Fishery Data Series No. 05-40

A Bottom Trawl Survey for Crabs and Groundfish in the Southern, Kamishak Bay, and Barren Islands Districts of the Cook Inlet Management Area, 20-25 June and 10-17 July 2000

by

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July 2005

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY DATA REPORT NO. 05-40

A BOTTOM TRAWL SURVEY FOR CRABS AND GROUNDFISH IN THE SOUTHERN, KAMISHAK BAY, AND BARREN ISLANDS DISTRICTS OF THE COOK INLET MANAGEMENT AREA, 20-25 JUNE AND 10-17 JULY 2000

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The Division of Sport Fish Fishery Data Series was established in 1987 for the publication of technically oriented results for a single project or group of closely related projects. Since 2004, the Division of Commercial Fisheries has also used the Fishery Data Series. Fishery Data Series reports are intended for fishery and other technical professionals. Fishery Data Series reports are available through the Alaska State Library and on the Internet: http://www.sf.adfg.state.ak.us/statewide/divreports/html/intersearch.cfm This publication has undergone editorial and peer review.

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ABSTRACT

During 20–25 June and 10–17 July 2000, the Alaska Department of Fish and Game conducted bottom trawl surveys to assess Tanner crab *Chionoecetes bairdi*, red king crab *Paralithodes camtschaticus*, and commercially important groundfish in the Southern, Kamishak Bay, and Barren Islands Districts of the Cook Inlet Management Area. The surveys were conducted with the state research vessel *Pandalus*, overall length 20.1 m (66 ft), making 1-nautical mile (nmi) tows with a 400-mesh Eastern otter trawl.

The 23 successful tows in the Southern District yielded a population estimate of 1,571,828 male Tanner crabs. Legal males (≥140 mm carapace width) comprised 5% of the population estimate. The Southern District was also estimated to contain 827,332 female Tanner crabs, with mature female crab comprising 24% of the surveyed population. The 2000 Southern District survey yielded 2 male and no female red king crab. Six male and 12 female Dungeness crab *Cancer magister* were caught. Other species caught during the Southern District survey included weathervane scallop *Patinopecten caurinus* (283 lb), octopus *Octopus dofleini* (161 lb), Pacific cod *Gadus macrocephalus* (1,182 lb), walleye pollock *Theragra chalcogramma* (4,462 lb), Pacific halibut *Hippoglossus stenolepis* (1,051 lb), rockfish *Sebastes spp*. (271 lb), sablefish *Anoplopoma fimbria* (13 lb), lingcod *Ophiodon elongatus* (44 lb), and skate *Raja* and *Bathyraja spp.* (2,289 lb).

The 28 successful tows in the Kamishak Bay and Barren Islands Districts yielded a population estimate of 979,353 male Tanner crabs, with legal male crab comprising 2% of the population vulnerable to the trawl survey gear. The Kamishak Bay and Barren Islands District survey also produced an estimated population abundance of 722,262 female Tanner crabs, with mature female crab comprising 4% of the surveyed population. A total of 139 male and 17 female red king crab were caught in the Kamishak Bay and Barren Islands Districts survey. Other species caught during the survey included weathervane scallops (321 lb), Pacific cod (1,190 lb), walleye pollock (1,841 lb), Pacific halibut (2,524 lb), rockfish (3 lb), sablefish (72 lb), spiny dogfish *Squalus acanthias* (670 lb), and skate (2,831 lb).

The legal segments of both Tanner and red king crabs in the Southern District and the Kamishak Bay and Barren Islands Districts continue to be insufficient to support commercial fisheries. In addition, estimated abundance of prerecruit males, although highly variable over time, remains at a low level with little evidence of stock rebuilding at this time.

Key words: Assessment, bottom trawl, Cook Inlet, crab, groundfish, and invertebrates.

INTRODUCTION

The Alaska Department of Fish and Game (ADF&G) has been conducting bottom trawl surveys for red king *Paralithodes camtschaticus* and Tanner *Chionoecetes bairdi* crabs in the Cook Inlet Management Area since 1990 (Kimker 1996; Bechtol 2001). Data from these surveys are used to develop crab abundance estimates, monitor population trends, and set quotas for commercial fisheries (Bechtol and Trowbridge 1999; Bechtol et al. 2002).

Trawl surveys superseded the crab pot surveys that were used by ADF&G prior to 1991 to assess crab stocks (Kimker 1991a, b). The pot survey data established an index of abundance that was correlated with commercial catch information. The shortcomings of the pot surveys, such as variation in soak time, dependence on the commercial fishery, and the relative nature of the indices themselves, induced ADF&G to switch to trawl surveys to allow direct stock enumeration. Trawl surveys are also used by the National Marine Fisheries Service (NMFS) in the Bering Sea and by ADF&G in the Westward Region to determine stock conditions and annual harvests for king and Tanner crabs.

Many species of groundfish are captured during trawl surveys. Enumeration of the groundfish catch was inconsistent during the first few years of Central Region trawl surveys due to personnel limits. Beginning in 1993, the regional groundfish biologist regularly participated in

Central Region trawl surveys, facilitating the systematic collection and analysis of groundfish data. Sampling methods were further modified beginning in 1998 to fully document all groundfish and shellfish catches (Bechtol 2000b).

OBJECTIVES

The 2000 survey goals were:

1. Estimate absolute abundance of Tanner and red king crabs and relative abundance of red king crab stocks in the Southern, Kamishak Bay, and Barren Islands Districts of the Cook Inlet Management Area.
2. Document the size, shell age, and clutch condition (females) of Tanner, king, and Dungeness crabs.
3. Estimate relative catch rates and population biomass of other important invertebrate and groundfish species (Appendix A1), including weathervane scallop, octopus, Pacific cod, walleye pollock, sablefish, rockfish species, spiny dogfish, and skates.
4. Collect data on the size, sex, maturity, and age of target groundfish species (Appendix A1). These data will be reported in a separate data report.

METHODS

STUDY AREA AND SURVEY STATIONS

Selection of the survey area was based on historical pot indices, commercial catch information, and previous survey catch history. The two general survey areas included (Figure 1): (1)the Southern District, focusing on Kachemak Bay (Figure 2), and (2) the Kamishak Bay and Barren Islands Districts, herein collectively referred to as Kamishak Bay (Figure 3).

Southern District survey stations were historically 2.5 nautical mile squares (6.25 nmi^2) and Kamishak Bay stations were approximately 5.1 nautical miles squares (26.1 nmi^2; Kimker 1991a). However, individual station size and shape varied somewhat due to irregular coastline and depth. Depths shallower than 18 m (10 fathoms) were subsequently excluded from the survey and analysis to reduce potential gear loss problems and to better represent Tanner and red king crab habitat. Southern District stations were further stratified by depth with a division at 92 m (50 fathoms). Some individual stations were historically redefined based on results of initial surveys and commercial fishery effort locations.

The trawl path was selected within the station grid by the vessel skipper wherever it appeared that a successful tow could be made. The initial goal for tow length was 1.0 nmi, or approximately 26-minute tows at an average speed of 2.5 nmi/hr (kt). All tows were made during daylight hours. Because irregular bottom or bottom hang-ups occasionally reduced the duration of a tow, data analysis was restricted to tows with lengths ≥0.5 nmi. Data from shorter tows were discarded and the tows repeated if time allowed.

VESSEL AND GEAR

The state research vessel *Pandalus*, overall length 20.1 m (66 ft), was used to conduct the survey. A 400-mesh Eastern otter trawl with either a 21.4 m (70 ft) or a 23.8 m (78 ft) headrope, a 29.0 m (95 ft) footrope fished with 363 kg (800 lb), 1.5 m x 2.1 m, Nor'Eastern Astoria V trawl

doors. The net opening was estimated to be 2.7 m (9 ft) high and 12.2 m (40 ft) wide. The trawl mesh was 10.1 cm (4.0 inch) in the wings and body, 8.9 cm (3.5 inch) in the intermediate and cod end, and 3.2 cm (1.3 inch) in the cod end liner.

Bottom temperature was recorded with a time specific temperature logger attached to the trawl headrope. This temperature logger was typically attached once daily on a tow where the likelihood of gear loss or a bottom hang-up was thought to be minor.

CATCH SAMPLING

Successful tows were brought aboard and weighed (Appendices B and C). Target animals were counted and weighed by species (Appendix A1). Remaining catch was either sorted in its entirety or a subsample of 1–3 bushel baskets was sorted into species or taxonomic groups. Abundance and aggregate weight was determined for each species or taxonomic group (Appendix A1). Pacific cod, walleye pollock, sablefish, and rockfish species were further sampled for individual weight, length, sex, maturity, and age. These size, age, and maturity data will be described in separate reports (e.g., Bechtol 1995, 1998).

All Tanner, king, and Dungeness crabs were weighed and measured by sex and species. Crab size was measured as carapace width (CW) for Tanner and Dungeness crabs and carapace length (CL) for red king crab. Shell age was recorded as soft, new, old, or very old for all crab (Kimker 1991a). Soft-shell and new-shell crabs are believed to have molted after the most recent winter. In contrast, old shells and very old shells are believed to have been retained for one or more years, thereby having avoided molting for at least one year. Female crabs were also assessed for egg condition and clutch size.

DATA ANALYSIS

For each district and target species, the population estimate P_i of either abundance or biomass B_i was calculated from the following area swept equation (Appendices C1–C4):

$$P_i = 151.9 \times \sum_{i=1}^{n} \left(A_i \times \frac{C_i}{l_i} \right) \quad (1)$$

where:

151.9 = a factor to convert catch per nautical mile towed to catch per square nautical mile = 6,076 feet per nautical mile/40 feet (fishing width of the net)

A_i = the surface area of station i in square nautical miles

c_i = catch in station i, measured as either number or weight of animals

l_i = the distance towed in station i in nautical miles

Because only survey stations that were sampled with a successful tow were included in the aggregated estimate, these are minimum population estimates. Population numbers were not estimated for king or Dungeness crabs because of the low abundances of these species.

Crab growth rates often vary by area across the geographic distribution of a given species but tend to be consistent within a given management area. Crab carapace widths were classified into estimated "age" categories based on previous observations of the Cook Inlet crab resources. For analysis purposes, soft-shell and new-shell crabs were pooled into a single "new" category whereas old-shell and very old-shell crabs were pooled into a single "old" category (Table 1;

Kimker 1991a). Mean carapace size within a district was calculated by weighting size frequency distributions within survey stations by the surface area of each station within that district.

RESULTS

SOUTHERN DISTRICT

A total of 23 successful tows, ranging in depth from 14 to 94 fathoms (26 to 172 m), were made in the Southern District during 10–17 July 2000 (Figure 2; Appendix B1). Aggregate catch from all successful tows was 36,528 lb. After standardizing to catch per nautical mile, target fish and invertebrate species comprised 11,751 lb among all Southern District tows (Table 2). Mean catch among tows was 510.9 lb/nmi. Target invertebrate catches totaled 1,953 lb of Tanner crab, 18 lb of red king crab, 28 lb of Dungeness crab, 284 lb of weathervane scallop, and 161 lb of octopus. Pacific halibut catches totaled 1,051 lb and target groundfish species totaled 8,277 lb, comprised of 1,198 lb of Pacific cod, 4,462 lb of walleye pollock, 271 lb of rockfish, 13 lb of sablefish, 2,289 lb of skate, and 44 lb of lingcod. For all species captured in the 2000 Southern District trawl survey, standardized catch rates are shown in Appendix C1 and estimated population biomasses within surveyed stations are shown in Appendix C2.

Tanner Crab

A standardized total (crab/nmi) of 2,304 male Tanner crab was caught in the 2000 Southern District (Table 4). Prerecruit-1 (pre-1) and prerecruit-2 (pre-2) crab comprised 42% of all males caught. Catch of legal male crab (≥140 mm) totaled 5% of all male size classes combined. New recruits comprised 4% (91 crab) of the legal male sample; only 3 postrecruit males (>165 m) were caught. The Southern District population estimate was 1,571,828 male Tanner crab vulnerable to the trawl survey gear (Tables 5 and 6). Legal males were estimated to total 73,961 Tanner crab, or 5% of the surveyed population (Figures 4 and 5). Carapace widths ranged from 18 to 171 mm (mean = 89.5 mm; Table 7), and mean CW of legal males was 147.4 mm.

The 2000 Southern District survey caught a standardized total of 1,606 female Tanner crab (Table 8). The district contained an estimated 827,330 female Tanner crab, of which 24% were mature (Tables 9 and 10). New shells were observed on 96% of the total female population and 84% of mature females (Figure 6). Less than 1% of the mature females were barren and 80% of the mature female population had full clutches. Female CW ranged from 18 to 118 mm (mean = 72.5 mm; Table 11), and mean CW of mature females was 99.3 mm.

Red King Crab

Two male red king crab were caught in the 2000 Southern District survey, one each from stations 2 and 8 (Tables 12 and 13). Both were old-shell, postrecruit males. No female red king crabs were caught in the 2000 Southern District survey (Tables 14).

Dungeness Crab

The 2000 Southern District survey caught 6 male Dungeness crab (Tables 15 and 16). Male CW ranged from 120 to 175 mm (mean CW = 153.1 mm; Table 7). Three legal-size males were caught, comprising of one new-shell and 2 old-shell recruits. The sublegal males included one prerecruit-2 new shell and 2 prerecruit-1 old shells.

The Southern District survey caught 12 female Dungeness crab (Tables 17 and 18). Five female crab had new shells. Based on observed carapace widths, all female Dungeness were assumed to

be mature, although all were barren except for 2 females with full clutches. Carapace widths ranged from 111 to 162 mm, with a weighted mean of 142.0 mm (Table 11).

Weathervane Scallop

An aggregate of 283 lb of weathervane scallops was caught from 11 tows in the Southern District survey (Table 2). The largest catch rates were 110 lb/nmi at station 2 and 71 lb/nmi at station 3 (Figure 2; Appendix C1). Scallops sampled for shell height (n=505) ranged from 72 to 190 mm and mean height was 119.8 mm; the most abundant size classes were 120 and 130 mm (Figure 7). Estimated population biomass in the surveyed stations was 177,818 lb (Appendix C2).

Halibut and Groundfish

Pacific halibut were caught in 91% of Southern District tows, with a mean catch of 45.7 lb/nmi (Table 2). Catch was greatest in stations 1 (246 lb/nmi) and 22 (128 lb/nmi; Figure 2). Estimated population biomass was 847,825 lb of Pacific halibut in the surveyed area.

Pacific cod were caught in 65% of the stations and mean catch rate was 52.1 lb/nmi among all stations. The largest catches occurred in stations 22 (294 lb/nmi) and 13 (226 lb/nmi). Estimated population biomass was 1,048,335 lb in the surveyed area.

Walleye pollock were caught in 78% of the surveyed stations, with a mean catch of 194.0 lb/nmi. Catch ranged from 0 to 2,129 lb/nmi, with the greatest catch rate occurring at station 1. Estimated population biomass was 3.7 million lb in the surveyed area, the largest biomass of any target species.

Standardized rockfish catches totaled 271 lb, comprised of 154 lb of dusky, 78 lb of dark, 33 lb of rougheye, 5 lb of red banded, and < 2 lb of redstripe rockfishes (Table 2; Appendix C1). Mean rockfish catch was 11.8 lb/nmi, with a maximum catch rate of 81 lb/nmi in station 14.

Sablefish were caught at stations 1, 2, 7, and 8, yielding a total catch of 13 lb and a mean catch rate of 0.6 lb/nmi among tows (Table 2).

Skates were caught in 100% of the Southern District tows and catches among stations totaled 2,289 lb (Table 2; Appendix C1). Skate catches averaged 99.5 lb/nmi among tows, with station 11 producing the largest catch of 310 lb/nmi and also the greatest individual species catch rate of 233.3 lb/nmi of big skate. Estimated Southern District biomass for all skate species totaled 1.9 million lb, comprised of 1,210,697 lb of big skate, 648,452 lb of longnose skate, and 394 lb of *Bathyraja* species (Appendix C2).

Flatfish species produced some of the largest groundfish catch rates (Appendix C1). For example, flathead sole was caught in 70% of the stations and produced a mean catch rate of 224.7 lb/nmi with a maximum catch rate of 1,306 lb/nmi at station 71. Butter sole were caught at 39% of the stations, producing a mean catch rate of 159.1 lb/nmi and a maximum catch rate of 1,293 lb/nmi at station 21. Arrowtooth flounder, caught in 96% of Southern District tows, produced a mean catch rate of 97.9 lb/nmi and a maximum catch rate of 955 lb/nmi at station 13. Although most flatfish were caught throughout the survey area, yellowfin sole were only caught at stations 1 through 7 located toward the head of Kachemak Bay (Figure 2).

KAMISHAK BAY AND BARREN ISLANDS DISTRICTS

A total of 28 successful tows were made in the Kamishak Bay and Barren Islands Districts during 20–25 June 2000; an additional 2 tows were discarded due to gear problems (Table 3;

Appendix B2; Figure 3). Aggregate catch from all retained tows was 37,497 lb among the 28 tows (Appendix B2). After being standardized for tow distance, mean catch was 1,361.6 lb/nmi. Target species comprised 10,793 lb among all tows, with a mean catch rate of 385.5 lb/nmi (Appendix C3). Catches of target invertebrates included 115 lb of Tanner crab, 1,208 lb of red king crab, 321 lb of weathervane scallop, 19 lb of octopus, and no Dungeness crab. Pacific halibut catches totaled 2,524 lb and target groundfish species totaled 6,607 lb, comprised of 1,190 lb of Pacific cod, 1,841 lb of walleye pollock, 72 lb of sablefish, 3 lb of rockfish, 670 lb of spiny dogfish, and 2,831 lb of skate. Estimated population biomass within surveyed stations are shown in Appendix C4 for all species captured in the 2000 trawl survey of the Kamishak Bay and Barren Islands Districts.

Tanner Crab

A standardized total of 266 male Tanner crab was caught during the 2000 Kamishak Bay and Barren Islands Districts survey (Table 19). Prerecruit-1 and -2 crabs comprised a total of 25% (n=67) of all males caught. Only 4 legal male crab (≥140 mm), comprising 2% of all age classes combined, were caught. All legal male crab were old-shell recruits; no postrecruit males were caught. The population estimate for the Kamishak Bay and Barren Islands Districts was 979,353 male Tanner crab vulnerable to the trawl survey gear (Tables 6 and 20; Figure 8). Estimated population abundance of legal males was 15,395 Tanner crab, or 2% of the surveyed male population. Carapace widths ranged from 17 to 151 mm (Table 7). Mean male carapace width, weighted by population abundance within stations, was 64.0 mm; mean width of legal males was 144 mm.

A standardized total of 205 female Tanner crab was caught in the Kamishak Bay and Barren Islands Districts survey (Table 21). Juveniles comprised 97% (n=198) of the catch. Two of the mature females had new shells and 5 had old or very old shells. None of the mature females were barren. Estimated population abundance for the district was 722,262 female Tanner crab, with the largest abundance (44% of the total) present in stations 60 and 68 (Table 22; Figure 6). Female carapace width ranged from 14 to 103 mm (Table 11). Mean CW, weighted by population abundance within stations, was 40.0 mm.

Red King Crab

The 2000 survey of the Kamishak Bay and Barren Islands Districts yielded a standardized total of 139 male red king crab, with 73% (n=101) of the catch occurring in station 51 (Tables 12 and 13). Legal males comprised 90% and new-shell legal males comprised 54% of the total catch. Male red king crab CL ranged from 43 to 186 mm (Table 7). Mean male CL, weighted by population abundance within stations, was 167.3 mm; mean CL of legal males was 169.0 mm.

During the 2000 survey of the Kamishak Bay and Barren Islands District, 17 female red king crab were caught (Table 14). Nine females (53%) were mature and 94% (n = 16) of the combined mature and juvenile females had new shells. All mature female red king crab had clutches.

Weathervane Scallop

A standardized total of 321 lb of weathervane scallops was caught among 16 tows in the Kamishak Bay and Barren Islands Districts survey (Table 3). The largest component of the catch biomass occurred at station 50 (69 lb) southeast of Augustine Island (Figure 3). Scallops sampled for shell height (n=356) ranged from 78–192 mm and mean height was 151.1 mm; the most abundant size class was 170 mm (Figure 7).

Halibut and Groundfish

Pacific halibut were caught in 93% of the Kamishak Bay and Barren Islands Districts tows; mean halibut catch among all tows was 90.1 lb/nmi (Table 3; Appendix C3). The halibut catch rate was greatest in station 54 (Figure 3), which yielded a catch rate of 442 lb/nmi. Estimated population biomass was 9.5 million lb in the surveyed area (Appendix C4).

Walleye pollock were caught in 71% of the surveyed stations (Table 3). Mean pollock catch was 65.8 lb/nmi, with the greatest catch rate of 588 lb/nmi from station 56 (Figure 3). Estimated population biomass was 7.1 million lb in the surveyed area (Appendix C4).

Pacific cod were caught in 93% of the survey stations and yielded the third greatest catch among target groundfish species caught in the 2000 survey (Table 3). The mean catch rate of Pacific cod was 42.5 lb/nmi among tows, with the largest catch rate occurring in station 28 (354.5 lb/nmi; Figure 3). Estimated population biomass was 4.1 million lb in the surveyed area (Appendix C4).

Rockfish were caught in 2 stations (Table 3). A standardized catch rate of 2.0 lb/nmi of light dusky rockfish occurred at station 59 and 0.6 lb/nmi of rougheye rockfish occurred at station 67 (Appendix C3).

Sablefish were caught in 6 (21%) of the survey stations (Table 3). With a mean catch rate of 2.6 lb/nmi, the largest rate was 33.7 lb/nmi from station 61.

Skates as a group were caught in 93% of the Kamishak Bay and Barren Islands Districts tows (Table 3). Big skate yielded the second largest mean catch rate (49.7 lb/nmi) among individual target groundfish species in the Kamishak Bay and Barren Islands Districts survey, with the largest catch of 412.0 lb/nmi in station 472 (Appendix C3). Estimated population biomass of big skate was 3.7 million lb within the surveyed area. Other skates caught in the 2000 survey included *Bathyraja* species and longnose skate, producing respective population estimates of 3.6 and 2.0 million lb (Appendix C4).

Spiny dogfish were caught in 89% of the survey tows. Mean dogfish catch was 23.9 lb/nmi, with a maximum catch rate of 66 lb/nmi at station 48 (Table 3). Estimated population biomass was 2.6 million lb in the surveyed area (Appendix C4).

