PROJECT OPERATIONAL PLAN
1998 ST. MATTHEW ISLAND
BLUE KING CRAB PROJECT

by

S. Forrest Blau
and
Leslie J. Watson

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Alaska Department of Fish and Game
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FOREWORD

The 1998 St. Matthew Island blue king crab project is funded under the State of Alaska Bering Sea Crab Test Fishery (BSTF) program. Initiated in 1990, the program focuses on red king crab research in Bristol Bay, and has since been expanded to include research on other Bering Sea/Aleutian Islands (BSAI) crab populations. In 1995, the Alaska Department of Fish and Game (ADF&G) implemented a triennial king crab survey plan that included surveys of St. Matthew blue king crabs (1995), Norton Sound red king crabs (1996), and Aleutian Islands golden king crabs (1997). The 1995 St. Matthew operational plan is documented in Watson et al. (1995); operational plans for other BSTF projects are listed in Tracy and Pengilly (1997).

The 1998 St. Matthew blue king crab project has two components: 1) a 28 day vessel charter to conduct a population assessment and tagging survey in the St. Matthew Section of the Bering Sea (Area Q2), and 2) recovery of tagged blue king crabs from the September 1998 St. Matthew blue king crab fishery. The total budget for the 1998 Bering Sea Crab Test Fishery program is $454,700, of which approximately $220,000 is allocated for the St. Matthew blue king crab project (Appendix A).

INTRODUCTION

The St. Matthew section of the Bering Sea king crab management area has supported annual commercial fisheries for blue king crabs *Paralithodes platypus* since 1977, with a peak harvest of 9.5 million pounds landed in 1983 (Morrison et al. 1998). In 1978, National Marine Fisheries Service (NMFS) began conducting annual trawl surveys to assess population abundance and distribution of blue king crabs in the St. Matthew Section (Otto et al. 1979). Nearshore rocky portions of the St. Matthew blue king crab habitat are untrawlable, resulting in imprecise estimates of population abundance (Otto et al. 1984, Stevens and MacIntosh 1989). In an effort to refine and supplement annual trawl survey catch data, ADF&G conducted the first triennial pot survey in the St. Matthew section in 1995 (Blau 1996). Major objectives of that survey included determination of the distribution and relative abundance of blue king crabs using pot gear, and distribution of tagged crabs within the study area for recovery in the subsequent September 1995 commercial fishery (Watson et al. 1995). Additionally, a standardized station grid was established for future triennial surveys to provide a framework for indexing blue king crab distribution and relative abundance from pot catches. Results from the 1995 survey are in Blau (1996).

The 1995 tag recovery study objectives were: 1) to compare returns of internally-marked (Passive Integrated Transponder or PIT-tagged) versus externally-marked (Floy-tagged) legal male blue king crabs from shore-based and at-sea deliveries for estimation of a minimum exploitation rate from the 1995 St. Matthew commercial fishery, and 2) to determine distribution, growth, and reproductive condition of mature female blue king crabs in successive years and to assess bycatch of females in the 1995 St. Matthew commercial fishery (Watson et al. 1995). Over the past three years, 21.4% of the 2,295 legal males and 4.4% of the 437 females Floy-tagged during the 1995 ADF&G survey have been recovered (Table 1). Tag recapture data have not been fully analyzed and reported in terms of estimating overall exploitation rates of legal male crabs. However, such data have been used to illustrate that the commercial fishery often disproportionately harvests certain portions of the

St. Matthew blue king crab stock that are not assessed by the NMFS trawl survey (Pengilly et al. 1997). Recoveries of tagged female crabs were low (4.1% of the females tagged were recaptured) in the 1995 fishery (and lower in 1996 and 1997), reflecting that tagged females are not recovered during the commercial fishery. Nonetheless, size data from recovered, tagged females is useful for determining growth-per-molt.

Detection and recovery of PIT-tagged legal crabs during the 1995 St. Matthew blue king crab fishery was insignificant, likely due to detection equipment shortfalls (Table 1). Large–scale PIT tagging and recovery efforts were discontinued after the 1995 St. Matthew program because of the high cost of producing reliable PIT tag detection systems.

The 1998 pot survey will encompass most of the 1995 study area in order to provide systematic catch data for comparison with 95 identically placed stations from the 1995 survey. The 1998 survey will be expanded to cover areas north and west of St. Matthew and Hall islands. Legal and sublegal male blue king crabs will be tagged and released throughout the survey area with an accompanying intensive tag recovery program in the September 1998 commercial fishery. A minimum harvest rate of legal male blue king crabs within the survey area will be estimated based on tagged legal crabs recaptured during the 1998 fishery. The 1998 fishery will also be monitored for recaptures of male and female blue king crabs tagged in 1995; these data, in conjunction with information on recaptured crabs tagged during the 1998 survey, will be used to determine bycatch rates of non-legal crabs.

A series of nearshore pots will be deployed during the last five days of the charter to describe the composition of the blue king crab population inhabiting waters less than or equal to 20 fathoms (fm). Of interest is the mature female component, specifically, multiparous females which are known to be biennial spawners (c.f. Somerton and MacIntosh 1985; Jensen and Armstrong 1989). Fecund females have not been observed in any great degree in annual NMFS trawl surveys, or by ADF&G observers during the commercial fishery. Data from the 1995 ADF&G survey confirmed this apparent gap in that most (77%) of the females observed were barren with empty egg cases (Blau 1996). In contrast, only 2% of the females were ovigerous and most of these females were observed in shallow stations at depths between 19 and 25 fm. Based on the evidence from the 1995 survey, it is likely that higher percentages of fecund females are found in shallower waters.

OBJECTIVES

Prioritized objectives of the 1998 St. Matthew Island blue king crab project are listed below.

1. Determine a relative stock index of blue king crabs in a portion of the St. Matthew Area Q2 as indicated by catch per unit effort from the 1998 systematic pot survey.

2. Estimate a minimum harvest rate for legal male blue king crabs using tag recovery rates calculated from recaptures of tagged crabs during the 1998 St. Matthew Area Q2 commercial fishery.

3. Determine straight-line movements of blue king crabs from recaptures of crabs tagged during the 1995 and 1998 surveys.

4. Document growth of male and female blue king crabs from recovered tagged crabs.

5. Describe the nearshore (≤ 20 fm) component of the St. Matthew blue king crab population relative to sex, size, and distribution.

METHODS

Offshore Survey

The offshore survey will be conducted aboard the chartered 39 m (130 ft) FV *Notorious* from August 1-28 1998, with a captain and four crew. Two ADF&G biologists and two technicians will be aboard the chartered vessel to conduct biological sampling and tagging.

Survey Design

The 1998 St. Matthew survey area and station array is based on the survey grid established for the 1995 ADF&G survey, with expansion to the west and north of St. Matthew Island to cover areas not surveyed by NMFS due to untrawlable substrate (Figure 1). The 1995 survey area was determined from geographic distribution of historic blue king crab fishery effort and the distribution and density of blue king crabs in historic NMFS trawl surveys (Watson et al. 1995). The primary intention of sampling areas north of St. Matthew Is. is to establish a baseline index of blue king crab catch per unit effort (CPUE) in that area. However, recovery of male crabs tagged in the northern area will not only provide insight into seasonal movements of male blue king crabs, but may also reveal the extent that legal males from the northern area contribute to the commercial fishery. Prior to the 1997 fishery, few pots from the northern area had been sampled by observers (Moore et al. in press), and nearly 90% of the annual commercial harvest has come from two statistical areas south of the island (726001 and 736001) (Table 2). Within the last two seasons, however, landings have been reported from a much wider area due to lower catch rates in the areas traditionally fished (Morrison et al. 1998).

A total of 137 stations will be fished; each station is spaced 5 nmi north-to-south and east-to-west, and is comprised of four king crab pots set 0.125 nmi apart and arrayed north-to-south. Each king crab pot measures 7' x 7' x 34" and is fitted as described in Appendix B. The target soak time for each pot is 30 to 36 hours. Station layout and pot deployment locations are detailed in Appendix B.

Catch Sampling

The contents of each pot fished will be enumerated to provide catch per unit effort data for blue king crabs and snow crabs *Chionoecetes opilio*, by sex and size as detailed in Appendix B.

Tagging Strategy

A maximum of 60 legal and 60 sublegal (≥ 90 mm CL) male blue king crabs will be tagged and released at each station. The tagging goal established for this survey is based on the tagging strategy used for the 1995 survey, and reflects a balance between tagging a maximum number of animals at

each station across the survey grid while maintaining consistent soak times for each pot fished. Females will not be tagged during the 1998 survey.

Nearshore Survey

At the conclusion of the offshore survey, a pilot study will be conducted using the 7.9 m (26 ft) ADF&G RV *Instar* and the FV *Notorious* to assess the nearshore component of the blue king crab population adjacent to St. Matthew Island. Locations of the 20 proposed nearshore strings are shown in Figure 2. Catch sampling methods and data forms are detailed Appendix B.

Tag Recovery

An intensive tag recovery program involving samplers placed at all crab processing locations during the 1998 St. Matthew blue king crab fishery will be conducted. Prior to the fishery and during vessel tank inspections, tag samplers will contact vessel crews and processing facilities to explain the tagged crab recovery effort and attendant tag reward program. A news release was issued to the Bering Sea crab industry outlining the tag recovery effort (Appendix C.1). ADF&G tag recovery personnel will be placed at St. Paul, Dutch Harbor, Akutan, King Cove, and all floating processors, and at-sea shellfish observers from the ADF&G mandatory observer program will also monitor catches for tagged crabs. Tag samplers and observers will be briefed prior to the onset of the fishery and equipped with instructions, forms and necessary equipment for tag recovery documentation (Appendix C.2). All recovered, tagged crabs will be measured and assessed for shell age, with complete capture location and depth information to be obtained from vessel captains. Tagged sublegal crabs will be sampled, their tags left intact on the crab, and released as soon as possible, if sampling occurs at sea. Recaptured female crabs tagged in 1995 will be collected and frozen for sampling by ADF&G research staff after the fishery.

SCHEDULES

Date	Activity	Personnel
1/98-7/98	Project planning, solicit vessel charter bids	Blau, Pengilly, Tracy
1/98-7/98	Prepare POP, PRs for major purchases, shipboard instructions, survey gear.	Blau, Moore, Watson
8/98	Conduct 28 day tagging survey in Area Q2.	Blau, Pappas, Schwenzfeier, Phillips
9/98	Conduct intensive tag recovery effort during the 1998 commercial fishery.	Moore et al.
9/98	Enter survey data.	Heim-Blackett
9/98	Edit and enter tag recovery data.	Watson
9/98-12/98	Compile, analyze, and write survey report	Blau, Watson

REPORTS

Date	Report	Author(s)
7/98	Project operational plan for the 1998 St. Matthew Island blue king crab project.	Blau, Watson
12/98	The 1998 St. Matthew Island blue king crab survey.	Blau, Watson
12/98	Recoveries of tagged blue king crabs from the 1998 St. Matthew Area Q2 commercial fishery.	To be determined

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Watson, L.J., D. Pengilly, and S.C. Byersdorfer. 1995. Project operational plan for the 1995 St. Matthew Is. blue king crab tagging survey. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Regional Information Report No. 4K95-48, Kodiak.

Table 1. Recovery rates by commercial fishery year of legal male and female blue king crabs tagged during the 1995 ADF&G St. Matthew survey.

	Floy Tagged Crabs				PIT-Tagged Crabs	
	Legal Males (n=2,295)		Female (n=437)		Legal Males (n=1,203)	
Fishing Year	Number	Rate (%)[a]	Number	Rate (%)[a]	Number	Rate (%)[a]
1995	216	9.41	18	4.12	14	1.16
1996	175	7.63	1	0.23	-[b]	-
1997	99	4.31	0	0	-[b]	-
Total	490	21.35	19	4.35	14	1.16

[a] Yearly recovery rate is based on the original number of crabs tagged during the 1995 survey.
[b] No recovery effort for PIT tags was made after the 1995 fishery.

Table 2. Percentage of pots lifted in statistical areas 726001 and 736001 relative to all other statistical areas in St. Matthew blue king crab fisheries, 1990-1997. (Data source: Morrison et al. 1998)

Fishery	Statistical Area		
Year	726001	736001	Total
1990	32.2	62.2	94.4
1991	40.1	51.6	91.8
1992	57.1	26.4	83.5
1993	25.5	62.7	88.2
1994	54.8	36.4	91.2
1995	63.7	22.9	86.6
1996	37.4	48.7	86.1
1997	38.2	49.8	88.0

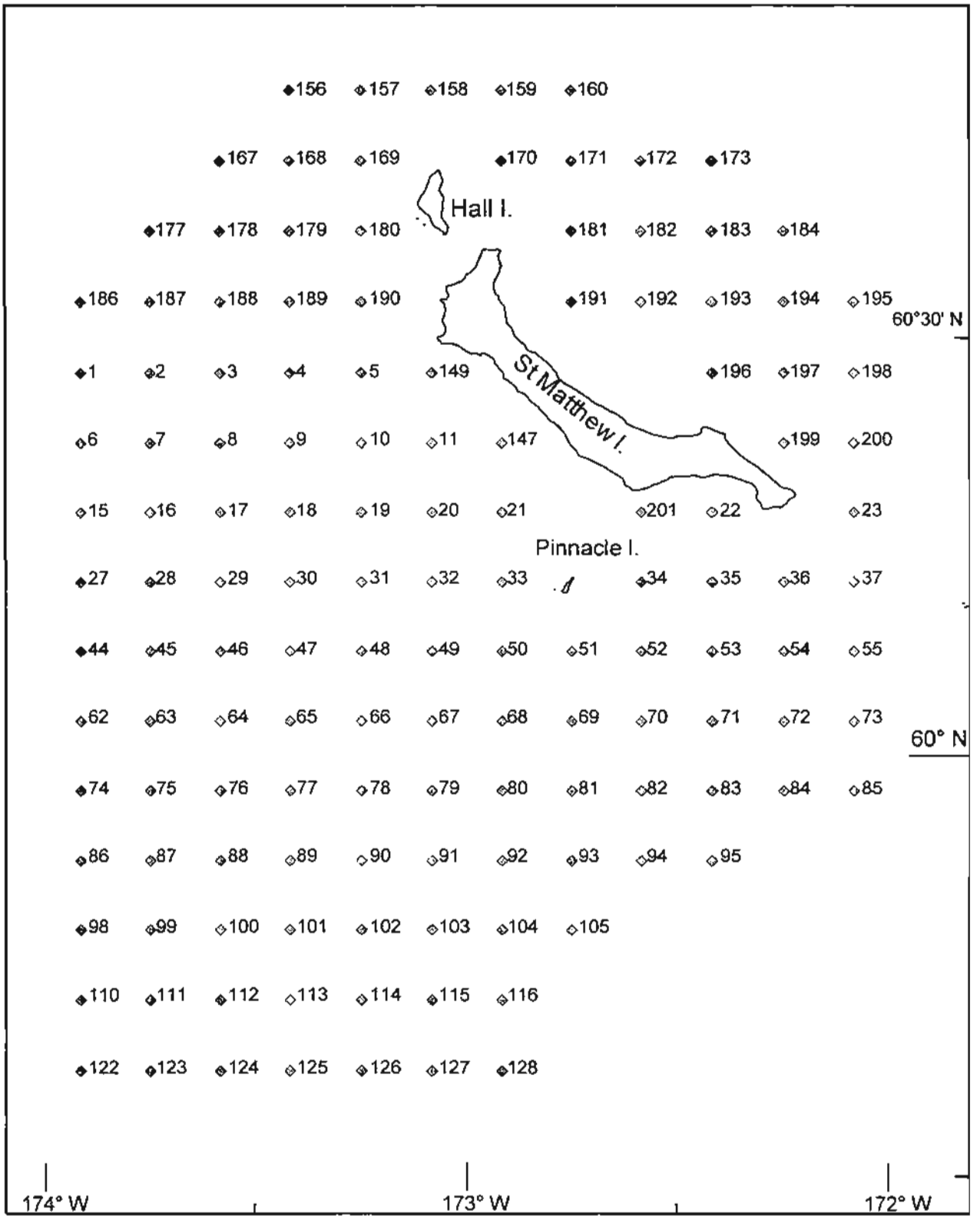

Figure 1. Station layout of the 137 stations to be fished on the 1998 ADF&G St. Matthew Island blue king crab survey.

