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Results of the Interstate Party Boat Association-Northeast Fisheries Center Voluntary Party Boat Logbook Program

Pilot Study, October 1983

by

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SUMMARY

A voluntary party boat logbook data collection system was cooperatively developed during summer 1983 between the Interstate Party Boat Association, Gloucester, Massachusetts, and the Northeast Fisheries Center, and implemented on a trial basis during a five-week period in autumn 1983. The purpose of the pilot study was to evaluate the merits of voluntary party boat data acquisition in documenting party boat-gillnet gear conflicts and possible adverse effects of gillnet activities on party boat performance. The autumn trial was limited to six party boat vessels fishing out of Gloucester, Massachusetts, to minimize logistical difficulties and to provide rapid identification of technical problems before wider implementation was considered.

Voluntary cooperation during the trial period was excellent. A total of 42 completed party boat trip records, containing data on party boat-gillnet incidents and party boat vessel performance, were submitted to the Northeast Fisheries Center for analysis. Results from these analyses indicate that a voluntary data collection system can provide relevant, high quality data enabling evaluations to be performed which would otherwise not be possible.

Expanded implementation of the voluntary party boat logbook system, on both a geographical and temporal scale among a larger number of vessels, would provide more complete and representative information on gear conflicts and vessel performance. To the extent that the voluntary system could be expanded without compromising the quality of data collected or the resources of the Interstate Party Boat Association, the utility of the program would be enhanced.

INTRODUCTION

During 1983, the Northeast Fisheries Center (NEFC) initiated a multifaceted research program to address potential resource problems associated with commercial gillnetting, and gear conflicts between gillnet and recreational party boat fisheries. Initiatives were developed to evaluate the character and performance of the gillnet fishery, the prevalence and effects of "ghost" gillnets, and the nature and extent of gillnet/party boat conflicts. Discussions were held with State, Federal, and industry (both commercial and recreational) representatives to review these initiatives and to provide insight and comment on critical research needs.

A major concern expressed by the party boat industry was the need for a better understanding of the effects that increased gillnet activity was having on the stocks being fished and the operation of the party boat fishery. To this end, the Interstate Party Boat Association offered to cooperate with the NEFC in establishing a voluntary party boat logbook system to record data on commercial gillnet observations (i.e., presence or absence of gillnets in areas of party boat fishing; hang-ups and gear and time losses due to gillnets; occurrence of fish with gillnet marks) and party boat fishing performance. A series of meetings were held with Wally Hynes, President of the Interstate Party Boat Association, during the summer of 1983 to develop and design the logbook format and to establish the details of implementation. The Interstate Party Boat Association agreed to undertake implementation and conduct of the voluntary data collection system, on a trial basis, during autumn 1983. Logbook records were to be forwarded to the Resource Assessment Division, NEFC, for processing and statistical analysis.

This report summarizes the data attained from the autumn 1983 voluntary party boat logbook trial data collection system, and evaluates the efficacy of the pilot program. Data are also presented on commercial gillnet activities during the same time period for comparative purposes. Recommendations are offered to enhance future voluntary acquisition of party boat data.

METHODS

Data from the pilot program were collected during 25 September to 29 October 1983 from six party boats fishing out of Gloucester, Massachusetts. Individual trip information was recorded on an Interstate Party Boat Association Trip Report (Figure 1). Data requested included: date of trip, vessel name (optional), incident location (i.e., gillnet hangups), nature of incident, and extent of any loss. Party boat performance data were collected on area fished, fishing effort (numbers of anglers and hours fished) and catch composition (number and weight of fish caught, by species).

Grided fishing charts of the Gulf of Maine region (Figure 2) were provided to identify party boat fishing locations by 10-minute squares of latitude and longitude. Exact LORAN bearings were requested for identification of areas where gear conflicts occurred.

