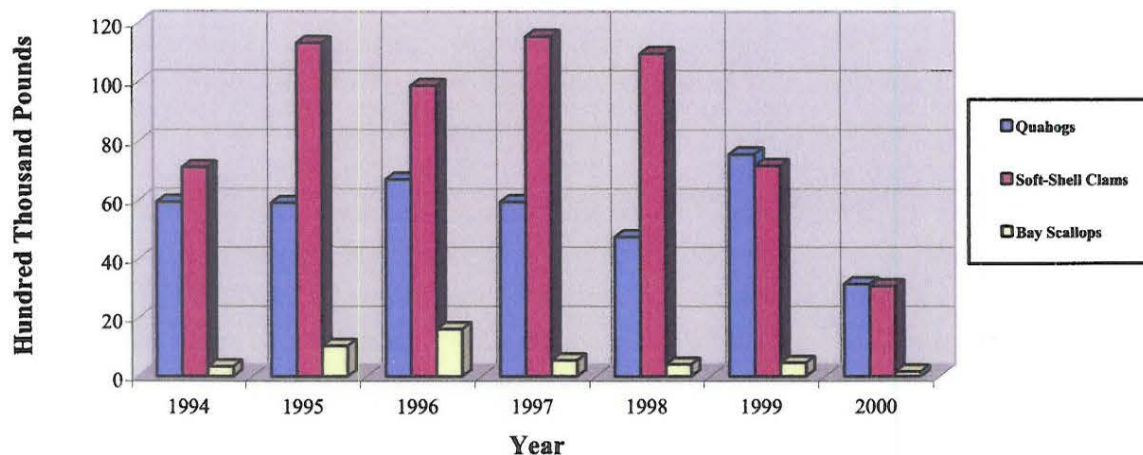


Table 2. 2000 Massachusetts Commercial Shellfish Harvest and Gear. *							Middlesex/ Norfolk/ Suffolk	Total Inside Town Boundaries	** Total Outside Town Boundaries	State Total
County:	Barnstable	Bristol	Dukes	Essex	Nantucket	Plymouth				
Number Fishermen:	785	118	85	222	73	80	5	1,368	1	1,369
Harvest -- Bushels										
CLAM, RAZOR	180	0	0	363	0	1,991	0	2,534	4,887	7,421
CLAM, SEA	454	12,329	25	10	10	104	0	12,932	13,056	25,988
CLAM, SOFT SHELL	37,086	76	312	17,367	0	1,932	200	56,973	76,473	133,446
CLAM, STIMSON	0	0	0	0	0	0	0	0	0	0
CONCHS	99	2,200	15	102	299	0	0	2,715	3,115	5,830
HORSESHOE CRABS	0	0	0	0	0	0	0	0	0	0
MUSSELS, UNCLASS	5,157	4	20	43	230	0	0	5,454	5,727	11,182
OYSTERS, UNCLASS	5,311	532	1,439	14	0	3,179	0	10,474	13,667	24,142
PERRIWINKLE	0	0	0	0	0	0	0	0	0	0
QUAHOG, CHERRYSTONES	3,693	1,973	1,132	0	44	1,064	0	7,906	9,014	16,920
QUAHOG, CHOWDERS	3,516	5,401	4,265	100	36	477	0	13,795	14,407	28,201
QUAHOG, LITTLENECKS	23,105	3,434	1,315	3	39	3,266	0	31,160	34,468	65,628
QUAHOG, UNCLASS	18,153	8,280	696	2	63	427	0	27,621	28,113	55,734
SCALLOP, BAY	7,301	19	2,800	0	9,719	265	0	20,104	30,088	50,192
SCALLOP, SEA	0	0	0	35	0	26	0	60	121	181
SNAILS	0	0	0	0	0	0	0	0	0	0
Total Bushels	104,053	34,248	12,019	18,038	10,439	12,730	200	191,728	233,135	424,863
EELS, AMERICAN (LBS)	3,077	30	0	0	0	0	0	3,107	0	3,107
WORMS, SAND (LBS)	0	0	0	311	0	0	0	311	0	311
Vessels										
Engaged in Fishery	703	92	74	140	70	73	5	1,157	0	1,157
Value (\$)	2,203,208	461,070	1,096,245	873,724	418,092	177,185	83,850	5,313,374	0	5,313,374
Gear Type (Number)										
Hand Devices	2,058	203	104	544	11	251	6	3,177	0	3,177
Mechanical	526	36	239	2	542	45	1	1,391	0	1,391
Pots	140	0	0	0	0	0	0	140	0	140
Hydraulic	21	0	3	0	0	0	0	24	0	24
Diver	1	9	0	75	10	3	0	98	0	98
Other	37	2	4	0	1	1	100	145	0	145

* Based on annual reports from licensed commercial fishermen.

** Includes Cape Cod Bay, Massachusetts Bay, Vineyard Sound, Nantucket Sound and Offshore Areas. Number of fishermen and vessels in this category are from "out of state" and are not necessarily responsible for the landings in this column.

3. Striped Bass Fishery -- 2000

The 2000 commercial fishery for striped bass was conducted within guidelines required by Amendment V of the ASMFC Interstate Fisheries Management Plan for Striped Bass. Under this declaration, all persons taking striped bass commercially had to obtain a special license from the Division, and were restricted to a specific season, July 3 through September 4, providing that the total commercial catch did not exceed 802,000 pounds. In addition, a minimum size limit of 34 inches total length was required for harvest, and each permittee had to file an annual report of their catch and effort.

During 2000, the Division issued a total of 3,280 striped bass licenses. Three hundred fifty four fishermen (11%) failed to file a catch report and were not issued a renewal license for 2001. Of the 2,926 fishermen who did report, 1,427 claimed that they did not fish for bass in 2000 and 137 reported that they fished but did not harvest any legal-sized fish. The remaining 1,362 reported that they caught a total harvest of 795,252 pounds of striped bass (667,606 sold and 127,646 consumed) during the 2000 commercial fishing season. The dealer survey showed a commercial catch in 2000 of 779,736 pounds. Dealer reports for the 2000 season indicate that 766,421 pounds of bass were sold during the nine week season.

Commercial landings of striped bass during the 2000 season were monitored through a seafood dealer survey which required that all Massachusetts dealers authorized to buy striped bass directly from fishermen report their purchases weekly by telephone. If the total landings approached the 802,000 cap before the season ended, the fishery is closed through notification to the dealers and the fishermen. The Division has been able to refine its landings figures for striped bass because of this survey which requires a report not only from the dealers, but also the fishermen. Funds for the monitoring of this fishery are now being provided by the Wallop-Breaux program. Data is presented here for informational purposes only. NMFS is not invoiced for this activity.

Table 3 presents a brief summary of some of the more important data elements of the 2000 Massachusetts commercial striped bass fishery.

Table 3. 2000 Massachusetts Commercial Striped Bass Statistics.

Month	# Fishermen Fishing	Total Hours	Sub-Legal Fish		Harvested Fish @	
			Number	Pounds	Number	Pounds
July	1,349	43,147	57,593	480,049	23,039	425,162
August	1,218	35,899	54,440	451,328	21,165	371,135
September	645	11,982	20,621	144,507	3,804	61,261
October	221	4,606	11,964	62,825	1,001	13,835
Total	3,433	95,634	144,618	1,138,709	49,009	871,392
Average Pounds per Fish				7.87		17.78

* Based on catch reports from licensed commercial fishermen.

@ Includes consumed and sold fish.

4. Gear Type Survey -- 2001

During 1989, the DMF implemented a redesigned automated Licensing System for all license types. The system was designed and coded by Project personnel. One of the advantages of the new system is that it allows the Division to accurately determine the number of Massachusetts fishermen employing specific gear types. All licensed fishermen are now required to state their primary and secondary gear types.

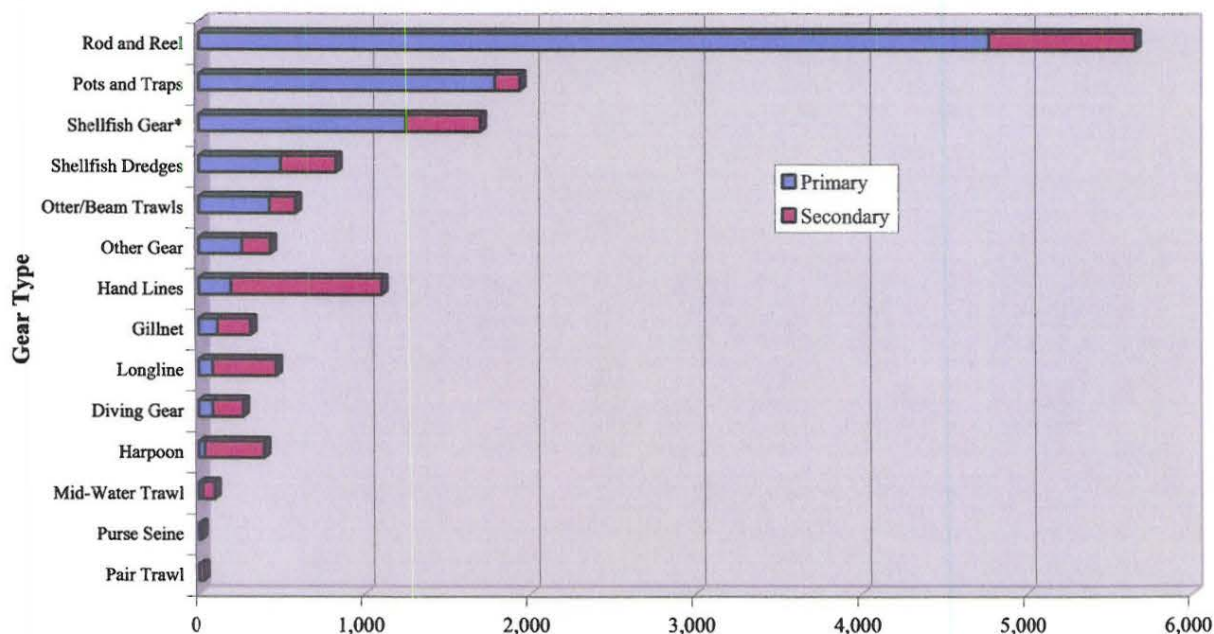
Rod and reel was the most frequently employed gear type, followed by pots and traps, and shellfish gear, respectively. Most fishermen fished only one gear type. Of the fishermen using a secondary gear type, the categories hand line, rod and reel, and shellfish gear are listed most often. A complete listing of primary and secondary gear types used, as reported by licensees are shown in Table 4. Matrices showing secondary gear types used by each primary gear used, have been run and are available, by request, from the Project. The gear type data are shown graphically in Figure 6.

Table 4. Primary and Secondary Gear Type Employed by Licensed Fishermen -- 2001

Gear Type	Primary	Secondary
Pair Trawl	2	24
Purse Seine	9	5
Mid-Water Trawl	22	72
Harpoon	35	359
Diving Gear	83	184
Longline	84	383
Gillnet	112	201
Hand Lines	194	911
Other Gear	260	172
Otter/Beam Trawls	428	158
Shellfish Dredges	497	332
Shellfish Gear*	1,253	450
Pots and Traps	1,790	151
Rod and Reel	4,773	887
Total	9,542	4,289

* Includes hand rakes, clam forks and plungers.