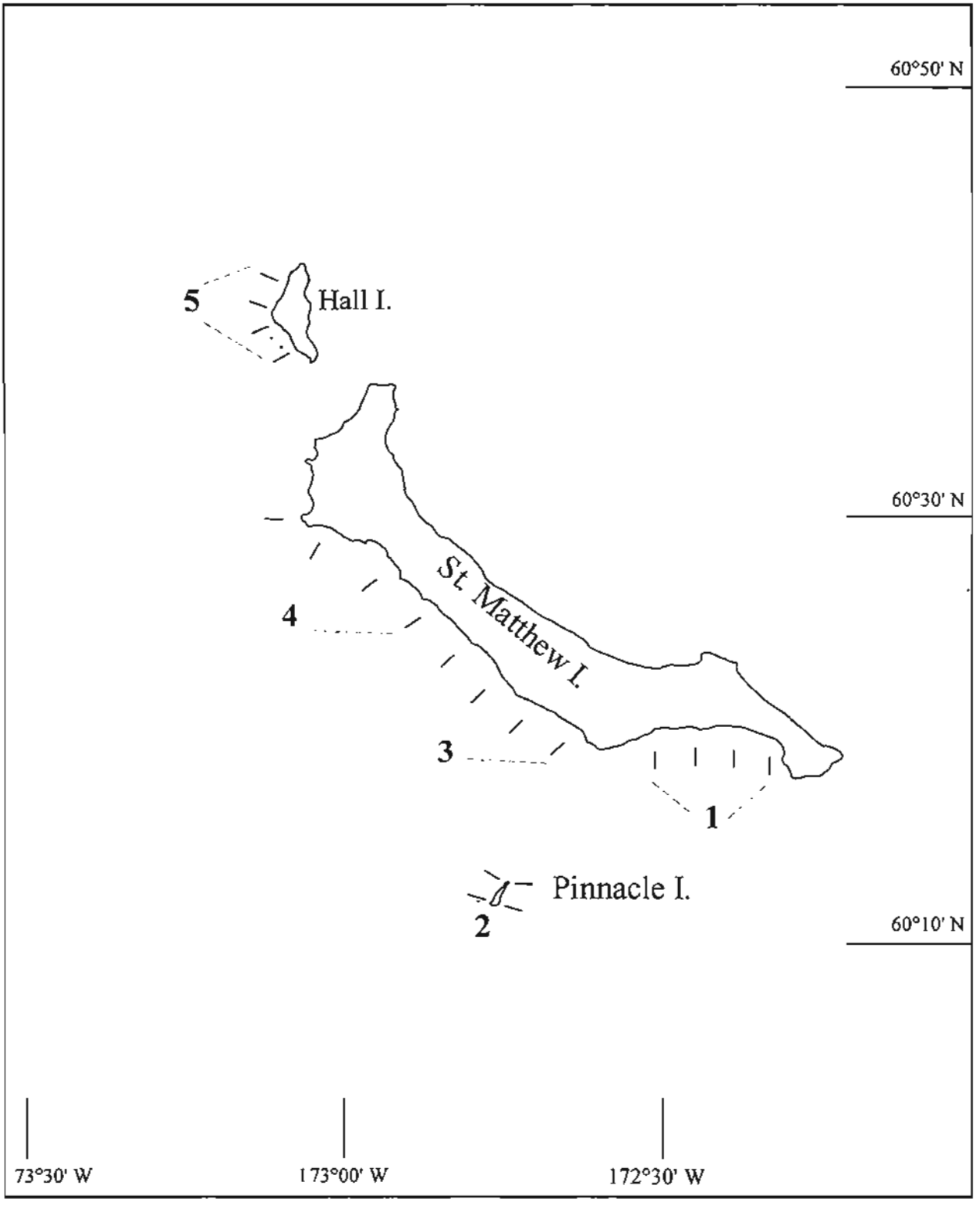

Figure 2. Location of the 20 proposed nearshore strings of pots to be fished on the 1998 ADF&G St. Matthew Island blue king crab survey.

APPENDIX

Appendix A. FY99 Yellowbook for the Bering Sea Crab Test Fishery Project

PROJECT TITLE: Bering Sea Crab Test Fishery
FISHERY UNIT: Bering Sea/Aleutian Islands crab
COMPONENT: 4000110100-Fisheries Mgmt
LOCATION: Kodiak

PROJECT NUMBER: TF-785
REGION: 4
LEDGER CODE: 741-47785
LEGISLATIVE DIST: 27

PROGRAM ELEMENT: Test Fishery-Funded Survey
FISHERIES AFFECTED: St. Matthew Blue King Crab
USER GROUPS AFFECTED: St. Matthew Commercial Blue King Crab Fishermen, Vessel Owners, and Processing Industry
SPECIES AFFECTED: Blue King Crab.

PROJECT DESCRIPTION

PROJECT OBJECTIVES

BUDGET MANAGER: 11-1857 Donn Tracy, Fishery Biologist III

BUDGET DETAIL	FY96	FY97	FY98	FY99
100 PERSONNEL SERVICES	200.5	114.9	118.5	165.1
200 TRAVEL	15.3	13.5	13.5	13.9
300 CONTRACTUAL	222.8	304.9	304.9	255.2
400 COMMODITIES	9.0	7.5	7.5	18.1
500 EQUIPMENT	7.0	10.0	10.0	2.5
700 GRANTS				
PROJECT TOTALS	446.8	450.8	454.4	454.8
FEDERAL RECEIPTS	0.0	0.0	0.0	0.0
GENERAL FUND	0.0	0.0	0.0	0.0
INTERAGENCY RECEIPTS	0.0	0.0	0.0	0.0
PROGRAM RECEIPTS	446.8	450.8	454.4	454.8
CIP FUNDS	0.0	0.0	0.0	0.0
STAFF MONTHS	30.0	14.5	12.0	22.5

-Continued-

Appendix A. (page 2 of 2).

PROJECT TITLE: Bering Sea Crab Test Fishery PROJECT NUMBER: TF-785
FISHERY UNIT: Bering Sea/Aleutian Islands Crab REGION: 4
COMPONENT: 400110100-Fisheries Mgmt.

PERSONNEL SERVICES DATA

					Premium Hours						
PCN	RS	LOC	R&S	NAME/TITLE	MM	OT	SEA	HAZ	SWG	GRV	COST
11-1857	AP	CAA	18B	Tracy, Donn	0	0	10	0	0	0	$3,316
11-1390	AP	BKB	18F	Pappas, George	0	0	28	0	0	0	$8,246
11-1595	PP	CAA	16M	Blau, Forrest	0	0	28	0	0	0	$9,731
11-1117	AS	CAA	14F	Byersdorfer, S	9.0	37.5	28	0	0	0	$53,324
11-1226	AP	BDB	16J	Gish, Robert	0	0	18	0	0	0	$5,669
11-1319	AS	CAA	11D	Blackett, Nang	2.0	0	0	0	0	0	$6,802
11-1409	AS	BKB	14B	Connolly, Dan	5.0	37.5	18	0	0	0	$29,507
11-1906	AS	BKB	9C	Ruccio, Michael	0	0	18	0	0	0	$4,323
11-1967	PS	CAA	14F	Watson, Leslie	3.0	20	28	0	0	0	$37,688
11-1603	PS	BKB	11D	Schwenzfeier, M	0	0	28	0	0	0	$6,500
PERSONNEL TOTALS:					13.0	90	252	0	0	0	$165,106

PROJECT LINE ITEM DETAIL

LINE	DESCRIPTION	AMOUNT	COMMENT
72240	Field Travel	7.4	Travel
72500	Per Diem/Other costs	6.5	Per diem expenses
73000	Charters/Other	255.2	Vessel charters, tags, printing phone, freight
74520	Misc. Sci. Supply	18.1	Misc. scientific equipment
75690	Misc. equipment	2.5	Computer upgrades
TOTAL LINES 200-500:		$289.7	
GRAND TOTAL ALL LINES		$454.7	

Shipboard instructions for the 1998 Triennial St. Matthew Island Blue King Crab Survey

By

S. Forrest Blau

Alaska Department of Fish and Game
Division of Commercial Fisheries
211 Mission Road
Kodiak, AK 99615

July 26, 1998

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SURVEY DESIGN

Survey Itinerary

The survey will begin and end in Dutch Harbor, with daily activities as noted in Table 1.

Survey Area and Coverage Goals

Offshore Stations

The 1998 survey goal is to fish 137 stations using king crab pots during the first three-quarters of charter (Figure 1). There will be 18 days of retrieving offshore stations. Four to nine stations are grouped into fishing units called blocks for setting and retrieving purposes (Table 1 and Figure 2). Stations are spaced 5 nautical miles (nmi) apart both north-to-south (5' latitude) and 5 nmi apart east-to-west (10' longitude) (Addendum A). This same grid pattern was fished on the 1995 survey (Blau 1996) although a different mix of stations are planned to be fished in 1998, including the addition of new stations around the west and northern sides of Hall and St. Matthew islands. Each offshore station will have four pots placed 1/8 nmi apart in a north to south manner (Addendum B). Each pot will be baited with one gallon of chopped herring.

Nearshore Survey

After all offshore stations have been fished, a goal of fishing five days nearshore of St. Matthew and Hall islands is scheduled to occur near (Table 1 and Figure 3). Up to four strings of pots will be set and retrieved daily. Strings of pots will be approximately 2 nmi apart. The 26' aluminum ADF&G skiff called the *Instar* will be used to fish conical pots. The *Notorious* will be nearby as the mothership; supplying bait, conical pots, fuel, and communications while the *Instar* fishes nearshore. Conical pots will be fished at one-fathom intervals from 4–15 fm. Each string will have 12 pots. If the *Notorious* fishes nearshore, it will use 10 king crab pots per string in depths from 11 –20 fm. Regardless of pot type, each pot will be baited with one gallon of herring.

Gear Description

Two completely different crab pots will be used during the 1998 survey. King crab pots will be used for all offshore and some nearshore fishing. These pots have been made for ADF&G's Bering Sea Test Fish project. They are made from welded steel and have rectangular frames (7'x7'x34" OD) and weigh approximately 700 pounds each. Each pot is webbed with tarred and untarred (tunnels only) #92 nylon twine. Stretch mesh is 2 and 3/4" on all webbing. Two opposing tunnel eyes were made of 5/8" round-stock steel and measured 8"x36" ID. A 2"x18" escapement mechanism of #30 cotton was sewn into the side wall of the back panel, near the bottom of each pot.

Conical pots would only be used by the *Instar* when fishing nearshore. Conical pot frames were made from round-stock steel, and weighed approximately 40 pounds each. Pots had a diameter of

5" at their base, 3' at the top, and stood 4' tall. The top had a hole 2' in diameter in it to which a plastic lip 8" deep was lashed to form a funnel. These pots were originally webbed with 3 and 1/2" stretch mesh red nylon. Then 1 and ½" stretch mesh tarred nylon was sewn over the top of the larger mesh. Each pot opened and closed at its bottom by means of a drawstring. These pots did not have an escapement mechanism, but were stackable when the bottom was open.

POT SAMPLING AND TAGGING PROCEDURES

Sequential Pot Numbers

The captain of the *Notorious* and the skipper of the *Instar* will complete their respective Pilot House Logs for each pot fished (Addendum C.1 and C.2). Latitude and longitude for each pot will be recorded using global position system (GPS) receiver on board each vessel. Each pot fished will be assigned a unique sequential pot number. Sequential pot numbers will begin with the number one and continue until the last pot is set, starting with the offshore stations and continuing through the nearshore stations. Lost pots and unbaited pots will keep their assigned sequential pot numbers as set. Sequential pot numbers are extremely important since they are the link between the location, depth fished, soak-time and the Crab Data Forms used on deck.

When each pot is retrieved, the captain of the *Notorious* will inform us on deck, via the loud hailer, what the sequential pot number is for that pot. The skipper of the *Instar* will do likewise and tell the recorder on deck what the sequential pot numbers are for each pot sampled. Two Rite-in-the Rain notebooks will be maintained by ADF&G for on-deck reference. Each book will be filled in with the previous day's block of stations and also will contain the date of pulling gear, station and buoy numbers and their sequential pot numbers. These notebooks will serve as a real time double check of the captains data recordings. More importantly they will serve as the reference for the sequential pot numbers to use on appropriate sequential pot number must be recorded on the multicolored "ADF&G St. Matthew Island Triennial Blue King Crab Survey Data Forms" (hereafter referred to as the Crab Data Form) (Addendum C.3) for each sex of blue king or snow crabs found in any pot. If a pot is not retrieved and lost, the captain still must notify the ADF&G crew, so they can record "LOST POT" across the row adjacent to the sequential pot number for each of the crab species/sex forms. In addition if a pot comes up unbaited the sequential pot number is still recorded on the Crab Data Form and "NO BAIT" is written on the form across the row of that pot, again on the four crab forms.

Station Numbers

Station numbers are pre-assigned for all offshore stations fished and are not fished in sequential order (Figure 2 and Addendum B). Station numbers for each nearshore string of gear fished will be start at 400 and ascend sequentially with each string fished.

Sorting the Catch

Blue king *Paralithodes platypus* and snow crabs *Chionoecetes opilio* from each pot will be fully enumerated to provide catch per pot by sex and size data. A Pilot House Log will be completed for each survey pot fished (Addendum C.1 or C.2). All crabs should be handled carefully during sorting, measuring and tagging and while being passed out the exit ramp.

The vessel crew will remove all the contents of each pot onto the ship's sorting table. Then blue king crabs will be separated from snow crabs and the remaining of the marine life will be thrown overboard by the vessel crew (Figure 4). Male blue king crabs will be separated into legal or sublegal groups with the aid of 5.5" measuring sticks and placed into four compartments on the ADF&G sorting table. A legal male blue king is a crab ≥5.5" (139.7 mm) carapace width measured perpendicular to the medial axis and outside the spines. Care must be taken to properly measure and separate legal and sublegal blue king crabs, otherwise data will be recorded incorrectly and compounded when crabs are tagged and logged into the wrong group. Female blue king and snow crabs will be sorted into numbered (#1-4) bushel baskets and garbage cans. Once the ADF&G sorting table is clear of sublegal and legal males, female blue king crabs will be processed. Snow crabs will be measured last.

Subsampling

All blue king crabs will be measured and shell-aged. Snow crabs may be subsampled prior to measuring with the goal of obtaining a minimum sample size of 50 crabs per sex. Each pot of snow crabs will be accompanied by a numbered clip (#1-6) which will represent the amount subsampled per pot (e.g. #1 = 100%, #2 = sampled 1 of 2 or 50%, etc.).

Recording Data on Crab Data Forms

All 1998 Crab Data Forms are exactly the same, except that they were printed in three colors. The forms printed in black ink are to be used solely for recording male blue king crab data; blue forms are for female blue king crabs and the green forms are to record male and female snow crabs on. Two sets of forms will be put on clipboards and will be kept adjacent to ADF&G's sorting table for use by two recording/measuring teams.

Complete all Crab Data Form header information (i.e. measurer, recorder, date, station number, page) first. Then add the sequential pot number once the captain states it over the loud hailer. Then continue to fill in the appropriate data for each column heading using the codes given at the bottom of the form. When a different pot comes on board, skip a row and draw a wavy line through that row. This is a key prompt for data entry people to watch for the new sequential pot number that will follow.

Record species, sex in their columns and continue to fill out the Crab Data Form in a left to right manner. The "Samp. Fract." column stands for sampling fraction. By convention, there is a one in the numerator so you just record the denominator. For example you are subsampling a particular

crab species and sex, say male snow crabs you could recorded a 2 in the sampling fraction column. That means you sampled 1 of 2 or ½ of those crabs; or record 3,4....8 or 10 means you subsampled 1/3, ¼ or 1/8 or 1/10 of the crabs measured.

Carapace length (CL) on blue king crabs will be measured from the posterior margin of the right eye socket to the midpoint of the rear margin of the carapace (Wallace et al. 1949). Carapace width (CW) of snow crabs is measured across the carapace at the widest part perpendicular to the medial line from the front of their carapace to the rear, with the tips of the calipers reaching inside the spines. After measuring blue or snow crabs record its length or width to the nearest millimeter.

Blue king crab legal width is 5.5" (139.7 mm CW); see above for how to measure. Note: The legal size for male snow crabs is ≥ 78 mm CW. Leave the legal column blank for females.

Shell-Aging

Blue King Crabs. To shell age male blue king crabs, separate them by the distinguishing characteristics outlined in Table 2. Chances are that >99% of the female crabs encountered will either be new-shell-pliable or new-shell-hard (see Table 2). All females with matted setae will be recorded as new-shell-hard.