A total of 42 completed trip records were submitted during the trial period to the NEFC. Photocopies of all reports were returned to the Interstate Party Boat Association for their files. Two photographs of ghost gillnet fishing gear were also provided to the NEFC during the trial program along with documentation of their position.

RESULTS

Party Boat - Gillnet Interactions

During the five-week period of the pilot program, 12 incidents of party boat - gillnet interactions were recorded on the party boat trip reports (Table 1). These incidents were grouped into three categories:

1) Gear Conflict - The party boat captain indicated that fishing was not possible or was difficult due to large numbers of gillnets in an area (4).
2) Ghost Gillnets - The party boat captain reported entanglements of angler gear in ghost gillnets (2).
3) Gear Reported - The party boat captain observed gillnets in the area fished but did not indicate an inability to fish the area (6).

Most incidents were recorded during the initial week of the program (6: Sept. 25-Oct. 1) when both gear conflicts and gear entanglements occurred. In subsequent weeks, the number of incidents reported subsided; no reports of gillnets hampering party boat activities occurred after October 15.

The relatively low number of party boat - gillnet interactions reported during the logbook trial period should be interpreted with caution. Party boat skippers avoid, if possible, areas where gillnet encounters are likely to occur to avert loss of fishing time or gear; hence, gillnet incidents might be expected to be low. In some cases, these decisions result in party boats fishing in areas of lower potential catch.

The period covered by the trial program (October) is one during which gillnet operations seasonally diminish due to weather and dogfish problems. For these reasons, fewer party boat - gillnet incidents are expected than at other times of the year. The pilot voluntary logbook program was implemented in the autumn to evaluate the utility of this approach on a trial basis, rather than to characterize, per se, the magnitude and severity of party boat - gillnet conflicts. More complete documentation of gillnet incidents may be possible if the logbook system is implemented on a broader scale in the future.

Party Boat Performance

Aggregate catch and effort data from the six party boats participating in the logbook program are summarized, by week, in Table 1. A total of 32,621 pounds of fish was caught in the 42 trips accomplished in the five-week period. An average trip had 40 anglers and provided five hours of fishing time. Mean catch per trip was highest during the first two weeks of the pilot program (25 Sept.-8 Oct.) and lowest during the last fishing week (23-29 Oct.) (Table 2). Mean catch per angler, however, was highest (33 pounds) in the last week. For the entire period, the average trip catch was 777 pounds and the average weight of fish caught per angler was 19 pounds (Table 2). Compared with autumn party boat catches in previous years, catches during the 1983 logbook program were considered by the party boat captains to be poor.

Cod was the dominant species caught accounting for between 67 and 87 percent of the weekly catches and 75 percent of the overall catch weight. Cusk, wolffish (ocean catfish), and haddock followed in order of importance, yet together only comprised 19 percent of the total weight landed. An unusally high catch (1800 lbs) of spiny dogfish occurred in one trip during the week of 2-8 October.

Mean catch per angler hour ranged from 2.66 pounds during the middle two weeks of October to a high of 6.86 pounds per angler during 23-29 October. Changes in catch rates of cod accounted for most of this variability. Party boat fishing locations, however, also changed from week to week (Table 3). During the initial week, the largest catches were derived from adjoining 10-minute squares east and southeast of Tillies Bank (427063 and 427064: Table 3 and Figure 3). In the following two weeks, catches were greatest on Jeffreys Ledge, southeast of New Scantum (10-minute square 427052). During the final two weeks, unit area catches were highest in the southeast part of Scantum Basin (10-minute square 427042) and in the Tillies Bank area (10-minute square 427053), respectively.

Due to the low number of gillnet incidents recorded during the trial program, no significant relation was found between party boat fishing performance and gillnet incidents. In the absence of a time series of party boat performance data, it is difficult to assess whether the localities fished and/or the catch rates observed during the trial period were characteristic for autumn party boat fishing in years when gillnet activity was substantially less. Should the pilot program be more widely implemented on a continuing basis, evaluation of these factors will become more tractable.

