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Ghost Fishing of Vented and Unvented Lobster, *Homarus americanus*, Traps

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ABSTRACT—Field experiments were conducted in waters near Boothbay Harbor, Maine, and Woods Hole, Mass., with 40 inshore-type lobster traps. Twenty of the traps were fished normally from the surface and 20 were left on the bottom and routinely surveyed by divers. Half of the traps in each group were fitted with sublegal escape vents. Catch-escape panels were also tested. Surface-hauled traps caught 3,425 lobsters in 53 sampling periods; 28 percent of the lobsters had one or more types of body damage. The "ghost" traps caught 456 lobsters during the same period; 25 percent of the lobsters died by the end of the experiment.

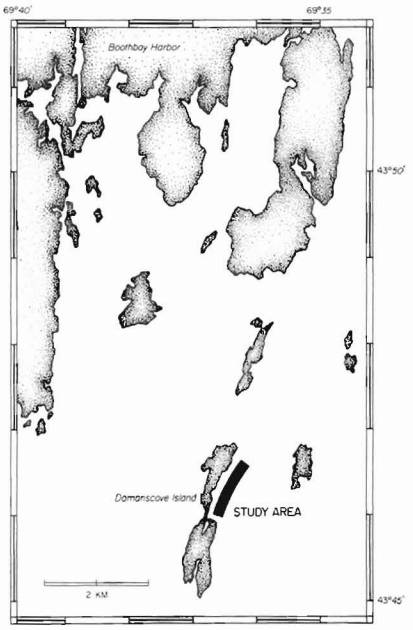

Figure 1.—Phases I and II study area, Damariscove Island, Maine.

INTRODUCTION

Pot-related interactions and mortality of the American lobster, *Homarus americanus*, have long been subjects of concern to lobster fishermen and state and federal fisheries research and management personnel. Information on nonselective and destructive fishing methods is required to provide information to coastal states from Maine to North Carolina regarding the management of both inshore and offshore lobster stocks.

This report presents the results of 11 months of study of lobster behavior, mortality, and emigration-immigration, regarding commercial trap gear in the Boothbay region of Maine (study Phases I and II) and Woods Hole, Mass. (study Phase III). The study was supported by NOAA's National Marine Fisheries Service (NMFS), Northeast Fisheries Center, Woods Hole, Mass., and the Manned Undersea Science and Technology Office, Rockville, Md.

The primary objective of this study was to define the effect of conventional pots and "ghost" pots on trap-related mortality, and to assess the effectiveness of escape vents on reducing mortality. Ghost pots are defined in this study as pots that cannot be retrieved by surface-oriented fishermen, due either to the pot's becoming "snagged" on the ocean bottom or its line being severed from the surface buoy. A secondary objective was to relate the trapping behavior of the lobster to its ecology and changes in certain environmental parameters.

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MATERIALS AND METHODS

Study Area

The area selected for conducting the first and second phases of the lobster-potting study was the east side of Damariscove Island, 6 nautical miles south of Boothbay Harbor, Maine (Fig. 1). The inshore lobster population of the Boothbay region has been the subject of investigation by NMFS and the Maine Department of Sea and Shore Fisheries since 1966. Damariscove Island was the site of an extensive underwater ecological study by NMFS during 1967-72, providing a data base for the sampling design and methodology of this study. The Damariscove Island lobster habitat is considered representative of inshore lobster habitats for the Gulf of Maine (Cooper et al., 1975).

Damariscove Island is 1.3 nautical miles long by 0.3 miles wide (greatest width) and glacially formed. The ocean bottom in the study area is primarily bedrock to a depth of 10-15 m (35-50 feet), followed by a sand bottom with occasional outcrops of bedrock (Fig. 2). Glacial rock deposits are scattered primarily along the bedrock-sand interface.

The third phase of this study was conducted on the west side of the Weepecket Islands, 5 miles west of Woods Hole, Mass., on the northern side of the Elizabethan Island chain (Fig. 3). This study area was similar to the Maine study area, with bedrock extending from the island to a depth of about 10 m where a sand substrate continued beyond the study area.

The rock substrate at Damariscove Island to depths of 18-20 m was covered with sparse to dense concentrations of attached algae, primarily *Agarum, Alaria, Ascophyllum, Chondrus, Fucus*, and *Laminaria*. Over 50 percent of all exposed surfaces of rocks

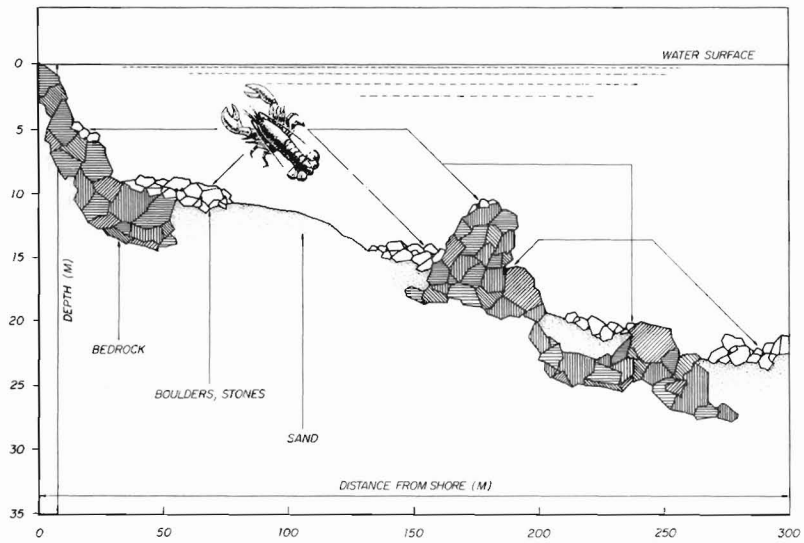


Figure 2.—Representative topography of ocean bottom and lobster habitat for lobster-potting study areas.

and boulders are encrusted with the coralline algae *Lithothamnium*. At greater depths only sparse concentrations of attached algae are present. A representative cross-section of the bottom topography in the study area is presented in Figure 2.

Rocky areas in the Massachusetts study area (Fig. 3) were primarily covered with assemblages of *Codium* sp., soft corals, and encrusting sponges. Sandy areas were notably barren of attached algae and other macrobenthic organisms.

Distribution of Catch Gear

To standardize the availability of lobsters to the various categories of catch gear it was necessary to fish the lobster pots at approximately equal distances from the rocky substrate within which the local lobster population is sheltered (Cooper et al., 1975). Figures 4 and 5 portray the distribution of experimental fishing gear regarding depth and bottom type for both study areas. Data on population density, size, and sex structure of the Damariscove Island population, as determined from the NMFS studies from 1967 to 1972, will be presented for comparative purposes later in this report.

The potting behavior-mortality study was conducted in three phases. Phases I and II were in Maine, and Phase III in Massachusetts. Phase I encompassed the colder months of the year, January-May (1973); Phase II the warmer months, May-September (1973). Phase II was initiated with the dive team removing all ghost-pot contents while pots remained on the bottom, and rebaiting with redfish, *Sebastes marinus*, racks (carcass minus lateral fillets of flesh). The location of the ghost-pot trawls was not altered

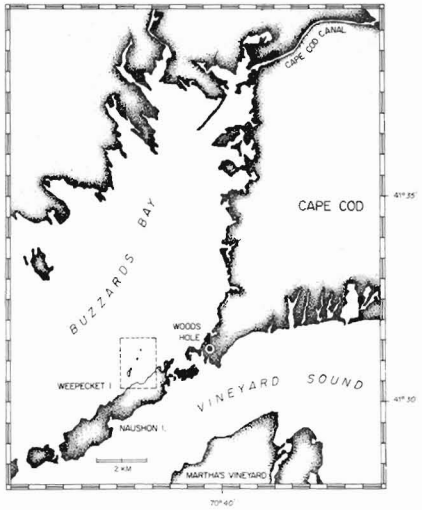


Figure 3.—Phase III study area, Weepecket Islands, Mass.

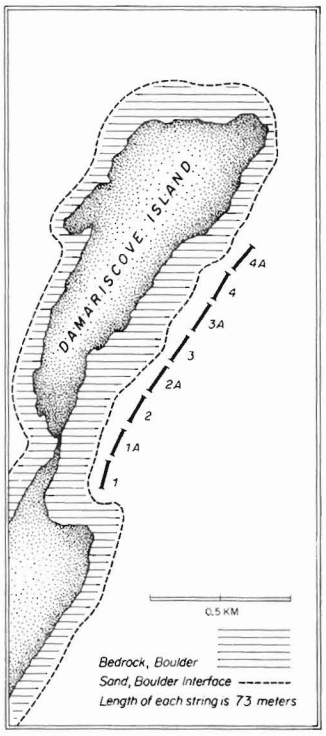
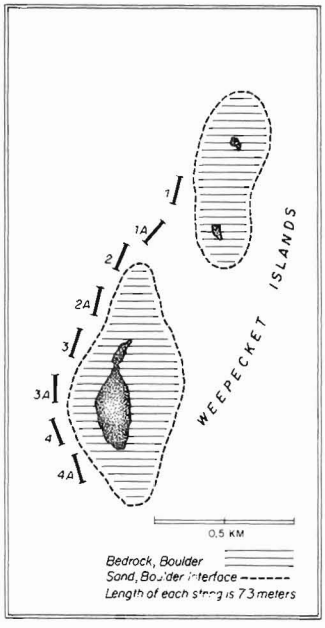


Figure 4.—Distribution of surface-hauled and ghost-pot strings at Damariscove Island, Maine.

Figure 5.—Distribution of surface-hauled and ghost-pot strings at Weepecket Islands, Mass.



from Phase I to Phase II. All biodegradable links were rearmed and sublegal escape vents cleared of any fouling debris between these first two phases. Phase III was begun in May 1974 in Massachusetts and concluded in August 1974.

Description of Trawls and Pots

Table 1 presents the four categories of catch gear fished in the two study areas along the rock-sand interface or on the sand bottom within 30 m of this interface. Eight five-pot trawls were fished during each phase. Four trawls of conventionally hauled pots were marked at the surface with stranded lobster buoys; two trawls had standard commercial-type pots without experimental escape vents, and two trawls had escape vents (sublegal escape vents and biodegradable panels). The remaining four trawls were fished in a "ghost-pot" mode without surface buoy markers; two trawls were composed of commercial pots without escape vents, and two had the escape vents. Figures 4 and 5 illustrate the alternate sequence of fishing conventionally hauled versus ghost pot trawls.

Each ghost pot was firmly fixed to the ocean bottom by winding 100-mm (0.305-inch) dacron trawl line around rock outcrops or large boulders and increasing the ballast of the pots with four 900-g (2-pound) bricks affixed to the base laths on opposite sides of the trap. Each pot was marked to designate pot and trawl number. Standard parlor-type commercial pots (Fig. 6), purchased new from a Maine manufacturer, were used for this study. Basic measurements were: length—91 cm (36 inches), top width/bottom width—63 cm (25 inches), height—33 cm (13 inches). The pots were of oak frame construction with 2.5-cm (1.0-inch) oak laths spaced 2.5-3.3 cm (1.0-1.3 inches) across the top and bottom. Sides were of 2.5-cm (1.0-inch) mesh vinyl-coated wire. Entrance rings of 14-cm (5.5-inch) diameter were located on both sides of the kitchen. Entry to the parlor was through a "skate-mouth" head (no ring at the opening). Normal lath-spacing on pots ranged from 2.5 to 3.3 cm (1.0 to 1.3 inches).

Table 1.—Pot design characteristics for study Phases I, II, and III.

Trawl no.	Fishing mode	Escape vent	Degradable panel	Mean depth (m)	Pot no.
Phases I and II—Maine					
1	Ghost	No	No	12	21-25
2	Ghost	Yes	Yes	15	16-20
3	Ghost	Yes	Yes	18	11-15
4	Ghost	No	No	18	26-30
1A	Conventional	No	No	12	36-40
2A	Conventional	Yes	Yes	15	1-5
3A	Conventional	Yes	Yes	18	6-10
4A	Conventional	No	No	18	31-35
Phase III—Massachusetts					
1	Ghost	Yes	No	14	66-70
2	Ghost	No	No	14	76-80
3	Ghost	No	No	14	71-75
4	Ghost	Yes	No	14	61-65
1A	Conventional	No	No	14	56-60
2A	Conventional	No	No	14	51-55
3A	Conventional	Yes	No	14	46-50
4A	Conventional	Yes	No	14	41-45

Escape Vents

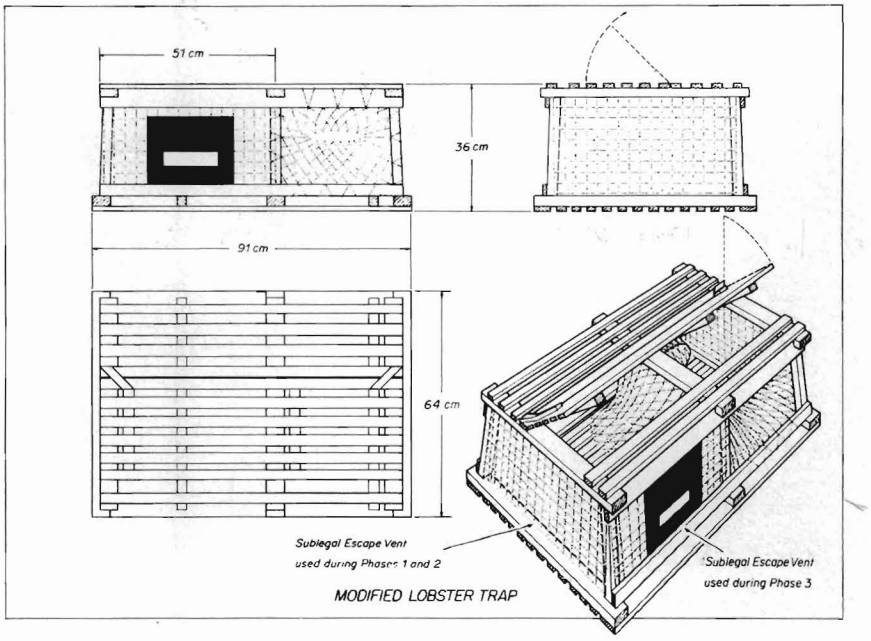
Vents were of two basic types (Fig. 6). The first, considered a sublegal escape vent and used in the Maine study, was constructed by removing an oak lath on the end of the parlor, leaving a 3.8- to 4.3-cm high (1½- to $1^{11}/_{16}$-inch) opening. During the Massachusetts study the opening in the oak laths was blocked, and a panel made of various materials with a 4.5-cm high and 15.2-cm long (1¾ ×6-inch) opening was affixed to the side of each experimental trap.

Experimental traps of the Maine study were also modified by cutting 10 ×15-cm (4 ×6-inch) openings on three sides of the parlor, and a panel with a degradable link or latch was affixed over the openings. All panels were constructed of the same material as the parlor sides of the pot and affixed to the pot walls at the bottom with two stainless steel rings. Each panel was fastened at the top by one of the various types of degradable material (jute, cotton, leather, manila, iron wire, iron-copper wire interwoven, and wool). Panels were fastened in such a way that upon breakdown of the degradable link the panel would open in an outward or inward direction. A detailed description of the sampling design, material used, and analysis of results of the degradable escape vents is presented by Blott (1978).

Setting and Hauling of Surface-Buoyed Pot Trawls

Each of the four conventional pot trawls was hauled on a weekly basis using standard commercial hauling gear. A schematic of basic setting

Figure 6.—Schematic of lobster pot used during study, with escape vent.



methods and measurements of trawls is given in Figure 7. Using landmarks on nearby islands and the vessel's depth recorder, trawls 1A-4A were fished at specific locations and at the desired distance from the rock-sand interface in their proper order along the linear array of eight trawls (Figs. 4 and 5). As each pot was hauled aboard the boat, the old bait was discarded and four to five redfish "racks" were strung on the bait string.

The physical condition of each escape panel, and associated degradable linkage material when used, was noted as well as the relative position of the panel on the parlor.

Numbers of lobsters, crabs, sea urchins, and various species of finfish were recorded from each pot. Carapace length and width in milliliters, sex, handedness, presence of eggs and maturity stage, old and new damage to the body (obvious punctures or breaks in the exoskeleton), and missing appendages were noted for each lobster. Legal lobsters were removed from the study area, sublegals were returned to the water. All catch data and lobster measurements were recorded by trawl and pot number.

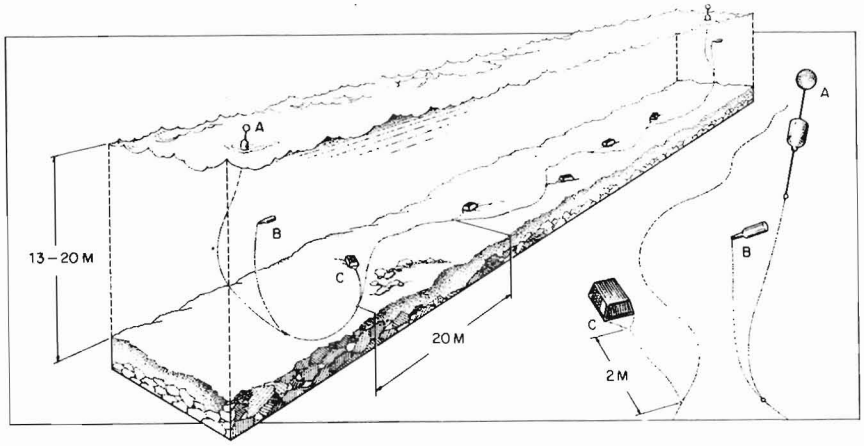


Figure 7.—Schematic of pot trawl set. A. Marker buoy. B. Float or toggle. C. Trap and gangion.

Figure 8.—Diver surveying ghost-pot catch.

Surveying Ghost-Pot Trawls

The two-man dive teams, using scuba, surveyed the four ghost-pot trawls weekly. Ghost pots were baited only at the beginning of the experiment and were left on the ocean bottom to simulate a realistic ghost-fishing mode. Divers used underwater writing tablets to record their observations and measurements (Fig. 8). Occasionally underwater lights were required to visually inspect the inner portions of the pots. The Massachusetts portion of the study was characterized by 1- to 2-knot tidal currents and poor underwater visibility of 1-2 m; the Maine study site usually had 3-5 m of visibility and little current (less than 0.2 knots).

The first diver survey of the ghost-pot trawls was conducted approximately 1 week after their placement on the ocean bottom. Each lobster found in a pot was given a color coded (red, blue, white, or yellow) and punch-hole coded, 1.3-cm wide (0.5-inch), rubber band on each cheliped to identify the individual lobster, its pot of observed capture, and trawl number. Lobsters recorded during the first week while bait remained as an attractant were classified as initial lobsters, those recorded later were classified as immigrants. Rubber bands were positioned proximally to the dactyl portions of the chelipeds so as not to deactivate the normal functions of the large claws. One of the five sections of the tail fan was given a 3-mm (0.1-inch) punched hole to serve as a secondary mark for experimental lobsters and denote its respective pot, i.e., 1, 2, 3, 4, or 5, within that trawl string. A hole punched in the tail fan is maintained through at least one moult and served to distinguish an experimental lobster from a previously unmarked lobster through the following moulting season, or in case of lost coded bands through band

breakdown or loss of chelipeds. Each dive team carried the necessary equipment on survey dives to mark new lobsters in ghost pots.

Lobsters from the ghost pots were removed carefully and individually by the dive team so as not to create a "chain reaction" of aggressive behavior among the pot's occupants. Each marked lobster was examined as to sex, carapace length, handedness, tail-fan punch, cheliped band color and punch mark, and noticeable injuries. Unmarked lobsters were marked and the same measurements and observations recorded. Pot and trawl number were recorded for each pot examined. The compartment was also noted, i.e., the kitchen or parlor.

The presence of other macrofauna (crabs, fish, sea urchins, etc.) within the pot was recorded along with observations on intraspecific behavior. A detailed examination of the parlor and kitchen of the trap and the ocean bottom within 4 m (12 feet) of the trap was conducted to assess the fate of missing lobsters. The exoskeleton breaks down into its component parts when a lobster dies, and pieces of shell in the area are sometimes the only direct evidence of the fate of a missing individual.

Night dives were made periodically throughout the Maine portion of the study to 1) measure directly the sex ratio and size distribution of the nocturnally active lobsters in the immediate vicinity of the experimental and conventional pot trawls, 2) observe the behavior of lobsters and other fauna within the pots at nighttime, and 3) locate individuals missing from the pots and measure the distance from the escaped pot to their shelter. Underwater lights were used to search lobster burrows, rock crevices, sand flats, etc., for marked individuals and to enable the dive team to accurately sample the nocturnal individuals.

Environmental Monitoring

In-situ measurements of water temperature, dissolved oxygen, pH, and conductivity were made of the bottom water mass during each week of the Maine study. Salinity was determined from the temperature-conductivity measurements. These four monitoring systems compose the Martek Mark I Water Quality Monitoring System[1]. Each sensor was calibrated at the beginning of the study and halfway through the study. Accuracy of the conductivity meter was ±0.2 parts per thousand, temperature was ±0.1°C, dissolved oxygen was ±0.4 parts per million at temperature of calibration, and pH was ±0.1. The Martek sensor package was lowered to 15 m at the center of the study area each week and the above measurements recorded.

Table 2.—Numbers and mean carapace lengths (mm) of male and female lobsters taken during 13 night dives at Damariscove Island, 1973.

Date	Study phase	Males No.	Males C.L. (mm)	Females No.	Females C.L. (mm)	Total no.	C.L. sexes combined (mm)
13 Mar	I	10	71.3	9	75.8	19	73.4
24 Apr	I	22	67.5	13	68.5	35	67.9
8 May	II	16	70.2	23	69.2	39	69.6
16 May	II	61	70.0	47	69.7	108	69.9
11 Jul	II	33	70.0	15	71.7	48	70.5
Total		[1]142	69.7	[2]107	70.2	249	69.9

[1]57% of sample.
[2]43% of sample.

RESULTS AND DISCUSSION

Natural Population

Samples of the nocturnally active (leaving shelter) portion of the natural lobster population were collected on 13 night dives during study Phases I and II. Sample statistics are presented in Table 2. Night dives were conducted between 2100 and 0400 hours, when nocturnal activity is at its peak (Cooper and Uzmann, 1977). Nocturnally active lobsters were of sufficient size (45-mm carapace length and larger) to be easily recognized by the dive team and captured; thus these samples are considered representative of the natural population that leave their shelters at night and are subject to capture by lobster pots.

A total of 249 lobsters were collected during the night dives in March, April, May, and July, 1973. The mean carapace length for males and females was similar throughout Phases I and II.

[1]Reference to trade names does not imply endorsement by the National Marine Fisheries Service, NOAA.

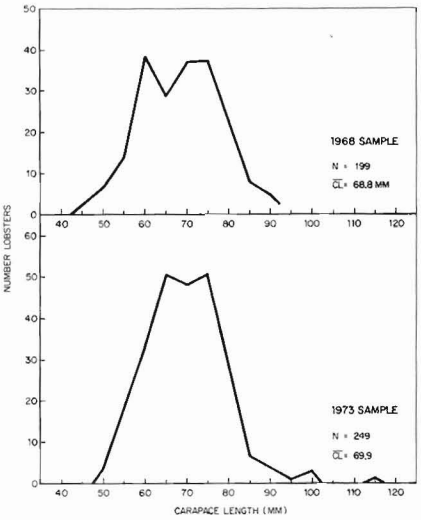


Figure 9.—Frequency distribution of lobsters (sexes combined) sampled from the nocturnally active population at Damariscove Island, 1968 and 1973, grouped in 5-mm intervals.

Likewise, the mean carapace length for males and females was similar by sampling date. Average size for males and females for the 13 samples was 69.7 mm and 70.2 mm, respectively. Figure 9 presents a length-frequency distribution of all lobsters from the night collections (1973), sexes combined. Sizes ranged from 41 to 117 mm.

Of the 249 lobsters collected, 142 (57 percent) were males and 107 (43 percent) were females—not significantly different from a 50:50 ratio (X^2 (1 df) = 2.97, $P > 0.5$).

To further define the sex ratio and size characteristics of the nocturnally active population, an examination of similar data collected by divers at Damariscove Island in 1968 (Cooper et al., 1975) was made. A total of 199 lobsters was collected on 18 March 1968 ($N = 18$) and 15 and 16 August 1968 ($N = 181$). Sex ratio was 50:50 ($N\,♂ = 99$, $N\,♀ = 100$). Males averaged 69.5 mm and females 68.2 mm, all samples combined, not significantly different from the overall 69.7 mm and 70.2 mm for males and females sampled in 1973. Sizes ranged from 45 to 91 mm. A frequency distribution of sizes, sexes combined, is presented in Figure 9.

Chi-square tests on these combined

nocturnal collections (1968 and 1973, N =448) show that the observed sex ratio (males 46.4 percent, females 53.8 percent) does not differ significantly from 50:50 (X^2 (1 df) =2.89, P >0.05). For this study we conclude that the nocturnally active lobsters at Damariscove Island are evenly composed of males and females that average 70 mm in carapace length.

Surface-Hauled Pot Catch

Catch Statistics

A total of 3,425 lobsters were taken over 53 sampling periods of study Phases I, II, and III. Complete catch statistics for these lobsters are given in Appendix A. Mean carapace length by sex, pot type (vented and nonvented), and sampling data for surface-hauled pots are presented in Tables 3, 4, and 5 for Phases I, II, and III.

Mean carapace lengths of males and females by trap type and study phase were similar. Similarly, mean carapace length by sex was relatively constant through the sampling interval for each study phase. Consequently, a mean carapace length for all lobsters, sexes combined, by pot type and study phase was determined (Tables 3-6).

Vented pots in all three phases caught larger lobsters and fewer lobsters (Table 6, Figs. 10, 11, 12). Mean carapace lengths of the nonvented pot catches compared with vented pot catches within each phase were different. (Phase I: $t_{(df=730)}=3.52$, $P<0.01$. Phase II: $t_{(df=843)}=3.91$, $P<0.01$. Phase III: $t_{(df=1,846)}=17.24$, $P<0.01$.) These highly significant differences indicate that the sublegal escape vents permitted the escape of relatively large lobsters compared with those that can escape the nonvented pots. Figures 10 and 11 demonstrate that vented pots retained fewer lobsters less than 75 mm (Phase I) and 80 mm (Phase II) in carapace length than the nonvented pots. Similarly, Phase III vented traps retained fewer lobsters 80 mm and smaller than nonvented pots (Figure 12). Krouse and Thomas (1975) reported similar results during tests of pots with 45-mm and 37-mm escape vents.

Table 3.—Inventory of surface hauled traps from study Phase I.

	Nonvented							Vented						
	Total		Males		Females			Total		Males		Females		
Sampling date	No.	C.L.	No.	C.L.	No.	C.L.	%	No.	C.L.	No.	C.L.	No.	C.L.	%
26 Jan.	47	76.4	25	77.5	22	75.2	47	46	75.7	26	77.4	20	73.6	43
5 Feb.	28	75.6	14	74.6	14	76.7	50	20	74.4	9	75.1	11	73.8	55
14 Feb.	14	74.6	10	74.9	4	73.8	29	7	73.6	3	73.0	4	74.0	43
20 Feb.	13	74.9	5	71.4	8	77.1	62	—	—	—	—	—	—	—
26 Feb.	7	70.4	1	82.0	6	68.5	86	2	73.0	2	73.0	—	—	—
9 Mar.	1	77.0	1	77.0	—	—	—	5	76.0	3	76.0	2	76.0	40
15 Mar.	2	76.5	—	—	2	76.5	100	7	73.4	1	91.0	6	70.5	86
20 Mar.	4	81.3	2	79.0	2	83.5	50	12	75.4	9	73.7	3	80.7	25
28 Mar.	5	71.2	3	70.3	2	72.5	40	2	72.5	—	—	2	72.5	100
3 Apr.	7	73.4	5	72.6	2	75.5	29	17	75.6	10	74.7	7	76.9	41
13 Apr.	51	75.5	21	75.5	30	75.6	59	26	78.2	13	78.8	13	77.6	50
18 Apr.	13	77.2	6	75.7	7	78.6	54	18	75.7	6	74.0	12	76.5	67
24 Apr.	24	73.4	15	74.9	9	70.8	37	31	77.0	18	76.3	13	78.0	42
30 Apr.	35	73.7	18	72.6	17	74.9	49	36	79.0	20	77.3	16	81.2	44
7 May	65	74.6	28	74.2	37	74.9	57	43	74.7	20	73.0	23	75.5	53
14 May	41	74.4	20	73.7	21	75.2	51	32	77.7	16	76.3	16	79.1	50
23 May	44	72.4	24	72.5	20	72.3	44	27	76.2	16	76.7	11	75.5	41
Average		74.6		74.4		74.8			76.3		76.1		76.4	
Total	401		198		203		50	331		172		159		48

Table 4.—Inventory of surface hauled traps from study Phase II.

	Nonvented							Vented						
	Total		Males		Females			Total		Males		Females		
Sampling date	No.	C.L.	No.	C.L.	No.	C.L.	%	No.	C.L.	No.	C.L.	No.	C.L.	%
4 June	28	75.7	13	74.6	15	76.7	54	35	77.8	16	76.7	19	78.8	54
11 June	21	73.5	14	72.5	7	75.6	33	29	75.8	15	76.4	14	75.1	48
18 June	19	72.5	6	74.7	13	71.5	68	18	76.5	6	75.2	12	77.2	67
27 June	34	75.6	20	74.7	14	76.9	41	21	77.3	5	74.4	16	78.3	76
3 July	14	70.8	8	72.9	6	68.0	43	38	72.4	15	72.2	23	72.6	61
10 July	34	76.2	16	75.1	18	77.2	53	22	78.4	10	74.0	12	82.1	55
17 July	48	75.5	22	74.5	26	76.2	54	19	77.3	10	77.1	9	77.6	47
23 July	31	75.5	13	74.2	18	76.4	58	24	80.0	8	81.8	16	79.1	67
31 July	28	77.9	15	78.3	13	77.4	46	17	81.4	10	81.4	7	81.4	41
6 Aug.	38	76.6	15	77.7	23	75.9	60	32	76.7	15	75.7	17	77.5	52
17 Aug.	37	77.2	17	77.4	20	77.1	54	32	83.1	10	86.0	22	81.8	69
21 Aug.	43	76.4	24	75.5	19	77.6	44	35	81.2	12	78.4	23	82.7	66
28 Aug.	52	79.7	22	78.5	30	80.6	58	34	78.0	19	77.8	15	78.2	44
30 Aug.	40	74.6	15	73.5	25	75.2	65	22	78.3	12	77.9	10	78.8	42
Average		76.1		75.5		76.5			78.1		77.3		78.6	
Total	467		220		247		53	378		163		215		57

Table 5.—Inventory of surface hauled traps from study Phase III.

	Nonvented							Vented						
	Total		Males		Females			Total		Males		Females		
Sampling date	No.	C.L.	No.	C.L.	No.	C.L.	%	No.	C.L.	No.	C.L.	No.	C.L.	%
14 May	29	71.3	19	73.2	10	67.7	34	35	76.1	19	76.8	16	75.2	46
21 May	67	74.6	43	74.5	24	74.8	36	30	78.4	17	79.4	13	77.1	43
23 May	27	72.0	13	72.2	14	71.9	52	22	76.4	10	77.6	12	75.3	55
28 May	109	72.4	46	73.3	63	71.8	58	30	78.4	12	77.8	18	78.8	60
30 May	47	71.8	24	72.9	23	70.6	49	15	78.5	9	79.6	6	76.8	40
3 June	31	72.1	19	72.8	12	71.0	39	17	78.1	5	77.8	12	78.2	71
7 June	53	72.0	21	72.1	32	71.8	61	21	79.3	10	79.4	11	79.3	52
12 June	27	73.3	17	72.8	10	74.1	37	29	79.3	16	79.8	13	78.8	45
14 June	60	73.5	27	73.0	33	73.9	55	15	78.0	9	77.2	6	79.2	40
18 June	74	75.1	45	75.8	29	74.1	39	25	78.7	12	80.7	13	76.8	52
24 June	94	75.2	46	75.5	48	74.9	51	37	79.8	21	80.4	16	79.0	43
27 June	121	74.6	69	75.0	52	74.0	43	34	79.4	18	80.6	16	78.0	47
5 July	99	74.4	50	74.8	49	73.9	49	—	—	—	—	—	—	—
10 July	82	75.1	38	75.3	44	74.9	54	33	81.0	17	81.2	16	80.6	48
16 July	85	73.1	40	72.1	45	74.0	53	24	78.9	4	78.0	20	79.1	83
22 July	59	75.1	25	75.3	34	74.9	58	23	78.8	4	76.8	19	79.2	83
30 July	55	75.4	29	74.2	26	76.7	47	19	79.7	6	78.7	13	80.2	67
5 Aug.	37	72.7	12	69.6	25	74.2	67	—	—	—	—	—	—	—
6 Aug.	22	74.6	13	74.5	9	74.8	41	17	79.5	6	78.2	11	80.3	65
12 Aug.	51	75.8	22	74.2	29	77.1	57	35	80.1	11	77.8	24	81.2	68
19 Aug.	57	74.7	25	75.0	32	74.4	56	19	78.6	8	78.6	11	78.5	58
23 Aug.	63	73.8	31	72.5	32	75.1	51	19	77.3	6	76.8	13	77.5	68
Average		74.0		74.0		73.9			78.8		79.0		78.6	
Total	1,349	73.80	674	74.03	675	73.58	50	499	78.79	220	79.02	279	78.61	56

Table 6.—Summary of surface pot catch by phase, pot type, and sex.

Phase	Trap type	Males			Females			Sexes combined			Sublegal/Legal		
		No.	C.L.	SD	No.	C.L.	SD	No.	C.L.	SD	<81 mm	≥81 mm	% Sublegal
I	Vented	172	76.1	5.56	159	76.4	6.48	331	76.3	6.01	272	59	82.2
	Nonvented	198	74.4	6.08	203	74.8	7.60	401	74.6	6.89	339	62	84.5
II	Vented	163	77.3	6.87	215	78.6	8.32	378	78.1	7.74	285	93	75.4
	Nonvented	220	75.5	6.50	247	76.5	7.56	467	76 1	7.09	385	82	82.4
III	Vented	220	79.0	3.82	279	78.6	3.87	499	78.8	3.85	374	125	75.0
	Nonvented	674	74.0	5.57	675	73.9	5.94	1,349	74.0	5.76	1,196	153	88.7

Table 7.—Observed damage of surface pot caught lobsters by study phase and type of damage. Other damage category includes broken rostrum, cracked carapace or abdomen, missing or broken antennae, etc. Data is listed in numbers and percent (in parenthesis).

