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A Summary of Biological Data Collected During the 1996 Bristol Bay
Red King Crab Test Fishery

By

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INTRODUCTION

At -sea studies of Bristol Bay red king crabs *Paralithodes camtschaticus* have been conducted annually since the inception of the Bering Sea crab test fishery program in 1990 (Watson et al. 1991). The test fishery program was initiated for the primary purpose of estimating harvest rates of legal male red king crabs in a portion of Bristol Bay using internal, Passive Integrated Transponder (PIT) tags, and performing other related crab research. Annual surveys are funded under the State of Alaska Test Fishery Program, with revenues generated from the sale of crabs caught during the survey. Project goals, objectives and results from previous test fishery surveys are documented in Byersdorfer and Watson (1992, 1993), Byersdorfer et al (1994, 1995), Byersdorfer (1995), Watson and Pengilly (1992, 1993, 1994a, 1994b), Watson et al (1996) and Tracy and Pengilly (1996).

The primary objectives of the 1996 test fishery were: 1) conduct cost recovery fishing to fund the test fishery program in FY97, 2) conduct a catchability study of red king and Tanner crabs using a newly designed experimental crab pot; 3) conduct a catchability study of red king and Tanner crabs using pots with and without escape rings; 4) obtain red king and Tanner crab length, width, and height measurements to determine the relationship of crab morphology to various types of escape mechanisms deployed in commercial crab pots.

The purpose of this report is to document and summarize the catch composition of crabs and other related biological data from the test fishery charter.

METHODS AND PROCEDURES

For the purposes of this report, terms related to the sampling of red king crabs are as follows:

- Carapace Length (CL)*- the straight line distance across the carapace from the posterior margin of the right eye orbit to the medial-posterior margin of the carapace.
- Legal Size*- male crabs > 165 mm (6.5 in) in carapace width including lateral spines.
- Pre-recruit Males*- male crabs between 132-164 mm (5.2-6.4 in) in carapace width.
- Mature Males*- male crabs > 120 mm CL.
- Immature Males*- males <120 mm CL.
- Soft shell*- crabs that have molted within the previous two months.
- New-Shell*- crabs that have molted within the preceding three to twelve months.
- Old-Shell*- crabs that have molted within the preceding thirteen to twenty-four months.

Very Old Shell- crabs that have not molted within the preceding twenty-four months.

Tanner crab *Chionoecetes bairdi* and snow crab *Chionoecetes opilio* were measured and shell aged as follows:

Carapace Width (CW)- The greatest straight-line distance across the carapace at a right angle to a line midway between the eyes to the medial-posterior margin of the carapace not including the spines; the biological size measurement of *C. bairdi* and *C. opilio*.

Legal Size- male crabs > 140 mm (5.5 in) in carapace width, including lateral spines.

New-Shell- crabs that have molted within the preceding three to twelve months.

Old-Shell- crabs that have molted within the preceding thirteen to twenty-four months.

Very Old Shell- crabs that have not molted within the preceding twenty-four months.

Fishing Itinerary

Fishing took place during a 31 d period from August 1 to August 31, 1996 aboard the 31-m (94 ft) chartered crabber, FV *Rosie G*. Cost recovery fishing was conducted during the first twelve days of the charter and concomitant with the gear studies during the last week of the charter.

Fishing Area

The study was conducted in a 3,121 km² (912 nm²) area encompassing a portion of the red king crab population located in Bristol Bay. The study area chosen in 1996 was discerned from information relative to the distribution of mature and immature king and Tanner crab that was gathered during the 1995 Bristol Bay test fish survey (Byersdorfer 1995), the 1996 cost recovery segment of the charter, and the 1996 National Marine Fisheries eastern Bering Sea crab survey (Otto et al., National Marine Fisheries Service, Kodiak, personnel communication). The general cost recovery and study area was between 56° 30' and 56° 54' N latitude and between 162° 24' and 163° 24' W longitude (Figure 1). The layout of the 25 study stations is shown in Figure 2.

Gear Study Sampling Design

The gear study design for objectives 2 and 3 consisted of : 1) alternately deploying experimental and standard king crab pots in a grid pattern; 2) alternately deploying standard king crab pots with and without escape rings in a grid pattern; 3) and alternately deploying Tanner crab pots with and without escape rings in a grid pattern. Each grid (referred to as a block) consisted of 16 2.1-m x 2.1-m (7-ft x 7-ft) commercial side-loading crab pots with 12.7-cm (5-in) stretch mesh

set in rows of 4 pots each spaced 0.6-km (0.33-nm) apart (Figure 2). At least 4 blocks of varying gear types were to be set and pulled each day. A target soak time for each pot was 48 h. Pots were baited with 1.9 L (2 qt) of frozen herring. The pot types used in the study were assigned numbers and are defined as follows:

Pot Type 1 (standard king crab pot) - Commercial pots with two 20.3-cm (8-in) tunnels and 12.7-cm (5 in) stretch mesh. These pots were used for cost recovery fishing and alternately deployed in blocks with experimental pots, and in blocks with pots containing four 15.2-cm (6-in) escape rings.

Pot Type 2 (experimental king crab pot) - The patented king crab pot design described in Zhou (1996). These pots were randomly deployed during cost recovery fishing and alternately deployed in blocks with standard king crab pots.

Pot Type 3 (escape ring king crab pot) - Standard king crab pots with opilio curtains covering the enlarged web. These pots were outfitted with four 15.2-cm (6-inch) escape rings sewn into two of the vertical panels within 45.7-cm (18-in) of the pot base. These pots were alternately deployed with standard king crab pots.

Pot Type 4 (Standard Tanner crab pot) - Commercial Tanner pots with two 7.6-cm (3-in) Dorian® tunnels, and opilio curtains covering the enlarged web panel. These pots were alternately deployed (in blocks) with pots containing four 12.7-cm (5-in) escape rings.

Pot Type 5 (Escape ring Tanner crab pot) - Standard Tanner crab pots outfitted with four 12.7-cm (5-in) escape rings sewn into two of the vertical panels and within 45.7-cm (18-in) of the pot base. These pots were alternately deployed (in blocks) with standard Tanner crab pots.

A comprehensive gear study design is described in Tracy and Pengilly (1996).

Catch Sampling

All pots retrieved during the gear study were sampled. The contents of each pot were unloaded to a sorting table where all crabs were separated by species and sex. Each pot was fully sampled, e.g. no subsampling was done. Each crab was measured to the nearest millimeter (CL for king crab; CW for Tanner and snow crabs). A commercial measure of carapace width was also determined for male red king crab to classify them as either legal or sublegal. Additionally, the number of mature, non-legal crabs ($\geq 6''$ and $< 6.5''$) were assessed and enumerated for every pot pulled. Shell age of king, Tanner and snow crabs was also assessed.

All sampled crabs were grossly examined for disease, and handling induced injury or mortality. Female crabs were examined for the presence of eggs, and empty egg cases for the determination of maturity and mating activity. Complete sampling instructions are detailed in Tracy and Pengilly (1996).

Ancillary Data Collections

Morphometric measurements of male and female king and Tanner crabs were collected opportunistically throughout the charter. These measurements consisted of: a) carapace length measurements of king crab, and carapace width measurements of Tanner crab (inside spines); b) the greatest carapace width (including spines); c) the greatest length (including rostrum); and d) body height (including spines). Complete sampling for all ancillary data collections are described in Tracy and Pengilly (1996).

At the request of the Department of Environmental Conservation (DEC), red king , Tanner, and Tanner hybrid crabs were collected from each statistical area fished and frozen whole. These specimens were turned over to DEC upon completion of the cost recovery portion of the charter for subsequent analysis to determine the baseline level of paralytic shellfish poison (PSP) and domoic acid present in the viscera.

Crabs were collected opportunistically during the last week of the charter for the fall 1996 mandatory shellfish observer practicum scheduled to take place aboard the vessel on August 26. Crabs of commercial value were predominately retained for this test.

RESULTS AND DISCUSSION

During cost recovery fishing, 17 strings of gear were fished with 14-25 pots in a string. A total of 348 pots were set and pulled during cost recovery over an 8 day period. The number of pots pulled each day varied from 40-82; none of these pots were sampled. The soak time averaged 59.6 h and ranged between 26.6 h and 100.9 h.

During the gear study portion of the fishery 25 blocks of gear were set (16 pots in a block) for a total of 400 pot sets, but only 398 pot pulls (2 lost pots) over a 17 day period. The number of pots pulled each day varied from 6-48; all were sampled. The soak time averaged 55.9 h and ranged between 33.2 h and 137.3 h. Of the 25 blocks of gear set the strata containing Pot Types 1 and 2 were sampled six times; the strata containing Pot Types 1 and 3 were sampled nine times; and the strata containing Pot Types 4 and 5 were sampled ten times.

A total of 31,472 immature, pre-recruit and legal male red king crabs were captured in the 746-pot cost recovery and gear study fishing effort. For the remainder of the report only data relating to the gear study pots will be reported.

Catch Composition

A total of 27,110 crabs were captured in the 398 gear study pots. Red king crabs predominated sample catches (91.1%), followed by Tanner crabs (8.8%), Tanner hybrids, Snow crabs, and Korean hair crabs *Erimacrus isenbeckii* comprised the remaining 0.1%. Only results related to red king and Tanner crab are described in the remainder of this report.

Red King Crab

Sex Composition and Catch Per Unit Effort

Of the 24,707 red king crabs caught in the 398 study pots; 82% were males and 18% were females. Approximately 31% (6,369 crabs) were legal-sized males. Length frequency and shell age data were obtained on all crabs in the 398 study pots. Catch per pot (C/P) of legal males ranged from 0 to 58 and averaged 16 crabs (Appendix A). The catch per pot from previous years is not directly comparable to the results presented here due to differences in survey dates, areas fished, and pot types. C/P data is comparable between paired pot types and are presented below. Complete analysis of these data will be presented in another paper.

The catch per pot of female red king crabs in all gear study pots ranged from 0 to 54 (Appendix A) and averaged 11 crabs. Of the total females caught in study pots, 43.8% were mature (Appendix B).

Pot Type 1 vs. Pot Type 2. Of the 2,853 red king crabs caught in the 96 Type 1 pots, 87% were males and 13% were females and of the 2,562 red king crabs caught in the 96 Type 2 pots; 85% were males and 15% females. Approximately 46% (1,137 crabs) were legal-sized males in Pot Type 1 and 42% (922 crabs) were legal-sized males in Pot Type 2. Catch per pot of legal male red king crabs averaged 11.8 crabs in Pot Type 1 and 9.6 crabs in Pot Type 2 (Table 1).

Pot Type 1 vs. Pot Type 3. Of the 5,198 red king crabs caught in the 144 Type 1 pots; 88% were males and 12% were females and of the 4,976 red king crabs caught in the 142 Type 3 pots; 88% were males and 12% were females. Approximately 48% (2,182 crabs) were legal-sized males in Pot Type 1 and 49% (2,122 crabs) were legal-sized males in Pot Type 3. The C/P of legal male red king crabs averaged 15.2 crabs in Pot Type 1 and 14.9 crabs in Pot Type 3 (Table 1).

Pot Type 4 vs. Pot Type 5. Of the 5,135 red king crabs caught in the 160 Type 4 pots; 73% were males and 27% were females and of the 3,983 red king crabs caught in the 160 Type 5 pots; 75% were males and 25% were females. Approximately 0.1% (5 crabs) were legal sized males in Pot Type 4 and <0.05% (1 crab) was a legal size male in Pot Type 5 (Table 1).

Length Distribution and Shell Age

Length frequency distributions of male and female red king crabs in all gear study pots are shown in Figure 3. Prominent size modes for male red king crab were noted around 90 and 130 mm CL. The average size of legal male red king crabs in study pots was 149 mm CL, and ranged between 132 to 189 mm. Length frequency distributions of male red king crabs by pot types is shown in Figure 4.

The size modes of female red king crabs in the study pots were noted around 85 and 125 mm CL. The average size of mature female crabs was 120 mm CL, and ranged between 84 and 178 mm.

Among all males in study pots, 81% were new-shell and 19% were old shell (Figure 5). Of the 6,369 legal-sized males caught, 58% were new-shell and 42% were old shell.

Pot Type 1 vs. Pot Type 2. A total of 2,495 males were caught in Pot Type 1 with prominent size modes at 90 and 135 mm CL; 2,173 males were caught in Pot Type 2 with prominent size modes at 90, 125 and 140 mm CL (Figure 6). The size modes of female red king crabs caught in Pot Type 1 were noted around 90 and 130 mm CL and in Pot Type 2 at 90, and 125 CL (Figure 7).

Pot Type 1 vs. Pot Type 3. A total of 4,555 males were caught in Pot Type 1 with prominent size modes at 90 and 130 mm CL; 4,362 males were caught in Pot Type 3 with prominent size modes at 90, 130 and 145 mm CL (Figure 8). The size modes of female red king crabs caught in Pot Type 1 were noted around 90, 105 and 125 mm CL and in Pot Type 3 at 95, 105 and 125 mm CL (Figure 9).