Snow Crabs. To shell age snow crabs, refer to the distinguishing characteristics listed below:

Soft-shell: Crab has molted within weeks. Exoskeleton is still soft and pliable from recent molt. Dorsal part of exoskeleton pink.

New-shell-pliable: Coxae and ventral surface of exoskeleton shiny, not scratched or pitted. Legs easily compressed when pinched (legs contain little meat at this time). Exoskeleton light pink, fragile and subject to breakage when handled or dumped from the pot. If carapace is removed, the gills will be translucent-cream in color. Crabs estimated to have had new, pliable exoskeletons for approximately 1-3 months.

New-shell: Crabs estimated to have had their exoskeletons ≤12 months. Dorsal side of the exoskeleton pinkish, ventral surface whitish-translucent. No visible scratches on ventral surface. Carapace spines sharp, unworn.

Old-shell: Crabs estimated to have had their exoskeletons for 13-24 months. Dorsal and ventral surfaces tan to light brown. Ventral surface marked frequently with scratches. Carapace spines worn.

Very old-shell: Crabs estimated to have had their exoskeletons >24 months. Dorsal and ventral surfaces dark tan to brown. Ventral surface heavily marked with scratches. Carapace spines very worn and rounded.

Female Clutch and Other Categories

Embryos: Fill in the appropriate color, development, condition and percent clutch characteristics observed using the codes at the bottom of the Crab Data Form page.

Other: Note when one or more of the 10 conditions exits. Mark Dead = 1 when crabs are dead prior to measuring; however, do not mark Alive = 2 for crabs that are alive at the time of measuring.

Tagging Strategy

Tagging male blue king crabs is the top priority of this charter; no other species or sex of crabs will be tagged. Tagging of male blue king crabs will commence immediately, even while sorting is still occurring by vessel crewmembers. The tagging goal is to tag the first 60 legal and first 60 sublegal crabs at each station. Legal crabs will be tagged first followed by the sublegals at each station. Sublegal males will be tagged randomly for size but must be ≥ 90 mm CL. Crabs infected with parasitic barnacles, or cracked carapaces, torn leg segments, or any other new injuries, will not be tagged. Crabs with old injuries (regenerated legs, black leg caps, etc.) will be tagged. No tagging will occur during the nearshore survey. Floy isthmus tags used will be of the "C" series. The series letter and number (1-10,000) will appear on both the green disc and 21" pink spaghetti-like polyvinyl tubing.

When there are a number of male blue king crabs to tag, the ADF&G crew will concentrate on measuring, shell-aging, and recording the data for the crabs while the vessel crew tags crabs. Two people are involved in tagging, regardless of being from the ADF&G or vessel crew. One person exposes the isthmus muscle (the muscle that connects the carapace to the abdomen) by pushing up on the lateral margins of the carapace while holding the animal's bottom side against their chest. The U-shaped needle, attached to one end of the tag tubing, will be threaded through the midpoint of the isthmus muscle. Care must be taken not to push the needle into the crab's vas deferens (white spaghetti-looking strands) or hepatopancreas (stomach), which are located ventrally from the midpoint of the isthmus muscle. When about ½ of the tag's tubing is drawn through the isthmus muscle, a double overhand knot is then tied near the green disc, making sure that the tag number on the tubing is not covered by the knot.

Ancillary Data Collections

Ovarian Weights

Female blue king crabs will be examined to determine the relationship between carapace length, ovary weight, and embryo condition. Observations will be recorded from crabs ranging from 55 to 134 mm CL, by 5-mm size increments (Addendum C.4). The goal is to collect five crabs from each of the following clutch/embryo conditions: 1. clean setae; 2. uneyed embryos (non-hatching); 3. eyed embryos (hatching); and 4. crabs having empty embryo cases. Each female taken will be temporarily tagged with a numbered wood or plastic clip (#1-10) and put aside for later dissection of the ovary. In addition to recording the pertinent data for each female sampled on the Crab Data

Form, the same data will be recorded on the ovarian weight form (Addendum C.5), which also needs the clip number and type filled in on it. A filled out ovarian weight form will accompany each dissected ovary in a zip-lock plastic bag. Data will be entered into an electronic copy of the ovarian weight form on a notebook computer on board the *Notorious*. Ovaries will be weighed to the nearest 2 grams at the ADF&G Dutch Harbor office after the completion of the survey using an Ohaus scale. Weights will be recorded on the same notebook computer.

Temperature Profiles

Bottom temperatures will be obtained by placing two Brancker Model TR-1000 submersible temperature recorders (STRs) in different king crab and conical pots to measure hourly bottom temperatures wherever deployed. STRs will be started prior to setting the first pots and data downloaded on board the *Notorious.* Each STR has its own protective rubber tubing housing and attachment carabiners. The top of each pot to carry a STR will be flagged with colored flagging tape. Both the captain and the ADF&G crew will mark on their forms when a pot with an STR comes on board (Addendum C.1 and C.2). The STRs are called T1 or T2 depending on the color of the tape. During the offshore survey they will be deployed on alternate days. STRs stay in the same pot throughout that survey. On the nearshore survey, the STRs will be moved to sample the range of depths fished.

Bird Collection

ADF&G has been asked to collect birds from St. Matthew Island by the University of Alaska and has received a special permit from the U.S. Fish and Wildlife Service to do so (Addendum D). This task can only be done near the end of the charter when fishing nearshore when using the *Instar.* Birds may be taken from the *Instar* or when a party of two ADF&G persons go ashore. Prior to going ashore the weather must be good enough both to land a party of two, and the forecast must be good enough to have a favorable chance to retrieve them. The shore party must bring along two survival suits, a handheld VHF radio (standby on channel 16), flares, a map of St. Matthew Island and extra food. In addition there needs to be two vessel crewmen that will volunteer the day that an ADF&G team goes ashore so the sampling the nearshore strings of gear will not be compromised.

Blue King Crab Collections

Two female blue king crabs will be collected and frozen on board during the survey for delivery to the Kodiak ADF&G office for use in public displays. Additionally, six blue king crabs will be collected for the University of Alaska Observer Training Center.

Daily Data Checking

Each day data is collected it will be checked for accuracy by cross-checking what was recorded, by a different person than the recorder. This includes all forms used that have been used that day (Pilot House Logs, Crab Data Forms, Ovarian Weight Forms, Radio Logs, etc.). The overall status of all forms will be recorded on the Daily Checklist (Addendum C.6). In addition, use the Daily Blue

King Crab Tally Form (Addendum C.7) to total the number of blue king crabs captured and tagged per station. This must be summarized prior to entering the results on the Daily Radio Logs-Part I and II (Addendum C.8).

On Board ADF&G Assignments

There will be a number of "assignments" to be done during the course of the charter. The crew leader will sit down with you to discuss them with you. Some will be assigned, other volunteered for. The goal is to evenly spread the workload and to assist each other so that we finish the workday at about the same time.

Tagged Crab Recovery

There are ADF&G Tag Recovery forms (Addendum C.9) in case there are any tagged blue king crabs recovered from the 1995 ADF&G during this survey. The Floy isthmus tags applied during that survey had yellow tubing.

Equipment List

The Equipment List (Addendum E) reveals what ADF&G gear was brought on board for the 1998 St. Matthew survey. A complete inventory of all ADF&G gear inventory will also be done prior to the time we depart the *Notorious*.

SURVEY ORIENTATION

ADF&G Crew	Vessel Crew
Forrest Blau, Biologist and Crew Leader, Kodiak	Bill Esselstrom-Captain, FV *Notorious*
George Pappas, Biologist, Dutch Harbor	Robert Stafford - Mate
Mary Schwenzfeier, Technician , Dutch Harbor	Gudjon Gudmundsson - Crewman
Kim Phillips, Technician, Kodiak	Tico Tyson – Crewman
	Jesus Avila – Crewman

Safety Briefing

Prior to departure from Dutch Harbor, both vessel and ADF&G crews are required in the contract to go through the following safety briefings on board the vessel lead by the captain:

1. Shipboard Safety Drill: Where personnel should be and what to do in emergency situations including: 1) where to go when the general alarm is pulled; location of life raft(s), skiff(s),

survival suits, and EPIRBs, and 2) safe locations to be on deck when gear is being set or pulled, and dangerous locations on deck to avoid when setting, retrieving or stacking pots. A drill will be held at an unspecified time to test the ability of all crewmembers and ADF&G personnel to don their survival suits and help others don theirs.

2. General Vessel Orientation: Vessel tour including fire stations, medical supplies, etc.

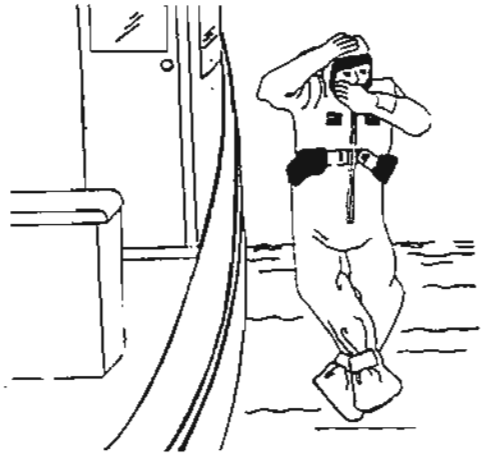
3. Vessel Rules: Where to hang rain gear, water conservation issues and policies (showers-how often & how long, laundry, dishes, bathroom), galley manners, personnel issues, miscellaneous Dos and Don'ts.

Safety of all personnel and the vessel is the primary concern every day during the charter. Under international law, the captain is responsible for the safety of the vessel and all souls aboard. Obey the captain in regards to your safety and the safety of others. If you have any doubt at all about where you should be at any time, ask the captain. Avoid running, be careful, and watch out for your own safety and the safety of others. Do not go on the decks alone or anywhere outside when seas are too rough and unsafe, no photo or video is worth the risk. Make sure all deck gear is secured so that the temptation to save gear when it gets wicked out can be precluded. When the gear is being worked, pay attention to the location of buoy lines, boom hooks and other flying objects. Stand at safe locations specified by the captain or deck boss when pots are being set, retrieved, moved or stacked. ADF&G personnel will **not** work vessel hydraulics, including pot launcher, cranes or booms or line coilers on the *Notorious*, but can on ADF&G's *Instar*. ADF&G personnel will **not** attach or detach bait jars in pots, or reach inside pots to remove crabs or other debris from pots on the *Notorious* but can on the *Instar*.

Prior to departure, preferably several days before the vessel is scheduled to depart, each ADF&G crew member shall check his/her survival suit, and will wax the zipper and ensure that it works properly throughout it's entire length. Place one large plastic bag at the entrance to each leg hole to ensure a quick donning of your suit if the need arises. Call the US Coast guard in Dutch Harbor (581-3466) for rules or times for testing EPIRBs. Then test your EPIRB and make sure it is securely attached to your suit. Also test your strobe and make sure it has fresh batteries, and that it too is secured to your suit. Practice donning your survival suit with a partner with all your rain gear and boots on. It is highly advisable that you also practice getting into the suit at a swimming pool prior to going to sea. Your peace of mind at sea will improve immensely if you have practiced and can get into your suit quickly, either on deck or in the water. If you don't know how to pack your suit or how to put it on, get someone who does to show you. If you must abandon ship, work with a buddy when getting into your survival suit; ensure that you and your buddy's zipper is up; if possible secure a line between you and your buddy once you are in the water. Do not tie yourselves together prior to leaving the vessel. Generally DO NOT ABANDON SHIP UNTIL THE LAST MINUTE! Since many boats that appear to be sinking, capsize and remain afloat. **Don't jump into the water unless there is no other option!**

Protocol for Jumping Off of Vessels (reprinted from Alaska Marine Safety Education Association)

Immersion suit wearers who jump in the water incorrectly can damage their eardrums when air inside a suit rushes into the hood. In addition, damage to one's neck, back, or the suit's zipper can occur when jumping with an inflated air bladder. The diagram below shows the proper way to jump from a height while wearing an immersion suit.



To avoid injury, place the hand farthest from the vessel being abandoned inside the hood or neck of the suit before jumping. This creates a gap between the hood and face that will allow the air in the suit to escape.

Once the wearer enters the water, the hydrostatic squeeze of water pressure rapidly forces air from the legs and body of the suit into the hood. The more bulky and a loose fitting the suit, the more likely air will rush into the hood. Without a path for the air to escape, the pressure inside the heed can be painful and even damaging to ear drums.

This same hand can be used to cover and protect the airway so the jumper does not involuntarily suck in any water through the gasping reflex.

Also, the immersion suit's air bladder should *not* be inflated if a jump is necessary. If it is, the jumper will come to a sudden and stressful stop once the inflated bladder with all its buoyancy hits the surface of the water. This can result in damage to wearer's neck or back. Damage to the suit's zipper and air bladder can also occur. On some suits the bladder is attached to the zipper, and the force of impact can rip the zipper apart. This damage has occurred even when jumping into the water from a standing position on a dock.

In addition to these two precautions, the jumper should place the hand nearest the vessel atop the hood. This does two things. It protects the side of the head near the vessel from hitting the vessel's side. Also, it keeps the hood in place while entering the water. It is easy for the hood to slip off during entry, especially if the immersion suit is large for the wearer. A well-anchored hood is critically important in preventing water from entering the airway, and in keeping the immersion suit wearer warm while in the water.

Enter the water correctly during training or drills. Learning the correct technique during the nonemergency situation can prevent unnecessary injury during an actual emergency.

Miscellaneous Shipboard Rules and Reminders

There will be no unlicensed retention of any animal for ANY purpose (i.e. home-packing or bait) captured during the survey by vessel or ADF&G crewmembers. Collection of crabs for display or other purposes will be authorized through the crew leader Forrest Blau. Sport fishing is permitted after work hours when using either a sport pole or handline provided that the person fishing has a valid State of Alaska 1998 sport-fishing license.

Make the effort to be on your best behavior and to get along with everybody on the vessel! Nine people on board makes for a very crowded situation, especially for 28 days. Be considerate in your manners, cleanliness (personal hygiene and belongings), noise levels, etc. There will be two women aboard, afford them all the privacy possible. Vessel and ADF&G crews should work as a unit particularly when sorting the catch and tagging crabs. We are all on the same boat with the objective of completing the charter goals; hence we are all on the same team, but our tasks will differ. Any personality conflicts will be resolved by the captain and crew leader; should situations arise that could escalate, notify them immediately. The crew leader has the authority to delay or halt the charter at any time (if conditions are unsafe, or so unworkable that necessary at-sea duties cannot be carried out) and has the authority to delay or halt the charter due to insubordination by any person on board (see Vessel Contract, Addendum F).

ADF&G crew must maintain all sampling equipment and ensure that calipers are cleaned daily and sprayed with WD-40. Store calipers, clipboards, etc., inside the vessel at the end of each sampling day. All sampling gear should be in a designated area out of the mainstream traffic pattern. Ensure that laptop computer(s) and the printer are taped securely on working surfaces, if seas are rough or left in the same place for extended periods.

Prior to ending your workday, ADF&G crewmembers should check with the crew leader to see if anything else needs doing. When lifting anything, no matter how light it is, bend at the knees, keep your back straight and lift the object using your legs.

INSTRUCTIONS TO THE CAPTAIN

To Captain Bill Esselstrom; please read your instructions and the vessel contract (Addendum F) and review them with Forrest Blau, crew leader.

Offshore stations that will be fished are noted in Addendum A. Offshore stations using king crab pots will be fished begin on the southwestern edge of the survey area, and after 18 days of pulling gear will end up on the southeastern corner of St. Matthew Island (Figures 1 and 2). Five nearshore days are then scheduled to occur using the *Instar,* ADF&G's 26 foot aluminum skiff, or the *Notorious* (Figure 3).

Consult with Forrest prior to: 1) planning the order of fishing stations, 2) daily schedule of when the first pot is picked each morning and, 3) when setting should begin each evening. Each offshore station consists of four king crab pots spaced 1/8 nmi apart and are arrayed north-to-south

(Addendum B). During transit to the first block of stations to fish, please enter the latitude and longitude coordinates for each pot at each offshore station. The target soak time for each pot is 30 to 36 hours. Departures from the soak time goal will occur, but those less than 24 hours or greater than 42 hours are considered unacceptable.