Again, it should be recognized that the purpose of the trial period was to determine whether the voluntary data collection system could be operationally successful in providing the <u>types</u> of data needed to evaluate the potential impacts of gillnetting on both the party boat fishery and the fishery resources themselves. Any inferences or extrapoliations drawn from the pilot data itself must be considered rudimentary and premature.

Party Boat - Commercial Gillnet Fishing Activity Comparisons

During October 1983, 15 commercial vessels operating out of Gloucester, Massachusetts, were active in the gillnet fishery. A comparison of the distribution of commercial gillnet effort (number of trips) and catch (total pounds landed) with that derived from the six party boat vessels participating in the trial program is presented, by area fished (quarter degree square), in Table 4. The gillnet vessels fished in four different quarter degree squares, completing a total of 165 trips and landing 517,018 pounds of fish. Fifty-seven percent of the gillnet catch and 53 percent of the gillnet trips occurred in quarter degree square 3 (42703: Figure 3), located approximately 5-10 miles east of Cape Ann. Party boat activity was also concentrated in this area; 62 percent of the six vessel party boat catch and 71 percent of the party boat trips were reported from the same quarter degree square. Although this overlap in gillnet and party boat fishing grounds is suggestive of potential conflicts, the current gillnet interview data are not detailed enough to identify specific localities where problems may have been, or are likely to be, encountered between the two fleets. Since a quarter degree square comprises approximately 444 square miles, and conflicts tend to arise in very small localized areas, more precise information on gillnet catch locations is needed. The NEFC is presently addressing this need through expansion of interview coverage of gillnet vessels (Tier 2 data collection system) and increased sea sampling trips aboard commercial gillnetters.

DISCUSSION AND RECOMMENDATIONS

The voluntary party boat logbook system, developed jointly between the Interstate Party Boat Association and the Northeast Fisheries Center, was implemented on a trial basis in autumn 1983 to evaluate the merits of the program in obtaining empirical data, on a real time basis, for documenting party boat - gillnet interactions and resource effects of gillnet activities on party boat performance. The pilot program was limited to six party boat vessels fishing out of Gloucester, Massachusetts, so that operational difficulties would be minimized, and technical problems readily identified and corrected before wider implementation was considered.

The cooperation exhibited by the Interstate Party Boat Association and the captains of the six participating party boats in implementing and conducting voluntary collection of party boat data was excellent. Virtually all trip reports submitted to the NEFC were complete and of high quality. Confidentiality of individual vessels was protected as well as exact party boat fishing locations. The single-page record form proved ideal to record the types of data needed to achieve the program objectives.

The analyses of the data collected were performed to demonstrate the broad utility of party boat information in evaluating resource and fishery conditions. In this sense, the pilot results are indicative of the types of evaluations possible. Such evaluations have not been possible with recreational data derived from other methods (i.e., National and Regional Marine Recreational Fishery Statistics Surveys).

Overall, the trial implementation of the voluntary party boat data collection system was extremely successful. Logistical problems were few and the voluntary contribution of data was high. Analytically, the breadth and detail of data provided afforded more rigorous examination of fishery conditions than would otherwise have been possible.

Additional benefits would accrue if the voluntary logbook system was continued on an expanded scale throughout the year. An increased number of party boat participants would provide more synoptic geographical coverage of important party boat fishing areas and perhaps a better representation of performance patterns. Observations on gear conflicts would be more complete if coverage was extended seasonally and geographically. Full participation by all party boat vessels, however, is neither warranted nor recommended. A major factor in the success of the pilot program was the close supervision and quality control exhibited by the Interstate Party Boat Association in conducting the logbook trial. To the extent that the voluntary system can be more broadly implemented without compromising either the integrity of the data collection or the resources of the Party Boat Association, the utility and efficacy of the voluntary program will be enhanced.