Pot Type 4 vs. Pot Type 5. A total of 3,743 males were caught in Pot Type 4 with a prominent size mode at 90 mm CL; 3,002 males were caught in Pot Type 5 also with one prominent size mode at 90 mm CL (Figure 10). The size mode of female red king crabs caught in Pot Type 4 and Pot Type 5 was 85 mm CL (Figure 11).

Incidence of Handling-Induced Injury or Mortality

When red king crabs were measured and shell aged they were “grossly” examined for any visible handling induced injuries or mortalities. Very few cases of black mat or “cottage cheese” disease were observed. Numerous cases of small injuries such as broken dactyl or spines were observed but not noted. Only 22 cases of potential life threatening damages such as broken rostrum or merus, and cracked carapace were noted.

Cost Recovery

Approximately 16,255 male red king crabs \geq 165mm (6.5 in) were sold to offset the cost of the 1996 Bering Sea crab test fishery program and another 1,495 male red king crabs were sold to offset the cost of the observer program. An additional 277 male red king crabs were landed as dead loss. The average weight per crab as calculated from fish ticket receipts during the first delivery was 3.1 kg (6.9 lb). This is comparable to the average weight per crab of 3.1 kg (6.9 lbs) obtained from preliminary inseason information (Rance Morrison, Alaska Department of Fish and Game, Dutch Harbor, personal communication) obtained during the 1996 Bristol Bay red king crab fishery. The average weight per crab from the second delivery was 2.9 kg (6.4 lb) slightly less than the first delivery and may reflect the fact that cost recovery fishing was being conducted concurrent to the gear study in an area that held smaller legal crab.

Tanner Crab

Sex Composition and Catch Per Unit Effort

Of the 2,386 Tanner crabs caught in the 398 study pots, 92% were males and 8 % were females. The catch of legal Tanner crabs in the survey pots ranged from 0. to 14.4 with an average of 4 crabs per pot. As with red king crabs, Tanner crab catch per pot data are not directly comparable to other studies due to differences in time frame, area fished and different pot types used. Male and female Tanner crab catch per pot is summarized in Appendix C.

Width Distribution and Shell Age

Width frequency distributions of male and female Tanner crabs in the 398 study pots are shown in Figure 12. Prominent size modes for males were noted around 135 and 155 CW. Among all males 9% were new shell and 91% were old shell (Figure 13). Of the 1,587 legal males caught, 9% were new shell crab. Tanner crab sex and size composition data presented here is not representative of the Bering Sea population, as the gear study efforts targeted on red king crab concentrations. Width frequency distribution of male Tanner crabs by pot types is shown in Figure 14.

Pot Type 1 vs. Pot Type 2. A total of 75 males were caught in Pot Type 1 with prominent size modes at 125, 140 and 160 mm CW; 95 males were caught in Pot Type 2 with prominent size modes at 135 and 155 mm CW (Figure 15). The size modes of female Tanner crab in Pot Type 1 were noted at 85 and 110 mm CW and in Pot Type 2 at 85 and 95 mm CW (Figure 16).

Pot Type 1 vs. Pot Type 3. A total of 152 males were caught in Pot Type 1 with a prominent size mode at 155 mm CW; 326 males were caught in Pot Type 3 with prominent size modes at 140 and 155 mm CW (Figure 17). There were no female Tanner crabs in Pot Type 1. The size mode of female Tanner crabs in Pot Type 3 was 100 mm CW.

Pot Type 4 vs. Pot Type 5. A total of 757 males were caught in Pot Type 4 with prominent size modes at 135 and 150 mm CW and 794 males were caught in Pot Type 5 with prominent size modes at 135 and 155 mm CW (Figure 18). The size mode of female Tanner crabs in both Pot Types 4 and 5 was at 100 mm CW (Figure 19).

Incidence of Handling-Induced Injury or Mortality

There were no observed injuries and only one mortality for Tanner crabs caught in the 398 gear study pots.

Ancillary Data Collections

A total of 5 Tanner, 5 hybrid Tanner and 5 red king crab were collected from 1 statistical area for analysis by DEC for presence of PSP and domoic acid. Domoic acid was not found any of the sampled crabs but PSP was detected in one hybrid Tanner crab. (Mike Ostasz, Alaska Department of Environmental Conservation, Anchorage, personal communication).

Morphometric measurements were collected from 337 male red king crab, 309 female red king crab, 155 male Tanner crab, and 108 female Tanner crab. The measurements were taken in various size categories to ensure a representative size distribution sample. This data was collected to begin establishing a database for determining the relationship of crab morphology to various types of escape mechanisms used in commercial crab pots. Presentation and analysis of this data is described in a separate document.

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Table 1. Summary of red king and Tanner crabs by paired pot types from 25 stations in the 1996 Bristol Bay red king crab test fishery.

	PAIRED POT TYPES				PAIRED POT TYPES				PAIRED POT TYPES				TOTALS
	Pot Type 1 (N = 96)		Pot Type 2 (N = 96)		Pot Type 1 (N = 144)		Pot Type 3 (N = 142)		Pot Type 4 (N = 160)		Pot Type 5 (N = 160)		
	Total	CPUE	Total	CPUE	Total	CPUE	Total	CPUE	Total	CPUE	Total	CPUE	
All Red King Crab	2853	29.7	2562	26.7	5198	36	4976	35	5135	32.1	3983	24.9	24,707
Males	2495	25.9	2173	22.6	4555	31.6	4362	30.7	3743	23.4	3002	18.8	20,330
Legal Males	1137	11.8	922	9.6	2182	15.2	2122	14.9	5	0.03	1	0.01	6,369
Sublegal Males	1358	14.1	1251	13	2373	16.5	2240	15.8	3738	23.4	3001	18.8	13,961
Females	358	3.7	389	4.1	643	4.5	614	4.3	1392	8.7	981	6.1	4,377
All Bairdi Tanner Crab	78	0.8	108	1.1	152	1.1	332	2.3	865	5.4	851	5.3	2,386
Males	75	0.8	95	1	152	1.1	326	2.3	757	4.7	794	5	2,199
Legal Males	67	0.7	69	0.7	127	0.9	253	1.8	505	3.1	566	3.5	1,587
Sublegal Males	8	0.08	26	0.3	25	0.2	73	0.5	252	1.6	228	1.4	612
Females	3	0.03	13	0.1	0	0	6	0.04	108	0.7	57	0.4	187

Pot Type 1= Standard King Crab Pot

Pot Type 2= Experimental Crab Pot

Pot Type 3= King Crab Pot With Escape Rings

Pot Type 4= Standard Tanner Crab Pot

Pot Type 5= Tanner Crab Pot With Escape Rings

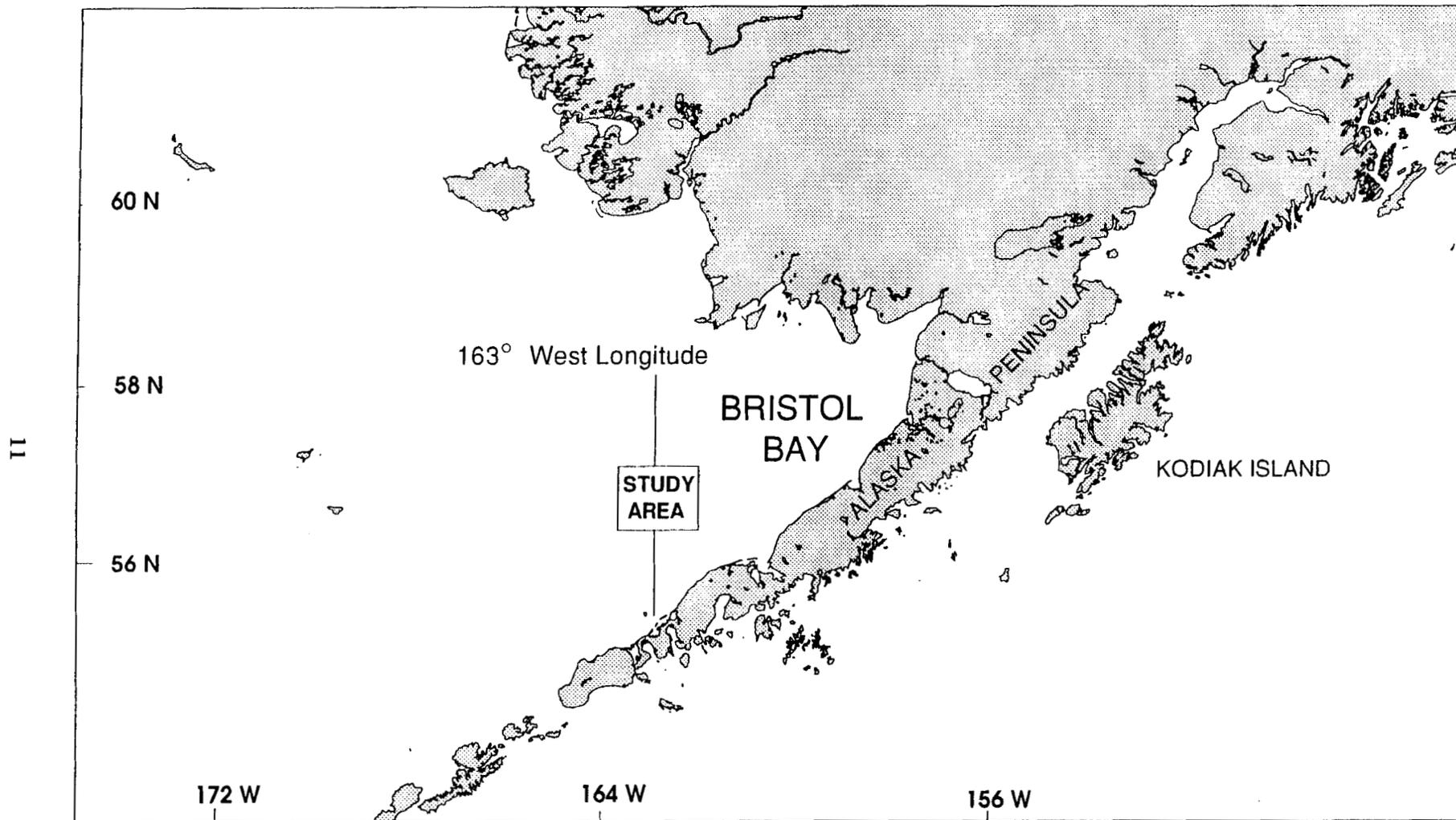


Figure 1. Location of the 1996 Bristol Bay red king crab test fishery.

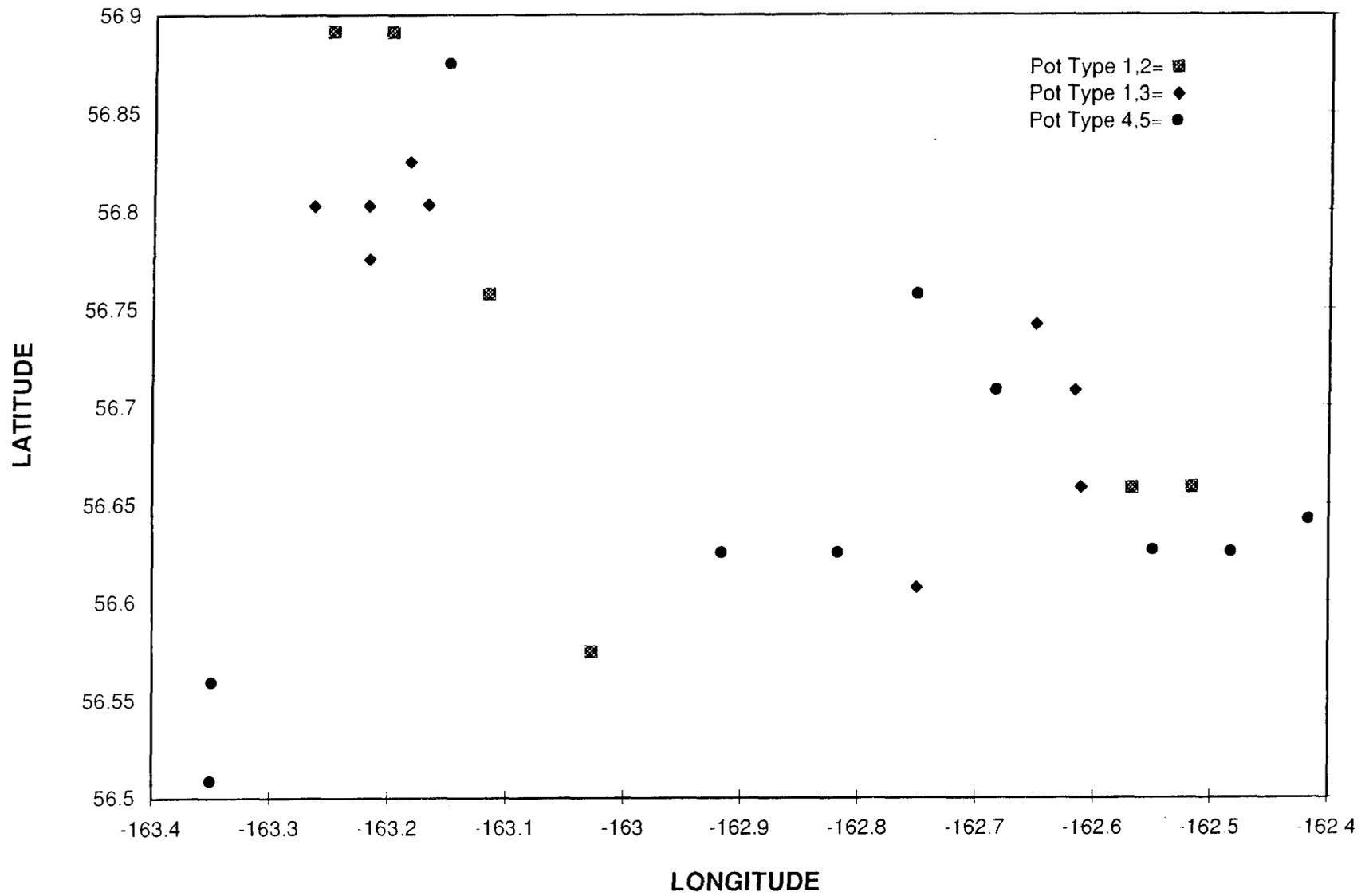


Figure 2. Layout by pot type, of the 25 stations in the 1996 Bristol Bay red king crab test fishery.