The primary goal when fishing the offshore stations is to try to adhere to the desired 30 to 36 hour soak-time for each pot. The itinerary for completing the 137 offshore stations and five days of nearshore fishing areas is given in Table 1. Changes can be made if bad weather slows or nullifies picking gear; or if crab catches are great, or if the vessel crew is overworking. Oftentimes charter crews have a false belief that an ADF&G crab charter will be easy; but contrarily they work long hours. Having analyzed the 1995 pick and set times for the crew of the *Notorious* reveals they had short inadequate sleep periods (Table 3). Perhaps the biggest challenge of the charter is for the captain and crew leader to develop a scheduled that maintains the desired soak time goal for pots while maximizing the vessel crew's sleep.

When setting or retrieving gear, you must use Pilot House Log for the *Notorious* (Addendum C.1). Fill in all required data for each pot. Unique, sequential pot numbers will be assigned for each pot in successive strings; for example, the first station will have sequential pot numbers 1-4, the second station will have sequential pot numbers 5-8, and so on. Fill in the sequential pot numbers from top to bottom on each pilot house log (Addendum C.1 and C.2) regardless of the direction of set (i.e. north to south or south to north). The sequential pot number is extremely important, as it ties all the data from station location to catch data together. Temperature recorders will be placed in two different flagged pots and will be noted as either T1 or T2 on the Pilot House Log (far right column).

Retrieving Gear

Retrieve gear as soon as the target soak time of 30 hours has been reached. Notify the ADF&G crew at least 30 minutes before the first pot is pulled in the morning so we can be ready for sampling. The lift dates and times for each pot must be recorded on the Pilot House Log as the gear comes aboard.

When each pot comes aboard, you must tell the ADF&G crew on deck (via loud hailer) what the sequential pot number is for each pot as they come aboard. If a pot is lost, note that on the Pilot House Log, tell the ADF&G deck crew. Do not erase the sequential pot number of any lost pot or pot that had a poor performance. However, do note lost pots in the Gear Performance column (far right column on the Pilot House Log).

Nearshore Fishing

Your are required to assist and work with the crew leader regarding the various major decisions and safety considerations when nearshore fishing occurs with the *Instar*.

Fishing nearshore with the *Instar,* ADF&G's skiff, will only occur if there are more than two days left in the charter (prior to August 26), so that the *Notorious* can return to Dutch Harbor by August

28. There are five days planned for nearshore fishing with the *Instar* (Figure 3) but all the offshore stations (1 to 201) must be fished first prior to any nearshore fishing. Delays due to large crab catches or rough weather could reduce the number of nearshore fishing days available, and could also change the nearshore areas to be fished i.e. the northeastern sides of Hall and St. Matthew islands.

The *Instar* will be fishing conical pots with a goal of setting and picking four strings (12 pots in a string) per day. Pots will be set from 4-15 fm, one pot set at each fathom interval. The *Notorious* will need to be positioned so that the skiff can be seen at all times, albeit fog, rain and sea state may preclude constant visual contact. The *Instar* is equipped with Magellan GPS, plotter with card showing St. Matthew and Hall islands and their bathymetry, radar, and VHF radios (built in and hand held). You will need to have the VHF radio on the *Notorious* tuned to channel 16.

The *Notorious* will act as a mothership to the *Instar* when nearshore fishing is occurring. Whether or not to crane the *Instar* aboard each evening will be your decision based on current and expected weather. The *Instar* will need to make 2-3 trips each day back to the *Notorious* for pots, and may stop for meals, fuel and crew changes. The crew of the *Notorious* may be asked if they want to help on the *Instar* but must first sign an ADF&G Volunteer form; they cannot drive the skiff (due to bureaucratic rules).

In addition if weather is favorable and some vessel crewmen sign up as Volunteers, then two ADF&G personnel may go ashore to collect birds as requested by the University of Alaska, and per permits issued by the U.S. Fish and Wildlife Service (Addendum D). They will be equipped with the hand held VHF radio, survival suits, and flares as well as collecting materials.

If poor weather or mechanical problems arise that prevent the *Instar* from used, then the *Notorious* will be used for nearshore fishing. Up to four stings, 10 king crab pots per string, will be fished on the *Notorious*, one pot set at each fathom interval from 11-20 fm.

Radio Schedule

A daily radio schedule and telex will be maintained between the vessel and the Dutch Harbor ADF&G office. This will be the duty of the captain. The Radio Log-Part I (Addendum C.8) simply needs the date and blocks of stations that were pulled and set, and other comments (i.e. first day, south of Prilibofs and give lat.-long. readings). Once the daily tally of blue king crabs is completed by ADF&G crew, transmit those numbers via MCI telex.

LITERATURE CITED

Blau, S.F. 1996. The 1995 St. Matthew Island blue king crab survey. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division. Regional Information Report 4K96-27.

Wallace, M.M., C.J. Pertuit, and A.R. Hvatum. 1949. Contribution to the biology of the king crab (*Paralithodes camtschatica*) Tilesus. U.S. Department of the Interior, Fish and Wildlife Service, Fishery Leaflet No. 340.

Table 1. Survey itinerary for the August 1998 St. Matthew Island blue king crab survey to be conducted by the Alaska Department of Fish and Game.

August	00:00 - 06:00	06:00 - 18:00	18:00 - 24:00
1	Leave Dutch Harbor 00:01, travel to St. Matthew survey area.		
2	Travel to first block.		
3	Set Block 1		
4	Set Block 2	Pick Block 1	
5	Set Block 3	Pick Block 2	
6	Set Block 4	Pick Block 3	
7	Set Block 5	Pick Block 4	
8	Set Block 6	Pick Block 5	
9	Set Block 7	Pick Block 6	
10	Set Block 8	Pick Block 7	
11	Set Block 9	Pick Block 8	
12	Set Block 10	Pick Block 9	
13	Set Block 11	Pick Block 10	
14	Set Block 12	Pick Block 11	
15	Set Block 13	Pick Block 12	
16	Set Block 14	Pick Block 13	
17	Set Block 15	Pick Block 14	
18	Set Block 16	Pick Block 15	
19	Set Block 17	Pick Block 16	
20	Set Block 18	Pick Block 17	
21		Pick Block 18	Set Nearshorea Strings
22	Set Block 1	Pick Nearshore Strings	Set Nearshore Strings
23	Set Block 1	Pick Nearshore Strings	Set Nearshore Strings
24	Set Block 1	Pick Nearshore Strings	Set Nearshore Strings
25	Set Block 1	Pick Nearshore Strings	Set Nearshore Strings
26	Set Block 1	Pick Nearshore Strings	
27	Travel towards Dutch Harbor.		
28	Travel to Dutch Harbor, unload vessel.		

a Each nearshore string is composed of either 12 conical pots set and pulled from the RV *Instar* or 10 king crab pots set and pulled from the FV *Notorious*.

Table 2. Shell age classification of St. Matthew Island male blue king crabs used on the August 1998 blue king crab survey conducted by the Alaska Department of Fish and Game.

Shell Age Categories	Estimated Shell Age	Ventral Surface of Walking Legs Coxae & Meri	Carapace Spines	Walking Leg Spines	Dactyls	Exoskeleton	Leg Meat Fullness	Gills
Soft-shell	0-2 weeks	White, supple.	Base reddish	Predominately white.	Pliable, sharp tips; white band above tips.	Soft, shell not formed.	None.	Translucent
New-Shell Pliable	2 wks-3 mo.	White, shiny not scratched.	Base reddish	Approx. ½ white above & ½ orangish at base.	Hard, sharp tips white band above tips.	Pliable, cracks and punctures easily.	<30% full.	Light yellowish.
New-Shell Hard	4 mo-18?	White or slightly off-white. Coxae and meri generally devoid of scratches. May have brown or black scratches on distal rim but not in a continuous band.	Base reddish	Approx. ½ white above & ½ orangish at base.	Hard, sharp tips white band above tips.	Firm.	Firm to hard.	Light gray.
Old-Shell	19-36 mo.?	Off-white. Distal portion of coxae rimmed with brown or black scratches. Meri sometimes have brown areas from spine abrasion.	Base of spines darker than above. Reddish-brown.	Mostly reddish -brown.	Tips worn, angled. Brown to black above tips.	Firm.	Full.	Dark gray.
Very-Old-Shell	>36mo?	Light cream color. Distal portion of coxae rimmed with scratches that are black. Middle of coxae and portions of meri often scratched, and may have brown areas.	Base of spines black.	Mostly black.	Tips angled & rounded, black above tips.	Firm but more pliable than new-hard or old-shell. Carapace on some pliable.	Full, but exo-skeleton may be pliable.	Dark gray to black.

Table 3. Summary of vessel crew work times from the 1995 ADF&G St. Matthew blue king crab pot survey.

Set Pots							Pull Pots						Total Elapsed Time To Set and Pull Pots	
					Elapsed Time						Elapsed Time			
Block	Date	No. Pots	Time First Pot Set	Time Last Pot Set	Hrs.	Min.	Block	Date	Time First Pot Pulled	Time Last Pot Pulled	Hrs.	Min.	Hrs.	Min.
1	3-Aug	36	0:01	5:38	5	37								
2	4-Aug	36	0:01	4:54	4	53	1	4-Aug	8:03	15:20	7	17	12	11
3	5-Aug	36	0:01	4:29	4	28	2	5-Aug	6:42	15:45	8	27	12	55
4	6-Aug	36	0:01	5:14	5	13	3	6-Aug	7:20	18:10	10	50	16	3
5	7-Aug	40	0:01	4:10	4	9	4	7-Aug	7:55	14:51	6	46	10	55
6	8-Aug	28	0:02	2:41	2	39	5	8-Aug	6:52	16:05	9	3	11	42
7	9-Aug	40	0:01	4:08	4	7	6	9-Aug	7:33	17:20	9	46	13	53
8	10-Aug	32	0:01	3:44	3	43	7	10-Aug	7:05	14:34	7	29	11	12
8b	11-Aug	28	0:01	3:56	3	55	8	11-Aug	7:02	14:37	7	35	11	30
9	12-Aug	36	0:02	5:43	5	41	8b	12-Aug	10:00	19:46	9	46	15	27
10	13-Aug	18	0:01	3:00	2	59	9	13-Aug	8:20	14:57	6	37	9	36
11	14-Aug	36	0:04	4:39	4	35	10	14-Aug	9:06	14:15	5	9	9	44
12	14-Aug	36	23:53	4:46	4	53	11	15-Aug	8:00	16:09	8	9	13	2
13	16-Aug	36	0:01	4:38	4	37	12	16-Aug	7:55	16:46	8	51	13	28
14	17-Aug	36	0:01	4:37	4	36	13	17-Aug	8:00	15:30	7	30	12	6
15	18-Aug	36	0:02	4:34	4	32	14	18-Aug	8:05	15:36	7	31	12	3
							15	19-Aug	6:26	13:08	6	42		

Notes: (1) A total of 16 sets and pulls of survey gear were made. The average time to set was 4 hrs 24 min (±1 hr); the average time to pull was 8 hr (range ± 3 hr).

(2) Add 3 hr per day to captain's time to run to the first station to pick after setting gear. To set and pull 72 pots per day, the total distance traveled is approx. 95 nmi, which results in approx. 11.2 hr of running time to work the gear (95 nmi x 8.5 knots/hr).

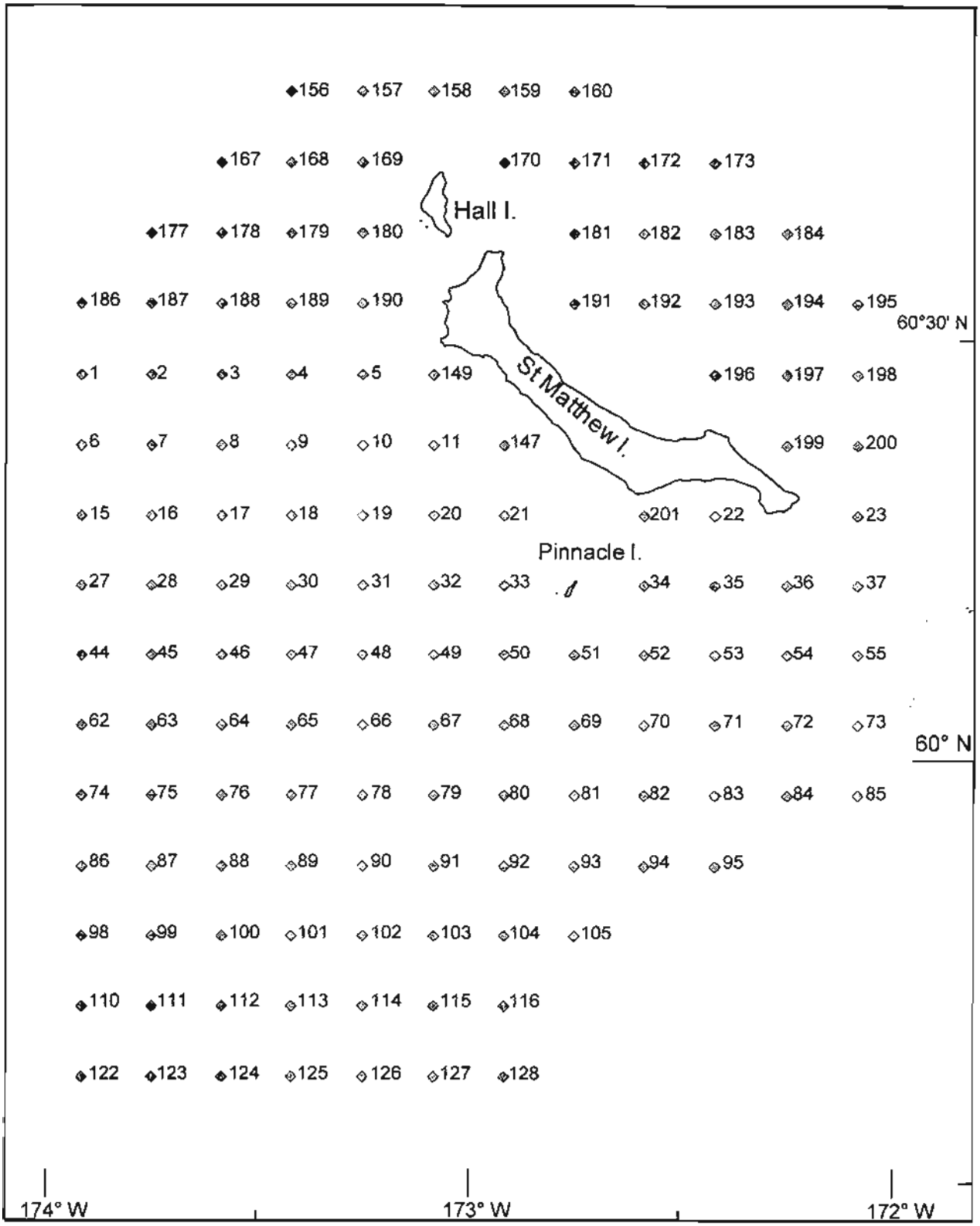


Figure 1. Location of the 137 offshore stations to be fished with king crab pots by the FV *Notorious* during the August 1998 blue king crab survey to be conducted by the Alaska Department of Fish and Game.