ACKNOWLEDGEMENTS

The pilot voluntary party boat logbook program would not have been possible without the cooperation and assistance of the Interstate Party Boat Association. We are indebted to Association President, Wally Hynes, for his willingness to implement the program and the fine rapport he established between the Association and the NEFC throughout the development and conduct of the study. We thank also the Association's Board of Directors for their endorsement of the program. We are equally pleased to recognize Jerry and Tommy Hill, George Hilton, and Ray Gilmore for their ideas and contributions during development of the logbook system. Finally, we express our sincere gratitude to the captains and crews of the six vessels that participated in the trial program for their diligent efforts in securing and providing the data that made the project a success.

Table 1. Weekly summary of performance and gillnet incidents for six recreational party boats fishing out of Gloucester, Massachusetts, and participating in trial voluntary party boat logbook data collection system during autumn 1983.

	Party Boat Performance				Gill Net Incidents		
Weekly period	No. of trips	Total hours fished	Total No. of anglers	Total estimated catch(lbs)	Gear[1] conflict	Ghost[2] nets	Gear[3] reported
Sept. 25-Oct. 1	10	48.75	343	8120	2	1	3
Oct. 2-Oct. 8	11	51.25	434	10456	-	1	2
Oct. 9-Oct. 15	11	55.50	455	6111	2	-	-
Oct. 16-Oct. 22	8	41.75	388	5394	-	-	-
Oct. 23-Oct. 29	2	9.75	76	2540	-	-	1
Total	42	207.00	1696	32621	4	2	6

[1]Reported difficulty in fishing area due to gillnets.

[2]Actual encounters with ghost gillnets.

[3]Instances of gillnets in fishing area but no difficulties encountered.

Table 2. Weekly summary of species catch composition (by weight) for six recreational party boats fishing out of Gloucester, Massachusetts, and participating in trial voluntary party boat logbook data collection system during autumn 1983. Numbers in parentheses are mean catch (pounds) per angler hour.

Weekly period	Estimated Species Catch (lbs.)								No. of trips	Catch (lbs.)	
	Cod	Cusk	Wolffish	Haddock	Pollock	Hake	Other	Total		Mean catch per trip	Mean catch per angler
Sept. 25-Oct. 1	6160 (3.69)	1367 (0.82)	457 (0.27)	54 (0.03)	28 (0.02)	39 (0.02)	15 (0.01)	8120 (4.86)	10	812	23.7
Oct. 2-Oct. 8	7000 (3.46)	1180 (0.58)	337 (0.17)	139 (0.07)	- -	- -	1800[1] (0.89)	10456 (5.17)	11	1046	24.1
Oct. 9-Oct. 15	4680 (2.04)	984 (0.43)	366 (0.16)	38 (0.02)	10 (<0.01)	- -	33 (0.01)	6111 (2.66)	11	611	13.4
Oct. 16-Oct. 22	4350 (2.15)	550 (0.27)	195 (0.10)	245 (0.12)	45 (0.02)	8 (<0.01)	1 (<0.01)	5394 (2.66)	8	539	13.9
Oct. 23-Oct. 29	2225 (6.01)	112 (0.30)	40 (0.11)	75 (0.20)	75 (0.20)	13 (0.04)	- -	2540 (6.86)	2	254	33.4
Total	24415 (2.92)	4193 (0.50)	1395 (0.17)	551 (0.06)	158 (0.02)	60 (0.01)	1849 (0.22)	32621 (3.90)	42	777	19.2

[1]Spiny dogfish caught in one trip.

Table 3. Weekly summary of estimated catch (lbs), by 10-minute square location, for six recreational party boats fishing out of Gloucester, Massachusetts, and participating in trial voluntary party boat logbook data collection system during autumn 1983.