Study phase	No. lobsters	Missing one claw	Missing both claws	Damaged one claw	Damaged both claws	Regenerate one claw	Regenerate both claws	Missing legs (one or more)	Damaged uropods	Other damages	Total number damaged lobsters
I	732	55	9	10	1	50	1	11	3	11	136
		(7.5%)	(1.2)	(1.4)	(0.1)	(6.9)	(0.1)	(1.6)	(0.3)	(1.6)	(18.6)
II	845	82	11	16	2	48	0	17	4	16	183
		(9.7%)	(1.3)	(1.9)	(2.4)	(5.7)	(0.0)	(2.0)	(4.8)	(1.9)	(21.7)
III	1,848	204	22	157	21	132	1	112	42	61	628
		(11.0%)	(1.2)	(8.1)	(1.2)	(7.1)	(0.0)	(6.0)	(2.4)	(3.3)	(35.0)
Total	3,425	341	42	183	24	230	2	140	49	88	947
		(10.0%)	(1.2)	(5.4)	(0.7)	(6.7)	(0.0)	(4.1)	(1.2)	(2.4)	(27.6)

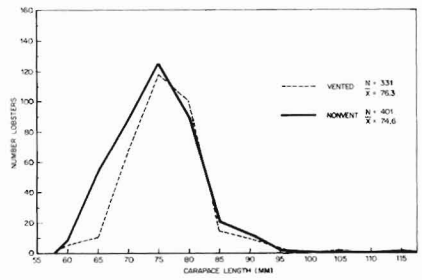


Figure 10.—Phase I. Surface-pot catch length-frequency, by 5-mm increments, of vented and nonvented pots (sexes combined).

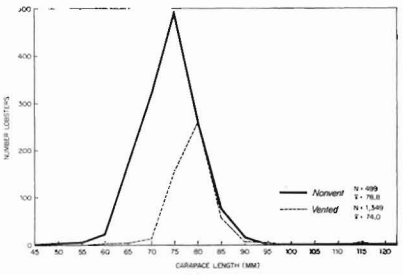
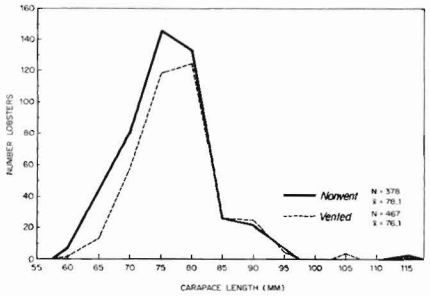


Figure 12.—Phase III. Surface-pot catch length-frequency, by 5-mm increments, of vented and nonvented pots (sexes combined).

Figure 11.—Phase II. Surface-pot catch length frequency, by 5-mm increments, of vented and nonvented pots (sexes combined).



Comparisons of sex ratios of the catch by pot type within study phase were similar at the 5 percent level (Table 6) with the exception of Phase III. Here, females dominated the vented pot catch (56 percent females, X^2 (1 df) = 4.80, $P < 0.05$). The reason for a predominance of females in the vented pots of Phase III is unknown.

Sublegal to Legal Ratio

Vented pots caught fewer sublegal lobsters (<81 mm) than nonvented pots in each study phase (Table 6). The differential in catch was greatest for Phase III (75 percent sublegals, vented—89 percent sublegals, nonvented) with a 45-mm (1¾-inch) escape vent and a 19-mm (¾-inch) difference in lath spacing between pot types. During Phases I and II the percentage of sublegals in vented pots was only slightly less than in nonvented pots. Correspondingly, the percentage of legal lobsters (≥81 mm) caught by the two trap types was nearly similar for Phases I and II and dissimilar for Phase III, where legals composed 25 percent of the vented pot catch compared with 11 percent for the nonvented pots.

Table 8.—Observed damage, judged new or old, for surface hauled lobsters from study Phase III, 30 July to 19 August 1974. Data given in numbers and percent.

Item	Total lobsters	With old damage	With new damage	Total damaged lobsters
Vented	91	36	7	39
		(37.6%)	(7.7)	(42.9)
Nonvented	221	95	21	108
		(43.0%)	(9.5)	(48.9)
Total	312	131	28	147
		(42.0%)	(9.0)	(47.1)

Incidence of Damage

All damage on lobsters caught by surface-hauled pots is summarized by study phase and type of damage in Table 7. For all phases combined, 27.6 percent (947 lobsters) had one or more types of body damage; 18.6 percent in Phase I, 21.7 percent in Phase II, and 35.0 percent in Phase III. The most common types of injuries were damaged, regenerate, or missing claws.

From 30 July 1974 to 19 August 1974, 312 lobsters from out surface-hauled pots were examined for "new" versus "old" injuries during study Phase III (Table 8). New injuries were identified by open wounds with no evidence of healing. This category of injury is assumed to have occured during aggressive encounters with other lobsters in the pot. Old injuries were characterized by healing scar tissue or the presence of a regenerating body part. Of the lobsters caught in the surface-hauled vented pots, 8 percent had "new" damage, compared with 9.5 percent from the nonvented pots (Table 8). Incidence of newly damaged lobsters was similar for vented and

nonvented pots. Also, the percentage of "old" damage was similar for vented and nonvented pots.

Comparison of Surface-Hauled Pot Catch and Natural Population

Size distributions and sex ratios of the diver-collected samples of lobsters from Damariscove Island and the surface-hauled pot catches (Phases I and II) were compared to judge the representative nature of the latter catch technique. Sex ratios of the combined diver collections from 1968 and 1973 (46.4 percent males, 53.8 percent females) and the surface-hauled pot catch (50.5 percent males and 49.5 percent females, Phase I; 45.3 percent males and 54.7 percent females, Phase II) were similar.

The surface-hauled pot catch yielded lobsters of a greater average size than the diver technique of sampling. Pot catches averaged 75-79 mm carapace length compared with 70 mm for diver-collected lobsters. Pots rarely caught lobsters less than 60 mm, whereas diver collected nocturnally active lobsters as small as 45 mm. We believe that the 45- to 60-mm lobsters did enter the surface-hauled pots but were not retained because of the lath spacing and escape-vent openings. The surface-hauled pots demonstrated only partial retention of 60- to 70-mm lobsters. Krouse (1973) fished surface-hauled pots with 25-mm square wire meshing in the same general study area in Maine. His catch length-frequencies reveal substantial numbers of lobsters in the 45- to 60-mm range, with an annual average carapace length of 68 mm. We conclude that our surface-hauled pots caught a representative proportion of the nocturnally active males and females but were selective for the larger individuals.

The total catch by vented traps was significantly less than by nonvented traps for all study phases (Tables 3-6). Again, the superior catches of nonvented traps is probably due to the greater ability of sublegal lobsters to emigrate from the traps with wider escape vents. The greater differential in size of escape vents of study Phase III (19 cm) compared with Phases I and II (13 mm) resulted in a proportionally smaller catch by vented traps in Phase III. Vented traps caught 83 and 81 percent of the lobsters taken by nonvented traps in Phases I and II and only 37 percent in Phase III.

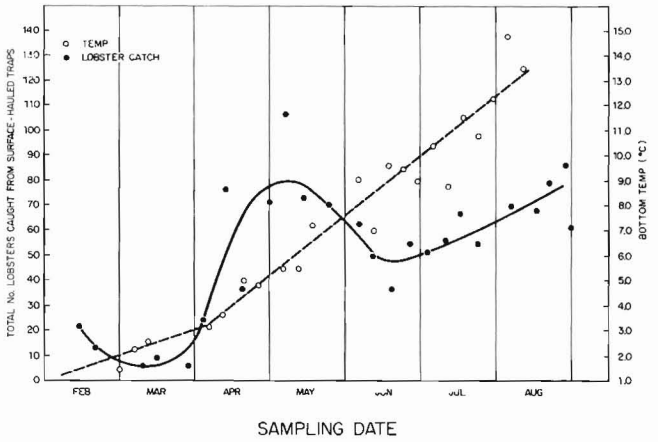


Figure 13.—Catch of lobsters from surface-hauled pots at Boothbay Harbor, and water temperature at 15-m depth. Sampling interval variable from 2 to 12 days.

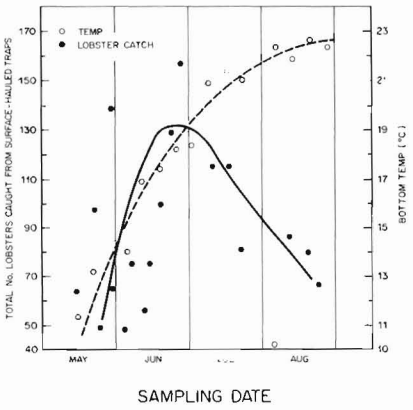


Figure 14.—Catch of lobsters from surface-hauled pots at Weepecket Islands, Mass., and temperature from 5-m at Woods Hole, Mass. Sampling interval variable from 2 to 13 days.

Catch Per Haul

Catch per haul trends were noted for a general indication of lobster trapability and a possible correlation between bottom-water temperature and catch. Set-over days versus catch will not be analyzed in this report.

Lobster catch in Phases I and II generally increased with increasing water temperature (Fig. 13). The decreased catch in late June and early July is probably due to a sharp increase in commercial fishing in the study area at this time and to decreased mobility, and therefore trapability, of the lobster prior to and post-moulting (McLeese and Wilder, 1958).

Lobster catch in Phase III increased with temperature from May through June, then decreased suddenly in July and August (Fig. 14). This drop may also be related to decreased mobility with regard to moulting.

Egg-bearing Females

Of the 818 female lobsters taken with surface-hauled pots during Phases I and II, only two were egg-bearing, 117- and 139-mm carapace lengths. Krouse (1973), using ovary stage and presence of spermatophores, concluded that the majority of female lobsters along the coast of Maine do not reach sexual maturity until 90-mm carapace length. Thomas (1973) sampled the population of Maine lobsters in the 81- to 127-mm size range at commercial pounds, and found the average size of berried females to be 102 mm (range 83-127 mm).

During Phase III, 8.4 percent of the

captured females carried external eggs, in contrast to less than 1 percent with eggs from the surface-hauled pot catches of Phases I and II. Average size of berried females (N =155) from Phase III was 78.0 mm, with a range of 68 to 91 mm.

Ghost-Pot Catch

Summary of Catches

Catch data collected by the dive team during Phases I, II, and III are presented in Table 9. The data are grouped by study phase, pot type, sex, sexes combined, and percent sublegal. Only original sightings (first capture) are presented. Catch data for each study phase were grouped into vented and nonvented categories for an assessment of the experimental 38- to 43-mm (Phases I and II) and 45-mm escape-vent openings in contrast to the conventional 25- to 33-mm lath spacing.

Mean sizes of male and female lobsters by pot type are similar for Phases I and II, thus these data were combined (Table 9). Mean size of lobsters (sexes combined) from vented and nonvented pots for Phases I and II were also found to be similar (Phase I, $t_{(df=61)}=1.77$, $P>0.10$; Phase II, $t_{(df=142)}=0.96$, $P>0.10$). Thus these data (males and females combined) for vented and nonvented pots were combined by study phase (Phase I $\overline{C.L.}$ =74.8 mm; Phase II, $\overline{C.L.}$ =72.5 mm). We believe the reasons for statistically similar mean sizes of lobsters from vented versus nonvented pots is due to 1) the relatively small difference in spacing between conventional and experimental pots, and 2) the small numbers of lobsters captured by the ghost pots. Length-frequency distributions for these combined samples are presented in Figures 15 and 16. In Phase III the mean carapace lengths for males and females by pot type are similar (vented, $t_{(df=85)}=0.13$, $P>0.10$; nonvented, $t_{(df=160)}=1.60$, $P>0.05$). Therefore, these data are combined (Table 9). Mean size of lobsters (sexes combined) from vented pots ($\overline{C.L.}$ =78.3 mm) is significantly greater than the mean size from nonvented pots ($\overline{C.L.}$ =76.0 mm) with $t_{(df-247)}=2.74$, $P>0.01$. Size-frequency distributions for vented and nonvented pot catches (sexes combined) are presented in Figure 17.

Table 9.—Data summations of ghost-pot lobsters by phase, sex, sexes combined, and pot type.

Phase	Trap type	Males			Females			Sexes combined			Pot type combined			Sublegal/Legal		
		No.	C.L.	SD	No.	C.L.	SD	No.	C.L.	SD	No.	C.L.	SD	<81 mm	≥81 mm	% Sublegal
I	Vented	18	75.4	4.52	16	76.8	5.62	34	76.0	5.03	63	74.8	5.92	28	6	82.3
	Nonvented	19	74.6	5.95	10	71.1	7.56	29	73.4	6.63				27	2	93.0
II	Vented	32	76.9	7.09	22	74.3	4.74	54	75.9	6.32	144	72.5	6.67	44	10	81.5
	Nonvented	51	74.6	5.78	39	75.0	8.17	90	74.8	6.88				76	14	84.4
III	Vented	53	78.4	7.14	34	78.2	7.14	87	78.3	7.14				61	26	70.1
	Nonvented	103	76.5	5.80	59	75.0	5.66	162	76.0	5.78				133	29	82.1

We believe that 45-mm vent openings in Phase III, compared with the conventional 25- to 33-mm lath spacing, permitted a greater degree of escape of relatively large lobsters than was possible from the conventional pots. Therefore, vented and nonvented pot catches are not combined for Phase III.

Sex ratios for vented and nonvented pot catches for Phases I and II, and Phase III vented tested by chi square, were not significantly divergent from a 50:50 ratio. In Phase III males dominated nonvented (64 percent $X^2_{(df=1)}=5.55$, $P<0.05$) pot catches. These data are in contrast to the surface pot catches of Phase III, where females dominated the vented pot catch and both sexes were equally abundant in the nonvented pots.

Some unplanned loss of ghost-pot contents occurred during Phase III: pot 63 accidentally opened, releasing its contents; and on 9 July, pots 62, 64, and 65 were found empty—apparently they had been hauled and their contents removed.

Ghost pots of Phases I, II, and III retained 456 lobsters that were recorded during weekly diving inventories. Capture totals and fates of captured lobsters are summarized in Table 10.

Ghost-pot captures during Phase I totaled 63 lobsters, 47 entering pots while bait remained as an attractant, and 16 lobsters entering after the bait had disappeared. Seven lobsters were missing

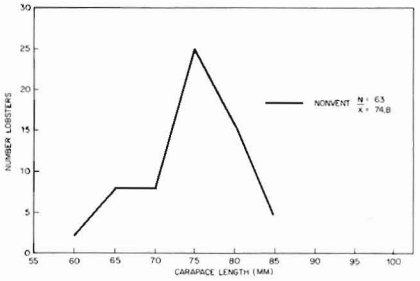


Figure 15.—Length frequency of Phase I ghost-pot lobsters by 5-mm increments, sexes and trap type combined.

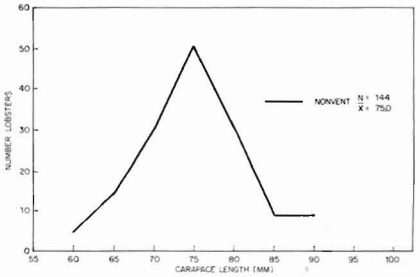


Figure 16.—Length frequency of Phase II ghost-pot lobsters by 5-mm increments, sexes and trap type combined.

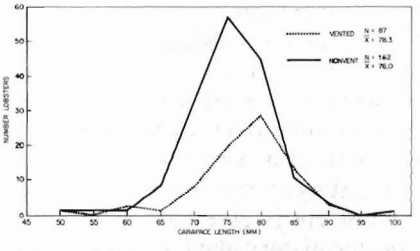


Figure 17.—Length frequency of Phase III vented and nonvented ghost-pot lobsters, sexes combined.

Table 10.—Catches and fates of captured lobsters from ghost pots of study Phases I, II, and III.

Trawl type	Total number lobsters captured	Initial captures[1]	Immigrants	Emigrants	Deaths	Missing
			Phase I			
Nonvented	21	8	13	0	2 (10%)	4 (19%)
Nonvented	8	7	1	0	3 (38%)	1 (13%)
Vented	15	15	0	1	1 (7%)	1 (7%)
Vented	19	17	2	1	2 (13%)	1 (7%)
Subtotal nonvented	29	15	14	0	5 (17%)	5 (17%)
Subtotal vented	34	32	2	2	3 (9%)	2 (6%)
Total	63	47	16	2	8 (13%)	7 (11%)
			Phase II			
Nonvented	64	38	26	0	8 (13%)	25 (39%)
Nonvented	26	17	9	0	12 (46%)	7 (27%)
Vented	33	7	26	0	8 (24%)	7 (21%)
Vented	21	17	4	0	4 (19%)	8 (38%)
Subtotal nonvented	90	55	35	0	20 (22%)	32 (36%)
Subtotal vented	54	24	30	0	12 (22%)	15 (28%)
Total	144	79	65	0	32 (22%)	47 (33%)
			Phase III			
Nonvented	82	40	42	4	26 (32%)	26 (32%)
Nonvented	80	39	41	1	38 (48%)	26 (33%)
Vented	42	32	10	1	0 (0%)	7 (17%)
Vented	45	14	31	1	8 (18%)	22 (49%)
Subtotal nonvented	162	79	83	5	64 (40%)	52 (32%)
Subtotal vented	87	46	41	2	8 (12%)	29 (33%)
Total	249	125	124	7	72 (29%)	81 (33%)

[1]Lobsters entering baited pots as opposed to entering pots after bait has disappeared.

from pots. Two lobster escapees from an intact pot were recaptured in the study area by divers, and there were eight confirmed deaths of lobsters in ghost pots.

Phase II ghost-pot catch totaled 144 lobsters, 79 entering pots while bait remained as an attractant, and 65 captured over the remainder of the phase. Missing lobsters totaled 47, of which there were no recaptures. Thirty-two lobsters were found dead in pots during this phase.

Phase III catch provided 249 lobsters, 125 entering pots while some bait remained, and an additional 124 entering during the remainder of the phase. Eighty-one lobsters were originally recorded as missing; seven of these were recaptured in the study area by our, or local fishermen's, surface pots. An additional 72 lobsters were recorded as pot-related deaths when their remains were found in our pots during diver inventories.

A history of each lobster captured by a ghost pot is given in Appendix B. Lobster-history data is grouped by study phase and pot number. Lobsters captured in each pot are listed in their order of entry. Sex, carapace length, original condition, time of first entry, damage incurred while entrapped, and its eventual fate are noted for each individual. Dates of in situ observation and examination of each lobster are given at the top of each table. The circle symbol on a lobster's time of entrapment denotes a trap-related injury and is defined in the remarks column. All pot injuries are preceded by a capital "I" and defined. Multiple injuries occurring in pots are separated by semicolons in the remarks column and are given in the order they occurred. Any injuries found on the lobster when it was first recorded are noted as the first entry in the remarks column and are not preceded by an "I." Each lobster's time of entrapment is represented by a heavy horizontal line beginning on the inventory date that it was initially recorded and extending through the last observational day for that individual. Lobsters with lines terminating prior to the final inventory day are characterized by one of three letters: "E" represents an escape from an intact trap, "M" is a lobster missing from a trap, and "D" is a lobster found dead within the trap.

Comparison of Ghost-Pot Catch with Surface-Pot Catch and Natural Population

Ghost-pot catches of Phases I and II, by pot type, were similar to surface-pot catches in mean size and sex composition (Tables 6 and 9). Compared with the even mixture of males and females in the nocturnally active portion of the population, the ghost-pot catches were similar in sex composition (58 percent males) but were comprised of larger lobsters ($\overline{C.L.}$ ranged from 73.4 to 78.3 mm) depending upon pot type, compared with 70 mm for the nocturnally active lobsters. Relatively few lobsters less than 70 mm were retained by the ghost pots (Figs. 15 and 16) compared with the size distribution of nocturnally active lobsters (Fig. 8). We conclude that ghost pots, regardless of pot type, selectively retain large lobsters but are not selective by sex.

Nonvented ghost pots of Phase III caught 162 lobsters (64 percent males) with an average carapace length of 76 mm compared with the surface-pot nonvented catch of 1,349 lobsters (50 percent males) averaging 74 mm. Sex composition of the nonvented ghost-pot and nonvented surface-pot catches were dissimilar ($X^2_{(df=1,509)}=10.16$, $P<0.01$).

Vented ghost pots of Phase III caught 87 lobsters (61 percent males) with an average size of 78 mm compared with the surface catch of 499 lobsters (44 percent males) averaging 79 mm. Again, males composed a greater percentage of the ghost-pot catch than of the surface-pot catch. Mean sizes ($\overline{C.L.}$) of ghost-pot and surface-pot catches were similar for vented pots, $t_{(df=584)}=0.96$, $P>0.05$, and dissimilar for nonvented pots, $t_{(df=1,509)}=4.17$, $P<0.01$. Again, vents had the effect of reducing ghost-pot catches and increasing average length of ghost-pot lobsters compared with nonvented pots.

Mortality, Damage, and Escapes

Escapes. During this study there were two classes of lobster escapees from ghost pots. The first is a lobster escapee from a pot opening with the

eroding of a degradable linked panel or a pot structural failure leaving a space large enough for escapement. The second escapee class was lobsters escaping from an intact pot and later recaptured by surface pots or divers.

During Phase I, 12 lobsters escaped when the catch-escape panels on three pots opened; 26 lobsters escaped during Phase II when the panels on nine pots opened. During Phase III, a panel on pot number 63 accidentally opened and eight lobsters were released. Catch-release panels served as an effective means to release captured lobsters.

There were eight confirmed escapees from intact lobster pots, two from Phase I and six during Phase III. Both Phase I lobsters (75 and 73 mm) were from vented pots. Of the six Phase III escapees, five (64, 55, 73, 77, and 78 mm) were in nonvented pots, and one (71 mm) was from a vented pot.

Escapement from pots for some species, depending on pot design and construction, has been found to be significant. High and Worlund[2] found an escapement rate of 80-92 percent for the king crab, *Paralithodes camtschatica,* from pots. High (1976) also found vents increased the rate of escapment for Dungeness crabs, *Cancer magister,* from 21 percent in 74 days in nonvented pots to 45 percent in only 12 days for vented pots. Our known escapement from intact pots was 1 percent. The portion of our missing lobsters (135) that may have been escapees is a matter of speculation, although we believe the degree of escapement from our pots was low.

Damage. Damage, as analyzed in this study, is classified as a major injury, defined as the loss of a cheliped or a crush wound on the thorax or abdomen. These types of wounds were easily recognized by divers and their time of occurrence was placed subsequent to the previous inventory. Minor injuries (regenerate chelipeds, missing walking legs, damaged uropods, etc.) may have escaped immediate detection. All major and minor damage with date first observed is recorded in Appendix B.

During Phase I there were 10 instances of major damage over a 111-day period; 30 in Phase II over 97 days; 14 from Phase III vented pots and 47 from nonvented pots over 79 days (Tables 11 and 12). Percentage of major injuries from vented and nonvented pot catches was similar within Phases I and II, thus these data were combined. During Phases I and II, 10 and 18 percent of the catch was damaged, compared with 29 percent for Phase III nonvented and 16 percent for vented pot catches over a common time interval of 75 days. In addition to the vented ghost pots having a smaller catch than nonvented in Phase III, the vented pots also had a catch with a reduced rate of damage.

During the entire three phases of the study, we recorded 101 instances of major damage in ghost pots. Twenty-five percent of all major damage occurred within the first 15 days a lobster was entrapped, and 69 percent occurred within the first 30 days. Thirty percent of all lobster mortalities were noted as having major injuries prior to their death. We often noted during diving inventories that a lobster suffering a major injury was subsequently attacked by other entrapped lobsters (either as a source of food or because of their aggressive behavior), often resulting in the loss of chelipeds and walking legs before death.

Mortalities. During the three phases of this study, 112 ghost-pot lobsters were found dead (24.6 percent of total catch) and recorded as ghost-pot mortalities (Table 10). The sizes of lobsters dying in ghost pots were representative of the sizes entrapped (Fig. 18). Mean carapace length of all ghost-pot inhabitants was 75.2 mm compared with 76.1 mm for ghost-pot mortalities. Mortality among males may be greater than for females, although this difference is not significant ($X^2_{(df=1)}=1.32$, $P>0.10$). Males composed 60.5 percent ($N=276$) of all ghost-pot catches, females 39.5 percent ($N=180$). Confirmed mortalities were 67 percent

Table 11.—Summation of mortality, damage, and missing lobsters for ghost pots of study Phases I and II, vented and nonvented pots combined. The numbers and percents given by cumulative 15-day intervals represent an estimate of mortality, damage, and missing lobsters as a function of ghost pot fishing time.

Maximum no. of days trapped	Mortalities No. (%)	Major injuries No. (%)	Missing No. (%)
	Phase I		
0- 15	4(6)	4(6)	1(2)
0- 30	5(8)	5(8)	5(8)
0- 45	7(11)	5(8)	6(10)
0- 60	7(11)	6(10)	6(10)
0- 75	7(11)	6(10)	7(11)
0- 90	8(13)	9(14)	7(11)
0-105	8(13)	10(16)	7(11)
0-111	8(13)	10(16)	7(11)
	Phase II		
0- 15	8(6)	6(4)	15(10)
0- 30	18(13)	21(15)	26(18)
0- 45	24(17)	23(16)	35(24)
0- 60	25(17)	24(17)	39(27)
0- 75	30(21)	26(18)	45(31)
0- 90	32(22)	30(21)	47(33)
0- 97	32(22)	30(21)	47(33)

Table 12.—Summation of mortality, damage, and missing lobsters for ghost pots of study Phase III, vented and nonvented pots. The numbers and percents given by cumulative 15-day intervals represent an estimate of mortality, damage, and missing lobsters as a function of ghost pot fishing time.

Maximum no. of days trapped	Mortalities No. (%)	Major injuries No. (%)	Missing No. (%)
	Phase III–vented traps		
0-15	2 (2)	6 (7)	16 (18)
0-30	6 (7)	11 (13)	23 (26)
0-45	8 (9)	14 (16)	28 (32)
0-60	8 (9)	14 (16)	29 (33)
0-75	8 (9)	14 (16)	29 (33)
0-79	8 (9)	14 (16)	29 (33)
	Phase III–nonvented traps		
0-15	15 (9)	9 (6)	17 (10)
0-30	22 (14)	33 (20)	32 (20)
0-45	37 (23)	40 (25)	42 (26)
0-60	53 (33)	42 (26)	46 (28)
0-75	61 (38)	47 (29)	49 (30)
0-79	64 (40)	47 (29)	52 (32)

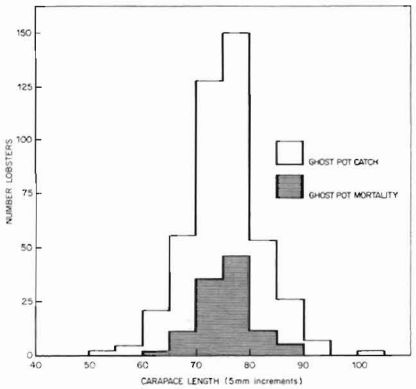


Figure 18.—Length frequency, by 5-mm increments, of all ghost-pot lobsters and all ghost-pot mortalities.

[2]High, W. L., and D. D. Worlund. 1976. Escape of king crabs from pots. Unpubl. manuscr. on file at the Northwest and Alaska Fisheries Center, National Marine Fisheries Service, NOAA, 2725 Montlake Boulevard East, Seattle, WA 98112.

(N =75) males and 33 percent (N =37) females. We conclude, therefore, that lobster mortality within the ghost pots is not selective by size or sex, compared with the ghost-pot catch.

Lobster mortality within the ghost pots of Phases I and II did not suggest a density-dependent relationship; catches totalled by pot type and study phase varied from 29 (Phase I, nonvented) to 90 (Phase II, nonvented). Within this catch range, average mortality ranged from 9 to 22 percent, with no apparent association with size of catch. In Phase III, nonvented pots totalled 162 lobsters with 40 percent mortality, compared with vented pot catches totalling 87 lobsters with 9.5 percent mortality. The relatively high catch from the nonvented pots with 40 percent mortality may suggest a density-dependent relationship over the entire catch range of 29 to 162 lobsters, but the data presented herein are insufficient to demonstrate this.

Lobster mortality within ghost pots may be related to water temperature, but the variation in mortality by study phase and pot type is too great to demonstrate such a relationship. Approximate mean water temperatures for Phases I, II, and III were 3-4°C, 10-11°C, and 15-16°C; mortalities for these periods were 17 and 19 percent, 22 and 22 percent, and 40 and 10 percent, respectively, for nonvented and vented pot catches.

Loss Rates. In this section we discuss our findings on ghost-pot lobster mortality, missing individuals, and damage as a function of the time a lobster is retained within the pot. The time of entrapment is summarized cumulatively by 15-day intervals for assessment. Data from Phase I (winter) and Phase II (summer) are compared for an indication of seasonal effects on ghost-pot catch. Phase III data are divided into vented and nonvented pots for a measure of the effectiveness of vents on ghost-pot lobsters.

Summations of mortality, damage, and missing lobsters are presented in Table 11 for Phases I and II. Pots fished in summer caught more lobsters than in the wintertime (Table 9). Phase II lobsters suffered a 22 percent mortality in 3 months, compared with 13 percent for Phase I, considering only the known deaths. The magnitude of injury was greater in Phase II (21 percent) than Phase I (14 percent) over 3 months. Missing lobsters in Phase II represented 33 percent of the catch compared with 11 percent in Phase I. (These differences, discussed above, may be related to water temperature and are attributed to seasonal influence by us. Moulting occurs during the summer and was probably one reason for the higher summer mortality.)

Summations of ghost-pot lobster mortality, missing lobsters, and lobster injury for Phase III vented and nonvented pots are presented in Table 12. Lobsters from vented pots suffered a 9 percent mortality in 79 days compared with 40 percent in nonvented pots. Sixteen percent of the vented-pot lobsters had injuries compared with 29 percent of the lobsters from nonvented pots. Both pot types demonstrated similar percentages of missing lobsters (32 and 33 percent). We conclude from these comparisons that escape vents resulted in significantly reduced mortality and injury, and similar rates of missing individuals, under the ghost-pot conditions described above for study Phase III.

Table 13.—Macrofauna observed in ghost pots by study phase (I, II, III) and trap type (vented, nonvented).

	I		II		III	
Species	Vented	Non-vented	Vented	Non-vented	Vented	Non-vented
Starfish (*Asterias* sp.)	+[1]	+	+	+	+	+
Sea urchins (*Strongylocentrotus droebrachiensis*)	+	+	+	+	+	+
Sand dollars (*Echinarachnius parma*)	1	0	0	0	0	0
Whelks (*Neptuna despecta tornata*) (*Buccinum undatum*) (*Busycon caricum*)	+	+	+	+	+	+
Cancer crabs (*Cancer borealis*, *C. irroratus*)	+	+	+	+	0	0
Spider crabs (*Libinia* sp., *Lithodes maia*)	1	1	0	0	0	0
Hermit crabs (*Paragarus* sp.)	+	+	+	+	+	+
Sea raven (*Hemitripterus americanus*)	0	2	0	1	0	0
Sculpin (*Myoxocephalus* sp.)	0	1	0	1	0	0
Eel pout (*Lycodes reticulatus*)	0	1	0	1	0	0
Cod (*Gadus callarias*)	2	0	0	0	0	0
Black sea bass (*Centropristis striata*)	0	0	0	0	5	11
Cunner (*Tautogolabrus adspersus*)	0	0	0	0	0	1
Scup (*Stenotomus versicolor*)	0	0	0	0	0	0
Sea robin (*Prionotus carolinus*)	0	0	0	0	0	0

[1] + = species were present but were not assessed due to 1) large concentration and/or 2) poor visibility for visual assessment.

Macrofaunal Catches. Macrofauna found in surface-hauled pots and ghost pots were recorded for an indication of pot attraction for species other than lobsters and their interactions with lobsters. A listing of macrofauna by study phase and pot type is presented in Table 13 for ghost pots and Table 14 for surface-hauled pots.

During Phases I and II, cancer crabs *Cancer irroratus* and *C. borealis*, were the most abundant macrofauna taken from the surface-hauled and ghost pots. Counts of cancer crabs and other invertebrates were not made from ghost pots because of the limited dive time at depth for the scuba team. Spider crabs (*Libinia* sp.) and whelks, *Neptuna despecta tornata* and *Busycon caricum*, were the most common macrofauna taken from surface-hauled and ghost pots from Phase III. Occasional catches of finfish were made with all pot types, with the sea raven, *Hemitripterus americanus*, sculpin (*Myoxocephalus* sp.), cod, *Gadus callarias*, black sea bass, *Centropristis striata*, and scup, *Stenotomus chrysops*, being the most common.

A relationship between cancer crabs and lobsters in ghost pots during Phases I and II was noted. The apparently desirable niches for both species in our ghost-pot's parlors were the four cor-

Table 14.—Macrofauna observed in surface hauled pots by study phase (I, II, III) and pot type (vented, nonvented).