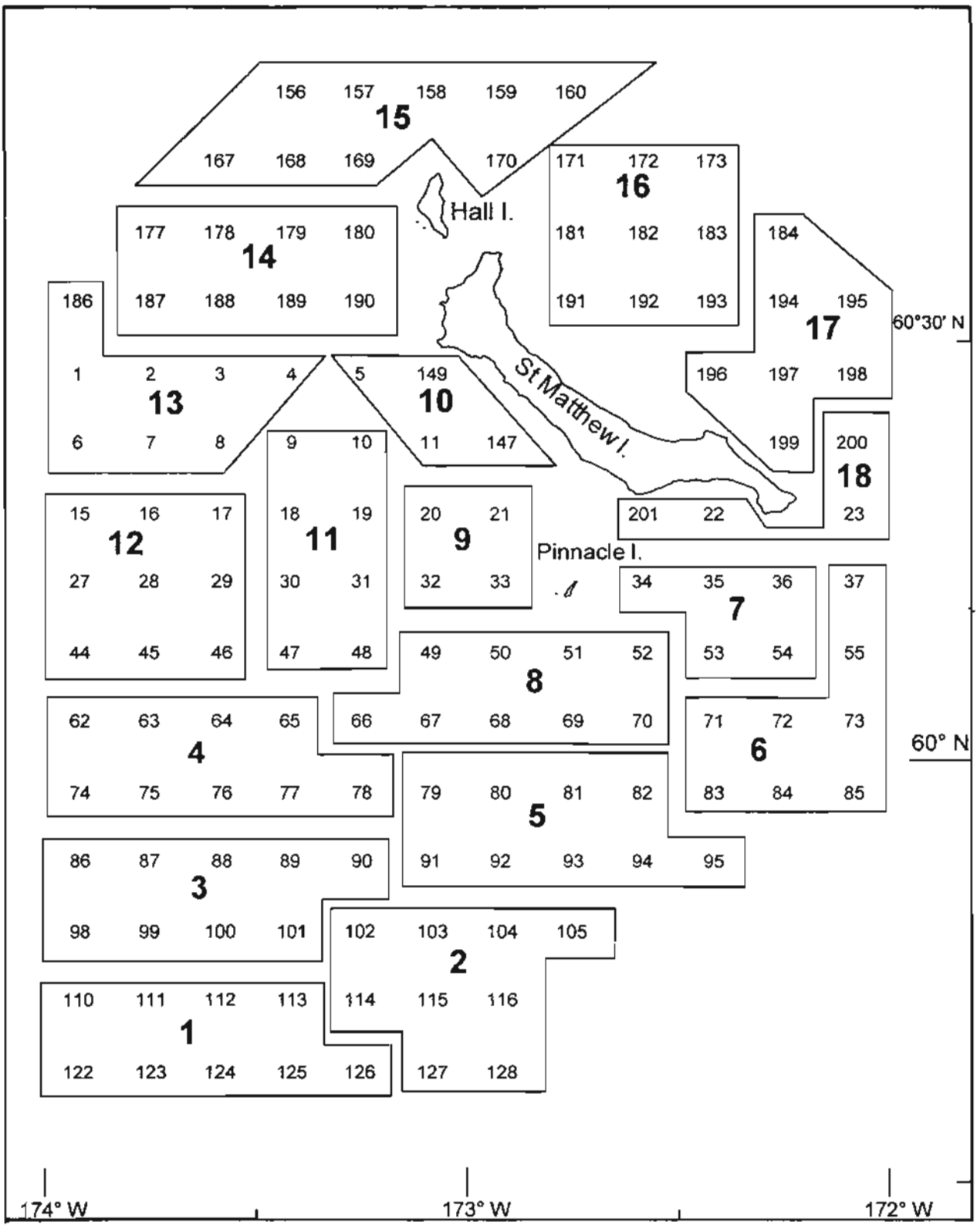


Figure 2. Layout of the 18 station blocks numbered in priority order of fishing for the 1998 Alaska Department of Fish and Game St. Matthew Island blue king crab survey.

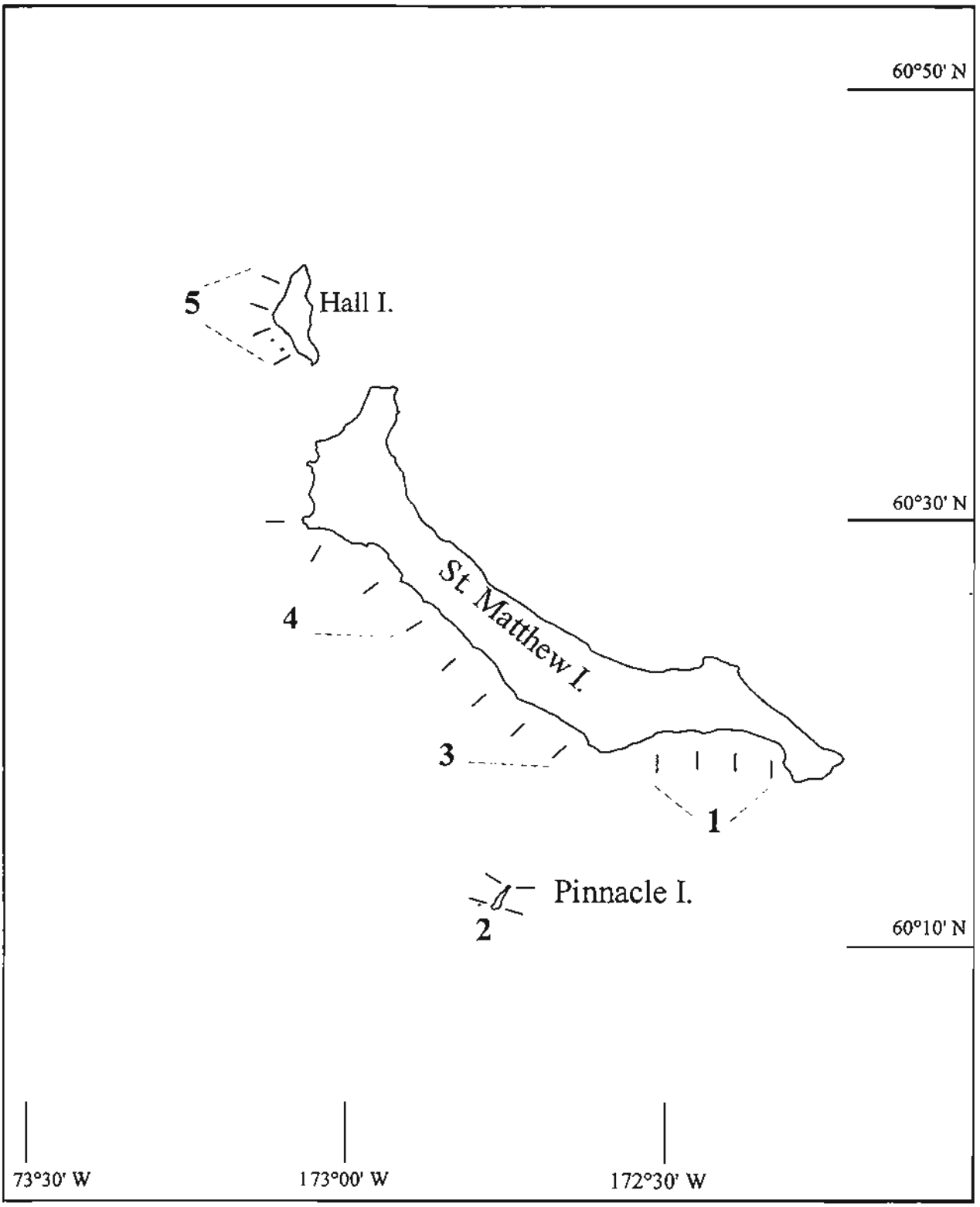


Figure 3. Location of 20 proposed nearshore strings of conical pots to be fished by the RV *Instar* and/or the FV *Notorious* during the August 1998 St. Matthew Island blue king crab survey to be conducted by the Alaska Department of Fish and Game.

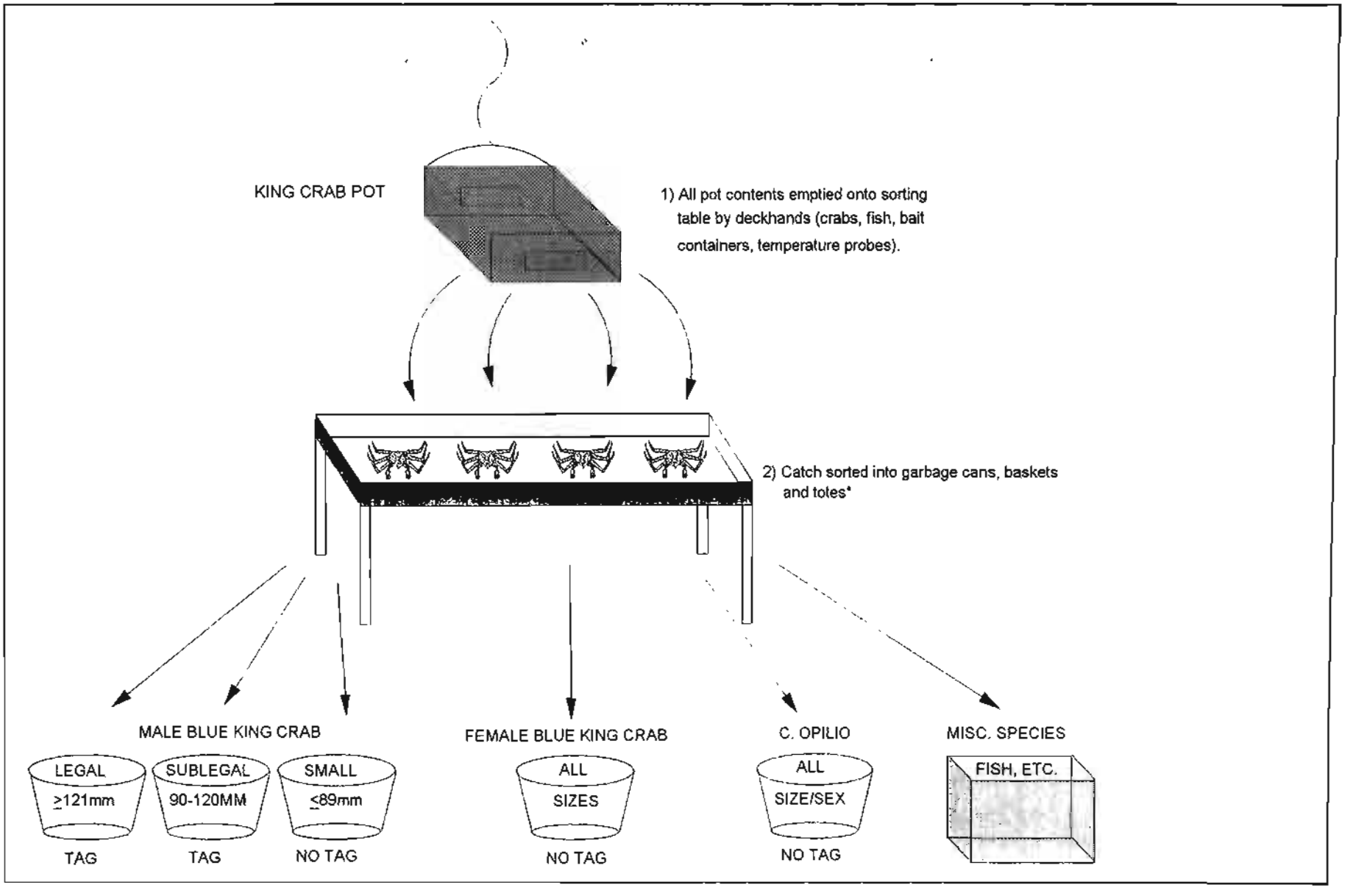


Figure 4. Onboard catch sorting scheme for the August 1998 Alaska Department of Fish and Game St. Matthew Island blue king crab survey.

ADDENDUM

Addendum A. Midpoint locations of 137 stations to be fished by daily block units using king crab pots on the 1998 St. Matthew Island blue king crab survey conducted by the Alaska Department of Fish and Game.

		N. Latitude		W. Longitude	
Station	Block	Degrees	Minutes	Degrees	Minutes
1	13	60	27.5	173	55
2	13	60	27.5	173	45
3	13	60	27.5	173	35
4	13	60	27.5	173	25
5	10	60	27.5	173	15
6	13	60	22.5	173	55
7	13	60	22.5	173	45
8	13	60	22.5	173	35
9	11	60	22.5	173	25
10	11	60	22.5	173	15
11	10	60	22.5	173	5
15	12	60	17.5	173	55
16	12	60	17.5	173	45
17	12	60	17.5	173	35
18	11	60	17.5	173	25
19	11	60	17.5	173	15
20	9	60	17.5	173	5
21	9	60	17.5	172	55
22	18	60	17.5	172	25
23	18	60	17.5	172	5
27	12	60	12.5	173	55
28	12	60	12.5	173	45
29	12	60	12.5	173	35
30	11	60	12.5	173	25
31	11	60	12.5	173	15
32	9	60	12.5	173	5
33	9	60	12.5	172	55
34	7	60	12.5	172	35
35	7	60	12.5	172	25
36	7	60	12.5	172	15
37	6	60	12.5	172	5
44	12	60	7.5	173	55
45	12	60	7.5	173	45
46	12	60	7.5	173	35
47	11	60	7.5	173	25
48	11	60	7.5	173	15
49	8	60	7.5	173	5
50	8	60	7.5	172	55

-Continued-

Addendum A. (page 2 of 4)

		N. Latitude		W. Longitude	
Station	Block	Degrees	Minutes	Degrees	Minutes
51	8	60	7.5	172	45
52	8	60	7.5	172	35
53	7	60	7.5	172	25
54	7	60	7.5	172	15
55	6	60	7.5	172	5
62	4	60	2.5	173	55
63	4	60	2.5	173	45
64	4	60	2.5	173	35
65	4	60	2.5	173	25
66	8	60	2.5	173	15
67	8	60	2.5	173	5
68	8	60	2.5	172	55
69	8	60	2.5	172	45
70	8	60	2.5	172	35
71	6	60	2.5	172	25
72	6	60	2.5	172	15
73	6	60	2.5	172	5
74	4	59	57.5	173	55
75	4	59	57.5	173	45
76	4	59	57.5	173	35
77	4	59	57.5	173	25
78	4	59	57.5	173	15
79	5	59	57.5	173	5
80	5	59	57.5	172	55
81	5	59	57.5	172	45
82	5	59	57.5	172	35
83	6	59	57.5	172	25
84	6	59	57.5	172	15
85	6	59	57.5	172	5
86	3	59	52.5	173	55
87	3	59	52.5	173	45
88	3	59	52.5	173	35
89	3	59	52.5	173	25
90	3	59	52.5	173	15
91	5	59	52.5	173	5
92	5	59	52.5	172	55
93	5	59	52.5	172	45
94	5	59	52.5	172	35
95	5	59	52.5	172	25
98	3	59	47.5	173	55

-Continued-

Addendum A. (page 3 of 4)

		N. Latitude		W. Longitude	
Station	Block	Degrees	Minutes	Degrees	Minutes
99	3	59	47.5	173	45
100	3	59	47.5	173	35
101	3	59	47.5	173	25
102	2	59	47.5	173	15
103	2	59	47.5	173	5
104	2	59	47.5	172	55
105	2	59	47.5	172	45
110	1	59	42.5	173	55
111	1	59	42.5	173	45
112	1	59	42.5	173	35
113	1	59	42.5	173	25
114	2	59	42.5	173	15
115	2	59	42.5	173	5
116	2	59	42.5	172	55
122	1	59	37.5	173	55
123	1	59	37.5	173	45
124	1	59	37.5	173	35
125	1	59	37.5	173	25
126	1	59	37.5	173	15
127	2	59	37.5	173	5
128	2	59	37.5	172	55
147	10	60	22.5	172	55
149	10	60	27.5	173	5
156	15	60	47.5	173	25
157	15	60	47.5	173	15
158	15	60	47.5	173	5
159	15	60	47.5	172	55
160	15	60	47.5	172	45
167	15	60	42.5	173	35
168	15	60	42.5	173	25
169	15	60	42.5	173	15
170	15	60	42.5	172	55
171	16	60	42.5	172	45
172	16	60	42.5	172	35
173	16	60	42.5	172	25
177	14	60	37.5	173	45
178	14	60	37.5	173	35
179	14	60	37.5	173	25
180	14	60	37.5	173	15
181	16	60	37.5	172	45

-Continued-

Addendum A. (page 4 of 4)

Station	Block	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
182	16	60	37.5	172	35
183	16	60	37.5	172	25
184	17	60	37.5	172	15
186	13	60	32.5	173	55
187	14	60	32.5	173	45
188	14	60	32.5	173	35
189	14	60	32.5	173	25
190	14	60	32.5	173	15
191	16	60	32.5	172	45
192	16	60	32.5	172	35
193	16	60	32.5	172	25
194	17	60	32.5	172	15
195	17	60	32.5	172	5
196	17	60	27.5	172	25
197	17	60	27.5	172	15
198	17	60	27.5	172	5
199	17	60	22.5	172	15
200	18	60	22.5	172	5
201	18	60	17.5	172	35

Addendum B. Pot locations within each station to be fished on the August 1998 Alaska Department of Fish and Game St. Matthew Island blue king crab survey.