Figure 6. 2001 Massachusetts Commercial License Status; Primary & Secondary Gear Type Employed by Fishermen



*Includes hand rakes, clam forks & plungers.

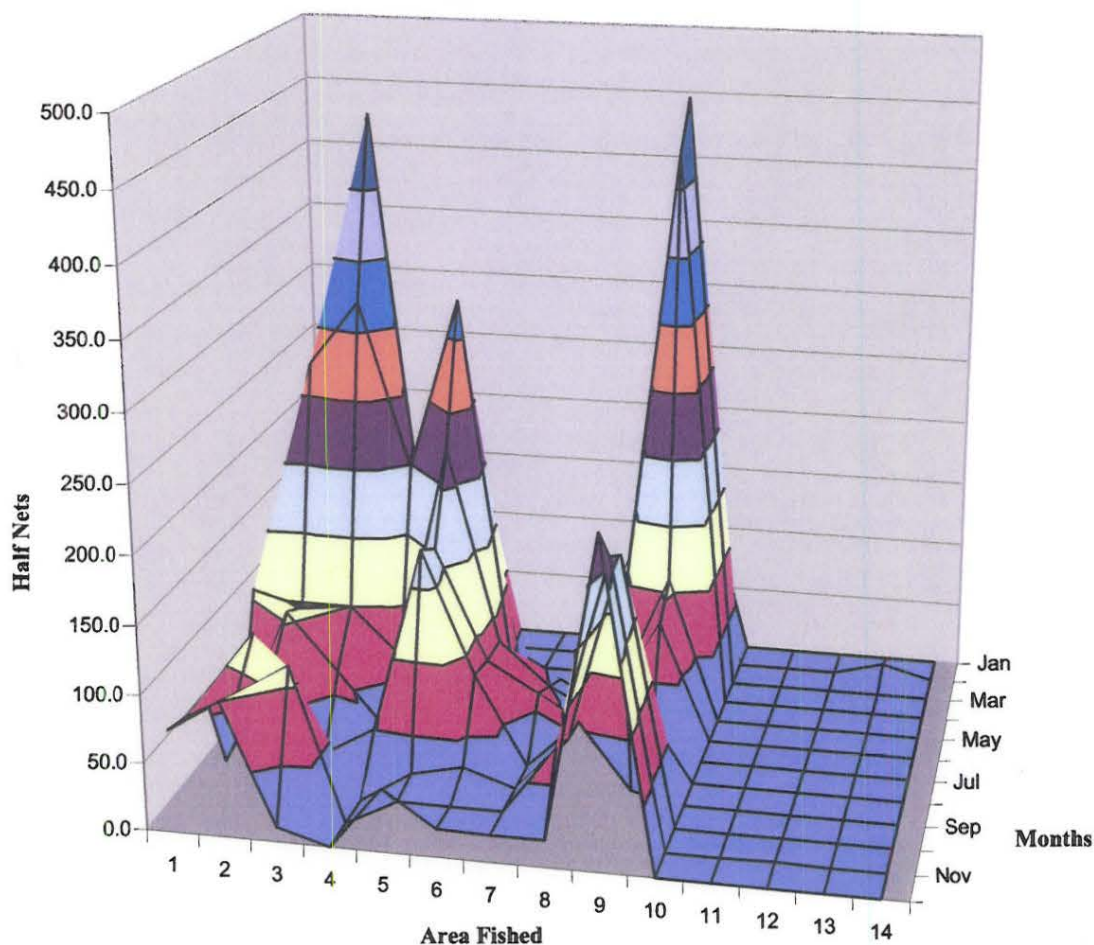
Number of Fishermen

5. Gillnet Fishery -- 2000

During 1988, the DMF and the Massachusetts Marine Fisheries Advisory Commission, in an attempt to gain baseline information on the Massachusetts state waters gillnet fishery and to establish a framework to manage that fishery, declared it to be a regulated fishery. Under this declaration, all gillnetters had to obtain, for a minimal fee, a special permit from DMF. A condition of the issuance of that permit was that each applicant had to fill out an informational survey. In 1992, the survey was expanded into an annual catch report with more rigorous catch and effort data summarized by month.

One hundred and forty-five fishermen received a regulated permit in 2000 to fish with a gillnet in state waters. Of those, 69 claimed they did not gillnet in 2000, and 11 did not file a report for their 2000 fishing activities and subsequently were not permitted to renew their license in 2001. The 66 fishermen who did file a report, reported fishing a total of 8,015 half-nets (300 foot) in 1,374 strings. Most of the effort occurred in areas 9, 5, 2, 3, and 1 (Figure 15). Gloucester was the largest port of landing for Massachusetts gillnetters with 2,813,036 pounds of fish landed followed by Scituate at 1,784,520 pounds and Chatham with 1,375,398 pounds.

Figure 7. 2000 Massachusetts Gillnet Fishery Number of Half Nets Fished by Month by Area Fished



Referring to Figure 7, the concentration of effort in the Massachusetts Bay area in the winter and spring months is the gillnet fishery targeting dogfish and cod. This fishery also extends into area 19 in federal waters. The large peak in area 3 is largely comprised of early spring effort targeting yellowtail, cod and winter flounder. Table 5 gives a breakdown of landings by species and Figure 8 is a pie chart of the top five species by volume landed by gillnetters. Dogfish is the highest volume species for gillnetters at 1.82 million pounds. Cod and monkfish are second and third at 1.74 million pounds and 1.45 million pounds, respectively.

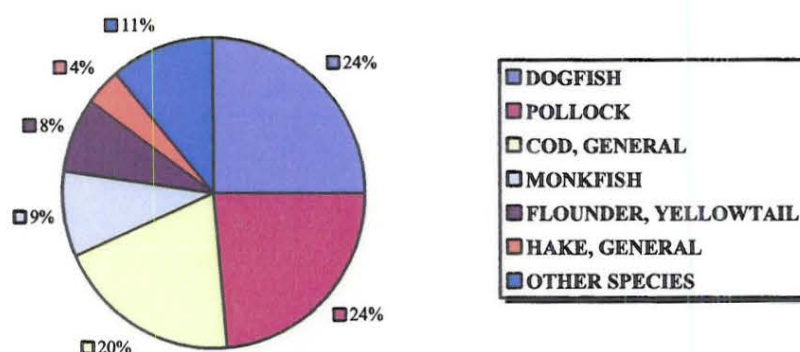
The gillnet fishery for bluefish is heavily restricted and monitored due to gear conflicts between gillnetters and party/charter boats. Persons engaged in the fishery must obtain a special fisheries permit from the Division and report their landings through our annual gillnet catch report. No permits were issued to prospective participants in this fishery during 2000.

Table 5. 2000 Massachusetts Gillnet Landings

<u>Species</u>	<u>Pounds Landed</u>
DOGFISH	1,820,855
COD, GENERAL	1,735,719
MONKFISH	1,446,856
POLLOCK	646,477
FLOUNDER, YELLOWTAIL	559,400
HAKE, GENERAL	303,623
FLOUNDER, WINTER	265,771
SKATE, GENERAL	203,339
HADDOCK, GENERAL	143,328
FLOUNDER, DAB	40,449
GROUND FISH, UNCLASS	36,244
FLOUNDER, WITCH	28,896
BLUEFISH	21,740
WOLFFISH	15,953
MACKEREL, ATLANTIC	14,889
CUSK	9,463
FLOUNDER, UNCLASS	8,438
HAKE, SILVER	7,527
REDFISH	6,323
HERRING, UNCLASS	300
TAUTOG	234
SCUP	150
SEA BASS, UNCLASS	10
Total Pounds	7,315,984

* Based on reports submitted by licensed fishermen.

Figure 8. 2000 Massachusetts Gillnet Fishery - Top Six Species by Volume



6. Fish Pot Fisheries -- 2000

The fish pot fisheries are comprised of three regulated fisheries which target the species sea bass, conch and scup using a fish pot, or trap, of one form or another, primarily south of the Cape. In 2000, 400 permits were issued across all three regulated fisheries, with a total of 223 of these permit holders indicating that they fished for one of the three regulated species. Table 6 shows a complete breakdown by fishery of permit information. There is a considerable overlap between fisheries, where 17 fishermen had only one of the three regulated permits. In all, 180 fishermen were issued the 400 total permits, 117 of them having permits in two of the three fisheries, and 46 having permits in all three fisheries. In addition, of those that reported fishing in 2000, 115 fishermen indicated that they had a coastal lobster permit, and 37 of those consider their regulated species catch as incidental to their lobster catch.

Table 6. 2000 Fish Pot Fisheries Permit Information and Total Landings

Regulated Fishery	Permits Issued	Reported Fishing Number	Percent	Reported Not Fishing Number	Percent	Not Reporting Number	Percent	Total Landings (lbs)
Sea Bass	66	55	83%	8	12%	3	5%	514,235
Conch	163	83	51%	66	40%	13	8%	1,854,172
Scup	171	79	46%	80	47%	11	6%	84,741
Totals	400	217	54%	154	39%	27	7%	2,453,148

Landings of all three targeted regulated species totalled approximately 2.3 million pounds, with an additional incidental catch in the sea bass fishery of scup and tautog totalling 4,190 pounds and 21,653 pounds respectively. Ninety-six percent of the landings were caught in Nantucket Sound, Vineyard Sound and Buzzards Bay (areas 10, 13 and 14 on Figure 15). Eighty-seven percent of the landings were caught during the months June through October, and top ports were Barnstable, Tisbury, Edgartown and Fairhaven respectively, due in large part to the large conch landings in those towns. See Figures 9, 10 and 11 for landing totals by area, month and county respectively, and Figure 12 for CPUE information.