Flatfish species produced some of the largest groundfish catch rates (Appendix C3). Arrowtooth flounder, caught in all of the Kamishak Bay and Barren Islands Districts tows, produced a mean catch rate of 519.5 lb/nmi, the largest catch rate among all singles species. The maximum catch was 4,502 lb/nmi at station 54, and the arrowtooth flounder population estimate was 56.7 million lb within the surveyed area. Butter sole yielded the second greatest population biomass estimate, 11.5 million lb, within the Kamishak Bay and Barren Islands Districts. Population estimates, in million lb, for other flatfish species included 4.4 of starry flounder, 3.5 of flathead sole, 1.2 of English sole, 0.9 of rex sole, 0.8 of yellowfin sole, 0.7 of Dover sole, 0.6 of rock sole, 0.5 of Alaska plaice, and 0.03 of sand sole (Appendix C4).

BOTTOM TEMPERATURE

Benthic water temperature along the ocean floor was sampled with the temperature logger at 5 stations in the Southern District during 10–14 July 2000, although data from one sampling event was lost due to equipment problems. Minimum temperatures by sample station ranged from 6.9°C at a mean depth of 91.0 fathoms at station 8 to a temperature of 8.1°C at respective depths of 34.8 and 42.1 fathoms at stations 14 and 15 (Appendix D1; Figure 2). In the Kamishak Bay

and Barren Islands Districts, benthic water temperature was recorded during 4 tows during 21–25 June 2000. Minimum sample temperatures ranged from 6.2°C at a mean depth of 81.7 fathoms at station 61to 8.2°C at a depth of 22.0 fathoms at station 48 (Appendix D1; Figure 3).

DISCUSSION

TANNER CRAB

Legal segments of the Tanner crab population in both the Southern District and the Kamishak Bay and Barren Islands Districts continued to be insufficient to support a commercial fishery. Previous analysis combining data from commercial fisheries and trawl and pot surveys evaluated the minimum stock size threshold (MSST), the stock biomass level necessary to provide surplus production to sustain commercial harvests. Estimated values of MSST were approximately 500,000 legal male crab in the Southern District and 800,000 legal male crab in the Kamishak Bay and Barren Islands Districts (Figure 9).

Limited commercial fisheries occurred most recently in the Southern District in 1994 (Kimker 1996; Bechtol et al. 2002). Trawl surveys in this district documented a decline in the Tanner crab stock from >2.5 million males in the early 1990s to <0.9 million in 1994. Following an increase to 1.9 million males in 1995, male crab abundance steadily decreased to a record low of 0.7 million male crab in 1998 (Table 6). However, total male abundance increased in 1999 to 2.8 million crab, primarily due to increased abundance of prerecuit-4 and -3 crabs (Bechtol 2000b). Estimated population abundance decreased to 1.6 million male Tanner crab in 2000, with new recruit abundance decreasing slightly while legal male abundance dropped to the lowest level in the trawl survey history (Figure 5).

In the Kamishak Bay and Barren Islands Districts, the commercial Tanner crab fisheries have remained closed since 1992 (Kimker 1996; Bechtol et al. 2002). Estimated population abundance of both total males and legal males continued to decline (Bechtol 2000b; Table 6). Prerecruit cohorts, responsible for the substantial increase in the total male population estimate from 1998 to 1999, declined sharply in the 2000 survey (Figure 5). Although the existence of a terminal molt in male Tanner crab continues to be debated (Paul and Paul 1990; Bechtol 2000b), it is apparent that old-shell crabs have been a significant component of the Cook Inlet population. This is especially evident in the Kamishak Bay and Barren Islands Districts where old-shell males have comprised the bulk of the legal male population throughout the trawl survey history (Table 6).

Trawl survey selectivity should increase with cohort age due to factors including trawl mesh size and the size- and sex-specific habitat distributions of the crab cohorts. For example, estimated abundance of prerecruit-4 male crab remains suspect among surveys years because prerecruit-4 abundance should exceed the subsequent prerecruit-3 abundance in order to accommodate natural mortality (Table 6; Figures 5 and 9). Selectivity and changes in cohort distribution due to aspects such as environmental variation could explain unexpected changes in cohort strength trends among years. Nonetheless, the trawl survey uses a consistent gear fished in a standard manner that should effectively detect changes in the abundance of particular cohorts, as well as the entire population, over time. Thus, there is little evidence of stock rebuilding to an extent that would allow commercial exploitation in the near future.

Another important indicator of stock status is the percentage of mature and egg-bearing female Tanner crab, although this measure may vary over time (Table 10). Mature females in 2000 comprised 24% of the estimated female population in the Southern District, well below the long-term historical average of 45% (Figure 6). Similarly, in the Kamishak Bay and Barren Islands Districts, the 4% of the female population estimated to be mature in 2000 represented a decline from the 1999 percentage and was well below the trawl survey historical average of 34%. The percentage of mature females bearing eggs in 2000 was high in all survey areas, similar to previous years (Tables 9 and 22; Bechtol 2001). Estimated abundance of juvenile female Tanner crab declined from 1999 to 2000 in all districts, but remained above the 1990–2000 average (Table 10). Aggregate abundance of 827,332 mature and juvenile female crabs in the Southern District in 2000 was below the long-term average of 988,626 crab, and a 51% decline from the record high estimate of 1.6 million crab in 1999 (Figure 6; Bechtol 2001). Aggregate abundance of 0.7 million mature and juvenile female crabs in the Kamishak Bay and Barren Islands Districts in 2000 was a 15% decline from the 1999 survey estimate and well below the long-term average of 910,231 crab (Bechtol 2001).

Historical pot and trawl survey data exhibit a positive bias toward male Tanner crab (Tables 6 and 10; Kimker 1996; Bechtol et al. 2002). This bias likely resulted from two factors: (1) an emphasis on stations that historically yielded the best catches of male Tanner crab in previous surveys and commercial fisheries; and (2) when bad weather caused a loss in survey fishing time, stations that have not shown significant male catches were eliminated from the survey. In addition, Tanner crab exhibit annual migration patterns, particularly given annual variations in water temperatures. Although some consistency in crab distribution can be expected, water temperatures may affect those distributions and, thus, trawl survey catches.

RED KING CRAB

Compared to historical commercial catch data that only summarizes legal male harvests, the 2000 survey results indicated overall population levels of red king crab remain low in the Southern, Kamishak Bay, and Barren Islands Districts (Table 13; Bechtol 2001). For example, commercial catch prior to the 1984 closure averaged 3.4 million lb/season, representing 500,000 legal males given a 6.5 lb/crab mean weight (Bechtol et al. 2002). In contrast, red king crab catches during the 2000 trawl survey, similar to previous years, were considered too low to generate a meaningful estimate of population abundance (Tables 12 and 13). Although some individuals may argue that a bottom trawl survey is not an effective tool to sample red king crab, this data has provided a meaningful index of population status (Bechtol et al. 2002). The lack of female red king crab in the Southern District in 2000 is particularly disconcerting (Table 14). Although low crab catches may result from temporal migration patterns, it is apparent that red king crab abundances in Cook Inlet remain very low.

DUNGENESS CRAB

Southern District trawl surveys detected a strong cohort of Dungeness males moving annually through successive size classes beginning in 1990 (Table 16; Bechtol 2001). Trawl data indicated a large reduction of these males by 1994. The presence of a strong cohort was also observed in the 1995 and 1996 trawl surveys, as the catch of both total males and legal males increased. However, the catch of both male and female Dungeness declined after 1996 and has subsequently remained at low levels (Tables 16 and 18). Although the trawl survey was not designed specifically to assess Dungeness crab, and provides only a relative index of abundance, trends in trawl survey data generally agree with results from the Southern District Dungeness pot

survey (Trowbridge and Bechtol 2003). Based on results of all surveys, the Dungeness crab resource in the Southern District continues to remain depressed with insufficient levels of abundance to support a commercial fishery. In addition to closures of commercial fisheries for Dungeness crab, recreational fisheries have remained closed in an effort to facilitate population rebuilding (Trowbridge et al. 2000; Trowbridge and Bechtol 2003).

WEATHERVANE SCALLOP

The bottom trawl survey has typically caught weathervane scallops throughout the Cook Inlet Management Area (Tables 2 and 3). In the Kamishak Bay area, trawl survey data were used in conjunction with commercial fishery harvest reports to identify preliminary survey stations for an ADF&G dredge survey for weathervane scallops (Bechtol 2000a). Weathervane scallop catches of 283 lb in the Southern District and 321 lb in the Kamishak Bay and Barren Islands Districts represented declines from the 1999 trawl survey (Bechtol 2001). Although not likely to become the primary assessment tool, trawl survey data may be used to "tune" an age-structured model for Kamishak Bay weathervane scallops (Bechtol 2000a).

HALIBUT AND GROUNDFISH

Catches of halibut and groundfish were not consistently documented during all trawl survey years in the Cook Inlet Management Area. Pacific cod, walleye pollock, and Pacific halibut are the predominant vertebrate species of local commercial importance caught in the trawl survey (Tables 2 and 3). However, a variety of flounder and sole currently comprise the largest catch biomass (Appendices E and G; Bechtol 2001). A comprehensive review of historical field data forms may reveal additional quantitative information that can be used to document trends in abundance and biomass for some groundfish species.

SURVEY DESIGN

The bottom trawl survey and its predecessor, the pot survey, were intended to assess commercially important crab resources in the Cook Inlet Management Area. As a result, these surveys have focused on the habitat where Tanner and red king crabs have historically been found. To avoid overestimating the population, area-swept estimates have only been extrapolated to those survey stations that were actually sampled in the annual survey. This likely introduced some bias to the population estimates because the actual stations surveyed, and the total number of stations surveyed, has changed slightly each year. Given the low level of crab abundance during the last decade, this bias has not affected the management approach. However, with a greater emphasis on providing multi-species trawl survey data, the survey design may be improved in the future by developing a more standardized approach to estimating the total survey area.

Another change initiated with the 2000 survey was a partial transition to the use of a 23.8-m (78 ft) headrope on the trawl gear. This change was implemented based on suggestions that a 23.8-m headrope would fish tighter to the substrate than the 21.4-m headrope historically used for the survey (D. King, NMFS, Seattle, personal communication). Preliminary analysis of video taped tows indicated that the 23.8-m headrope caught up to 10% more Tanner crab, the primary target species of this survey (unpublished data).

Trawl survey methodology was modified in 1998 to include a more comprehensive approach to catch sampling. First, the target species list was expanded to include skates and sharks. Second, after removal of vertebrate and invertebrate target species, the remaining catch was either sampled in its entirety or subsampled. This approach should provide a better documentation of

long-term changes in the Cook Inlet ecosystem. In addition to providing a broader assessment of ecosystem health, increased sampling provides data to monitor changes in a greater variety of species, including some species for which future fisheries may develop.

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TABLES AND FIGURES

Table 1.–Carapace sizes used to determine crab size classes in Cook Inlet.

Class	Prerecruit				Recruit	Postrecruit
	Pre-4	**Pre-3**	**Pre-2**	**Pre-1**	**Recruit**	**Postrecruit**
	Tanner Crab (carapace width, mm)					
Width	<70	70–91	92–114	115–139	140–165	>165
	Red King Crab (carapace length, mm)					
Width	<91	92–108	109–126	127–144	145–163	>163
	Dungeness Crab (carapace width, mm)					
Width	<89	90–114	115–139	140–164	165–189	>189

Table 2.–Catch weight of target species in a bottom trawl survey of the Cook Inlet Southern District, 2000.

Survey Station	Dungeness Crab	Tanner Crab	King Crab	Weathervane Scallop	Octopus	Pacific Cod	Walleye Pollock	Rockfish	Sablefish	Pacific Halibut	Lingcod	Skate	Total
						Round Weight (lb/nmi)							
1	4	78	0	34	0	52	2,129	1	1	246	0	68	2,612
2	3	18	10	110	0	0	12	0	1	66	0	36	255
3	2	48	0	71	0	0	51	0	0	81	0	141	394
4	2	97	0	40	0	0	42	0	0	28	0	133	341
5	0	66	0	1	13	0	6	0	0	20	0	160	266
6	8	84	0	<1	0	0	25	<1	0	12	0	59	189
7	10	167	0	8	0	0	159	0	8	22	0	165	537
8	0	334	8	0	0	0	4	14	4	4	0	52	420
9	0	94	0	0	0	104	243	6	0	0	0	37	484
10	0	11	0	<1	0	4	562	2	0	8	0	48	635
11	0	157	0	<1	52	69	329	18	0	16	0	310	951
12	0	89	0	4	0	27	361	0	0	6	0	75	562
13	0	200	0	0	3	226	202	38	0	71	0	109	848
14	0	0	0	14	0	177	70	81	0	12	0	133	487
15	0	211	0	0	0	12	82	38	0	0	0	48	391
16	0	0	0	0	0	82	0	15	0	84	28	22	231
17	0	0	0	0	0	4	0	<1	0	16	0	135	155
18	0	2	0	0	0	40	30	8	0	28	0	224	332
19	0	0	0	0	0	8	<1	0	0	34	0	86	129
20	0	0	0	0	0	0	0	0	0	86	0	<1	86
21	0	0	0	0	0	82	0	42	0	78	6	86	294
22	0	0	0	0	60	294	0	6	0	128	10	<1	498
71	0	295	0	0	34	18	154	1	0	6	0	162	670
Total	28	1,951	18	283	161	1,198	4,462	271	13	1,051	44	2,289	11,768
Mean	1.2	84.8	0.8	12.3	7.0	52.1	194.0	11.8	0.6	45.7	1.9	99.5	511.7
Freq.	26%	70%	9%	48%	22%	65%	78%	65%	17%	91%	13%	91%	100%

Table 3.–Catch weight of target species in a bottom trawl survey of the Cook Inlet Kamishak Bay and Barren Islands Districts, 2000.

Survey Station	Dungeness Crab	Tanner Crab	King Crab	Weathervane Scallop	Octopus	Pacific Cod	Walleye Pollock	Rockfish	Sablefish	Pacific Halibut	Spiny Dogfish	Skate	Total
						Round Weight (lb/nmi)							
24	0	0	0	1	0	47	0	0	0	2	9	21	80
28	0	1	0	22	0	355	1	0	0	100	33	167	678
29	0	<1	0	0	0	14	0	0	0	28	0	7	50
32	0	8	0	11	0	7	13	0	1	16	11	36	103
33	0	<1	0	17	0	24	7	0	0	83	10	36	178
34	0	1	0	0	0	2	0	0	0	99	19	6	127
37	0	2	12	58	0	16	0	0	0	132	18	0	238
38	0	0	0	1	0	0	6	0	0	116	14	4	140
39	0	<1	0	0	0	0	0	0	0	3	9	0	13
41	0	1	0	0	0	33	21	0	0	233	39	170	496
44	0	4	177	45	0	17	1	0	0	33	52	4	333
45	0	0	65	2	0	45	0	0	0	47	24	4	186
48	0	0	0	0	0	6	0	0	0	214	66	317	602
50	0	2	0	69	0	8	0	0	0	139	18	49	286
51	0	2	951	45	0	41	424	0	0	241	27	78	1,810
52	0	2	0	6	0	6	0	0	2	81	22	101	220
53	0	3	0	0	0	83	8	0	0	33	32	113	271
54	0	49	0	18	0	20	0	0	0	442	20	129	680
55	0	2	0	1	0	16	64	0	0	34	36	114	266
56	0	<1	0	0	<1	14	588	0	18	20	33	149	822
58	0	2	0	0	0	20	11	0	0	113	33	182	361
59	0	8	0	26	0	127	0	2	0	69	61	109	402
60	0	10	0	0	0	52	154	0	0	48	0	232	496
61	0	3	0	0	0	20	378	0	34	63	20	168	686
67	0	1	0	<1	19	29	99	1	7	10	7	164	337
68	0	6	0	0	0	16	13	0	11	0	35	24	104
471	0	5	0	<1	0	25	6	0	0	125	21	6	188
472	0	3	3	0	0	147	48	0	0	0	0	441	642
Total	0	115	1,208	321	19	1,190	1,841	3	72	2,524	670	2,831	10,793
Mean	0.0	4.1	43.1	11.5	0.7	42.5	65.8	0.1	2.6	90.1	23.9	101.1	385.5
Freq.	0%	86%	18%	57%	7%	93%	71%	7%	21%	93%	89%	93%	100%

Table 4.–Catch abundance of male Tanner crab by carapace size class and shell condition during a trawl survey of the Cook Inlet Southern District, 2000.

	Number of crab/nmi											
	Sublegal Males						Legal Males					
	Pre-4	Pre-3	Pre-2		Pre-1		Recruit		Postrecruit		Total	Total
Station			(new)	(old)	(new)	(old)	(new)	(old)	(new)	(old)	Legal	Males
1	62	62	29	4	10	1	0	0	0	0	0	168
2	22	13	5		4	0	0	0	0	0	0	44
3	38	87	7		3	0	0	0	0	0	0	135
4	13	65	47	2	21	0	2	0	0	0	2	150
5	297	5	0	0	1	0	0	0	0	0	0	303
6	15	76	40	4	9	0	1	0	0	0	1	145
7	98	42	97	3	28	2	1	0	0	0	1	272
8	2	7	73	2	74	6	9	1	0	0	10	174
9	15	0	9	1	33	0	4	0	0	0	4	62
10	21	0	0	0	2	0	3	0	0	0	3	26
11	12	3	32	1	56	1	9	2	0	0	11	116
12	0	0	1	1	31	0	11	1	0	0	12	45
13	2	0	16	0	76	0	15	2	0	1	18	112
14	1	1	0	0	0	1	0	0	0	0	0	4
15	0	0	2	2	69	3	36	4	0	2	42	118
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	1	0	0	0	0	0	0	1
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
71	63	212	110	2	41	2	1	0	0	0	1	431
						Southern District Total						
Total	661	574	468	22	459	16	91	10	0	3	104	2,304
Percent	29%	25%	20%	1%	20%	1%	4%	0%	0%	0%	5%	100%

Carapace widths (mm) used for Tanner crab size classes.

Class	Pre-4	Pre-3	Pre-2	Pre-1	Recruit	Post Recruit
mm	<70	70–91	92–114	115–139	140–165	>165

Table 5.–Population abundance estimates of male Tanner crab by carapace size class and shell condition in the Cook Inlet Southern District, 2000.

	Sublegal Males						Legal Males					
	Pre-4	Pre-3	Pre-2		Pre-1		Recruit		Postrecruit		Total	Total
Station			(new)	(old)	(new)	(old)	(new)	(old)	(new)	(old)	Legal	Males
1	47,046	46,901	21,937	3,026	7,565	756	0	0	0	0	0	127,231
2	9,758	5,766	2,218	0	1,774	0	0	0	0	0	0	19,516
3	31,547	73,056	5,811	0	2,491	0	0	0	0	0	0	112,905
4	6,022	30,573	21,771	926	9,728	0	926	0	0	0	926	69,946
5	267,97	4,511	0	0	745	0	0	0	0	0	0	273,235
6	11,169	58,079	30,529	2,978	6,701	0	745	0	0	0	745	110,202
7	58,526	25,337	57,941	1,756	16,973	1,171	585	0	0	0	585	162,289
8	1,085	3,796	39,587	1,085	40,129	3,254	4,881	542	0	0	5,423	94,357
9	10,253	0	6,152	684	23,241	0	2,734	0	0	0	2,734	43,064
10	27,178	0	0	0	2,588	0	3,883	0	0	0	3,883	33,649
11	8,274	2,069	22,754	690	39,302	690	6,206	1,379	0	0	7,585	81,362
12	0	0	931	931	29,784	0	10,238	931	0	0	11,169	42,815
13	1,880	0	15,040	0	72,378	0	14,100	1,880	0	940	16,920	106,217
14	1,462	1,462	0	0	0	1,462	0	0	0	0	0	4,385
15	0	0	1,118	1,118	38,570	1,677	20,124	2,236		1,118	23,478	65,961
16	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	949	0	0	0	0	0	0	949
19	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0
71	32,919	110,07	57,093	1,029	21,089	1,029	514	0	0	0	514	223,744
Southern District Total												
Total	515,098	361,622	282,882	14,222	314,00	10,038	64,935	6,968		2,058	73,961	1,571,828
Percent	33%	23%	18%	1%	20%	1%	4%	0%	0%	0%	5%	100%

Carapace widths (mm) used for Tanner crab size classes.

Class	Pre-4	Pre-3	Pre-2	Pre-1	Recruit	Post Recruit
mm	<70	70–91	92–114	115–139	140–165	>165

Table 6.–Population abundance estimates by carapace size class and shell condition for male Tanner crab in the Cook Inlet Management Area, 1990–2000.

Southern District

	Sublegal Males						Legal Males					
			Pre-2		Pre-1		Recruit		Postrecruit		Total	Total
Year	Pre-4	Pre-3	(new)	(old)	(new)	(old)	(new)	(old)	(new)	(old)	legal	males
1990	453,024	682,569	541,891	9,492	403,015	37,055	137,235	163,961	12,081	53,504	366,781	2,493,827
1991	316,529	295,026	826,589	35,265	790,463	117,838	279,543	187,509	45,587	24,084	536,723	2,918,433
1992	306,159	134,137	438,453	34,688	683,607	205,970	740,136	138,101	49,547	26,155	953,939	2,756,953
1993	599,873	89,299	120,343	12,548	215,292	109,962	280,719	185,496	41,158	16,946	524,319	1,671,636
1994	258,118	169,986	114,102	8,572	95,260	58,967	65,675	94,138	6,726	20,633	187,172	892,177
1995	372,035	356,327	449,225	17,330	386,004	37,399	157,383	62,421	6,049	9,466	235,319	1,853,639
1996	189,773	42,712	312,708	121,332	368,250	156,423	48,546	45,116	0	0	93,662	1,284,860
1997	148,607	111,729	267,005	6,655	311,678	36,110	143,170	10,525	0	0	153,695	1,035,478
1998	266,684	16,456	11,802	11,915	109,473	59,024	115,128	59,585	8,147	0	182,859	658,213
1999	883,481	1,082,780	522,594	85,064	100,471	79,416	52,710	37,469	609	949	91,737	2,845,544
2000	515,098	361,622	282,882	14,222	314,006	10,038	64,935	6,968	0	2,058	73,961	1,571,828

Kamishak Bay and Barren Islands Districts

	Sublegal Males						Legal Males					
			Pre-2		Pre-1		Recruit		Postrecruit		Total	Total
Year	Pre-4	Pre-3	(new)	(old)	(new)	(old)	(new)	(old)	(new)	(old)	legal	males
1990	1,831,889	332,005	535,114	429,654	257,792	2,085,775	105,461	488,244	0	0	593,705	6,065,934
1991	230,638	155,084	286,310	91,460	357,887	1,053,779	39,765	330,052	0	0	369,817	2,544,975
1992	251,834	552,348	360,846	233,671	166,434	1,236,465	19,629	193,576	0	3,968	217,173	3,018,771
1993	298,382	151,385	523,487	211,521	137,821	530,615	23,387	87,287	0	0	110,674	1,963,885
1994	200,254	852,801	1,168,971	431,525	916,511	673,005	51,582	126,964	0	3,968	182,514	4,425,581
1995	47,256	422,861	841,368	502,175	733,399	875,308	171,912	71,418	0	0	243,330	3,665,697
1996	681,961	162,180	297,593	366,916	730,491	1,561,542	88,162	315,768	0	3,967	407,897	4,208,580
1997	519,036	23,800	15,594	342,027	202,073	1,388,968	107,126	282,795	0	7,935	397,856	2,889,354
1998	318,593	34,109	0	66,769	31,689	314,195	31,741	86,221	0	0	117,963	883,318
1999	808,409	99,074	1,146,644	59,520	63,249	265,337	0	67,386	0	0	67,386	2,509,619
2000	641,624	59,326	31,942	56,234	89,452	85,380	0	15,395	0	0	15,395	979,353

Carapace widths (mm) used for Tanner crab size classes in Cook Inlet.