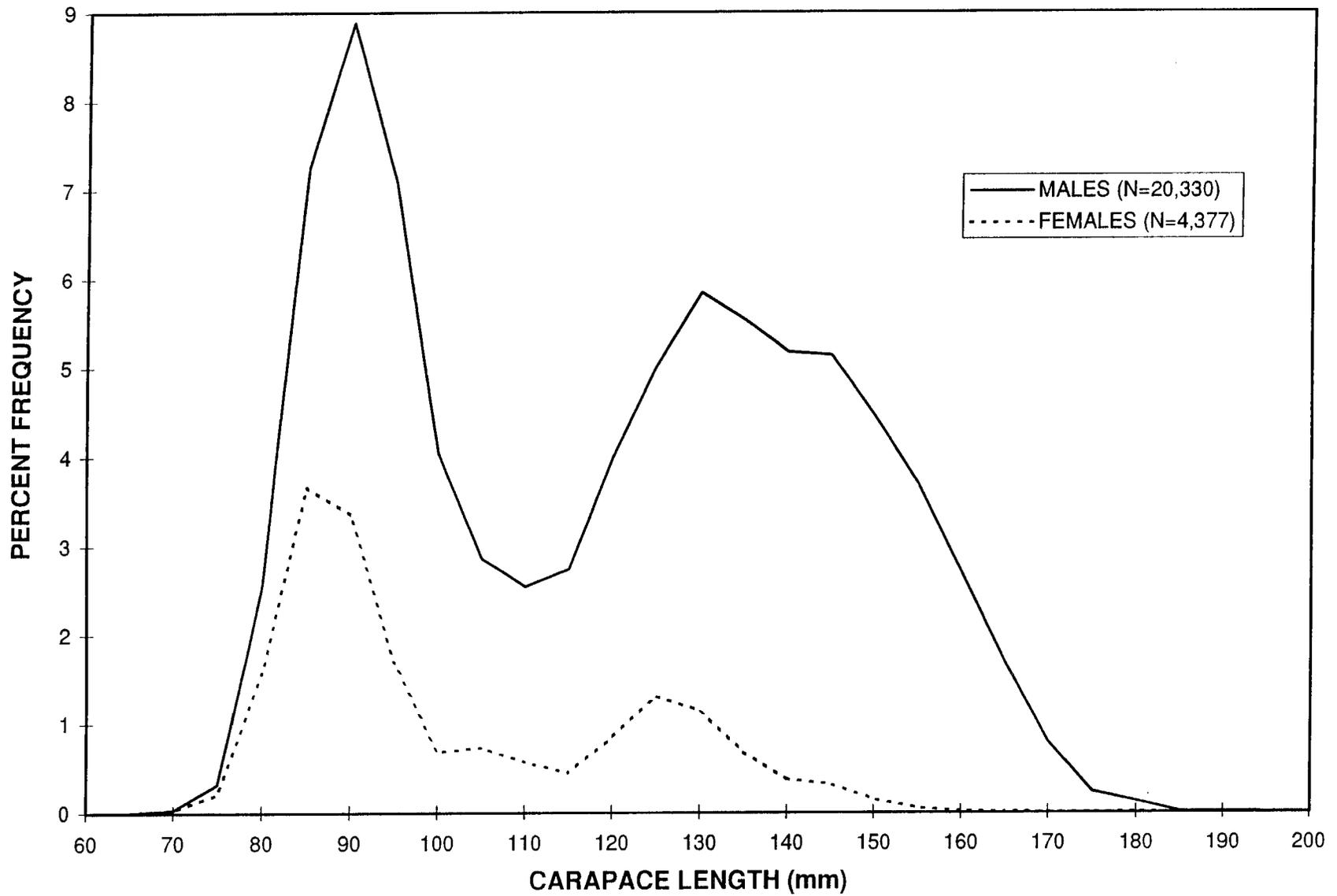


Figure 3. Length frequency of male and female red king crabs caught in all pot types during the 1996 Bristol Bay red king crab test fishery, by 5-mm length classes.

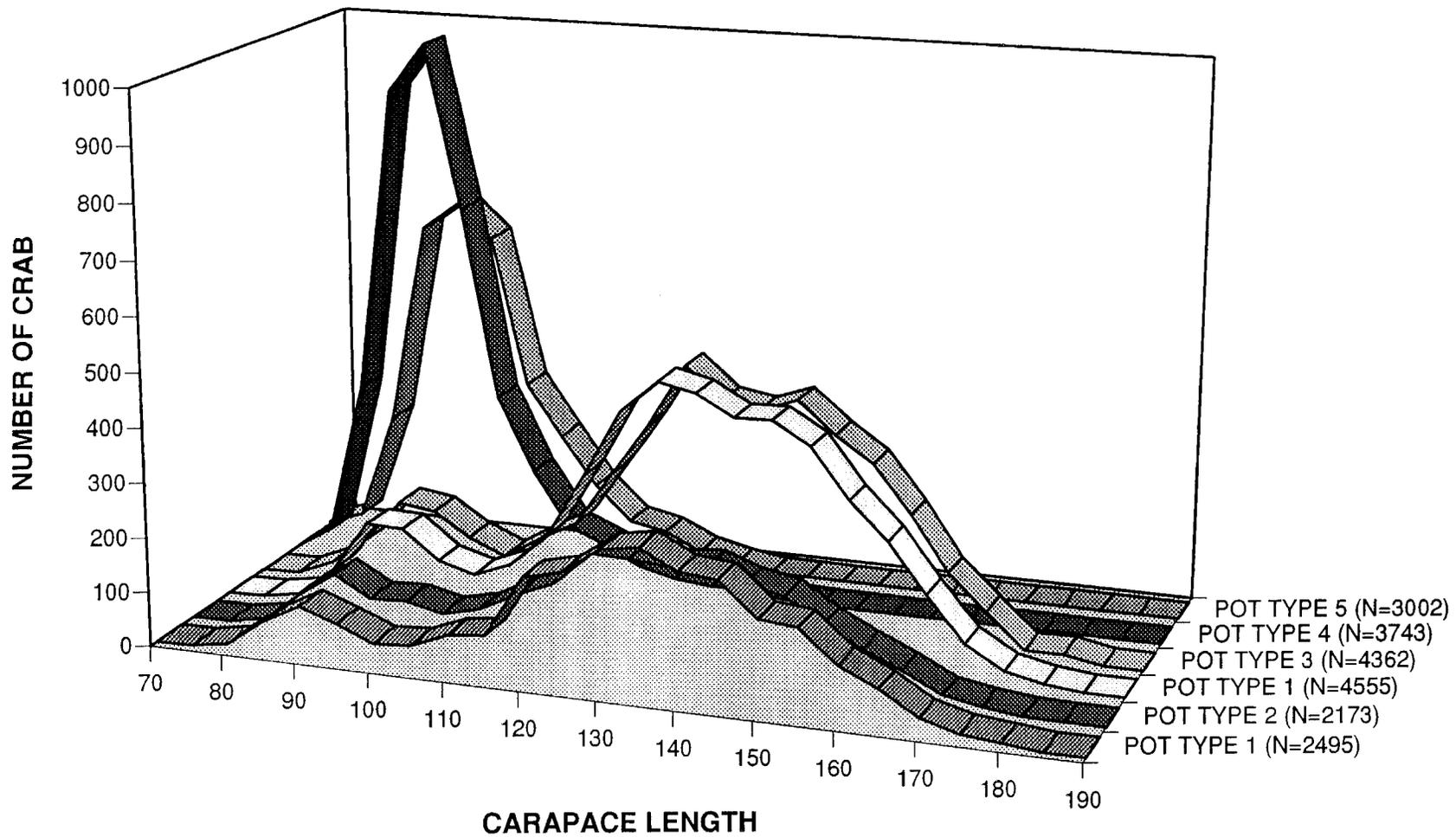


Figure 4. Length frequency of male red king crabs caught by pot type during the 1996 Bristol Bay red king crab test fishery, by 5-mm length classes.

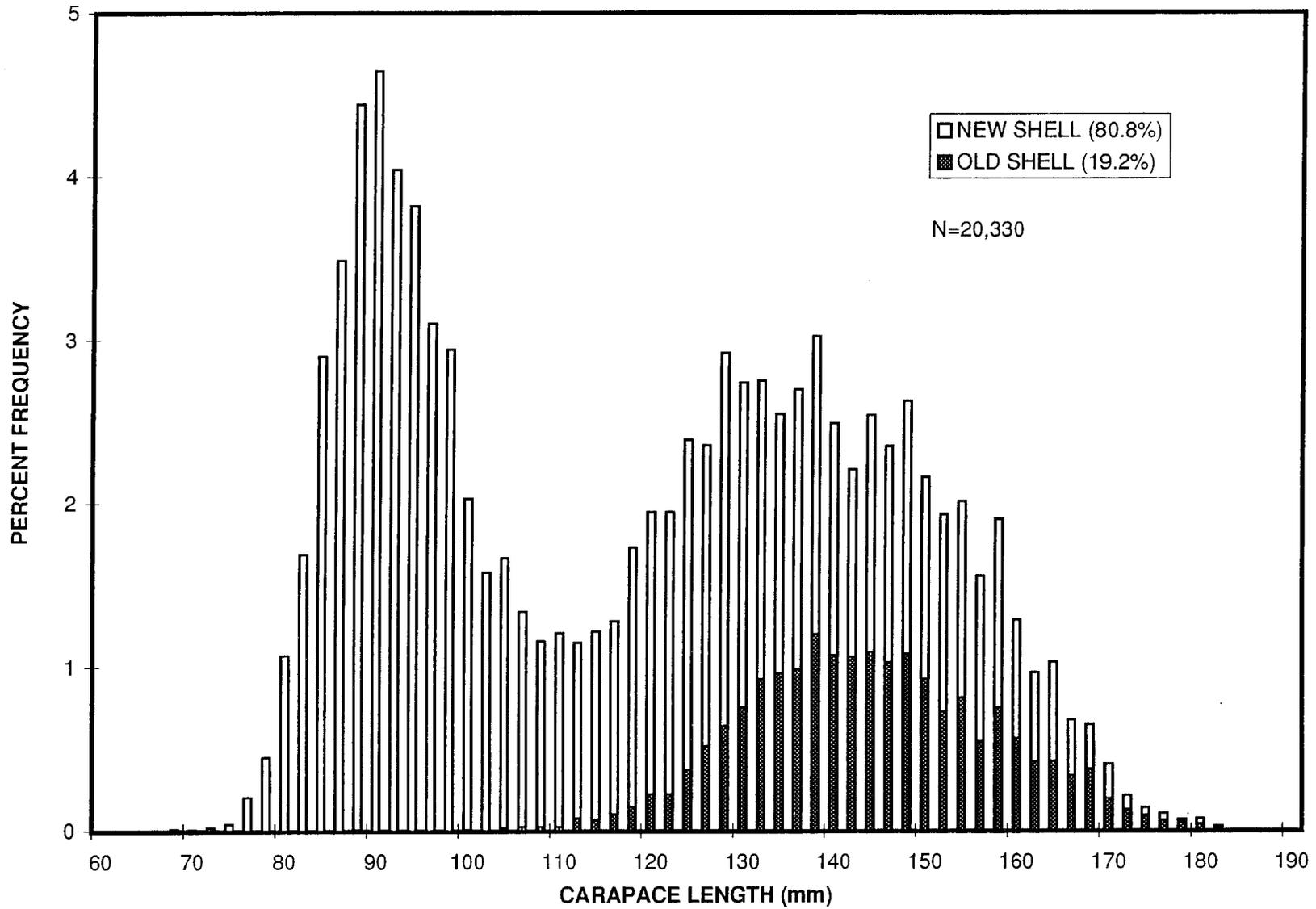


Figure 5. Shellage of male red king crabs caught in all pot types during the 1996 Bristol Bay red king crab test fishery, by 2-mm length classes.