Figure 9. 2000 Massachusetts Fish Pot Fisheries, Total Landings by Area

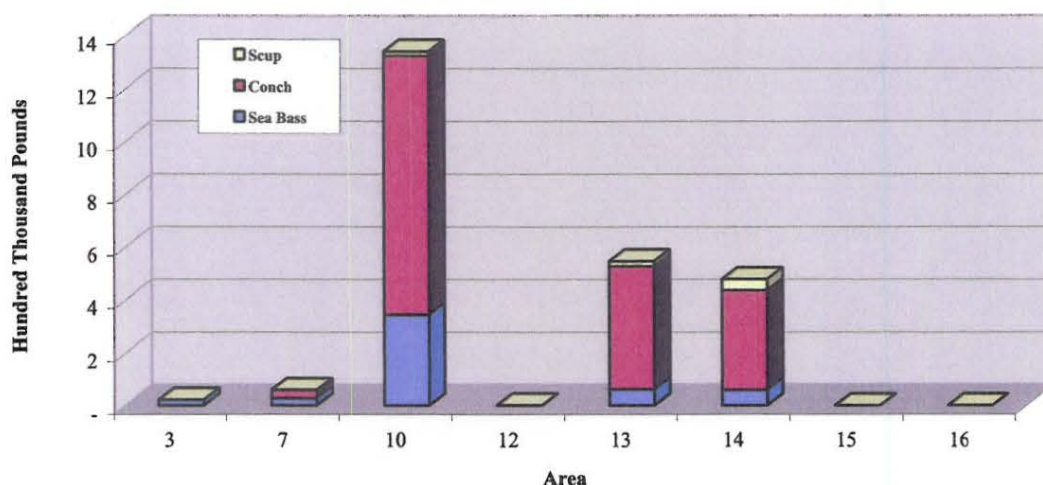


Figure 10. 2000 Massachusetts Fish Pot Fisheries, Total Landings by Month

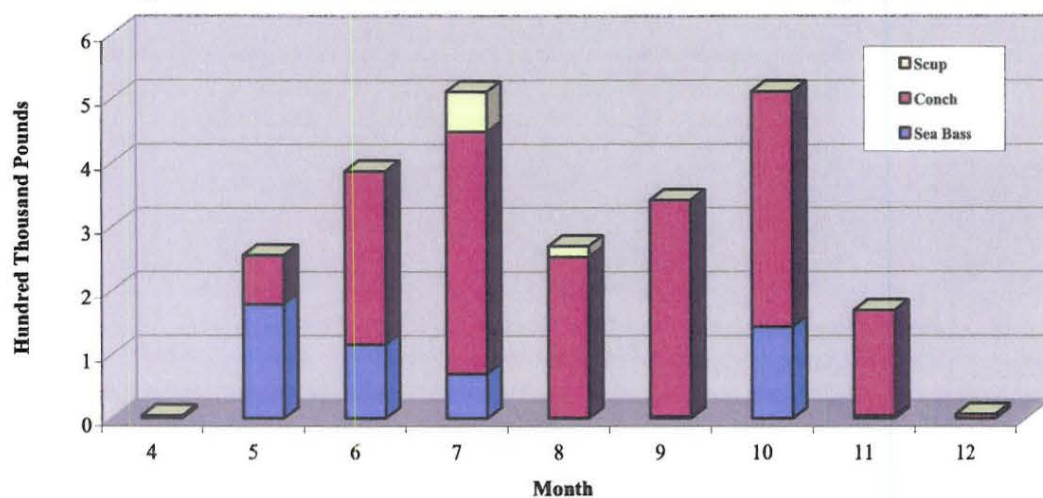


Figure 11. 2000 Massachusetts Fish Pot Fisheries, Total Landings by County

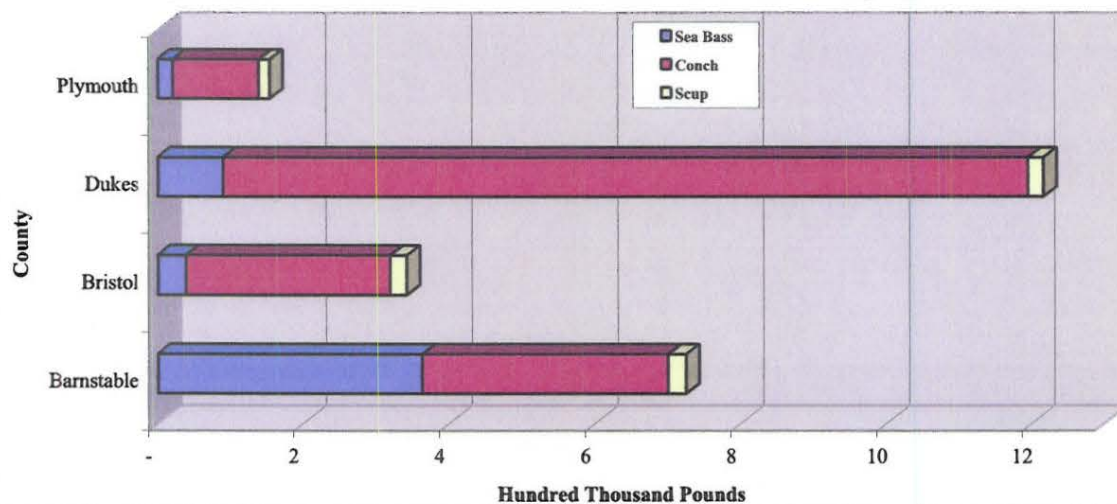
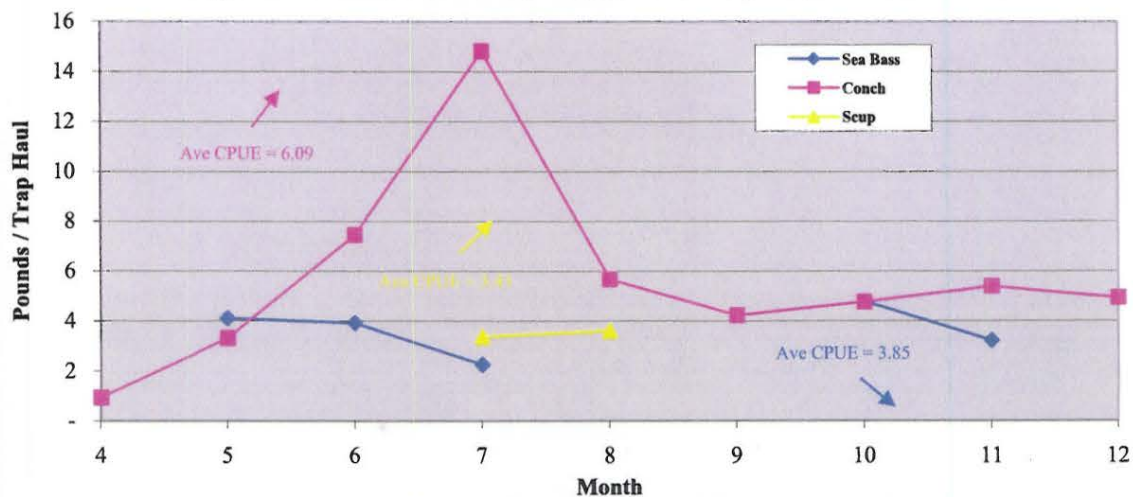


Figure 12. 2000 Massachusetts Fish Pot Fisheries, Catch Per Unit Effort



B) MONTHLY REPORTS

Objectives: To obtain information on certain territorial water finfisheries which are managed by the Division; licensed commercial fishermen participating in these fisheries are required to file monthly reports of their fishing activities.

1. Fish Trap Fishery -- 2001

The Project collects monthly trap fishery landing statistics from licensed fish trap operators along the coast. During the 2001 fish trap season, which lasted from April through September, trap operators reported fishing a maximum of 15 traps in any given month (May). There were a total of 516 trap-lifts. Landings were 963,646 pounds of various species. Atlantic mackerel, squid, scup and butterfish were the most abundant species landed, respectively. Although the squid landings are 47% lower than the previous year, the total 2001 landings across all species are higher, primarily due to increases in mackerel and butterfish. Detailed landings by month, area and species are presented in Tables 7 and 8. Figures 13 and 14 show eight-year trends in total landings and landings by species, respectively.

Figure 13. Total Massachusetts Fish Trap Landings, 1994 - 2000

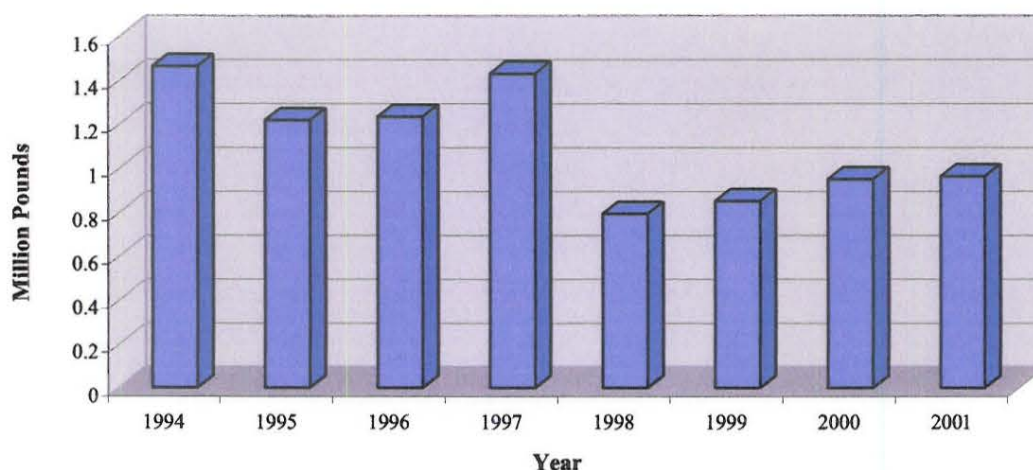


Figure 14. Massachusetts Fish Trap Landings for Selected Species, 1994 - 2000

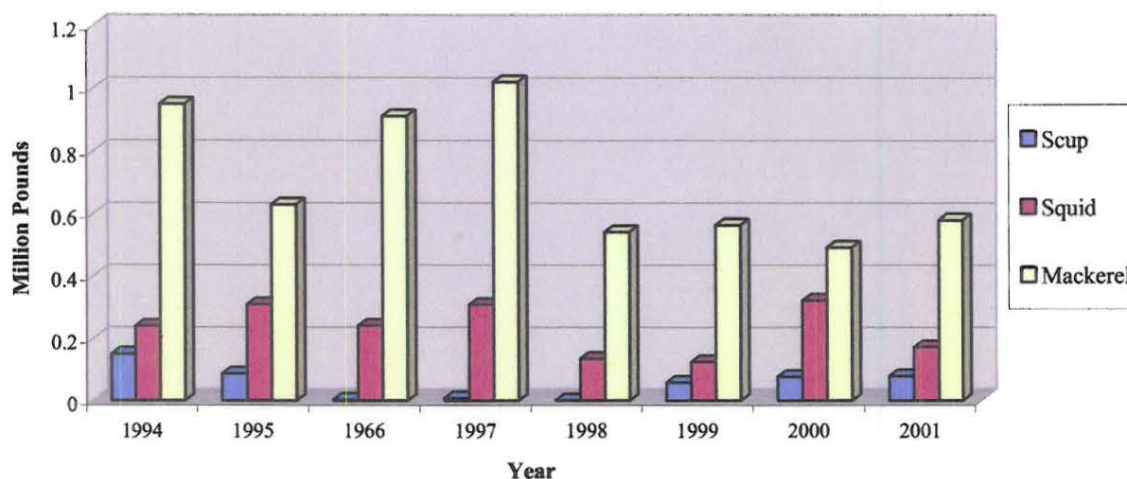


Table 7. 2001 Massachusetts Fish Trap Harvest by Month as Reported by Fishermen

Effort	Apr	May	Jun	Jul	Aug	Sep	Total
Max Traps Fishing	13	15	6	2	2	2	40
Trap Lifts	41	354	26	30	42	23	516
Species – Pounds Harvested							
ALBACORE	0	0	0	0	133	3,540	3,673
BLUEFISH	0	5,544	4,852	4,390	7,223	2,541	24,550
BONITO	490	0	45	1,172	7,981	6,514	16,202
BUTTERFISH	4,860	40,040	0	10	0	0	44,910
FLOUNDER, SUMMER	5	2,418	512	2,320	1,115	0	6,370
FLOUNDER, UNCLASS	0	11	0	0	0	0	11
FLOUNDER, WINTER	0	2	0	0	0	0	2
HERRING, UNCLASS	13,000	8,900	0	0	0	0	21,900
MACKEREL, ATLANTIC	11,230	569,931	0	17	0	0	581,178
MACKEREL, KING	0	0	0	0	6	0	6
MACKEREL, SPANISH	0	0	0	0	205	3,512	3,717
MENHADEN	0	200	0	0	0	0	200
SCUP	0	78,581	0	0	0	0	78,581
SEA BASS, UNCLASS	0	6,478	3,050	4	0	0	9,532
SEA ROBIN	0	0	0	170	0	0	170
SQUID, GENERAL	4,455	168,045	55	0	0	0	172,555
TAUTOG	0	65	0	0	0	0	65
WEAKFISH	0	5	19	0	0	0	24
Total	34,040	880,220	8,533	8,083	16,663	16,107	963,646