Location[1] (10-minute square)	Weekly Period - Autumn 1983					Total
	Sept. 25-Oct. 1	Oct. 2-Oct. 8	Oct. 9-Oct. 15	Oct. 16-Oct. 22	Oct. 23-Oct. 29	
42-70 C-3(33)	-	-	708	-	-	708
42-70 D-2(42)	-	1840	1096	1359	-	4295
42-70 D-3(43)	-	-	670	-	-	670
42-70 D-4(44)	-	-	854	-	-	854
42-70 E-1(51)	468	-	-	540	-	1008
42-70 E-2(52)	1034	3283	2113	600	-	7030
42-70 E-3(53)	513	-	340	620	2540	4013
42-70 E-4(54)	753	-	-	-	-	753
42-70 E-5(55)	-	2122	-	-	-	2122
42-70 F-1(61)	625	-	330	910	-	1865
42-70 F-3(63)	1822	-	-	-	-	1822
42-70 F-4(64)	2220	2111	-	-	-	4331
42-70 F-5(65)	685	-	-	-	-	685
Cashes Ledge	-	1100	-	-	-	1100
Unknown	-	-	-	1365	-	1365
Total	8120	10456	6111	5394	2540	32621

[1]See Figures 2 and 3 for chart location.

Table 4. Comparison between estimated catch (lbs) of six recreational party boats fishing out of Gloucester, Massachusetts, and participating in trial voluntary party boat logbook data collection system, and catch (lbs, live weight) of Gloucester commercial gillnet vessels during October 1983, by area fished.

Area fished		Party Boats			Gill Net Vessels[1]		
Latitude/Longitude	Quarter degree square	No. of trips	Catch (lbs.)	% of total catch	No. of trips	Catch (lbs.)	% of total catch
42 - 70	1	9	9075	27.8	-	-	-
42 - 70	2	-	-	-	4	8555	1.7
42 - 70	3	30	20373	62.4	87	294418	56.9
42 - 70	4	1	708	2.2	35	32734	6.3
43 - 70	1	-	-	-	39	181311	35.1
Cashes Ledge		1	1100	3.4	-	-	-
Unknown		1	1365	4.2	-	-	-
Total		42	32621	100.0	165	517018	100.0

[1]Data derived from NEFC commercial data base and represents the total number of trips and pounds landed in Gloucester by vessels using gillnets in October 1983.

INTERSTATE PARTY BOAT ASSOCIATION TRIP REPORT

TRIP DATE: _____ VESSEL: _____

INCIDENT LOCATION: _____

NATURE OF INCIDENT: i.e., FIXED GEAR-MOBILE GEAR

1. GILLNET: a. Active:_____ b. Inactive:_____

2. OTHER: _____ Describe _____

_____

EXTENT OF LOSS:

A. Terminal Gear:_____ B. Line, etc._____

C. Ground tackle: _____ D. Other: _____

DESCRIBE: _____

TOTAL VALUE OF LOSS: $_____ ANGLER TIME LOST: _____

MARKINGS OF CONFLICTING GEAR OR VESSEL, IF ANY:

_____

DESCRIBE INCIDENT: _____

_____

_____

TOTAL HOURS FISHED_____ NUMBER OF ANGLERS: _____

GENERAL FISHING LOCATION: _____

TRIP CATCH

SPECIES NAME	NUMBER	EST. POUNDS

COMMENTS:

Figure 1. Interstate Party Boat Association Trip Report form used in recording data in trial voluntary party boat logbook data collection system during autumn 1983.