Class	Pre-4	Pre-3	Pre-2	Pre-1	Recruit	Post Recruit
mm	<70	71–90	91–114	115–139	140–165	>165

Table 7.–Maximum, minimum, and mean carapace width (mm) of male Tanner and Dungeness crabs and carapace length (mm) of male red king crab caught in trawl surveys of Cook Inlet, 2000.

Southern District										Kamishak Bay and Barren Islands Districts						
	Tanner Crab			Dungeness Crab			Red King Crab				Tanner Crab			Red King Crab		
Station	Min.	Max.	Mean	Min.	Max.	Mean	Min.	Max.	Mean	Station	Min.	Max.	Mean	Min.	Max.	Mean
1	30	125	78.9	120	149	134.5				28	21	83	39.8			
2	38	126	72.7	161	161	161.0	208	208	208.0	32	41	143	103.3			
3	21	121	76.0	152	175	163.5				33	75	75	75.0			
4	27	143	92.0							34	91	91	91.0			
5	23	136	55.3							37	126	131	128.5	167	167	167.0
6	18	146	87.9							39	23	23	23.0			
7	26	140	86.8	166	166	166.0				41	33	59	45.2			
8	58	151	115.4				172	172	172.0	44	125	142	133.5	136	181	162.7
9	25	163	108.0							45				96	177	154.0
10	32	162	64.7							50	104	119	111.4			
11	41	155	114.6							51	105	133	119.0	107	186	169.8
12	104	157	131.9							52	33	134	68.0			
13	38	165	126.8							53	33	135	45.7			
14	37	125	80.0							54	76	141	114.1			
15	101	171	135.3							55	18	113	40.9			
18	138	138	138.0							56	19	19	19.2			
71	37	154	88.3							58	34	112	48.1			
										59	25	135	101.6			
										60	23	135	56.8			
										61	21	151	34.4			
										67	17	59	37.5			
										68	31	135	43.2			
										471	35	133	55.5			
										472	38	60	49.4	43	54	47.4
Total	18	171	89.5	120	175	153.1	172	208	188.2	Total	17	151	64.0	43	186	167.3

Table 8.–Catch abundance of female Tanner crab by shell condition and clutch fullness in a trawl survey of the Cook Inlet Southern District, 2000.

	Number of crab/nmi												
		Full Clutches			Partial Clutches			Barren			Total mature			
Station	Juvenile	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	Total Females
1	59	11	3	0	3	0	0	0	0	0	14	3	0	76
2	25	0	0	0	0	0	0	0	0	0	0	0	0	25
3	38	0	1	0	0	0	0	0	0	0	0	1	0	39
4	36	1	1	0	0	0	0	0	0	0	1	1	0	38
5	260	1	0	0	0	0	0	0	0	0	1	0	0	261
6	47	1	0	0	0	0	0	0	0	0	1	0	0	48
7	126	7	6	1	0	2	0	0	0	0	7	8	1	142
8	11	141	0	5	34	0	6	0	0	1	175	0	12	198
9	13	23	5	0	9	0	0	0	0	0	31	5	0	49
10	20	0	0	0	0	0	0	0	0	0	0	0	0	20
11	7	20	1	0	8	0	0	0	0	0	27	1	0	35
12	0	0	0	1	0	0	1	0	0	0	0	0	2	2
13	6	12	0	0	1	0	0	0	0	0	13	0	0	19
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	1	0	0	0	0	0	0	0	0	1	0	0	1
16	20	40	40	40	20	0	0	0	0	0	60	40	40	160
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	7	42	71	71	35	0	0	0	0	0	77	71	71	225
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	249	1	17	1	0	1	0	0	0	0	1	18	1	268
							Southern District Total							
Total	923	300	144	119	110	3	7	0	0	1	410	147	127	1,606
Percent	57%	19%	9%	7%	7%	0%	0%	0%	0%	0%	26%	9%	8%	100%

Table 9.–Population abundance estimates by shell condition and clutch fullness of female Tanner crab in the Cook Inlet Southern District, 2000.

		Full Clutches			Partial Clutches			Barren			Total mature			
Station	Juvenile	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	Total Female
1	44,631	8,321	2,269	0	2,269	0	0	0	0	0	10,59	2,269	0	57,491
2	11,089	0	0	0	0	0	0	0	0	0	0	0	0	11,089
3	31,547	0	830	0	0	0	0	0	0	0	0	830	0	32,377
4	16,676	463	463	0	0	0	0	0	0	0	463	463	0	17,602
5	234,594	902	0	0	0	0	0	0	0	0	902	0	0	235,497
6	35,741	745	0	0	0	0	0	0	0	0	745	0	0	36,486
7	75,499	4,097	3,512	585	0	1,171	0	0	0	0	4,097	4,682	585	84,863
8	5,965	76,46	0	2,711	18,43	0	3,254	0	0	542	94,90	0	6,507	107,372
9	8,886	15,72	3,418	0	6,152	0	0	0	0	0	21,87	3,418	0	34,178
10	25,884	0	0	0	0	0	0	0	0	0	0	0	0	25,884
11	4,827	13,79	690	0	5,516	0	0	0	0	0	19,30	690	0	24,822
12	0	0	0	931	0	0	931	0	0	0	0	0	1,862	1,862
13	5,640	11,28	0	0	940	0	0	0	0	0	12,22	0	0	17,860
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	559	0	0	0	0	0	0	0	0	559	0	0	559
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	129,103	514	8,744	514	0	514	0	0	0	0	514	9,258	514	139,390
							Southern District Total							
Total	630,082	132,8	19,92	4,742	33,31	1,685	4,184	0	0	542	166,1	21,61	9,468	827,332
Percent	76%	16%	2%	1%	4%	0%	1%	0%	0%	<1%	20%	3%	1%	100%

Table 10.–Population abundance estimates of female Tanner crab in the Cook Inlet Management Area, 1990–2000.

Southern District

Year	Juvenile	Mature	Total	% Mature
	Estimated Abundance			
1990	919,907	393,506	1,313,413	30.0%
1991	519,521	914,322	1,433,843	63.8%
1992	350,782	533,748	884,530	60.3%
1993	573,958	600,634	1,174,592	51.1%
1994	515,136	373,041	888,177	42.0%
1995	609,577	676,352	1,285,929	52.6%
1996	223,189	451,068	674,257	66.9%
1997	162,867	209,994	372,861	56.3%
1998	317,679	77,820	395,499	19.7%
1999	1,126,217	498,233	1,624,450	30.7%
2000	630,082	197,248	827,332	23.8%
Average	540,810	447,815	988,626	45.3%

Kamishak Bay and Barren Islands Districts

Year	Juvenile	Mature	Total	% Mature
	Estimated Abundance			
1990	2,140,458	499,961	2,640,419	18.9%
1991	326,075	87,484	413,559	21.2%
1992	453,343	217,801	671,144	32.5%
1993	389,426	826,705	1,216,131	68.0%
1994	490,030	944,491	1,434,521	65.8%
1995	195,451	479,970	675,421	71.1%
1996	637,737	150,670	788,407	19.1%
1997	227,905	79,352	307,257	25.8%
1998	283,420	7,935	291,355	2.7%
1999	808,618	43,450	852,068	23.8%
2000	694,448	27,813	722,262	4.9%
Average	604,265	305,967	910,231	33.6%

Table 11.–Maximum, minimum, and mean of female Tanner and Dungeness crabs carapace width and red king crab carapace length caught in Cook Inlet trawl surveys, 2000.

Southern District							Kamishak Bay and Barren Islands Districts						
	Tanner Crab			Dungeness Crab				Tanner Crab			Red King Crab		
Station	Min.	Max.	Mean	Min.	Max.	Mean	Station	Min.	Max.	Mean	Min.	Max.	Mean
1	49	101	72.3	129	130	129.5	24						
2	35	85	63.6	111	112	111.5	28	39	83	49.6			
3	41	103	70.1				29	73	73	73.0			
4	36	108	79.0				32	38	54	47.6			
5	23	98	57.0				33						
6	25	104	70.1	130	162	149.8	34						
7	18	110	68.8				37	31	31	31.0	149	149	149.0
8	78	118	98.4				38						
8	44	116	88.2				39	18	18	18.0			
9	27	57	47.5				41	38	38	38.0			
10	53	114	95.4				44				135	135	135.0
10	103	109	106.0				45				135	142	138.7
11	40	114	87.8				48						
12							50						
12	108	108	108.0				51	19	19	19.0			
13							52						
13							53	17	56	38.5			
13							54	94	94	93.6			
14							55	14	33	21.4			
15							56	20	20	19.5			
18							58	34	55	43.2			
19							59	23	57	39.0			
71	39	113	76.2				60	15	103	43.9			
							61	24	39	30.7			
							67	33	40	36.0			
							68	30	61	41.1			
							471	34	54	46.0			
							472	36	74	48.9	40	56	48.8
Total	18	118	72.5	111	162	142.0	Total	14	103	40.0	40	149	133.9

Table 12.–Catch abundance by carapace size class and shell condition of male red king crab during trawl surveys of the Cook Inlet Management Area, 2000.

	Number of crab/nmi											
Southern District												
	Sublegal Males						Legal Males					
			Pre-2		Pre-1		Recruit		Postrecruit		Total	Total
Station [a]	Pre-4	Pre-3	(new)	(old)	(new)	(old)	(new)	(old)	(new)	(old)	legal	males
2	0	0	0	0	0	0	0	0	0	1	1	1
8	0	0	0	0	0	0	0	0	0	1	1	1
Southern District Total												
Abund.	0	0	0	0	0	0	0	0	0	2	2	2
Percent	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%
Kamishak and Barren Islands Districts												
	Sublegal Males						Legal Males					
			Pre-2		Pre-1		Recruit		Postrecruit		Total	Total
Station [a]	Pre-4	Pre-3	(new)	(old)	(new)	(old)	(new)	(old)	(new)	(old)	legal	males
37	0	0	0	0	0	0	0	0	1	0	1	1
44	0	0	0	0	1	0	5	5	6	5	20	21
45	0	1	0	0	0	0	2	0	1	1	4	5
51	0	1	0	0	0	0	7	11	53	29	100	101
472	11	0	0	0	0	0	0	0	0	0	0	11
Kamishak Bay and Barren Islands Districts Total												
Abund.	11	2	0	0	1	0	14	16	61	35	125	139
Percent	8%	1%	0%	0%	1%	0%	10%	11%	44%	25%	90%	100%

Carapace lengths (mm) used for red king crab size classes in Cook Inlet.

Class	Pre-4	Pre-3	Pre-2	Pre-1	Recruit	Post Recruit
mm	<91	91–108	109–126	127–144	145–163	>163

[a] Stations not listed had no catch of male red king crab.

Table 13.–Annual catch by carapace size class and shell condition of male red king crab during trawl surveys of the Cook Inlet Management Area, 1990–2000.

Number of crab/nmi

Southern District

	Sublegal Males						Legal Males					
			Pre-2		Pre-1		Recruit		Postrecruit		Total	Total
Year	Pre-4	Pre-3	(new)	(old)	(new)	(old)	(new)	(old)	(new)	(old)	legal	males
1990	0	1	0	0	0	0	0	0	1	2	3	4
1991	0	0	0	0	1	0	18	3	69	14	104	105
1992	0	2	2	0	0	0	1	1	11	31	44	48
1993	0	2	5	0	0	0	1	0	5	2	8	15
1994	4	0	0	0	0	0	0	0	1	6	7	11
1995	0	0	0	0	0	0	0	0	1	2	3	3
1996	0	1	0	0	0	0	0	1	1	2	4	5
1997	0	1	0	0	0	0	1	1	3	4	9	10
1998	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	1	0	1	2	2
2000	0	0	0	0	0	0	0	0	0	2	2	2

Kamishak Bay and Barren Islands Districts

	Sublegal Males						Legal Males					
			Pre-2		Pre-1		Recruit		Postrecruit		Total	Total
Year	Pre-4	Pre-3	(new)	(old)	(new)	(old)	(new)	(old)	(new)	(old)	legal	males
1990	1	0	0	0	1	0	2	0	1	1	4	6
1991	0	0	0	0	0	0	0	1	2	4	7	7
1992	0	2	1	0	1	0	2	2	8	10	22	26
1993	1	0	0	0	0	0	0	0	1	0	1	2
1994	0	0	0	0	0	0	0	0	1	2	3	3
1995	1	2	0	0	0	0	1	0	1	1	3	6
1996	0	12	14	0	3	0	0	1	1	0	2	31
1997	0	5	19	0	25	0	8	4	0	2	14	63
1998	0	0	0	0	2	0	11	0	1	0	12	14
1999	0	0	0	0	0	0	0	1	0	1	2	2
2000	11	2	0	0	1	0	14	16	61	35	125	139

Carapace lengths (mm) used for red king crab size classes in Cook Inlet.

Class	Pre-4	Pre-3	Pre-2	Pre-1	Recruit	Post Recruit
mm	<91	91–108	109–126	127–144	145–163	>163

Table 14.–Annual catch by shell condition and clutch fullness of female red king crab in Cook Inlet trawl surveys, 1990–2000.

Number of crab/nmi

Southern District Catches

		Full Clutches			Partial Clutches			Barren			Total Mature			
Year	Juveniles	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	Total Females
1990	2	0	0	0	0	0	0	0	0	0	0	0	0	2
1991	0	0	0	0	8	0	0	0	0	0	8	0	0	8
1992	1	19	0	0	59	0	0	2	0	0	80	0	0	81
1993	3	3	0	0	14	1	0	0	0	0	17	1	0	21
1994	6	2	0	0	2	0	0	0	0	0	4	0	0	10
1995	0	0	0	0	1	0	0	0	0	0	1	0	0	1
1996	0	0	0	0	0	0	0	1	0	1	1	0	1	2
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Kamishak Bay and Barren Islands Districts Catches

		Full Clutches			Partial Clutches			Barren			Total Mature			
Year	Juveniles	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	Total Females
1990	0	3	0	0	1	0	0	0	0	0	4	0	0	4
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	1	0	0	0	2	0	0	1	0	0	3	0	0	4
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	4	0	0	0	0	0	0	0	0	0	0	0	0	4
1996	2	0	0	0	7	0	0	0	0	0	7	0	0	9
1997	7	2	0	0	52	4	0	6	0	0	60	4	0	71
1998	0	1	0	0	2	2	0	0	0	0	3	2	0	5
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	8	1	0	0	7	1	0	0	0	0	8	1	0	17

Table 15.–Catch abundance by carapace size class and shell condition of male Dungeness crab during the Cook Inlet Southern District trawl survey, 2000.

	Number of crab/nmi											
	Sublegal Males						**Legal Males**					
			Pre-2		**Pre-1**		**Recruit**		**Postrecruit**		**Total**	**Total**
Station	**Pre-4**	**Pre-3**	**(new)**	**(old)**	**(new)**	**(old)**	**(new)**	**(old)**	**(new)**	**(old)**	**Legal**	**Males**
1	0	0	1	0	0	0	0	1	0	0	1	2
2	0	0	0	0	0	1	0	0	0	0	0	1
3	0	0	0	0	0	1	1	0	0	0	1	2
7	0	0	0	0	0	0	0	1	0	0	1	1
Southern District Total												
Total	0	0	1	0	0	2	1	2	0	0	3	6
Percent	0%	0%	17%	0%	0%	33%	17%	33%	0%	0%	50%	100%

Carapace widths (mm) used for Dungeness crab size classes.

Class	Pre-4	Pre-3	Pre-2	Pre-1	Recruit	Post Recruit
mm	<89	90–114	115–139	140–164	165–189	>189

Table 16.–Annual catch by carapace size class and shell condition of male Dungeness crab during Cook Inlet Southern District trawl surveys, 1990–2000.

	Number of crab/nmi											
	Sublegal Males						Legal Males					
			Pre-2		Pre-1		Recruit		Postrecruit		Total	Total
Year	Pre-4	Pre-3	(new)	(old)	(new)	(old)	(new)	(old)	(new)	(old)	legal	males
1990	1	17	189	5	91	7	6	1	0	0	7	317
1991	0	1	15	2	158	12	45	1	0	0	46	234
1992	0	0	19	2	93	31	54	10	1	1	66	211
1993	0	0	0	3	50	7	67	9	0	0	76	136
1994	0	0	2	0	7	3	13	12	0	0	25	37
1995	0	2	97	1	46	3	5	5	0	0	10	159
1996	0	0	3	16	43	56	1	1	28	28	58	176
1997	0	1	1	1	1	7	3	1	0	0	4	15
1998	0	0	0	0	2	2	0	2	0	1	3	7
1999	0	0	1	0	4	1	6	5	0	0	11	17
2000	0	0	1	0	0	2	1	2	0	0	3	6

Carapace widths (mm) used for Dungeness crab size classes.

Class	Pre-4	Pre-3	Pre-2	Pre-1	Recruit	Post Recruit
mm	<89	90–114	115–139	140–164	165–189	>189

Table 17.–Catch abundance by shell condition and clutch fullness for female Dungeness crab in the Cook Inlet Southern District trawl survey, 2000.

	Number of crab/nmi												
		Full Clutches			**Partial Clutches**			**Barren**			**Total mature**			
Station	**Juvenile**	**New**	**Old**	**Very Old**	**New**	**Old**	**Very Old**	**New**	**Old**	**Very Old**	**New**	**Old**	**Very Old**	**Total Females**
1	0	0	0	0	0	0	0	2	0	0	2	0	0	2
2	0	0	0	0	0	0	0	2	0	0	2	0	0	2
6	0	0	2	0	0	0	0	1	5	0	1	7	0	8
Southern District Total														
Abund.	0	0	2	0	0	0	0	5	5	0	5	7	0	12
Percent	0%	0%	17%	0%	0%	0%	0%	42%	42%	0%	42%	58%	0%	100%

Table 18.–Annual catch by shell condition and clutch fullness of female Dungeness crab during Cook Inlet Southern District trawl surveys, 1990–2000.

	Number of crab/nmi												
	Southern District Catches												
		Full Clutches			**Partial Clutches**			**Barren**			**Total Mature**			
Year	**Juveniles**	**New**	**Old**	**Very Old**	**New**	**Old**	**Very Old**	**New**	**Old**	**Very Old**	**New**	**Old**	**Very Old**	**Total Females**
1990	NA [a]	0	8	0	0	0	0	2	13	0	2	21	0	23
1991	0	37	7	0	8	2	0	408	14	0	453	23	0	476
1992	0	0	1	0	0	0	0	397	78	0	397	79	0	476
1993	7	0	0	0	0	0	0	377	150	0	377	150	0	534
1994	0	0	0	0	0	0	0	43	69	2	43	69	2	114
1995	0	8	1	1	0	0	0	105	10	0	113	11	1	125
1996	0	0	0	0	0	0	0	96	167	107	96	167	107	370
1997	0	1	0	0	0	0	0	12	70	7	13	70	7	90
1998	0	0	0	0	0	0	0	6	2	4	6	2	4	12
1999	0	1	1	0	0	1	0	5	14	5	6	16	5	27
2000	0	0	2	0	0	0	0	5	5	0	5	7	0	12

[a] Juveniles were not distinguished in the 1990 survey.

Table 19.–Catch abundance by carapace size class and shell condition of male Tanner crab during the Cook Inlet Kamishak Bay and Barren Islands Districts trawl survey, 2000.

	Number of crab/nmi											
	Sublegal Males						**Legal Males**					
			Pre-2		**Pre-1**		**Recruit**		**Postrecruit**		**Total**	**Total**
Station	**Pre-4**	**Pre-3**	**(new)**	**(old)**	**(new)**	**(old)**	**(new)**	**(old)**	**(new)**	**(old)**	**Legal**	**Males**
24	0	0	0	0	0	0	0	0	0	0	0	0
28	7	1	0	0	0	0	0	0	0	0	0	8
29	0	0	0	0	0	0	0	0	0	0	0	0
32	2	0	0	0	0	3	0	1	0	0	1	5
33	0	1	0	0	0	0	0	0	0	0	0	1
34	0	1	0	0	0	0	0	0	0	0	0	1
37	0	0	0	0	0	2	0	0	0	0	0	2
38	0	0	0	0	0	0	0	0	0	0	0	0
39	2	0	0	0	0	0	0	0	0	0	0	2
41	5	0	0	0	0	0	0	0	0	0	0	5
44	0	0	0	0	0	1	0	1	0	0	1	2
45	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	1	0	1	0	0	0	0	0	2
51	0	0	0	1	0	1	0	0	0	0	0	2
52	2	0	0	0	0	1	0	0	0	0	0	3
53	20	0	0	0	0	1	0	0	0	0	0	21
54	0	10	6	1	21	6	0	1	0	0	1	45
55	8	1	1	0	0	0	0	0	0	0	0	10
56	1	0	0	0	0	0	0	0	0	0	0	1
58	12	0	0	1	0	0	0	0	0	0	0	13
59	2	0	1	2	0	4	0	0	0	0	0	9
60	23	1	0	7	0	1	0	0	0	0	0	32
61	18	0	0	0	0	0	0	1	0	0	1	19
67	17	0	0	0	0	0	0	0	0	0	0	17
68	39	0	0	1	1	0	0	0	0	0	0	41
471	9	0	0	0	0	1	0	0	0	0	0	10
472	16	0	0	0	0	0	0	0	0	0	0	16
Kamishak Bay and Barren Islands Districts Total												
Total	181	15	8	14	23	22	0	4	0	0	4	266
Percent	68%	6%	3%	5%	8%	8%	0%	1%	0%	0%	1%	100%

Carapace widths (mm) used for Tanner crab size classes.

Class	Pre-4	Pre-3	Pre-2	Pre-1	Recruit	Post Recruit
mm	<70	70–91	92–114	115–139	140–165	>165

Table 20.–Population abundance estimates of male Tanner crab by carapace size class and shell condition in the Cook Inlet Kamishak Bay and Barren Islands Districts, 2000.