Table 8. 2001 Massachusetts Fish Trap Harvest by Area as Reported by Fishermen

Area	3	10	Total
Max Traps Fishing	1	39	
Trap Lifts	16	500	513
Species – Pounds Harvested			
ALBACORE	0	3,673	3,673
BLUEFISH	0	24,550	24,550
BONITO	0	16,202	16,202
BUTTERFISH	0	44,910	44,910
FLOUNDER, SUMMER	0	6,370	6,370
FLOUNDER, UNCLASS	0	11	11
FLOUNDER, WINTER	0	2	2
HERRING, UNCLASS	6,400	15,500	21,900
MACKEREL, ATLANTIC	63,722	517,456	581,178
MACKEREL, KING	0	6	6
MACKEREL, SPANISH	0	3,717	3,717
MENHADEN	0	200	200
SCUP	0	78,581	78,581
SEA BASS, UNCLASS	0	9,532	9,532
SEA ROBIN	0	170	170
SQUID, GENERAL	0	172,555	172,555
TAUTOG	0	65	65
WEAKFISH	0	24	24
Total	70,122	893,524	963,646

See Figure 15 for Map of Areas

JOB 2 – DISSEMINATION

Although 2000 lobster fishery information was keypunched into the project's statistical database, the annual publication for 2000 was not completed until after the project period due to a shortage of personnel on the project. That document (entitled 2000 Massachusetts Lobster Fishery Statistics) is appended to this report (Appendix A). Summary statistics of the 2000 lobster fishery statistics were published in the Massachusetts Lobsterman's Association Newsletter.

Project personnel submitted finfish, lobster and shellfish data to the National Marine Fisheries Service for their 2000 "shore and boat survey" and for inclusion in Fisheries of the United States 2000 and Fisheries Statistics of the United States.

Project personnel responded to many requests for fisheries related data. There has been a marked increase in the number of data requests since the inception of quota managed fisheries and the numerous plan amendments to interstate and Federal fisheries management plans. These requests were made by Division personnel and projects, other state agencies, federal agencies, consultants, the electronic and print media, special interest groups and the general public.

JOB 3 – ATLANTIC COASTAL COOPERATIVE STATISTICS PROGRAM

The Project Leader (Charlie Anderson), as the New England States' member on the Operations Committee of the Atlantic Coastal Cooperative Statistics Program (ACCSP) attended numerous meetings of the Operations Committee, the ACCSP Coordinating Council and the Industry Advisors. He continued to serve as Vice-chair of the Committee until the Chair of the Committee resigned in the fall and the Project Leader became acting Chair.

During the year, the ACCSP began the transition from primarily a planning and development effort to a functioning implementation and operational Program. Considerable work was done by a sub-committee of the Operations Committee in reorganization of the program to meet the newly emerging needs of the Program. Several options were placed before the Coordinating Council. As a result, more staff, including a Program Director, was added to the Program. The Operations Committee was expanded from seven members to include a member of each of the 23 Program Partners (three representing NMFS). As a result of this reorganization, the Project Leader spent considerable time putting together a white paper concerning the Roles and Responsibilities of the new Program Director, the Operations Committee and the various technical committees of ACCSP. This continued as a work-in progress, pending input by the new Director who will join the program in early 2002.

The 2002 ACCSP Operations Plan was completed and accepted by the Coordinating Council. The Operations Committee completed a new Funding Decision Policy, which gave far more direction to partners submitting requests for individual project funding. The Committee tasked several other ACCSP committees relative to the continued development of Technical Series Document V, The Biological and Discard (At Sea Observer) module of the program. That document will be presented to the Coordinating Council for approval early in 2002.

The Operations Committee evaluated about 50 grant requests (including the Operational budget for the ACCSP). In all, the Committee recommended almost \$ 3 Million in grants to the ACCSP partners. The recommendations were accepted by the Coordinating Council.

Confidentiality of data and system security continued to be major issues that are constantly addressed by

the Committee.

JOB 4 – LOBSTER SEA SAMPLING DATA ENTRY

Data entry for the DMF Lobster Investigation Program's 2000 sampling data was completed in February of 2001. The database contained biological sampling records from 83 lobster trips spanning May – November, 2000, for a total of 17,251 trap-hauls and 38,391 individual lobsters. Approximately 40 percent of the 2001 data was also keypunched. Those sampling trips remaining had not been received from field samplers and will be completed during the next project time period.

JOBS 5 & 6 – MANAGEMENT INFORMATION SYSTEMS AND TECHNICAL ASSISTANCE

The project leader (Charlie Anderson) continued to serve as the DMF parent agency's (Department of Fisheries, Wildlife and Environmental Law Enforcement) Chief Information Officer. He is Chair of the Executive Office of Environmental Affairs (EOEA) Systems Integration Team, which is responsible for the daily operation and oversight of all of EOEA's information systems components, including a 30 + server Wide Area Network and the EOEA Data Center, which serves Oracle and Arc/Info Applications. EOEA Agencies are in the process of migrating out of Banyan VINES/Beyond Mail environment to Windows 2000/MS Outlook Mail.

The project leader led the Systems Integration Team through several sessions regarding the past and future of the Team itself. The end result was a very significant change in the Team's mission. The past activities of the Team were heavily devoted to the development of Secretariat wide IT policy and Standards. The Commonwealth of Massachusetts IT paradigm has changed to be more central (The Commonwealth's Information Technology Division) and Departmental level control. The need for extensive work at the Secretariat level has declined except for managing the Data Center and Tele/Data communications, standalone activities servicing all five Departments within the Executive Office that benefit from economies of scale, has decreased. A new mission statement was drafted and adopted. The team is now focused on technology information exchange, funding issues, and advising the Secretariat Chief Information Officer.

The project leader spent considerable time in obtaining funding for the continued development of e-Government in the Department of Fisheries, Wildlife and Environmental Law Enforcement, with emphasis on putting the Division of Marine Fisheries commercial, seafood dealer and special permit application (FISH2000) on the internet, making enhancements in that system and integrating the commercial fisheries statistics module into that application. A total of \$600,000 was obtained from the Information Technology Division (ITD) for the FISH2000 enhancements and other Department e-Commerce activities. He also served as Project Sponsor and Senior Advisor to the development contractors Oracle and Acacia Systems for the internet enabled module of FISH2000.

He also assisted the Division of Environmental Law Enforcement in obtaining \$200,000 for the acquisition of a Computer Assisted Dispatch (CAD) system, including hardware and application software, building a secure network, and development and customizing the system.

The Assistant Project Leader, (Senior Systems Analyst - Thomas Hoopes) spent approximately one third of his time configuring specific hardware and software to conform to the network and needs of the users. Major tasks included but was not limited to the following:

- Two computer orders were initiated involving a) peripherals and b) PC's and printers, for the Division. These arrived in January and June of 2001, respectively. Considerable time was spent configuring equipment from these two orders.
- Acted as project manager for the Department of Fisheries, Wildlife & Env Law Enforcement during the selection of an integrator, and the first three phases of the conversion or migration from Banyan Vines to a Microsoft Windows 2000 network operating system, including Active Directory and Exchange 2000. This project is otherwise known as MassMail as it involves the migration of all Massachusetts State agencies email systems to a consolidated one running under Windows 2000. This task alone consumed thirty percent, or almost two months, of the Systems Analyst's time. It is expected that this task will be completed, depending on funding, at the end of June, 2002.
- Continued support for four DMF locations (Gloucester, Pocasset, Newburyport and Vineyard Haven), two of which have servers, including Vines accounts, mail and file services, and Microsoft NT 4.0 workstations. Several days were spent eradicating the Nimda virus from several PC's and a server at the Gloucester location.
- Upgraded the Gloucester facility voice mail system to provide new functionality to employees, and quota managed fishery information to callers using a touch tone phone. The architecture of the information system was constructed, and most of the messages recorded and tested, with full production slated for mid-late January, 2002.
- Continued to maintain servers, PC's and phone systems at the Gloucester and Pocasset offices in addition to a DMF Intranet web site.
- Continued to maintain the DMF inventory database for computer equipment.
- Other miscellaneous tasks, mostly concerning support for end-users and troubleshooting.

The remainder of his time was spent on the following non-GIS related tasks:

- As the project manager, on the new DMF licensing system, called FISH2000. The system went into production in late January, 2001, and a good portion of time was managing enhancements and bug fixes over the following two to three months. Once most of the bugs were fixed, it was felt that the new system is a vast improvement over the old one for many reasons, and fishermen have expressed similar sentiment.
- As the project manager, on the conversion of the Division's commercial fisheries statistics data entry screens, including quota-managed species and incorporation of the telephony-based dial-a-fish system into the Division's new Oracle database called FISH2000. This project will tie all commercial fisheries effort and landings data into the Division's licensing database. In the past much of this information was linked only to a copy of the licensing information as it resided in separate databases, and real-time licensing updates were not appropriately associated with the catch data. As a result of the change, the most benefit was found when it came to tracking the quota managed fisheries, as a surprisingly large number of seafood dealers were not properly licensed and/or authorized to handle these species.
An Oracle developer was hired through Acacia Systems to help in this effort. At the end of the project period, all of the dial-a-fish modules had been developed and were undergoing testing, and all dealer and fishermen transaction reporting data entry screens were completed, with data entry of 2001 data started.
- The Department of Fisheries, Wildlife and Environmental Law Enforcement will be migrating its network operating system from Banyan Vines to Microsoft 2000 during the state's 2002 fiscal year. The Systems Analyst crafted an investment brief to the MA Information Technology Division to estimate the cost of this conversion for the Department.

- Attended a one-day meeting in Tampa, Florida for the ACCSP Permitting Workgroup. This workgroup is tasked with trying to come up with a scheme to uniquely identify fishermen and dealers in the ACCSP database. In addition, the project's Systems Analyst crafted a grant request to ASMFC to hire a contractor sometime in the fall of 2001 to begin the process of researching and developing a plan to convert Massachusetts statistical systems from their current monthly/yearly format to an ACCSP compliant trip-based system. That proposal was approved, and the job posting for this position will be crafted and posted early in the second half of the job timeline. Approximately two percent of the Systems Analyst's time was spent on these activities.
- Updated the organizational chart for the Division. This has been a priority for Director Paul Diodati, and has been helpful in re-organizing the agency's projects and staff.