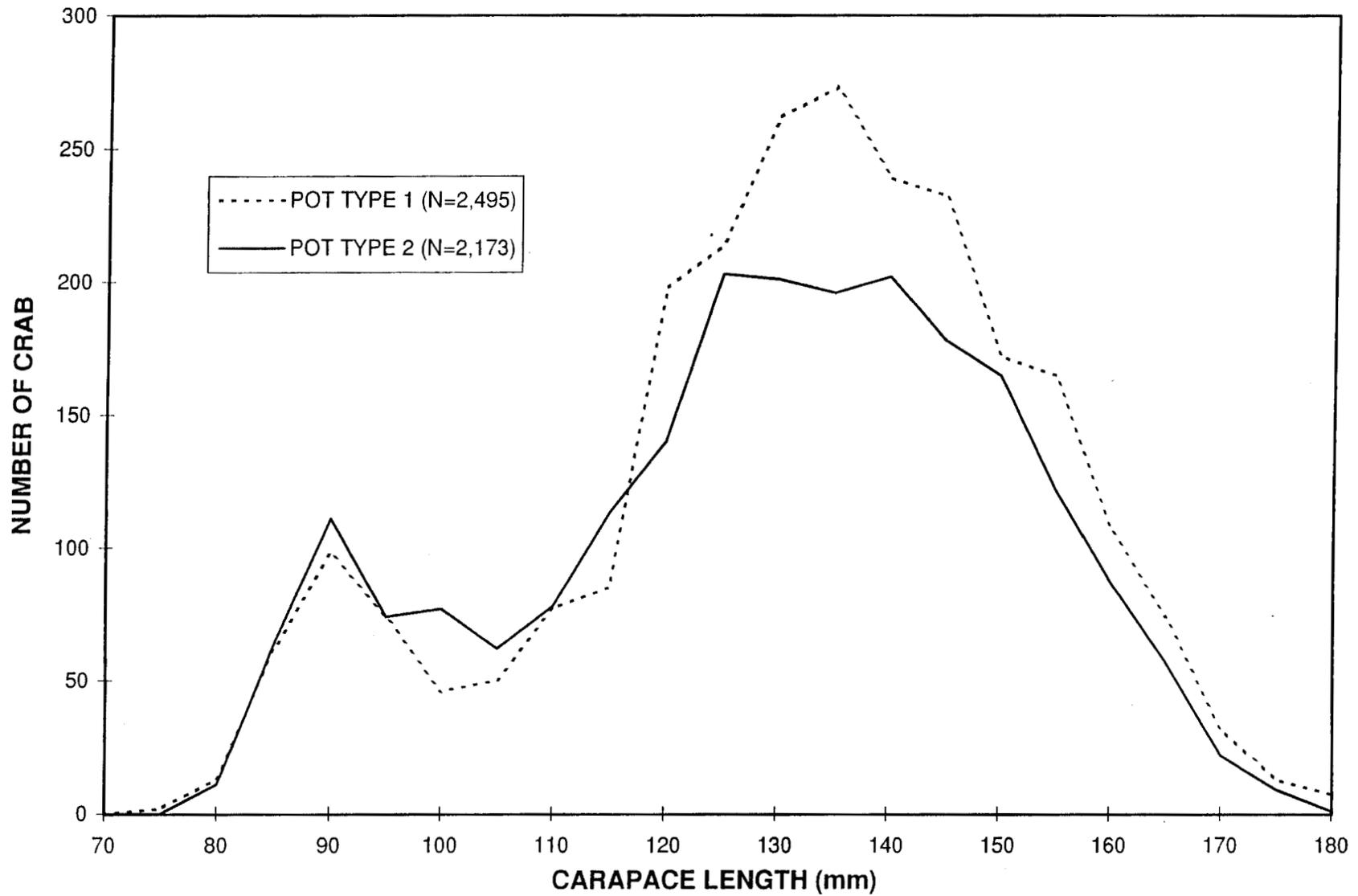


Figure 6. Length frequency of male red king crabs caught in standard king crab pots (Pot Type 1) and experimental pots (Pot Type 2) during the 1996 Bristol Bay red king crab test fishery, by 5-mm length classes.

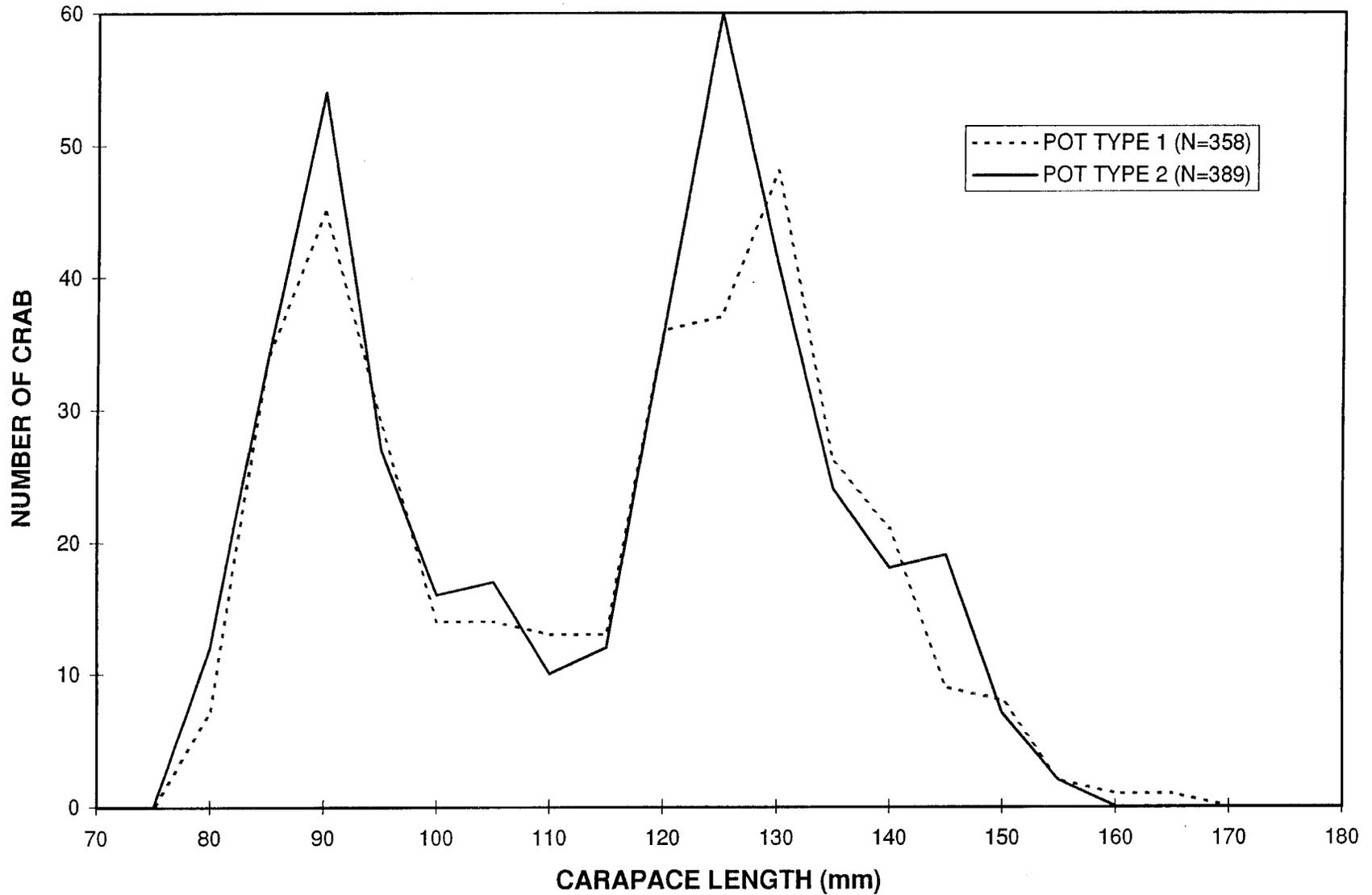


Figure 7. Length frequency of female red king crabs caught in standard king crab pots (Pot Type 1) and experimental pots (Pot Type 2) during the 1996 Bristol Bay red king crab test fishery, by 5-mm length classes.

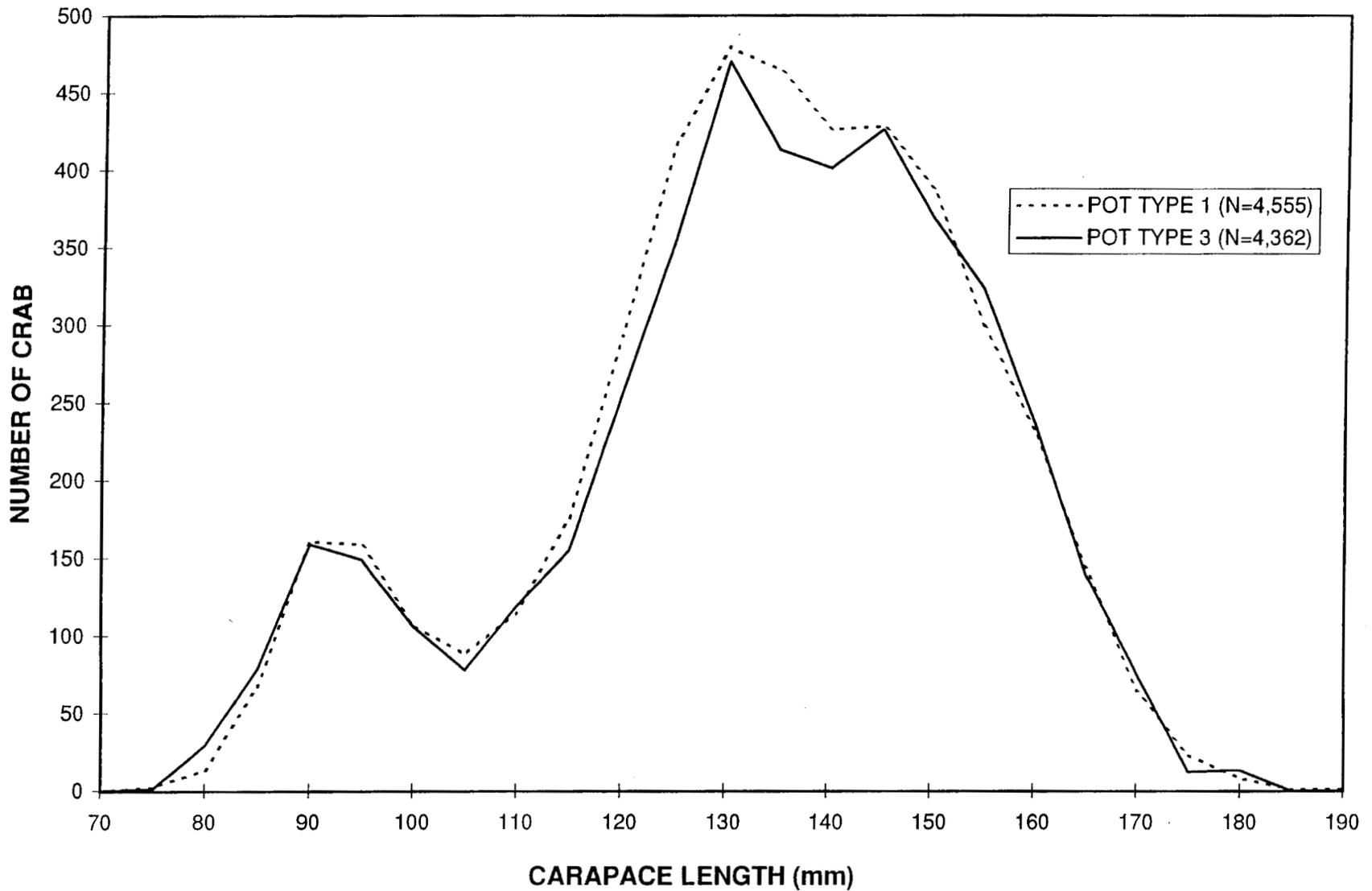


Figure 8. Length frequency of male red king crabs caught in standard king crab pots (Pot Type 1) and king crab pots with escape rings (Pot Type 3) during the 1996 Bristol Bay red king crab test fishery, by 5-mm length classes.