	Sublegal Males						Legal Males					
			Pre-2		Pre-1		Recruit		Postrecruit		Total	Total
Station	Pre-4	Pre-3	(new)	(old)	(new)	(old)	(new)	(old)	(new)	(old)	Legal	Males
24	0	0	0	0	0	0	0	0	0	0	0	0
28	28,855	3,607	0	0	0	0	0	0	0	0	32,462	32,462
29	0	0	0	0	0	0	0	0	0	0	0	0
32	7,214	0	0	0	0	10,821	0	3,607	0	0	21,642	21,642
33	0	3,928	0	0	0	0	0	0	0	0	3,928	3,928
34	0	3,779	0	0	0	0	0	0	0	0	3,779	3,779
37	0	0	0	0	0	7,935	0	0	0	0	7,935	7,935
38	0	0	0	0	0	0	0	0	0	0	0	0
39	6,613	0	0	0	0	0	0	0	0	0	6,613	6,613
41	12,790	0	0	0	0	0	0	0	0	0	12,790	12,790
44	0	0	0	0	0	3,852	0	3,852	0	0	7,704	7,704
45	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	4,049	0	4,049	0	0	0	0	8,097	8,097
51	0	0	0	3,890	0	3,890	0	0	0	0	7,780	7,780
52	7,857	0	0	0	0	3,928	0	0	0	0	11,785	11,785
53	78,567	0	0	0	0	3,928	0	0	0	0	82,495	82,495
54	0	40,077	24,046	4,008	84,162	24,046	0	4,008	0	0	180,347	180,347
55	31,741	3,968	3,968	0	0	0	0	0	0	0	39,676	39,676
56	3,890	0	0	0	0	0	0	0	0	0	3,890	3,890
58	40,405	0	0	3,367	0	0	0	0	0	0	43,773	43,773
59	7,857	0	3,928	7,857	0	15,713	0	0	0	0	35,355	35,355
60	91,255	3,968	0	27,773	0	3,968	0	0	0	0	126,96	126,964
61	70,710	0	0	0	0	0	0	3,928	0	0	74,639	74,639
67	66,924	0	0	0	0	0	0	0	0	0	66,924	66,924
68	153,41	0	0	5,290	5,290	0	0	0	0	0	163,99	163,995
471	29,248	0	0	0	0	3,250	0	0	0	0	32,498	32,498
472	4,282	0	0	0	0	0	0	0	0	0	4,282	4,282
Kamishak Bay and Barren Islands Districts Total												
Total	641,62	59,326	31,942	56,234	89,452	85,380	0	15,395	0	0	979,35	979,353
Percent	66%	6%	3%	6%	9%	9%	0%	2%	0%	0%	100%	100%

Carapace widths (mm) used for Tanner crab size classes.

Class	Pre-4	Pre-3	Pre-2	Pre-1	Recruit	Post Recruit
mm	<70	70–91	92–114	115–139	140–165	>165

Table 21.–Catch abundance by shell condition and clutch fullness of female Tanner crab in the Cook Inlet Kamishak Bay and Barren Islands Districts trawl survey, 2000.

	Number of crab/nmi													
		Full Clutches			Partial Clutches			Barren			Total mature			
Station	Juvenile	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	Total Females
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	7	0	0	0	0	0	0	0	0	0	0	0	0	7
29	1	0	0	0	0	0	0	0	0	0	0	0	0	1
32	5	0	0	0	0	0	0	0	0	0	0	0	0	5
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	1	0	0	0	0	0	0	0	0	0	0	0	0	1
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	2	0	0	0	0	0	0	0	0	0	0	0	0	2
41	1	0	0	0	0	0	0	0	0	0	0	0	0	1
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	1	0	0	0	0	0	0	0	0	0	0	0	0	1
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	21	0	0	0	0	0	0	0	0	0	0	0	0	21
54	0	0	0	0	1	0	0	0	0	0	1	0	0	1
55	7	0	0	0	0	0	0	0	0	0	0	0	0	7
56	1	0	0	0	0	0	0	0	0	0	0	0	0	1
58	9	0	0	0	0	0	0	0	0	0	0	0	0	9
59	5	0	0	0	0	0	0	0	0	0	0	0	0	5
60	34	1	3	1	0	1	0	0	0	0	1	4	1	40
61	24	0	0	0	0	0	0	0	0	0	0	0	0	24
67	6	0	0	0	0	0	0	0	0	0	0	0	0	6
68	40	0	0	0	0	0	0	0	0	0	0	0	0	40
471	13	0	0	0	0	0	0	0	0	0	0	0	0	13
472	20	0	0	0	0	0	0	0	0	0	0	0	0	20
Kamishak Bay and Barren Islands Districts Total														
Abund.	198	1	3	1	1	1	0	0	0	0	2	4	1	205
Percent	97%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	2%	0%	100%

Table 22.–Population abundance estimates by shell condition and clutch fullness of female Tanner crab in the Cook Inlet Kamishak Bay and Barren Islands Districts, 2000.

		Full Clutches			Partial Clutches			Barren			Total mature			
Station	Juvenile	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	New	Old	Very Old	Total Females
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	28,855	0	0	0	0	0	0	0	0	0	0	0	0	28,855
29	3,543	0	0	0	0	0	0	0	0	0	0	0	0	3,543
32	18,035	0	0	0	0	0	0	0	0	0	0	0	0	18,035
33	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	3,968	0	0	0	0	0	0	0	0	0	0	0	0	3,968
38	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	6,613	0	0	0	0	0	0	0	0	0	0	0	0	6,613
41	2,558	0	0	0	0	0	0	0	0	0	0	0	0	2,558
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	3,890	0	0	0	0	0	0	0	0	0	0	0	0	3,890
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	82,495	0	0	0	0	0	0	0	0	0	0	0	0	82,495
54	0	0	0	0	4,008	0	0	0	0	0	4,008	0	0	4,008
55	27,773	0	0	0	0	0	0	0	0	0	0	0	0	27,773
56	3,890	0	0	0	0	0	0	0	0	0	0	0	0	3,890
58	30,304	0	0	0	0	0	0	0	0	0	0	0	0	30,304
59	19,642	0	0	0	0	0	0	0	0	0	0	0	0	19,642
60	134,899	3,968	11,903	3,968	0	3,968	0	0	0	0	3,968	15,871	3,968	158,705
61	94,280	0	0	0	0	0	0	0	0	0	0	0	0	94,280
67	23,901	0	0	0	0	0	0	0	0	0	0	0	0	23,901
68	158,705	0	0	0	0	0	0	0	0	0	0	0	0	158,705
471	45,497	0	0	0	0	0	0	0	0	0	0	0	0	45,497
472	5,600	0	0	0	0	0	0	0	0	0	0	0	0	5,600
Kamishak Bay and Barren Islands Districts Total														
Abund.	694,448	3,968	11,903	3,968	4,008	3,968	0	0	0	0	7,975	15,871	3,968	722,262
Percent	96%	1%	2%	1%	1%	1%	0%	0%	0%	0%	1%	2%	1%	100%

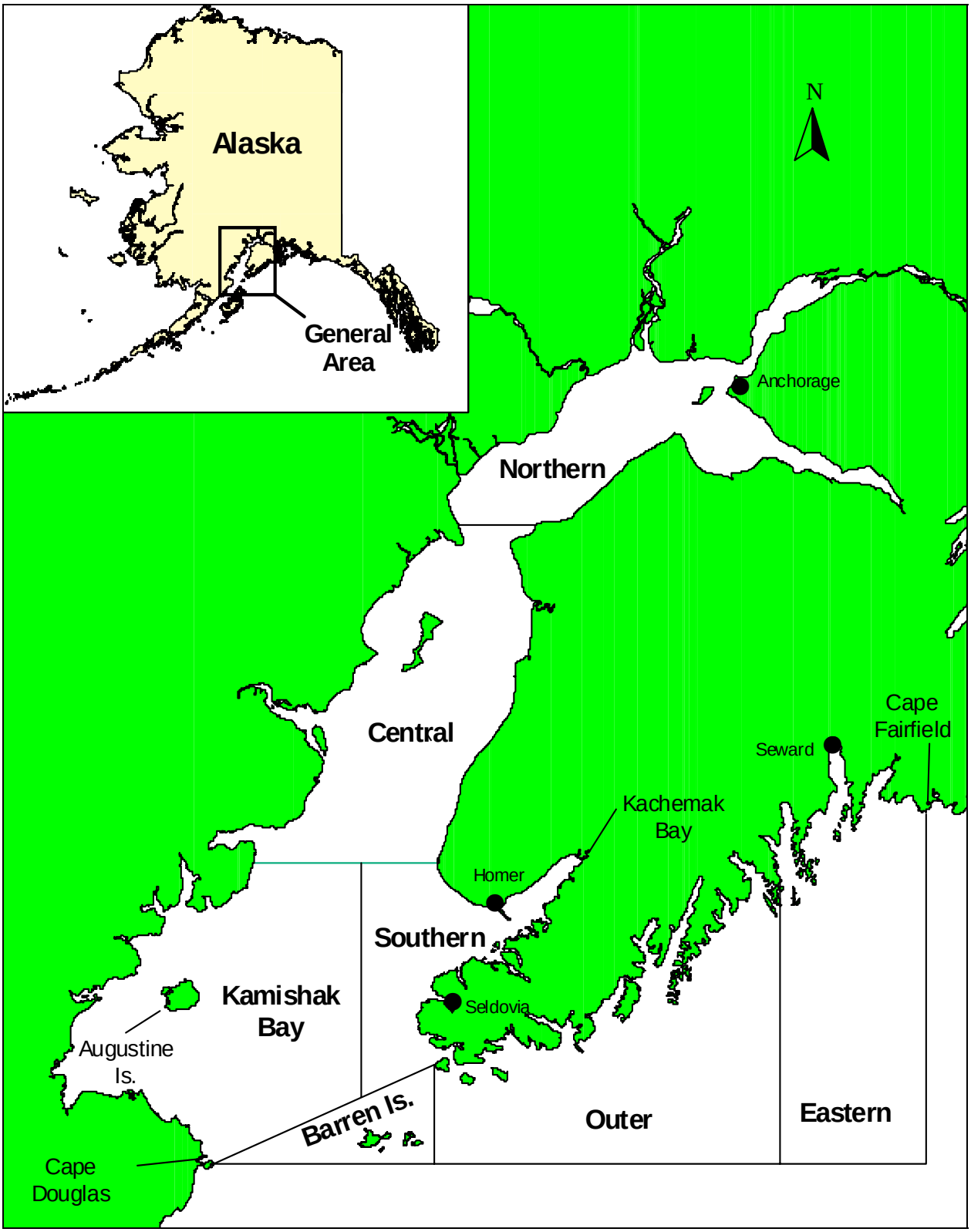


Figure 1.–Crab management districts in the Cook Inlet Management Area.

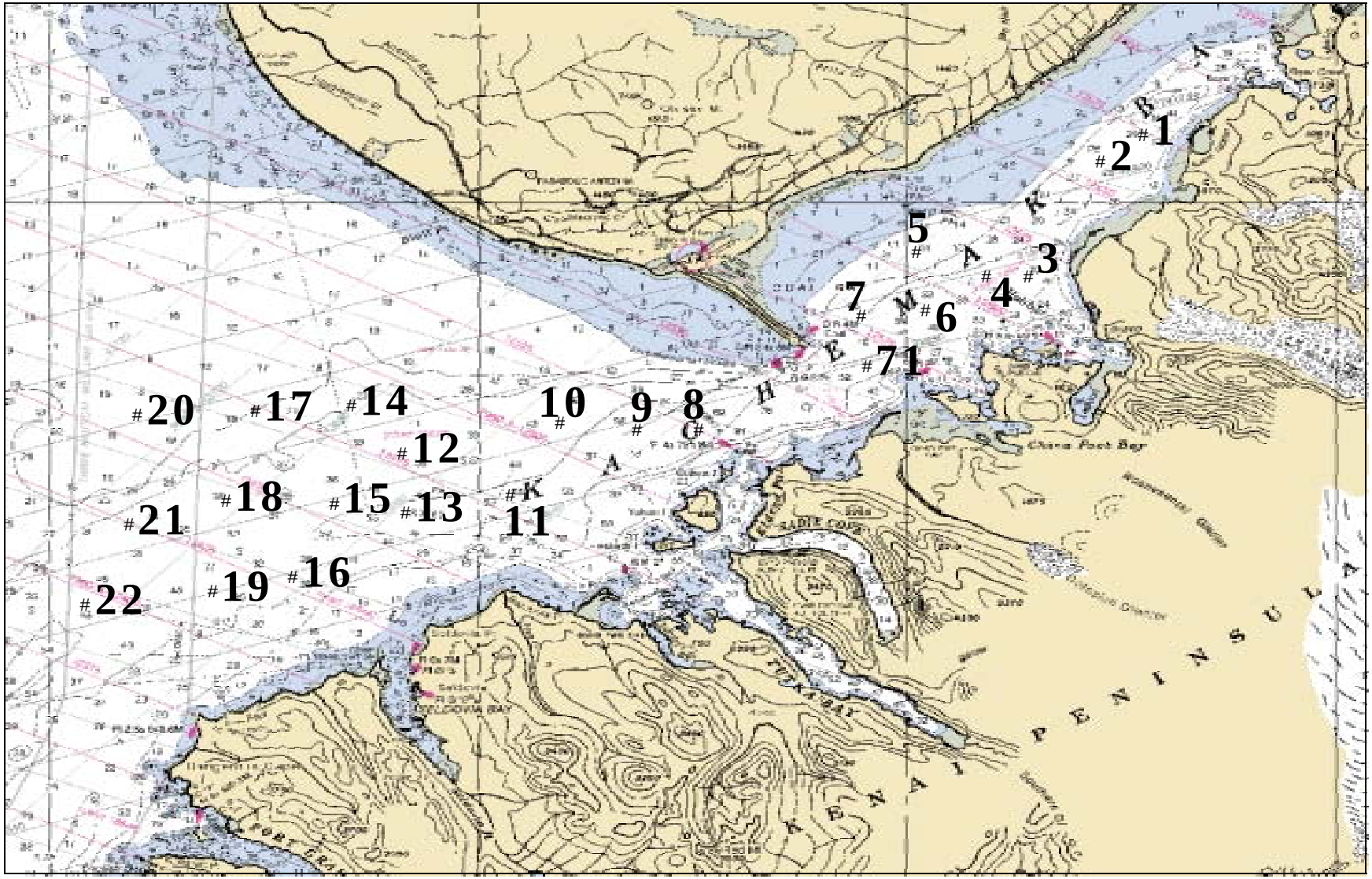


Figure 2.–Tow path midpoint in a bottom trawl survey of the Southern District during 10–17 July 2000, Cook Inlet.

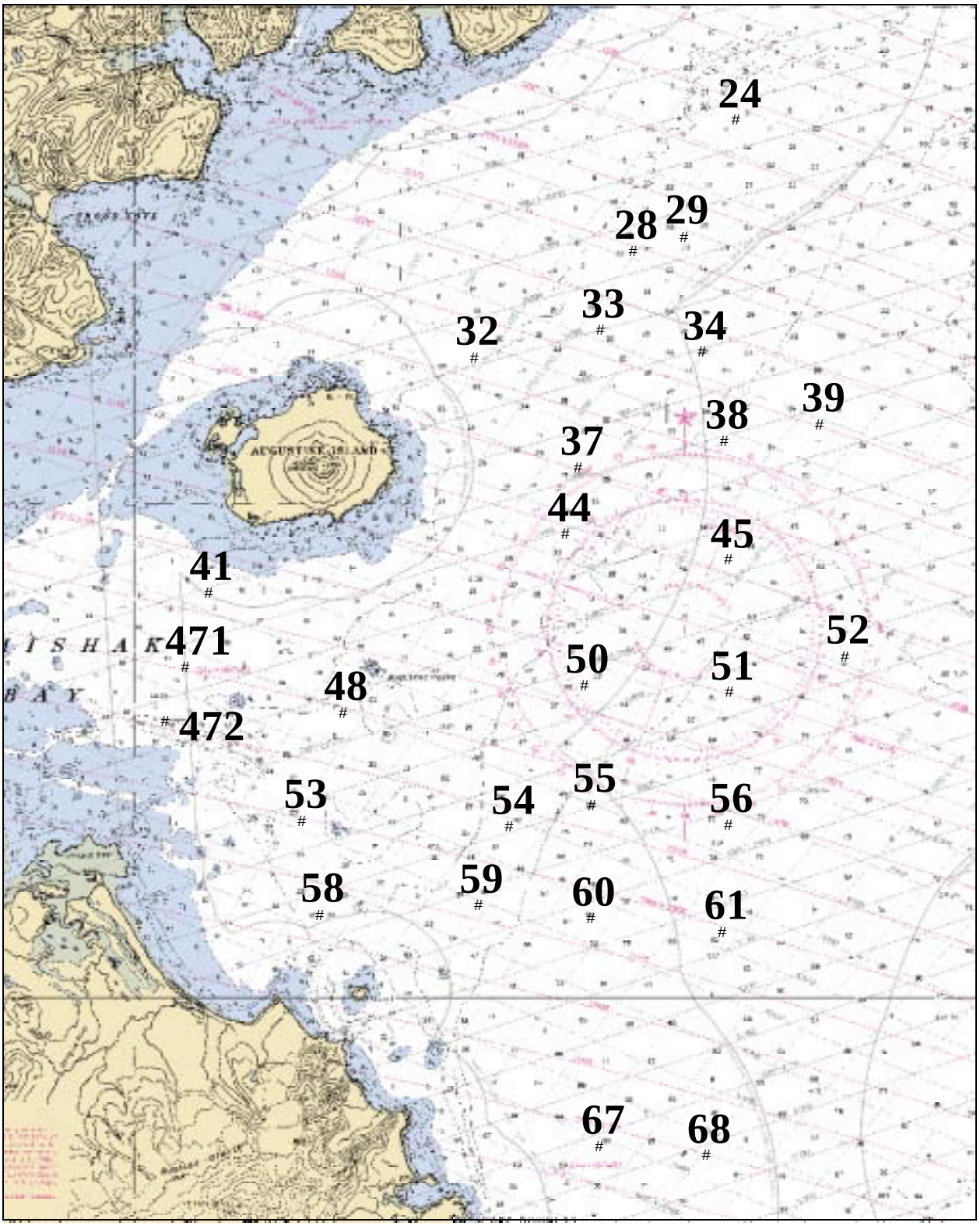


Figure 3.–Tow path midpoint in a bottom trawl survey of the Kamishak Bay and Barren Islands Districts during 20–25 June 2000, Cook Inlet.

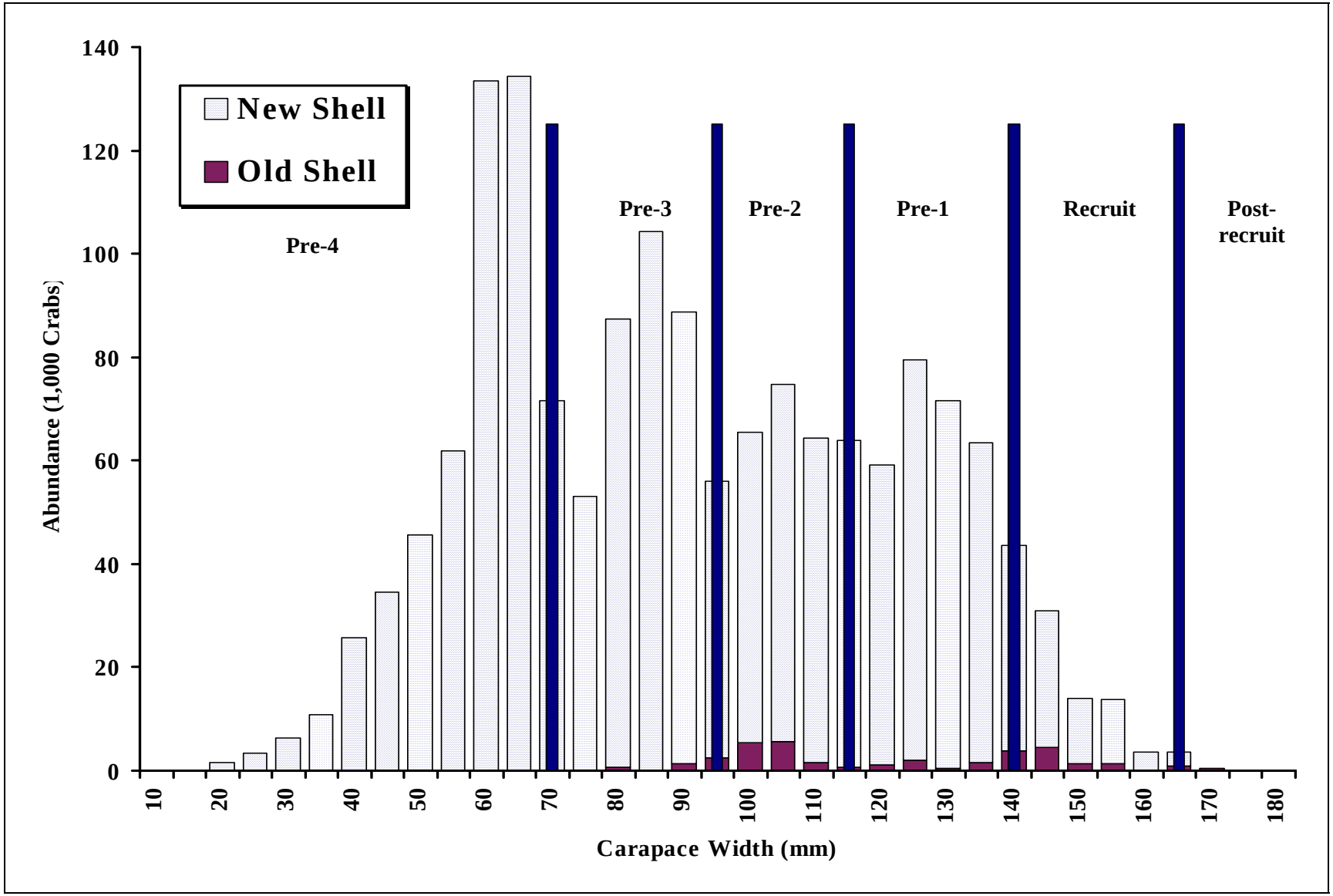


Figure 4.–Carapace size and shell condition of the male Tanner crab population in the Southern District, Cook Inlet, 2000.