GIS

The Systems Analyst spent approximately twenty percent of his time maintaining the environmental monitoring information system (stored in Oracle with a spatial component in Arc/Info), fulfilling several requests for plots and creating several new coverage and basemaps with mylar overlays for the creation of a new shellfish habitat data coverage. This included:

- One hundred seventy base maps and one hundred sixty-five mylar overlays were produced as part of the creation of a shellfish habitat data coverage spanning all of the territorial waters of the Commonwealth. Considerable time was spent developing the process of data collection and compilation onto these base maps, and then producing a plotting program which produced the maps and overlays themselves. Compiled base maps and overlays are being scanned and automated by a contractor with the intention that the data coverage will be complete sometime in August of 2001.
- Worked with Lobster project to enhance their lobster sea-sampling data points, and be able to use ArcView to manipulate their data and produce plots on their own.
- Worked with the Resource Assessment project to produce a point coverage of sampling points detailing shellfish resources. This coverage was created so that the project could use it in ArcView to both manipulate their data and produce their own plots.
- The Systems Analyst was asked by MA Coastal Zone Management to participate as a principal investigator on the Massachusetts Ocean Resource Information System (MORIS) project funded by CZM. This system is designed to bring together marine resource data sets from a variety of sources into an ArcView application for use by state and federal agencies, as well as public and private organizations.
- Fulfilled several data requests for environmental monitoring data in plot and or electronic format.

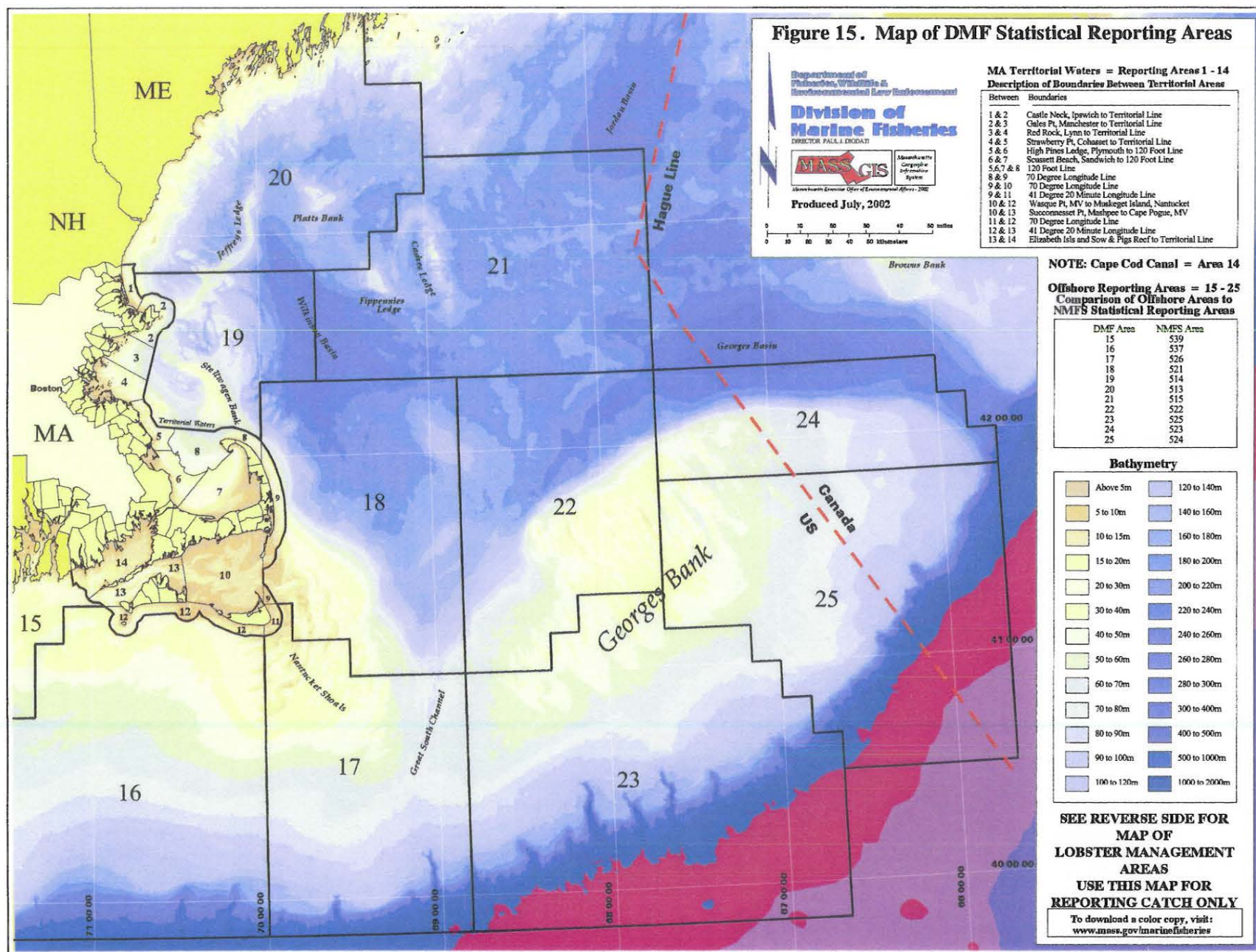
JOB 7 – STRATEGIC PLAN

As a means to begin addressing the need to move towards collecting fisheries information on a trip-level basis, a grant proposal was accepted by ACCSP to hire a contractor to help develop a plan. During the project period, negotiations occurred with the University of Massachusetts to act as the contractor. It is expected that this contract will be fulfilled over the course of 2002.

APPENDIX A

2000 STATISTICAL REPORTING MAPS

(FIGURE 15)

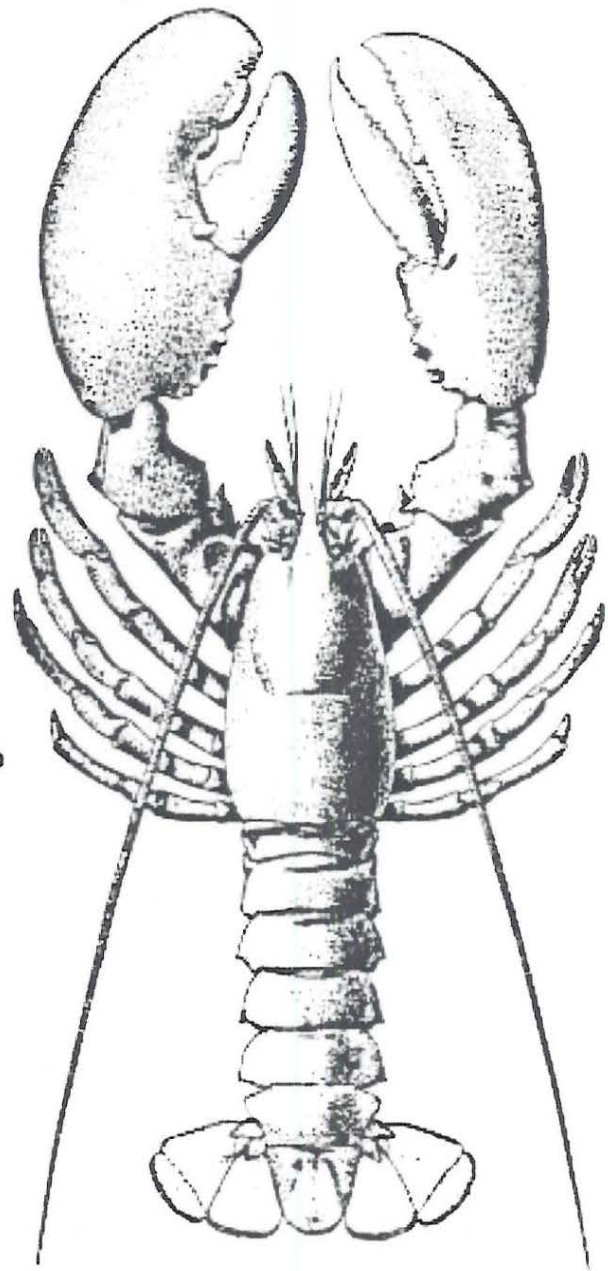
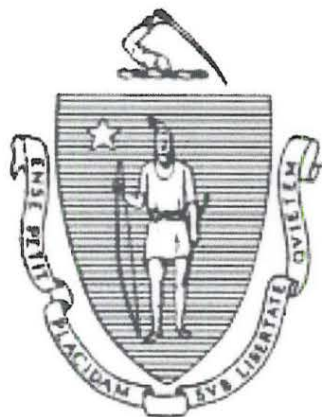


APPENDIX B
2000 MASSACHUSETTS LOBSTER
FISHERY STATISTICS

2000

Massachusetts
Lobster Fishery
Statistics

Holly M. McBride
Micah J. Dean
Thomas B. Hoopes



MASSACHUSETTS
DIVISION OF MARINE FISHERIES

**2000
MASSACHUSETTS
LOBSTER FISHERY
STATISTICS**

by

Holly M. McBride
Research Analyst
and

Micah J. Dean
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Massachusetts Division of Marine Fisheries
Technical Report TR-9
(Lobster Statistics Publication 35)