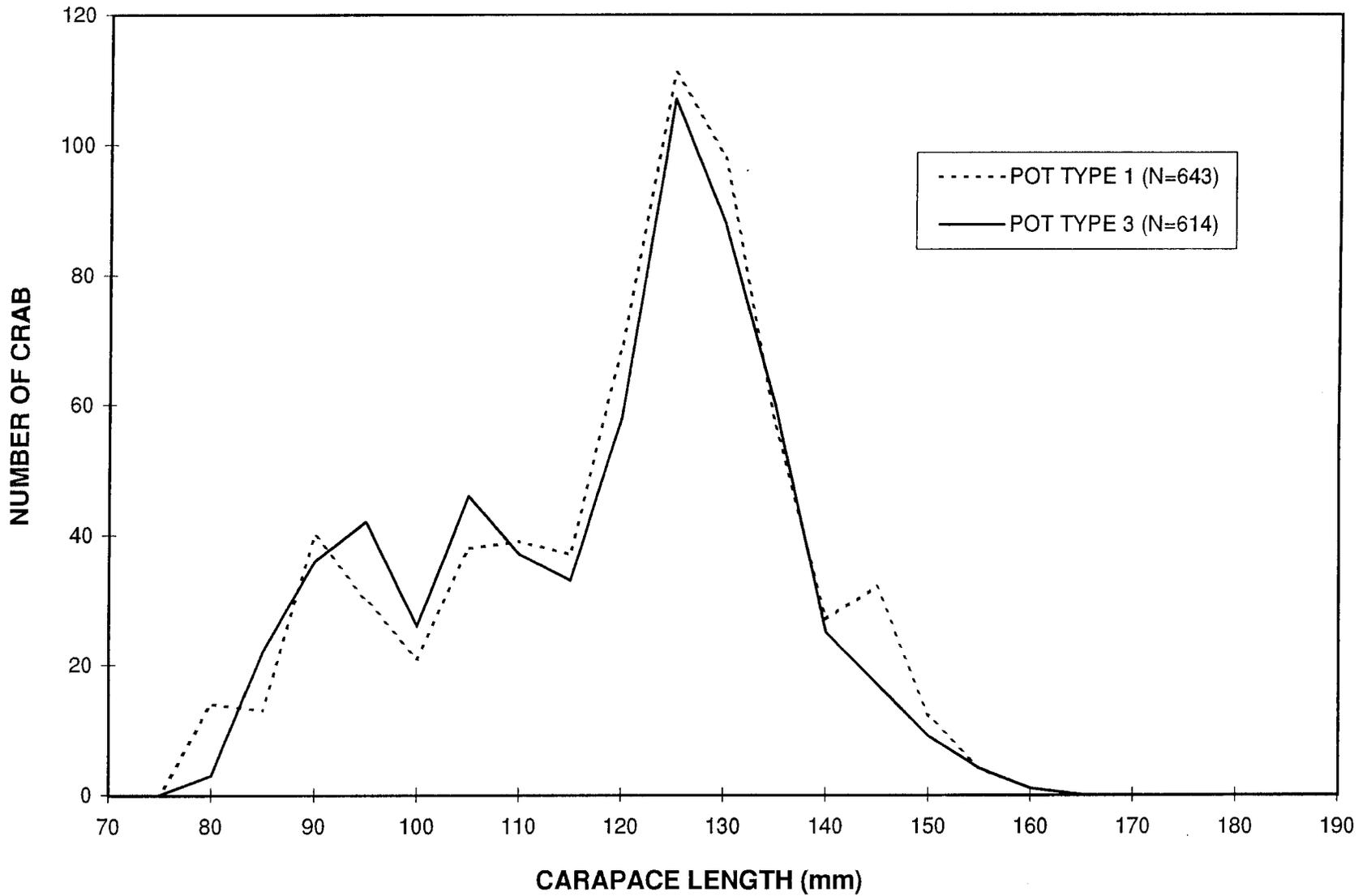


Figure 9. Length frequency of female red king crabs caught in standard king crab pots (Pot Type 1) and king crab pots with escape rings (Pot Type 3) during the 1996 Bristol Bay red king crab test fishery, by 5-mm length classes.

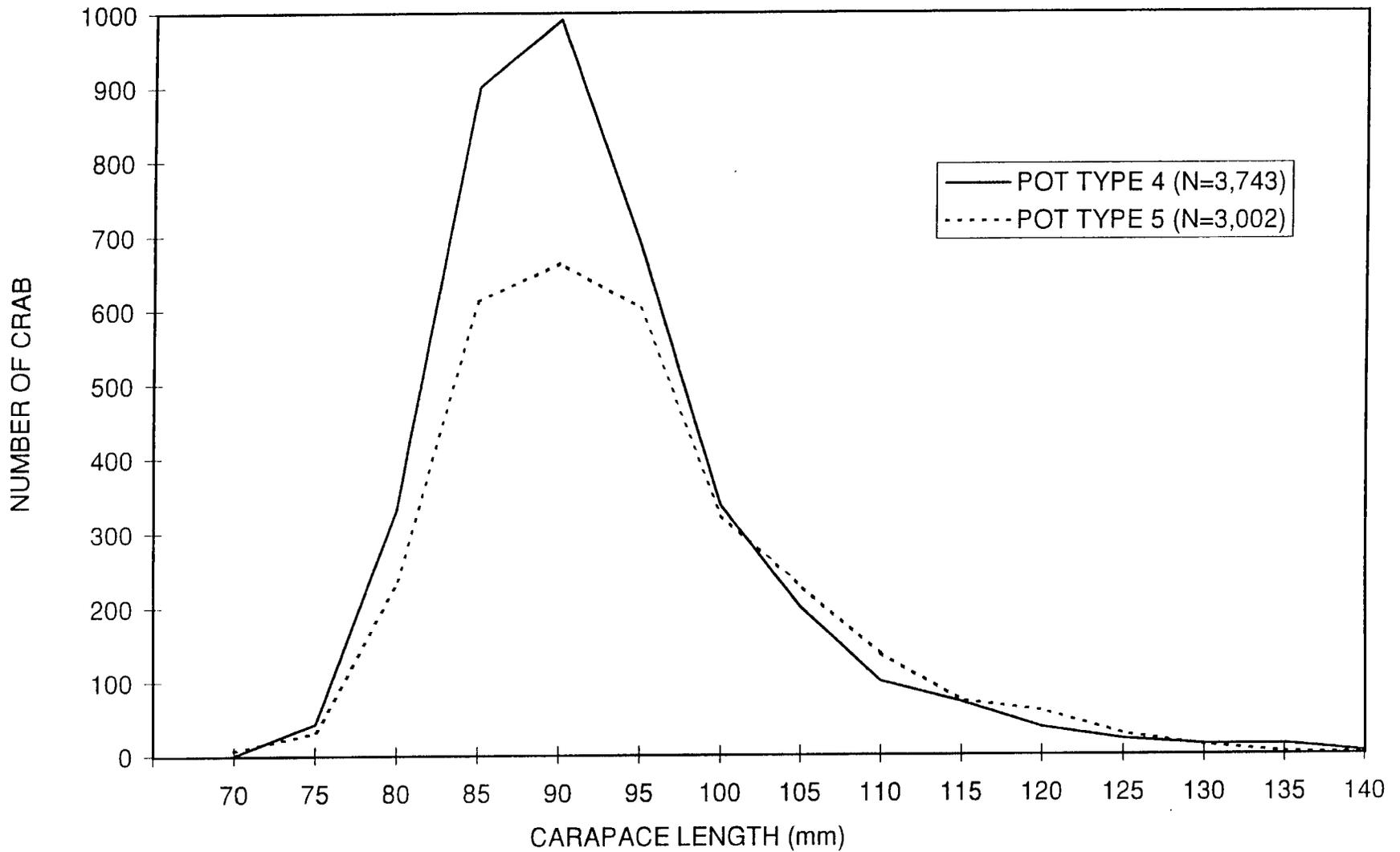


Figure 10. Length frequency of male red king crabs caught in standard Tanner crab pots (Pot Type 4) and Tanner crab pots with escape rings (Pot Type 5) during the 1996 Bristol Bay red king crab test fishery, by 5-mm length classes.

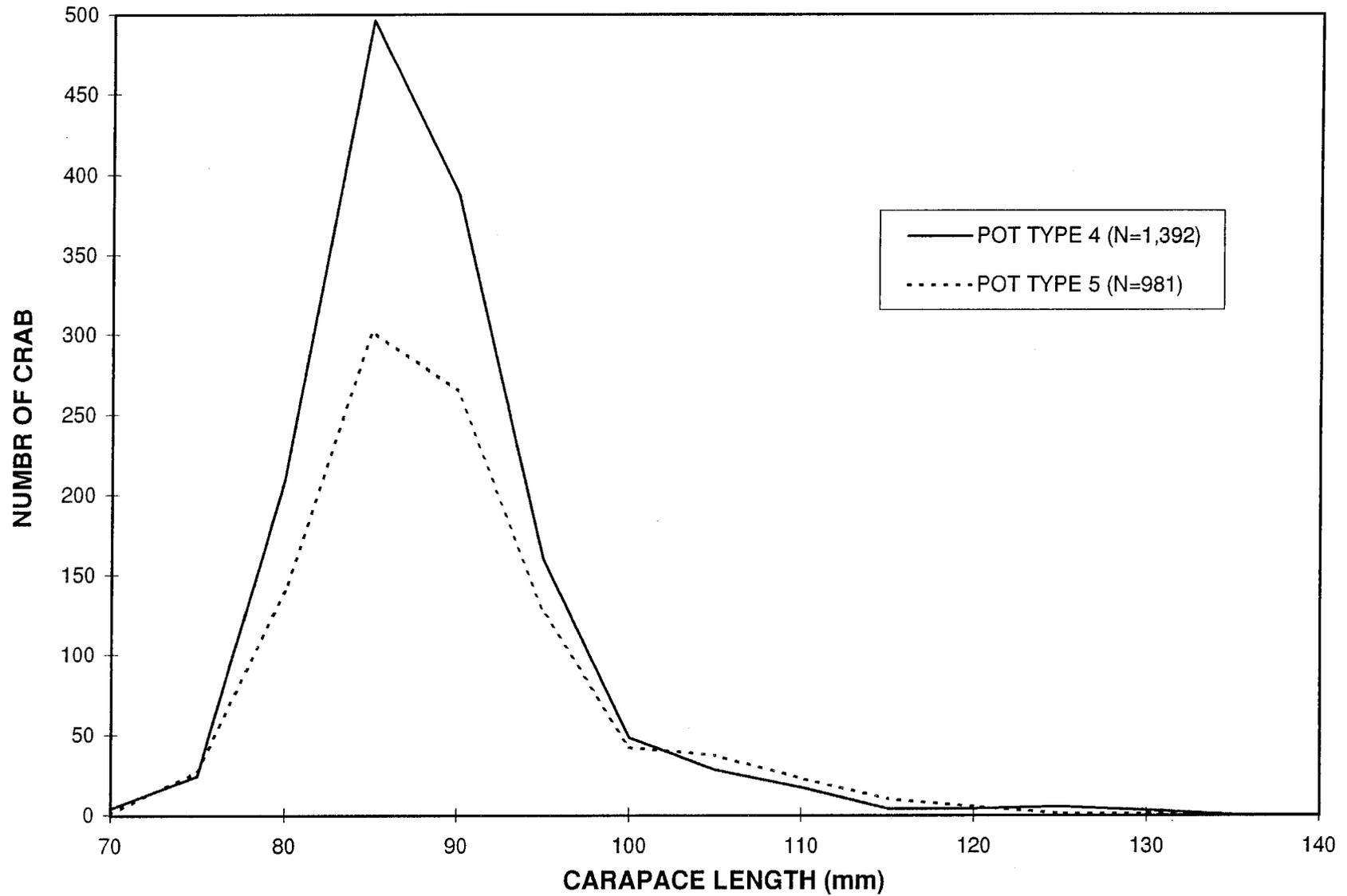


Figure 11. Length frequency of female red king crabs caught in standard Tanner crab pots (Pot Type 4) and Tanner crab pots with escape rings (Pot Type 5) during the 1996 Bristol Bay red king crab test fishery, by 5-mm length classes.