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
1	1	60	27.69	173	55
1	2	60	27.56	173	55
1	3	60	27.44	173	55
1	4	60	27.31	173	55
2	1	60	27.69	173	45
2	2	60	27.56	173	45
2	3	60	27.44	173	45
2	4	60	27.31	173	45
3	1	60	27.69	173	35
3	2	60	27.56	173	35
3	3	60	27.44	173	35
3	4	60	27.31	173	35
4	1	60	27.69	173	25
4	2	60	27.56	173	25
4	3	60	27.44	173	25
4	4	60	27.31	173	25
5	1	60	27.69	173	15
5	2	60	27.56	173	15
5	3	60	27.44	173	15
5	4	60	27.31	173	15
6	1	60	22.69	173	55
6	2	60	22.56	173	55
6	3	60	22.44	173	55
6	4	60	22.31	173	55
7	1	60	22.69	173	45
7	2	60	22.56	173	45
7	3	60	22.44	173	45
7	4	60	22.31	173	45
8	1	60	22.69	173	35
8	2	60	22.56	173	35
8	3	60	22.44	173	35
8	4	60	22.31	173	35
9	1	60	22.69	173	25
9	2	60	22.56	173	25
9	3	60	22.44	173	25
9	4	60	22.31	173	25
10	1	60	22.69	173	15
10	2	60	22.56	173	15

-Continued-

Addendum B. (page 2 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
10	3	60	22.44	173	15
10	4	60	22.31	173	15
11	1	60	22.69	173	5
11	2	60	22.56	173	5
11	3	60	22.44	173	5
11	4	60	22.31	173	5
15	1	60	17.69	173	55
15	2	60	17.56	173	55
15	3	60	17.44	173	55
15	4	60	17.31	173	55
16	1	60	17.69	173	45
16	2	60	17.56	173	45
16	3	60	17.44	173	45
16	4	60	17.31	173	45
17	1	60	17.69	173	35
17	2	60	17.56	173	35
17	3	60	17.44	173	35
17	4	60	17.31	173	35
18	1	60	17.69	173	25
18	2	60	17.56	173	25
18	3	60	17.44	173	25
18	4	60	17.31	173	25
19	1	60	17.69	173	15
19	2	60	17.56	173	15
19	3	60	17.44	173	15
19	4	60	17.31	173	15
20	1	60	17.69	173	5
20	2	60	17.56	173	5
20	3	60	17.44	173	5
20	4	60	17.31	173	5
21	1	60	17.69	172	55
21	2	60	17.56	172	55
21	3	60	17.44	172	55
21	4	60	17.31	172	55
22	1	60	17.69	172	25
22	2	60	17.56	172	25
22	3	60	17.44	172	25
22	4	60	17.31	172	25
23	1	60	17.69	172	5
23	2	60	17.56	172	5
23	3	60	17.44	172	5

-Continued-

Addendum B. (page 3 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
23	4	60	17.31	172	5
27	1	60	12.69	173	55
27	2	60	12.56	173	55
27	3	60	12.44	173	55
27	4	60	12.31	173	55
28	1	60	12.69	173	45
28	2	60	12.56	173	45
28	3	60	12.44	173	45
28	4	60	12.31	173	45
29	1	60	12.69	173	35
29	2	60	12.56	173	35
29	3	60	12.44	173	35
29	4	60	12.31	173	35
30	1	60	12.69	173	25
30	2	60	12.56	173	25
30	3	60	12.44	173	25
30	4	60	12.31	173	25
31	1	60	12.69	173	15
31	2	60	12.56	173	15
31	3	60	12.44	173	15
31	4	60	12.31	173	15
32	1	60	12.69	173	5
32	2	60	12.56	173	5
32	3	60	12.44	173	5
32	4	60	12.31	173	5
33	1	60	12.69	172	55
33	2	60	12.56	172	55
33	3	60	12.44	172	55
33	4	60	12.31	172	55
34	1	60	12.69	172	35
34	2	60	12.56	172	35
34	3	60	12.44	172	35
34	4	60	12.31	172	35
35	1	60	12.69	172	25
35	2	60	12.56	172	25
35	3	60	12.44	172	25
35	4	60	12.31	172	25
36	1	60	12.69	172	15
36	2	60	12.56	172	15
36	3	60	12.44	172	15
36	4	60	12.31	172	15

-Continued-

Addendum B. (page 4 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
37	1	60	12.69	172	5
37	2	60	12.56	172	5
37	3	60	12.44	172	5
37	4	60	12.31	172	5
44	1	60	7.69	173	55
44	2	60	7.56	173	55
44	3	60	7.44	173	55
44	4	60	7.31	173	55
45	1	60	7.69	173	45
45	2	60	7.56	173	45
45	3	60	7.44	173	45
45	4	60	7.31	173	45
46	1	60	7.69	173	35
46	2	60	7.56	173	35
46	3	60	7.44	173	35
46	4	60	7.31	173	35
47	1	60	7.69	173	25
47	2	60	7.56	173	25
47	3	60	7.44	173	25
47	4	60	7.31	173	25
48	1	60	7.69	173	15
48	2	60	7.56	173	15
48	3	60	7.44	173	15
48	4	60	7.31	173	15
49	1	60	7.69	173	5
49	2	60	7.56	173	5
49	3	60	7.44	173	5
49	4	60	7.31	173	5
50	1	60	7.69	172	55
50	2	60	7.56	172	55
50	3	60	7.44	172	55
50	4	60	7.31	172	55
51	1	60	7.69	172	45
51	2	60	7.56	172	45
51	3	60	7.44	172	45
51	4	60	7.31	172	45
52	1	60	7.69	172	35
52	2	60	7.56	172	35
52	3	60	7.44	172	35
52	4	60	7.31	172	35
53	1	60	7.69	172	25

-Continued-

Addendum B. (page 5 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
53	2	60	7.56	172	25
53	3	60	7.44	172	25
53	4	60	7.31	172	25
54	1	60	7.69	172	15
54	2	60	7.56	172	15
54	3	60	7.44	172	15
54	4	60	7.31	172	15
55	1	60	7.69	172	5
55	2	60	7.56	172	5
55	3	60	7.44	172	5
55	4	60	7.31	172	5
62	1	60	2.69	173	55
62	2	60	2.56	173	55
62	3	60	2.44	173	55
62	4	60	2.31	173	55
63	1	60	2.69	173	45
63	2	60	2.56	173	45
63	3	60	2.44	173	45
63	4	60	2.31	173	45
64	1	60	2.69	173	35
64	2	60	2.56	173	35
64	3	60	2.44	173	35
64	4	60	2.31	173	35
65	1	60	2.69	173	25
65	2	60	2.56	173	25
65	3	60	2.44	173	25
65	4	60	2.31	173	25
66	1	60	2.69	173	15
66	2	60	2.56	173	15
66	3	60	2.44	173	15
66	4	60	2.31	173	15
67	1	60	2.69	173	5
67	2	60	2.56	173	5
67	3	60	2.44	173	5
67	4	60	2.31	173	5
68	1	60	2.69	172	55
68	2	60	2.56	172	55
68	3	60	2.44	172	55
68	4	60	2.31	172	55
69	1	60	2.69	172	45
69	2	60	2.56	172	45

-Continued-

Addendum B. (page 6 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
69	3	60	2.44	172	45
69	4	60	2.31	172	45
70	1	60	2.69	172	35
70	2	60	2.56	172	35
70	3	60	2.44	172	35
70	4	60	2.31	172	35
71	1	60	2.69	172	25
71	2	60	2.56	172	25
71	3	60	2.44	172	25
71	4	60	2.31	172	25
72	1	60	2.69	172	15
72	2	60	2.56	172	15
72	3	60	2.44	172	15
72	4	60	2.31	172	15
73	1	60	2.69	172	5
73	2	60	2.56	172	5
73	3	60	2.44	172	5
73	4	60	2.31	172	5
74	1	59	57.69	173	55
74	2	59	57.56	173	55
74	3	59	57.44	173	55
74	4	59	57.31	173	55
75	1	59	57.69	173	45
75	2	59	57.56	173	45
75	3	59	57.44	173	45
75	4	59	57.31	173	45
76	1	59	57.69	173	35
76	2	59	57.56	173	35
76	3	59	57.44	173	35
76	4	59	57.31	173	35
77	1	59	57.69	173	25
77	2	59	57.56	173	25
77	3	59	57.44	173	25
77	4	59	57.31	173	25
78	1	59	57.69	173	15
78	2	59	57.56	173	15
78	3	59	57.44	173	15
78	4	59	57.31	173	15
79	1	59	57.69	173	5
79	2	59	57.56	173	5
79	3	59	57.44	173	5

-Continued-

Addendum B. (page 7 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
79	4	59	57.31	173	5
80	1	59	57.69	172	55
80	2	59	57.56	172	55
80	3	59	57.44	172	55
80	4	59	57.31	172	55
81	1	59	57.69	172	45
81	2	59	57.56	172	45
81	3	59	57.44	172	45
81	4	59	57.31	172	45
82	1	59	57.69	172	35
82	2	59	57.56	172	35
82	3	59	57.44	172	35
82	4	59	57.31	172	35
83	1	59	57.69	172	25
83	2	59	57.56	172	25
83	3	59	57.44	172	25
83	4	59	57.31	172	25
84	1	59	57.69	172	15
84	2	59	57.56	172	15
84	3	59	57.44	172	15
84	4	59	57.31	172	15
85	1	59	57.69	172	5
85	2	59	57.56	172	5
85	3	59	57.44	172	5
85	4	59	57.31	172	5
86	1	59	52.69	173	55
86	2	59	52.56	173	55
86	3	59	52.44	173	55
86	4	59	52.31	173	55
87	1	59	52.69	173	45
87	2	59	52.56	173	45
87	3	59	52.44	173	45
87	4	59	52.31	173	45
88	1	59	52.69	173	35
88	2	59	52.56	173	35
88	3	59	52.44	173	35
88	4	59	52.31	173	35
89	1	59	52.69	173	25
89	2	59	52.56	173	25
89	3	59	52.44	173	25
89	4	59	52.31	173	25

-Continued-

Addendum B. (page 8 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
90	1	59	52.69	173	15
90	2	59	52.56	173	15
90	3	59	52.44	173	15
90	4	59	52.31	173	15
91	1	59	52.69	173	5
91	2	59	52.56	173	5
91	3	59	52.44	173	5
91	4	59	52.31	173	5
92	1	59	52.69	172	55
92	2	59	52.56	172	55
92	3	59	52.44	172	55
92	4	59	52.31	172	55
93	1	59	52.69	172	45
93	2	59	52.56	172	45
93	3	59	52.44	172	45
93	4	59	52.31	172	45
94	1	59	52.69	172	35
94	2	59	52.56	172	35
94	3	59	52.44	172	35
94	4	59	52.31	172	35
95	1	59	52.69	172	25
95	2	59	52.56	172	25
95	3	59	52.44	172	25
95	4	59	52.31	172	25
98	1	59	47.69	173	55
98	2	59	47.56	173	55
98	3	59	47.44	173	55
98	4	59	47.31	173	55
99	1	59	47.69	173	45
99	2	59	47.56	173	45
99	3	59	47.44	173	45
99	4	59	47.31	173	45
100	1	59	47.69	173	35
100	2	59	47.56	173	35
100	3	59	47.44	173	35
100	4	59	47.31	173	35
101	1	59	47.69	173	25
101	2	59	47.56	173	25
101	3	59	47.44	173	25
101	4	59	47.31	173	25
102	1	59	47.69	173	15

-Continued-

Addendum B. (page 9 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
102	2	59	47.56	173	15
102	3	59	47.44	173	15
102	4	59	47.31	173	15
103	1	59	47.69	173	5
103	2	59	47.56	173	5
103	3	59	47.44	173	5
103	4	59	47.31	173	5
104	1	59	47.69	172	55
104	2	59	47.56	172	55
104	3	59	47.44	172	55
104	4	59	47.31	172	55
105	1	59	47.69	172	45
105	2	59	47.56	172	45
105	3	59	47.44	172	45
105	4	59	47.31	172	45
110	1	59	42.69	173	55
110	2	59	42.56	173	55
110	3	59	42.44	173	55
110	4	59	42.31	173	55
111	1	59	42.69	173	45
111	2	59	42.56	173	45
111	3	59	42.44	173	45
111	4	59	42.31	173	45
112	1	59	42.69	173	35
112	2	59	42.56	173	35
112	3	59	42.44	173	35
112	4	59	42.31	173	35
113	1	59	42.69	173	25
113	2	59	42.56	173	25
113	3	59	42.44	173	25
113	4	59	42.31	173	25
114	1	59	42.69	173	15
114	2	59	42.56	173	15
114	3	59	42.44	173	15
114	4	59	42.31	173	15
115	1	59	42.69	173	5
115	2	59	42.56	173	5
115	3	59	42.44	173	5
115	4	59	42.31	173	5
116	1	59	42.69	172	55
116	2	59	42.56	172	55

-Continued-

Addendum B. (page 10 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
116	3	59	42.44	172	55
116	4	59	42.31	172	55
122	1	59	37.69	173	55
122	2	59	37.56	173	55
122	3	59	37.44	173	55
122	4	59	37.31	173	55
123	1	59	37.69	173	45
123	2	59	37.56	173	45
123	3	59	37.44	173	45
123	4	59	37.31	173	45
124	1	59	37.69	173	35
124	2	59	37.56	173	35
124	3	59	37.44	173	35
124	4	59	37.31	173	35
125	1	59	37.69	173	25
125	2	59	37.56	173	25
125	3	59	37.44	173	25
125	4	59	37.31	173	25
126	1	59	37.69	173	15
126	2	59	37.56	173	15
126	3	59	37.44	173	15
126	4	59	37.31	173	15
127	1	59	37.69	173	5
127	2	59	37.56	173	5
127	3	59	37.44	173	5
127	4	59	37.31	173	5
128	1	59	37.69	172	55
128	2	59	37.56	172	55
128	3	59	37.44	172	55
128	4	59	37.31	172	55
147	1	60	22.69	172	55
147	2	60	22.56	172	55
147	3	60	22.44	172	55
147	4	60	22.31	172	55
149	1	60	27.69	173	5
149	2	60	27.56	173	5
149	3	60	27.44	173	5
149	4	60	27.31	173	5
156	1	60	47.69	173	25
156	2	60	47.56	173	25
156	3	60	47.44	173	25

-Continued-

Addendum B. (page 11 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
156	4	60	47.31	173	25
157	1	60	47.69	173	15
157	2	60	47.56	173	15
157	3	60	47.44	173	15
157	4	60	47.31	173	15
158	1	60	47.69	173	5
158	2	60	47.56	173	5
158	3	60	47.44	173	5
158	4	60	47.31	173	5
159	1	60	47.69	172	55
159	2	60	47.56	172	55
159	3	60	47.44	172	55
159	4	60	47.31	172	55
160	1	60	47.69	172	45
160	2	60	47.56	172	45
160	3	60	47.44	172	45
160	4	60	47.31	172	45
167	1	60	42.69	173	35
167	2	60	42.56	173	35
167	3	60	42.44	173	35
167	4	60	42.31	173	35
168	1	60	42.69	173	25
168	2	60	42.56	173	25
168	3	60	42.44	173	25
168	4	60	42.31	173	25
169	1	60	42.69	173	15
169	2	60	42.56	173	15
169	3	60	42.44	173	15
169	4	60	42.31	173	15
170	1	60	42.69	172	55
170	2	60	42.56	172	55
170	3	60	42.44	172	55
170	4	60	42.31	172	55
171	1	60	42.69	172	45
171	2	60	42.56	172	45
171	3	60	42.44	172	45
171	4	60	42.31	172	45
172	1	60	42.69	172	35
172	2	60	42.56	172	35
172	3	60	42.44	172	35
172	4	60	42.31	172	35

-Continued-

Addendum B. (page 12 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
173	1	60	42.69	172	25
173	2	60	42.56	172	25
173	3	60	42.44	172	25
173	4	60	42.31	172	25
177	1	60	37.69	173	45
177	2	60	37.56	173	45
177	3	60	37.44	173	45
177	4	60	37.31	173	45
178	1	60	37.69	173	35
178	2	60	37.56	173	35
178	3	60	37.44	173	35
178	4	60	37.31	173	35
179	1	60	37.69	173	25
179	2	60	37.56	173	25
179	3	60	37.44	173	25
179	4	60	37.31	173	25
180	1	60	37.69	173	15
180	2	60	37.56	173	15
180	3	60	37.44	173	15
180	4	60	37.31	173	15
181	1	60	37.69	172	45
181	2	60	37.56	172	45
181	3	60	37.44	172	45
181	4	60	37.31	172	45
182	1	60	37.69	172	35
182	2	60	37.56	172	35
182	3	60	37.44	172	35
182	4	60	37.31	172	35
183	1	60	37.69	172	25
183	2	60	37.56	172	25
183	3	60	37.44	172	25
183	4	60	37.31	172	25
184	1	60	37.69	172	15
184	2	60	37.56	172	15
184	3	60	37.44	172	15
184	4	60	37.31	172	15
186	1	60	32.69	173	55
186	2	60	32.56	173	55
186	3	60	32.44	173	55
186	4	60	32.31	173	55
187	1	60	32.69	173	45