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Project # 3-IJ-179

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

INTRODUCTION

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

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

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

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

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

SOURCE OF DATA

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

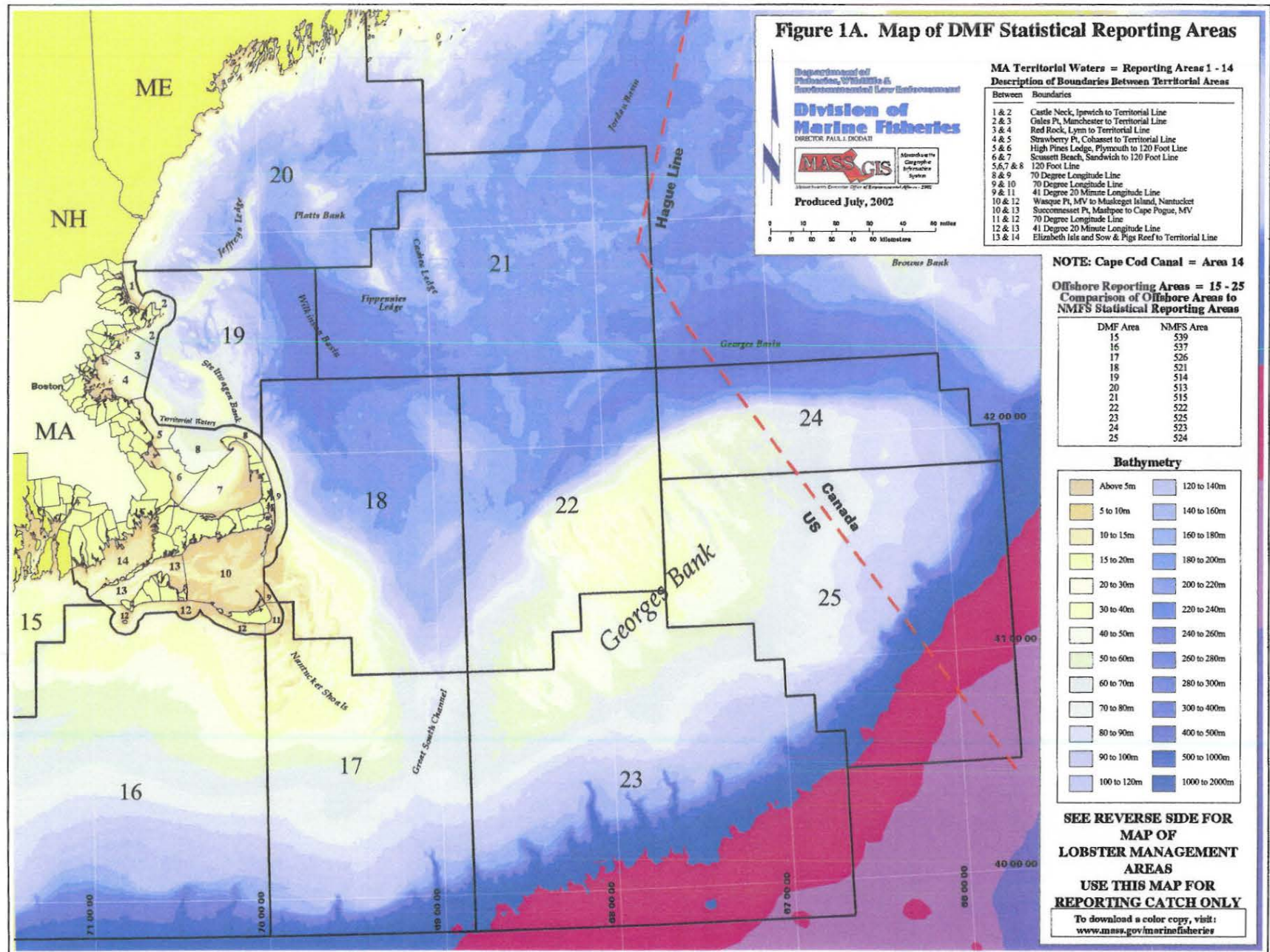
COASTAL LOBSTER LICENSE TRANSFER

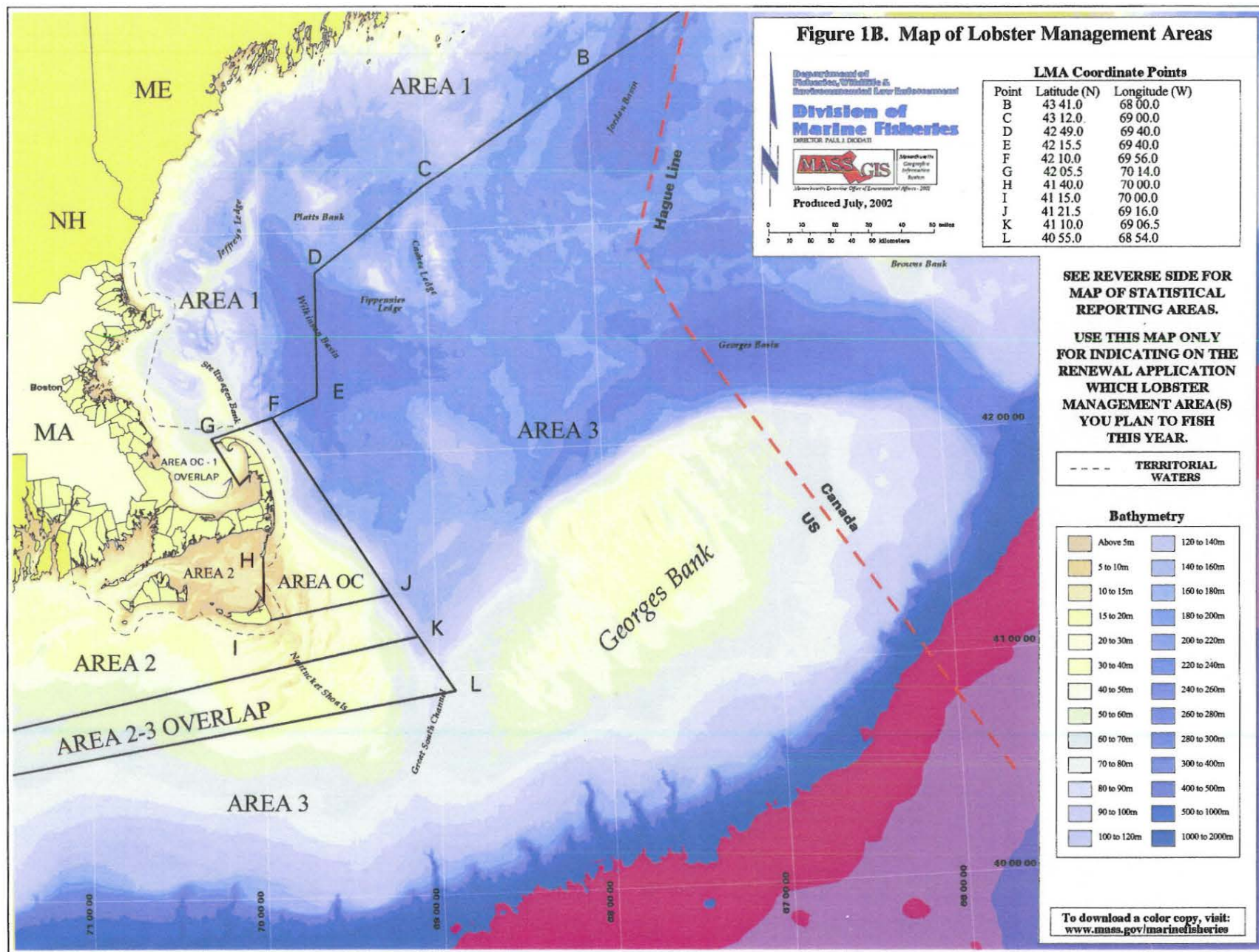
During 1993, the Division promulgated regulations to broaden the criteria for the transfer of a coastal lobster license from one individual to another. The intent of the new legislation was to create more options for lobstermen who wish to retire and leave this limited entry fishery. During calendar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

EXPLANATION OF TABLES

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

Figure 1A. Map of DMF Statistical Reporting Areas





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

Here is a brief definition of each lobster license type:

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

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

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

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

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

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

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

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

ISSUED LICENSES AND REPORTING STATUS

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

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

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

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

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

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

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

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

LANDINGS AND VALUE

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

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

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

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

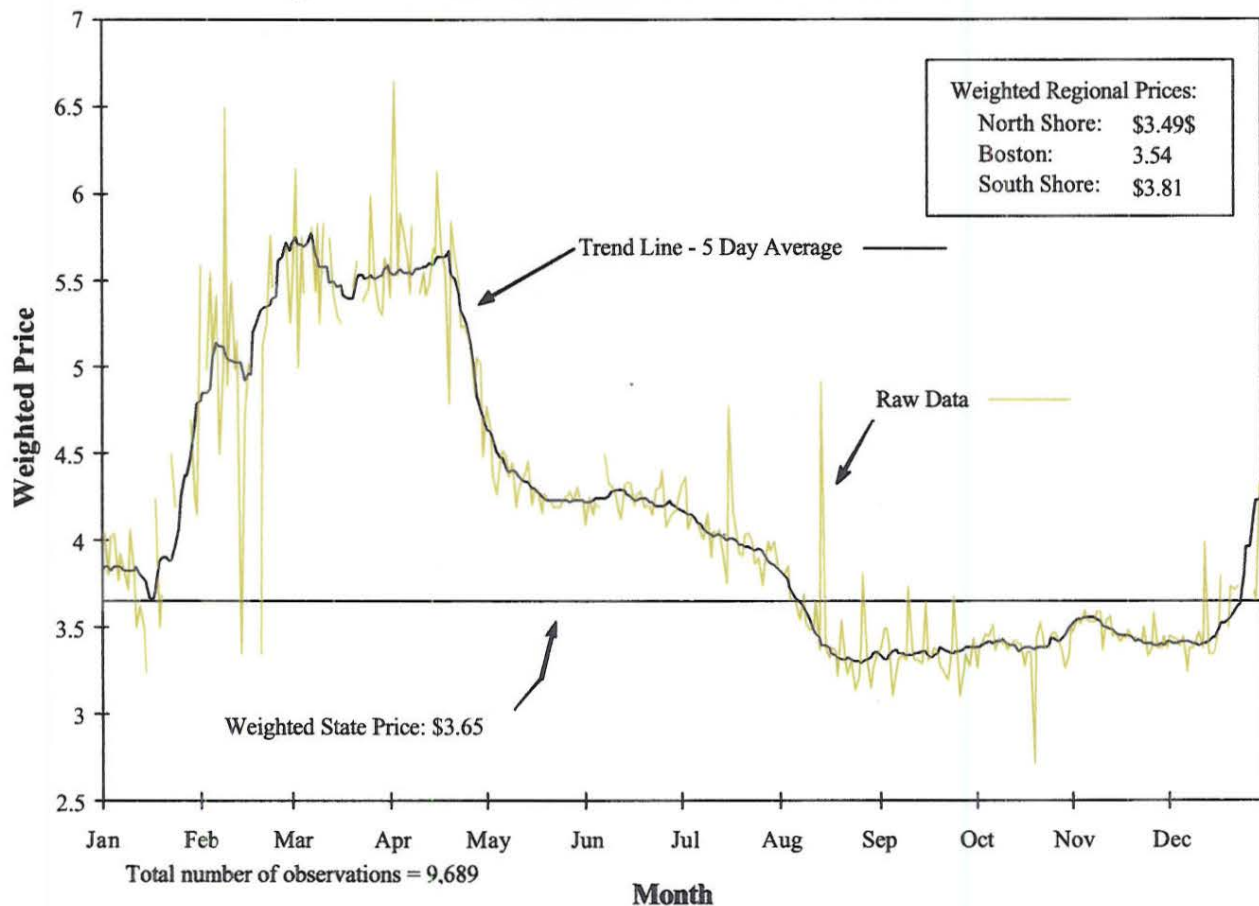


Table 3. 2000 Massachusetts Commercial Lobster Fishery; Number of Fishermen, Harvest (lbs.) and Value of Harvest

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

* +Row and column totals may not equal the sum of the rows or columns due to masking of the data.

Value is based on an ex-vessel price of \$3.65, see Figure 2.

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

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

Table 5. 2000 Massachusetts Commercial Lobster Fishery
Number of Active Commercial Fishermen and Landings by Homeport
Does not include seasonal (Student) Licenses

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

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

RECREATIONAL LOBSTER FISHERY

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

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

<u>License Type:</u>	<u>Diver</u>	<u>Diver/Pot</u>	<u>Potman</u>	<u>Total</u>	<u>Percent</u>
1) Number of Licenses Issued in 2000	3,709	3,477	4,619	11,805	
2) Number that Reported	2,853	2,763	3,538	9,154	77.54%
a) Total Number That Fished	1,988	1,946	2,630	6,564	55.60%
b) Total Number That Did Not Fish	865	817	908	2,590	21.94%
3) Number That Did Not Report	856	714	1,081	2,651	22.46%
4) Number of Lobsters Reported Landed	47,595	77,767	132,544	257,906	%Change from 1999
Pounds of Lobsters (Calculated)*	60,446	98,764	168,331	327,541	-2.31%
5) Number Pots Fished		6,765	19,706	26,471	2.80%
6) Number of Hours Diving	31,069	25,185		56,254	4.36%
* Based on 1.27 Pounds per Lobster.					