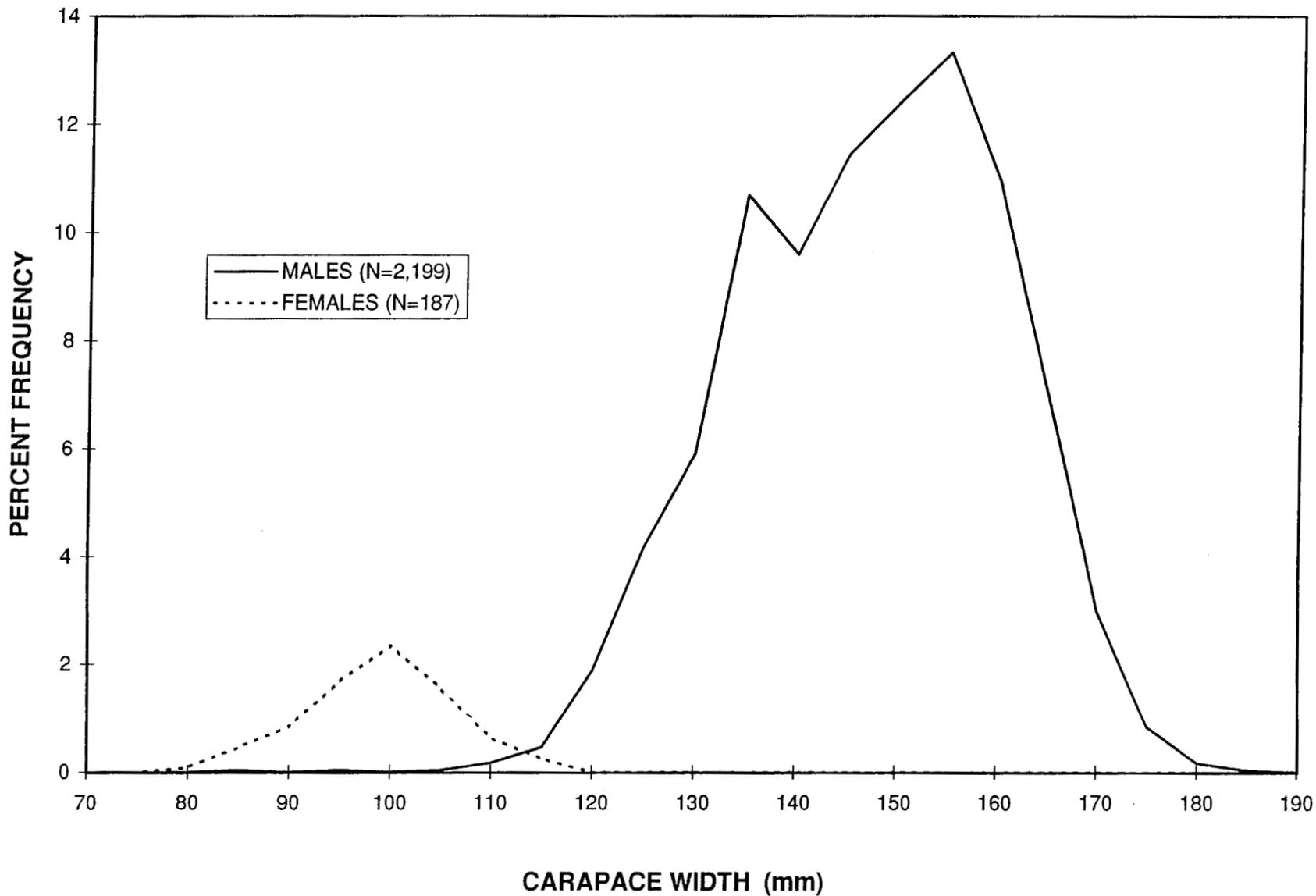


Figure 12. Width frequency of male and female Tanner crabs caught in all pot types during the 1996 Bristol Bay red king crab test fishery, by 5-mm width classes.

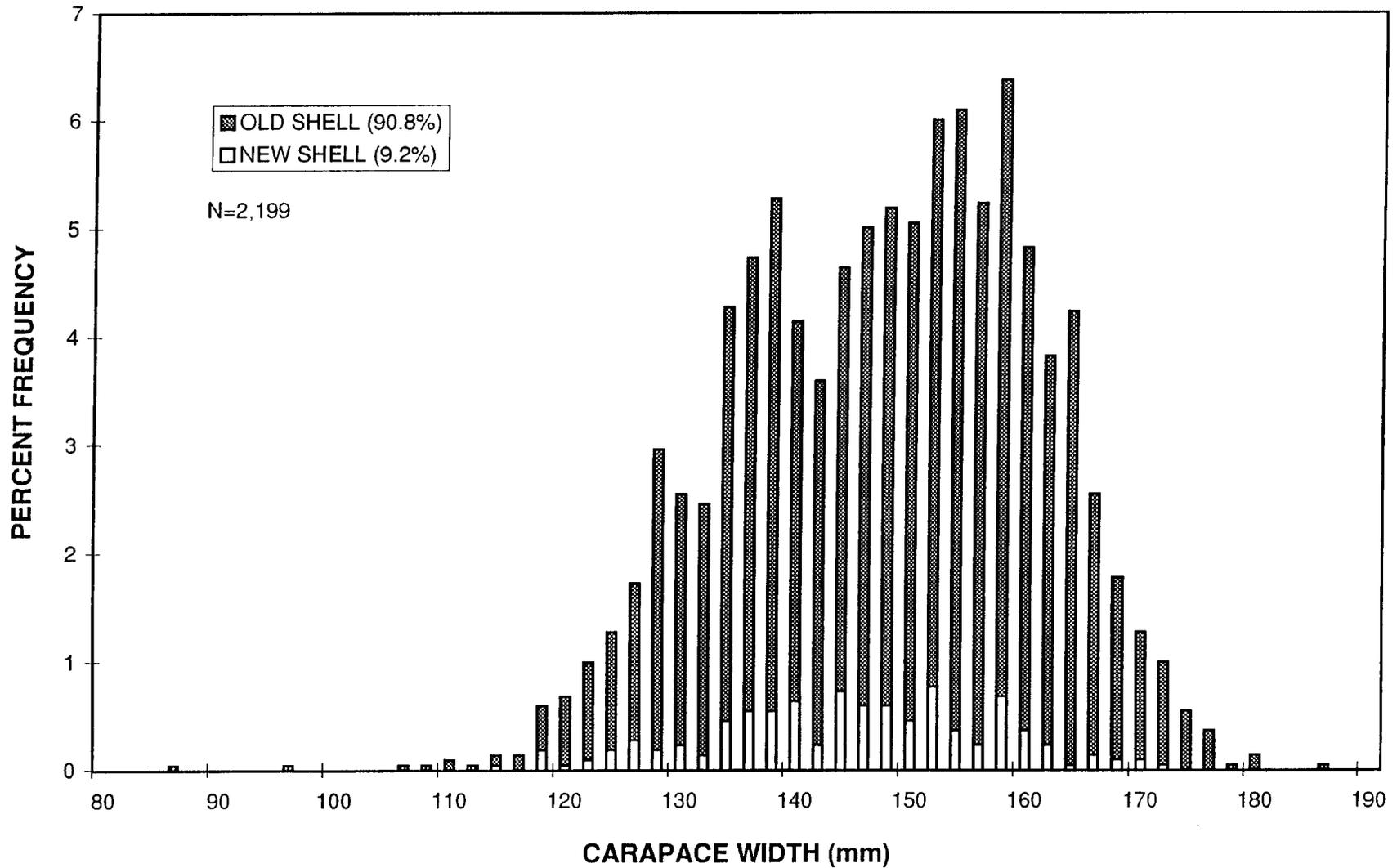


Figure 13. Shellage of male Tanner crab caught in all pot types during the 1996 Bristol Bay red king crab test fishery, by 2-mm width classes.

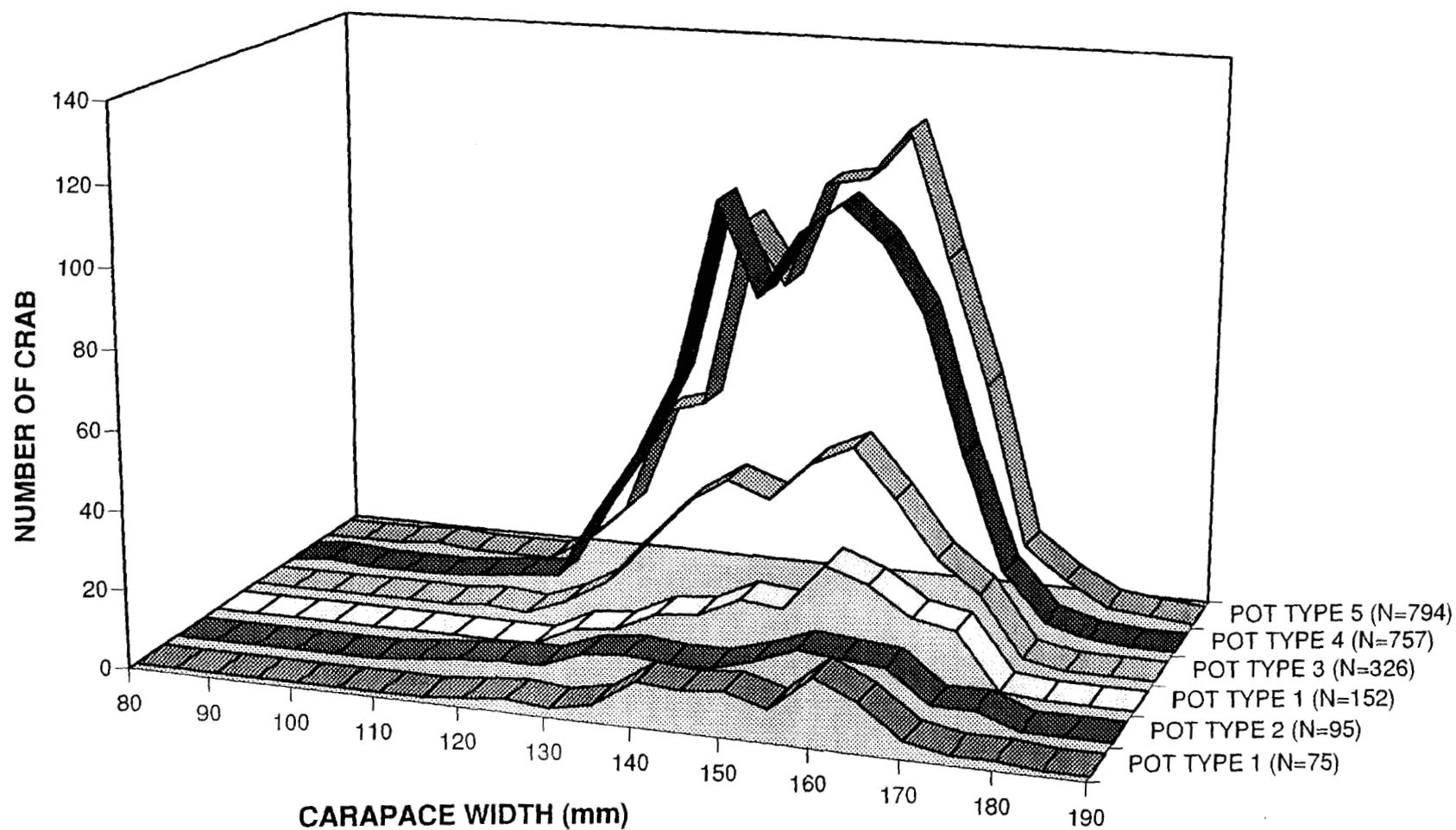


Figure 14. Width frequency of male Tanner crabs caught by pot types during the 1996 Bristol Bay red king crab test fishery, by 5-mm width classes.

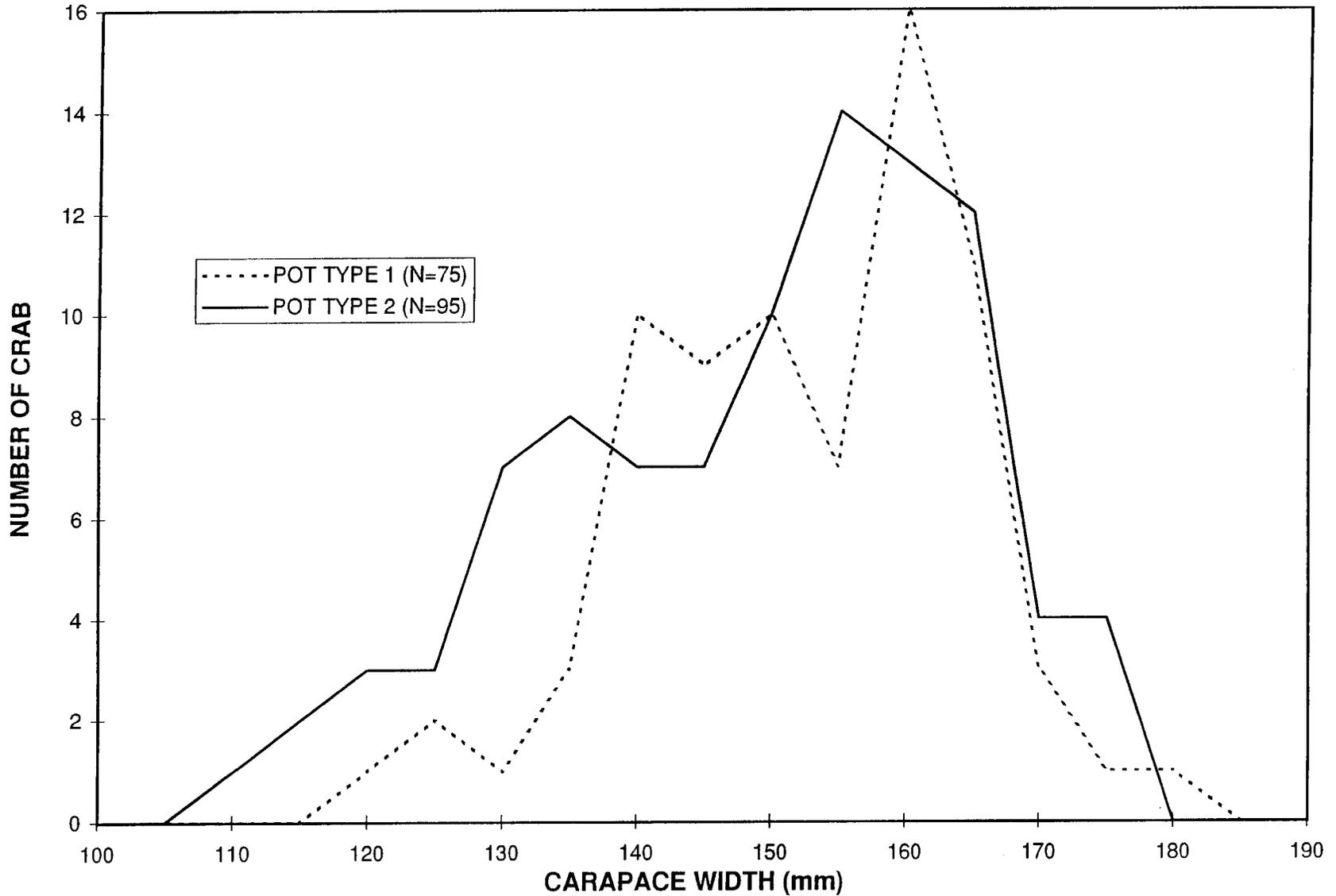


Figure 15. Width frequency of male Tanner crabs caught in standard king crab pots (Pot Type 1) and experimental pots (Pot Type 2) during the 1996 Bristol Bay red king crab test fishery, by 5-mm width classes.