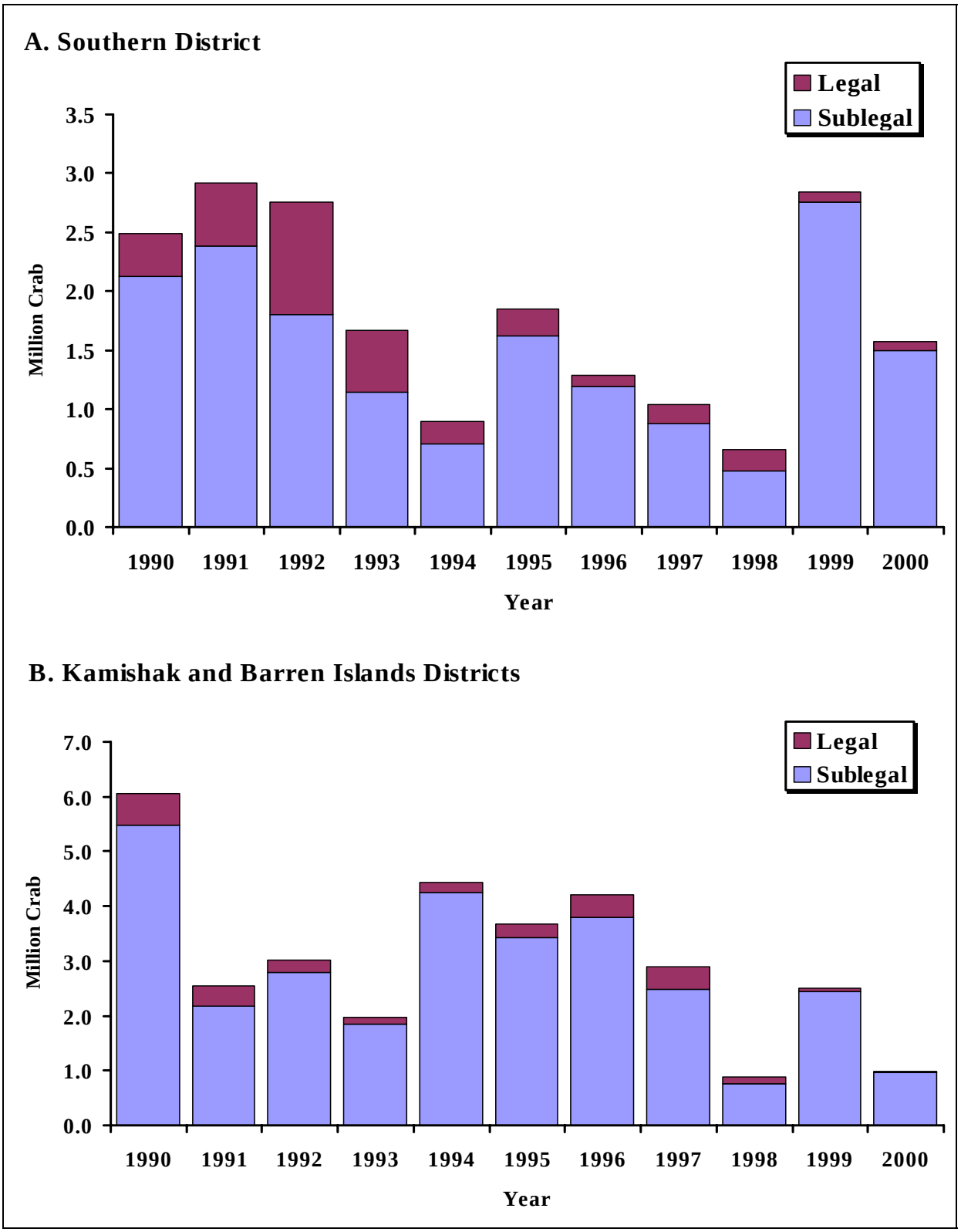


Figure 5.–Population abundance estimates for male Tanner crab by legal and sublegal carapace size in the Southern, Kamishak Bay, and Barren Islands Districts, Cook Inlet, 1990–2000.

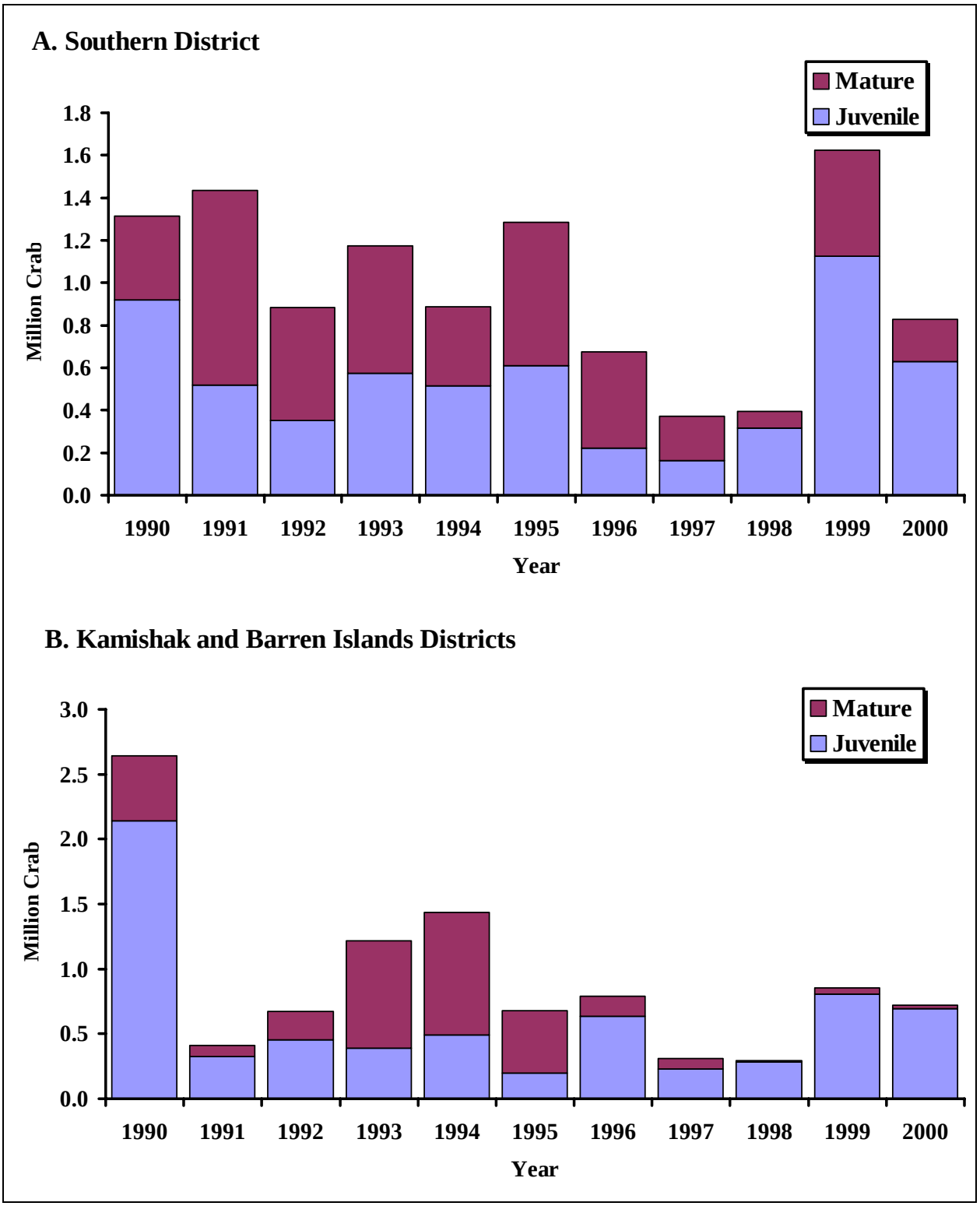


Figure 6.–Population abundance estimates for female Tanner crab by maturity stage in the Southern, Kamishak Bay, and Barren Islands Districts, Cook Inlet, 1990–2000.

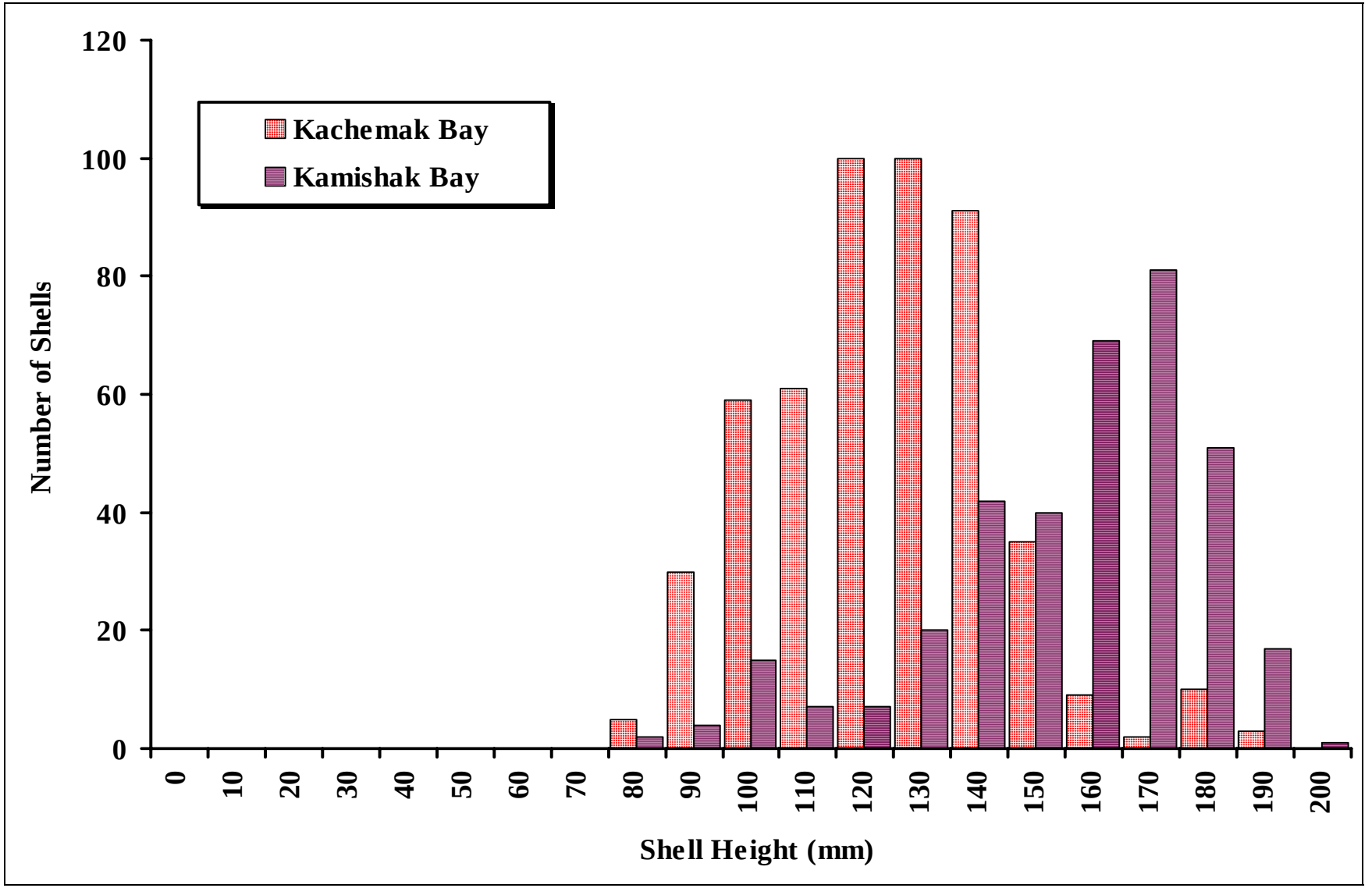


Figure 7.–Height and age composition of weathervane scallops caught in the Cook Inlet bottom trawl survey, 2000.

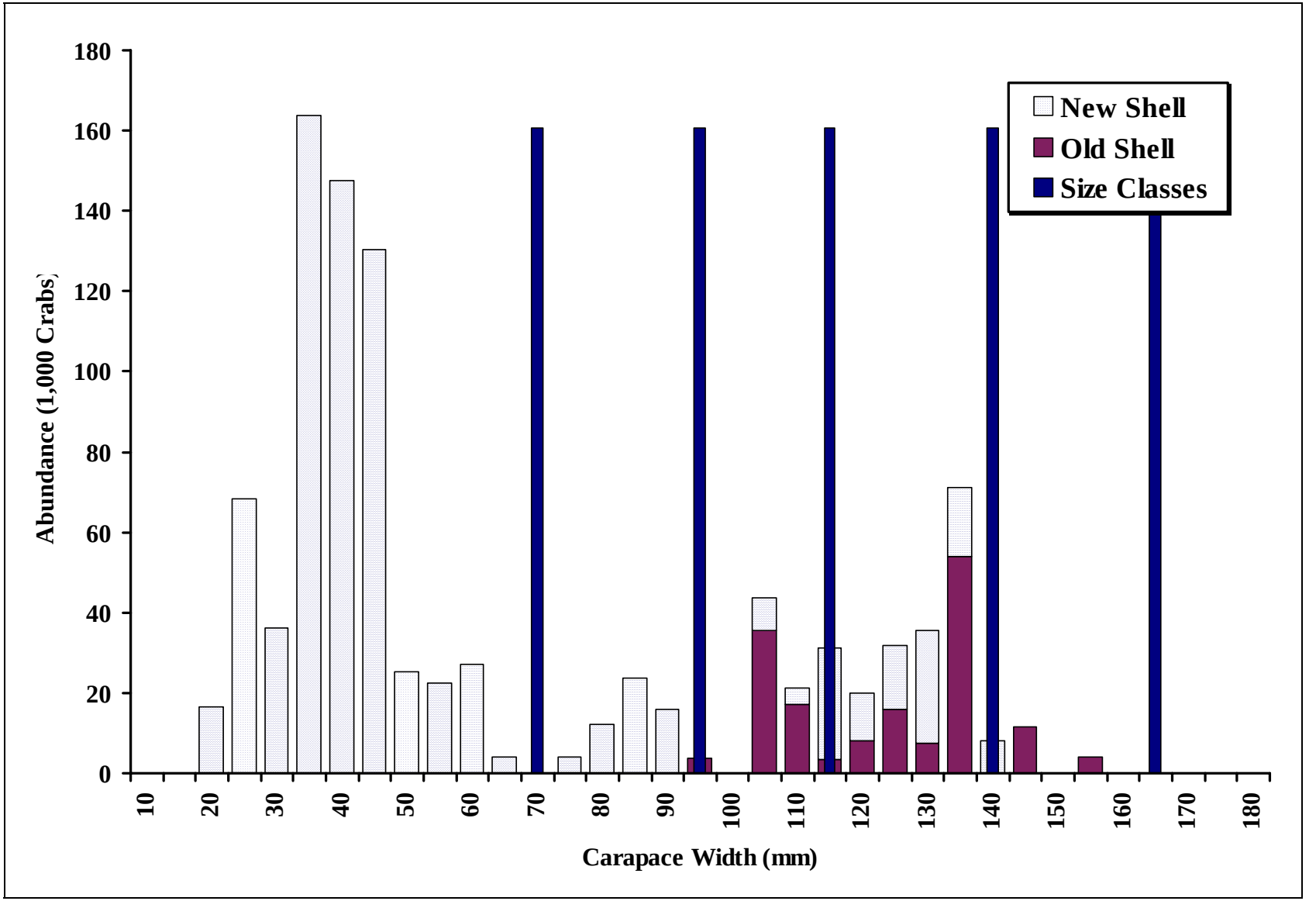
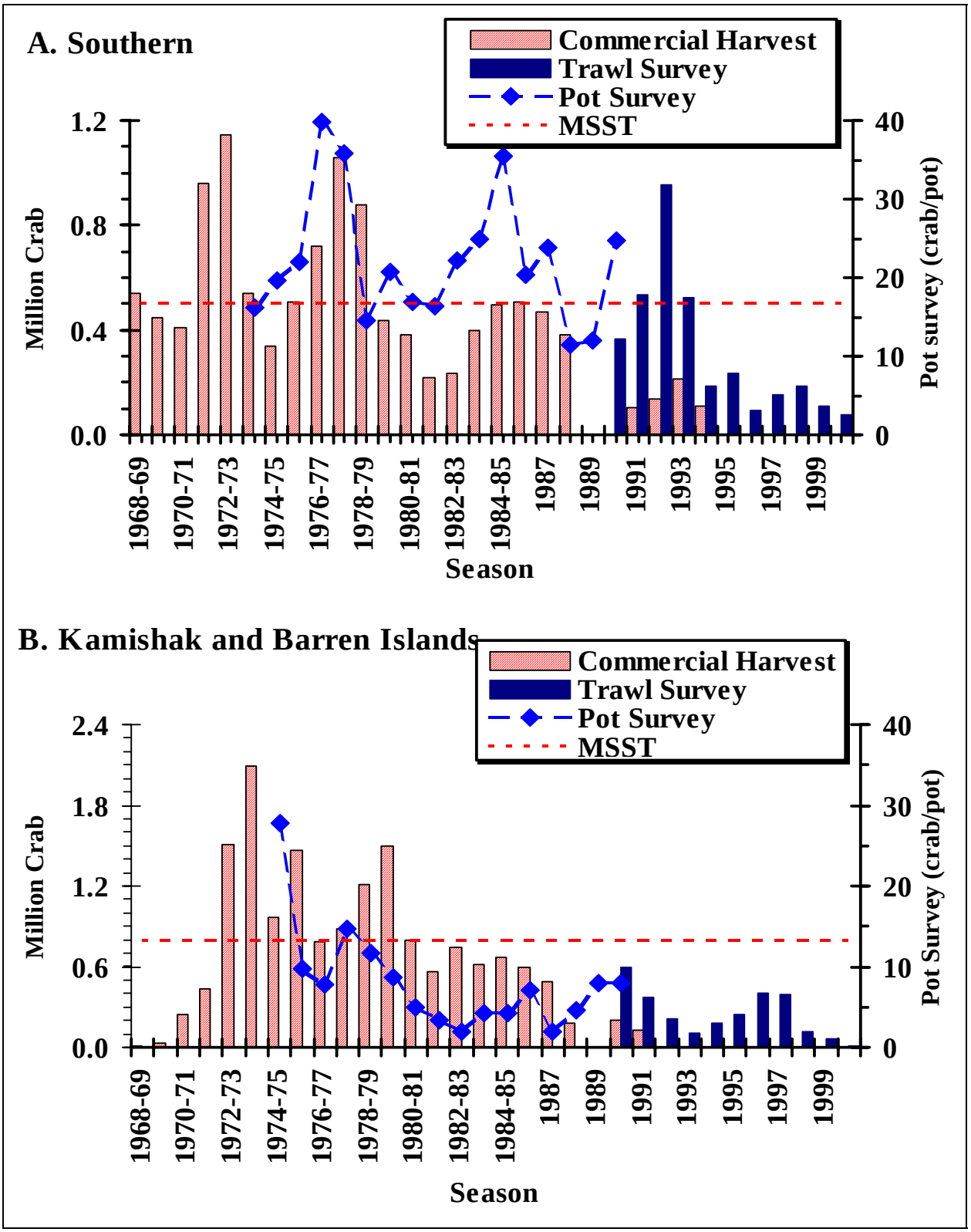


Figure 8.–Carapace size and shell condition of the male Tanner crab population in the Kamishak Bay and Barren Islands Districts, Cook Inlet, 2000.



Note: MMST = minimum stock size threshold.

Figure 9.–Historical fishery harvests and pot and bottom trawl survey catches of legal male Tanner crab in the Southern, Kamishak Bay, and Barren Island Districts, Cook Inlet, 1968–2000.

APPENDIX A

Appendix A1.–List of species or species groups caught during a trawl survey of the Cook Inlet Southern, Kamishak Bay, and Barren Islands Districts, 2000.

Common name	Scientific Name	Common name	Scientific Name
Pacific cod*	*Gadus macrocephalus*	Prowfish*	Family Stichaeidae
Walleye pollock*	*Theragra chalcogramma*	Snailfish*	Family Liparidae
Pacific tomcod*	*Microgadus proximus*	Weathervane scallop*	*Patinopecten caurinus*
Saffron cod	*Eleginus gracilis*	Hind's scallop	*Chlamys rubida*
Rougheye rockfish*	*Sebastes aleutianus*	Octopus*	*Octopus dofleini*
Redbanded rockfish*	*Sebastes babcockir*	Purple urchin*	*Stronglyocentrotus*
Redstripe rockfish*	*Sebastesproriger*		*purpuratus*
Light dusky rockfish*	*Sebastes variabilis*	Green urchin	*Stronglyocentrotus*
Dark dusky rockfish*	*Sebastes ciliatus*		*droebachiensis*
Lingcod*	*Ophiodon elongatus*	Dungeness crab*	*Cancer magister*
Sablefish*	*Anoplopoma fimbria*	Red king crab*	*Paralithodes camtschatica*
Pacific halibut*	*Hippoglossus stenolepis*	Tanner crab*	*Chionoecetes bairdi*
Spiny dogfish*	*Squalus acanthias*	Pygmy cancer crab	*Cancer oregonensis*
Longnose skate*	*Raja rhina*	Decorator crab	*Oregonia gracilis*
Big skate*	*Raja binoculata*	Hermit Crab	*Pagurus sp.*
Bathyraja skate*	*Bathyraja sp.*	Lyre crab	*Hyas sp.*
Arrowtooth flounder	*Atheresthes stomias*	Northern (pink) shrimp	*Pandalus borealis*
Flathead sole	*Hippoglossoides elassodon*	Sidestripe shrimp	*Pandalopsis dispar*
Rock sole	*Lepidopsetta sp.*	Humpy shrimp	*Pandalus goniurus*
Dover sole	*Microstomus pacificus*	Coonstripe shrimp	*Pandalus hypsinotus*
Rex sole	*Glyptocephalus zachirus*	Crangon shrimp	*Crangon sp.*
Butter sole	*Isopsetta isolepis*	Greenland cockle	*Serripes groenlandicus*
Yellowfin sole	*Limanda aspera*	Horse mussel	*Modiolus modiolus*
English sole	*Parophrys vetulus*	Brachiopod	Phylum Brachiopoda
Starry flounder	*Platichthys stellatus*	Ribbed sinistral	*Pyrulofusus harpa*
Sand sole	*Psettichthys melanostictus*	Silky buccinum	*Ruccinum scalariforme*
Alaska plaice	*Plueronectes*	Sea mouse	*Aphrodita negligens*
	quadrituberculatus	Sea pen	*Ptilosarcus gurneyi*
Starry flounder	*Platichthys stellatus*	Hairy triton	*Fusitriton oregonensis*
Sculpin, unspecified	Family Cottidae	Neptune snail	*Neptunea sp*.
Whitespot greenling	*Hexagrammos stelleri*	Kennicott's berringus	*Beringius kennicottii*
Kelp greenling	*Hexagrammos*	Pentamera	*Pentamera lissoplaca*
	decarammus	Sipuncula	*Golfingia margaritacea*
Eelpout	*Lycodes sp.*	Sea cucumber	*Cucumaria sp.*
Giant wrymouth*	*Delolepis gigantea*	Anemone	Family Actiniidaa
Pacific herring*	Clupea pallasii	Jellyfish	Scyphozoa class
Eulachon	*Thaleichthys pacificus*	Sea star	Family Asteroidea
Capelin	*Mallotus villosus*	Leather star	*Dermasterias imbricata*
Ronquil/Searcher	Family Bathymasteridae	Basket star	*Gorgonocephalus caryi*
Pacific sandfish	*Trichodon trichodon*	Sand dollar	*Echinarachnius parma*
Sturgeon poacher	*Agonus acipenserinus*	Tube worm	Family Serpulidae
Prickleback	*Zaprora silenus*		

* Denotes target species.