TERRITORIAL FISHERY

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

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

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

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

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

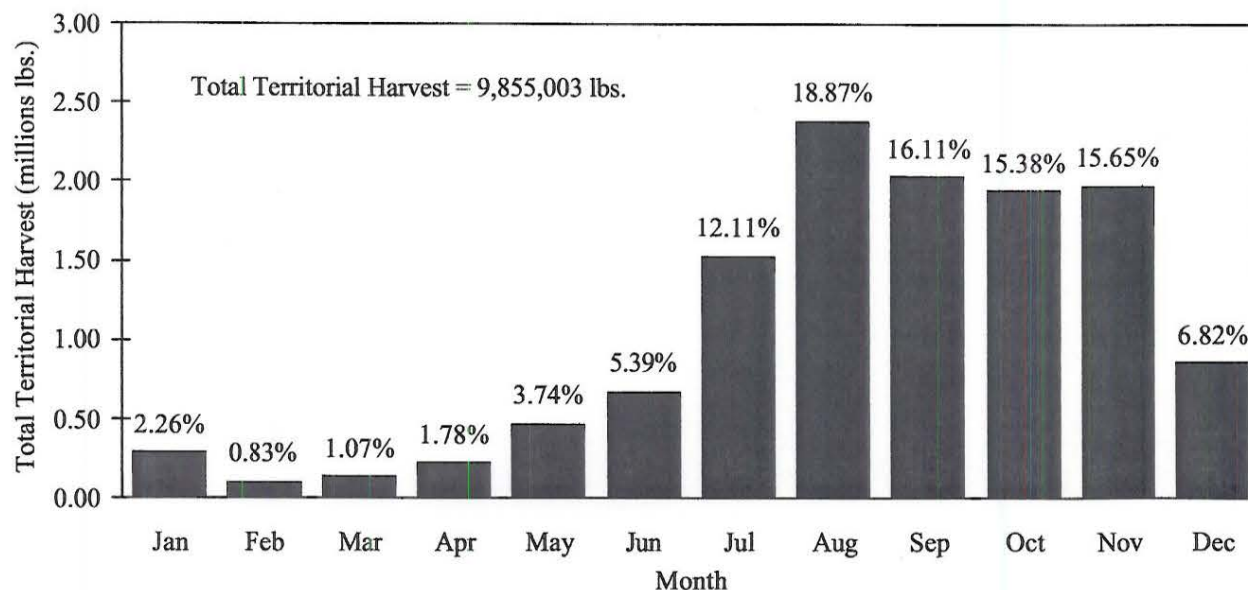


Table 8. 2000 Massachusetts Commercial Lobster Fishery Percent Territorial Harvest by Area License Type

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

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

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

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

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

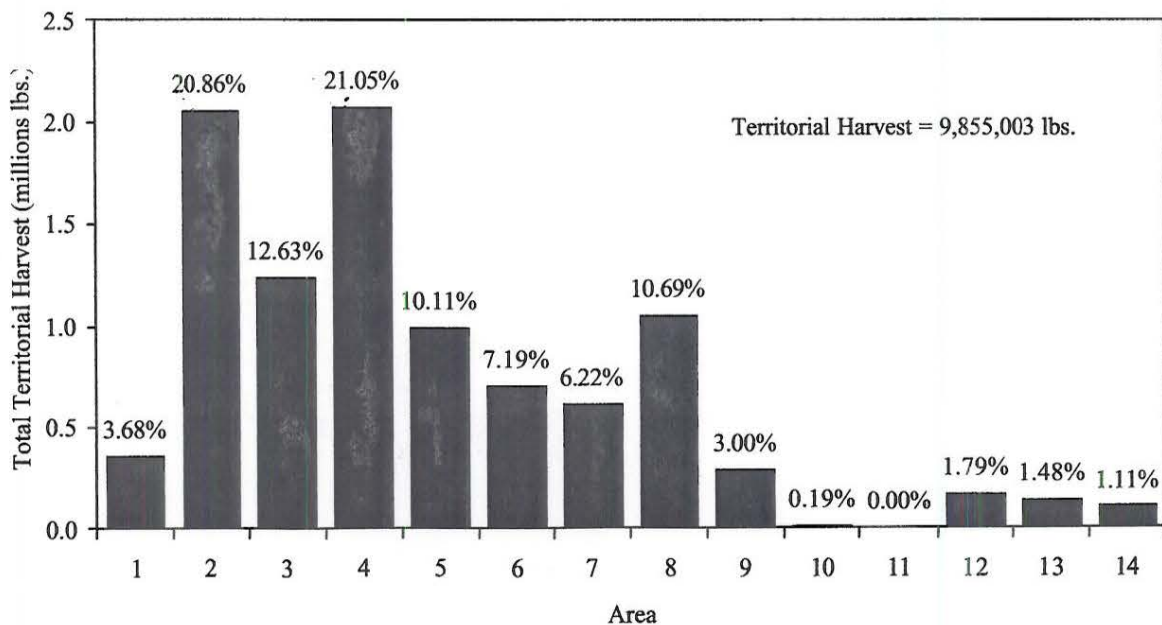
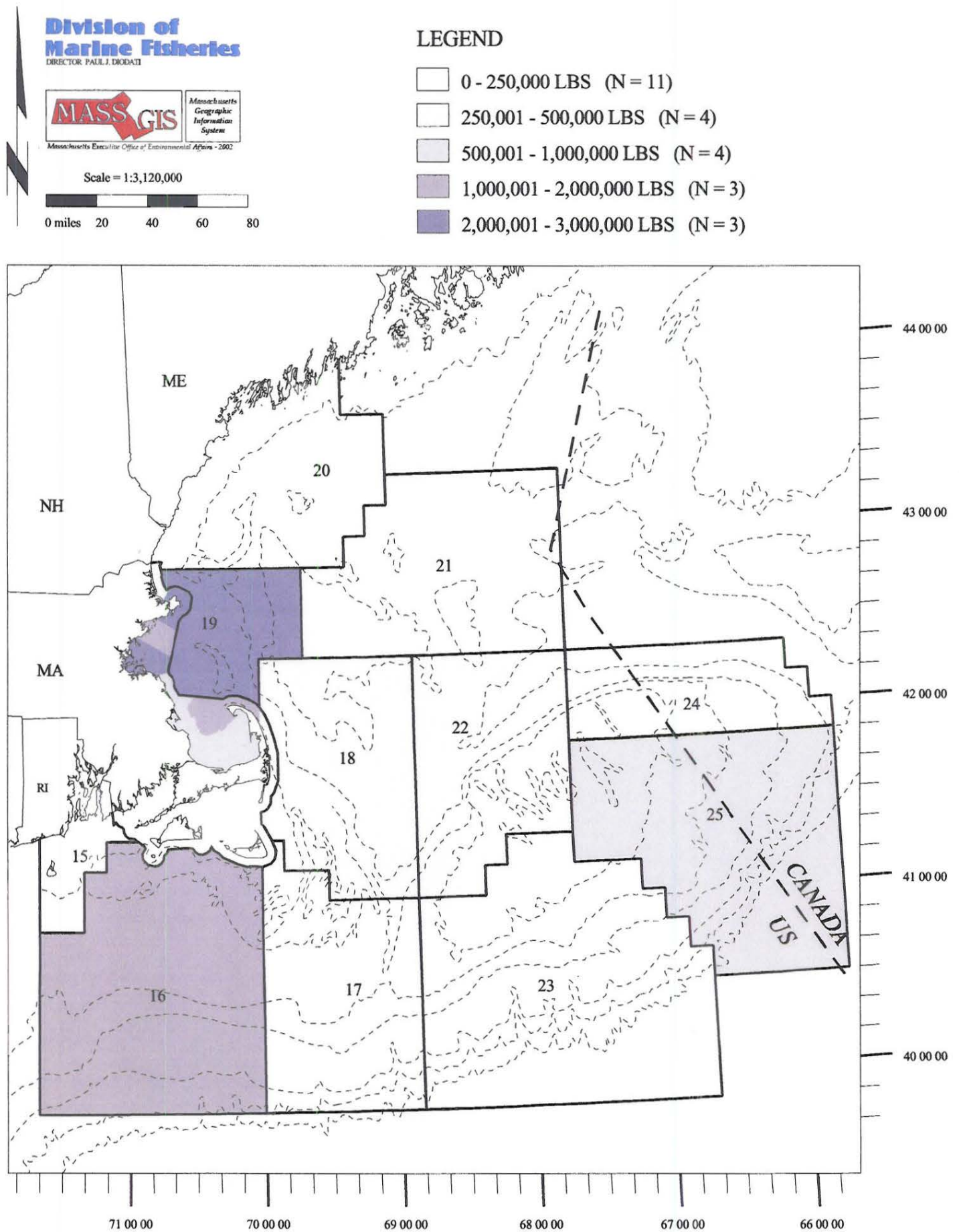


Figure 5. 2000 Massachusetts Lobster Fishery; Landings by Statistical Reporting Area - (See Figure 1A For References to Reporting Areas)