Species	I		II		III	
	Vented	Non-vented	Vented	Non-vented	Vented	Non-vented
Starfish (*Asterias* sp.)	0	10	0	0	0	2
Sea urchins (*Strongylocentrotus droebrachiensis*)	0	165	0	2	0	0
Sand dollars (*Echinarachnius parma*)	0	150	1	0	0	0
Whelks (*Neptuna despecta tornata*) (*Buccinum undatum*) (*Busycon caricum*)	0	0	0	0	8	94
Cancer crabs (*Cancer borealis*, *C. irroratus*)	230	458	94	425	0	1
Spider crabs (*Libinia* sp., *Lithodes maia*)	1	3	0	0	17	288
Hermit crabs (*Paragarus* sp.)	4	2	1	0	0	0
Sea raven (*Hemitripterus americanus*)	2	1	0	0	0	0
Sculpin (*Myoxocephalus* sp.)	3	0	0	4	0	0
Eel pout (*Lycodes reticulatus*)	1	0	0	1	0	0
Cod (*Gadus callarias*)	0	0	2	5	0	0
Black sea bass (*Centropristis striata*)	0	0	0	0	0	0
Cunner (*Tautogolabrus adspersus*)	0	0	2	0	1	0
Scup (*Stenotomus versicolor*)	0	0	0	0	1	8
Sea robin (*Prionotus carolinus*)	0	0	0	0	1	0

ners and a location under the parlor head. If only lobsters were present in a pot, these niches were occupied by them. If there were lobsters and crabs in a pot, the desired niches were always occupied by crabs. Our observations in tanks with a combination of lobsters and crabs also confirms the apparent dominance crabs have over lobsters in occupying a niche desirable to both species. This establishment of a dominance for niches seems to result in no physical injury during the original encounters of the two species for desired areas.

Three ghost pots in Phase III had extensive lobster mortality after black sea bass, *Centropristis striata*, had been observed in the pot parlors. In trap 72, on the inventory day that two black sea bass were found in the pot, there were eight dead lobsters (from a total of 13); on the next inventory, after immigration of new lobsters, there were nine additional mortalities; and on the next inventory, with one bass still trapped, three additional lobster mortalities were recorded. At this point, only one lobster was left alive and this individual had all legs missing. For the time-span that these bass were trapped (26 June-2 August), 20 lobsters had died. Similar circumstances occurred during the same dates (26 June-2 August) in two other ghost pots. In pot 77, bass were found along with 13 dead lobsters, and in pot 78, bass were found along with 11 dead lobsters.

The high lobster mortality coincident with the entrapment of black sea bass in these three pots and not a correspondingly high mortailty in the other pots during the same time suggests that the bass, either directly or indirectly, were the cause of the increased mortality; or possibly, the bass entered coincidentally with a general rise in water temperature or some other factor that caused the mortalities.

New lobsters did not avoid the three pots with bass. Into each of the three pots with black sea bass, lobsters continued to enter, in the presence of fish and dead lobsters. Morgan (1974) found that western rock lobsters tended to avoid pots with dead lobsters or a predator; this was apparently not true with us. Our three pots had a high initial, and continuing, mortality for as long as the bass remained trapped. These sea bass had the most damaging effect of macrofauna recorded during this study.

Environmental Measurements. For a normal range of temperatures, McLeese and Wilder (1958) found American lobster catchability to increase with temperature. Morgan (1974) found a positive correlation between water temperature and catchability, and between salinity and catchability, of the western rock lobster, *Panulirus cygnus*. Lofts (1956) also found a positive correlation between salinity and the metabolic rate of some decapod crustaceans.

A general increase in lobster catch with increasing water temperatures was found during this study. During Phases I and II in Maine, seawater temperatures were 1.0°C in February and gradually rose to the 13-14°C range at the conclusion of Phase II (Fig. 19). Readings of salinity in parts per thousand ranged from 31.8 to 29.1, dissolved oxygen ranged between 8.3 and 12.0 parts per million, and pH ranged from 8.25 to 8.86 (Table 15).

The Phase III environmental data was limited to daily temperatures at the laboratory dockside approximately 5 miles from the Weepecket Islands. Although dockside temperatures would not give an accurate portrait of the actual study area temperatures, they would reflect general temperature trends in the area. During Phase III, the Woods Hole ocean temperature trends gradually rose from approximately 12°C in May to about 20°-22°C at the end of the study.

We found no correlation between salinity and catch, although this type of relationship in the natural environment may be caused by the resulting surge activity from wind and rain storms having a dampening effect on lobster activity in shallow-water areas.

Trap-Head Design. To replace damaged traps, new traps were constructed for Phase III. Each of the eight strings consisted of four old traps and one new trap. The new traps were constructed by a local lobsterman who was given an old trap and told to make the new one identical to it.

Upon receipt, the new traps seemed identical, and only upon close examination was a variation in inner-head design noticed. The difference, as shown in Figures 20-21, was that the new heads were one mesh less in circumference. The net result can be seen in the

illustration: a shorter, steeper head, with a larger "skate-mouth" opening.

The new traps caught significantly fewer lobsters ("ghost" traps #61, 66, 71, and 76; "fished" traps #41, 46, 51, and 56). By reviewing the ghost-trap catch data it seems that the deficiency of the new trap was that it did not retain lobsters caught. Observations in laboratory aquarium tanks confirmed this.

SUMMARY

1) This report has presented the results of an in situ study on lobster behavior, mortality, and immigration-emigration regarding commercial pot gear fished in conventional (surface-hauled) and "ghost-pot" modes in the Boothbay region of Maine, and Woods Hole, Mass. Four experimental (ghost-pot) and four control (surface-hauled) trawls of five pots per trawl were fished at similar depths and in similar lobster habitats at 1-week intervals. The conventional trawls were hauled and examined at the surface, and ghost-pot trawls were examined at depth by divers during the daytime.

2) Sublegal escape vents and biodegradable panels were constructed in pots, according to a specified sampling design, for each of the experimental

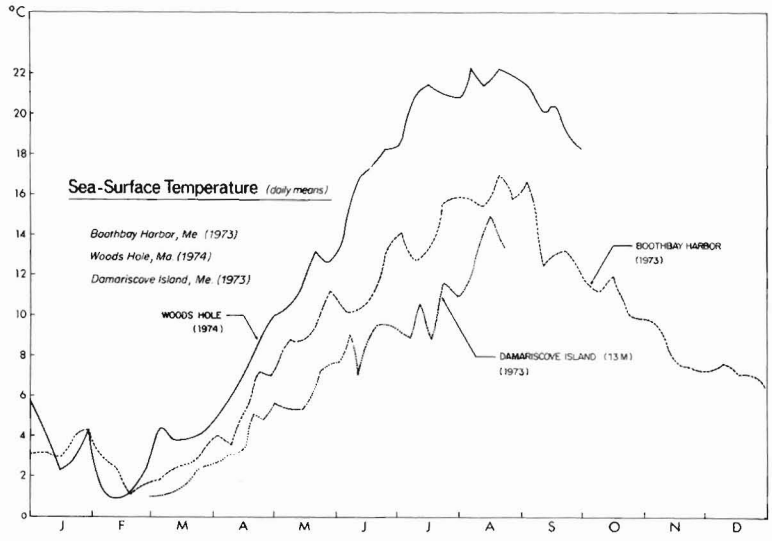


Figure 19.—Temperatures of 40 foot depth, Damariscove Island, Maine; Woods Hole Laboratory dock 4 feet below mean low surface.

Table 15.—Temperature, pH, salinity, and dissolved O_2 at study site during Phases I and II.

Date	Temp. (°C)	pH	Salinity (ppt)	O_2 (ppm)
2/27	1.0	8.78	31.8	11.8
3/13	1.4	8.66	31.4	11.5
3/21	2.2	8.35	31.4	10.4
3/29	2.5	8.70	30.6	11.0
4/5	3.0	8.34	30.4	10.8
4/13	3.1	8.54	31.5	10.8
4/18	3.6	8.68	31.5	10.8
4/20	5.0	8.62	30.9	12.0
4/24	4.8	8.25	30.8	10.6
5/1	5.6	8.68	30.0	10.0
5/7	5.4	8.38	29.8	9.6
5/14	5.4	8.43	30.2	10.0
5/24	7.2	8.81	30.0	10.5
6/1	7.7	8.72	29.9	9.8
6/4	9.0	8.84	29.1	10.0
6/11	7.0	8.74	—	10.0
6/18	9.5	8.82	29.7	9.0
6/28	9.5	8.86	30.1	10.8
7/6	9.0	8.65	30.3	10.8
7/10	10.4	8.52	29.9	9.8
7/16	8.8	8.76	30.8	8.3
7/23	11.5	8.48	30.1	10.0
7/31	10.8	—	30.4	8.8
8/6	12.3	—	30.6	8.9
8/17	14.8	—	30.6	9.2
8/21	13.5	—	31.0	8.8

Figure 20.—Inner head construction—"old" trap.

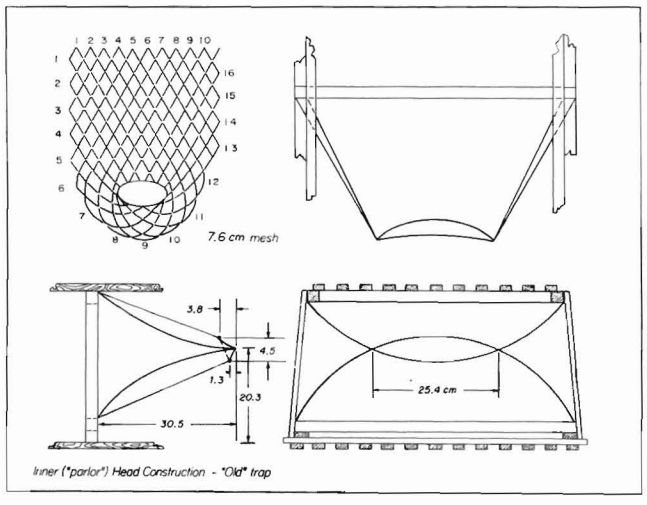
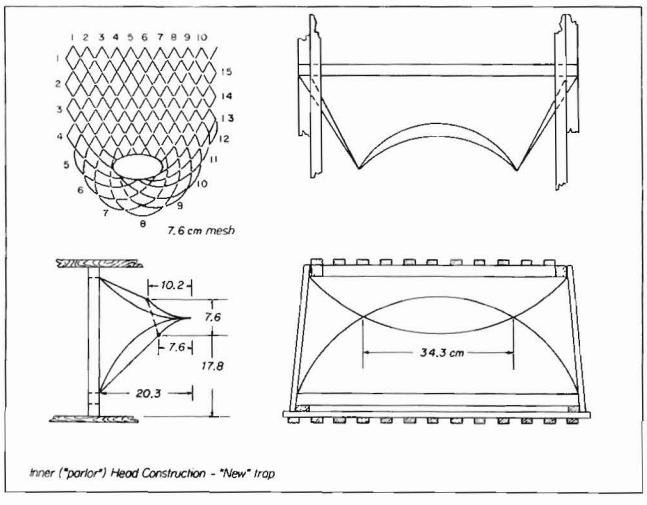


Figure 21.—Inner head construction—"new" trap.



and control trawls. Observations on behavior, mortality, and immigration-emigration were related to the presence or absence of escape vents and panels. In study Phases I and II, vented pots had lath spacings of 38-43 mm, and nonvented pots 25-33 mm. In study Phase III, vented pots had a standardized vent opening of 45 mm, compared with the 25- to 33-mm spacing of the control pots.

3) Newly entrapped lobsters from the ghost pots were given color-coded tags (primary mark), thus subsequent sightings and identification did not require repeated handling of the tagged individual. Each tagged lobster was given a secondary mark; a 3- to 4-mm hole was punched into one of the five tail fan sections to identify experimental lobsters through at least one moult. Disturbance to the occupants of the ghost pot was minimal.

4) Night dives were made on several occasions during study Phases I and II off the coast of Maine. Lobsters leaving their shelters at night, termed nocturnally active, were sampled by the divers to define the size distribution and sex ratio of the population from which the control (conventional) and experimental (ghost-pot) catches were derived. The behavior of lobsters and other fauna within the ghost pots was observed during these dives to compare with similar observations made during the daytime. Surrounding lobster habitats were searched for marked individuals that had escaped the ghost pots. Comparable observations at night were not possible during study Phase III because of poor underwater visibility.

5) Of the 448 nocturnally active lobsters collected from the Boothbay, Maine, study area, the sex ratio did not differ significantly from 50:50; mean carapace length, similar for males and females, was 70 mm. Nocturnally active individuals ranged from 45 to 91 mm.

6) Surface-haled pots caught 3,425 lobsters over 53 sampling periods for study Phases I, II, and III. Mean carapace lengths by pot type (vented VS nonvented) and study phase were similar. Vented pots caught fewer lobsters (83, 81, and 37 percent for Phases I, II, and III) and larger lobsters ($\overline{C.L.}_{vented}$=76.3, 78.1, and 78.8 mm; $\overline{C.L.}_{nonvented}$=74.6, 76.1, and 74.0 mm) than nonvented pots.

7) Twenty-eight percent of the lobsters taken by the surface-hauled pots had one or more types of body damage; the most common injuries were damaged, regenerate, or missing claws. Incidence of damage, judged new or old, was similar for vented and nonvented pots.

8) Sex ratios of the diver-collected nocturnally active lobsters and the surface-hauled pot catches were similar. Surface-hauled catches yielded larger lobsters than diver-collected samples; pot catches averaged 75- to 79-mm carapace length compared with 70 mm for diver collections. Pots rarely caught lobsters less than 60 mm whereas divers collected nocturnally active lobsters as small as 45 mm. We believe the 45- to 60-mm lobsters entered the surface-hauled pots but were not retained because of the lath spacing and escape vents.

9) Mean sizes of male and female lobsters by ghost-pot type are similar: mean sizes of lobsters (sexes combined) from vented and nonvented pots are similar for study Phases I and II, thus these data are combined giving an overall mean carapace length of 74.8 mm (Phase I) and 72.5 mm (Phase II). We believe this similarity is due to: 1) relatively small differences in lath spacing between conventional (nonvented, 25-33 mm) and experimental (vented, 38-43 mm) pots, and 2) comparatively small numbers of lobsters captured by the ghost pots. For study Phase III, vented pots (45-mm vent) captured lobsters of a larger average size than nonvented pots (78.3 mm VS 76.0 mm, sexes combined). Here the greater differential in lath spacing permitted a greater degree of escape of larger lobsters from the vented pots.

10) Sex ratios for vented and nonvented ghost-pot catches for Phases I and II approximated 50:50. Males predominated the vented (61 percent) and nonvented (64 percent) pot catches in Phase III.

11) Ghost pots of study Phases I, II, and III retained 456 lobsters that were recorded during weekly diving inventories. Captures during Phase I totaled 63 lobsters, 47 entering the pots while bait remained and 16 thereafter. Phase II totaled 144; 79 entered while bait remained and 65 thereafter. Phase III had 249 lobsters with 125 entering while pots were baited and 124 thereafter. A history of each lobster captured by a ghost pot is presented.

12) Ghost pots selectively captured large lobsters ($\overline{C.L.}$ for Phases I and II ranged from 73.4 to 78.3 mm, depending on pot type) but were not selective by sex, with the exception of Phase III. Here, males predominated (64 percent) in both the nonvented catches, compared with the assumed percentage (50 percent) of nocturnally active males (derived from the surface pot catches) and vented pot catches (61 percent compared with 44 percent from the surface vented pot catches). Diver collections of the nocturnally active portion of the population were not possible during study Phase III.

13) We have defined two classes of escapees from ghost pots: 1) lobster escaping the pot through an opening created by the erosion of a degradable linked panel or a pot structure failure, and 2) lobster escaping from an intact pot and later recaptured by pots or divers. A total of 46 lobsters escaped through degradable panels that had opened during Phases I, II, and III. Of the lobsters classified as missing from intact pots, eight were recaptured. The portion of lobsters classified as missing that may have been escapees is believed to be low.

14) Damage, or major injury, is defined in this study as characterizing a lobster whose cheliped(s) are missing, and/or whose abdomen or thorax has a "crushing" type of wound. During study Phases I, II, and III there were 19 (16 percent), 30 (21 percent), and 61 (14 [16] vented, 47 [30 percent] nonvented) instances of major damage of ghost-pot lobsters over time intervals ranging up to 79-111 days. Vented pots from Phase III had a catch with a reduced rate of damage compared with

the catch from nonvented pots. Rates of damage from vented and nonvented pots in Phases I and II were similar; again, catch rates for these pots were similar, as noted above. Twenty-five percent of all major damage occurred within the first 15 days of ghost-pot entrapment, and 69 percent within the first 30 days. Thirty percent of all lobster mortalities had major injuries prior to their death.

15) During the three phases of the study, 112 (25 percent) were found dead in ghost pots. Lobster mortality was not selective by size or sex, compared with the ghost-pot catch; mean carapace length for all ghost-pot inhabitants was 75.2 mm, and 76.1 mm for ghost-pot mortalities. Males composed 60.5 percent of all ghost-pot catches, compared with 67.0 percent male mortality. Lobster mortality does not appear to be density-dependent.

CONCLUSIONS

1) Selectivity of traps can be improved by the use of sublegal escape vents.

2) Reducing the overall catch of a trap, by permitting escapement of sublegal lobsters, reduces injuries and mortality induced by entrapment.

3) Incidence of trap-related injury and mortality is probably a function of one, or a combination of: 1) water temperature, 2) fishing pressure, 3) trap set-over days, and 4) physical condition of the lobster, i.e., its nearness to moult.

4) Ghost traps continue to fish for extended periods of time, having a catch rate equal to approximately 10 percent of the surface-hauled traps. Twenty-five percent of the ghost-pot lobsters died.

5) Vented traps with a 45-mm lath spacing had significantly fewer mortalities during the ghost-fishing period than nonvented traps with 25- to 33-mm spacings. Traps with lath spacings less than 45 mm have lobster mortalities similar to the conventional nonvented traps.

6) Trap-mounted escape panels are an effective means of releasing entrapped lobsters.

7) The percentage of missing lobsters from vented and nonvented pots was similar.

8) Lobster catch, mortality, and damage were greater in summer than in winter.

9) Lobsters dying in ghost pots were representative of the trappable population in terms of size and sex ratio.

10) Major trap-related mortalities may be caused by factors other than interspecific actions, e.g., agitation by other entrapped macrofauna such as cancer crabs, black sea bass, etc.

11) Lobsters moulting within a trap with other lobsters present are generally cannibalized.

12) The major portion of damage and mortality among entrapped lobsters occurs during the first 30 days of confinement.

13) Lobsters and finfish enter unbaited traps, perhaps seeking shelter, and their trap deaths may act as a baiting process.

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APPENDIX A

Field Experiment Catch Data

Key to listings

DATE:	Year, month, day
SOD:	Set over days
T#:	Trap number
V:	Vented
S:	Sex, male or female
LEN:	Carapace length (mm)
WID:	Carapace width (mm)
H:	Indicates either left (L) or right (R) crusher claw
E:	Egg condition: 1 = new eggs (black); 2 = ripe eggs (red); 3 = eggs recently released
D:	Damage code (1 indicates no damage)

LOBSTER DATA - SURFACE HAULED TRAPS
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DATE	SOD	T#	V	S	LEN	WID	H	E	D
730205	10	04	V	F	074		R		
730205	10	04	V	M	078		L		1
730205	10	05	V	F	079		L		1
730205	10	05	V	M	067		R		1
730205	10	06	V	M	079		R		1
730205	10	07	V	M	076		L		1
730205	10	08	V	F	072		L		
730205	10	08	V	F	073		L		1
730205	10	10	V	F	077		L		1
730205	10	10	V	F	068		R		1
730205	10	10	V	M	077		R		1
730205	10	31		M	067		L		
730205	10	31		F	073		R		
730205	10	31		M	091		R		1
730205	10	31		M	073		L		1
730205	10	31		F	071		R		1
730205	10	32		F	082		L		1
730205	10	33		F	072		L		
730205	10	33		M	081		R		
730205	10	33		M	071		L		1
730205	10	33		M	070		R		1
730205	10	33		M	066		L		1
730205	10	33		F	078		L		1
730205	10	34		M	074		R		
730205	10	34		F	077		L		
730205	10	34		M	077		R		
730205	10	34		F	093		R		1
730205	10	34		M	072		R		1
730205	10	34		F	076		R		1
730205	10	34		F	069		L		1
730205	10	35		F	087		R		
730205	10	35		F	075		R		
730205	10	35		F	079		R		1
730205	10	35		M	072		R		1
730205	10	35		F	070		R		1
730205	10	35		M	081		R		1
730205	10	35		M	071		L		1
730205	10	35		F	072		L		1
730205	10	36		M	078		L		1
730214	09	01	V	F	079		R		1
730214	09	02	V	F	069				
730214	09	04	V	M	074		L		
730214	09	05	V	F	070		L		1
730214	09	08	V	F	078		R		1
730214	09	09	V	M	074		L		1
730214	09	10	V	M	071		R		1
730214	09	31		M	069		R		1
730214	09	32		M	079		R		1
730214	09	32		M	070		R		1
730214	09	32		F	082		L		1
730214	09	32		F	076		R		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730126	01		V	M	077		L		
730126	01		V	F	067		L		
730126	01		V	F	058		R		
730126	01		V	M	083		R		1
730126	01		V	F	078		R		1
730126	01		V	F	074		L		1
730126	02		V	F	070		R		1
730126	02		V	M	077		L		1
730126	02		V	M	075		L		1
730126	02		V	M	081		R		1
730126	02		V	F	072		L		1
730126	02		V	M	070		L		1
730126	03		V	F	082		L		
730126	03		V	F	072		L		
730126	03		V	M	080		L		
730126	03		V	F	073		L		1
730126	03		V	M	076		L		1
730126	04		V	M	091		R		1
730126	04		V	M	073		R		1
730126	04		V	M	083		L		1
730126	04		V	M	081		R		1
730126	04		V	M	076		R		1
730126	04		V	F	075		R		1
730126	04		V	F	075		L		1
730126	05		V	M	071				
730126	05		V	M	076		L		1
730126	05		V	M	066		R		1
730126	05		V	M	073		R		1
730126	05		V	F	066		R		1
730126	06		V	F	080		R		1
730126	06		V	M	074		R		1
730126	06		V	F	073		L		1
730126	06		V	M	081		R		1
730126	06		V	M	076		R		1
730126	06		V	F	069		R		1
730126	07		V	M	082		L		
730126	07		V	M	080		L		1
730126	07		V	M	076		R		1
730126	08		V	M	079				
730126	08		V	M	077		R		
730126	08		V	F	077		R		1
730126	08		V	M	078		L		1
730126	08		V	F	074		L		1
730126	08		V	F	076		R		1
730126	08		V	F	080		L		1
730126	09		V	F	080		L		1
730126	31			F	078		R		1
730126	32			M	084		L		1
730126	32			F	081		L		1
730126	33			F	071		L		1
730126	33			F	080		R		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730126	33			F	068		L		1
730126	34			M	079		R		
730126	34			M	095		L		1
730126	34			M	080		R		1
730126	34			F	075		R		1
730126	34			M	076		R		1
730126	34			M	076		L		1
730126	35			F	081		L		
730126	35			F	070		L		
730126	35			M	080		L		1
730126	35			F	078		L		1
730126	35			M	077		L		1
730126	35			F	077		R		1
730126	35			M	086		L		1
730126	35			M	070		L		1
730126	35			M	074		R		1
730126	36			M	074		L		
730126	36			M	088		L		
730126	36			F	073		R		
730126	36			F	070		R		1
730126	36			F	080		L		1
730126	36			M	080		L		1
730126	37			M	080		R		
730126	37			F	071				
730126	37			F	076		R		
730126	37			M	078		R		
730126	37			M	077		L		1
730126	38			F	072		R		
730126	38			F	070		L		1
730126	38			M	068		L		1
730126	38			M	073		R		1
730126	38			F	083		R		1
730126	39			F	076		L		1
730126	39			M	067		L		1
730126	39			F	080		R		1
730126	40			F	075		L		
730126	40			M	075		R		
730126	40			M	074		R		1
730126	40			M	075		L		1
730126	40			M	073		L		1
730126	40			M	078		L		1
730126	40			F	070		L		1
730205	10	01	V	M	078		R		1
730205	10	01	V	M	070		R		1
730205	10	01	V	F	071		R		1
730205	10	01	V	F	073		L		1
730205	10	02	V	F	071		R		1
730205	10	03	V	M	076		R		1
730205	10	03	V	F	077		L		1
730205	10	03	V	F	077		L		1
730205	10	04	V	M	075		R		

LOBSTER DATA - SURFACE HAULED TRAPS
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DATE	SOD	T#	V	S	LEN	WID	H	E	D
730214	09	33		M	078		R		1
730214	09	33		M	087		L		1
730214	09	33		M	074		L		1
730214	09	33		F	067		L		1
730214	09	34		M	079		R		
730214	09	34		M	066		R		1
730214	09	34		F	070		R		1
730214	09	35		M	078		L		
730214	09	37		M	069		L		
730220	06	31		F	077		R		
730220	06	31		F	063		L		
730220	06	31		F	075		R		1
730220	06	31		M	074		L		1
730220	06	32		M	079		R		
730220	06	32		F	063		L		1
730220	06	32		F	079		R		1
730220	06	32		F	087		R		1
730220	06	33		F	085		R		1
730220	06	33		F	088		L		1
730220	06	33		M	072		L		1
730220	06	34		M	084		R		1
730220	06	34		M	068		L		1
730226	06	06	V	M	072		L		1
730226	06	10	V	M	074		L		1
730226	06	33		F	064		R		1
730226	06	33		F	064		R		1
730226	06	34		F	076		R		1
730226	06	34		F	078		L		1
730226	06	34		M	082		R		1
730226	06	35		F	062		R		1
730226	06	37		F	067		L		1
730309	10	05	V	F	069		R	3	1
730309	10	08	V	M	068		R		1
730309	10	08	V	F	083		L		1
730309	10	09	V	M	080		R		1
730309	10	09	V	M	080		R		1
730309	10	35		M	077		L		
730315	06	31		F	075		R		
730315	06	35		F	078		L		
730320	05	01	V	M	081		R		
730320	05	07	V	M	081				
730320	05	08	V	M	065		R		1
730320	05	09	V	M	071		R		1
730320	05	09	V	F	077		R		1
730320	05	10	V	M	076		L		1
730320	05	10	V	M	072		L		1
730320	08	10	V	M	071		R		1
730320	05	31		F	075		R		1
730320	05	32		M	071		R		1
730320	05	33		M	087		L		1
730320	05	34		F	092		L		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730328	08	05	V	F	075		R		1
730328	08	31		M	076		R		
730328	08	31		F	081		L		1
730328	08	31		M	061		R		1
730328	08	32		M	074		L		1
730328	08	39		F	064		L		
730403	06	01	V	F	079		R		1
730403	06	02	V	F	073		R		1
730403	06	02	V	M	077		R		1
730403	06	02	V	F	070		L		1
730403	06	02	V	M	077		R		1
730403	06	03	V	M	074		L		1
730403	06	04	V	F	076				
730403	06	04	V	M	070		R		1
730403	06	05	V	M	060		R		1
730403	06	05	V	M	075		R		1
730403	06	06	V	M	077		R		1
730403	06	07	V	M	089		L		1
730403	06	08	V	F	079		R		
730403	06	08	V	F	089		L		1
730403	06	09	V	M	070		L		1
730403	06	10	V	M	078		R		1
730403	06	10	V	F	072		L		1
730403	06	32		M	067				
730403	06	33		M	063		L		1
730403	06	34		F	071		L		1
730403	06	35		M	079		L		1
730403	06	35		M	077		L		1
730403	06	37		F	080		R		1
730403	06	39		M	077		R		1
730413	10	01	V	F	081		R		
730413	10	01	V	M	095		R		1
730413	10	01	V	M	081		R		1
730413	10	01	V	F	075		L		1
730413	10	01	V	F	081		L		1
730413	10	01	V	F	071		R		1
730413	10	01	V	F	071		R		1
730413	10	02	V	M	075		L		
730413	10	02	V	F	073		L		1
730413	10	02	V	F	075		L		1
730413	10	02	V	M	072		L		1
730413	10	03	V	M	081		L		1
730413	10	03	V	M	076		R		1
730413	10	03	V	F	075		R		1
730413	10	04	V	F	080		R		
730413	10	04	V	M	076		R		1
730413	10	04	V	F	090		R		1
730413	10	04	V	M	071		L		1
730413	10	05	V	M	077		L		1
730413	10	05	V	F	081		L		1
730413	10	06	V	F	079		R		

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730413	10	06	V	M	081		L		1
730413	10	06	V	F	077		R		1
730413	10	06	V	M	080		L		1
730413	10	06	V	M	079		L		1
730413	10	10	V	M	081		L		1
730413	10	31		F	074		R		
730413	10	31		F	073		L		1
730413	10	31		F	069		L		1
730413	10	31		M	077		L		1
730413	10	32		M	079		R		
730413	10	32		M	073		R		1
730413	10	33		M	087		R		
730413	10	33		M	077		L		
730413	10	33		F	065		L		1
730413	10	33		F	074		R		1
730413	10	33		F	067		R		1
730413	10	34		M	074		L		
730413	10	34		F	081		L		1
730413	10	34		M	072		R		1
730413	10	34		M	065		L		1
730413	10	34		F	072		R		1
730413	10	34		F	063		L		1
730413	10	34		F	065		R		1
730413	10	35		M	081		R		
730413	10	36		M	076		R		
730413	10	36		F	080		L		1
730413	10	36		F	088		R		1
730413	10	36		F	078		L		1
730413	10	36		M	065		L		1
730413	10	36		M	072		L		1
730413	10	36		F	068		R		1
730413	10	37		M	077		R		1
730413	10	37		F	080		R		1
730413	10	37		F	077		R		1
730413	10	38		M	072		L		
730413	10	38		F	080		R		1
730413	10	38		M	072		L		1
730413	10	38		M	068		L		1
730413	10	38		F	075		R		1
730413	10	38		F	074		R		1
730413	10	39		F	086		L		
730413	10	39		F	075		L		
730413	10	39		F	078		R		1
730413	10	39		F	081		R		1
730413	10	39		M	081		L		1
730413	10	39		F	084		R		1
730413	10	40		M	089		R		1
730413	10	40		M	077		R		1
730413	10	40		F	075		R		1
730413	10	40		M	077		L		1
730413	10	40		F	082		R		1

LOBSTER DATA - SURFACE HAULED TRAPS
BOOTHBAY HARBOR, MAINE 1973

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730413	10	40		F	066		L		1
730413	10	40		F	076		L		1
730413	10	40		F	081		L		1
730413	10	40		F	080		R		1
730413	10	40		M	075		L		1
730418	05	01	V	F	072		L		1
730418	05	02	V	F	077		L		1
730418	05	02	V	F	077		R		1
730418	05	05	V	M	072		L		1
730418	05	05	V	F	072		L		1
730418	05	05	V	M	071		L		1
730418	05	05	V	M	070		L		1
730418	05	05	V	F	075		L		1
730418	05	06	V	F	078		L		1
730418	05	06	V	M	080		R		1
730418	05	06	V	F	076		L		1
730418	05	08	V	M	078		R		1
730418	05	08	V	F	073		R		1
730418	05	08	V	F	081		L		1
730418	05	09	V	F	078		L		1
730418	05	09	V	F	078		L		1
730418	05	09	V	F	081		L		1
730418	05	09	V	M	073		R		1
730418	05	31		M	077		L		
730418	05	31		F	087		L		1
730418	05	31		F	066		R		1
730418	05	32		M	081		R		
730418	05	32		F	074		R		1
730418	05	32		F	071		L		1
730418	05	32		F	077		L		1
730418	05	33		M	075		L		
730418	05	34		F	083		L		1
730418	05	34		M	073		L		1
730418	05	35		F	092		L		1
730418	05	35		M	074		L		1
730418	05	35		M	074		L		1
730424	06	01	V	M	066		L		
730424	06	02	V	F	086		L		
730424	06	02	V	F	075		L		1
730424	06	02	V	F	071		L		1
730424	06	03	V	M	077		R		
730424	06	03	V	F	097		R		1
730424	06	03	V	F	075		L		1
730424	06	03	V	M	077		R		1
730424	06	03	V	M	080		L		1
730424	06	04	V	M	074		R		
730424	06	04	V	F	079		L		
730424	06	04	V	M	080		L		1
730424	06	04	V	F	069		R		1
730424	06	05	V	M	078		L		1
730424	06	06	V	M	081		R		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730424	06	06	V	M	081		L		1
730424	06	06	V	F	080		L		1
730424	06	07	V	M	074		L		1
730424	06	07	V	F	077		L		1
730424	06	08	V	M	072		R		1
730424	06	08	V	F	085		R		1
730424	06	08	V	M	077		L		1
730424	06	08	V	M	076		L		1
730424	06	09	V	M	080		L		
730424	06	09	V	M	079		L		
730424	06	09	V	F	077		L		1
730424	06	09	V	F	080		L		1
730424	06	10	V	M	075		L		
730424	06	10	V	F	063		L		
730424	06	10	V	M	072		L		1
730424	06	10	V	M	074		R		1
730424	06	33		M	066		R		
730424	06	33		F	070		R		1
730424	06	34		F	076		R		
730424	06	34		F	063		L		1
730424	06	34		M	080		L		1
730424	06	34		M	069		L		1
730424	06	35		M	078		L		
730424	06	35		F	062		F		1
730424	06	36		F	066		R		1
730424	06	37		M	071		L		1
730424	06	37		F	079		L		1
730424	06	37		M	065		R		1
730424	06	37		F	077		R		1
730424	06	38		F	079		R		1
730424	06	38		M	074		R		1
730424	06	38		F	065		R		1
730424	06	38		M	082		R		1
730424	06	39		M	080		R		1
730424	06	39		M	070		L		1
730424	06	39		M	077		L		1
730424	06	40		M	079		R		
730424	06	40		M	076		L		1
730424	06	40		M	080		L		1
730424	06	40		M	077		L		1
730430	06	01	V	M	071		R		
730430	06	01	V	M	094		L		1
730430	06	01	V	M	072		L		1
730430	06	02	V	F	078		L		
730430	06	02	V	F	084		R		1
730430	06	02	V	F	090		L		1
730430	06	02	V	M	071		R		1
730430	06	02	V	F	074		R		1
730430	06	03	V	F	077		L		
730430	06	03	V	M	067		R		
730430	06	04	V	M	081		L		