APPENDIX B

Appendix B1.–Fishing log and aggregate catch (lb) in the Cook Inlet Southern District trawl survey, 10–17 July 2000.

Station	Area (nmi^2)	Date	Tow Start Location		Course (deg.)	Duration (minutes)	Distance (nmi)	Scope (fathom)	Depth (fathom)		Catch (lb)
			Latitude	Longitude					Min.	Max.	
1	4.98	17-Jul	59° 41.43'	151° 9.25'	27	:27	1.00	90	27	36	3,006
2	2.92	14-Jul	59° 41.47'	151° 10.09'	228	:26	1.00	100	28	29	748
3	5.52	14-Jul	59° 38.39'	151° 14.25'	174	:28	1.01	100	33	36	846
4	3.08	14-Jul	59° 38.25'	151° 15.25'	240	:26	1.01	110	36	39	838
5	5.94	17-Jul	59° 38.87'	151° 18.55'	235	:27	1.00	50	14	16	2,418
6	5	17-Jul	59° 37.20'	151° 18.13'	240	:27	1.02	125	40	40	1,062
7	3.93	14-Jul	59° 36.44'	151° 22.55'	49	:26	1.02	110	31	33	2,416
8	3.57	11-Jul	59° 33.68'	151° 28.61'	259	:27	1.00	275	88	94	1,264
9	4.59	14-Jul	59° 33.88'	151° 31.68'	232	:27	1.02	200	62	66	1,200
10	8.52	13-Jul	59° 33.60'	151° 36.97'	73	:28	1.00	150	48	50	1,162
11	4.63	13-Jul	59° 31.94'	151° 37.48'	244	:27	1.02	175	57	59	1,398
12	6.25	13-Jul	59° 32.97'	151° 42.44'	262	:27	1.02	125	38	42	1,374
13	6.25	12-Jul	59° 31.25'	151° 42.27'	269	:27	1.01	180	58	61	2,855
14	6.64	10-Jul	59° 34.43'	151° 45.25'	239	:18	0.69	110	35	35	1,744
15	3.68	11-Jul	59° 31.60'	151° 45.67'	257	:27	1.00	125	42	43	1,405
16	3.26	13-Jul	59° 29.54'	151° 47.19'	255	:27	1.00	125	37	40	670
17	8.94	10-Jul	59° 34.50'	151° 49.71'	217	:27	1.00	75	21	24	2,340
18	6.25	13-Jul	59° 31.92'	151° 51.02'	223	:26	1.00	110	36	37	1,530
19	6.25	11-Jul	59° 29.21'	151° 51.35'	248	:26	1.02	125	37	46	590
20	6.25	10-Jul	59° 33.89'	151° 54.86'	281	:27	1.02	60	19	20	1,658
21	6.25	10-Jul	59° 31.06'	151° 55.25'	250	:25	1.00	110	34	36	2,262
22	6.25	10-Jul	59° 29.55'	151° 59.19'	80	:27	1.00	135	34	44	1,462
71	3.42	14-Jul	59° 35.26'	151 22.69'	78	:26	1.01	200	52	78	2,280
Total							22.87		14	94	36,528

Appendix B2.–Fishing log and aggregate catch (lb) in the Cook Inlet Kamishak Bay and Barren Islands Districts trawl survey, 20–25 June 2000.

Station	Area (nmi^2)	Date	Tow Start Location		Course (deg.)	Duration (minutes)	Distance (nmi)	Scope (fathom)	Depth (fathom)		Catch (lb)
			Latitude	Longitude					Min.	Max.	
24	26.1	20-Jun	59° 35.14'	152 55.46'	054	:29	1.06	65	20	21	418
28	26.1	20-Jun	59° 30.29'	153 1.58'	252	:25	1.10	70	21	21	1,108
29	26.1	20-Jun	59° 30.34'	152 58.39'	348	:28	1.12	65	21	22	218
32	26.1	20-Jun	59° 26.20'	153 13.8'	225	:26	1.10	60	20	20	610
33	26.1	24-Jun	59° 26.52'	153 4.96'	006	:27	1.01	85	22	23	444
34	26.1	20-Jun	59° 26.57'	152 56.9'	198	:27	1.05	85	26	27	498
37	26.1	24-Jun	59° 21.97'	153 6.65'	171	:27	1.00	100	27	28	856
38	26.1	25-Jun	59° 22.25'	152 56.88'	054	:28	1.02	100	32	34	642
39	26.1	20-Jun	59° 23.29'	152 48.84'	107	:14	0.60	125	41	42	260
41	16.8	25-Jun	59° 16.18'	153 33.51'	298	:28	1.00	55	17	17	716
44	26.1	25-Jun	59° 18.41'	153 8.12'	039	:28	1.03	100	29	29	1,330
45	26.1	25-Jun	59° 17.46'	152 55.99'	054	:27	1.02	135	41	45	2,400
48	25.8	23-Jun	59° 12.05'	153 24.61'	159	:27	1.03	75	21	23	801
50	26.1	23-Jun	59° 12.21'	153 6.21'	017	:27	0.98	125	37	38	3,718
51	26.1	23-Jun	59° 12.09'	152 54.89'	307	:28	1.02	200	60	66	3,674
52	26.1	20-Jun	59° 14.36'	152 46.54'	176	:26	1.01	200	64	66	1,696
53	26.1	22-Jun	59° 06.73'	153 26.95'	333	:27	1.01	75	24	24	1,344
54	26.1	22-Jun			338	:13	0.45	75	21	22	Discarded
54	26.1	23-Jun	59° 06.47'	153 11.5'	349	:27	0.99	135	42	44	5,390
55	26.1	23-Jun	59° 07.34'	153 5.03'	358	:27	1.00	190	56	63	998
56	26.1	23-Jun	59° 06.54'	152 54.87'	340	:27	1.02	23.5	77	78	1,342
58	22.6	22-Jun	59° 02.95'	153 25.51'	330	:28	1.02	75	24	25	1,602
59	26.1	21-Jun	59° 04.26'	153 14.12'	175	:27	1.01	135	42	44	1,052
60	26.1	21-Jun			006	:16	0.56	225	74	75	Discarded
60	26.1	21-Jun	59° 02.73'	153 5.72'	007	:27	1.00	225	75	75	1,020
61	26.1	21-Jun	59° 02.40'	152 54.86'	305	:16	1.01	260	81	82	1,412
67	26.1	21-Jun	58° 53.05'	153 4.84'	355	:23	0.83	275	90	91	820
68	26.1	21-Jun	58° 53.18'	152 56.98'	006	:21	0.75	275	89	90	1,418
471	22.3	24-Jun	59° 13.31'	153 35.14'	284	:28	1.04	70	18	18	536
472	1.8	25-Jun	59° 11.28'	153 38.37'	100	:22	0.83	150	41	50	1,174
Total									17	91	37,497

APPENDIX C

Appendix C1.–Catch rates of all species or species groups caught in a bottom trawl survey of the Cook Inlet Southern District, 2000.

Station	Pacific Cod	Walleye Pollock	Pacific Tomcod	Rougheye Rockfish	Redbanded Rockfish	Redstripe Rockfish	Dusky Rockfish	Dark Rockfish	Lingcod	Sablefish	Pacific Halibut	Longnose Skate	Big Skate	Bathyraja Skate	Arrowtooth Flounder
	Lb/nmi														
1	52.0	2,129.0	0.8	1.1	0.0	0.0	0.0	0.0	0.0	0.6	246.0	68.0	0.0	0.0	21.0
2	0.0	12.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.6	66.0	36.0	0.0	0.0	42.4
3	0.0	51.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	81.2	53.5	87.1	0.0	6.6
4	0.0	41.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.7	27.7	105.0	0.0	12.8
5	0.0	6.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	160.0	0.0	16.2
6	0.0	25.5	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	58.8	0.5	8.8
7	0.0	158.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8	21.6	37.3	127.5	0.0	68.4
8	0.0	4.0	0.0	14.0	0.0	0.0	0.0	0.0	0.0	4.0	4.0	52.0	0.0	0.0	505.9
9	103.9	243.1	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	37.3	0.0	0.0	141.8
10	4.0	562.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	48.0	0.0	0.0	61.1
11	68.6	329.4	0.0	2.8	1.9	0.0	13.7	0.0	0.0	0.0	15.7	76.5	233.3	0.0	79.8
12	27.5	360.8	3.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	25.5	49.0	0.0	75.0
13	225.7	202.0	0.0	5.9	2.2	0.0	29.7	0.0	0.0	0.0	71.3	65.3	43.6	0.0	955.1
14	176.8	69.6	5.3	0.0	0.0	0.7	2.2	78.3	0.0	0.0	11.6	60.9	72.5	0.0	56.9
15	12.0	82.0	0.0	0.0	0.3	0.0	38.0	0.0	0.0	0.0	0.0	48.0	0.0	0.0	30.5
16	82.0	0.0	0.0	0.0	0.0	0.9	14.0	0.0	28.0	0.0	84.0	22.0	0.0	0.0	21.2
17	4.0	0.0	6.9	0.0	0.0	0.0	0.1	0.0	0.0	0.0	16.0	30.0	105.0	0.0	2.9
18	40.0	30.0	51.1	0.0	0.0	0.0	8.0	0.0	0.0	0.0	28.0	0.0	224.0	0.0	34.1
19	7.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.3	21.6	64.7	0.0	8.3
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	86.3	0.0	0.0	0.0	0.0
21	82.0	0.0	0.0	0.0	0.0	0.0	42.0	0.0	6.0	0.0	78.0	0.0	86.0	0.0	52.8
22	294.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	10.0	0.0	128.0	0.0	0.0	0.0	32.4
71	17.8	154.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	5.9	162.4	0.0	0.0	18.7
Total	1,198.2	4,462.0	71.0	32.7	4.5	1.6	153.7	78.3	44.0	13.0	1,051.2	871.8	1,416.4	0.5	2,252.7
Freq	65%	78%	35%	35%	13%	9%	39%	4%	13%	17%	91%	74%	57%	4%	96%
Mean	52.1	194.0	3.1	1.4	0.2	0.1	6.7	3.4	1.9	0.6	45.7	37.9	61.6	0.0	97.9
Var.	6,400	199,465	113	11	0	0	161	266	38	3	3,181	1,331	5,157	0	45,494

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Appendix C1.–Page 2 of 5.

Station	Flathead Sole	Rock Sole	Dover Sole	Rex Sole	Butter Sole	Yellowfin Sole	English Sole	Starry Flounder	Sand Sole	Alaska Plaice	Sculpin, Unid.	Whitespot Greenling	Kelp Greenling	Eelpout	Wrymouth
								Lb/nmi							
1	42.1	0.0	0.0	0.4	0.0	49.1	0.0	0.0	0.0	11.6	28.5	0.0	0.0	0.0	0.0
2	33.9	8.5	0.0	0.1	0.0	67.8	0.0	0.0	0.0	25.4	10.1	0.0	0.0	0.0	0.0
3	157.6	0.0	0.9	0.0	0.0	16.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	264.7	0.0	0.0	0.9	0.0	13.8	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0
5	122.8	0.0	1.1	2.0	0.0	122.8	0.0	0.0	0.0	0.0	173.2	0.0	0.0	0.0	0.0
6	448.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	10.2	0.0	0.0	0.0	0.0
7	775.8	0.0	25.2	0.0	0.0	68.4	0.0	0.0	0.0	68.4	8.9	0.0	0.0	0.0	0.0
8	196.2	0.0	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	50.0
9	368.6	0.0	9.5	56.7	0.0	0.0	0.0	0.0	0.0	0.0	15.8	0.0	0.0	0.0	0.0
10	374.0	0.0	22.9	15.3	0.0	0.0	0.0	0.0	0.0	0.0	87.4	0.0	0.0	2.9	0.0
11	196.9	0.0	47.9	26.6	0.0	0.0	0.0	0.0	0.0	0.0	17.0	0.0	0.0	0.0	0.0
12	324.8	0.0	25.0	2.2	199.9	0.0	0.0	0.0	0.0	0.0	98.9	0.2	0.7	0.0	0.0
13	361.4	0.0	77.4	335.6	77.4	0.0	77.4	0.0	0.0	0.0	0.5	0.0	0.0	1.2	9.8
14	113.8	0.0	0.0	85.4	740.0	0.0	4.1	569.2	0.0	398.5	6.2	0.0	0.0	6.0	0.0
15	81.4	0.0	0.0	132.3	284.9	0.0	81.4	61.0	0.0	122.1	28.4	0.0	0.0	9.6	0.0
16	0.0	84.8	0.0	0.0	0.0	0.0	0.0	21.2	0.0	0.0	37.3	0.0	0.0	13.6	0.0
17	0.0	0.0	12.7	3.3	426.6	0.0	1,378.1	0.0	35.3	0.0	157.6	0.0	0.0	4.3	0.0
18	0.0	14.3	0.0	34.1	396.3	0.0	17.0	562.6	0.0	0.0	161.0	0.0	0.0	1.5	0.0
19	0.0	78.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	158.8	0.0	0.0	1.1	0.0
20	0.0	795.9	0.0	0.0	193.6	0.0	21.5	64.5	0.0	0.0	387.9	0.0	0.0	22.6	0.0
21	0.0	316.6	0.0	12.2	1,292.6	0.0	158.3	0.0	0.0	0.0	210.3	0.0	0.0	1.5	0.0
22	0.0	210.5	0.0	16.2	48.6	0.0	0.0	0.0	0.0	0.0	163.7	0.0	0.0	1.8	0.0
71	1,305.9	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	37.3	176.8	0.0	0.0	12.0	0.0
Total	5,167.9	1,509.2	222.6	738.0	3,659.8	338.3	1,737.8	1,278.6	35.3	663.3	1,946.0	0.2	0.7	78.4	59.8
Freq	70%	30%	39%	78%	39%	26%	30%	22%	4%	26%	96%	4%	4%	57%	9%
Mean	224.7	65.6	9.7	32.1	159.1	14.7	75.6	55.6	1.5	28.8	84.6	0.0	0.0	3.4	2.6
Var.	94,017	31,483	371	5,436	97,364	1,011	82,104	26,263	54	7,336	9,793	0	0	34	111

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Appendix C1.–Page 3 of 5.

Station	Pacific Herring	Eulachon	Capelin	Ronquil/ Searcher	Pacific Sandfish	Sturgeon Poacher	Prickleback	Prowfish	Snailfish	Weathervane Scallop	Hind's Scallop	Octopus	Purple Urchin	Green Urchin	Dungeness Crab
	Lb/nmi														
1	0.0	3.2	0.0	0.0	0.7	0.0	0.0	0.0	0.0	34.0	0.0	0.0	0.0	0.1	3.7
2	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	110.0	0.0	0.0	0.0	0.0	2.5
3	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	71.3	0.0	0.0	0.0	0.0	2.0
4	0.0	0.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	39.6	0.0	0.0	0.0	0.0	2.2
5	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.7	13.2	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	9.2	7.8
7	1.2	0.0	0.0	0.0	1.9	0.0	0.0	0.0	0.0	7.8	0.0	0.0	0.0	1.3	9.6
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	12.5	0.0
9	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0	51.5	0.0	4.6	0.0
12	0.0	0.0	0.0	0.0	0.0	2.8	0.3	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	2.7	0.0	51.8	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.2	0.0	0.2	0.0	6.0	0.0	0.9	0.2	0.0	0.0	56.5	0.0
17	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	1.3	294.9	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.0	0.0
22	0.0	0.0	0.0	0.0	0.0	5.2	0.0	0.0	0.0	0.0	2.0	60.0	0.0	210.5	0.0
71	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.7	0.0	18.7	0.0
Total	1.2	8.2	0.2	0.2	4.4	19.5	0.3	6.0	5.0	283.7	3.8	161.1	1.3	675.5	27.8
Freq	4%	30%	4%	4%	17%	35%	4%	4%	9%	52%	17%	22%	4%	52%	26%
Mean	0.1	0.4	0.0	0.0	0.2	0.8	0.0	0.3	0.2	12.3	0.2	7.0	0.1	29.4	1.2
Var.	0	1	0	0	0	3	0	2	1	759	0	293	0	5,367	7

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Appendix C1.–Page 4 of 5.

Station	Red King Crab	Tanner Crab	Hermit Crab	Other Crab	Pink Shrimp	Sidestripe Shrimp	Humpy Shrimp	Coonstripe Shrimp	Crangon Shrimp	Other Shrimp	Greenland Cockle	Horse Mussel	"Other" Clam	Cucumaria	Brachiopod
								Lb/nmi							
1	0.0	78.0	1.1	0.0	33.9	0.2	0.1	0.4	0.0	0.2	0.0	0.0	0.0	0.0	0.0
2	10.0	18.0	3.7	0.0	73.3	0.2	1.2	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	47.5	10.6	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.0	10.1	0.0	0.0	0.0
4	0.0	97.0	0.0	0.7	6.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	66.0	1.6	5.0	5.0	0.7	0.0	0.0	0.0	1.1	0.2	0.0	0.0	0.0	0.9
6	0.0	84.3	9.2	0.0	2.6	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
7	0.0	166.7	7.5	18.1	17.9	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
8	8.0	334.0	0.0	0.0	0.6	0.2	0.0	0.0	0.1	0.0	0.0	1.1	0.0	0.0	0.0
9	0.0	94.1	10.4	0.0	31.5	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	11.1	0.9	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	156.9	3.8	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
12	0.0	89.2	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	200.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	4.4	0.0	0.0
15	0.0	210.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	93.2	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	17.7	0.0
18	0.0	2.0	2.6	1.1	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	12.2	0.0
20	0.0	0.0	5.7	0.9	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	16.0	0.0
22	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0	145.7	0.0
71	0.0	295.0	0.0	0.0	1.2	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
Total	18.0	1,953.2	68.4	25.8	186.8	6.3	1.3	1.6	3.1	2.3	0.5	105.1	4.4	191.7	0.9
Freq	9%	74%	65%	22%	52%	26%	9%	13%	43%	26%	9%	17%	9%	17%	4%
Mean	0.8	84.9	3.0	1.1	8.1	0.3	0.1	0.1	0.1	0.1	0.0	4.6	0.2	8.3	0.0
Var.	7	9,821	12	15	296	1	0	0	0	0	0	377	1	925	0

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Appendix C1.–Page 5 of 5.

Station	Fusitriton	Hyas	Kennicott's bererringius	Neptunia	Jellyfish	Pentamera	Sipuncla	Starfish	Sand Dollar	Anemone	Sea Pen	Tube Worm	Other Invertebrates
								Lb/nmi					
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
2	0.0	0.0	0.0	1.7	0.0	0.0	0.0	50.8	0.0	0.7	0.0	0.0	0.0
3	0.0	0.0	0.0	1.1	0.0	0.0	0.0	19.7	0.0	32.8	0.0	0.0	0.0
4	0.0	0.0	0.0	0.8	0.0	0.8	0.0	15.1	0.0	1.3	0.0	0.0	0.0
5	0.0	0.0	0.0	1.4	0.0	0.0	0.0	184.2	0.0	40.9	0.0	0.0	0.0
6	0.0	0.0	0.0	6.8	0.0	0.0	0.0	86.3	0.0	7.4	0.0	0.0	0.0
7	0.0	0.0	0.0	6.8	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.0	0.0
8	4.0	0.0	0.0	0.0	0.0	0.0	0.0	8.4	0.0	41.5	0.0	0.0	0.0
9	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4	0.0	0.0	0.0
10	4.3	0.0	0.0	0.9	2.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
11	15.4	0.0	0.0	0.8	7.9	0.0	0.0	0.3	0.0	20.4	0.0	0.4	0.0
12	1.5	0.0	0.0	0.0	1.2	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0
13	11.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	8.2	0.0	0.0	0.0	0.0	13.2	6.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	0.0
16	11.8	0.0	0.0	1.7	5.5	8.6	0.0	6.8	0.0	9.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.3	262.5	0.0	0.0	0.0
18	0.0	0.0	0.0	3.4	0.0	0.0	0.0	1.1	19.2	30.1	4.5	0.0	0.0
19	7.8	0.0	0.0	1.0	0.0	7.9	0.0	5.6	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	430.2	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	79.1	0.0	0.0	0.0
22	18.9	0.0	3.6	28.6	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	1.6
71	0.0	1.9	0.0	4.9	0.0	0.0	0.0	0.0	0.0	70.1	0.0	0.0	0.0
Total	82.7	1.9	3.6	59.8	25.3	17.4	0.0	434.6	51.2	1,068.5	10.5	0.4	1.6
Freq	39%	4%	4%	57%	22%	13%	4%	57%	17%	83%	9%	4%	4%
Mean	3.6	0.1	0.2	2.6	1.1	0.8	0.0	18.9	2.2	46.5	0.5	0.0	0.1
Var.	33	0	1	36	6	6	0	1,775	30	10,085	2	0	0

Appendix C2.–Population biomass estimates in surveyed stations for species caught in a bottom trawl survey of the Cook Inlet Southern District, 2000.

Station	Pacific Cod	Walleye Pollock	Pacific Tomcod	Rougheye Rockfish	Redbanded Rockfish	Redstripe Rockfish	Dusky Rockfish	Dark Rockfish	Lingcod	Sablefish	Pacific Halibut	Longnose Skate	Big Skate	Bathyraja Skate	Arrowtooth Flounder
								Pounds							
1	39,336	1,610,50	643	834	0	0	0	0	0	450	186,090	51,439	0	0	15,898
2	0	5,323	124	0	0	0	0	0	0	244	29,274	15,968	0	0	18,794
3	0	43,170	0	0	0	0	0	0	0	0	68,075	44,830	73,056	0	5,507
4	0	19,455	312	0	0	0	0	0	0	0	12,970	12,970	49,101	0	6,007
5	0	5,414	2,035	0	0	0	0	0	0	0	18,046	0	144,366	0	14,655
6	0	19,360	0	328	0	0	0	0	0	0	8,935	0	44,676	394	6,711
7	0	94,812	0	0	0	0	0	0	0	4,682	12,876	22,240	76,084	0	40,862
8	0	2,169	0	7,592	0	0	0	0	0	2,169	2,169	28,199	0	0	274,324
9	72,456	169,520	0	4,101	0	0	0	0	0	0	0	25,975	0	0	98,845
10	5,177	727,334	0	2,588	0	0	0	0	0	0	10,354	62,121	0	0	79,027
11	48,265	231,674	0	1,976	1,368	0	9,653	0	0	0	11,032	53,782	164,103	0	56,151
12	26,061	342,520	3,399	0	0	0	0	0	0	0	5,585	24,200	46,538	0	71,159
13	214,314	191,755	0	5,640	2,068	0	28,199	0	0	0	67,678	62,038	41,359	0	906,780
14	178,335	70,165	5,379	0	0	731	2,193	78,935	0	0	11,694	61,394	73,088	0	57,412
15	6,708	45,837	0	0	185	0	21,242	0	0	0	0	26,832	0	0	17,061
16	40,606	0	0	0	0	448	6,933	0	13,865	0	41,596	10,894	0	0	10,496
17	5,432	0	9,332	0	0	0	68	0	0	0	21,728	40,740	142,589	0	3,929
18	37,975	28,481	48,557	0	0	0	7,595	0	0	0	26,583	0	212,660	0	32,371
19	7,446	246	0	0	0	0	0	0	0	0	32,577	20,477	61,430	0	7,922
20				0	0	0	0	0	0		81,907	0	0	0	0
21	77,849	0	0	0	0	0	39,874	0	5,696	0	74,051	0	81,646	0	50,089
22	279,116	0	0	0	0	0	5,696	0	9,494	0	121,520	0	0	0	30,746
71	9,258	80,239	0	283	0	0	0	0	0	0	3,086	84,354	0	0	9,692
Total	1,048,335	3,687,982	69,782	23,343	3,621	1,178	121,452	78,935	29,055	7,546	847,825	648,452	1,210,697	394	1,814,438

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Appendix C2.–Page 2 of 5.