-Continued-

Addendum B. (page 13 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
187	2	60	32.56	173	45
187	3	60	32.44	173	45
187	4	60	32.31	173	45
188	1	60	32.69	173	35
188	2	60	32.56	173	35
188	3	60	32.44	173	35
188	4	60	32.31	173	35
189	1	60	32.69	173	25
189	2	60	32.56	173	25
189	3	60	32.44	173	25
189	4	60	32.31	173	25
190	1	60	32.69	173	15
190	2	60	32.56	173	15
190	3	60	32.44	173	15
190	4	60	32.31	173	15
191	1	60	32.69	172	45
191	2	60	32.56	172	45
191	3	60	32.44	172	45
191	4	60	32.31	172	45
192	1	60	32.69	172	35
192	2	60	32.56	172	35
192	3	60	32.44	172	35
192	4	60	32.31	172	35
193	1	60	32.69	172	25
193	2	60	32.56	172	25
193	3	60	32.44	172	25
193	4	60	32.31	172	25
194	1	60	32.69	172	15
194	2	60	32.56	172	15
194	3	60	32.44	172	15
194	4	60	32.31	172	15
195	1	60	32.69	172	5
195	2	60	32.56	172	5
195	3	60	32.44	172	5
195	4	60	32.31	172	5
196	1	60	27.69	172	25
196	2	60	27.56	172	25
196	3	60	27.44	172	25
196	4	60	27.31	172	25
197	1	60	27.69	172	15
197	2	60	27.56	172	15

-Continued-

Addendum B. (page 14 of 14)

Station	Pot in Station	N. Latitude Degrees	N. Latitude Minutes	W. Longitude Degrees	W. Longitude Minutes
197	3	60	27.44	172	15
197	4	60	27.31	172	15
198	1	60	27.69	172	5
198	2	60	27.56	172	5
198	3	60	27.44	172	5
198	4	60	27.31	172	5
199	1	60	22.69	172	15
199	2	60	22.56	172	15
199	3	60	22.44	172	15
199	4	60	22.31	172	15
200	1	60	22.69	172	5
200	2	60	22.56	172	5
200	3	60	22.44	172	5
200	4	60	22.31	172	5
201	1	60	17.69	172	35
201	2	60	17.56	172	35
201	3	60	17.44	172	35
201	4	60	17.31	172	35

Addendum C.1.

ADF&G PILOT HOUSE LOG - 1998 ST. MATTHEW BLUE KING CRAB SURVEY

CAPTAIN: Bill Esselstrom VESSEL: FV *NOTORIOUS* BLOCK ________ PAGE ____ OF ____

STATION	Gear Type	SET GEAR			DEPTH	*Bot	SEQUENTIAL	BUOY	LIFT GEAR			N. LATITUDE		W. LONGITUDE		**Gear	***T
		MO	DAY	MILITARY TIME	(FM)	Type	POT NUMBER	NO	MO	DAY	MILITARY TIME	DEG.	MINUTES	DEG.	MINUTES	Perf.	Pro
	1	8							8				.		.		
		8							8				.		.		
		8							8				.		.		
		8							8				.		.		
STATION	Gear Type												.		.		
	1	8							8				.		.		
		8							8				.		.		
		8							8				.		.		
		8							8				.		.		
STATION	Gear Type												.		.		
	1	8							8				.		.		
		8							8				.		.		
		8							8				.		.		
		8							8				.		.		
STATION	Gear Type												.		.		
	1	8							8				.		.		
		8							8				.		.		
		8							8				.		.		
		8							8				.		.		

Comments:

*BOTTOM TYPE CODES:

1-Rock	4-Mud
2-Sand	5-Gravel
3-Silt	

**GEAR PERFORMANCE CODES:

0-Pot performance satisfactory
20-Lost pot
21-Pot malfunction: loss of catch observed due to bent/untied door
22-Pot not baited

***TEMPERATURE PROBE:

Y = Installed in pot
N = No probe in pot

C:\FBSTM\SMFORM98.XLS - SHEET <SM98LOG1(2)>

Addendum C.2. **ADF&G FV *INSTAR* LOG - 1998 ST. MATTHEW BLUE KING CRAB NEARSHORE SURVEY**

INSTAR OPERATOR: ______________________

STATION	Gear Type	SET GEAR			DEPTH	*Bot	SEQUENTIAL	BUOY	LIFT GEAR			N. LATITUDE		W. LONGITUDE		**Gear	***T
		MO	DAY	MILITARY TIME	(FM)	Type	POT NUMBER	NO	MO	DAY	MILITARY TIME	DEG.	MINUTES	DEG.	MINUTES	Perf.	Pro
	2	8							8				.		.		
		8							8				.		.		
		8							8				.		.		
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		8							8				.		.		
		8							8				.		.		
		8							8				.		.		
		8							8				.		.		

Comments:

*BOTTOM TYPE CODES:

1-Rock 4-Mud
2-Sand 5-Gravel
3-Silt

**GEAR PERFORMANCE CODES:

0-Pot performance satisfactory
20-Lost pot
21-Pot malfunction: loss of catch observed due to bent/untied door
22-Pot not baited

***TEMPERATURE PROBE:

Y = Installed in pot
N = No probe in pot

C:\F8STM\SMFORM98.XLS - SHEET <SMLOG2(2)>

Addendum C.3.

ADF&G St. Matthew Island Triennial Blue King Crab Survey Data Form

FV *Notorious*

MEASURER ____

RECORDER ____

DATE 0 8 ____ 9 8 STATION NUMBER ____ PAGE ____ OF ____

	SEQUENTIAL	POT NUMBER		SPECIES			SEX	SAMP. FRACT.	SIZE CRABS (MM) FISH (CM)			LEGAL	SHELL AGE	EMBRYOS COLOR	EMBRYOS DEVELOPMENT	EMBRYOS CONDITION	EMBRYOS % CLUTCH	OTHER		TAG NUMBER				COMMENTS
1																								
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								

Crab Species
1-*L. aequispinus*
2-*P. camtschaticus*
3-*P. platypus*
4-*Erimacrus*
6- *C. bairdi*
7-*C. opilio*

Fish & Invert. Species
See coded species list

Sex
1- Male
2- Female

Legal
1- Sublegal
2- Legal

Shell Age
0- Soft
1- New-Pliable
2- New-Hard
3- Old
4- Very Old

Live Embryo Color
1- Tan
2- Purple
3- Brown
4- Orange
5- Purple-brown
6- Pink
7- Reddish
0- Other, describe in Comments

Embryo Development
1- Uneyed
2- Eyed
3- Hatching (1-29% clutch with matted setae)

Clutch Condition
1- Dead embryos not apparent
2- Dead embryos <20%
3- Dead embryos >20%

Percent Clutch
1- Barren, clean pleopods
2-Barren, matted pleopods (empty embryo cases)
3- Clutch 1-29% full
4- Clutch 30-59% full
5- Clutch 60-89% full
6- Clutch 90-100% full

Others
1-Dead
2-Alive
3-Nemerteans in clutch
4-Turbellarians in clutch
5-Black mat
6-Bitter crab disease
7-"Cottage cheese" disease
8-Shell disease
9-*Briarosaccus callosus*
0- Leatherback, male golden king crab with soft carapace regardless of shell condition

C:\FBSTM\CRABFORM.XLS - SHEET <CRABFORM(2)>

Addendum C.4. On deck tally sheet for ovarian samples taken from female blue king crabs, by external clutch and size categories on the 1998 ADF&G St. Matthew Island blue king crab survey. Collection goal: seven samples per 5-mm category.

Carapace Length (mm)	Clean Setae	Uneyed Embryos*	Eyed Embryos*	Eyed Embryos Hatching	Matted Setae
55-59					
60-64					
65-69					
70-74					
75-79					
80-84					
85-89					
90-94					
95-99					
100-104					
105-109					
110-114					
115-119					
120-124					
125-129					
130-134					

* Use full clutch females if at all possible.

Addendum C.5. Ovarian weight versus clutch condition and size data entry form - August 1998 St. Matthew blue king crab survey.

DAY	STATION	SEQUENTIAL POT NUMBER	SIZE CL (mm)	SHELL AGE	EMBRYOS				OTHER	OVARIAN WEIGHT (GRAMS)	CLIP NUMBER	CLIP COLOR	CLIP TYPE	OVARY COLOR & COMMENTS
					COLOR	DEVELOPMENT	CONDITION	% CLUTCH						

C:\FBSTM\OVARY.XLS - SHEET <OVARY>

Addendum C.6. Daily check list for ADF&G crew stations fished, forms checked for accuracy, and data entered on 1998 St. Matthew Island blue king crab survey.

Station	Seq. Pot Number	Lost Pot? (Seq. Pot No)	Pilot House Log	Blue King Crab		Ovary Samples	Temperature Probes	Radio Logs
				Males	Females			

1. Record station number, sequential pot number (SPN), and/or lost pot SPN.
2. Check boxes where data has been checked or entered.
3. Place dash where no data.

Addendum C.7. On board daily blue king crab catch summary for the August 1998 ADF&G St. Matthew Is. survey.

	Legals		Sublegals				No. of
	Number	Floy	Number	Floy	Ones*	<Ones	Females
Station							
Station							
Station							
Station							
Station							

* Ones are ≥ 105 mm CL but not legal width.

Addendum C.8. Daily radio log for the FV *Notorious* and ADF&G -1998 St. Matthew blue king crab survey.

PART I. At 1545 each day, ADF&G Dutch (WIM76) will call the FV *Notorious* (WAP5748) on 4125 (use 4146 as backup at 1550). Call signs for ADF&G Kodiak are WHM29 on 4125 and 4146 and WON32 on 3230.

Col. 1	Col. 2	Col. 3	
	Blocks		
Date	Pulled - Set		COMMENTS (location, how it's going, etc.)
8/			
8/			
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Addendum C.8. (page 2 of 2)

PART II. The skipper of the *Notorious* will send an MCI telex to the ADF&G MCI server in Dutch Harbor each day there is data to report. The MCI number is 23 650 626 4534; note the spaces.

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7			
	Date	No. Pots	No. Blue King Crabs						
Station	Lifted	Pulled	Legals	Ones	< Ones	Females			
	8/								
	8/								
	8/								
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Addendum C.9.

ADF&G WESTWARD REGION TAGGED CRAB RECOVERY FORM

SPECIES _____ **FISHERY CODE** _____ **OBSERVER/ DOCKSIDE SAMPLER** _____

	SEQ. POT NO	FLOY TAG SERIES & NUMBER	SIZE (mm) KING - CL TANNER - CW	LEGAL (a)	SEX (b)	SHELL (c)	FATE (d)	CAPTURE DATE MO.	DAY	YEAR	CAPTURE LOCATION (Note: "E." longitude if applicable) N. LATITUDE	W. LONGITUDE	DEPTH (FM)	STATISTICAL AREA	ADF&G VESSEL NO.
1															
2															
3															
4															
5															

(a) **LEGAL**: 1=Sublegal; 2=Legal. (b) **SEX**: 1=Male; 2=Female. (c) **SHELL AGE**: 0=Soft; 1=New; 2=Old; 3= Very Old.

(d) **FATE**: 1=Retained for sale; 2=Released alive; 3=Dead (not retained for sale; found in deadloss pile or frozen whole for ADF&G/Observer sampling).

NOTE: If a tagged female crab, record additional information on the back of this form. Record comments for males and females on the back of this form.

	Received Tag or Tagged Crab From: Name, Address & Phone	Received Recovery Location Data From: Name, Address & Phone	Vessel Name	Processor Name	Sampling Date Mo.	Day	Year
1	Needs hat ☐ Issued hat ☐						
2	Needs hat ☐ Issued hat ☐						
3	Needs hat ☐ Issued hat ☐						
4	Needs hat ☐ Issued hat ☐						
5	Needs hat ☐ Issued hat ☐						

Edited by: Date: Entered by: Date: C:\FBSTM\STM98TR.XLS - SHEET <TAGLOC(2)> 7/98

Addendum C.9. (page 2 of 2)

ADF&G WESTWARD REGION TAGGED CRAB RECOVERY FORM

(REVERSE SIDE)

*	SEQ. POT NO.	EMBRYOS				OTHER	COMMENTS
		COLOR	DEVELOPMENT	CONDITION	% CLUTCH		
1							
2							
3							
4							
5							

LIVE EMBRYO COLOR

1-Tan
2-Purple
3-Brown
4-Orange
5-Purple-brown
6-Pink
7-Reddish
0-Other; describe in Comments.

EMBRYO DEVELOPMENT

1-Uneyed
2-Eyed

CLUTCH CONDITION

1-Dead embryos not apparent
2-Dead embryos <20 %
3-Dead embryos >20%

PERCENT CLUTCH

1-Barren, clean pleopods
2-Barren, with empty embryo cases and/or stalks
3-Clutch 1-29% full
4-Clutch 30-59% full
5-Clutch 60-89% full
6-Clutch 90-100% full

OTHER

3-Nemerteans in clutch
4-Turbellarians in clutch
5-Black mat syndrome
6-Bitter crab syndrome
7-"Cottage cheese" disease
8-Shell rust
9-*Briarosaccus callosus* (sac-like parasitic barnacle on king crab abdomens)
0-Leatherback: male brown king crab w/soft carapace & is old or very old shell

SPECIES	CHANGES IN EMBRYO COLOR		COMMENTS
	UNEYED	EYED-WELL DEVELOPED	
Red King	Purple	Reddish	Occasionlly brown or gray intermediate.
Blue King	Purple	Pinkish-reddish	
Golden (brown) king	Orange	Tan	
Tanner (*C. bairdi*)	Orange	Brown or purple brown	
Snow (*C. opilio*)	Orange	Brown or purple brown	

Note: If other species are tagged, update this form before use.

C:\FBSTM\STM98TR XLS - SHEET <FEMCOMM(2)> 7/98

UNIVERSITY OF ALASKA MUSEUM
907 Yukon Drive

14 April 1998

To whom it may concern:

Given the rare opportunity of a scientific visit to remote St. Matthew Island in connection with the August 1998 blue king crab survey being conducted by the Alaska Department of Fish & Game out of Dutch Harbor, I would like to request that the members of this survey (Forrest Blau, George Pappas, Mary Schwenzfeier, and Leslie Watson) collect bird specimens from St. Matthew Island or Hall Island if the opportunity to do so occurs. Specimens from these remote islands are extremely important to the University of Alaska Museum bird collection, in that we attempt to document the geographic and genetic variation of Alaska birds at the population level. Population samples from remote islands are very difficult to acquire, and our success in doing so depends entirely upon the cooperation of agencies such as ADF&G.

Although any specimens from these islands are desirable, some would be more important than others. For example, there are no genetic samples of the resident Rosy Finch (*Leucosticte tephrocotis*) population. These birds can probably best be obtained by standing on a beach between cliffs and waiting for individuals or pairs to fly by (they fly the length of the beach but have to be watched for; they're the only dark bird of their size that fly the length of the beaches in going from cliff to cliff). Additionally, specimens of McKay's Bunting males (white backs) and birds in juvenal plumage are important in ongoing research here at UAM to determine whether this taxon (*Plectrophenax hyperboreus*) is a full species. Similarly, specimens of adult Rock Sandpipers (*Calidris ptilocnemis*) from this remote population are much desired.

Besides these special desires there remain several other desirables from this remote area. The island's breeding avifauna remains poorly known. Any *Charadrius* plovers seen should be collected. One species was reported breeding there last year (*C. semipalmatus*), and two others should occur there at least in some years (*C. hiaticula & mongolus*). In fact, any plover there should be collected, as should any small *Calidris* sandpiper (besides Rock Sandpipers). The same is true of any passerine vagrants, such as Old World buntings, which might occur there in any year. If the opportunity affords, samples of the locally breeding pintails or other puddle ducks would be very welcome as well.

One bit of information that might be gained is some estimate of the ratio of the two common gull species, Glaucous and Glaucous-winged. The latter was recorded to breed at St. Matthew for the first time last year, yet seemed to be quite common. Specimens of both species are desired; one of the Glaucous-winged Gull to document the breeding range expansion and two of Glaucous Gull to obtain the European subspecies, which barely reaches Alaska.