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730430	06	04	V	M	079		R		1
730430	06	04	V	F	079		L		1
730430	06	04	V	M	076		L		1
730430	06	06	V	M	083		R		1
730430	06	06	V	M	087		R		1
730430	06	06	V	F	076		L		1
730430	06	06	V	F	084		R		1
730430	06	06	V	M	077		L		1
730430	06	06	V	F	077		R		1
730430	06	06	V	F	074		R		1
730430	06	07	V	M	077		R		
730430	06	07	V	M	076		R		1
730430	06	07	V	M	080		L		1
730430	06	07	V	M	081		L		1
730430	06	07	V	F	107		R		1
730430	06	09	V	F	087		R		
730430	06	09	V	M	073		L		1
730430	06	09	V	F	085		L		1
730430	06	09	V	F	075		R		1
730430	06	09	V	F	074		L		1
730430	06	09	V	F	078		R		1
730430	06	09	V	M	072		R		1
730430	06	09	V	M	075		R		1
730430	06	10	V	M	082		R		1
730430	06	10	V	M	072		R		1
730430	06	31		F	079		L		
730430	06	31		F	060		L		1
730430	06	31		F	078		R		1
730430	06	31		M	064		L		1
730430	06	31		F	077		L		1
730430	06	31		F	085		L		1
730430	06	31		M	070		L		1
730430	06	33		M	078		R		
730430	06	33		M	071		L		1
730430	06	33		M	067		L		1
730430	06	34		F	076		R		1
730430	06	34		M	073		L		1
730430	06	34		F	071		L		1
730430	06	34		M	068		L		1
730430	06	34		M	070		L		1
730430	06	35		M	084		L		1
730430	06	35		M	076		L		1
730430	06	36		F	077		R		1
730430	06	36		F	069		L		1
730430	06	36		F	075		R		1
730430	06	36		M	068		L		1
730430	06	37		F	091		R		1
730430	06	37		M	073		L		1
730430	06	37		M	082		L		1
730430	06	37		M	075		R		1
730430	06	38		M	076		R		

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DATE	SOD	T#	V	S	LEN	WID	H	E	D
730430	06	38		F	076		L		1
730430	06	38		M	075		R		1
730430	06	38		F	073		L		1
730430	06	39		M	069		L		1
730430	06	39		F	076		R		1
730430	06	39		F	074		L		1
730430	06	39		F	070		L		1
730430	06	39		M	068		L		1
730430	06	39		F	067		R		1
730507	07	01	V	F	080		R		
730507	07	01	V	F	069		R		
730507	07	01	V	M	079		L		
730507	07	01	V	F	077		R		1
730507	07	01	V	M	071		L		1
730507	07	01	V	F	074		R		1
730507	07	01	V	F	073		L		1
730507	07	02	V	F	072		L		
730507	07	02	V	M	074		L		1
730507	07	02	V	M	073		L		1
730507	07	02	V	F	071		R		1
730507	07	02	V	F	079		L		1
730507	07	02	V	M	078		R		1
730507	07	02	V	M	079		L		1
730507	07	03	V	M	072		R		
730507	07	03	V	M	081		R		1
730507	07	03	V	F	080		L		1
730507	07	03	V	M	077		R		1
730507	07	03	V	F	075		L		1
730507	07	03	V	F	075		R		1
730507	07	04	V	F	071		L		1
730507	07	04	V	M	070		R		1
730507	07	05	V	F	078		R		1
730507	07	05	V	M	068		R		1
730507	07	06	V	M	080		R		1
730507	07	06	V	F	079		R		1
730507	07	06	V	M	071		L		1
730507	07	06	V	M	075		L		1
730507	07	08	V	F	068		L		
730507	07	08	V	F	073		R		1
730507	07	08	V	M	078		R		1
730507	07	08	V	F	081		L		1
730507	07	09	V	F	074		L		
730507	07	09	V	F	077		R		1
730507	07	09	V	F	080		R		1
730507	07	09	V	F	072		L		1
730507	07	09	V	M	075		L		1
730507	07	09	V	F	077		R		1
730507	07	09	V	M	081		R		1
730507	07	10	V	M	059		L		1
730507	07	10	V	F	081		R		1
730507	07	10	V	M	072		R		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730507	07	10	V	M	065		L		1
730507	07	31		F	072		L		
730507	07	31		F	067		R		1
730507	07	31		M	076		R		1
730507	07	31		F	068		L		1
730507	07	31		F	074		L		1
730507	07	31		M	072		L		1
730507	07	31		F	076		R		1
730507	07	31		F	071		R		1
730507	07	32		M	073		R		
730507	07	32		M	075		R		
730507	07	32		M	071		L		1
730507	07	32		F	064		L		1
730507	07	32		F	081		R		1
730507	07	32		F	066		L		1
730507	07	32		M	077		R		1
730507	07	32		M	079		R		1
730507	07	32		M	080		L		1
730507	07	33		F	073		L		
730507	07	33		M	074		R		1
730507	07	33		F	072		L		1
730507	07	33		M	077		R		1
730507	07	33		F	069		L		1
730507	07	33		F	071		R		1
730507	07	33		F	066		L		1
730507	07	33		F	077		R		1
730507	07	34		F	073		R		1
730507	07	34		F	078		R		1
730507	07	34		M	080		R		1
730507	07	34		M	072		R		1
730507	07	34		F	077		R		1
730507	07	34		M	073		R		1
730507	07	34		M	080		L		1
730507	07	34		F	064		L		1
730507	07	35		F	079		L		
730507	07	36		F	091		L		1
730507	07	36		M	074		L		1
730507	07	36		F	074		L		1
730507	07	37		M	068		R		
730507	07	37		F	075		L		1
730507	07	37		F	076		R		1
730507	07	37		F	079		R		1
730507	07	37		M	082		L		1
730507	07	37		F	075		R		1
730507	07	37		F	072		R		1
730507	07	37		M	068		L		1
730507	07	38		M	071		R		1
730507	07	38		F	068		R		1
730507	07	38		M	070		R		1
730507	07	38		F	079		L		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730807	07	38		M	089		R		1
730507	07	38		M	063		L		1
730507	07	39		M	078		R		
730507	07	39		F	076		R		
730507	07	39		F	084		L		1
730507	07	39		F	076		L		1
730507	07	39		F	067		R		1
730507	07	39		M	074		L		1
730507	07	39		M	062		R		1
730507	07	40		M	064		R		1
730507	07	40		F	070		L		1
730507	07	40		F	074		L		1
730507	07	40		F	080		R		1
730807	07	40		M	074		R		1
730507	07	40		F	117		R	1	1
730514	07	01	V	M	074		R		1
730514	07	03	V	F	078		L		1
730514	07	03	V	M	075		L		1
730514	07	03	V	F	078		L		1
730514	07	04	V	F	080		R		1
730514	07	04	V	M	079		L		1
730514	07	04	V	F	070		R		1
730514	07	04	V	F	079		R		1
730514	07	04	V	M	069		L		1
730514	07	06	V	M	073		R		1
730514	07	06	V	M	076		L		1
730514	07	06	V	M	073		R		1
730514	07	06	V	F	085		L		1
730514	07	06	V	M	077		L		1
730514	07	06	V	M	089		L		1
730514	07	06	V	F	076		R		1
730514	07	06	V	M	070		R		1
730514	07	07	V	F	077		L		1
730514	07	07	V	M	080		R		1
730514	07	07	V	F	081		L		1
730514	07	07	V	F	079		R		1
730514	07	08	V	F	088		R		1
730514	07	08	V	F	075		L		1
730514	07	08	V	F	075		R		1
730514	07	08	V	M	081		L		1
730514	07	08	V	F	080		R		1
730514	07	09	V	F	078		R		
730514	07	09	V	M	069		L		
730514	07	09	V	M	079		R		1
730514	07	09	V	F	087		R		1
730514	07	09	V	M	077		R		1
730514	07	31		F	080		R		1
730514	07	31		F	075		R		1
730514	07	31		M	070		R		1
730514	07	31		M	065		L		1
730514	07	31		F	074		R		1

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DATE	SSD	T#	V	S	LEN	WID	H	E	D
730514	07	31		F	080		L		1
730514	07	31		M	073		L		1
730514	07	32		M	075		L		1
730514	07	32		M	077		L		1
730514	07	33		M	068		L		1
730514	07	33		F	087		R		1
730514	07	33		M	069		L		1
730514	07	34		M	077				
730514	07	34		F	084		R		1
730514	07	35		M	078		L		1
730514	07	36		M	081		L		
730514	07	36		F	065		L		1
730514	07	36		M	076		R		1
730514	07	36		M	069		L		1
730514	07	36		F	068		L		1
730514	07	37		F	079		L		1
730514	07	37		F	082		R		1
730514	07	37		F	068		R		1
730514	07	37		F	074		R		1
730514	07	37		M	067		L		1
730514	07	38		F	082		R		1
730514	07	38		M	064		R		1
730514	07	38		F	067		R		1
730514	07	38		M	070		L		1
730514	07	38		M	077		R		1
730514	07	38		F	069		L		1
730514	07	38		F	065		L		1
730514	07	38		M	076		R		1
730514	07	39		F	074		R		
730514	07	39		F	072		L		1
730514	07	39		F	072		R		1
730514	07	40		M	079		R		
730514	07	40		F	070				
730514	07	40		F	092		R		1
730514	07	40		M	080		L		1
730514	07	40		M	082		L		1
730523	07	03	V	F	079		R		
730523	07	03	V	M	092		L		1
730523	07	04	V	M	074		R		
730523	07	04	V	M	072		R		
730523	07	04	V	F	081		L		1
730523	07	04	V	F	073		L		1
730523	07	04	V	M	071		R		1
730523	07	05	V	F	069		R		
730523	07	05	V	M	074		L		
730523	07	05	V	M	078		L		
730523	07	05	V	F	076		R		1
730523	07	05	V	F	075		R		1
730523	07	05	V	F	072		L		1
730523	07	05	V	F	077		L		1
730523	07	05	V	M	076		R		1

DATE	SSD	T#	V	S	LEN	WID	H	E	D
730523	07	06	V	F	078		L		
730523	07	06	V	M	082		L		1
730523	07	06	V	F	079		L		1
730523	07	06	V	M	076		R		1
730523	07	07	V	M	081		L		
730523	07	07	V	M	080		L		1
730523	07	09	V	M	071		R		
730523	07	09	V	F	072		R		
730523	07	09	V	M	078		R		
730523	07	09	V	M	075		R		1
730523	07	10	V	M	073		R		1
730523	07	10	V	M	074		L		1
730523	07	31		M	075		R		1
730523	07	31		M	065		R		1
730523	07	31		M	080		L		1
730523	07	32		M	070		R		
730523	07	32		M	070		L		1
730523	07	32		M	074		L		1
730523	07	32		M	070		R		1
730523	07	32		F	065		L		1
730523	07	32		M	065		R		1
730523	07	32		F	072		R		1
730523	07	32		M	067		R		1
730523	07	32		M	065		R		1
730523	07	33		M	075		R		1
730523	07	33		M	070		L		1
730523	07	33		M	062		R		1
730523	07	33		M	064		R		1
730523	07	34		F	062		R		
730523	07	34		M	083		R		
730523	07	34		M	080		L		
730523	07	34		M	075		R		1
730523	07	34		F	061		R		1
730523	07	34		M	078		R		1
730523	07	34		F	066		L		1
730523	07	37		F	084		L		
730523	07	37		F	087		L		1
730523	07	37		F	078		L		1
730523	07	37		M	082		L		1
730523	07	37		F	089		R		1
730523	07	37		F	067		L		1
730523	07	37		F	065		L		1
730523	07	37		M	071		R		1
730523	07	37		M	082		R		1
730523	07	38		M	073		R		
730523	07	38		F	070		R		
730523	07	38		F	060		R		
730523	07	38		F	074		L		1
730523	07	38		F	068		R		1
730523	07	38		F	077		L		1
730523	07	38		M	065		R		1

DATE	SSD	T#	V	S	LEN	WID	H	E	D
730523	07	39		F	079		L		
730523	07	39		F	071		R		
730523	07	40		M	080		L		1
730523	07	40		F	077		R		1
730604	12	01	V	F	069				
730604	12	01	V	F	080		L		1
730604	12	02	V	M	073		R		
730604	12	02	V	F	081		R		1
730604	12	02	V	M	072		R		1
730604	12	02	V	F	081		R		1
730604	12	03	V	M	074		R		1
730604	12	03	V	M	086		L		1
730604	12	03	V	F	081		R		1
730604	12	03	V	M	080		L		1
730604	12	03	V	F	080		L		1
730604	12	04	V	F	080		L		
730604	12	04	V	M	079		R		
730604	12	04	V	M	077		R		
730604	12	04	V	M	075		R		
730604	12	04	V	F	076		L		1
730604	12	05	V	M	080		L		
730604	12	05	V	F	070		R		1
730604	12	06	V	F	076		L		
730604	12	06	V	F	086		R		1
730604	12	06	V	M	074		R		1
730604	12	07	V	F	074		L		
730604	12	07	V	F	075		R		1
730604	12	08	V	F	080		R		
730604	12	08	V	F	074		R		1
730604	12	09	V	F	081		L		1
730604	12	09	V	F	079		L		1
730604	12	09	V	M	080		R		1
730604	12	10	V	M	077		L		1
730604	12	10	V	M	080		L		1
730604	12	10	V	F	092		L		1
730604	12	10	V	M	075		R		1
730604	12	10	V	M	071		R		1
730604	12	10	V	F	082		R		1
730604	12	10	V	M	074		L		1
730604	12	31		M	072		L		
730604	12	31		F	070		L		
730604	12	31		F	075		L		1
730604	12	33		F	080		L		1
730604	12	36		F	078		R		
730604	12	36		F	079				
730604	12	36		F	088		L		1
730604	12	36		F	073		L		1
730604	12	36		M	065		L		1
730604	12	36		M	070		L		1
730604	12	37		M	078		R		
730604	12	37		F	076		L		1

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DATE	SSD	T#	V	S	LEN	WID	H	E	D
730604	12	37		M	080		L		1
730604	12	37		F	076		R		1
730604	12	37		F	069		R		1
730604	12	38		M	066		L		
730604	12	38		F	073		R		1
730604	12	38		M	075		L		1
730604	12	39		M	090		R		1
730604	12	39		F	081		R		1
730604	12	39		M	068		R		1
730604	12	40		F	070				
730604	12	40		F	076		R		
730604	12	40		F	086		L		
730604	12	40		M	071		L		
730604	12	40		M	076		R		1
730604	12	40		M	089		L		1
730604	12	40		M	070		R		1
730611	07	01	V	M	081		L		1
730611	07	01	V	M	074		L		1
730611	07	02	V	F	077		L		
730611	07	02	V	M	078		L		1
730611	07	02	V	F	070		R		1
730611	07	02	V	F	069		R		1
730611	07	03	V	F	078		R		
730611	07	03	V	F	080		R		1
730611	07	03	V	F	087		L		1
730611	07	04	V	F	079		L		
730611	07	04	V	F	074		R		1
730611	07	05	V	F	069		R		
730611	07	05	V	F	069		L		1
730611	07	05	V	M	062		L		1
730611	07	06	V	M	078		L		1
730611	07	06	V	F	071		L		1
730611	07	06	V	M	079		R		1
730611	07	06	V	M	080		L		1
730611	07	08	V	M	068		R		1
730611	07	08	V	M	076		R		1
730611	07	08	V	F	076		R		1
730611	07	08	V	F	078		L		1
730611	07	09	V	M	089		L		
730611	07	09	V	M	077		R		
730611	07	09	V	M	076		R		1
730611	07	09	V	M	077		R		1
730611	07	10	V	M	080		L		1
730611	07	10	V	M	071		R		1
730611	07	31		M	075		R		1
730611	07	31		M	064		L		1
730611	07	32		M	072		R		1
730611	07	33		M	073		R		1
730611	07	34		F	070		R		1
730611	07	35		F	077		L		
730611	07	36		M	067		L		1

DATE	SSD	T#	V	S	LEN	WID	H	E	D
730611	07	37		M	073		R		1
730611	07	38		M	079		L		1
730611	07	39		F	080		R		
730611	07	39		F	079		R		1
730611	07	39		F	061		R		1
730611	07	39		M	075		R		1
730611	07	39		M	073		L		1
730611	07	39		F	079		R		1
730611	07	40		M	074		R		
730611	07	40		M	073		R		
730611	07	40		F	083		L		1
730611	07	40		M	073		R		1
730611	07	40		M	070		R		1
730611	07	40		M	074		R		1
730618	07	01	V	F	079		L		1
730618	07	01	V	F	078		L		1
730618	07	03	V	M	088		L		1
730618	07	04	V	F	076				
730618	07	05	V	F	072		L		1
730618	07	05	V	F	073		L		1
730618	07	05	V	M	067		L		1
730618	07	06	V	F	076		R		1
730618	07	06	V	M	078		R		1
730618	07	08	V	F	086		R		1
730618	07	08	V	F	077		L		1
730618	07	09	V	F	078		L		1
730618	07	09	V	M	074		R		1
730618	07	10	V	M	074		R		1
730618	07	10	V	F	077		R		1
730618	07	10	V	F	076		R		1
730618	07	10	V	M	070		R		1
730618	07	31		F	073		R		
730618	07	33		F	079		L		1
730618	07	34		M	070		L		1
730618	07	35		F	067				
730618	07	35		M	078		R		1
730618	07	36		M	068		R		1
730618	07	36		F	076		R		1
730618	07	36		F	066		R		1
730618	07	36		F	068		R		1
730618	07	38		F	076		L		
730618	07	38		F	080		L		1
730618	07	38		M	077		R		1
730618	07	38		F	065		L		1
730618	07	38		F	065		L		1
730618	07	38		F	071		L		1
730618	07	39		M	076		R		1
730618	07	39		F	074		R		1
730618	07	40		F	069		L		
730618	07	40		M	079		R		1
730627	09	01	V	F	116		R		1

DATE	SSD	T#	V	S	LEN	WID	H	E	D
730627	09	02	V	M	078		R		1
730627	09	02	V	M	072		L		1
730627	09	02	V	F	096		L		1
730627	09	03	V	F	078		R		1
730627	09	03	V	F	075		R		1
730627	09	04	V	F	076		R		1
730627	09	04	V	F	077		L		1
730627	09	04	V	F	078		R		1
730627	09	04	V	F	074		R		1
730627	09	04	V	F	073		R		1
730627	09	04	V	M	076		R		1
730627	09	05	V	F	073		L		1
730627	09	05	V	M	074		L		1
730627	09	06	V	F	078		R		1
730627	09	08	V	F	067		R		1
730627	09	08	V	F	070		L		1
730627	09	08	V	F	069		R		1
730627	09	09	V	M	072		R		1
730627	09	10	V	F	074		L		1
730627	09	10	V	F	078		R		1
730627	09	31		M	074		L		1
730627	09	33		M	075		R		
730627	09	33		M	067		R		
730627	09	34		F	081		L		1
730627	09	34		M	080		L		1
730627	09	34		M	070		L		1
730627	09	35		F	078		R		
730627	09	35		F	073		R		1
730627	09	35		M	080		L		1
730627	09	35		M	076		L		1
730627	09	35		F	074		L		1
730627	09	35		M	070		R		1
730627	09	36		F	080		L		
730627	09	36		F	081		L		1
730627	09	36		M	079		R		1
730627	09	36		M	065		L		1
730627	09	36		M	077		R		1
730627	09	36		F	062		R		1
730627	09	36		M	070		L		1
730627	07	36		F	061		L		1
730627	07	36		F	064		R		1
730627	07	36		F	071		L		1
730627	07	36		F	063		R		1
730627	09	37		M	071				
730627	07	37		M	063		L		
730627	09	37		F	078		L		1
730627	09	37		F	079		L		1
730627	09	37		M	072		R		1
730627	09	38		M	081		L		
730627	09	38		M	078		R		
730627	09	38		F	078		R		

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DATE	SOD	T#	V	S	LEN	WID	H	E	D
730627	09	38		F	078		L		
730627	07	38		M	072		L		
730627	09	38		M	077		L		1
730627	09	38		F	075		R		1
730627	07	38		M	080		L		1
730627	07	38		M	069		R		1
730627	09	39		F	075		R		
730627	09	39		M	073		L		1
730627	09	39		F	084		R		1
730627	07	39		M	078		L		1
730627	07	39		M	078		L		1
730627	09	40		M	079		R		1
730627	09	40		M	080		L		1
730703	07	01	V	F	070		L		1
730703	07	01	V	F	073		L		1
730703	07	01	V	F	066		R		1
730703	07	01	V	F	071		R		1
730703	07	02	V	M	073		L		1
730703	07	03	V	F	078		L		1
730703	07	04	V	F	073		L		
730703	07	04	V	F	078		R		1
730703	07	04	V	M	070		R		1
730703	07	05	V	M	073		R		1
730703	07	05	V	M	071		R		1
730703	07	05	V	M	063		L		1
730703	07	05	V	M	063		R		1
730703	07	05	V	F	071		L		1
730703	07	06	V	F	080		L		1
730703	07	06	V	F	073		L		1
730703	07	06	V	M	073		L		1
730703	07	06	V	F	073		L		1
730703	07	07	V	F	073		L		
730703	07	07	V	M	075		R		1
730703	07	07	V	M	078		L		1
730703	07	07	V	F	079		L		1
730703	07	08	V	M	081		R		1
730703	07	08	V	M	069		L		1
730703	07	08	V	M	069		L		1
730703	07	08	V	F	073		R		1
730703	07	08	V	F	065		L		1
730703	07	09	V	M	071		L		
730703	07	09	V	F	071		R		1
730703	07	09	V	F	072		L		1
730703	07	09	V	M	080		L		1
730703	07	10	V	F	008		L		
730703	07	10	V	F	068		R		1
730703	07	10	V	M	074		R		1
730703	07	10	V	F	072				1
730703	07	10	V	F	076		L		1
730703	07	10	V	F	076		R		1
730703	07	10	V	F	071		R		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730703	07	31		F	071		L		
730703	07	31			076		L		1
730703	07	32		M	067		L		
730703	07	33		F	078		R		1
730710	07	01	V	M	072		L		
730710	07	03	V	F	076		L		
730710	07	03	V	F	078		L		1
730710	07	04	V	F	074			1	
730710	07	04	V	M	074		L		
730710	07	04	V	F	139		R		
730710	07	04	V	F	079		L		
730710	07	05	V	F	077		L		
730710	07	05	V	M	073		L		1
730710	07	05	V	M	074		R		1
730710	07	05	V	M	073		R		1
730710	07	06	V	F	081		L		1
730710	07	06	V	F	077		L		1
730710	07	07	V	M	081		R		1
730710	07	08	V	M	066		L		1
730710	07	08	V	F	071		L		1
730710	07	08	V	F	063		L		1
730710	07	09	V	M	079		L		
730710	07	09	V	F	077		R		1
730710	07	10	V	F	093		L		
730710	07	10	V	M	068		L		1
730710	07	10	V	M	080		L		1
730710	07	32		M	080		R		1
730710	07	32		F	073		R		1
730710	07	33		F	073		R		
730710	07	33		F	078		L		1
730710	07	33		F	067		R		1
730710	07	34		F	080		R		
730710	07	34		F	077		R		
730710	07	34		M	066		L		
730710	07	34		M	067		R		1
730710	07	34		M	074		R		1
730710	07	34		F	080		L		1
730710	07	35		M	080		L		
730710	07	35		F	079		R		1
730710	07	35		F	091		R		1
730710	07	35		M	081		R		1
730710	07	35		M	079		R		1
730710	07	36		M	078		L		
730710	07	36		F	075		R		1
730710	07	37		F	073		R		1
730710	07	37		F	080		R		1
730710	07	37		M	072		L		1
730710	07	37		M	077		R		1
730710	07	38		F	075		L		
730710	07	38		M	079		L		1
730710	07	38		F	081		R		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730710	07	38		F	077		R		1
730710	07	38		M	074		L		1
730710	07	38		M	077		R		1
730710	07	38		F	073		L		1
730710	07	39		M	063		R		
730710	07	39		M	080		R		1
730710	07	39		F	080		R		1
730710	07	40		F	078		R		1
730710	07	40		M	075		L		1
730717	07	01	V	F	082		R		
730717	07	01	V	M	082		L		1
730717	07	01	V	M	073		R		1
730717	07	02	V	F	073		R		1
730717	07	03	V	F	081		L		
730717	07	04	V	F	071		L		1
730717	07	04	V	M	080		R		1
730717	07	05	V	M	075		R		1
730717	07	05	V	M	080		L		1
730717	07	05	V	M	075		R		1
730717	07	06	V	M	077		R		1
730717	07	06	V	F	081		L		1
730717	07	06	V	M	080		L		1
730717	07	06	V	F	074		L		1
730717	07	06	V	M	076		L		1
730717	07	07	V	F	080		L		1
730717	07	08	V	M	073		R		1
730717	07	09	V	F	072		L		1
730717	07	09	V	F	084		R		1
730717	07	31		F	066		R		1
730717	07	31		F	076		L		1
730717	07	32		F	065		L		1
730717	07	32		M	073		R		1
730717	07	33		F	073		R		1
730717	07	33		F	068		R		1
730717	07	33		M	076		L		1
730717	07	33		M	071		R		1
730717	07	34		M	077		L		1
730717	07	34		F	072		R		1
730717	07	34		F	078		L		1
730717	07	35		M	078		R		
730717	07	35		F	077		L		
730717	07	35		F	113		L		1
730717	07	35		F	066		L		1
730717	07	35		F	073		R		1
730717	07	35		M	064		R		1
730717	07	35		M	078		R		1
730717	07	36		F	079		L		1
730717	07	36		F	082		R		1
730717	07	36		F	065		L		1
730717	07	36		M	075		R		1
730717	07	36		F	081		L		1

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DATE	SOD	T#	V	S	LEN	WID	H	E	D
730717	07	36		M	072		R		1
730717	07	36		F	071		R		1
730717	07	36		M	070		L		1
730717	07	37		M	063		L		
730717	07	37		M	096		R		
730717	07	37		F	079		R		1
730717	07	37		M	065		L		1
730717	07	37		F	090		L		1
730717	07	37		M	082		L		1
730717	07	37		M	079		L		1
730717	07	38		F	080		R		
730717	07	38		M	073		L		1
730717	07	38		M	071		R		1
730717	07	38		M	074		L		1
730717	07	39		F	078		R		
730717	07	39		F	071		R		1
730717	07	39		F	079		L		1
730717	07	39		M	080		L		1
730717	07	39		M	075		R		1
730717	07	39		M	080		L		1
730717	07	40		F	066		L		1
730717	07	40		M	068		R		1
730717	07	40		F	074		R		1
730717	07	40		F	068		R		1
730717	07	40		F	092		R		1
730723	06	01	V	M	076		R		1
730723	06	02	V	F	092		R		1
730723	06	03	V	F	079		L		1
730723	06	04	V	M	072		L		
730723	06	04	V	F	026		L		1
730723	06	05	V	M	078		L		
730723	06	05	V	F	075		L		
730723	06	05	V	F	078		L		1
730723	06	05	V	F	079		L		1
730723	06	05	V	M	088		L		1
730723	06	05	V	F	080		L		1
730723	06	07	V	M	089		R		1
730723	06	07	V	F	079		R		1
730723	06	07	V	F	084		L		1
730723	06	07	V	M	090		R		1
730723	06	08	V	F	078		R		1
730723	06	08	V	F	081		L		1
730723	06	09	V	F	078		L		1
730723	06	09	V	F	079		L		1
730723	06	09	V	M	078		R		1
730723	06	09	V	F	079		R		1
730723	06	10	V	F	076		L		1
730723	06	10	V	F	073		L		1
730723	06	10	V	M	083		L		1
730723	06	31		F	075		L		1
730723	06	31		F	076		L		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730723	06	31		M	074		L		1
730723	06	32		F	078		L		1
730723	06	33		F	076		L		1
730723	06	33		M	074		R		1
730723	06	34		M	081		R		1
730723	06	34		M	066		R		1
730723	06	34		M	066		L		1
730723	06	35		F	080		R		1
730723	06	35		F	063		R		1
730723	06	35		F	065		R		1
730723	06	35		M	062		R		1
730723	06	36		F	074		L		
730723	06	36		F	094		R		
730723	06	36		F	080		R		1
730723	06	36		F	029		L		1
730723	06	36		F	087		L		1
730723	06	36		M	078		R		1
730723	06	36		M	072		L		1
730723	06	37		M	075		R		1
730723	06	37		M	076		L		1
730723	06	37		F	072		L		1
730723	06	37		M	073		L		1
730723	06	39		F	083		R		1
730723	06	39		F	074		L		1
730723	06	40		F	080		R		1
730723	06	40		M	094		R		1
730723	06	40		F	075		R		1
730723	06	40		F	065		R		1
730723	06	40		M	073		R		1
730731	08	01	V	M	080		L		1
730731	08	02	V	F	105		L		
730731	08	02	V	M	078		L		1
730731	08	03	V	F	073		R		
730731	08	04	V	F	073		R		
730731	08	04	V	F	074		R		1
730731	08	05	V	M	092		L		1
730731	08	05	V	M	080		L		1
730731	08	05	V	M	074		L		1
730731	08	05	V	F	078		R		1
730731	08	06	V	F	081		L		1
730731	08	06	V	M	074		R		1
730731	08	07	V	M	090		R		
730731	08	07	V	F	079		L		1
730731	08	10	V	M	079		R		
730731	08	10	V	M	081		R		1
730731	08	10	V	F	080		R		1
730731	08	10	V	M	086		R		1
730731	08	31		F	076		L		
730731	08	31		F	076		L		1
730731	08	31		M	072		R		1
730731	08	31		M	075		L		1
730731	08	31		M	074		L		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730731	08	31		M	093		L		1
730731	08	31		F	086		R		1
730731	08	31		F	078		L		1
730731	08	32		F	070		R		1
730731	08	32		F	076		L		1
730731	08	32		F	072		L		1
730731	08	33		F	064		R		
730731	08	33		M	079		L		1
730731	08	33		F	077		L		1
730731	08	33		M	075		R		1
730731	08	34		M	078		R		1
730731	08	36		M	070		L		
730731	08	36		M	075		R		1
730731	08	36		M	080		L		1
730731	08	39		M	078		L		1
730731	08	39		M	083		R		1
730731	08	40		F	087		L		
730731	08	40		F	079		R		
730731	08	40		M	075		L		1
730731	08	40		F	086		L		1
730731	08	40		F	083		L		1
730731	08	40		M	093		L		1
730731	08	40		M	074		R		1
730806	06	02	V	M	081		L		
730806	06	02	V	M	079		R		1
730806	06	02	V	F	086		R		1
730806	06	03	V	F	081		R		
730806	06	03	V	M	085		R		1
730806	06	04	V	F	069		R		
730806	06	04	V	M	074		R		1
730806	06	04	V	M	080		R		1
730806	06	04	V	F	074		L		1
730806	06	04	V	F	071		L		1
730806	06	04	V	F	081		R		1
730806	06	05	V	F	064		L		
730806	06	05	V	M	079		L		
730806	06	05	V	F	080		L		1
730806	06	05	V	M	069		R		1
730806	06	06	V	F	067		L		
730806	06	06	V	M	084		L		1
730806	06	06	V	F	068		R		1
730806	06	06	V	M	068		L		1
730806	06	06	V	M	077		R		1
730806	06	06	V	M	082		R		1
730806	06	06	V	F	081		R		1
730806	06	06	V	F	089		R		1
730806	06	07	V	F	091		L		1
730806	06	07	V	M	086		R		1
730806	06	07	V	M	077		R		1
730806	06	08	V	F	117		R		
730806	06	08	V	F	073		L		1