Station	Flathead Sole	Rock Sole	Dover Sole	Rex Sole	Butter Sole	Yellowfin Sole	English Sole	Starry Flounder	Sand Sole	Alaska Plaice	Sculpin, Unid.	Whitespot Greenling	Kelp Greenling	Eelpout	Wrymouth
							Pounds								
1	31,814	0	0	292	0	37,116	0	0	0	8,767	159,068	0	0	1,110	0
2	15,035	3,759	0	41	0	30,070	0	0	0	11,276	71,416	0	0	663	0
3	132,177	0	789	0	0	13,768	0	0	0	0	132,177	0	0	3,642	0
4	123,847	0	0	429	0	6,436	0	0	0	0	74,308	0	0	507	0
5	110,795	0	1,018	1,832	0	110,795	0	0	0	0	147,726	0	0	1,628	0
6	340,241	0	0	1,086	0	0	0	0	0	0	134,306	0	0	9,080	0
7	463,104	0	15,014	0	0	40,862	0	0	0	40,862	231,552	0	0	13,513	0
8	106,371	0	0	5,598	0	0	0	0	0	0	185	0	0	185	27,114
9	256,997	0	6,610	39,538	0	0	0	0	0	0	19,769	0	0	6,683	0
10	484,041	0	29,635	19,757	0	0	0	0	0	0	8,058	0	0	7,731	0
11	138,506	0	33,691	18,717	0	0	0	0	0	0	371	0	0	867	6,895
12	308,354	0	23,720	2,092	189,756	0	0	0	0	0	83,018	0	0	2,745	0
13	343,106	0	73,523	318,598	73,523	0	73,523	0	0	0	15,040	0	0	0	0
14	114,824	0	0	86,118	746,355	0	4,114	574,119	0	401,883	28,706	0	0	0	0
15	45,495	0	0	73,929	159,232	0	45,495	34,121	0	68,242	5,687	0	0	0	0
16	0	41,982	0	0	0	0	0	10,496	0	0	48,979	109	328	0	0
17	0	0	17,191	4,420	579,253	0	1,871,43	0	47,996	0	13,753	0	0	0	0
18	0	13,560	0	32,371	376,196	0	16,186	534,127	0	0	16,186	0	0	0	0
19	0	74,664	0	0	0	0	0	0	0	0	8,436	0	0	0	0
20	0	755,620	0	0	183,800	0	20,422	61,267	0	0	0	0	0	0	0
21	0	300,536	0	11,595	1,227,19	0	150,268	0	0	0	6,626	0	0	0	0
22	0	199,849	0	15,373	46,119	0	0	0	0	0	164,427	0	0	0	0
71	678,428	0	0	1,602	0	0	0	0	0	19,384	19,384	0	0	7,051	0
Total	3,693,133	1,389,970	201,190	633,390	3,581,42	239,047	2,181,44	1,214,130	47,996	550,415	1,389,177	109	328	55,406	34,009

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Appendix C2.–Page 3 of 5.

Station	Pacific Herring	Eulachon	Capelin	Ronquil/ Searcher	Pacific Sandfish	Sturgeon Poacher	Prickleback	Prowfish	Snailfish	Weathervane Scallop	Hind's Scallop	Octopus	Purple Urchin	Green Urchin	Dungeness Crab
								Pounds							
1	0	2,455	0	0	500	0	0	0	0	25,720	0	0	0	58	0
2	0	870	0	0	0	0	0	0	0	48,790	0	0	0	0	0
3	0	182	182	0	0	0	0	0	0	59,773	0	0	0	0	0
4	0	234	0	0	715	0	0	0	0	18,529	0	0	0	0	0
5	0	1,221	0	0	0	0	0	0	0	796	611	11,935	0	0	0
6	0	0	0	0	0	99	0	0	0	181	0	0	0	7,007	0
7	735	0	0	0	1,161	0	0	0	0	4,682	0	0	0	751	0
8	0	0	0	0	0	0	0	0	2,169	0	0	0	0	6,788	0
9	0	363	0	0	0	0	0	0	684	0	0	0	0	0	0
10	0	544	0	0	0	0	0	0	0	342	0	0	0	0	0
11	0	0	0	0	152	0	0	0	0	228	0	36,234	0	3,219	0
12	0	0	0	0	0	2,615	261	0	0	3,723	0	0	0	0	0
13	0	0	0	0	0	2,431	0	0	0	0	0	2,590	0	49,167	0
14	0	0	0	0	0	0	0	0	0	14,618	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	109	0	116	0	2,971	0	437	116	0	0	27,988	0
17	0	0	0	0	0	1,473	0	0	0	0	0	0	0	0	1,660
18	0	0	0	0	0	1,427	0	0	0	0	0	0	0	4,104	1,115
19	0	0	0	0	0	0	0	0	0	0	926	0	1,231	279,989	1,031
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,740
21	0	0	0	0	0	5,797	0	0	0	0	0	0	0	10,491	2,764
22	0	0	0	0	0	4,914	0	0	0	0	1,864	56,963	0	199,849	0
71	0	0	0	0	0	0	0	0	0	0	0	17,488	0	9,722	5,957
Total	735	5,870	182	109	2,528	18,873	261	2,971	2,853	177,818	3,516	125,210	1,231	599,133	18,267

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Appendix C2.–Page 4 of 5.

Station	Red King Crab	Tanner Crab	Hermit Crab	Other Crab	Pink Shrimp	Sidestripe Shrimp	Humpy Shrimp	Coonstripe Shrimp	Crangon Shrimp	Other Shrimp	Greenland Cockle	Horse Mussel	"Other" Clam	Cucumaria	Brachiopod
							Pounds								
1	0	2,546	818	0	25,638	117	58	292	234	117	0	0	0	0	0
2	0	0	1,657	0	32,497	89	533	533	178	0	0	0	0	0	0
3	0	0	8,863	0	9,774	0	0	12	364	0	0	8,499	0	0	0
4	0	0	0	312	2,886	78	0	0	78	0	0	0	0	0	0
5	0	0	1,425	4,478	4,478	611	0	0	407	1,018	204	0	0	0	814
6	0	117,832	7,007	0	1,974	0	0	0	296	99	0	0	0	0	0
7	0	0	4,504	10,810	10,660	0	0	0	300	75	0	0	0	0	0
8	4,338	181,123	0	0	309	93	0	0	62	0	0	617	0	0	0
9	0	189,875	7,264	0	21,937	3,414	0	0	0	0	0	0	0	0	0
10	0	84,699	1,198	0	1,633	0	0	0	436	0	0	0	0	0	0
11	0	1,899	2,641	0	1,320	0	0	0	0	0	0	495	0	0	0
12	0	0	4,053	0	0	0	0	0	0	0	0	0	0	0	0
13	0	110,321	2,161	0	0	0	0	0	0	0	0	0	0	0	0
14	0	14,340	0	0	0	0	0	0	0	0	0	0	4,430	0	0
15	0	65,621	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	153,278	578	0	0	0	0	0	4	309	154	46,136	4	0	0
17	0	39,849	0	0	0	0	0	0	0	0	0	0	0	24,067	0
18	4,435	7,984	2,498	1,070	0	0	0	0	0	0	0	0	0	0	0
19	0	45,396	0	0	0	0	0	0	0	0	0	0	0	11,625	0
20	0	99,495	5,403	900	0	0	0	0	0	0	0	0	0	0	0
21	0	59,004	0	0	0	0	0	0	0	0	0	0	0	15,184	0
22	0	59,551	3,389	0	0	0	0	0	0	136	0	0	0	138,357	0
71	0	64,036	0	0	641	0	0	0	0	0	0	0	0	0	0
Total	8,774	1,296,847	53,460	17,571	113,747	4,401	591	837	2,358	1,752	358	55,748	4,434	189,233	814

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Appendix C2.–Page 5 of 5.

Station	Fusitriton	Hyas	Kennicott's Berringius	Neptunia	Jellyfish	Pentamera	Sipuncula	Starfish	Sand Dollar	Anemone	Sea Pen	Tube Worm	Other Invertebrate
								Pounds					
1	0	0	0	0	0	0	0	0	0	760	0	0	0
2	0	0	0	746	0	0	0	22,552	0	290	0	0	0
3	0	0	0	911	0	0	0	16,522	0	27,537	0	0	0
4	0	0	0	390	0	390	0	7,077	0	585	0	0	0
5	0	0	0	1,221	0	0	0	166,192	0	36,932	0	0	0
6	0	0	0	5,132	0	0	0	65,566	0	5,626	0	0	0
7	0	0	0	4,054	0	0	0	0	0	4,504	0	0	0
8	2,160	0	0	0	0	0	0	4,567	0	22,517	0	0	0
9	5,157	0	0	0	0	0	0	0	0	7,264	0	0	0
10	5,553	0	0	1,198	3,158	0	0	109	0	0	0	0	0
11	10,811	0	0	536	5,571	0	0	206	0	14,360	0	289	0
12	1,438	0	0	0	1,177	0	0	47,439	0	0	0	0	0
13	11,076	0	0	0	0	0	0	0	0	4,863	0	0	0
14	0	0	0	0	8,227	0	0	0	0	13,290	6,012	0	0
15	0	0	0	0	0	0	0	0	0	2,843	0	0	0
16	5,823	0	0	848	2,738	4,281	19	3,355	0	4,473	0	0	0
17	0	0	0	0	0	0	0	0	22,102	356,464	0	0	0
18	0	0	0	3,211	0	0	0	1,070	18,198	28,546	4,282	0	0
19	7,407	0	0	926	0	7,510	0	5,350	0	0	0	0	0
20	0	0	0	0	0	0	0	0	9,455	408,443	0	0	0
21	0	0	0	0	0	0	0	0	5,521	75,134	0	0	0
22	17,962	0	3,389	27,113	0	0	0	5,762	0	0	0	0	1,525
71	0	961	0	2,564	0	0	0	0	0	36,430	0	0	0
Total	67,388	961	3,389	48,851	20,870	12,181	19	345,767	55,277	1,050,861	10,294	289	1,525

Appendix C3.–Catch rates of all species or species groups caught in a bottom trawl survey of the Cook Inlet Kamishak Bay and Barren Islands Districts, 2000.

Station	Pacific Cod	Walleye Pollock	Pacific Tomcod	Saffron Cod	Rougheye Rockfish	Light Dusky Rockfish	Sablefish	Spiny Dogfish	Pacific Halibut	Longnose Skate	Big Skate	Bathyraja Skate	Arrowtooth Flounder	Flathead Sole	Rock Sole
								Lb/nmi							
24	47.2	0.0	0.0	0.0	0.0	0.0	0.0	9.4	1.9	0.0	20.8	0.0	12.2	6.1	5.7
28	354.5	0.7	1.1	0.0	0.0	0.0	0.0	32.7	100.0	0.0	152.7	14.5	19.1	12.7	0.0
29	14.3	0.2	0.4	0.0	0.0	0.0	0.0	0.0	27.7	0.0	0.0	7.1	16.1	1.8	0.0
32	7.3	12.7	1.2	0.0	0.0	0.0	0.6	10.9	16.4	0.0	36.4	0.0	1.3	11.6	0.0
33	23.8	7.3	3.8	0.0	0.0	0.0	0.0	9.9	83.2	0.0	0.0	35.6	108.2	3.5	3.6
34	1.9	0.0	2.0	0.0	0.0	0.0	0.0	19.0	99.0	0.0	0.0	5.7	74.1	5.3	0.0
37	16.0	0.2	0.0	0.0	0.0	0.0	0.0	18.0	132.0	0.0	0.0	0.0	140.4	18.7	0.0
38	0.0	5.9	0.0	0.0	0.0	0.0	0.0	13.7	115.7	0.0	0.0	3.9	118.3	0.0	59.1
39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	3.3	0.0	0.0	0.0	85.0	0.0	0.0
41	32.8	20.7	1.0	0.0	0.0	0.0	0.0	38.6	232.8	0.0	170.4	0.0	44.4	0.0	1.1
44	17.5	0.7	0.7	0.0	0.0	0.0	0.0	52.4	33.0	0.0	0.0	3.9	132.7	26.5	13.3
45	45.1	0.0	0.0	0.0	0.0	0.0	0.0	23.5	47.1	0.0	0.0	3.9	1,659.3	0.0	0.0
48	5.8	0.1	0.0	0.0	0.0	0.0	0.0	66.0	213.6	0.0	295.1	21.4	69.9	9.7	40.8
50	8.2	0.0	0.0	0.0	0.0	0.0	0.0	18.4	138.8	24.5	0.0	24.5	2,538.2	211.5	0.0
51	41.2	423.5	0.0	0.0	0.0	0.0	0.0	27.5	241.2	31.4	0.0	47.1	1,246.5	117.6	0.0
52	5.9	0.0	0.0	0.0	0.0	0.0	2.0	21.8	81.2	69.3	0.0	31.7	1,153.3	42.7	0.0
53	83.2	7.9	0.0	0.0	0.0	0.0	0.0	31.7	32.7	53.5	47.5	11.9	136.4	19.4	0.0
54	20.2	0.0	0.0	0.0	0.0	0.0	0.0	20.2	442.4	8.1	92.9	28.3	4,502.0	107.2	0.0
55	16.0	64.0	0.0	0.0	0.0	0.0	0.0	36.0	34.0	54.0	0.0	60.0	558.3	20.0	0.0
56	13.7	588.2	0.0	0.0	0.0	0.0	17.6	33.3	19.6	96.1	0.0	52.9	260.0	55.7	0.0
58	19.6	10.8	0.0	0.7	0.0	0.0	0.0	33.3	112.7	0.0	125.5	56.9	128.8	42.9	0.0
59	126.7	0.0	0.0	0.0	0.0	2.0	0.0	61.4	69.3	11.9	39.6	57.4	335.3	28.7	28.7
60	52.0	154.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	48.0	0.0	184.0	305.7	12.5	0.0
61	19.8	378.2	0.0	0.0	0.0	0.0	33.7	19.8	63.4	13.9	0.0	154.5	336.2	94.6	0.0
67	28.9	98.8	0.0	0.0	0.6	0.0	7.2	7.2	9.6	89.2	0.0	74.7	141.0	22.3	0.0
68	16.0	13.3	0.0	0.0	0.0	0.0	10.7	34.7	0.0	0.0	0.0	24.0	90.7	13.3	0.0
471	25.0	5.9	0.0	0.0	0.0	0.0	0.0	21.2	125.0	0.0	0.0	5.8	106.2	2.5	3.4
472	147.0	48.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.9	412.0	0.0	226.5	1.4	0.0
Total	1,189.6	1,841.4	10.1	0.7	0.6	2.0	71.8	669.9	2,523.6	528.6	1,393.0	909.7	14,546.4	888.3	155.7
Freq	93%	71%	25%	4%	4%	4%	21%	89%	93%	43%	36%	79%	100%	86%	29%
Mean	42.5	65.8	0.4	0.0	0.0	0.1	2.6	23.9	90.1	18.9	49.7	32.5	519.5	31.7	5.6
Var.	4,976	21,790	1	0	0	0	53	290	9,489	848	9,997	2,004	951,803	2,280	198

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Appendix C3.–Page 2 of 5.

Station	Dover Sole	Rex Sole	Butter Sole	Yellowfin Sole	English Sole	Starry Flounder	Sand Sole	Alaska Plaice	Unid. Sculpin	Whitespot Greenling	Eelpout	Pacific Herring	Eulachon	Capelin	Pacific Sandfish
								Lb/nmi							
24	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	10.1	0.0	0.0	0.0	0.9	0.0	0.0
28	0.7	1.4	51.0	0.0	0.0	0.0	0.0	0.0	44.6	0.0	0.0	0.0	0.1	0.0	0.0
29	0.0	0.3	91.1	0.0	0.0	3.6	0.9	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.0
32	0.0	1.7	11.6	34.8	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	5.4	0.0	0.0
33	0.0	2.6	90.2	7.2	0.0	4.2	0.0	0.0	7.4	0.0	0.0	0.0	0.2	0.0	0.0
34	0.0	1.5	207.5	0.0	0.0	43.8	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0
37	0.0	1.1	280.9	0.0	0.0	93.6	0.0	0.0	74.9	0.0	0.0	0.0	1.5	0.0	0.0
38	0.0	0.0	236.5	0.0	0.0	58.7	0.0	0.0	0.0	0.0	0.0	0.0	4.9	0.0	0.0
39	0.0	0.0	283.4	0.0	0.0	28.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	0.0	0.0	59.2	2.7	0.0	44.4	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
44	0.0	2.2	159.3	26.5	0.0	424.7	0.0	0.0	172.5	0.0	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	168.7	0.0	0.0	337.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	2.0	3.9	21.4	7.8	0.0	1.9	0.0	3.9	2.0	0.0	0.0	0.0	0.0	0.0	0.0
50	0.0	4.7	423.0	0.0	253.8	76.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	23.5	70.6	282.2	0.0	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52	0.0	0.0	256.3	0.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	51.2	0.0	0.0	0.0	0.0	102.3	15.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	20.1	107.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
55	14.6	18.8	0.0	0.0	0.0	0.0	0.0	0.0	9.7	0.0	0.0	0.0	0.7	0.0	0.0
56	24.8	49.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
58	0.0	0.0	42.9	0.0	0.0	0.0	0.0	0.0	128.8	0.0	0.0	4.1	5.9	0.7	0.1
59	1.0	14.8	62.3	0.0	0.0	0.0	0.0	0.0	9.5	0.0	0.0	0.0	5.3	0.0	0.0
60	0.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	1.3	0.0
61	105.1	10.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.2	0.0	0.0
67	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7	0.0	1.1	0.0	0.0
68	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.6	0.0	0.0
471	0.0	0.0	33.4	133.4	0.0	5.6	0.0	11.1	13.9	0.0	0.0	0.0	0.7	0.0	0.0
472	0.0	0.0	0.0	0.0	0.0	72.3	0.0	0.0	0.2	0.0	2.4	0.0	0.1	0.0	0.0
Total	171.6	214.6	2,920.9	212.4	300.9	1,195.6	0.9	123.3	489.7	1.5	14.4	4.1	54.1	2.1	0.1
Freq	25%	57%	75%	21%	7%	46%	4%	14%	50%	4%	11%	4%	64%	7%	4%
Mean	6.1	7.7	104.3	7.6	10.7	42.7	0.0	4.4	17.5	0.1	0.5	0.1	1.9	0.1	0.0
Var.	421	261	13,915	675	2,348	10,050	0	374	1,710	0	3	1	18	0	0

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Station	Prickleback	Ronquil/ Searcher	Sturgeon Poacher	Snailfish	Skate Egg Case	Red King Crab	Tanner Crab	Pygmy Caner Crab	Decorator Crab	Hermit Crab	Lyre Crab	Weathervane Scallop	Hind's Scallop	Octopus	Green Sea Urchin
								Lb/nmi							
24	0.0	0.1	0.0	0.2	0.0	0.0	0.0	0.0	3.0	4.2	0.0	0.6	0.0	0.0	5.4
28	0.0	0.0	0.0	0.1	0.0	0.0	1.1	0.1	0.0	57.3	4.2	21.8	3.5	0.0	0.0
29	0.0	0.0	1.5	0.0	0.0	0.0	0.2	0.0	0.7	1.9	0.4	0.0	0.0	0.0	0.0
32	0.0	0.0	1.7	0.0	0.0	0.0	8.2	0.0	0.0	15.3	58.0	10.9	7.7	0.0	0.0
33	0.2	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.6	17.5	0.0	0.0	0.4
34	0.0	0.0	0.7	0.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
37	0.0	0.0	0.0	0.0	0.0	12.0	2.0	0.0	0.0	0.0	0.0	58.0	0.0	0.0	0.0
38	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
39	0.0	0.0	0.8	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	176.7	3.9	0.0	0.0	0.0	0.0	44.7	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0	0.0	64.7	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	1.7
50	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	69.4	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	0.0	951.0	2.5	0.0	0.0	0.0	0.0	45.1	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0
53	0.4	5.6	0.8	0.0	0.0	0.0	2.9	0.0	0.0	102.3	2.8	0.0	0.0	0.0	68.2
54	0.0	0.0	0.0	0.0	0.0	0.0	49.3	0.0	0.0	0.0	0.0	18.2	0.0	0.0	0.0
55	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	5.1	0.0	0.7	9.5	0.0	32.8
56	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.0	0.1	0.1	1.7
58	0.2	0.0	0.5	0.0	0.0	0.0	1.8	0.0	0.0	407.9	26.0	0.0	0.0	0.0	5.4
59	0.0	3.2	0.0	0.0	0.0	0.0	8.1	0.0	1.6	38.3	0.0	25.7	6.1	0.0	19.2
60	0.0	2.9	0.0	0.0	0.0	0.0	10.0	0.0	0.0	34.9	1.3	0.0	1.4	0.0	104.8
61	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	42.0	0.0	0.0	0.0	0.0	73.6
67	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	65.1	0.0	0.0	0.0	19.3	52.0
68	0.0	0.0	0.0	0.0	0.3	0.0	5.6	0.0	0.0	32.4	0.5	0.0	0.0	0.0	2.5
471	0.0	0.0	1.3	0.0	0.0	0.0	4.5	0.0	0.0	0.9	0.0	0.4	0.0	0.0	0.9
472	0.0	0.0	0.2	0.8	0.0	3.4	2.7	0.0	0.0	9.6	26.5	0.0	0.0	0.0	0.8
Total	3.8	11.8	7.6	1.1	0.3	1,207.8	115.0	0.1	5.2	822.3	122.1	321.1	28.4	19.4	369.4
Freq	21%	14%	32%	11%	4%	18%	86%	4%	11%	64%	39%	57%	21%	7%	50%
Mean	0.1	0.4	0.3	0.0	0.0	43.1	4.1	0.0	0.2	29.4	4.4	11.5	1.0	0.7	13.2
Var.	0	2	0	0	0	32,883	86	0	0	6,153	157	387	6	13	755