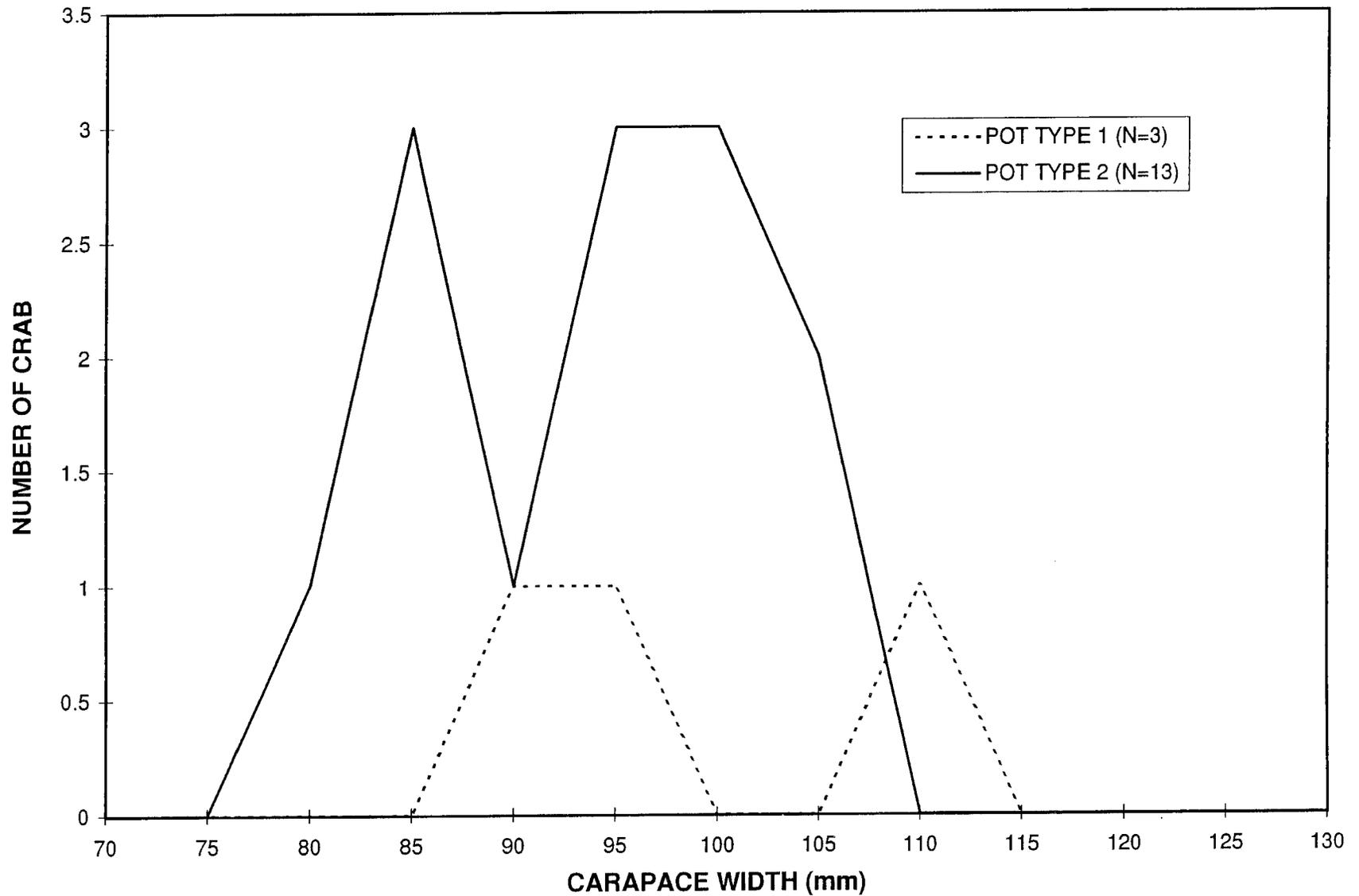


Figure 16. Width frequency of female Tanner crabs caught in standard king crab pots (Pot Type 1) and experimental pots (Pot Type 2) during the 1996 Bristol Bay red king crab test fishery, by 5-mm width classes.

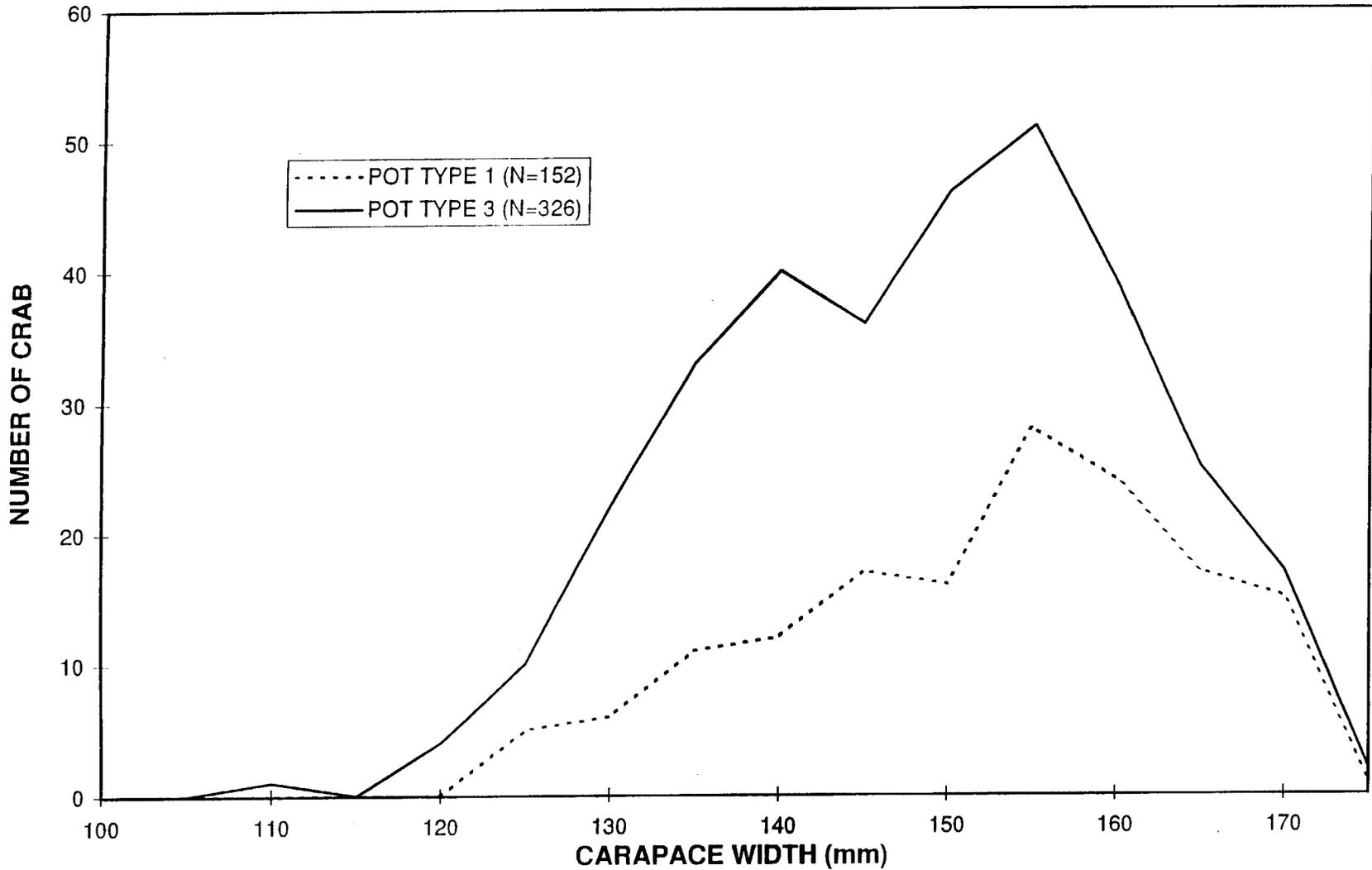


Figure 17. Width frequency of male Tanner crabs caught in standard king crab pots (Pot Type 1) and king crab pots with escape rings (Pot Type 3) during the 1996 Bristol Bay red king crab test fishery, by 5-mm width classes.

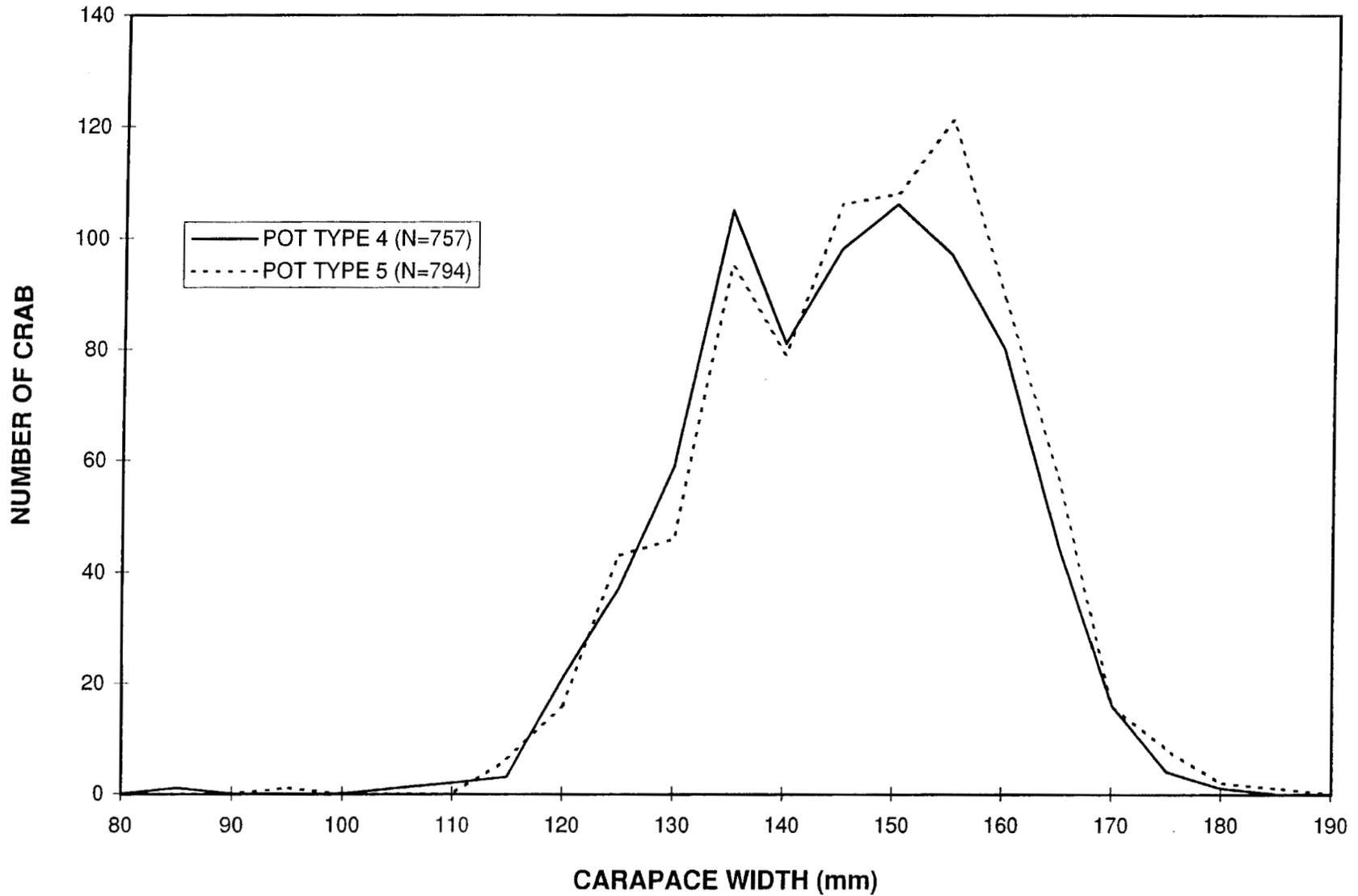


Figure 18. Width frequency of male Tanner crabs caught in standard Tanner crab pots (Pot Type 4) and Tanner crab pots with escape rings (Pot Type 5) during the 1996 Bristol Bay red king crab test fishery, by 5-mm width classes.