LOBSTER DATA - SURFACE HAULED TRAPS
BOOTHBAY HARBOR, MAINE 1973

DATE	SOD	T#	V	S	LEN	WID	H	E	D
730806	06	08	V	F	071		L		1
730806	06	08	V	M	066		R		1
730806	06	08	V	F	070		L		1
730806	06	08	V	F	077		L		1
730806	06	08	V	F	079		R		1
730806	06	08	V	F	079		R		1
730806	06	08	V	M	075		L		1
730806	06	08	V	F	079		L		1
730806	06	08	V	F	080		R		1
730806	06	09	V	M	072		R		1
730806	06	09	V	F	075		R		1
730806	06	09	V	M	070		R		1
730806	06	10	V	F	077		L		
730806	06	10	V	F	081		L		1
730806	06	10	V	F	077		R		1
730806	06	10	V	F	073		L		1
730806	06	10	V	M	065		L		1
730806	06	10	V	M	064		L		1
730806	06	10	V	M	084		R		1
730806	06	31		F	072		L		
730806	06	31		F	069		R		1
730806	06	31		M	078		L		1
730806	06	31		F	067		L		1
730806	06	31		F	081		L		1
730806	06	32		M	072		L		
730806	06	32		F	070		R		
730806	06	32		F	072		R		1
730806	06	32		F	086		R		1
730806	06	33		M	085		R		
730806	06	33		M	076		L		1
730806	06	33		M	091		L		1
730806	06	33		F	068		R		1
730806	06	33		F	080		R		1
730806	06	34		M	073		R		1
730806	06	34		M	073		R		1
730806	06	34		F	079		R		1
730806	06	35		M	078		L		
730806	06	35		F	081		L		
730806	06	35		M	080		R		1
730806	06	35		F	072		L		1
730806	06	35		F	071		L		1
730806	06	35		F	065		L		1
730806	06	35		M	079		R		1
730817	11	01	V	F	080		L		
730817	11	01	V	F	080		L		
730817	11	01	V	F	071		L		
730817	11	01	V	F	088		R		1
730817	11	02	V	M	088		R		
730817	11	02	V	F	084		R		
730817	11	02	V	F	077		L		1
730817	11	02	V	F	079		R		1
730817	11	02	V	F	077		L		1
730817	11	02	V	F	081		L		1
730817	11	02	V	F	081		R		1
730817	11	04	V	F	072		R		
730817	11	04	V	F	088		R		1
730817	11	04	V	M	091		R		1
730817	11	04	V	M	074		R		1
730817	11	06	V	M	085		L		
730817	11	06	V	F	078		L		1
730817	11	06	V	F	093		R		1
730817	11	07	V	F	086		L		
730817	11	07	V	M	087		L		1
730817	11	07	V	F	088		R		1
730817	11	08	V	M	080		L		
730817	11	08	V	M	092		L		1
730817	11	08	V	F	088		R		1
730817	11	08	V	F	089		R		1
730817	11	09	V	M	105		L		
730817	11	09	V	F	085		R		1
730817	11	09	V	F	074		L		1
730817	11	09	V	F	077		L		1
730817	11	09	V	F	071		L		1
730817	11	09	V	M	081		L		1
730817	11	09	V	F	090		R		1
730817	11	31		F	080				
730817	11	31		F	092		R		
730817	11	31		M	085		R		1
730817	11	31		F	087		L		1
730817	11	31		M	079		L		1
730817	11	31		F	073		L		1
730817	11	31		F	074		L		1
730817	11	31		F	068		R		1
730817	11	32		F	066		R		
730817	11	32		M	073		L		
730817	11	32		F	077		L		
730817	11	32		M	070		R		1
730817	11	33		F	075		R		
730817	11	33		F	074		R		
730817	11	33		M	076		R		1
730817	11	33		F	063		R		1
730817	11	34		F	082		L		1
730817	11	34		F	075		L		1
730817	11	34		M	073		L		1
730817	11	35		F	088		L		
730817	11	35		M	078		R		1
730817	11	35		M	068		L		1
730817	11	35		M	077				1
730817	11	36		M	079		L		1
730817	11	37		M	078		R		
730817	11	37		M	080		L		
730817	11	37		F	077		L		1
730817	11	37		F	076		L		1
730817	11	37		F	083		R		1
730817	11	38		M	082				
730817	11	38		M	072		L		1
730817	11	38		M	079		R		1
730817	11	38			081		L		1
730817	11	39		F	070		R		1
730817	11	39		M	088		L		1
730817	11	40		M	078		L		1
730817	11	40		F	081		L		1
730821	04	01	V	F	104		R		1
730821	04	01	V	M	085		R		1
730821	04	01	V	F	092		R		1
730821	04	01	V	F	075		L		1
730821	04	02	V	F	093		R		
730821	04	02	V	M	084		L		1
730821	04	03	V	M	065		L		1
730821	04	03	V	M	071		L		1
730821	04	04	V	F	070		R		
730821	04	04	V	F	080		L		
730821	04	04	V	M	075		L		
730821	04	04	V	F	092		L		1
730821	04	04	V	M	074		R		1
730821	04	04	V	F	075		L		1
730821	04	06	V	M	092		L		1
730821	04	06	V	F	074		R		1
730821	04	06	V	F	102		R		1
730821	04	06	V	F	075		R		1
730821	04	06	V	M	078		L		1
730821	04	06	V	F	083		R		1
730821	04	07	V	M	080		L		1
730821	04	07	V	M	080		L		1
730821	04	07	V	F	093		L		1
730821	04	07	V	F	084		R		1
730821	04	08	V	M	080		R		1
730821	04	08	V	F	085		L		1
730821	04	08	V	F	076		R		1
730821	04	08	V	M	077		R		1
730821	04	08	V	F	081		L		1
730821	04	09	V	F	073				
730821	04	09	V	F	074		L		1
730821	04	09	V	F	077		L		1
730821	04	09	V	F	079		R		1
730821	04	10	V	F	086		L		1
730821	04	31		M	091		L		1
730821	04	31		M	070		L		1
730821	04	31		F	075		L		1
730821	04	32		M	063		L		
730821	04	32		M	071		L		
730821	04	32		F	074		L		
730821	04	32		F	026		L		1
730821	04	32		F	074		R		1
730821	04	32		M	082		L		1
730821	04	33		F	078		L		
730821	04	33		M	075		L		
730821	04	33		M	078		L		1
730821	04	33		M	075		R		1
730821	04	34		F	068				
730821	04	34		M	079		R		
730821	04	34		M	074		L		
730821	04	34		F	077		R		1
730821	04	34		M	082		R		1
730821	04	34		F	077		R		1
730821	04	34		M	078		R		1
730821	04	34		F	074		L		1
730821	04	35		F	095		L		
730821	04	35		F	072		L		1
730821	04	35		F	080		R		1
730821	04	35		M	074		L		1
730821	04	36		M	060		L		1
730821	04	37		M	062		R		1
730821	04	37		F	078		R		1
730821	04	37		F	077		R		1
730821	04	37		M	079		L		1
730821	04	37		M	076		L		1
730821	04	38		M	078		R		
730821	04	38		F	080		L		1
730821	04	38		F	075		R		1
730821	04	38		M	076		R		1
730821	04	38		F	072		R		1
730821	04	39		F	081		L		
730821	04	39		F	091		L		1
730821	04	39		M	071		R		1
730821	04	39		M	077		R		1
730821	04	39		M	076		L		1
730821	04	40		M	092		R		1
730821	04	40		M	073		L		1
730828	07	01	V	F	072		R		
730828	07	01	V	F	085		L		1
730828	07	01	V	M	080		R		1
730828	07	01	V	M	075		L		1
730828	07	01	V	F	079		R		1
730828	07	02	V	M	082		R		
730828	07	02	V	F	077		L		
730828	07	02	V	M	078		R		1
730828	07	02	V	F	092		L		1
730828	07	02	V	M	069		R		1
730828	07	03	V	F	079		R		
730828	07	03	V	M	078		L		
730828	07	03	V	M	080		R		1
730828	07	04	V	F	068		R		
730828	07	04	V	F	080		L		1
730828	07	04	V	M	080		R		1
730828	07	04	V	M	074		L		1
730828	07	04	V	M	077		R		1
730828	07	04	V	M	072		L		1
730828	07	05	V	M	068		L		1
730828	07	05	V	M	072		R		1
730828	07	05	V	F	075		R		1
730828	07	05	V	M	078		R		1
730828	07	05	V	M	076		R		1
730828	07	06	V	M	080		R		1
730828	07	06	V	F	080		R		1
730828	07	06	V	F	076		R		1
730828	07	07	V	F	079		L		
730828	07	08	V	F	076		L		1
730828	07	08	V	M	107		R		1
730828	07	08	V	F	071		L		1
730828	07	08	V	F	084		L		1
730828	07	09	V	M	078		R		1
730828	07	09	V	M	077		L		1
730828	07	31		F	091		R		1
730828	07	31		F	090		L		1
730828	07	31		M	086		R		1
730828	07	31		F	094		R		1
730828	07	31		F	090		L		1
730828	07	31		F	076		L		1
730828	07	32		M	073		R		
730828	07	32		F	086		R		1
730828	07	32		F	077		R		1
730828	07	32		F	081		R		1
730828	07	32		F	073		R		1
730828	07	32		F	080		L		1
730828	07	32		M	079		L		1
730828	07	32		M	072		R		1
730828	07	33		M	070		R		
730828	07	33		F	078		L		
730828	07	33		F	079		R		
730828	07	33		M	080		R		1
730828	07	33		F	081		L		1
730828	07	33		M	088		L		1
730828	07	33		F	080		R		1
730828	07	33		M	082		R		1
730828	07	33		M	080		R		1
730828	07	33		M	068		R		1
730828	07	34		M	084		L		
730828	07	34		F	080		L		
730828	07	34		F	073		L		
730828	07	34		F	078		L		1
730828	07	34		F	070		L		1
730828	07	34		F	083		R		1
730828	07	34		F	077		L		1
730828	07	34		M	089		R		1
730828	07	35		M	070		R		
730828	07	35		M	070		R		1
730828	07	35		F	080		R		1
730828	07	35		F	090		L		1
730828	07	35		F	084		R		1
730828	07	35		M	073		R		1
730828	07	35		F	079		R		1
730828	07	36		F	075		R		
730828	07	36		F	076		L		
730828	07	36		M	077		R		1
730828	07	37		M	077		L		1
730828	07	37		F	079		L		1
730828	07	38		M	090		R		1
730828	07	38		M	089		L		1
730828	07	39		M	077		R		1
730828	07	39		M	081		R		1
730828	07	39		F	082		L		1
730828	07	40		F	077		L		
730828	07	40		M	071		R		
730828	07	40		F	078		R		1
730830	02	01	V	F	077		R		
730830	02	03	V	M	076		R		1
730830	02	04	V	M	067		L		
730830	02	04	V	F	071		L		1
730830	02	04	V	M	081		L		1
730830	02	05	V	F	086		L		1
730830	02	05	V	F	080		R		1
730830	02	06	V	M	082		R		
730830	02	06	V	F	091		R		
730830	02	08	V	M	087		L		1
730830	02	08	V	M	080		R		1
730830	02	08	V	F	077		R		1
730830	02	08	V	F	079		R		1
730830	02	08	V	F	072		L		1
730830	02	09	V	M	081		R		
730830	02	09	V	M	069		L		
730830	02	09	V	F	080		R		
730830	02	09	V	M	088		L		1
730830	02	10	V	M	076		L		
730830	02	10	V	M	071		R		1
730830	02	10	V	M	077		L		1
730830	02	10	V	F	075		L		1
730830	02	31		M	076		L		
730830	02	31		F	077		R		
730830	02	31		M	071		R		1
730830	02	31		M	077		R		1
730830	02	31		F	076		R		1
730830	02	31		F	082		L		1
730830	02	31		F	079		L		1
730830	02	32		M	078				
730830	02	32		M	086		L		

LOBSTER DATA - SURFACE HAULED TRAPS
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DATE	SOD	T#	V	S	LEN	WID	H	E	D
730830	02	32		F	080		R		
730830	02	32		F	075		R		1
730830	02	32		M	077		L		1
730830	02	33		F	083		L		1
730830	02	33		F	071		L		1
730830	02	33		F	070		L		1
730830	02	33		F	086		L		1
730830	02	35		F	067		L		
730830	02	35		F	079		L		
730830	02	35		M	068		L		1
730830	02	35		F	079		R		1
730830	02	36		F	079		R		
730830	02	36		F	085		L		
730830	02	36		F	074		R		
730830	02	36		F	080		R		1
730830	02	36		F	071		R		1
730830	02	36		M	077		L		1
730830	02	36		M	075		L		1
730830	02	36		F	075		L		1
730830	02	36		F	070		R		1
730830	02	36		M	077		R		1
730830	02	36		F	067		R		1
730830	02	36		M	065		L		1
730830	02	36		F	061		L		1
730830	02	37		F	073		L		
730830	02	38		F	075		L		1
730830	02	39		M	068		L		
730830	02	39		M	071		R		
730830	02	39		F	065		R		1
730830	02	40		M	070		R		
730830	02	40		M	067		R		1

LOBSTER DATA - SURFACE HAULED TRAPS
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DATE	SOD	T#	V	S	LEN	WID	H	E	D
740514	05	41	V	M	077		R		1
740514	05	41	V	F	076		R	1	1
740514	05	41	V	F	078		R	2	1
740514	05	41	V	M	076		L		1
740514	05	42	V	F	071		L		
740514	05	42	V	F	073			3	
740514	05	42	V	M	079		L		1
740514	05	42	V	F	079		L		1
740514	05	43	V	M	078		R		
740514	05	43	V	M	079		L		1
740514	05	44	V	M	078		L		1
740514	05	44	V	F	080		R		1
740514	05	44	V	M	069		L		1
740514	05	45	V	F	075		R		
740514	05	45	V	M	079		R		1
740514	05	45	V	M	078		L		1
740514	05	46	V	M	078		R		
740514	05	46	V	F	075		R	3	1
740514	05	46	V	F	069		L	3	1
740514	05	46	V	M	074		L		1
740514	05	46	V	F	076		R		1
740514	05	47	V	M	060		R		
740514	05	47	V	F	077		R	2	
740514	05	47	V	F	078		R		1
740514	05	48	V	M	075		L		
740514	05	48	V	M	082		R		1
740514	05	48	V	M	086		R		1
740514	05	48	V	M	067		L		1
740514	05	49	V	F	076		R		
740514	05	49	V	M	086		R		1
740514	05	49	V	F	077		L		1
740514	05	50	V	F	080		R		1
740514	05	50	V	F	063		R		1
740514	05	50	V	M	079		L		1
740514	05	50	V	M	079		L		1
740514	05	51		M	057		R		1
740514	05	51		F	060		L		1
740514	05	51		M	078		R		1
740514	05	52		M	079		L		
740514	05	52		M	074		L		1
740514	05	52		F	067		R		1
740514	05	52		M	076		R		1
740514	05	52		F	076		L		1
740514	05	52		M	074		L		1
740514	05	53		F	067		R		
740514	05	53		M	071		R		1
740514	05	53		F	066		R		1
740514	05	53		M	081		L		1
740514	05	53		M	068		L		1
740514	05	53		M	075		R		1
740514	05	53		M	075		R		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
740514	05	53		M	076		R		1
740514	05	54		M	073		R		
740514	05	54		M	080		L		1
740514	05	55		M	071		L		1
740514	05	55		F	067		L		1
740514	05	55		M	068		L		1
740514	05	55		M	069		R		1
740514	05	55		M	070		L		1
740514	05	55		F	073		L		1
740514	05	57		F	069		L	1	1
740514	05	58		F	063		L		
740514	05	58		F	069		R		1
740514	05	59		M	075		L		
740521	07	41	V	F	086	053	L		
740521	07	42	V	F	082	051	R		1
740521	07	42	V	M	081	049	L		1
740521	07	42	V	M	077	046	L		1
740521	07	43	V	M	076	046	L		1
740521	07	43	V	M	077	046	R		1
740521	07	43	V	M	077	047	R		1
740521	07	43	V	M	078	046	R		1
740521	07	43	V	M	080	048	R		1
740521	07	44	V	M	078	046	R		
740521	07	44	V	M	082	050	R		1
740521	07	44	V	F	060	035	L		1
740521	07	44	V	M	086	052	R		1
740521	07	44	V	F	076	046	R		1
740521	07	44	V	F	081	049	L		1
740521	07	45	V	F	075	048	R		
740521	07	45	V	F	077	048	L		
740521	07	45	V	M	075		L		
740521	07	45	V	F	078	048	L		1
740521	07	45	V	M	092	056	R		1
740521	07	45	V	F	078	050	R		1
740521	07	46	V	F	077	050	R	2	
740521	07	46	V	M	078	048	R		1
740521	07	46	V	M	077	047	R		1
740521	07	46	V	M	079	048	R		1
740521	07	47	V	M	079	047	R		1
740521	07	47	V	F	076	047	R	2	1
740521	07	48	V	F	077	048	L	2	1
740521	07	48	V	F	079	047	R		1
740521	07	49	V	M	078	048	L		1
740521	07	52		F	075	044	R		
740521	07	52		F	068	041	L		
740521	07	52		M	073	043	L		
740521	07	52		F	078	047	L	2	1
740521	07	52		M	078	047	L		1
740521	07	52		F	074	043	L	2	1
740521	07	52		F	082	051	L		1
740521	07	52		F	080	048	L		1

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DATE	SOD	T#	V	S	LEN	WID	H	E	D
740521	07	52		M	075	045	R		1
740521	07	53		F	077	048	R	2	
740521	07	53		M	075	047	L		1
740521	07	53		F	084	054	R		1
740521	07	53		M	078	046	R		1
740521	07	53		M	078	048	R		1
740521	07	54		M	072	044	R		
740521	07	54		F	074	047	R	2	
740521	07	54		M	075	045	L		1
740521	07	54		M	082	052	R		1
740521	07	54		M	072	044	L		1
740521	07	54		M	080	048	L		1
740521	07	54		F	069	043	L	2	1
740521	07	55		F	073	046	L		
740521	07	55		M	075	045	L		
740521	07	55		M	074	045	L		
740521	07	55		M	071	041	R		
740521	07	55		F	078	049	L		1
740521	07	55		M	072	043	L		1
740521	07	55		F	077	046	R		1
740521	07	55		M	073	045	R		1
740521	07	55		M	074	044	L		1
740521	07	55		M	073	046	L		1
740521	07	55		F	080	049	R	2	1
740521	07	55		F	076	048	R	2	1
740521	07	55		M	073	049	R		1
740521	07	55		M	081	047	L		1
740521	07	55		F	074	046	R		1
740521	07	55		M	075	044	R		1
740521	07	55		M	078	047	R		1
740521	07	55		F	070	042	R		1
740521	07	55		F	066	039	L		1
740521	07	57		M	075	046	R		
740521	07	57		M	078	044	L		
740521	07	57		M	072	043	L		
740521	07	57		M	077	046	L		1
740521	07	57		M	071	043	L		1
740521	07	57		F	070	043	R		1
740521	07	57		M	067	039	L		1
740521	07	58		M	076	048	L		
740521	07	58		F	076	048	L		1
740521	07	58		M	070	043	L		1
740521	07	58		M	084	051	R		1
740521	07	59		M	072	044	R		
740521	07	59		M	068	041	L		
740521	07	59		M	083	052	L		
740521	07	59		M	074	046	L		
740521	07	59		F	077	049	R	2	
740521	07	59		M	081	049	R		1
740521	07	60		M	070	041	R		
740521	07	60		F	074	046	L		

DATE	SOD	T#	V	S	LEN	WID	H	E	D
740521	07	60		M	079	047	R		1
740521	07	60		F	075	045	R		1
740521	07	60		M	071	043	R		1
740521	07	60		M	064	038	L		1
740521	07	60		M	081	050	R		1
740521	07	60		M	068	041	L		1
740521	07	60		M	066	040	L		1
740521	07	60		F	069	043	R		1
740523	02	41	V	M	076	047	L		
740523	02	42	V	M	077	046	R		
740523	02	42	V	F	078	049	L	2	1
740523	02	42	V	F	070	043	L		1
740523	02	42	V	F	071	045	L		1
740523	02	42	V	F	075	048	R	2	1
740523	02	42	V	F	073	047	L		1
740523	02	43	V	F	076	048	L	2	1
740523	02	43	V	M	073	046	R		1
740523	02	43	V	M	078	048	L		1
740523	02	43	V	M	078	047	R		1
740523	02	44	V	M	080	049	R		1
740523	02	45	V	M	079	050	L		1
740523	02	46	V	M	075	097	R		1
740523	02	47	V	F	076	096	R	2	1
740523	02	48	V	F	075	047	L		
740523	02	48	V	F	078	049	L		
740523	02	48	V	F	077	050	R	2	1
740523	02	48	V	M	082	051	L		1
740523	02	48	V	F	078	048	R	2	1
740523	02	49	V	M	078	048	L		
740523	02	49	V	F	077	049	R		1
740523	02	52		M	078	046	L		
740523	02	52		F	071	043	R		1
740523	02	52		M	067	039	L		1
740523	02	53		F	076	046	L		
740523	02	53		F	077	096	R		1
740523	02	53		M	063	038	L		1
740523	02	53		M	088	054	R		1
740523	02	53		M	065	037	R		1
740523	02	53		F	073	016	L		1
740523	02	54		F	077	045	R		1
740523	02	54		M	074	043	L		1
740523	02	54		M	072	045	R		1
740523	02	54		M	081	048	L		1
740523	02	55		F	077	046	R	2	1
740523	02	55		F	075	047	R		1
740523	02	55		F	071	045	R		1
740523	02	55		F	074	045	L		1
740523	02	55		F	082	051	R	2	1
740523	02	55		F	069	041	R		1
740523	02	55		M	075	047	L		1
740523	02	55		M	064	037	L		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
740823	02	57		M	081	048	L		1
740823	02	59		M	070	041	R		
740823	02	59		F	061	036	L		1
740523	02	60		F	065	040	L		1
740523	02	60		F	059	036	R		1
740523	02	60		M	060	035	L		1
740528	05	42	V	F	081	049	R		
740528	05	42	V	F	079	049	R		
740528	05	42	V	M	080	044	L		1
740528	05	42	V	M	079	045	L		1
740528	05	42	V	F	074	046	R	2	1
740528	05	42	V	M	077	044	L		1
740528	05	44	V	F	079	046	L		1
740528	05	45	V	M	079	046	R		
740528	05	45	V	M	069	040	L		
740528	05	45	V	F	080	045	R	2	1
740528	05	45	V	F	075	045	L		1
740528	05	45	V	M	081	049	L		1
740528	05	45	V	F	076	096	R		1
740528	05	45	V	M	070	040	R		1
740528	05	45	V	M	082	050	R		1
740528	05	45	V	M	079	046	L		1
740528	05	46	V	F	077	045	R		1
740528	05	46	V	F	080	047	L		1
740528	05	47	V	M	079	046	L		1
740528	05	47	V	F	079	049	R	2	1
740528	05	47	V	F	080	045	R		1
740528	05	48	V	F	077	045	R		
740528	05	48	V	F	077	045	R		
740528	05	48	V	M	079	045	R		1
740528	05	48	V	F	082	049	L		1
740528	05	49	V	F	081	047	L		1
740528	05	49	V	F	080	046	R	2	1
740528	05	50	V	F	085	050	L	2	
740528	05	50	V	M	080	047	R		1
740528	05	50	V	F	077	045	R	2	1
740528	05	51		M	075	041	L		
740528	05	52		M	071	040	R		
740528	05	52		F	068	059	R		
740528	05	52		F	073	043	L		
740528	05	52		F	074	043	R	2	
740528	05	52		F	079	045	R		1
740528	05	52		F	071	039	L		1
740528	05	52		M	074	042	L		1
740528	05	52		M	069	040	L		1
740528	05	52		F	065	035	R		1
740528	05	52		F	066	038	R		1
740528	05	52		F	069	039	R	2	1
740528	05	52		F	070	041	R		1
740528	05	52		M	080	045	L		1
740528	05	52		F	067	038	L		1

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DATE	SOD	T#	V	S	LEN	WID	H	E	D
740528	05	52		F	074	044	R	2	1
740528	05	52		F	071	043	R		1
740528	05	52		F	067	037	L		1
740528	05	52		F	074	043	L		1
740528	05	52		F	071	041	L		1
740528	05	53		M	068	039	R		
740528	05	53		M	070	039	R		1
740528	05	53		F	066	039	L		1
740528	05	53		F	072	042	L		1
740528	05	53		F	075	044	L		1
740528	05	53		F	071	041	L		1
740528	05	53		M	070	040	R		1
740528	05	53		F	073	041	L	2	1
740528	05	53		F	077	049	L	2	1
740528	05	53		M	074	040	R		1
740528	05	53		F	073	041	R		1
740528	05	53		M	069	037	L		1
740528	05	53		F	067	040	R		1
740528	05	53		F	063	036	L		1
740528	05	53		F	073	043	R	2	1
740528	05	53		F	071	040	L		1
740528	05	53		M	070	042	R		1
740528	05	54		M	076	043	R		
740528	05	54		F	075	046	R		
740528	05	54		M	083	049	L		
740528	05	54		F	070	042	L		
740528	05	54		M	085	050	R		1
740528	05	54		M	074	042	R		1
740528	05	54		M	079	044	L		1
740528	05	54		M	076	045	R		1
740528	05	54		M	077	044	L		1
740528	05	54		F	033	042	L	2	1
740528	05	54		F	077	046	R		1
740528	05	54		M	074	042	L		1
740528	05	54		F	072	043	L		1
740528	05	55		M	072	043	R		
740528	05	55		M	074	043	R		
740528	05	55		F	061	035	R		1
740528	05	55		F	075	045	L		1
740528	05	55		F	069	040	L		1
740528	05	55		M	067	037	L		1
740528	05	55		M	080	049	R		1
740528	05	55		F	079	046	R		1
740528	05	55		M	066	037	L		1
740528	05	55		M	067	039	R		1
740528	05	56		F	075	045	R	2	
740528	05	57		M	077	045	L		
740528	05	57		F	072	044	L		
740528	05	57		F	070	042	R		1
740528	05	57		F	074	043	R		1
740528	05	57		F	065	037	L		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
740528	05	58		F	073	042	L		
740528	05	58		F	075	043	L		
740528	05	58		F	079	049	R		
740528	05	58		M	073	049	R		1
740528	05	58		M	075	042	L		1
740528	05	58		F	079	048	R		1
740528	05	58		M	076	043	L		1
740528	05	58		F	071	041	R		1
740528	05	58		F	080	050	L	2	1
740528	05	59		F	073	045	L	2	
740528	05	59		F	069	037	L		
740528	05	59		F	073	043	L		
740528	05	59		M	072	043	L		1
740528	05	59		M	069	039	R		1
740528	05	59		M	074	043	R		1
740528	05	59		F	075	045	L		1
740528	05	59		F	039	068	L		1
740528	05	59		M	074	041	L		1
740528	05	59		M	071	042	L		1
740528	05	59		F	074	043	R		1
740528	05	59		M	070	040	L		1
740528	05	59		F	069	041	L		1
740528	05	59		F	070	040	R		1
740528	05	60		M	076	043	R		
740528	05	60		M	070	040	R		
740528	05	60		F	067	038	R		
740528	05	60		M	071	041	R		
740528	05	60		M	069	040	R		
740528	05	60		F	073	041	L		1
740528	05	60		F	083	050	L		1
740528	05	60		M	084	050	L		1
740528	05	60		M	069	039	R		1
740528	05	60		F	074	043	R	2	1
740528	05	60		M	077	043	R		1
740528	05	60		M	074	041	L		1
740528	05	60		M	077	044	R		1
740528	05	60		M	069	039	R		1
740528	05	60		F	078	095	L		1
740528	05	60		F	070	041	R		1
740528	05	60		M	067	036	L		1
740528	05	60		F	074	044	L		1
740528	05	60		F	067	039	R		1
740528	05	60		F	065	036	R		1
740530	02	41	V	F	075	046	L	2	1
740530	02	42	V	F	077	046	L		1
740530	02	42	V	M	079	048	L		1
740530	02	43	V	M	080	048	L		1
740530	02	44	V	M	078	044	R		
740530	02	44	V	M	078	045	L		1
740530	02	44	V	M	080	051	R		1
740530	02	44	V	M	077	047	R		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
740530	02	44	V	M	085	052	L		1
740530	02	46	V	F	078	048	L		
740530	02	47	V	F	076	045	R		1
740530	02	48	V	F	077	045	R	2	1
740530	02	49	V	M	080	046	R		1
740530	02	50	V	M	079	046	R		1
740530	02	50	V	F	078	045	R	2	1
740530	02	51		M	078	047	R		
740530	02	51		M	065	036	L		1
740530	02	52		F	070	044	L	2	1
740530	02	52		M	079	046	R		1
740530	02	52		F	065	038	R		1
740530	02	52		M	075	047	L		1
740530	02	52		F	074	043	R		1
740530	02	52		M	072	042	L		1
740530	02	52		M	075	045	L		1
740530	02	52		M	074	045	R		1
740530	02	52		F	066	037	R		1
740530	02	52		F	067	040	R		1
740530	02	52		M	079	044	R		1
740530	02	53		F	070	044	L		1
740530	02	53		F	064	040	R		1
740530	02	53		M	070	040	R		1
740530	02	53		F	065	035	L		1
740530	02	53		F	073	044	R	2	1
740530	02	53		F	074	042	R		1
740530	02	53		M	074	043	L		
740530	02	54		M	077	044	R		1
740530	02	54		F	066	040	R		1
740530	02	54		F	071	044	L		1
740530	02	54		M	073	044	R		1
740530	02	54		M	075	045	R		1
740530	02	54		F	073	043	L	2	
740530	02	55		M	073	042	R		1
740530	02	55		F	073	045	L	2	1
740530	02	55		M	070	041	R		1
740530	02	55		M	076	045	L		1
740530	02	55		M	071	043	R		1
740530	02	55		F	083	050	L		
740530	02	58		M	075	045	L		1
740530	02	59		F	066	040	L		1
740530	02	59		F	073	040	R		1
740530	02	59		M	075	044	L		1
740530	02	59		M	072	044	L		1
740530	02	59		F	066	038	R		1
740530	02	60		F	075	047	R		1
740530	02	60		M	066	041	R		1
740530	02	60		M	060	034	L		1
740530	02	60		F	067	039	L		1
740530	02	60		M	075	045	R		1
740530	02	60		F	080	048	R		1

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DATE	SOD	T#	V	S	LEN	WID	H	E	D
740530	02	60		F	078	046	R	2	1
740530	02	60		M	071	045	L		1
740530	02	60		F	065	037	L		
740603	04	41	V	F	078	041	R		1
740603	04	42	V	F	077	047	R		1
740603	04	42	V	M	079	046	R		1
740603	04	43	V	M	083	043	L		1
740603	04	43	V	F	072	040	R		1
740603	04	43	V	F	074	047	L		1
740603	04	44	V	F	084	053	R	2	1
740603	04	44	V	M	080	046	R		
740603	04	45	V	F	076	046	L		1
740603	04	45	V	F	077	047		2	1
740603	04	45	V	F	079	048	L		1
740603	04	46	V	M	071	040	L		1
740603	04	46	V	F	087	052	L		1
740603	04	47	V	F	080	040	L	2	1
740603	04	47	V	F	078	048	R	2	1
740603	04	50	V	M	076	045	R		1
740603	04	50	V	F	076	046	R	2	1
740603	04	51		M	079	047	L		1
740603	04	51		M	075	043	R		1
740603	04	52		F	074	044	L		1
740603	04	53		M	076	044	R		1
740603	04	53		F	077	046	R		1
740603	04	53		M	076	045	R		1
740603	04	53		F	073	043	R	2	1
740603	04	53		F	066	038	R		1
740603	04	53		F	076	044	L		1
740603	04	53		M	074	043	L		1
740603	04	53		M	066	036	L		
740603	04	53		M	076	045	R		
740603	04	53		F	073	043	L	2	
740603	04	54		M	075	043	L		1
740603	04	54		M	072	042	R		1
740603	04	54		F	080	048	R		
740603	04	55		M	087	033	R		1
740603	03	56		F	054	036	L		1
740603	03	56		F	066	037	L		
740603	03	57		F	076	045	R		1
740603	03	58		M	068	037	R		
740603	03	58		M	074	045	L		
740603	03	59		F	076	047	R		1
740603	03	59		M	071	041	L		1
740603	03	59		F	061	037	L		1
740603	03	59		M	077	044	R		1
740603	03	59		M	064	037	R		1
740603	03	59		M	071	042	L		
740603	03	59		M	081	048	R		
740603	03	60		M	076	044	L		1
740603	03	60		M	073	045	R		

DATE	SOD	T#	V	S	LEN	WID	H	E	D
740607	04	42	V	M	078	046	R		1
740607	04	42	V	F	079	046	R		1
740607	04	42	V	M	075	043	L		
740607	04	42	V	F	079	046	R		
740607	04	42	V	F	077	049	L		
740607	04	43	V	M	080	046	R		1
740607	04	43	V	F	077	047	L		1
740607	04	44	V	F	081	050	L		1
740607	04	44	V	F	081	049	R		
740607	04	44	V	F	080	050	R		
740607	04	45	V	M	077		L		
740607	04	48	V	M	079	046	R		1
740607	04	48	V	F	080	049	L		1
740607	04	48	V	F	084	050	L		1
740607	04	48	V	M	076	045	L		
740607	04	49	V	M	080	047	L		1
740607	04	49	V	F	077	046	R		1
740607	04	50	V	M	087	050	R		1
740607	04	50	V	F	077	046	L		1
740607	04	50	V	M	083	047	L		1
740607	04	50	V	M	079	047	R		
740607	04	51		F	073	044	R		1
740607	04	52		F	079	046	L		1
740607	04	52		M	074	042	R		1
740607	04	52		F	066	037	R		1
740607	04	52		M	074	042	L		1
740607	04	52		M	070	041	L		1
740607	04	52		F	078	044	R		
740607	04	52		F	076	043	L		
740607	04	53		F	079	048	L		1
740607	04	53		M	070	040	R		1
740607	04	53		F	073	043	R		1
740607	04	53		M	076	044	R		
740607	04	54		F	070	041	L		1
740607	04	54		M	075	043	R		1
740607	04	54		M	080	046	L		1
740607	04	54		F	072	041	L		1
740607	04	54		F	071	043	L		1
740607	04	54		F	080	047	R		
740607	04	55		F	069	040	R		1
740607	04	55		M	067	039	R		1
740607	04	55		F	074	046	L		1
740607	04	55		F	076	045	L		
740607	04	55		F	066	038	R		
740607	04	55		F	079	046	L		
740607	04	55		F	070	042	L		
740607	04	55		F	075		L		
740607	04	56		F	065	037	R		1
740607	04	56		F	074	046	R	2	1
740607	04	56		M	079	045	L		1
740607	04	56		F	065	037	L		1

DATE	SOD	T#	V	S	LEN	WID	H	E	D
740607	04	56		M	065	035	R		1
740607	04	56		F	063	037	L		
740607	04	56		M	076	043			
740607	04	56		M	075	043	L		
740607	04	56		F	052	029	R		
740607	04	57		M	067	039	L		1
740607	04	57		F	076	039	L		1
740607	04	57		M	064	036	R		1
740607	04	57		M	074	042	L		
740607	04	57		M	074	039	L		
740607	04	58		F	077	045	R		1
740607	04	58		M	075	045	R		1
740607	04	58		F	079	046	L		1
740607	04	58		M	074	042	R		1
740607	04	58		F		037	L		
740607	04	58		F	073	042	L		
740607	04	59		M	071	042	R		1
740607	04	59		F	069	039	R		1
740607	04	59		M	073	042	L		1
740607	04	59		F	079	046	R		1
740607	04	59		M	062	035	L		
740607	04	60		F	063	036	L		1
740607	04	60		F	063	036	R		1
740607	04	60		F	075	044	R		
740612	05	41	V	M	081	049	L		1
740612	05	41	V	M	081	050	L		1
740612	05	42	V	F	081	050	R		1
740612	05	43	V	M	079	047	L		1
740612	05	43	V	M	078	049	R		1
740612	05	43	V	M	080	048	R		1
740612	05	43	V	F	081	049	R		1
740612	05	44	V	M	081	049	R		1
740612	05	44	V	M	082	050	L		
740612	05	45	V	M	080	050	L		1
740612	05	45	V	M	080	047	R		1
740612	05	45	V	M	076	047	R		1
740612	05	45	V	F	075	043	L		1
740612	05	45	V	M	075	043	R		1
740612	05	45	V	M	078	045	L		1
740612	05	45	V	F	082	049	R		1
740612	05	45	V	M	081	050	R		1
740612	05	46	V	F	075	047	R		1
740612	05	46	V	F	080	047	L		
740612	05	47	V	F	076	046	R		1
740612	05	47	V	M	078	047	L		1
740612	05	48	V	F	079	049	L		1
740612	05	48	V	F	082	050	L	1	1
740612	05	48	V	F	081	051	L	2	
740612	05	49	V	M	079	047	L		
740612	05	50	V	F	079	047	R	1	1
740612	05	50	V	F	079	050	R		1