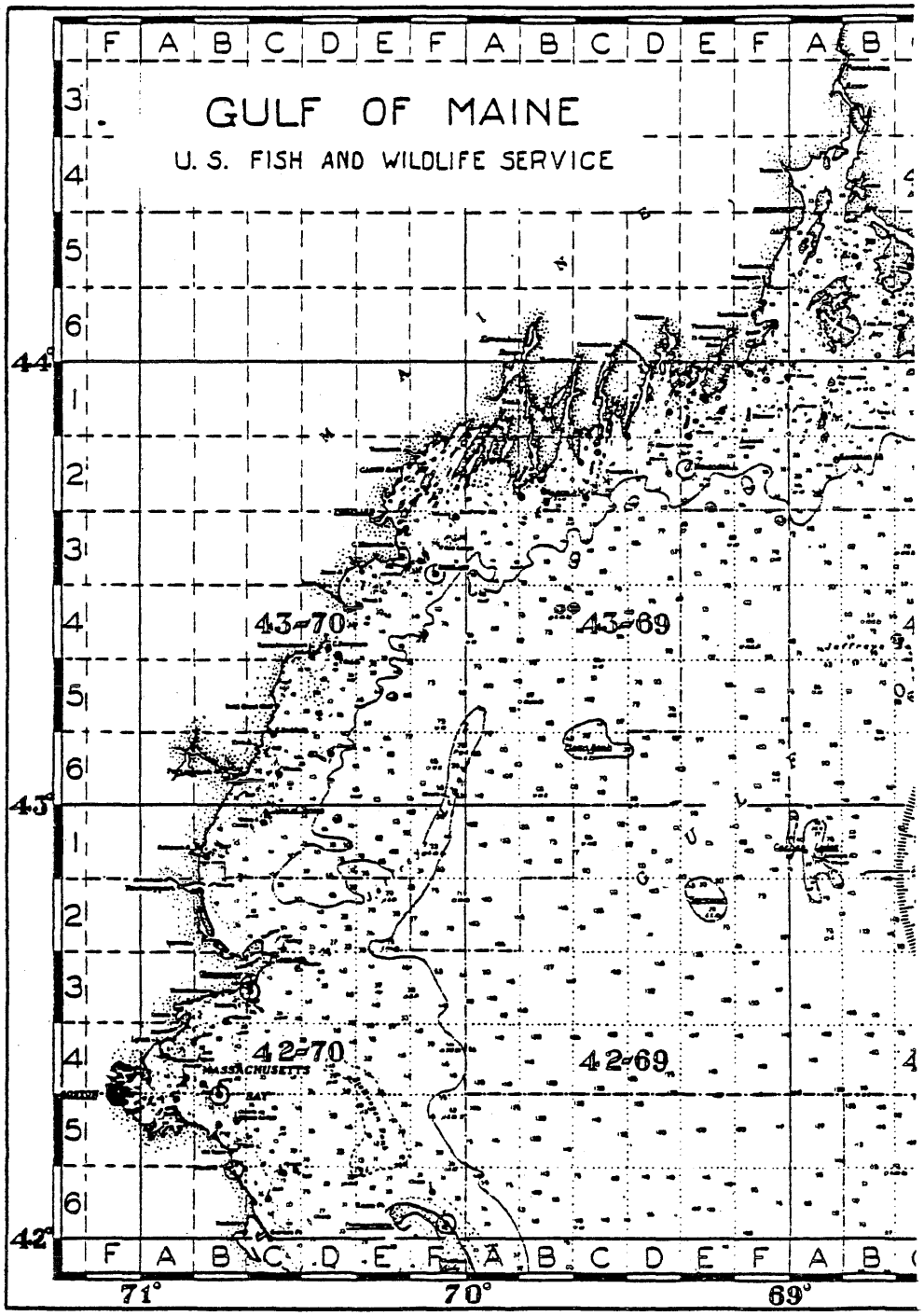

Figure 2. Grided 10-minute square fishing chart of the Gulf of Maine provided to party boats participating in pilot voluntary logbook system for identification of party boat fishing locations.