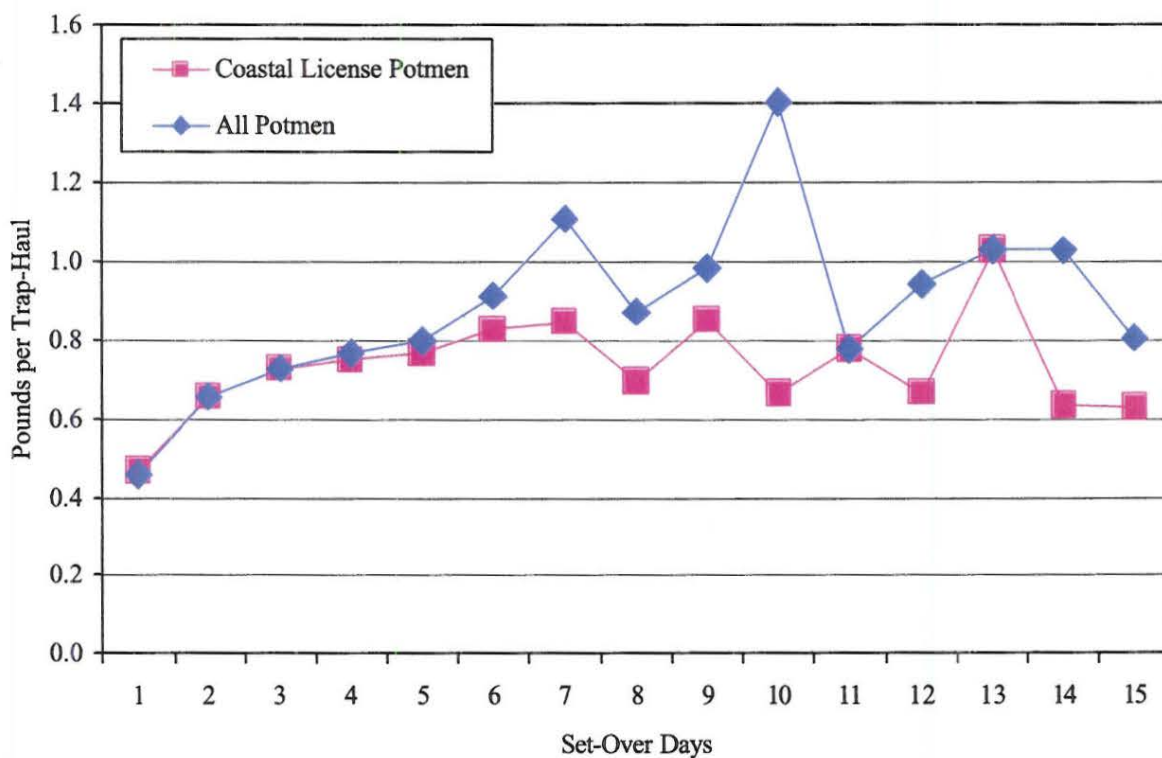


CATCH RATES

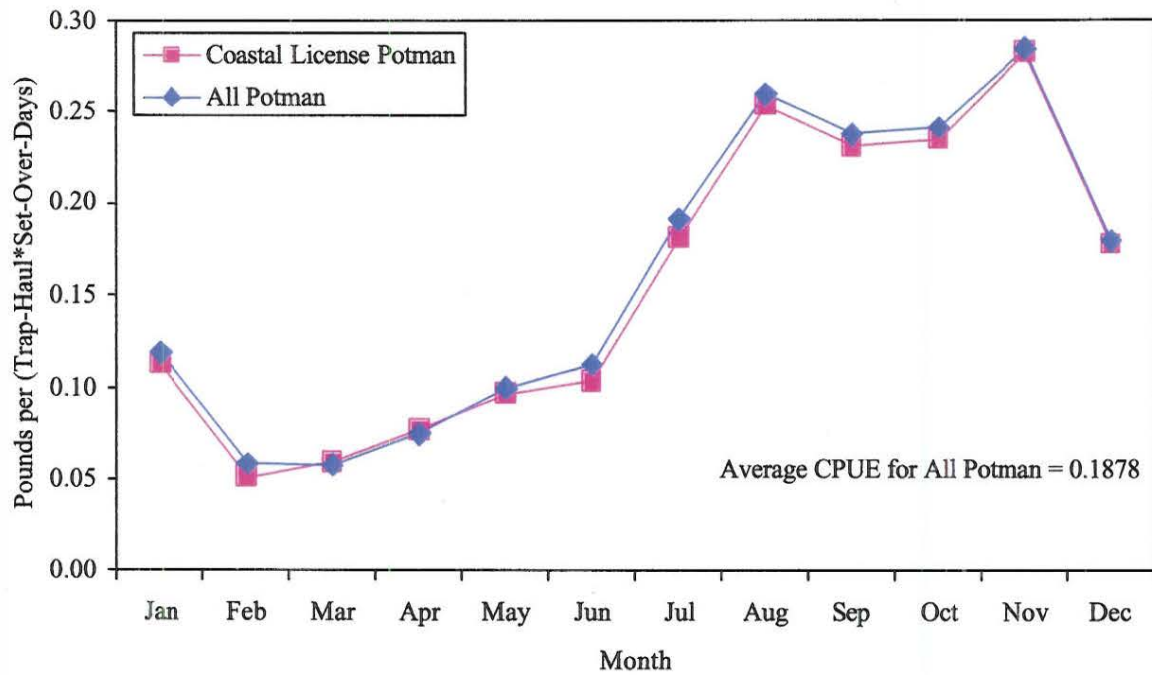
The average catch per trap haul for coastal lobstermen was 0.7256 pounds, a decrease from 1999. For traps fished one set-over day the average was, 0.4670; for those fished two days, 0.6569, for three days, 0.7270, and for four days, 0.7516. See Figure 6 for catch effort by set-over day.

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

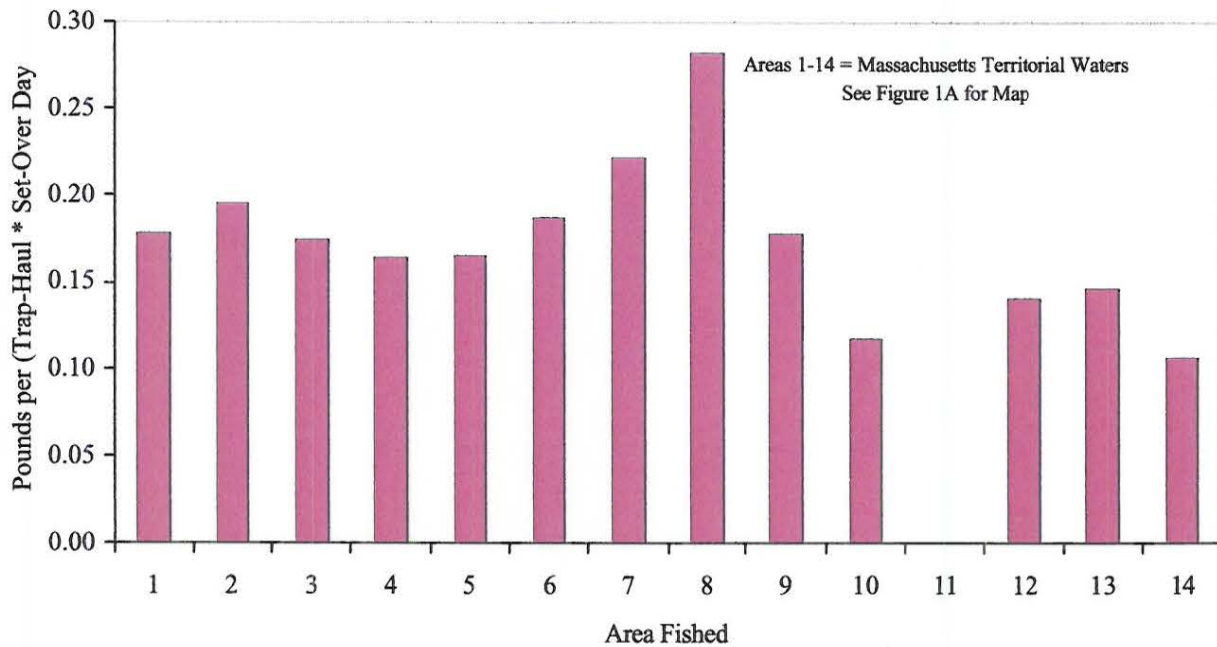
**Figure 6. 2000 Massachusetts Commercial Lobster Fishery
Catch per Unit of Effort by Set-Over Day for Coastal Potmen and All Potmen**



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



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



FISHING GEAR, VESSELS AND VALUE

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

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

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

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

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

AREA:	TERRITORIAL (Areas 1-14)						NON-TERRITORIAL (Areas 15 - 25)					
LICENSE TYPE:	----- COASTAL -----				SEASONAL (Student)	TOTAL	--- COASTAL ---	--- OFFSHORE ---	TOTAL NON-		GRAND	
GEAR TYPE:	Diver	Potman	Potman/ Diver	Trawl/ Gillnet	Potman	TERRITORIAL	Potman	Trawl/ Gillnet	Potman	Trawl/ Gillnet	TERRITORIAL	TOTAL
-- COUNTY --												
BARNSTABLE												
Pots Fished	0	50,654	3,235	0	137	54,026	6,625	0	5,536	0	12,161	66,187
Power Boat	5	155	13	0	5	178	12	0	6	31	49	227
Non Power Boat	1	28	8	0	1	38	8	0	0	0	8	46
BRISTOL												
Pots Fished	0	18,142	0	0	0	18,142	12,362	0	19,302	0	31,664	49,806
Power Boat	1	65	0	0	0	66	22	1	17	108	148	214
Non Power Boat	0	2	0	0	0	2	0	0	0	0	0	2
DUKES												
Pots Fished	0	4,685	0	0	56	4,741	2,180	0	980	0	3,160	7,901
Power Boat	0	26	0	0	3	29	5	1	5	1	12	41
Non Power Boat	0	1	0	0	0	1	0	0	0	0	0	1
ESSEX												
Pots Fished	0	148,372	2,021	0	541	150,934	27,840	0	7,285	0	35,125	186,059
Power Boat	0	414	14	4	26	458	40	0	9	59	108	566
Non Power Boat	0	99	1	0	1	101	2	0	0	0	2	103
NANTUCKET												
Pots Fished	0	440	4	0	0	444	800	0	0	0	800	1,244
Power Boat	0	4	1	0	0	5	1	0	0	1	2	7
Non Power Boat	0	17	0	0	0	17	0	0	0	0	0	17
NORFOLK												
Pots Fished	0	17,202	0	0	20	17,222	550	0	0	0	550	17,772
Power Boat	0	52	0	0	0	52	1	0	0	0	1	53
Non Power Boat	0	1	0	0	0	1	1	0	0	0	1	2
PLYMOUTH												
Pots Fished	0	108,538	1,571	0	349	110,458	9,820	0	327	0	10,147	120,605
Power Boat	2	293	9	4	15	323	21	4	4	7	36	359
Non Power Boat	0	57	1	0	2	60	1	0	0	0	1	61
SUFFOLK												
Pots Fished	0	25,424	900	0	0	26,324	1,800	0	2,300	0	4,100	30,424
Power Boat	0	54	2	0	0	56	1	0	2	16	19	75
Non Power Boat	0	7	1	0	0	8	0	0	0	0	0	8
STATE TOTAL												
Pots Fished	0	373,457	7,731	0	1,103	382,291	61,977	0	35,730	0	97,707	479,998
Power Boat	8	1,063	39	8	49	1,167	103	6	43	223	375	1,542
Non Power Boat	1	212	11	0	4	228	12	0	0	0	12	240
OUT OF STATE												
Pots Fished	0	285	0	0	0	285	0	0	1,800	0	1,800	2,085
Power Boat	0	2	0	0	0	2	0	0	1	30	31	33
Non Power Boat	0	1	0	0	0	1	0	0	0	0	0	1

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

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

VALIDITY OF DATA

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

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

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

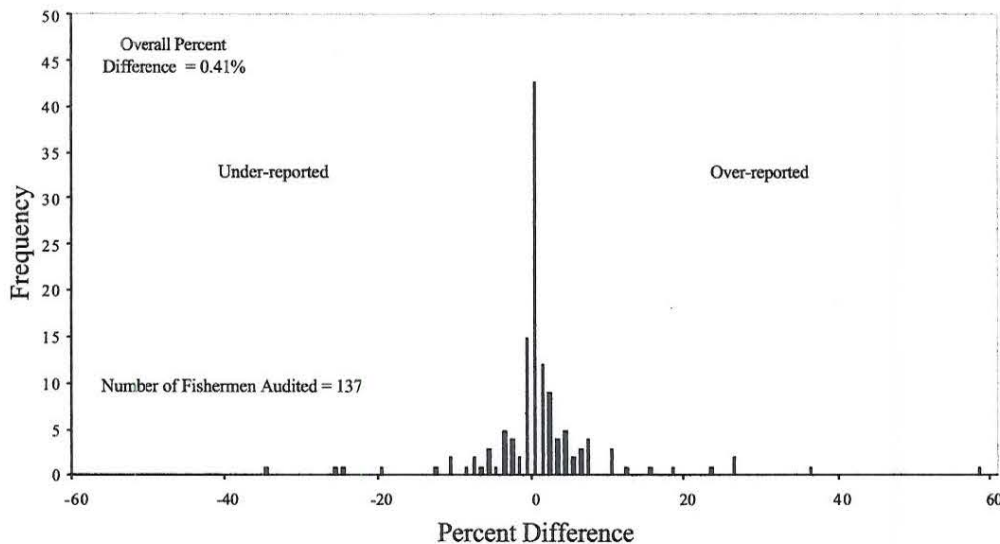


Figure 10. Coastal Map of Massachusetts Showing County Boundaries