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DATE	SOD	T#	V	S	LEN	WID	H	E	D
740612	05	50	V	F	075	048	R		1
740612	05	50	V	M	087	053	L		
740612	05	52		M	078	047	L		1
740612	05	52		M	067	039	L		1
740612	05	52		M	069	042	L		1
740612	05	54		F	080	052	R		1
740612	05	55		F	075	043	L		1
740612	05	55		M	072	039	L		1
740612	05	57		M	073	044	R		1
740612	05	57		M	079	057	R		1
740612	05	57		F	075	046	R		
740612	05	58		M	076	044	R		
740612	05	58		F	075	045	R		
740612	05	59		M	081	048	R		1
740612	05	59		M	074	040	L		
740612	05	59		M	077	046	L		
740612	05	60		M	074	046	R		1
740612	05	60		M	065	048	R		1
740612	05	60		F	079	048	R		1
740612	05	60		F	070	043	R		1
740612	05	60		M	066	039	R		1
740612	05	60		F	072	042	L		1
740612	05	60		M	073	041	R		1
740612	05	60		F	075	045	L		1
740612	05	60		F	075	043	R		1
740612	05	60		M	064	036	R		1
740612	05	60		M	079	048	R		
740612	05	60		F	064	038	R		
740612	05	60		M	070	039	R		
740614	02	42	V	M	077	046	R		1
740614	02	42	V	F	078	048	L		1
740614	02	42	V	F	075	046	L	3	1
740614	02	42	V	M	069	040	L		1
740614	02	42	V	M	076	046	R		1
740614	02	44	V	F	080	049	R		
740614	02	45	V	F	080		R		1
740614	02	45	V	M	079	048	L		1
740614	02	46	V	F	078	047	R		1
740614	02	46	V	M	084	049	R		1
740614	02	46	V	M	075	046	L		
740614	02	47	V	M	077	046	L		1
740614	02	47	V	M	079	048	L		1
740614	02	49	V	M	079	048	R		1
740614	02	49	V	F	084	050	R		1
740614	02	51		F	077	046	R		1
740614	02	51		F	076	043	R		
740614	02	52		M	064	035	R		1
740614	02	53		F	079	048	R	2	1
740614	02	53		F	079	047	R		1
740614	02	53		M	074	043	R		1
740614	02	53		M	073	041	R		1
740614	02	53		F	072	044	L		1
740614	02	53		F	072	043	L		
740614	02	53		M	081	049	L		
740614	02	53		M	073	042	R		
740614	02	54		M	084	049	R		1
740614	02	54		F	069	042	L		1
740614	02	54		M	076	044	R		1
740614	02	54		F	069	041	R		1
740614	02	54		M	071	040	R		1
740614	02	54		M	073	043	L		
740614	02	54		M	079	046	R		
740614	02	54		F	077	045	R		
740614	02	55		M	082	049	L		1
740614	02	55		M	068	039	L		1
740614	02	55		M	072	043	R		1
740614	02	55		F	067	040	R		1
740614	02	55		F	080	047	R	2	
740614	02	55		M	067	040	R		
740614	02	56		M	054	031	R		1
740614	02	56		F	071	041	R	3	1
740614	02	56		M	073	045	L		1
740614	02	56		F	066	039	L		1
740614	02	56		F	061	057	L		1
740614	02	56		F	076	044	L		1
740614	02	56		F	074	046	R		1
740614	02	56		M	068	039	R		1
740614	02	56		M	074	044	R		
740614	02	56		F	076	046	L		
740614	02	57		M	085	050	R		1
740614	02	57		F	072	043	R		1
740614	02	57		F	075	045	L		1
740614	02	58		F	074	046	R		1
740614	02	58		F	081	049	R		1
740614	02	58		M	069	041	R		1
740614	02	58		F	073	045	L		1
740614	02	58		F	073	042	L		1
740614	02	58		F	071	041	R		1
740614	02	58		M	075	043	R		1
740614	02	58		F	073	045	R		
740614	02	59		F	079	047	L		1
740614	02	59		F	076	046	R		1
740614	02	59		F	074	045	L		1
740614	02	59		F	076	046	R		1
740614	02	59		F	077	048	L		1
740614	02	59		M	070	042	L		1
740614	02	59		F	074	047	R	2	1
740614	02	59		F	076	045	R		1
740614	02	59		M	076	044	L		1
740614	02	59		M	073	042	R		1
740614	02	59		M	078	044	L		
740614	02	60		M	075	045	L		1
740614	02	60		M	064	036	L		1
740614	02	60		F	075	045	L	2	
740618	04	42	V	F	076	047	L		1
740618	04	42	V	F	076	045	L		1
740618	04	42	V	M	074	046	R		1
740618	04	42	V	F	073	044	L		
740618	04	42	V	F	077	046	R		
740618	04	43	V	F	077	048	R	2	1
740618	04	43	V	F	075	046	R		1
740618	04	43	V	M	078	047	L		1
740618	04	43	V	F	076	047	R		
740618	04	44	V	M	074	045	L		1
740618	04	44	V	M	085	052	R		
740618	04	44	V	M	079	047	R		
740618	04	45	V	M	086	052	R		1
740618	04	47	V	F	077	046	R		1
740618	04	47	V	F	076	046	R		
740618	04	47	V	M	079	048	L		
740618	04	47	V	F	079	048	L		
740618	04	48	V	F	085	051	R	2	1
740618	04	48	V	M	093	057	R		1
740618	04	48	V	F	076	047	L		1
740618	04	49	V	F	076	048	L		1
740618	04	50	V	M	077	047	L		1
740618	04	50	V	M	079	047	R		1
740618	04	50	V	M	084	051	L		1
740618	04	50	V	M	080	047	R		
740618	04	52		M	077	048	L		1
740618	04	52		F	072	045	L		1
740618	04	52		M	076	046	R		1
740618	04	52		M	076	045	R		1
740618	04	52		M	077	047	L		1
740618	04	52		F	069	042	L		1
740618	04	52		F	074	045	R		
740618	04	52		M	082	049	R		
740618	04	52		M	073	043	L		
740618	04	52		M	079	047			
740618	04	52		M	075	045	L		
740618	04	53		M	075	044	R		1
740618	04	53		M	072	042	L		1
740618	04	53		F	078	048	L		1
740618	04	54		M	077	046	L		
740618	04	55		M	079	046	L		1
740618	04	55		F	068	043	R		1
740618	04	55		M	074	045	L		1
740618	04	55		M	073	043	L		1
740618	04	55		M	076	046	R		
740618	04	55		F	071	042	L		
740618	04	55		F	078	049	L		
740618	04	55		M	076	047	R		
740618	04	55		M	075	045	R		

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DATE	SOD	T#	V	S	LEN	WID	H	E	D
740618	04	56		M	067	040	L		1
740618	04	56		M	071	040	L		
740618	04	56		M	075	045	R		
740618	04	57		M	086	051	L		1
740618	04	57		F	083	052	R		1
740618	04	57		M	082	050	R		1
740618	04	57		F	076	046	R		1
740618	04	57		M	073	045	R		1
740618	04	57		F	077	048	L		1
740618	04	57		M	070	040	R		
740618	04	57		M	081	049	L		
740618	04	58		M	073	046	L		1
740618	04	58		M	074	045	L		1
740618	04	58		M	075	045	L		1
740618	04	58		F	075	047	L		1
740618	04	58		F	076	046	L	2	1
740618	04	58		F	076	046	L		1
740618	04	58		M	079	048	L		1
740618	04	58		F	073	045	L		1
740618	04	58		F	074	043	R		
740618	04	58		F	078	046	R		
740618	04	58		F	074	045	L		
740618	04	58		M	075	044	R		
740618	04	58		F	080	051	L	2	
740618	04	59		M	081	049	L		1
740618	04	59		M	071	041	L		1
740618	04	59		M	078	047	L		1
740618	04	59		F	073	046	L		1
740618	04	59		M	076	044	L		1
740618	04	59		M	066	039	L		1
740618	04	59		M	076	045	R		1
740618	04	59		M	080	050	L		
740618	04	59		M	083	051	L		
740618	04	59		F	067	041	R		
740618	04	59		F	073	045	R		
740618	04	59		F	081	049	L		
740618	04	59		F	063	036	R		
740618	04	60		F	066	039	R		1
740618	04	60		M	071	041	R		1
740618	04	60		F	074	047	R		1
740618	04	60		F	078	050	L		1
740618	04	60		F	077	048	R		1
740618	04	60		M	088	052	R		1
740618	04	60		M	078	047	R		1
740618	04	60		M	075	045	L		1
740618	04	60		F	079	048	L	2	
740618	04	60		F	067	038	L		
740618	04	60		M	068	042	L		
740618	04	60		M	077	047	R		
740618	04	60		M	070	042	L		
740624	06	42	V	F	085	052	L		1
740624	06	42	V	F	077	048	L		1
740624	06	42	V	M	075	045	L		1
740624	06	42	V	M	080	047	R		1
740624	06	42	V	M	079	046	R		1
740624	06	42	V	F	080	049	L		
740624	06	42	V	F	078	044	L		
740624	06	43	V	M	084	050	R		1
740624	06	43	V	M	079	047	R		1
740624	06	43	V	M	079	048	L		1
740624	06	43	V	M	081	047	L		
740624	06	43	V	F	082	046	R		
740624	06	44	V	M	086	051	L		1
740624	06	44	V	M	079	047	L		1
740624	06	44	V	M	083	049	L		1
740624	06	44	V	M	082	050	L		1
740624	06	44	V	F	079	049	L		1
740624	06	44	V	F	080	047	R		
740624	06	44	V	M	077		L		
740624	06	44	V	F	081	050	R	2	
740624	06	45	V	F	078	049	L		1
740624	06	45	V	F	075	046			1
740624	06	45	V	M	078	046	R		
740624	06	45	V	F	080	047	R		
740624	06	45	V	M	085	052	L		
740624	06	47	V	F	077		R		1
740624	06	47	V	F	075		R		
740624	06	47	V	M	081		R		
740624	06	48	V	F	078		L		1
740624	06	48	V	M	083		L		1
740624	06	48	V	M	083		L		1
740624	06	48	V	M	078	047	R		1
740624	06	48	V	M	077	045	L		
740624	06	49	V	F	082	050	L		1
740624	06	49	V	F	077	047	L		
740624	06	50	V	M	079	047	L		
740624	06	52		F	075	048	L		1
740624	06	52		F	071	042	L		1
740624	06	52		F	079	048	L		1
740624	06	52		M	066	039	L		1
740624	06	52		F	073	044	L		1
740624	06	52		F	074	043	L		1
740624	06	52		M	077	044	L		1
740624	06	52		M	071	043	R		1
740624	06	52		F	079	048			1
740624	06	52		F	077	046	L		
740624	06	52		M	071	041	R		
740624	06	52		F	076	047	L		
740624	06	52		M	075	043	R		
740624	06	53		F	069	041	L	2	1
740624	06	53		M	080	048	R		1
740624	06	53		F	076	045	R		1
740624	06	53		F	078	046	L		1
740624	06	53		F	078	048	R		1
740624	06	53		M	074	043	R		1
740624	06	53		F	072	042	L		1
740624	06	53		F	073	043	L		
740624	06	53		F	073	043	R		
740624	06	53		M	076	043	L		
740624	06	53		M	078	046	L		
740624	06	53		M	075	043	L		
740624	06	54		F	091	057	L	2	1
740624	06	54		F	079	048	R		1
740624	06	54		F	072	041	R		1
740624	06	54		F	078	047	R		1
740624	06	54		F	078	047	L		1
740624	06	54		M	072	042	R		1
740624	06	54		F	073	043	R		1
740624	06	54		M	077	047	L		1
740624	06	54		M	073	042	L		1
740624	06	54		F	077	046	L		1
740624	06	54		F	080	047	R		1
740624	06	54		F	078	046	L		
740624	06	54		M	078	044	L		
740624	06	55		M	077	044	R		1
740624	06	55		M	071	040	L		1
740624	06	55		M	079	049	R		1
740624	06	55		F	074	044	R		1
740624	06	55		F	074	044	L		1
740624	06	55		F	077	046	R		1
740624	06	55		M	081	047	L		1
740624	06	55		F	083	052	L		1
740624	06	55		F	072	043	R		
740624	06	55		F	074	043	R		
740624	06	55		F	073	044	L		
740624	06	55		M	072	042	R		
740624	06	55		F	076	046	L		
740624	06	55		M	073	042	R		
740624	06	55		F	083	051	R		
740624	06	56		M	076	047	L		1
740624	06	57		M	075	045	R		1
740624	06	57		M	083	050	L		1
740624	06	57		F	082	049	L		1
740624	06	57		F	074	044	R		1
740624	06	57		F	074	045	R		1
740624	06	57		F	068	042	L		
740624	06	57		M	078	045	R		
740624	06	58		M	080	048	L		1
740624	06	58		M	076	045	L		1
740624	06	58		M	083	050	R		1
740624	06	58		M	074	043	R		1
740624	06	58		M	082	050	R		1

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DATE	SUB	T#	V	S	LEN	WID	H	E	D
740624	06	58	M		082	049	R		
740624	06	59	F		077	046	R	2	1
740624	06	59	M		074	043	L		1
740624	06	59	M		077	045	R		1
740624	06	59	M		090	053	R		1
740624	06	59	M		072	042	L		1
740624	06	59	F		080	048	R		1
740624	06	59	M		078	047	R		1
740624	06	59	M		071	042	R		
740624	06	59	M		076	045	L		
740624	06	59	M		076	047	R		
740624	06	60	M		079	048	R		1
740624	06	60	F		075	046	L	2	1
740624	06	60	F		065	040	R		1
740624	06	60	F		063	038	R		1
740624	06	60	M		065	036	L		1
740624	06	60	M		072	041	L		1
740624	06	60	F		062	035	R		1
740624	06	60	F		072	042	L		1
740624	06	60	M		084	049	R		1
740624	06	60	F		078	047	R		1
740624	06	60	F		071	041	R		
740624	06	60	M		062	037	R		
740624	06	60	M		075	045	L		
740624	06	60	F		066	038	R		
740624	06	60	M		064	037	L		
740624	06	60	M		074	042	L		
740624	06	60	F		074	043	L		
740627	03	41	V	M	080	048	R		1
740627	03	42	V	M	078	047	L		1
740627	03	42	V	F	078	045	L		1
740627	03	42	V	M	086	052	L		1
740627	03	42	V	F	082	047	L		
740627	03	42	V	M	073	045	R		
740627	03	43	V	M	081	048	L		1
740627	03	44	V	F	077	048	L		1
740627	03	44	V	F	079	048	L		1
740627	03	44	V	M	078	046	L		1
740627	03	44	V	F	078	047	L		
740627	03	45	V	M	083	049	L		1
740627	03	45	V	M	080	048	L		1
740627	03	45	V	F	084	053	R	2	1
740627	03	46	V	F	073	046	L		1
740627	03	46	V	M	080	049	R		1
740627	03	47	V	M	086	053	R		1
740627	03	47	V	F	080	047	L	3	1
740627	03	47	V	M	078	047	L		
740627	03	48	V	F	080	050	R	3	1
740627	03	48	V	F	075	045	R		1
740627	03	48	V	F	075	047	L		1
740627	03	48	V	M	083	052	L		1

DATE	SUB	T#	V	S	LEN	WID	H	E	D
740627	03	48	V	F	075	047	L		1
740627	03	48	V	M	078	047	R		
740627	03	48	V	M	078	045	L		
740627	03	49	V	M	083	047	R		1
740627	03	49	V	F	078	046	R		1
740627	03	49	V	M	085	052	L		1
740627	03	49	V	F	076	046	R		1
740627	03	49	V	F	078	048	L		
740627	03	49	V	F	080	047	L		
740627	03	50	V	M	081	049	R		1
740627	03	50	V	M	080	048	L		
740627	03	51		M	086	051	L		1
740627	03	51		M	068	040	L		
740627	03	52		F	068	041	R		1
740627	03	52		F	069	041	L		1
740627	03	52		M	074	043	R		1
740627	03	52		F	072	044	R		1
740627	03	52		F	076	045	R		1
740627	03	52		M	079	047	L		1
740627	03	52		M	071	042	L		1
740627	03	52		M	090	054	R		1
740627	03	52		M	076	043	R		1
740627	03	52		M	076	044	R		1
740627	03	52		F	066	037	L		1
740627	03	52		F	063	039	L		1
740627	03	52		M	073	043	L		1
740627	03	52		M	084	049	R		
740627	03	52		F	068	041	R		
740627	03	52		F	067	039	R		
740627	03	52		M	063	038	L		
740627	03	52		F	068	039	L		
740627	03	52		M	080	046	R		
740627	03	53		M	073	043	L		1
740627	03	53		M	075	043	L		1
740627	03	53		M	090	055	L		1
740627	03	53		M	081	048	R		1
740627	03	53		M	065	038	R		1
740627	03	53		M	076	044	R		1
740627	03	53		M	068	038	R		1
740627	03	53		F	083	051	L		1
740627	03	53		F	071	041	R		1
740627	03	53		F	078	048	R		1
740627	03	53		M	081	049	R		
740627	03	53		F	079	048	L		
740627	03	53		M	072	042	L		
740627	03	53		F	088	050	R		
740627	03	53		F	078	046	R		
740627	03	53		M	077	044	R		
740627	03	54		M	078	046	L		1
740627	03	54		F	079	047	R		1
740627	03	54		M	068	041	L		1

DATE	SUB	T#	V	S	LEN	WID	H	E	D
740627	03	54		F	072	043	L		1
740627	03	54		F	082	049	L		1
740627	03	54		F	077	045	L		1
740627	03	54		F	067	042	L		1
740627	03	54		M	073	041	R		1
740627	03	54		M	077	046	R		
740627	03	54		F	069	041	L		
740627	03	55		M	077	046	L		1
740627	03	55		F	073	046	R		1
740627	03	55		M	078	044	R		1
740627	03	55		M	072	044	R		1
740627	03	55		F	081	049	R		1
740627	03	55		F	073	045	L		1
740627	03	55		M	085	050	L		1
740627	03	55		M	072	045	R		1
740627	03	55		M	062	037	R		1
740627	03	55		F	087	053	L		1
740627	03	55		M	079	047	R		1
740627	03	55		M	068	041	R		1
740627	03	55		M	062	038	L		
740627	03	56		F	075	046	L		1
740627	03	56		F	077	048	L		1
740627	03	56		M	072	046	L		1
740627	03	56		F	069	041	R		
740627	03	56		M	079	048	L		
740627	03	57		F	079	047	L		1
740627	03	57		F	075	046	R		1
740627	03	57		F	078	049	L		1
740627	03	57		F	073	043	L		1
740627	03	57		M	082	048	L		1
740627	03	57		F	082	048	R		1
740627	03	57		M	077	045	R		1
740627	03	57		F	066	040	L		
740627	03	57		M	077	045	L		
740627	03	57		M	082	051	L		
740627	03	57		F	076	046	R		
740627	03	58		F	068	042	R		1
740627	03	58		F	091	057	R		1
740627	03	58		F	075	043	R		1
740627	03	58		M	077	048	R		1
740627	03	58		F	081	049	R		1
740627	03	58		F	074	042	L		1
740627	03	58		F	070	043	L		1
740627	03	58		M	080	049	L		1
740627	03	58		M	068	040	L		1
740627	03	58		M	077	045	R		1
740627	03	58		M	078	047	L		1
740627	03	58		F	078	046	L		1
740627	03	58		M	087	053	R		
740627	03	59		M	080	047	R		1
740627	03	59		M	083	050	L		1

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DATE	SUB	T#	V	S	LEN	WID	H	E	D
740627	03	59		F	078	047	L		1
740627	03	59		F	076	048	L		1
740627	03	59		M	071	041	L		1
740627	03	59		M	070	039	L		1
740627	03	59		F	066	040	L		1
740627	03	59		M	079	042	R		1
740627	03	59		F	081	051	R		1
740627	03	59		M	069	043	L		
740627	03	59		M	071	043	L		
740627	03	60		M	085	050	L		1
740627	03	60		M	072	042	L		1
740627	03	60		F	066	040	L		1
740627	03	60		M	068	041	R		1
740627	03	60		M	066	037	L		1
740627	03	60		M	073	044	L		1
740627	03	60		M	072	042	L		1
740627	03	60		M	079	046	R		1
740627	03	60		F	073	042	R		1
740627	03	60		M	077	044	R		1
740627	03	60		M	066	039	R		1
740627	03	60		M	064	038	R		1
740627	03	60		M	079	046	R		1
740627	03	60		F	070	042	R		1
740627	03	60		M	067	039	R		1
740627	03	60		M	077	045	L		1
740627	03	60		F	071	043	L		
740627	03	60		M	070	042	R		
740627	03	60		F	065	040	L		
740627	03	60		F	063	037	L		
740627	03	60		F	071	040	L		
740627	03	60		M	069	041	L		
740627	03	60		M	078	047	L		
740705	08	51		F	073	043	R		
740705	08	51		F	076	045	L		
740705	08	52		F	076	043	L		1
740705	08	52		M	079	049	R		1
740705	08	53		M	079	047	L		1
740705	08	53		F	071	043	R		1
740705	08	53		F	067	040	L		1
740705	08	53		F	094	056	R		1
740705	08	53		F	075	044	L		1
740705	08	53		M	079	036	L		1
740705	08	53		F	067	037	R		1
740705	08	53		F	075	042	R		1
740705	08	53		M	074	043	L		
740705	08	53		F	067	039	R		
740705	08	53		F	076	046	L		
740705	08	53		M	071	040	R		
740705	08	53		F	073	041	R		
740705	08	53		M	072	042	L		
740705	08	53		M	076	044	R		

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740705	08	53		F	079	036	L		
740705	08	53		F	074	043	L		
740705	08	53		F	082	047	L		
740705	08	53		M	069	038	R		
740705	08	55		F	067	039	R		1
740705	08	55		M	078	045	L		1
740705	08	55		F	074	044	R		1
740705	08	55		M	072	041	L		1
740705	08	55		M	071	041	R		1
740705	08	55		M	076	044	L		1
740705	08	55		F	068	037	R		1
740705	08	55		M	073	041	L		
740705	08	55		F	073	044	L		
740705	08	55		M	074	041	L		
740705	08	57		F	083	050	R		1
740705	08	57		F	075	043	L		1
740705	08	57		M	077	044	R		1
740705	08	57		M	071	040	R		1
740705	08	57		M	072	040	L		1
740705	08	57		F	076	044			
740705	08	57		F	073	043	R		
740705	08	57		M	070	040	R		
740705	08	57		M	079	047	L		
740705	08	57		F	085	051	L		
740705	08	57		F	081	049	R		
740705	08	58		M	065	036	R		1
740705	08	58		F	081	049	L		1
740705	08	58		M	082	049	R		1
740705	08	58		F	079	047	L		1
740705	08	58		M	077	045	L		1
740705	08	58		F	075	044	R		1
740705	08	58		F	085	054	R		
740705	08	58		F	079	045	L		
740705	08	58		M	079	050	L		
740705	08	58		F	071	041	L		
740705	08	58		M	077	047	L		
740705	08	58		F	069	039	L		
740705	08	58		M	072	041	R		
740705	08	58		M	089	052	L		
740705	08	59		F	065	039	L		1
740705	08	59		F	067	037	L		1
740705	08	59		F	071	042	R		1
740705	08	59		M	079	045	R		1
740705	08	59		M	083	049	R		1
740705	08	59		F	065	037	L		1
740705	08	59		F	065	037	L		1
740705	08	59		F	084	049	R		
740705	08	59		M	081	046	L		
740705	08	59		F	065	037	R		
740705	08	59		F	080	047	R		
740705	08	59		F	072	041	R		

DATE	SUB	T#	V	S	LEN	WID	H	E	D
740705	08	59		M	080	047	L		
740705	08	59		M	078	045	R		
740705	08	60		M	079	045	R		1
740705	08	60		F	074	045	L		1
740705	08	60		M	075	042	L		1
740705	08	60		M	066	037	R		1
740705	08	60		M	066	038	L		1
740705	08	60		M	080	046	L		1
740705	08	60		M	066	039	L		1
740705	08	60		F	079	049	L		1
740705	08	60		M	067	038	L		1
740705	08	60		M	070	039	L		1
740705	08	60		M	072	040	R		1
740705	08	60		F	068	040	L		1
740705	08	60		M	070	042	R		1
740705	08	60		F	063	036	R		1
740705	08	60		F	065	036	R		1
740705	08	60		M	079	044	R		1
740705	08	60		M	084	049	L		1
740705	08	60		M	069	030	L		1
740705	08	60		M	086	050	L		1
740705	08	60		M	071	041	R		1
740705	08	60		M	070	041	L		
740705	08	60		F	068		L		
740705	08	60		F	077	045	R		
740705	08	60		M	075	043	L		
740705	08	60		M	066	037	R		
740705	08	60		F	073	042	R		
740705	08	60		M	076	043	R		
740710	13	42	V	M	078	046	L		1
740710	13	42	V	F	079	049	L		
740710	13	42	V	M	077	046	L		
740710	13	42	V	F	078	046	L		
740710	13	42	V	M	078	047	R		
740710	13	46	V	F	079	048	R		1
740710	13	47	V	F	086	055	L		1
740710	13	47	V	F	078	048	R		1
740710	13	47	V	F	085	050	R		
740710	13	48	V	M	080	047	R		1
740710	13	48	V	M	080	046	L		
740710	13	49	V	F	081	047	R		1
740710	13	49	V	M	081	048	L		1
740710	13	49	V	M	085	051	L		1
740710	13	49	V	F	080	050	L		1
740710	13	49	V	F	080	048	L		1
740710	13	50	V	F	078	046	R		1
740710	13	50	V	M	080	049			
740710	13	50	V	M	080	048			
740710	13	50	V	F	078	049	R		
740710	13	50	V	M	084	052	L		
740710	05	52		F	066	038	L		1

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WOODS HOLE, MA. 1974

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740710	05	52		M	070	043	L		1
740710	05	52		F	074	044	L		1
740710	05	52		F	074	046	L		1
740710	05	52		F	082	051	L		1
740710	05	52		M	079	046	R		1
740710	05	52		F	069	042	L		
740710	05	52		M	080	047	R		
740710	05	52		M	074	042	R		
740710	05	52		F	071	089	R		
740710	05	52		F	078	048	R		
740710	05	53		M	074	044	L		1
740710	05	53		F	087	051	L		1
740710	05	53		F	072	044	L		1
740710	05	53		F	061	038	R		1
740710	05	53		M	068	039	L		1
740710	05	53		F	073	044	R		1
740710	05	53		M	073	042	R		1
740710	05	53		F	077	045	R		1
740710	05	53		M	073	042	R		1
740710	05	53		F	073	043	R		1
740710	05	53		M	072	042	R		1
740710	05	53		M	075	045	L		1
740710	05	53		M	078	046	R		1
740710	05	53		F	079	046	R		
740710	05	53		F	071	041	R		
740710	05	54		F	070	039	R		1
740710	05	54		F	082	049	L		1
740710	05	54		F	075	047	L		1
740710	05	54		M	080	047	R		1
740710	05	54		M	088	053	R		
740710	05	54		F	076	047	L		
740710	05	54		F	070	043	R		
740710	05	55		M	089	053	R		1
740710	05	55		M	070	041	R		1
740710	05	55			086	052			1
740710	05	55		M	077	043	R		1
740710	05	55		F	081	051	L		1
740710	05	55		F	079	048	R		1
740710	05	55		M	074	044	R		1
740710	05	55		M	080	048	L		1
740710	05	55		F	072	042	L		1
740710	05	55		M	074	044	L		1
740710	05	55		F	073	043	R		1
740710	05	55		F	072	042	L		1
740710	05	55		F	085	052	R		
740710	05	55		F	073	045			
740710	05	55		M	089	053	L		
740710	05	55		F	076	044	R		
740710	05	55		F	082	050	L		
740710	05	57		F	069		R		
740710	05	57		M	023	043	R		

DATE	SQD	T#	V	S	LEN	WIC	H	E	D
740710	05	57		M	059	039	L		
740710	05	58		M	087	052	L		1
740710	05	58		F	075	045	R		1
740710	05	58		F	074	044	L		1
740710	05	58		F	072	042			1
740710	05	58		F	082	048	R		1
740710	05	58		F	069	039	R		1
740710	05	58		M	067	039	L		1
740710	05	58		M	073	044	L		1
740710	05	58		F	072	042	R		1
740710	05	58		F	075	045	L		
740710	05	58		M	083	047	R		
740710	05	58		M	072	042	L		
740710	05	59		M	077	045	R		1
740710	05	59		M	068	039	L		1
740710	05	59		M	073	033	R		1
740710	05	59		F	079	048	L		1
740710	05	60		M	074	043	R		1
740710	05	60		F	083	044	R		1
740710	05	60		F	081	050	R		1
740710	05	60		M	074	043	L		1
740710	05	60		F	063	036	L		1
740710	05	60		M	070	036	R		1
740710	05	60		F	077	046	L		1
740710	05	60		F	071	041	R		1
740710	05	60		M	072	041	L		1
740710	05	60		M	072	042	L		1
740710	05	60		M	065	036	L		1
740710	05	60		F	080	048	R		1
740710	05	60		M	070	040	R		
740713	13	42	V	F	078	049	R		1
740713	13	42	V	F	080	049	L		1
740713	13	43	V	M	080	047	R		1
740713	13	43	V	M	090	055	R		1
740713	13	43	V	F	081	050	L		1
740713	13	43	V	M	078	047	L		
740713	13	43	V	F	086	052	L		
740713	13	44	V	M	081	051	L		1
740713	13	44	V	M	084	050	R		
740713	13	45	V	M	080	047	R		1
740713	13	45	V	F	083	052	L		1
740713	13	45	V	M	084	051	R		1
740716	06	41	V	F	081	051	R		
740716	06	42	V	M	076	047	L		1
740716	06	42	V	F	072	045	R		1
740716	06	42	V	F	075	046	R		1
740716	06	42	V	M	076	046	R		
740716	06	42	V	F	079	049	R		
740716	06	42	V	F	081	051	L		
740716	06	42	V	F	074	046	L		
740716	06	42	V	F	081	050	R		

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740716	06	44	V	F	075	047	L		1
740716	06	44	V	F	087	053	R		1
740716	06	44	V	F	079	047	R		
740716	06	45	V	M	080	049	R		
740716	06	46	V	F	076	046	R		1
740716	06	46	V	F	084	051	R		1
740716	06	46	V	F	079	048	L		
740716	06	47	V	F	081	050	L		
740716	06	48	V	F	077	047	L		1
740716	06	48	V	F	078	048	R		
740716	06	48	V	F	079	049	L		
740716	06	49	V	M	080	047	R		1
740716	06	49	V	F	082	051	L		1
740716	06	49	V	F	080	046	L		
740716	06	49	V	F	082	050	L		
740716	06	52		F	083	049	R		1
740716	06	52		M	066	039	R		1
740716	06	52		F	066	041	L		1
740716	06	52		M	079	041	L		1
740716	06	52		F	066	041	R		1
740716	06	52		M	074	044	R		1
740716	06	52		F	066	039	L		1
740716	06	52		M	080	049	L		1
740716	06	52		F	071	048	L		1
740716	06	52		M	086	053	R		
740716	06	52		M	065	037	L		
740716	06	52		M	062	036	L		
740716	06	52		F	068	041	L		
740716	06	53		M	071	044	R		1
740716	06	53		F	067	041	R		1
740716	06	53		F	070	044	R		1
740716	06	53		M	079	015	L		1
740716	06	53		F	070	042	R		1
740716	06	53		M	072	042	R		1
740716	06	53		F	074	046	R		1
740716	06	53		M	064	037	L		
740716	06	53		F	068	040	R		
740716	06	53		F	071	044			
740716	06	53		F	071	042	R		
740716	06	54		M	072	042	L		1
740716	06	54		F	073	044	L		1
740716	06	54		M	073	043	R		1
740716	06	54		F	086	049	L		
740716	06	54		F	082	049	R		
740716	06	54		F	072	043	R		
740716	06	55		F	069	042	L		1
740716	06	55		F	081	049	L		1
740716	06	55		F	075	046	L		
740716	06	55		M	075	045	L		
740716	06	55		F	079	046	R		
740716	06	55		F	084	052	L		

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WOODS HOLE, MA. 1974

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740716	06	55		M	079	046	R		
740716	06	55		F	074	044	L		
740716	06	55		F	065	038			
740716	06	55		M	075	043			
740716	06	55		M	075	043			
740716	06	55		M	071	042	R		
740716	06	55		F	076	047	R		
740716	06	55		F	087	055	R		
740716	06	55		M	086	052	L		
740716	06	55		F	071	042	L		
740716	06	55		F	072	044	R		
740716	06	55		F	076	044	L		
740716	06	55		F	077	043	R		
740716	06	57		M	071	044	L		1
740716	06	57		F	078	049	L		1
740716	06	57		M	067	039	L		1
740716	06	57		F	073	045	L		
740716	06	57		M	076	045	L		
740716	06	57		M	070	041	R		
740716	06	57		M	070	041	R		
740716	06	58		F	083	050	L		1
740716	06	58		M	074	044	R		1
740716	06	58		M	074	041	R		1
740716	06	58		F	075	045	R		1
740716	06	58		M	081	050	R		
740716	06	59		M	064	038	L		1
740716	06	59		F	067	042	R		1
740716	06	59		M	079	045	L		1
740716	06	59		F	081	050	L		1
740716	06	59		M	065	039	L		
740716	06	60		F	081	050	R		1
740716	06	60		M	074	046	R		1
740716	06	60		M	069	040	R		1
740716	06	60		M	064	039	R		1
740716	06	60		M	064	039	L		1
740716	06	60		M	079	046	R		
740716	06	60		F	077	047	R		
740716	06	60		F	082	051			
740716	06	60		F	083	050	L		
740716	06	60		F	067	040	L		
740716	06	60		M	064	040	R		
740716	06	60		F	060	035			
740716	06	60		M	068	042			
740716	06	60		M	065	039	L		
740716	06	60		F	069	041	R		
740716	06	60		F	074	044	L		
740716	06	60		M	070	041	L		
740716	06	60		M	072	042	L		
740716	06	60		M	073	042	R		
740716	06	60		F	072	044	L		
740722	06	42	V	F	079	047	R		