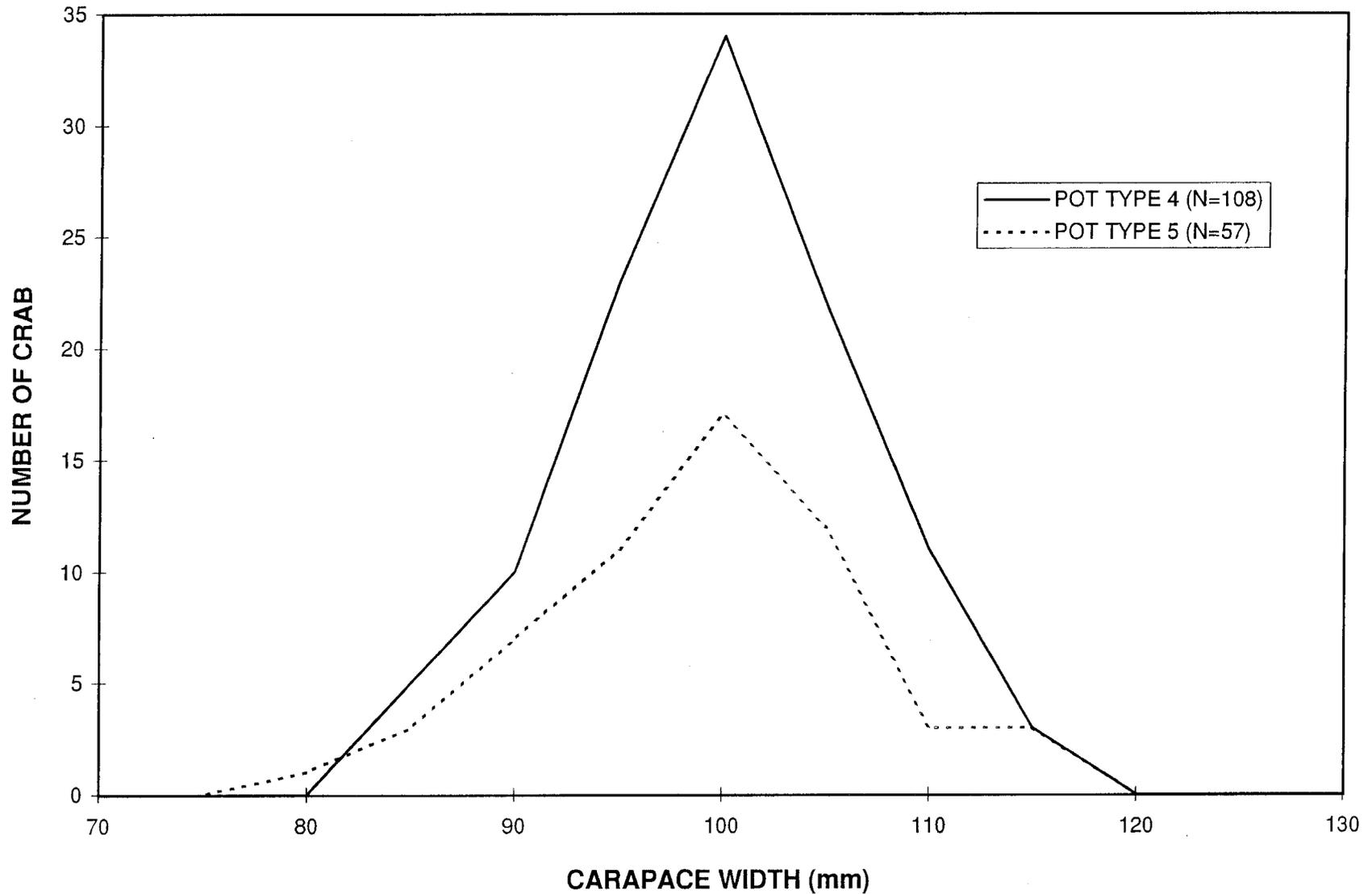


Figure 19. Width frequency of female Tanner crabs caught in standard Tanner crab pots (Pot Type 4) and Tanner crab pots with escape rings (Pot Type 5) during the 1996 Bristol Bay red king crab test fishery, by 5-mm width classes.

APPENDIX

Appendix A. Summary of red king crab fishing and catch data at 25 stations in the 1996 Bristol Bay red king crab test fishery.

Sta- tion	Date	North Lati- tude	West Longi- tude	Depth (m)	Soak Time (hrs)	No. of Pots Sampled	Females	Males			Avg C/P
								Sublegal		Legal	
								<120mm CL	≥120mm CL	No.	
1	8/14/96	56.88	163.23	72	50.3	16	162	155	321	389	24.3
2	8/14/96	56.87	163.17	72	50.9	16	10	129	2	0	0.0
3	8/14/96	56.83	163.20	72	48.7	16	55	88	322	566	35.4
4	8/15/96	56.75	162.67	74	50.6	16	164	496	188	208	13.0
5	8/15/96	56.72	162.70	74	44.7	16	130	790	41	2	0.1
6	8/15/96	56.75	162.73	70	47.7	16	386	1393	16	0	0.0
7	8/16/96	56.67	162.62	80	36.2	16	428	433	313	360	22.5
8	8/16/96	56.63	162.57	82	44	16	338	867	2	0	0.0
9	8/16/96	56.65	162.53	80	38.6	16	289	527	220	312	19.5
10	8/17/96	56.70	162.63	76	45	16	284	545	320	298	18.6
11	8/17/96	56.63	162.50	76	40.5	16	621	1288	2	0	0.0
12	8/18/96	56.63	162.43	74	43.8	16	857	1943	35	3	0.2
13	8/18/96	56.67	162.57	80	48.5	16	241	313	246	342	21.4
14	8/19/96	56.60	162.73	82	49.8	16	288	178	332	408	25.5
15	8/20/96	56.62	162.82	78	40.3	16	19	104	33	1	0.1
16	8/20/96	56.63	162.93	80	48.6	16	11	64	2	0	0.0
17	8/21/96	56.57	163.01	84	38.5	16	8	32	133	301	18.8
18	8/22/96	56.77	163.20	76	34.9	15	1	55	254	411	25.7
19	8/22/96	56.79	163.23	74	40.7	16	14	60	282	456	28.5
20	8/22/96	56.52	163.33	88	126.5	16	1	19	4	0	0.0
21	8/22/96	56.75	163.13	74	36.2	16	18	67	194	295	18.4
22	8/23/96	56.79	163.28	76	116.5	16	7	33	303	726	45.4
23	8/23/96	56.79	163.18	74	136.6	15	16	56	355	871	58.1
24	8/24/96	56.88	163.18	70	97.4	16	29	114	287	420	26.3
25	8/27/96	56.55	163.33	84	48.4	16	0	5	0	0	0.0
TOTAL						398	4377	9754	4207	6369	16.0

Appendix B. Percent maturity by length class of new-shell female red king crabs caught during 1996 Bristol Bay red king crab test fishery.

Carapace Length (mm)	Without Embryos	With Embryos	Total	Percent Mature
70	4	0	4	0
72	1	0	1	0
74	4	0	4	0
75	11	0	11	0
76	19	0	19	0
77	17	0	17	0
78	36	0	36	0
79	26	0	26	0
80	108	0	108	0
81	75	0	75	0
82	142	0	142	0
83	134	0	134	0
84	194	2	196	1
85	177	0	177	0
86	167	3	170	1.8
87	216	8	224	3.6
88	165	8	173	4.6
89	167	14	181	7.7
90	182	12	194	6.2
91	118	13	131	9.9
92	133	16	149	10.7
93	110	19	129	14.7
94	63	16	79	20.2
95	58	19	77	24.7
96	40	29	69	42
97	36	25	61	41
98	28	23	51	45
99	13	20	33	60.6
100	4	34	38	89.5
101	3	17	20	85
102	1	24	25	96
103	2	35	37	94.6
104	1	41	42	97.6
105	1	37	38	97.3
106	1	36	37	97.3
107	0	26	26	100
108	0	36	36	100
109	0	27	27	100
110	1	29	30	96.7
111	0	20	20	100
112	0	26	26	100
113	0	18	18	100
114	0	25	25	100
115	0	20	20	100
116	0	22	22	100
117	0	24	24	100

-Continued-

Appendix B. (page 2 of 2)

Carapace Length (mm)	Without Embryos	With Embryos	Total	Percent Mature
118	0	35	35	100
119	0	22	22	100
120	0	48	48	100
121	0	38	38	100
122	1	64	65	98.5
123	0	55	55	100
124	0	80	80	100
125	0	61	61	100
126	0	62	62	100
127	0	63	63	100
128	0	73	73	100
129	0	61	61	100
130	0	60	60	100
131	0	29	29	100
132	0	56	56	100
133	0	49	49	100
134	0	42	42	100
135	0	28	28	100
136	0	28	28	100
137	0	20	20	100
138	0	29	29	100
139	0	12	12	100
140	0	16	16	100
141	0	9	9	100
142	0	24	24	100
143	0	19	19	100
144	0	13	13	100
145	0	23	23	100
146	0	8	8	100
147	0	14	14	100
148	0	8	8	100
149	0	9	9	100
150	0	5	5	100
151	0	8	8	100
152	0	5	5	100
153	0	4	4	100
154	0	1	1	100
155	0	2	2	100
156	0	3	3	100
157	0	2	2	100
159	0	1	1	100
160	0	1	1	100
162	0	1	1	100
163	0	1	1	100
178	0	1	1	100
Totals	2459	1917	4376	43.8

Appendix C. Summary of Tanner crab fishing and catch data in 25 stations in the 1996 Bristol Bay red king crab test fishery.

Sta- tion	Date	North Lati- tude	West Longi- tude	Depth (m)	Soak Time (hrs)	No. of Pots Sampled	Females	Males		
								Sub- legal	Legal	
								No.	Ave C/P	
1	8/14/96	56.88	163.23	72	50.3	16	2	2	2	0.1
2	8/14/96	56.87	163.17	72	50.9	16	0	12	4	0.3
3	8/14/96	56.83	163.20	72	48.7	16	0	8	1	0.06
4	8/15/96	56.75	162.67	74	50.6	16	0	17	138	8.6
5	8/15/96	56.72	162.70	74	44.7	16	1	33	230	14.4
6	8/15/96	56.75	162.73	70	47.7	16	3	20	66	4.1
7	8/16/96	56.67	162.62	80	36.2	16	0	7	79	4.9
8	8/16/96	56.63	162.57	82	44.0	16	22	42	205	12.8
9	8/16/96	56.65	162.53	80	38.6	16	2	10	46	2.9
10	8/17/96	56.70	162.63	76	45.0	16	0	7	56	3.5
11	8/17/96	56.63	162.50	76	40.5	16	7	40	155	9.7
12	8/18/96	56.63	162.43	74	43.8	16	4	23	93	5.8
13	8/18/96	56.67	162.57	80	48.5	16	1	4	29	1.8
14	8/19/96	56.60	162.73	82	49.8	16	0	1	21	1.3
15	8/20/96	56.62	162.82	78	40.3	16	0	19	38	2.4
16	8/20/96	56.63	162.93	80	48.6	16	0	9	40	2.5
17	8/21/96	56.57	163.01	84	38.5	16	4	13	37	2.3
18	8/22/96	56.77	163.20	76	34.9	15	3	23	23	1.5
19	8/22/96	56.79	163.23	74	40.7	16	3	14	14	0.9
20	8/22/96	56.52	163.33	88	126.5	16	25	171	143	8.9
21	8/22/96	56.75	163.13	74	36.2	16	7	4	20	1.3
22	8/23/96	56.79	163.28	76	116.5	16	0	15	41	2.6
23	8/23/96	56.79	163.18	74	136.6	15	0	6	7	0.4
24	8/24/96	56.88	163.18	70	97.4	16	0	1	2	0.1
25	8/27/96	56.55	163.33	84	48.4	16	103	111	97	6.1
TOTAL						398	187	612	1587	4

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