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Station	Pink Shrimp	Sidestripe Shrimp	Coonstripe Shrimp	Crangon Shrimp	Other Shrimp	Sea Star	Leather Star	Basket Star	Sand Dollar	Cucumaria	Greenland Cockle	Horse Mussel	Fusitriton Snail	Neptunea Snail	Kennicott's Berringius
								Lb/nmi							
24	0.0	1.1	0.5	0.9	1.4	5.7	0.0	0.0	0.0	0.0	0.0	91.3	1.5	1.7	0.0
28	0.0	0.2	0.0	0.1	0.0	4.2	0.0	0.0	0.0	0.0	0.0	1.1	11.2	25.3	0.0
29	0.0	0.1	0.0	0.4	0.1	1.8	0.0	0.0	1.8	1.0	0.0	8.9	0.3	0.4	0.0
32	0.0	0.0	0.0	0.0	0.0	34.8	0.0	0.0	0.0	0.0	0.0	0.0	14.1	4.5	0.0
33	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.1	0.0
34	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	1.2	0.0	0.0	0.7	0.9	0.0	0.0
37	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.5	0.0
38	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.9
39	0.0	0.0	0.0	0.8	0.2	0.0	0.0	0.0	2.6	0.0	0.0	0.6	0.0	0.0	0.0
41	0.0	0.0	0.0	0.0	0.0	44.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.2	0.0	0.0
53	0.0	0.2	0.0	0.9	0.0	7.9	0.0	0.0	0.0	494.5	0.0	0.0	8.1	8.6	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	0.0	0.0
55	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	2.8	0.0
56	0.4	0.0	0.0	0.0	0.0	12.4	0.0	0.0	0.0	0.0	0.0	0.0	1.6	1.7	0.0
58	0.0	0.0	0.0	0.0	0.0	36.9	0.0	0.0	0.0	0.0	3.5	5.7	46.4	31.5	1.2
59	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	4.8	2.6	0.0
60	3.3	0.0	0.0	0.0	0.2	0.0	0.0	3.0	0.0	0.0	0.0	0.0	7.7	2.2	8.4
61	0.0	0.0	0.0	0.0	0.0	4.1	0.7	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0
67	4.9	0.0	0.0	0.3	0.0	8.2	0.2	0.8	0.0	0.0	0.0	0.0	0.7	7.4	3.3
68	0.0	0.0	0.0	0.1	0.0	5.3	3.6	1.3	0.0	0.0	0.4	0.0	0.0	0.5	1.0
471	0.0	0.0	0.0	0.0	0.1	4.9	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.1	0.0
472	0.2	0.4	0.1	0.4	0.0	19.3	0.0	0.0	0.0	2.9	0.1	1.0	9.6	14.5	0.0
Total	9.6	1.9	0.6	4.1	2.5	204.0	4.5	5.1	6.6	498.4	4.1	109.3	128.1	106.3	18.7
Freq	21%	18%	11%	36%	25%	64%	11%	11%	14%	11%	11%	25%	75%	57%	18%
Mean	0.3	0.1	0.0	0.1	0.1	7.3	0.2	0.2	0.2	17.8	0.1	3.9	4.6	3.8	0.7
Var.	1	0	0	0	0	144	0	0	0	8,729	0	297	82	60	4

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Appendix C3.–Page 5 of 5.

Station	Ribbed Sinistral	Silky Buccinum	Other Snail	Jellyfish	Anemone	Sea Mouse	Sea Pen	Other Invertebrate
								Lb/nmi
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	1.4	0.0	0.6	0.0	2.8	0.0	3.5	0.0
29	0.2	0.0	0.0	0.0	8.9	0.0	0.5	0.2
32	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33	0.0	0.1	0.0	0.0	25.3	0.0	0.2	0.0
34	0.0	0.0	0.0	0.0	3.1	0.0	3.1	0.0
37	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0
38	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
39	0.0	0.0	0.0	9.9	0.0	0.0	1.4	0.0
41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48	0.0	0.0	0.0	0.0	0.4	0.0	0.1	0.0
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
54	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55	12.9	0.4	0.5	0.0	24.1	0.0	0.0	0.0
56	0.0	0.0	0.0	1.7	80.5	0.0	0.0	0.0
58	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.0
59	0.0	0.4	0.0	0.0	67.1	0.0	0.0	0.0
60	0.0	1.0	0.0	0.0	1.4	0.0	0.0	0.0
61	0.6	0.0	0.0	3.5	0.0	0.0	0.0	0.0
67	0.0	2.4	0.0	0.0	59.4	0.7	0.4	0.0
68	1.4	0.4	0.0	0.0	1.1	1.8	0.0	0.0
471	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
472	0.0	0.0	0.0	0.0	1.4	0.4	0.0	0.3
Total	18.9	4.6	1.1	16.1	277.8	3.0	10.1	23.5
Freq	21%	21%	7%	14%	46%	11%	29%	11%
Mean	0.7	0.2	0.0	0.6	9.9	0.1	0.4	0.8
Var.	6	0	0	4	484	0	1	19

Appendix C4.–Population biomass estimates in surveyed stations for species caught in a bottom trawl survey of the Cook Inlet Kamishak Bay and Barren Islands Districts, 2000.

Station	Pacific Cod	Walleye Pollock	Pacific Tomcod	Saffron Cod	Rougheye Rockfish	Light Dusky Rockfish	Sablefish	Spiny Dogfish	Pacific Halibut	Longnose Skate	Big Skate	Bathyraja Skate	Arrowtooth Flounder	Flathead Sole	Rock Sole
								Pounds							
24	187,152	0	0	0	0	0	0	37,430	7,486	0	82,347	0	48,300	24,150	22,627
28	1,406,704	2,783	4,179	0	0	0	0	129,850	396,763	0	605,965	57,711	75,823	50,548	0
29	56,680	937	1,406	0	0	0	0	0	109,818	0	0	28,340	64,000	7,085	0
32	28,855	50,497	4,567	0	0	0	2,465	43,283	64,925	0	144,277	0	5,074	46,031	0
33	94,280	28,926	15,148	0	0	0	0	39,283	329,981	0	0	141,420	429,439	13,886	14,315
34	7,557	0	8,101	0	0	0	0	75,574	392,984	0	0	22,672	293,974	21,063	0
37	63,482	612	0	0	0	0	0	71,417	523,727	0	0	0	557,159	74,288	0
38	0	23,339	0	0	0	0	0	54,458	459,000	0	0	15,559	469,217	0	234,608
39	0	0	0	0	0	0	0	36,446	13,225	0	0	0	337,367	0	0
41	84,026	52,897	2,506	0	0	0	0	98,689	595,605	0	435,883	0	113,669	0	2,715
44	69,337	2,718	2,902	0	0	0	0	208,012	130,970	0	0	15,408	526,599	105,320	52,660
45	178,932	0	0	0	0	0	0	93,356	186,712	0	0	15,559	6,583,599	0	0
48	22,812	251	0	0	0	0	0	258,531	836,423	0	1,155,785	83,642	273,739	38,019	159,681
50	32,389	0	0	0	0	0	0	72,875	550,610	97,166	0	97,166	10,070,602	839,217	0
51	163,373	1,680,407	0	0	0	0	0	108,915	956,899	124,475	0	186,712	4,945,846	466,589	0
52	23,570	0	0	0	0	0	7,857	86,424	322,124	274,984	0	125,707	4,575,817	169,475	0
53	329,981	31,427	0	0	0	0	0	125,707	129,635	212,131	188,561	47,140	541,253	76,815	0
54	80,154	0	0	0	0	0	0	80,154	1,755,375	32,062	368,709	112,216	17,862,457	425,297	0
55	63,482	253,928	0	0	0	0	0	142,835	134,899	214,252	0	238,058	2,215,235	79,480	0
56	54,458	2,333,899	0	0	0	0	70,017	132,254	77,797	381,203	0	210,051	1,031,647	221,067	0
58	67,342	37,038	0	2,375	0	0	0	114,482	387,218	0	430,991	195,293	442,414	147,471	0
59	502,828	0	0	0	0	7,794	0	243,557	274,984	47,140	157,134	227,844	1,330,523	114,045	114,045
60	206,317	611,015	0	0	0	0	0	0	190,446	190,446	0	730,044	1,212,891	49,659	0
61	78,567	1,500,628	0	0	0	0	133,564	78,567	251,414	54,997	0	612,822	1,334,074	375,208	0
67	114,727	391,983	0	0	2,211	0	28,682	28,682	38,242	353,740	0	296,377	559,514	88,344	0
68	63,482	52,902	0	0	0	0	42,321	137,544	0	0	0	95,223	359,732	52,902	0
471	84,494	20,061	0	0	0	0	0	71,495	422,472	0	0	19,499	358,858	8,285	11,391
472	40,189	13,177	0	0	0	0	0	0	0	7,906	112,662	0	61,931	370	0
Total	4,105,173	7,089,424	38,809	2,375	2,211	7,794	284,905	2,569,820	9,539,735	1,990,502	3,682,313	3,574,464	56,680,752	3,494,615	612,042

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Appendix C4.–Page 2 of 5.

Station	Dover Sole	Rex Sole	Butter Sole	Yellowfin Sole	English Sole	Starry Flounder	Sand Sole	Alaska Plaice	Unid. Sculpin	Whitespot Greenling	Eelpout	Pacific Herring	Eulachon	Capelin	Pacific Sandfish
							Pounds								
24	0	0	6,655	0	0	0	0	0	39,931	0	0	0	3,461	0	0
28	2,786	5,572	202,194	0	0	0	0	0	176,919	0	0	0	279	0	0
29	0	1,171	361,338	0	0	14,170	3,514	0	625	0	0	0	1,093	0	0
32	0	6,596	46,031	138,094	0	0	0	0	0	6,089	0	0	21,311	0	0
33	0	10,256	357,866	28,629	0	16,568	0	0	29,260	0	0	0	947	0	0
34	0	5,833	823,127	0	0	173,820	0	0	0	0	0	0	9,073	0	0
37	0	4,504	1,114,319	0	0	371,440	0	0	297,152	0	0	0	6,142	0	0
38	0	0	938,433	0	0	232,933	0	0	0	0	0	0	19,396	0	0
39	0	0	1,124,557	0	0	112,456	0	0	0	0	0	0	0	0	0
41	0	0	151,559	6,891	0	113,669	0	0	0	0	0	0	1,462	0	0
44	0	8,707	631,919	105,320	0	1,685,117	0	0	684,579	0	0	0	0	0	0
45	0	0	669,518	0	0	1,339,037	0	0	0	0	0	0	0	0	0
48	7,963	15,422	83,642	30,415	0	7,627	0	15,208	7,855	0	0	0	0	0	0
50	0	18,501	1,678,434	0	1,007,060	305,273	0	0	0	0	0	0	0	0	0
51	93,318	279,954	1,119,814	0	186,636	0	0	0	0	0	0	0	0	0	0
52	0	0	1,016,848	0	0	0	0	23,570	0	0	0	0	0	0	0
53	0	0	202,970	0	0	0	0	405,940	59,662	0	0	0	0	0	0
54	0	79,697	425,297	0	0	0	0	0	0	0	0	0	9,376	0	0
55	57,934	74,692	0	0	0	0	0	0	38,304	0	0	0	2,873	0	0
56	98,252	196,504	0	0	0	0	0	0	0	0	0	0	0	0	0
58	0	0	147,471	0	0	0	0	0	442,414	0	0	14,062	20,320	2,438	297
59	3,771	58,665	247,097	0	0	0	0	0	37,713	0	0	0	20,952	0	0
60	0	43,929	0	0	0	0	0	0	3,820	0	0	0	0	5,348	0
61	416,898	41,359	0	0	0	0	0	0	0	0	0	0	84,097	0	0
67	0	0	0	0	0	0	0	0	0	0	34,484	0	4,220	0	0
68	0	0	0	0	0	0	0	0	0	0	13,295	0	2,449	0	0
471	0	0	112,735	450,940	0	18,789	0	37,578	46,973	0	0	0	2,485	0	0
472	0	0	0	0	0	19,765	0	0	44	0	646	0	29	0	0
Total	680,922	851,364	11,461,824	760,290	1,193,696	4,410,664	3,514	482,296	1,865,252	6,089	48,426	14,062	209,964	7,786	297

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Appendix C4.–Page 3 of 5.

Station	Prickleback	Ronquil/ Searcher	Sturgeon Poacher	Snailfish	Skate Egg Case	Red King Crab	Tanner Crab	Pygmy Caner Crab	Decorator Crab	Hermit Crab	Lyre Crab	Weathervane Scallop	Hind's Scallop	Octopus	Green Sea Urchin
								Pounds							
24	0	266	0	825	0	0	0	0	11,713	16,771	0	2,476	0	0	21,296
28	0	0	0	279	0	0	4,294	279	0	227,468	16,716	86,566	13,930	0	0
29	78	0	5,857	0	0	0	703	0	2,812	7,419	1,406	0	0	0	0
32	0	0	6,596	0	0	0	32,462	0	0	60,888	230,157	43,283	30,444	0	0
33	789	0	947	0	0	0	1,299	0	0	631	2,209	69,283	0	0	1,578
34	0	0	2,592	0	0	0	3,779	0	0	3,889	0	0	0	0	0
37	0	0	0	0	0	47,612	8,110	0	0	0	0	230,122	0	0	0
38	11,637	0	0	0	0	0	0	0	0	0	0	2,487	0	0	0
39	0	0	3,306	0	0	0	1,458	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	1,692	0	0	0	4,385	0	0	0	0
44	0	0	0	0	0	701,076	15,408	0	0	0	0	177,195	0	0	0
45	0	0	0	0	0	256,729	0	0	0	0	0	6,003	0	0	0
48	38	0	0	0	0	0	0	0	0	838	587	0	0	0	6,622
50	0	0	0	0	0	0	8,097	0	0	0	0	275,305	0	0	0
51	0	0	0	0	0	3,773,136	9,776	0	0	0	0	178,932	0	0	0
52	0	0	0	0	0	0	7,857	0	0	0	0	23,570	0	0	0
53	1,492	22,373	0	0	0	0	11,692	0	0	405,940	11,187	0	0	0	270,626
54	0	0	0	0	0	0	195,462	0	0	0	0	72,139	0	0	0
55	0	0	0	0	0	0	6,123	0	0	20,109	0	2,777	37,825	0	130,308
56	0	0	0	0	0	0	78	0	0	14,350	0	0	542	429	6,769
58	813	0	1,626	0	0	0	6,013	0	0	1,400,979	89,407	0	0	0	18,694
59	0	12,571	0	0	0	0	32,120	0	6,286	152,060	0	102,137	24,304	0	76,030
60	0	11,460	0	0	0	0	39,676	0	0	138,616	4,966	0	5,730	0	415,848
61	0	0	0	0	0	0	12,991	0	0	166,759	0	0	0	0	291,829
67	0	0	0	0	0	0	4,321	0	0	258,307	0	105	0	76,484	206,137
68	0	0	0	0	1,166	0	22,159	0	0	128,364	2,099	0	0	0	9,913
471	0	0	4,556	0	0	0	15,220	0	0	3,107	0	1,433	0	0	3,107
472	0	0	51	232	0	922	748	0	0	2,635	7,247	0	0	0	232
Total	14,847	46,670	25,531	1,336	1,166	4,779,475	441,537	279	20,810	3,009,130	370,366	1,273,814	112,775	76,913	1,458,989

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Appendix C4.–Page 4 of 5.

Station	Pink Shrimp	Sidestripe Shrimp	Coonstripe Shrimp	Crangon Shrimp	Other Shrimp	Sea Star	Leather Star	Basket Star	Sand Dollar	Cucumaria	Greenland Cockle	Horse Mussel	Fusitriton Snail	Neptunea Snail	Kennicott's Berringius
								Pounds							
24	0	4,259	2,130	3,461	5,590	22,627	0	0	0	0	0	362,250	5,857	6,655	0
28	0	836	0	557	0	16,716	0	0	0	0	0	4,179	44,576	100,295	0
29	0	234	0	1,718	351	7,085	0	0	7,085	3,905	0	35,425	1,093	1,406	0
32	0	0	0	0	0	138,094	0	0	0	0	0	0	55,814	17,759	0
33	0	0	0	0	0	1,262	0	0	0	0	0	0	6,154	4,260	0
34	0	0	0	162	1,620	0	0	0	4,861	0	0	2,916	3,565	0	0
37	0	0	0	0	0	4,094	0	0	0	0	0	0	6,142	2,047	0
38	0	0	0	0	0	12,930	0	0	0	0	0	0	0	0	19,396
39	0	0	0	3,306	826	0	0	0	10,330	0	0	2,479	0	0	0
41	0	0	0	0	0	113,669	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	22,812	0	0	0	0	0	0	7,627	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
51	1,029	0	0	0	0	0	0	0	0	0	0	0	6,172	0	0
52	0	0	0	0	0	0	0	0	3,736	0	0	0	934	0	0
53	0	597	149	3,729	0	31,323	0	0	0	1,962,041	0	0	32,068	34,306	0
54	0	0	0	0	0	0	0	0	0	0	0	0	30,472	0	0
55	2,394	0	0	0	0	0	0	0	0	0	0	0	15,321	11,012	0
56	1,543	0	0	0	0	49,126	0	0	0	0	0	0	6,498	6,769	0
58	0	0	0	0	0	126,795	0	0	0	0	12,192	19,507	159,307	108,101	4,064
59	0	0	0	0	0	14,666	0	0	0	0	0	0	18,857	10,476	0
60	12,988	0	0	191	764	0	0	11,842	0	0	0	0	30,559	8,786	33,233
61	0	0	0	0	0	16,084	2,757	0	0	0	0	0	4,595	0	0
67	19,476	0	0	1,298	0	32,461	974	3,246	0	0	0	0	2,921	29,215	12,984
68	0	0	0	233	0	21,161	14,112	5,132	0	0	1,749	0	0	2,099	3,849
471	0	0	0	0	414	16,569	0	0	0	0	0	0	5,799	3,728	0
472	58	116	15	109	7	5,271	0	0	0	784	29	269	2,635	3,953	0
					0										
Total	37,488	6,042	2,293	14,764	9,574	652,746	17,843	20,219	26,012	1,966,730	13,970	427,026	446,968	350,867	73,526

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Appendix C4.–Page 5 of 5.

Station	Ribbed Sinistral	Silky Buccinum	Other Snail	Jellyfish	Anemone	Sea Mouse	Sea Pen	Other Invertebrate
								Pounds
24	0	0	0	0	0	0	0	0
28	5,572	0	2,507	0	11,144	0	13,930	0
29	781	0	0	0	35,425	0	1,874	937
32	9,641	0	0	0	0	0	0	0
33	0	316	0	0	100,202	0	947	0
34	0	0	0	0	12,314	0	12,314	0
37	0	0	0	0	0	0	3,685	0
38	0	0	0	3,879	0	0	0	0
39	0	0	0	39,254	0	0	5,372	0
41	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0
48	0	0	0	0	1,425	0	335	0
50	0	0	0	0	0	0	0	0
51	0	0	0	0	9,258	0	0	0
52	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0
55	51,231	1,436	1,915	0	95,759	0	0	0
56	0	0	0	6,769	319,319	0	0	0
58	0	0	0	0	0	0	0	78,841
59	0	1,676	0	0	266,105	0	0	0
60	0	3,820	0	0	5,730	0	0	0
61	2,298	0	0	13,786	0	0	0	0
67	0	9,414	0	0	235,585	2,921	1,623	0
68	5,365	1,400	0	0	4,432	7,231	0	0
471	0	0	0	0	0	0	0	0
472	0	0	0	0	370	109	0	80
Total	74,887	18,061	4,422	63,688	1,097,068	10,261	40,080	79,858

APPENDIX D

Appendix D1–Bottom temperature recordings during Cook Inlet trawl surveys, 1992–2000.

Southern District				Kamishak Bay and Barren Islands Districts			
Date	**Station**	**Depth (fm)**	**Temp (°C)**	**Date**	**Station**	**Depth (fm)**	**Temp (°C)**
7/15/92	4	32	7.5	7/10/92	61	82	6.7
7/16/92	7	37	7.5	7/11/92	67	90	6.3
7/17/92	10	47	7.8	7/12/92	53	24	9.3
7/18/92	11	55	7.9				
7/6/93	5	16	6.9	6/28/93	53	22	8.2
7/7/93	7	34	6.7	6/29/93	31	12	10.2
7/8/93	8	67	6.6	6/30/93	67	92	5.5
7/12/93	7	39	7.1	7/1/93	54	23	8.8
7/13/93	18	36	8.4	7/2/93	44	26	8.0
7/14/93	15	41	7.6				
6/27/94	3	30	6.3	6/14/94	67	89	5.9
6/28/94	5	22	6.4	6/15/94	38	29	6.8
6/29/94	8	81	6.0	6/16/94	47	18	7.4
6/30/94	11	54	6.5	6/17/94	51	55	7.1
7/5/94	13	57	6.5				
7/6/94	18	35	7.4				
7/5/95	5	16	6.3	6/19/95	34	27	7.9
7/6/95	2	28	5.7	6/20/95	44	30	7.4
7/7/95	10	49	6.4	6/21/95	67	94	7.1
7/8/95	71	66	6.3	6/22/95	47	19	5.9
7/9/95	8	92	6.0	6/23/95	41	16	7.2
7/10/95	15	39	7.4	6/24/95	23	16	7.1
8/19/96	10	46	9.2	6/20/96	68	91	5.5
8/20/96	18	35	9.7	6/21/96	58	23	7.6
				6/22/96	41	17	8.3
				6/23/96	37	27	7.6
6/27/97	10	49	6.6	6/8/97	61	84	ND
				6/9/97	68	89	ND
				6/12/97	37	27	ND
8/14/98	9	65.6	9.3	6/16/98	61	81.0	5.7
8/17/98	5	16.5	9.6	6/17/98	60	75.5	6.8
				6/28/98	33	21.0	9.0
				6/29/98	44	29.0	8.1
				6/30/98	41	16.5	9.5
7/19/99	4	35.5	7.1	8/17/99	54	26.5	9
7/22/99	13	59.5	7.5	8/22/99	37	27.0	11.7
7/23/99	14	34.5	8.2				
7/10/00	14	34.8	8.1	6/21/00	61	81.7	6.2
7/11/00	15	42.1	8.1	6/21/00	59	42.9	7.3
7/12/00	8	91.0	6.9	6/23/00	48	22.0	8.2
7/13/00	12	40.0	7.6	6/25/00	38	33.5	7.5