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740722	06	43	V	F	080	049	L		1
740722	06	43	V	F	082	050	L		1
740722	06	43	V	F	085	052	R		1
740722	06	43	V	M	075	045	R		
740722	06	43	V	F	075	046	L		
740722	06	44	V	M	077	045	R		1
740722	06	44	V	F	077	049	R		1
740722	06	44	V	F	079	048	L		
740722	06	44	V	F	080	050	L		
740722	06	45	V	F	078	047	R		1
740722	06	45	V	F	079	049	L		1
740722	06	45	V	F	077	046	R		1
740722	06	45	V	F	081	050	L		1
740722	06	45	V	M	075	045	L		
740722	06	45	V	F	080	049			
740722	06	47	V	F	079	050	L		1
740722	06	47	V	F	076	049	R		1
740722	06	47	V	F	081	050	R		1
740722	06	48	V	F	077	047	L		
740722	06	49	V	F	075	047	L		1
740722	06	50	V	M	080	049	R		1
740722	06	50	V	F	085	052	L		
740722	06	52		F	070	042	R		1
740722	06	52		F	070	040	L		1
740722	06	52		M	077	045	R		1
740722	06	52		F	078	049	L		1
740722	06	52		F	077	047	L		1
740722	06	53		F	078	048	L		1
740722	06	53		M	070	041	R		1
740722	06	53		F	075	045	L		
740722	06	53		M	075	045	R		
740722	06	53		F	072	044	L		
740722	06	53		M	075	044	R		
740722	06	53		M	079	046	R		
740722	06	54		M	091	056	R		1
740722	06	54		F	077	047	R		
740722	06	54		M	089	052			
740722	06	54		F	087	054			
740722	06	54		M	077	046			
740722	06	54		F	078	046			
740722	06	54		M	075	043	R		
740722	06	54		F	075	046	R		
740722	06	54		M	079	045	R		
740722	06	54		F	072	044	L		
740722	06	55		M	073	043	R		1
740722	06	55		M	071	042	L		1
740722	06	55		M	080	047	L		1
740722	06	55		F	069	043	R		1
740722	06	55		M	069	039	L		1
740722	06	55		M	071	040	R		1
740722	06	55		F	081	049	R		1

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740722	06	55		F	073	043	L		1
740722	06	55		F	074	043	L		
740722	06	55		F	079	049	R		
740722	06	57		F	070	042	R		1
740722	06	57		F	079	050	L		1
740722	06	58		F	079	049	R		1
740722	06	58		M	073	046	L		1
740722	06	58		F	077	047	L		
740722	06	59		M	076	047	R		1
740722	06	59		M	079	048	R		1
740722	06	59		F	066	040	R		1
740722	06	59		F	074	045	R		1
740722	06	59		M	075	045	L		
740722	06	60		F	071	044	R		1
740722	06	60		M	076	045	L		1
740722	06	60		M	067	040	L		1
740722	06	60		F	074	045	L		1
740722	06	60		M	069	040	R		1
740722	06	60		F	075	046	R		1
740722	06	60		M	073	042	L		1
740722	06	60		F	075	046	R		1
740722	06	60		F	069	042	L		1
740722	06	60		F	082	051	L		1
740722	06	60		F	074	042	L		
740722	06	60		M	066	039	L		
740722	06	60		M	077	044	R		
740722	06	60		F	065	039	R		
740722	06	60		F	075	046	R		
740722	06	60		F	080	051	R		
740722	06	60		F	077	045	L		
740730	08	42	V	F	085	051	R		1
740730	08	42	V	F	092	056	L		1
740730	08	42	V	F	078	049	R		1
740730	08	43	V	F	080	048	R	1	1
740730	08	43	V	F	085	054			1
740730	08	43	V	F	076	047	R		
740730	08	44	V	F	081	048	L	1	1
740730	08	44	V	M	079	045	R		
740730	08	45	V	M	077	048	R		1
740730	08	47	V	F	080	048	L		1
740730	08	47	V	M	075	047	L		
740730	08	48	V		078	045	R		1
740730	08	48	V	M	079	048	L		1
740730	08	48	V	F	080	050	L		1
740730	08	48	V	F	078	048			1
740730	08	48	V	M	081	049	R		
740730	08	48	V	M	081	051	L		
740730	08	49	V	F	080	049	R		1
740730	08	50	V	F	069	042			
740730	08	51		F	083	053	L		1
740730	08	52		F	075	044	L		1

LOBSTER DATA - SURFACE HAULED TRAPS
WOODS HOLE, MA. 1974

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740730	08	52		F	073	045	R		1
740730	08	52		F	072	045	L		1
740730	08	52		F	068	040	R		1
740730	08	52		F	067	040	R		1
740730	08	52		F	077	048	R		1
740730	08	52		M	069	040	L		1
740730	08	52		M	068	040	L		
740730	08	52		M	074	046	R		
740730	08	53		M	074	045	L		1
740730	08	53		M	071	042	R		1
740730	08	53		M	069	041	L		
740730	08	53		F	069	040	R		
740730	08	53		M	069	039	R		
740730	08	53		F	070	041	R		
740730	08	53		F	077	047	L		
740730	08	54		F	084	052	R		1
740730	08	54		M	073	044	L		1
740730	08	54		F	080	050	L		1
740730	08	54		F	078	049	L		1
740730	08	54		M	079	045	L		
740730	08	55		M	078	044	R		1
740730	08	55		F	068	040	R		1
740730	08	55		F	074	044	L		1
740730	08	55		F	079	048	L		
740730	08	55		M	075	043	R		
740730	08	55		F	087	054	L		
740730	08	55		M	077	047	L		
740730	08	57		F	067	039	L		1
740730	08	57		M	073	043	L		
740730	08	57		M	077	046	R		
740730	08	57		F	078	048	L		
740730	08	57		F	086	051			
740730	08	57		M	073	043	R		
740730	08	57		M	072	042	R		
740730	08	57		M	073	044	R		
740730	08	57		M	076	046	L		
740730	08	57		M	075	043	L		
740730	08	58		M	085	053	R		1
740730	08	58		M	071	041	R		1
740730	08	58		M	080	046	R		1
740730	08	58		M	076	043	L		1
740730	08	58		M	077	044	R		
740730	08	58		F	088	055	R		
740730	08	58		F	077	044	R		
740730	08	58		F	085	050			
740730	08	58		F	083	049			
740730	08	59		M	076	046	R		1
740730	08	59		F	074	047	R		1
740730	08	59		M	071	041	R		1
740730	08	59		F	076	046	L		1
740730	08	59		M	075	044	L		

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740730	08	59		M	073	043	L		
740730	08	60		M	073	043	R		1
740805	06	60		M	069	049	L		1
740805	06	60		F	080	050	L	1	1
740805	06	60		F	080	050	L		1
740805	06	60		M	067	040	R		1
740805	06	60		F	061	034	R		1
740805	06	60		M	063	037	R		1
740805	06	60		F	086	055	L		1
740805	06	60		M	064	037	R		
740805	06	60		M	065	036	R		
740805	06	60		F	065				
740805	06	60		F	066	039	R		
740805	06	60		F	084	051	L		
740805	06	60		F	069	039	L		
740805	06	60		F	084	054			
740805	06	60		F	072	045	L		
740805	06	60		M	066	040	L		
740805	06	60		F	062	036	L		
740806	07	42	V	M	075	047	R		1
740806	07	43	V	F	075	047	R		1
740806	07	44	V	F	081	050	L		1
740806	07	44	V	F	075	050	R	1	1
740806	07	45	V	F	080	049	R		1
740806	07	45	V	M	076	046	L		1
740806	07	45	V	F	085	054	L		
740806	07	47	V	M	081	050	L		1
740806	07	47	V	F	082	050	R		1
740806	07	47	V	F	079	051	L		1
740806	07	47	V	F	081	051	L		
740806	07	48	V	F	079	049	L		1
740806	07	48	V	M	083	050	R		1
740806	07	48	V	F	089	054	R		1
740806	07	48	V	M	077	046	L		1
740806	07	49	V	M	077	047	R		1
740806	07	49	V	F	077	047	L	1	1
740806	07	51		M	080	050	R		
740806	07	52		M	078	049	L		1
740806	07	52		F	071	044	L		1
740806	07	52		M	075	047	R		1
740806	07	52		M	073	043	L		1
740806	07	52		F	068	040	R		1
740806	07	52		M	073	045	R		
740806	07	53		M	066	041	L		1
740806	07	53		M	084	053	R		1
740806	07	53		F	070	043	L		1
740806	07	53		F	081	050	L		1
740806	07	53		F	071	044	R		
740806	07	53		M	069	042	R		
740806	07	54		F	075	046	L		1
740806	07	54		F	077	049	R		

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740806	07	54		F	079	049	L		
740806	07	55		M	079	047	R		1
740806	07	55		M	073	042	L		1
740806	07	55		F	081	050	R		
740806	07	55		M	075	044	L		
740806	07	55		M	073	043	L		
740806	07	55		M	071	041	R		
740808	06	57		F	071	041	R		1
740808	06	57		F	075	046	R		1
740808	06	57		F	078	047	R		1
740808	06	57		M	077	048	L		1
740808	06	57		F	077	047	L		1
740808	06	57		M	070	040	R		1
740808	06	57		F	066	040	L		1
740808	06	57		M	076	043	R		
740808	06	57		F	065	039	R		
740808	06	57		M	072	041	R		
740808	06	57		F	074	045	R		
740808	06	57		F	071	042	R		
740808	06	58		F	079	047	R		1
740808	06	58		F	076	045	R		1
740808	06	58		F	077	046	R		1
740808	06	58		F	086	053	R		1
740808	06	58		M	072	044	R		
740808	06	58		F	077	047	R		
740808	06	58		F	075	046	R		
740808	06	58		M	074	045	R		
740812	06	42	V	F	083	050	R		1
740812	06	42	V	F	081	050	R		
740812	06	42	V	M	079	045	L		
740812	06	42	V	F	079	045	L		
740812	06	42	V	F	079	048			
740812	06	42	V	M	079	045	L		
740812	06	42	V	F	076	045	R		
740812	06	44	V	F	079	050	R		1
740812	06	44	V	F	076	045	L		1
740812	06	44	V	F	092	057	R		1
740812	06	44	V	M	080	046	L		
740812	06	44	V	F	087	055	R		
740812	06	45	V	F	074	045	R		1
740812	06	45	V	F	080	048	R		1
740812	06	45	V	F	077	047	R		1
740812	06	45	V	F	080	049	L		1
740812	06	45	V	M	081	047	R		1
740812	06	45	V	F	084	051	L		
740812	06	45	V	F	080	049	R		
740812	06	45	V	F	078	047	L		
740812	06	46	V	F	080	049	L		1
740812	06	46	V	F	083	049	R		1
740812	06	46	V	F	083	050	L		1
740812	06	47	V	F	077	047	L		1

LOBSTER DATA - SURFACE HAULED TRAPS
WOODS HOLE, MA. 1974

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740812	06	47	V	M	078	046	R		1
740812	06	47		M	078	045	R		
740812	06	47	V	M	074	045	L		
740812	06	47	V	F	082	050	R		
740812	06	48	V	M	077	045	L		1
740812	06	48	V	M	077	047	R		1
740812	06	48	V	F	095	059	R		
740812	06	48	V	F	079	049	L	2	
740812	06	48	V	M	077	046	L		
740812	06	49	V	M	078	046	L		
740812	06	49	V	M	076	045	L		
740812	06	50	V	F	084	050	R		1
740812	06	52		F	085	052	R		1
740812	06	52		M	072	041	R		1
740812	06	52		M	075	043	L		1
740812	06	52		M	071	042	R		1
740812	06	52		F	081	049	R		1
740812	06	52		F	087	052	R		1
740812	06	52		F	087	054	R		1
740812	06	52		F	077	045	L		1
740812	06	52		M	069	039	L		1
740812	06	52		M	072	042	R		1
740812	06	52		F	074	045	L		
740812	06	52		F	073	044	R		
740812	06	52		F	071	043	L		
740812	06	53		F	079	049	L		1
740812	06	53		F	064	039	L		1
740812	06	54		F	081	050	L		1
740812	06	55		F	069	040	L		1
740812	06	55		F	084	051	R		
740812	06	55		F	072	044	R		
740812	06	57		F	080	047	R		1
740812	06	57		F	077	045	L	2	1
740812	06	57		F	077	045	R		
740812	06	57		F	079	047	R		
740812	06	58		M	076	044	L		1
740812	06	58		M	079	047	R		1
740812	06	58		M	075	043	R		1
740812	06	58		M	079	047	L		1
740812	06	58		M	078	043	R		1
740812	06	58		F	072	043	R	2	1
740812	06	58		M	080	047	R		
740812	06	58		F	076	046	L	2	
740812	06	59		F	086	050	R		1
740812	06	59		M	066	038	R		1
740812	06	59		F	080	047	L		
740812	06	59		M	076	045	R		
740812	06	59		F	078	046	L		
740812	06	59		M	067	039	R		
740812	06	59		F	066	039	L		
740812	06	59		M	074	042	R		

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740812	06	59		F	074	043	L		
740812	06	59		F	069	040	R		
740812	06	60		F	081	048	L		1
740812	06	60		M	089	053	R		1
740812	06	60		M	064	036	L		1
740812	06	60		M	079	043	L		1
740812	06	60		M	070	040	R		1
740812	06	60		F	081	051	R		
740812	06	60		M	071	040	L		
740812	06	60		F	075	042	R		
740812	06	60		M	073	042	L		
740819	07	42	V	F	077	047	R	1	1
740819	07	43	V	F	082	051	R		1
740819	07	43	V	M	078	047	L		1
740819	07	43	V	M	081	049	R		
740819	07	44	V	F	074	046	L		1
740819	07	44	V	F	076	048	L		
740819	07	45	V	F	075	047	L		1
740819	07	45	V	M	075	046	R		1
740819	07	45	V	M	079	048	L		
740819	07	45	V	M	076	045	L		
740819	07	45	V	M	080	049	R		
740819	07	48	V	F	080	051	L		
740819	07	48	V	F	082	049	L	1	
740819	07	49	V	F	086	053	L		1
740819	07	49	V	F	077	047	L		1
740819	07	49	V	F	077	049	L		
740819	07	50	V	M	082	052	R		1
740819	07	50	V	F	078	049	R	1	1
740819	07	50	V	M	078	046	R		
740819	07	52		F	090	054	L		1
740819	07	52		M	078	045	L		1
740819	07	52		F	080	049	L	1	1
740819	07	52		F	076	045	L		1
740819	07	52		M	078	046	R		1
740819	07	52		M	071	041	R		1
740819	07	52		M	076	044	R		1
740819	07	52		F	073	043	L		
740819	07	52		F	074	046	R		
740819	07	52		F	070	023	R		
740819	07	52		F	075	043	R	1	
740819	07	52		F	079	047	R	1	
740819	07	52		M	077	045	L		
740819	07	53		F	079	047	L	1	1
740819	07	53		M	069	041	L		1
740819	07	53		M	076	046	L		1
740819	07	53		F	065	037	L		1
740819	07	53		M	072	042	L		1
740819	07	53		F	078	048	L	1	
740819	07	53		M	069	039	L		
740819	07	54		F	072	042	L		1

DATE	SQD	T#	V	S	LEN	WID	H	E	D
740819	07	54		F	086	052	R		1
740819	07	54		F	086	052	R		1
740819	07	54		M	076	044	R		
740819	07	54		F	074	046	R	1	
740819	07	55		F	075	045	L	1	1
740819	07	55		F	075	045	R		1
740819	07	55		F	075	045	L	1	1
740819	07	55		F	075	045	R		1
740819	07	55		F	077	046	L		
740819	07	55		F	077	046	L		
740819	07	58		F	077	046	L		1
740819	07	58		M	079	045	R		1
740819	07	58		M	077	046	R		1
740819	07	58		M	070	041	L		1
740819	07	58		M	075	042	R		
740819	07	58		F	086	053	R		
740819	07	58		M	077	047	R		
740819	07	58		F	076	045	R	1	
740819	07	58		F	081	050	R		
740819	07	58		F	072	045	R		
740819	07	58		M	077	044	L		
740819	07	59		M	072	041	R		1
740819	07	59		M	082	049	L		1
740819	07	59		M	074	046	L		1
740819	07	59		F	068	041	L	1	1
740819	07	59		F	071	043	R		1
740819	07	59		F	070	041	R		
740819	07	59		M	071	042	L		
740819	07	59		M	078	045	L		
740819	07	59		F	062	037			
740819	07	59		F	079	045	L		
740819	07	59		M	082	047	L		
740819	07	59		F	070	041	R		
740819	07	59		M	068	036	R		
740819	07	60		M	073	044	R		1
740819	07	60		F	059	033	R		1
740819	07	60		M	077	044	R		
740819	07	60		F	068	040	R		
740819	07	60		F	073	044	R		
740819	07	60		F	072	043	L		
740823	04	42	V	M	074	045	R		1
740823	04	42	V	M	075	045	L		1
740823	04	42	V	F	076	046	L		1
740823	04	42	V	F	076	045	L		1
740823	04	42	V	M	076	045	L		
740823	04	43	V	F	075	046	L	1	1
740823	04	43	V	M	078	046			1
740823	04	44	V	F	077	047	R	3	
740823	04	45	V	F	073	046	L	1	1
740823	04	45	V	F	076	047	R		1
740823	04	45	V	M	078	047	L		

LOBSTER DATA - SURFACE HAULED TRAPS
WOODS HOLE, MA. 1974

DATE	SOD	T#	V	S	LEN	WID	H	E	D
740823	04	46	V	F	084	052	R		
740823	04	48	V	F	082	048	L	1	1
740823	04	48	V	F	079	047	R		
740823	04	48	V	M	080	048	R		
740823	04	49	V	F	076	047	L		1
740823	04	49	V	F	079	048	R	1	1
740823	04	49	V	F	076	047	R	1	
740823	04	50	V	F	078	046	R		
740823	04	51		F	070	042	R		1
740823	04	52		F	072	044	R		1
740823	04	52		M	074	045	R		1
740823	04	52		F	074	048	L	1	1
740823	04	52		M	075	042	L		1
740823	04	52		F	080	051	L		1
740823	04	52		M	073	043	R		1
740823	04	52		F	078	049	R		1
740823	04	52		F	077	047	L	1	1
740823	04	52		F	078	047	L	1	1
740823	04	52		F	073	044	R	1	1
740823	04	52		M	072	043	R		1
740823	04	52		F	085	053	R		
740823	04	52		F	082	052	R		
740823	04	52		F	067	042	L		
740823	04	52		M	079	045	L		
740823	04	52		F	078	048	R		
740823	04	52		F	075	044	R		
740823	04	52		F	079	047	R		
740823	04	53		F	084	051	R		1
740823	04	53		F	079	048	L		
740823	04	54		M	079	047	R		
740823	04	54		F	079	048	R	1	
740823	04	59		M	079	048	R		1
740823	04	59		F	073	044	R		1
740823	04	59		M	069	041	R		1
740823	04	59		M	067	039	R		1
740823	04	59		F	067	039	R		1
740823	04	59		M	069	039	L		1
740823	04	59		M	067	041	L		1
740823	04	59		M	080	046	R		
740823	04	59		M	068	039	L		
740823	04	59		M	078	045	L		
740823	04	59		F	080	048	R		
740823	04	60		M	079	047	R		1
740823	04	60		F	068	040	L		1
740823	04	60		F	066	038	L		1
740823	04	60		F	077	047	R		1
740823	04	60		M	067	039	L		1
740823	04	60		M	070	041	R		1
740823	04	60		M	066	037	L		1
740823	04	60		M	074	047	R		1
740823	04	60		M	062	035	L		1

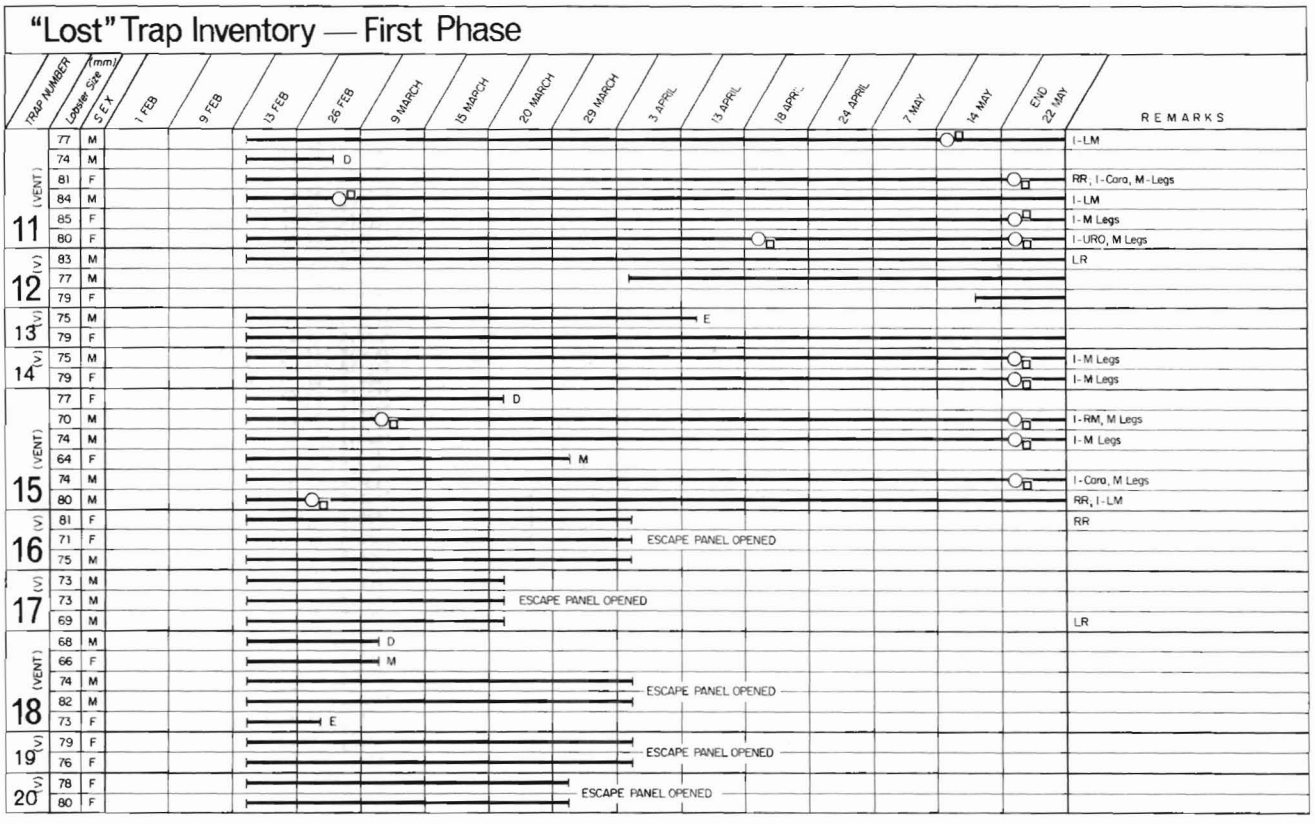
DATE	SOD	T#	V	S	LEN	WID	H	E	D
740823	04	60		M	063	036	R		1
740823	04	60		F	059	035	R		1
740823	04	60		F	064	038	L		1
740823	04	60		M	063	038	R		
740823	04	60		M	071	044	R		

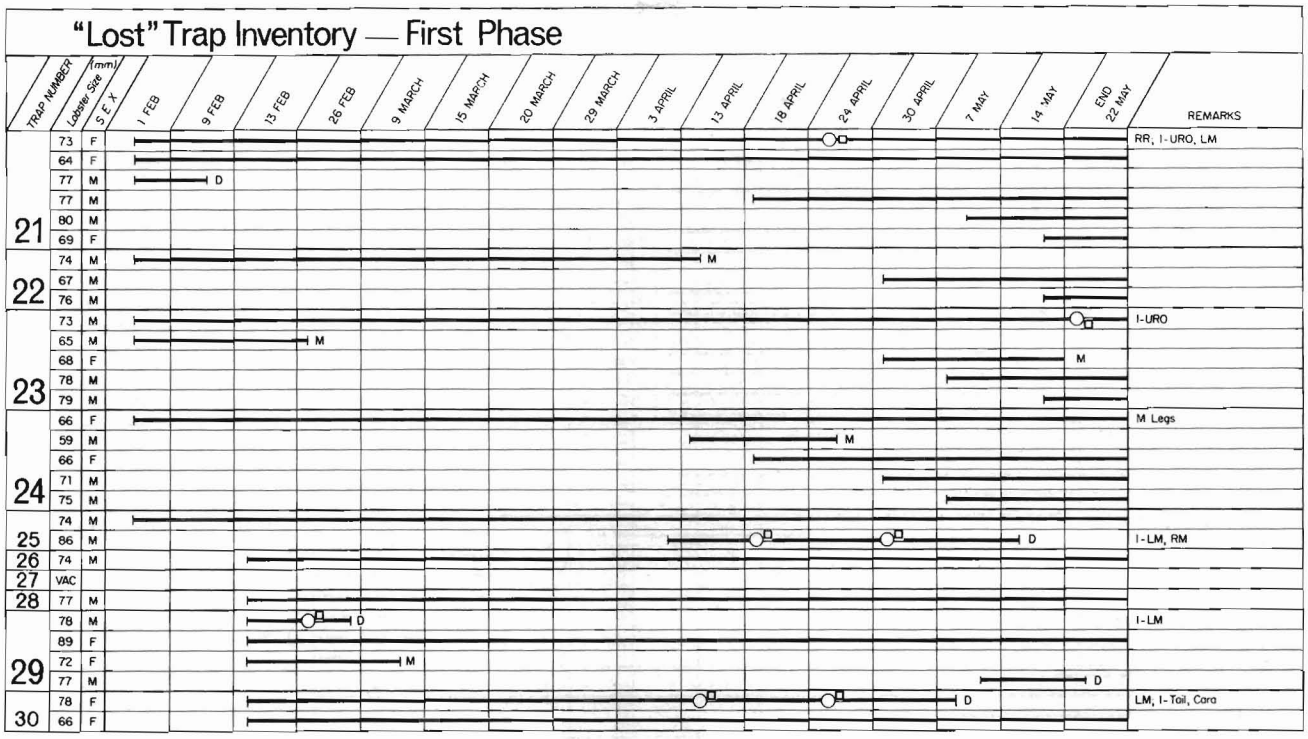
APPENDIX B

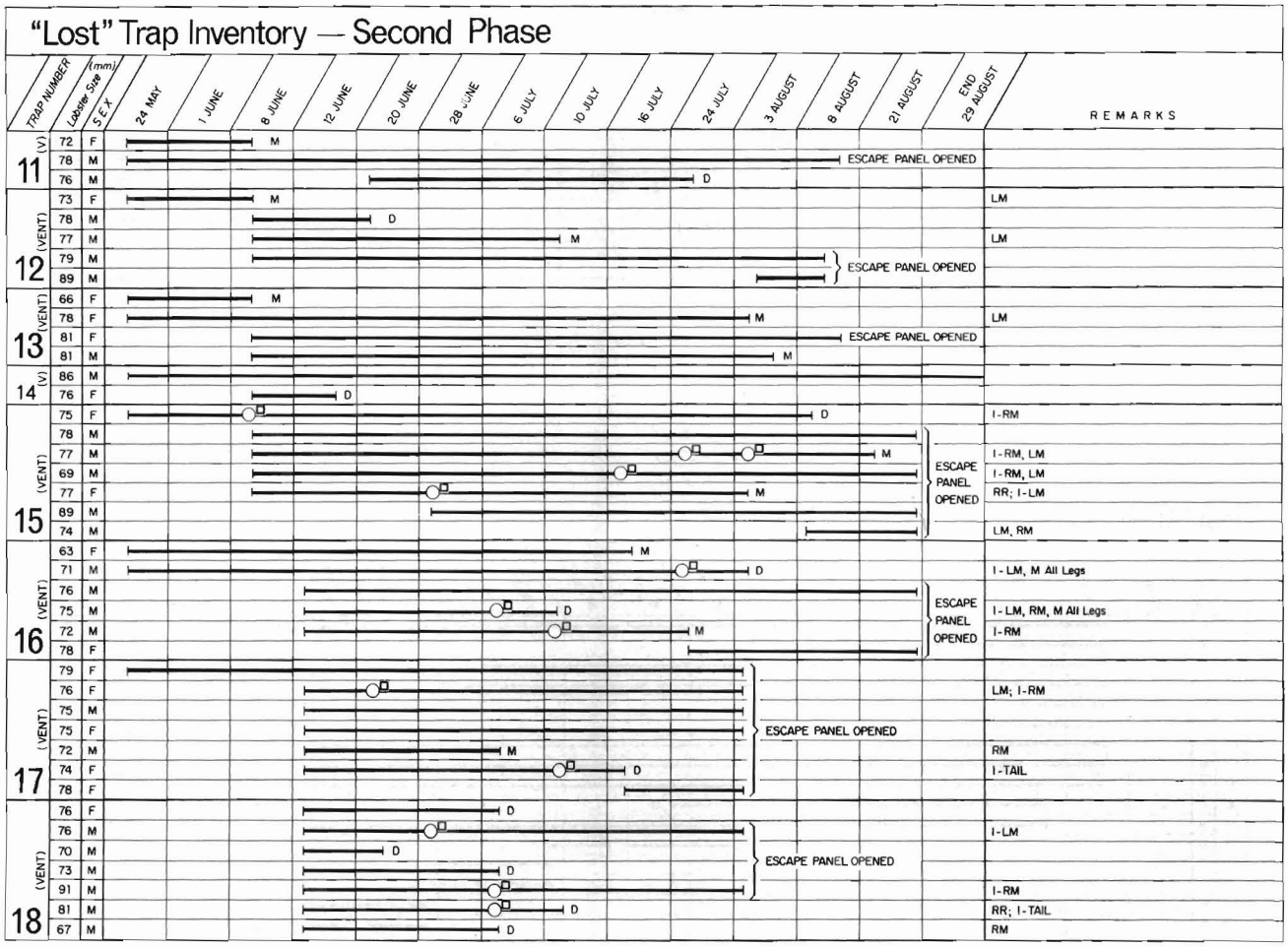
"Lost" trap inventory

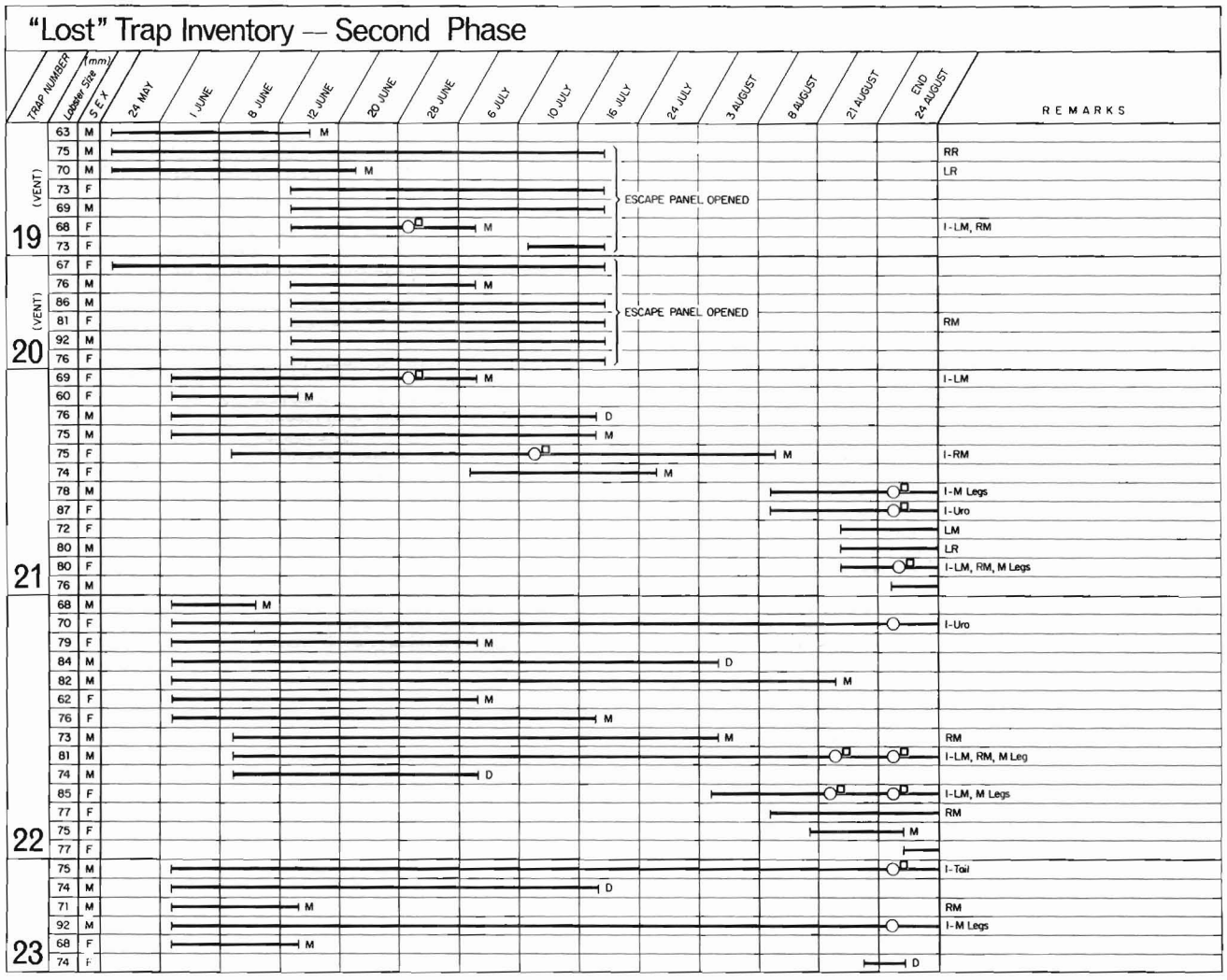
Key to tables

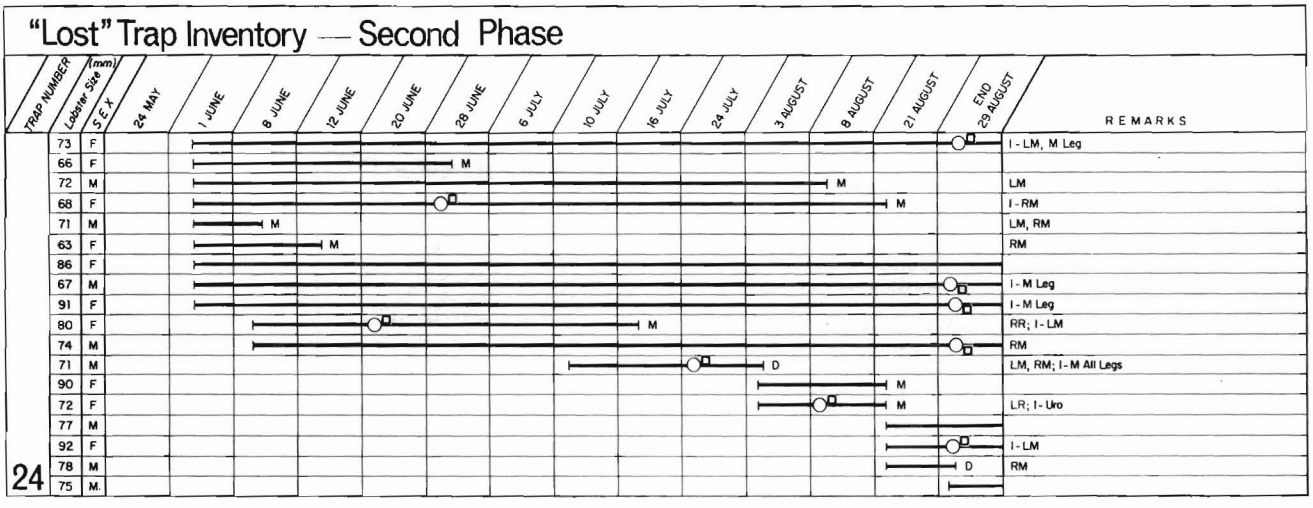
O□:	Injured in trap
D:	Dead
M:	Missing
E:	Escaped (later recaptured)
RR:	Right (claw) regenerate
LR:	Left (claw) regenerate
RM:	Right (claw) missing
LM:	Left (claw) missing
Cara:	Carapace damaged
URO:	Uropods damaged
M legs:	Missing legs