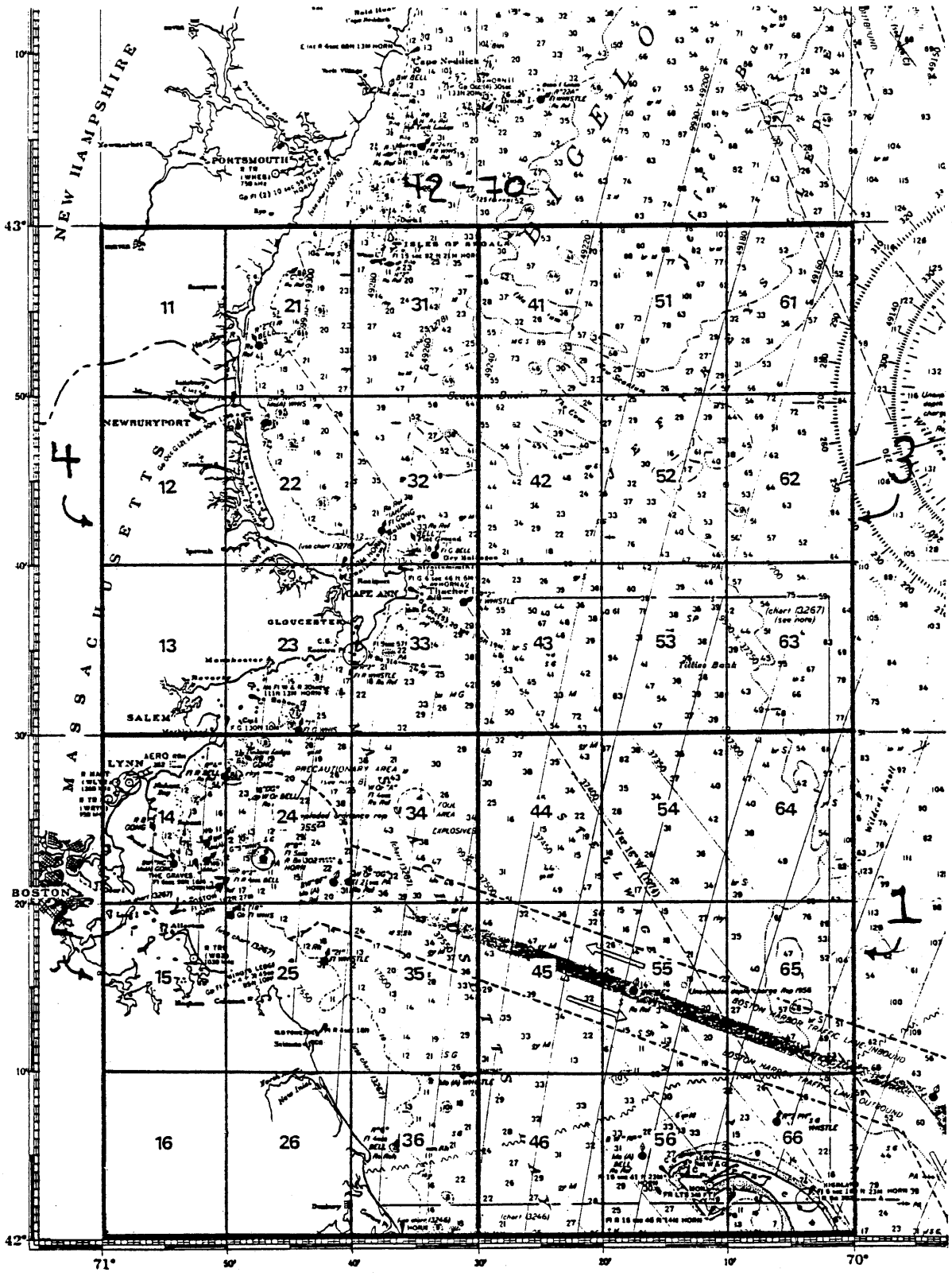

Figure 3. NEFC 10-minute square unit areas and quarter degree squares for latitude 42°, longitude 70°. Ten-minute squares are indicated by six digit code (i.e., 427011, 427021,...427066); quarter degree squares are five digit code (i.e., 42701, 42702, 42703, and 42704).