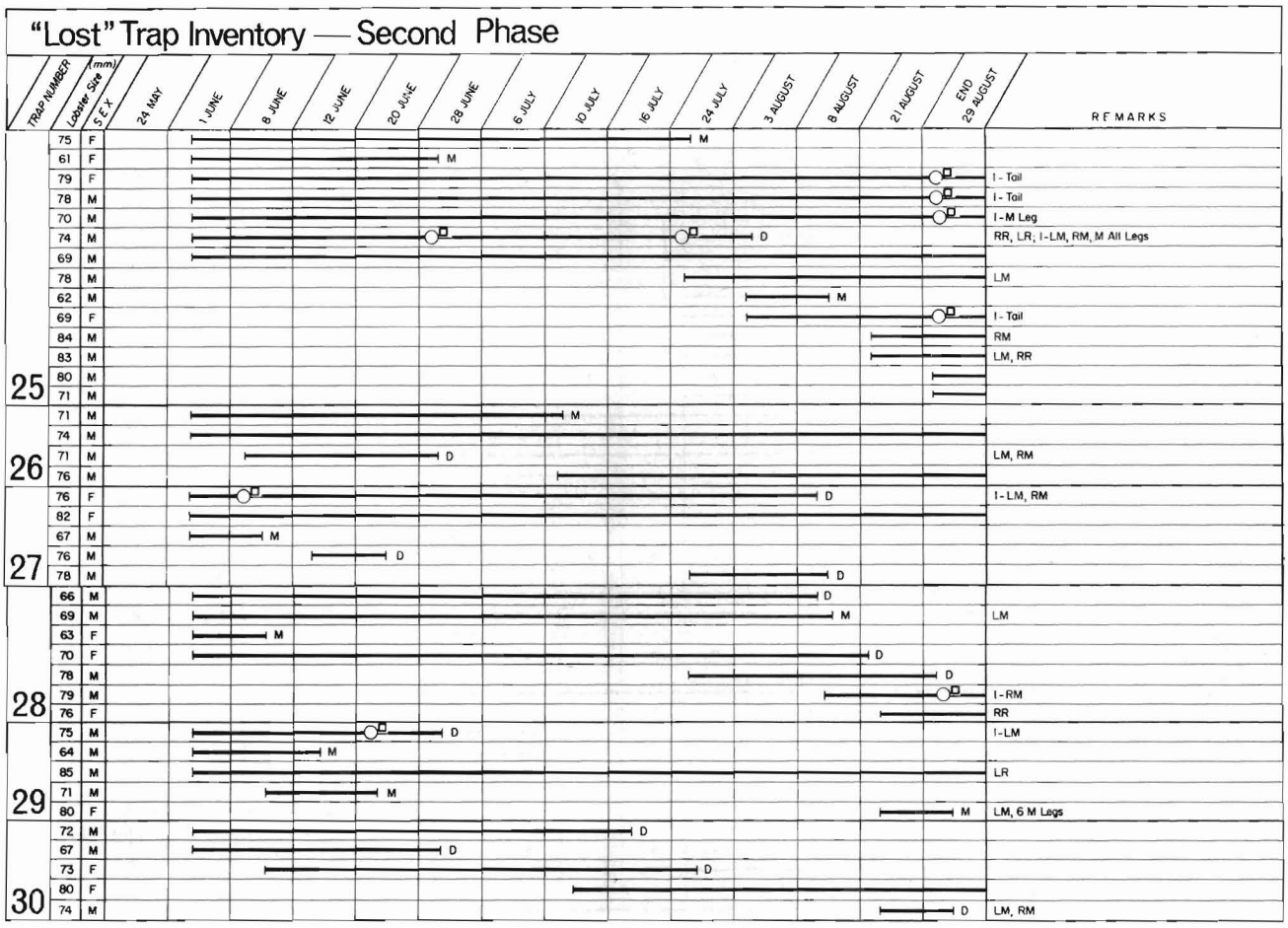


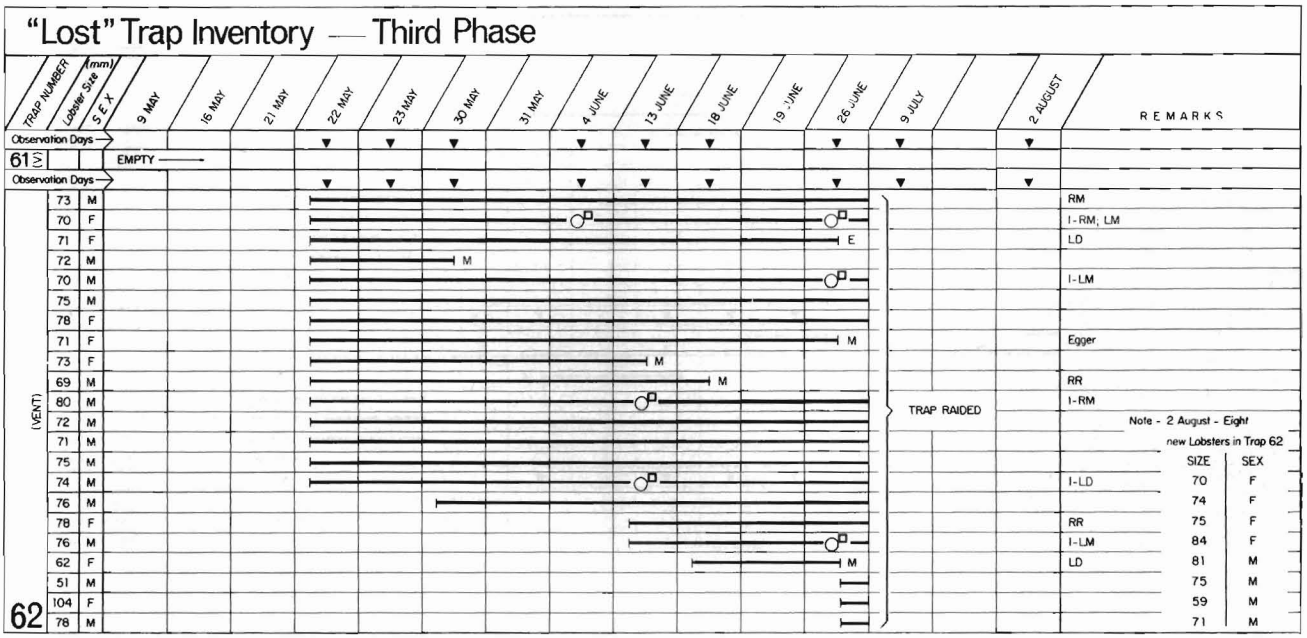

"Lost" Trap Inventory — First Phase
TRAP NUMBER
Lobster Size (mm)
SEX
1 FEB
9 FEB
13 FEB
26 FEB
9 MARCH
15 MARCH
20 MARCH
29 MARCH
3 APRIL
13 APRIL
18 APRIL
24 APRIL
30 APRIL
7 MAY
14 MAY
END 22 MAY
REMARKS
21
73 F RR, I-URO, LM
64 F
77 M D
77 M
80 M
69 F
22
74 M M
67 M
76 M
23
73 M I-URO
65 M M
68 F M
78 M
79 M
24
66 F M Legs
59 M M
66 F
71 M
75 M
25
74 M
86 M I-LM, RM D
26
74 M
27
VAC
28
77 M
29
78 M D I-LM
89 F
72 F M
77 M D
30
78 F D LM, I-Tail, Cara
66 F

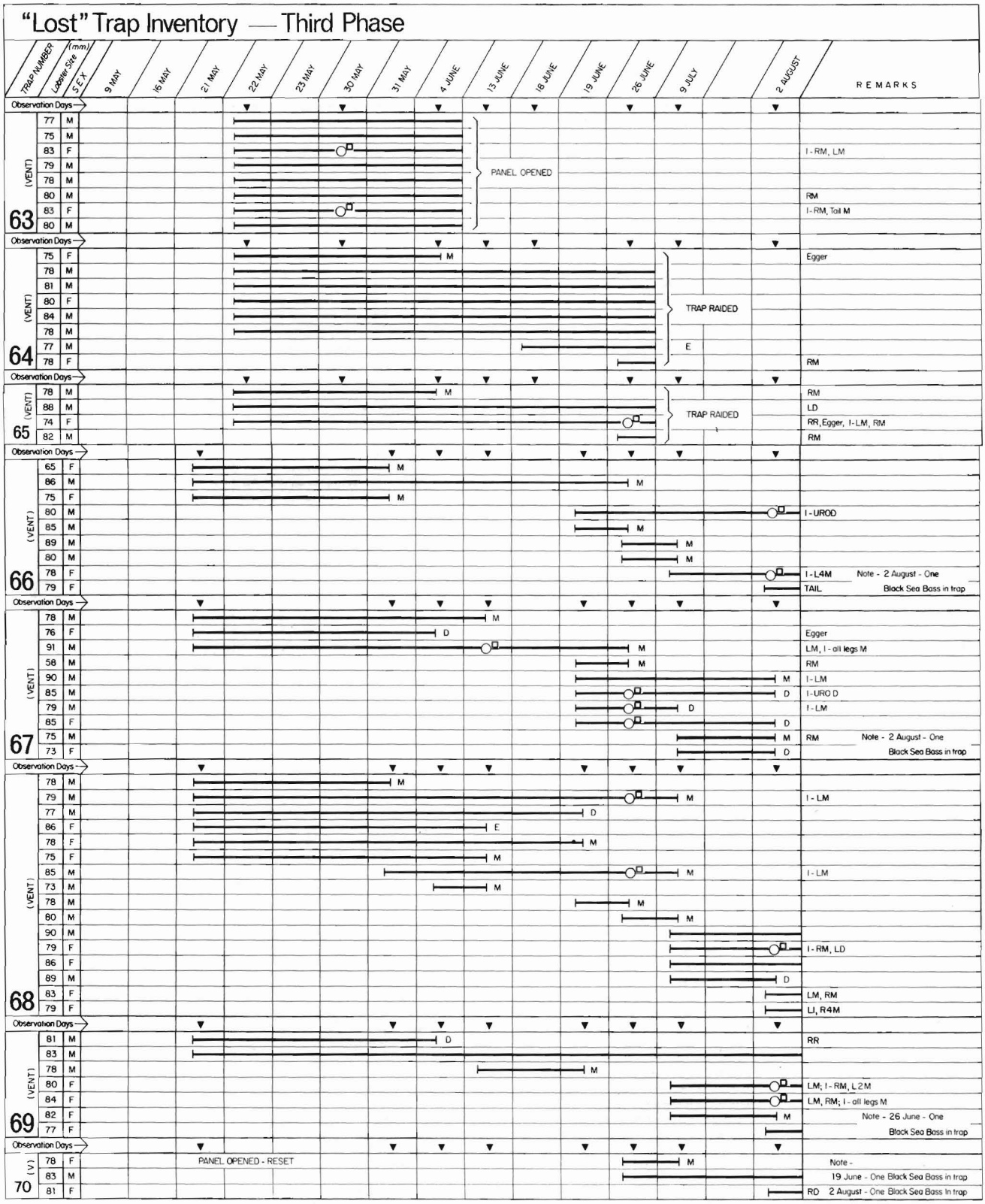

"Lost" Trap Inventory — Second Phase
TRAP NUMBER
Lobster Size (mm)
SEX
24 MAY
1 JUNE
8 JUNE
12 JUNE
20 JUNE
28 JUNE
6 JULY
10 JULY
16 JULY
24 JULY
3 AUGUST
8 AUGUST
21 AUGUST
END 29 AUGUST
REMARKS
11 (V)
72 F M
78 M ESCAPE PANEL OPENED
76 M D
12 (VENT)
73 F M LM
78 M D
77 M M LM
79 M ESCAPE PANEL OPENED
89 M
13 (VENT)
66 F M
78 F M LM
81 F ESCAPE PANEL OPENED
81 M M
14 (V)
86 M
76 F D
15 (VENT)
75 F D I-RM
78 M
77 M M I-RM, LM
69 M I-RM, LM
77 F M RR; I-LM
89 M
74 M LM, RM
ESCAPE PANEL OPENED
16 (VENT)
63 F M
71 M D I-LM, M All Legs
76 M
75 M D I-LM, RM, M All Legs
72 M M I-RM
78 F
ESCAPE PANEL OPENED
17 (VENT)
79 F
76 F LM; I-RM
75 M
75 F ESCAPE PANEL OPENED
72 M M RM
74 F D I-TAIL
78 F
18 (VENT)
76 F D
76 M I-LM
70 M D
73 M D
91 M I-RM
81 M D RR; I-TAIL
67 M D RM
ESCAPE PANEL OPENED

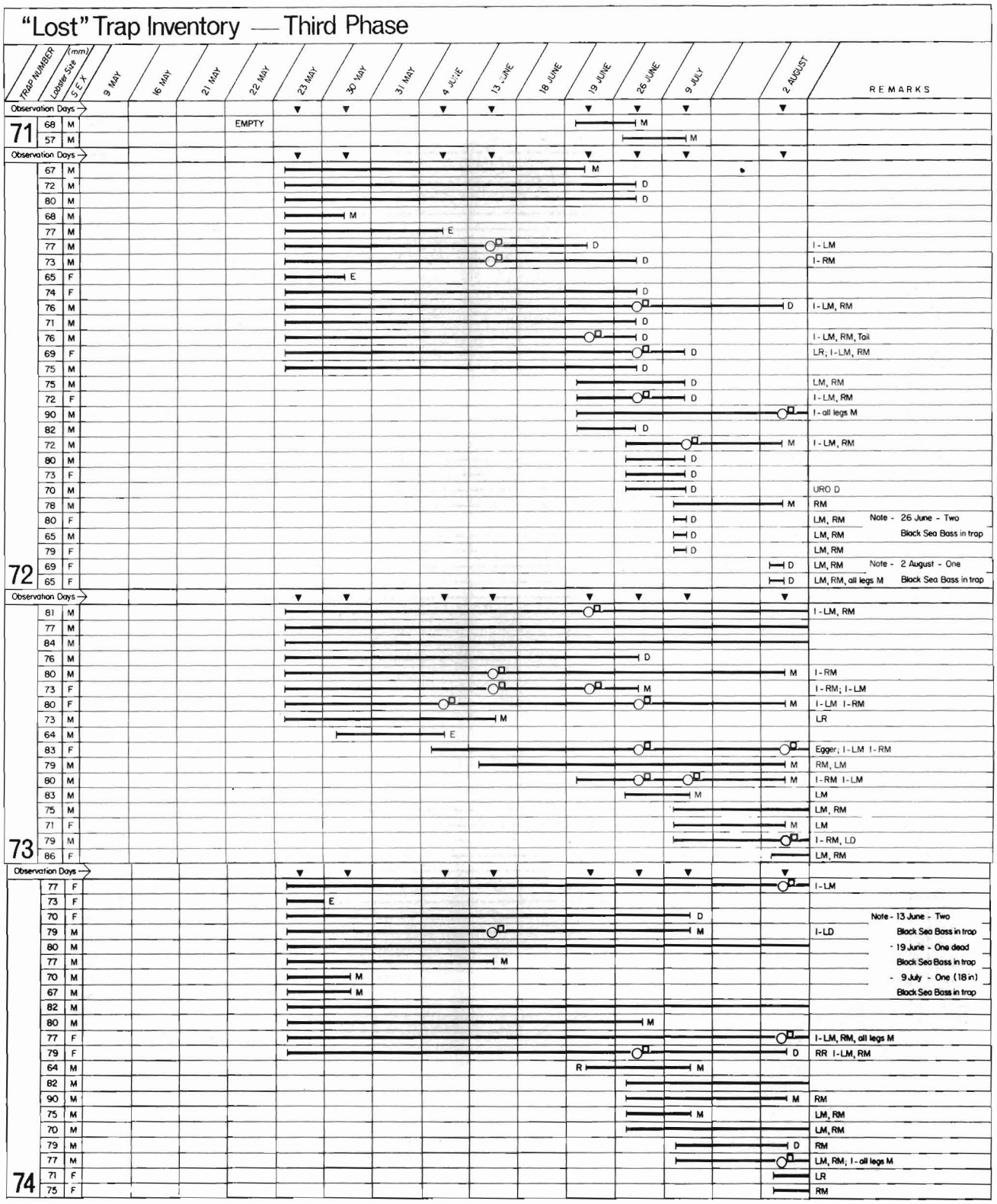

"Lost" Trap Inventory — Second Phase
TRAP NUMBER
Lobster Size (mm)
SEX
24 MAY
1 JUNE
8 JUNE
12 JUNE
20 JUNE
28 JUNE
6 JULY
10 JULY
16 JULY
24 JULY
3 AUGUST
8 AUGUST
21 AUGUST
END 24 AUGUST
REMARKS
19 (VENT)
20 (VENT)
21
22
23
ESCAPE PANEL OPENED
RR
LR
I-LM, RM
RM
I-LM
I-RM
I-M Legs
I-Uro
LM
I-LM, RM, M Legs
I-Tail

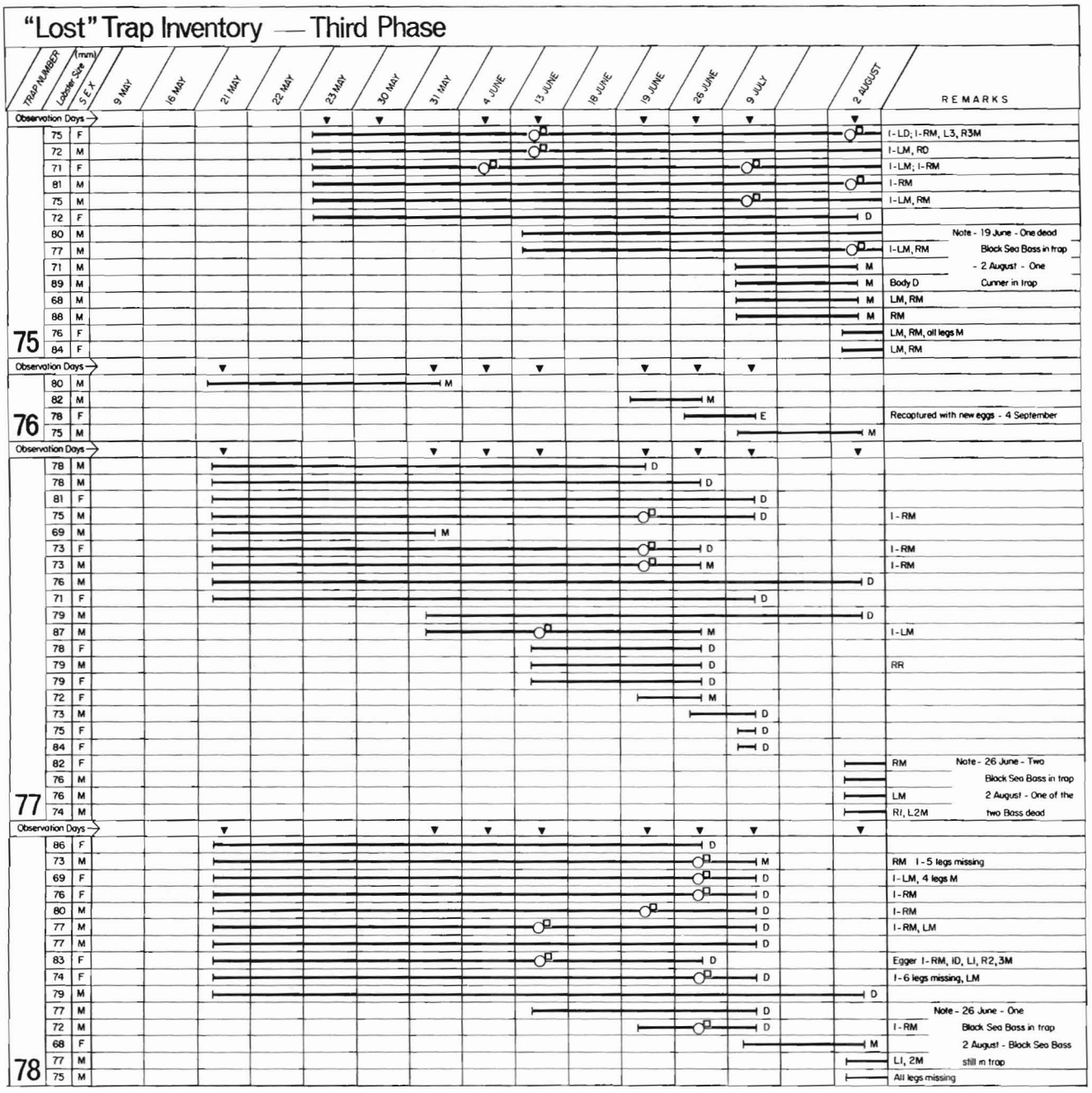

"Lost" Trap Inventory — Second Phase
TRAP NUMBER
Lobster Size (mm)
SEX
24 MAY
1 JUNE
8 JUNE
12 JUNE
20 JUNE
28 JUNE
6 JULY
10 JULY
16 JULY
24 JULY
3 AUGUST
8 AUGUST
21 AUGUST
END 29 AUGUST
REMARKS
24
I-LM, M Leg
LM
I-RM
LM, RM
RM
I-M Leg
RR; I-LM
LM, RM; I-M All Legs
LR; I-Uro
I-LM

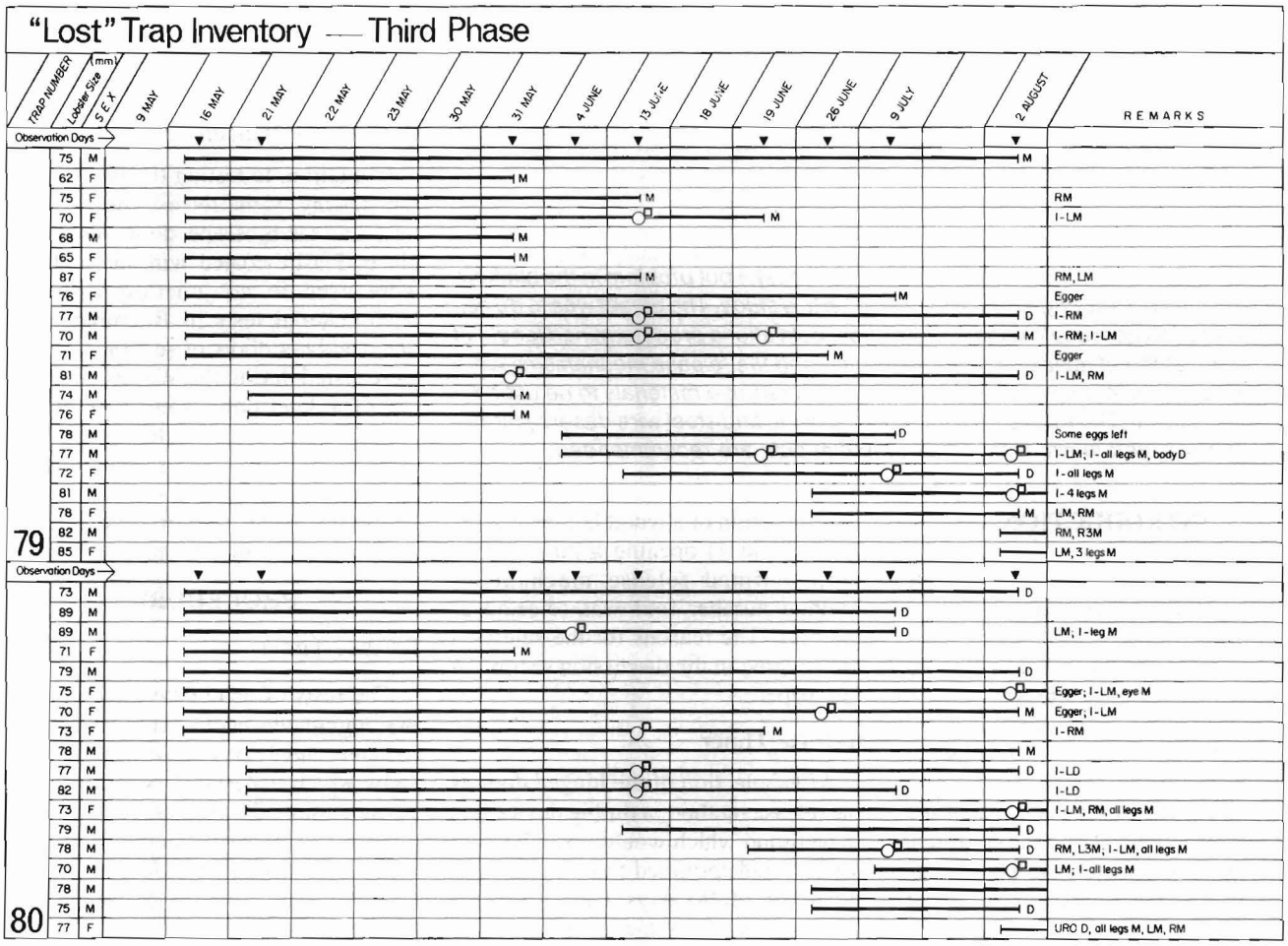

"Lost" Trap Inventory — Second Phase
TRAP NUMBER
Lobster Size (mm)
SEX
24 MAY
1 JUNE
8 JUNE
12 JUNE
20 JUNE
28 JUNE
6 JULY
10 JULY
16 JULY
24 JULY
3 AUGUST
8 AUGUST
21 AUGUST
END 29 AUGUST
REMARKS
25
75 F M
61 F M
79 F 1-Tail
78 M 1-Tail
70 M 1-M Leg
74 M D RR, LR, 1-LM, RM, M All Legs
69 M
78 M LM
62 M M
69 F 1-Tail
84 M RM
83 M LM, RR
80 M
71 M
26
71 M M
74 M
71 M D LM, RM
76 M
27
76 F D 1-LM, RM
82 F
67 M M
76 M D
78 M D
28
66 M D
69 M M LM
63 F M
70 F D
78 M D
79 M 1-RM
76 F RR
29
75 M D 1-LM
64 M M
85 M LR
71 M M
80 F M LM, 6 M Legs
30
72 M D
67 M D
73 F D
80 F
74 M D LM, RM


"Lost" Trap Inventory — Third Phase
TRAP NUMBER
Lobster Size (mm)
SEX
9 MAY
16 MAY
21 MAY
22 MAY
23 MAY
30 MAY
31 MAY
4 JUNE
13 JUNE
18 JUNE
19 JUNE
26 JUNE
9 JULY
2 AUGUST
REMARKS
Observation Days
61 (V) EMPTY
Observation Days
(VENT)
73 M RM
70 F 1-RM, LM
71 F E LD
72 M M
70 M 1-LM
75 M
78 F
71 F M Egger
73 F M
69 M M RR
80 M 1-RM
72 M
71 M
75 M
74 M 1-LD
76 M
78 F RR
76 M 1-LM
62 F M LD
51 M
104 F
78 M
62
TRAP RAIDED
Note - 2 August - Eight new Lobsters in Trap 62
SIZE SEX
70 F
74 F
75 F
84 F
81 M
75 M
59 M
71 M


"Lost" Trap Inventory — Third Phase
TRAP NUMBER
Lobster Size (mm)
SEX
9 MAY
16 MAY
21 MAY
22 MAY
23 MAY
30 MAY
31 MAY
4 JUNE
13 JUNE
18 JUNE
19 JUNE
26 JUNE
9 JULY
2 AUGUST
REMARKS
Observation Days
(VENT)
63
PANEL OPENED
I - RM, LM
RM
I - RM, Tail M
64
TRAP RAIDED
E
Egger
RM
65
TRAP RAIDED
RM
LD
RR, Egger, I - LM, RM
RM
66
I - UROD
I - L4M
Note - 2 August - One Black Sea Bass in trap
TAIL
67
Egger
LM, I - all legs M
RM
I - LM
I - URO D
I - LM
RM
Note - 2 August - One Black Sea Bass in trap
68
I - LM
I - LM
I - RM, LD
LM, RM
LI, R4M
69
RR
LM; I - RM, L2M
LM, RM; I - all legs M
Note - 26 June - One Black Sea Bass in trap
70
(V)
PANEL OPENED - RESET
Note -
19 June - One Black Sea Bass in trap
RD 2 August - One Black Sea Bass in trap


"Lost" Trap Inventory — Third Phase
TRAP NUMBER
Lobster Size (mm)
SEX
9 MAY
16 MAY
21 MAY
22 MAY
23 MAY
30 MAY
31 MAY
4 JUNE
13 JUNE
18 JUNE
19 JUNE
26 JUNE
9 JULY
2 AUGUST
REMARKS
Observation Days
71
68 M EMPTY
57 M
72
67 M
72 M
80 M
68 M
77 M
77 M
73 M
65 F
74 F
76 M
71 M
76 M
69 F
75 M
75 M
72 F
90 M
82 M
72 M
80 M
73 F
70 M
78 M
80 F
65 M
79 F
69 F
65 F
73
81 M
77 M
84 M
76 M
80 M
73 F
80 F
73 M
64 M
83 F
79 M
80 M
83 M
75 M
71 F
79 M
86 F
74
77 F
73 F
70 F
79 M
80 M
77 M
70 M
67 M
82 M
80 M
77 F
79 F
64 M
82 M
90 M
75 M
70 M
79 M
77 M
71 F
75 F
I-LM
I-RM
I-LM, RM
I-LM, RM, Tail
LR; I-LM, RM
LM, RM
I-LM, RM
I-all legs M
LM, RM
URO D
RM
LM, RM
LM, RM
LM, RM
LM, RM
LM, RM, all legs M
Note - 26 June - Two Black Sea Bass in trap
Note - 2 August - One Black Sea Bass in trap
I-LM, RM
I-RM
I-RM; I-LM
I-LM I-RM
LR
Egger, I-LM I-RM
RM, LM
I-RM I-LM
LM
LM, RM
LM
I-RM, LD
LM, RM
I-LM
I-LD
Note - 13 June - Two Black Sea Bass in trap
- 19 June - One dead Black Sea Bass in trap
- 9 July - One (18 in) Black Sea Bass in trap
I-LM, RM, all legs M
RR I-LM, RM
RM
LM, RM
LM, RM
RM
LM, RM; I-all legs M
LR
RM


"Lost" Trap Inventory — Third Phase
TRAP NUMBER
Lobster Size (mm)
SEX
9 MAY
16 MAY
21 MAY
22 MAY
23 MAY
30 MAY
31 MAY
4 JUNE
13 JUNE
18 JUNE
19 JUNE
26 JUNE
9 JULY
2 AUGUST
REMARKS
Observation Days
75 F 1-LD; 1-RM, L3, R3M
72 M 1-LM, RD
71 F 1-LM; 1-RM
81 M 1-RM
75 M 1-LM, RM
72 F D
80 M Note - 19 June - One dead
77 M 1-LM, RM Black Sea Bass in trap
71 M M - 2 August - One
89 M M Body D Cunner in trap
68 M M LM, RM
88 M M RM
75 76 F LM, RM, all legs M
84 F LM, RM
Observation Days
80 M M
82 M M
76 78 F E Recaptured with new eggs - 4 September
75 M M
Observation Days
78 M D
78 M D
81 F D
75 M D 1-RM
69 M M
73 F D 1-RM
73 M M 1-RM
76 M D
71 F D
79 M D
87 M M 1-LM
78 F D
79 M D RR
79 F D
72 F M
73 M D
75 F D
84 F D
82 F RM Note - 26 June - Two
76 M Black Sea Bass in trap
76 M LM 2 August - One of the
77 74 M RI, L2M two Bass dead
Observation Days
86 F D
73 M M RM 1-5 legs missing
69 F D 1-LM, 4 legs M
76 F D 1-RM
80 M D 1-RM
77 M D 1-RM, LM
77 M D
83 F D Egger 1-RM, ID, LI, R2, 3M
74 F D 1-6 legs missing, LM
79 M D
77 M D Note - 26 June - One
72 M D 1-RM Black Sea Bass in trap
68 F M 2 August - Black Sea Bass
77 78 M LI, 2M still in trap
75 M All legs missing



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