University of Alaska Fairbanks
PO Box 756960 Fairbanks, AK 99775-6960
907• 474-7505 FAX: 907• 474-5469

Of the species known to be there, these are the most desirable (in order):

Rosy Finch (*Leucosticte tephrocotis*)
McKay's Bunting (*Plectrophenax hyperboreus*). (Males and young in juvenal plumage)
Rock Sandpiper (*Calidris ptilocnemis*)
Glaucous-winged Gull (*Larus glaucescens*). (One specimen sufficient)
Glaucous Gull (*Larus hyperboreus*) (Two sufficient)
Anas ducks
Lapland Longspur (*Calcarius lapponicus*)

Not more than 15 of any given species (except gulls, for which very few are desired) should be necessary at this time.

All specimens will have to be collected using shotguns; there is no functional alternative collecting method on this island. Specimens taken can be frozen in plastic bags with a label inside giving date and locality (e.g., St Matthew Island, 26 August 1998).

Any specimens that ADF&G obtains in any area of activity are always desirable. Most of the material added to the UAM collection comes from the salvage of birds found dead. Active collecting at Dutch Harbor would also fill some ongoing Aleutian research needs (e.g., Rock Sandpipers, Winter Wrens, Song Sparrows, Snow Buntings, Rosy Finches, Lapland Longspurs).

Sincerely,

Dr. Kevin Winker
Curator of Birds
University of Alaska Museum
907 Yukon Drive
Fairbanks, Alaska 99775-6960
907-474-7027; ffksw@aurora.alaska.edu

UNIVERSITY OF ALASKA MUSEUM
907 Yukon Drive

6 May 1998

Sunny LaCour
U.S. Fish & Wildlife Service
Migratory Birds Permit Office
1011 East Tudor Road, Room 155
Anchorage, AK 99503

Re: Permit PRT-812229

Dear Ms. LaCour,

This is to notify you, as directed by the University of Alaska Museum's Scientific Collecting permit, that I am designating collecting and salvage authority to the following individuals, adding to thoseon the list sent previously:

Forrest Blau
William S. Koenig
George Pappas
Christin Pruett
Mary C. Schwenzfeier
Garth Spellman
Leslie Watson
David C. Weisensel

Best regards,

Kevin Winker
University of Alaska Museum
907 Yukon Drive
Fairbanks, Alaska 99775-6960
907-474-7027; ffksw@aurora.alaska.edu.

3-201
(10 85)

U. S. FISH AND WILDLIFE SERVICE
MIGRATORY BIRD PERMITS OFFICE
1011 EAST TUDOR ROAD, ROOM 155
ANCHORAGE, ALASKA 99503-6199
(907) 786-3300/ATTN:PERMITS ADMINISTRATOR

FEDERAL FISH AND WILDLIFE PERMIT

2. AUTHORITY-STATUTES
16 USC 703-712

REGULATIONS (Attached)
50 CFR Part 13
50 CFR 21.23

1. PERMITTEE

UNIVERSITY OF ALASKA MUSEUM
CURATOR OF ORNITHOLOGY
907 YUKON DRIVE
FAIRBANKS AK 99775-6960

3. NUMBER
PRT-812229

4. RENEWABLE	5. MAY COPY
[X] YES	[X] YES
[ ] NO	[ ] NO

6. EFFECTIVE	7. EXPIRES
1/ 7/98	12/31/98

8. NAME AND TITLE OF PRINCIPAL OFFICER (If #1 is a business)
CURATOR

9. TYPE OF PERMIT
SCIENTIFIC COLLECTING

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED
STATE OF ALASKA

11. CONDITIONS AND AUTHORIZATIONS:

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

D. Carry and display this permit upon request when conducting activity authorized herein.
E. Maintain records as required in 50 CFR 13.46.
F. Authority is granted to take migratory birds, eggs, and nests as necessary for the programs of the Museum and the College of Natural Sciences, University of Alaska, transport and possess dead specimens for scientific and educational purposes, during the tenure of this permit. The use of unattended mist nets is not authorized.
G. Dispose of specimens as specified in 50 CFR 21.23(C)(1).
H. SUBPERMITTEES: Concurrent authority is granted to those individuals identified in writing by the permittee to the issuing office.
I. Permittee must have written authority from the Alaska Department of Fish and Game, Juneau, Alaska, before

[ ] ADDITIONAL CONDITIONS AND AUTHORIZATIONS ON REVERSE ALSO APPLY

12. REPORTING REQUIREMENTS
FIRST ANNUAL REPORT DUE 1/31/99
REPORT FORM WILL BE PROVIDED AT A LATER DATE FOR REPORTING PURPOSES.

ISSUED BY	TITLE	DATE
Sunny LaCour	PERMITS ADMINISTRATOR	1/ 7/98

SUNNY LA COUR

ARD/ARW R7; SRA, FAIRBANKS LE; ADF&G, JUNEAU;

UNIVERSITY OF ALASKA MUSEUM
PRT 812229 - SCCL
PAGE TWO OF TWO PAGES

I. CONTINUED
exercising any of the authorities granted by this permit.
J. Permittee must comply with all of the attached standard conditions authorized by the scientific collecting Attachment # 1.

SCIENTIFIC COLLECTING

"ATTACHMENT # 1"

IN ADDITION TO SPECIFIC PERMIT CONDITIONS AS NOTED ON FEDERAL FISH AND WILDLIFE PERMIT, FORM 3-201, PERMITTEE(S) MUST COMPLY WITH STANDARD CONDITIONS LISTED BELOW:

1. Not authorized to take OR live-trap and release eagles and/or federally listed endangered/threatened species.

2. Any endangered/threatened species and/or bald or golden eagles salvaged, if salvage activities are authorized, must be reported to issuing office within 48 hours at (907) 786-3300.

3. Not authorized to trespass, take, live-trap and release and/or salvage specimens on National Wildlife Refuges or Parks lands without additional written authorization from the Refuge or Parks manager.

4. Not authorized to trespass, take, live-trap and release and/or salvage specimens on Native Corporation lands or villages, or other private lands.

5. Live specimens not suitable for release must be deposited with a specific public educational/scientific institution as specified in 50 CFR 21.12(b), or as directed by issuing office.

6. Dead specimens unsuitable for the research or for donation to a public research/educational institution, shall be completely destroyed by burning or burying.

7. Carry and display this permit upon request when conducting any activity authorized herein.

8. Maintain records as required in 50 CFR 13.46.

9. Taking migratory game birds, if authorized by permit, during hunting seasons shall be in compliance with state/federal hunting regulations.

10. Non-toxic steel shot must be utilized where authorized collecting of waterfowl is done with a shotgun.

11. Authorities granted herein shall not be exercised contrary to the laws of the appropriate state agencies.

12. The annual report shall contain copies of reports, publications, or papers on the findings that result from the projects.

Addendum D. (page 7 of 11)

SPECIAL CONDITIONS

Special Use Permit # 98014
Kevin S. Winker

1. Failure to abide by any part of the Special Use Permit; violation of any Refuge related provision in Title 43 (Part 36) or Title 50 (Subchapters B and C) Code of Federal Regulations; or violations of any pertinent state regulation (e.g., fish or game violation) will with due process be considered grounds for immediate revocation of this permit and could result in denial of future permit requests for lands administered by the U.S. Fish and Wildlife Service. This provision applies to all persons working under the authority of this permit (e.g., assistants). Appeals of decisions relative to permits are handled in accordance with Title 50 Code of Federal Regulations 36.41.

2. The permittee is responsible for ensuring that all persons working for the permittee and conducting activities allowed by this permit are familiar with and adhere to the conditions of this permit.

3. Any problems with wildlife and/or animals taken in defense of life or property must be reported immediately to the Refuge Manager, Alaska Department of Fish and Game, and be salvaged in accordance with State regulations.

4. This permit may be canceled or revised at any time by the Refuge Manager for non-compliance or in case of an emergency.

5. This permit does not imply in any way exclusive use of this area, nor does it include the right to authorize any other uses of these lands.

6. The permittee shall provide the Refuge Manager with a report of activities under this permit by **December 31, 1998**. This report shall include methods used, success in data collection, numbers and kinds of samples collected, results of the study to date, and problems encountered.

7. Valid collecting permits from the Federal and State governments must accompany this permit while in the field. Copies of those collecting permits must be provided to this office.

8. Copies of reports, thesis', scientific papers, etc. produced regarding the work covered under this permit shall be provided to the Refuge.

9. In accordance with the Archaeological Resources Protection Act (16 USC 470aa), **the removal or disturbance of archaeological or historical sites or artifacts is prohibited**. The excavation, disturbance, collection, or purchase of historical, recent, ethnological, or archaeological specimens or artifacts is prohibited.

I have read and agreed to abide by the above special conditions.

x _____ 1 June 1998 _____ 05/27/98
Permittee Date for Deputy Refuge Manager Date

Appendix B. (page 63 of 90)
Addendum D. (page 8 of 11) General Conditions

1. Payments
All payments shall be made on or before the due date to the local representative of the U.S. Fish and Wildlife Service by a postal money order or check made payable to the U.S. Fish and Wildlife Service.
2. Use limitations
The permittee's use of the described premises is limited to the purposes herein specified; does not unless provided for in this permit allow him/her to restrict other authorized entry on to his/her area; and permits the Service to carry on whatever activities are necessary for (1) protection and maintenance of the premises and adjacent lands administered by the Service and (2) the management of wildlife and fish using the premises and other Service lands.
3. Damages
The United States shall not be responsible for any loss or damage to property including but not limited to growing crops, animals, and machinery; or injury to the permittee, or his/her relatives, or to the officers, agents, employees, or any others who are on the premises from instructions or by the sufferance of wildlife or employees or representatives of the Government carrying out their official responsibilities. The permittee agrees to save the United States or any of its agencies harmless from any and all claims for damages or losses that may arise or be incident to the flooding of the premises resulting from any associated Government river and harbor, flood control, reclamation, or Tennessee Valley Authority activity.
4. Operating Rules and Laws
The permittee shall keep the premises in a neat and orderly condition at all times, and shall comply with all municipal, county and State laws applicable to the operations under the permit as well as all Federal laws, rules and regulations governing National Wildlife Refuges and the area described in this permit. The permittee shall comply with all instructions applicable to this permit issued by the refuge officer in charge. The permittee shall take all reasonable precautions to prevent the escape of fires and to suppress fires and shall render all reasonable assistance in the suppression of refuge fires.
5. Responsibility of Permittee
The permittee, by operating on the premises, shall be considered to have accepted these premises with all facilities, fixtures, or improvements in their existing condition as of the date of this permit. At the end of the period specified or upon earlier termination, the permittee shall give up the premises in as good order and condition as when received except for reasonable wear, tear, or damage occurring without fault or negligence. The permittee will fully repay the Service for any and all damage directly or indirectly resulting from negligence or failure on his/her part, or the part of anyone of his/her associates, to use reasonable care.
6. Revocation Policy
This permit may be revoked by the Regional Director of the Service without notice for noncompliance with the terms hereof or for violation of general and/or specific laws or regulations governing National Wildlife Refuges or for nonuse. It is at all times subject to discretionary revocation by the Directory of the Service. Upon such revocation the Service, by and through any authorized representative, may take possession of the said premises for its own and sole use, or may enter and posses the premises as the agent of the permittee and for his/her account.
7. Compliance
Failure of the Service to insist upon a strict compliance with any of this permit's terms, conditions, and requirements shall not constitute a waiver or be considered as a giving up of the Service's right to thereafter enforce any of the permit's terms, conditions, or requirements.
8. Termination Policy
At the termination of this permit the permittee shall immediately give up possession to the Service representative, reserving, however, the rights specified in paragraph 9. If he/she fails to do so, he/she will pay the Government, as liquidated damages, an amount double the rate specified in this permit for the entire time possession is withheld. Upon yielding possession, the permittee will still be allowed to reenter as needed to remove his/her property as stated in paragraph 9. The acceptance of any fee for liquidated damages or any other act of administration relating to the continued tenancy is not to be considered as an affirmation of the permittees action nor shall it operate as a waiver of the Government's right to terminate or cancel the permit for the breach of any specified condition or requirement.
9. Removal of Permittee's Property
Upon the expiration or termination of this permit, if all rental charges and/or damage claims due to the Government have been paid, the permittee may, within a reasonable period as stated in the permit or as determined by the refuge officer in charge but not to exceed 60 days, remove all structures, machinery, and/or other equipment, etc., from the premises for which he/she is responsible. Within this period the permittee must also remove any other of his/her property including his/her acknowledged share of products or crops grown, cut, harvested, stored, or stacked on the premises. Upon failure to remove any of the above items within the aforesaid period, they shall become the property of the United States.
10. Transfer of Privileges
This permit is not transferable, and no privileges herein mentioned may be sublet or made available to any person or interest not mentioned in this permit. No interest hereunder may accrue through lien or be transferred to a third party without the approval of the Regional Director of the U.S. Fish and Wildlife Service and the permit shall not be used for speculative purposes.
11. Conditions of Permit not Fulfilled
If the permittee fails to fulfill any of the conditions and requirements set forth herein, all money paid under this permit shall be retained by the Government to be used to satisfy as much of the permittee's obligation as possible.
12. Officials Barred from Participating
No Members of Congress or Resident Commissioner shall participate in any part of this contract or to any benefit that may arise from it, but this provision shall not pertain to this contract if made with corporation for its general benefit.
12. Nondiscrimination in Employment
The permittee agrees to be bound by the equal opportunity clause of Executive Order 11246, as amended.

Privacy Act Statement - Special Use Permit

NOTICE: In accordance with the Privacy Act of 1974, 5 U.S.C. 552a, please be advised that:

1. The issuance of a permit and collection of fees on lands of the National Wildlife Refuge System is authorized by the National Wildlife Refuge System Administration Act (16 U.S.C. 668dd - 668ee), and the Refuge Recreation Act, (16 U.S. C. 460k-3); implemented by regulations in 50 CFR 25-36.

2. Information collected in issuing a permit may be used to evaluate and conclude the eligibility of , or merely document, permit applicants.

3. Routine use disclosures may also be made (1) to the U.S. Department of Justice when related to litigation or anticipated litigation; (2) of information indicating a violation or potential violation of a statute, regulation, rule, order or license, to appropriate Federal, State, local or foreign agencies responsible for investigating or prosecuting the violation or for enforcing or implementing the statute, rule, regulation, order, or license; (3) from the record of the individual in response to an inquiry from a Congressional office made at the request of that individual; (4) to provide addresses obtained from the Internal Revenue Service to debt collection agencies for purposes of locating a debtor to collect or compromise a Federal Claim against the debtor, or to consumer reporting agencies to prepare a commercial credit report for use by the Department (48FR 54716; December 6, 1983).

4. Any information requested is required to receive this permit. Failure to answer questions may jeopardize the eligibility of individuals to receive permits.

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Alaska Maritime National Wildlife Refuge
2355 Kachemak Bay Drive, Suite 101
Homer, Alaska 99603

SPECIAL USE PERMIT

Station No. to be Credited Permit No.
74500 - 98014

Date May 27, 1998

Period of Use (inclusive)
From July 15, 1998
To September 15, 1998

Permittee Name
Kevin Winker

Permittee Address
University of Alaska Fairbanks
University of Alaska Museum
907 Yukon Drive
Fairbanks, Alaska 99775-6960

Purpose (specify in detail privilege requested, or units of products involved)

Access to refuge lands on St. Matthew Island for the collection of bird specimens. All specimens will be deposited at the University of Alaska Museum.

Those persons covered under this permit include: Forrest Blau, George Pappas, Mary Schwenzfeier, and Leslie Watson.

Description (specify unit numbers: metes and bounds, or other recognizable designations)

Lands administered by the U.S. Fish and Wildlife Service at St. Matthew Island in the Bering Sea Unit of the Alaska Maritime National Wildlife Refuge.

Amount of fee $0 if not a fixed payment, specify rate and unit of charge:

- ☒ Payment Exempt - Justification: cooperative project
- ☐ Full Payment
- ☐ Partial Payment - Balance of payments to be made as follows:

Record of Payments
n/a

Special Conditions

In addition to the General Conditions on the reverse of this permit, there are Special Conditions attached.

The collection of Aleutian and Arctic terns are prohibited under this permit.

This permit is issued by the U.S. Fish and Wildlife Service and accepted by the undersigned, subject to the terms, covenants, obligations, and reservations, expressed or implied herein, and to the conditions and requirements appearing on the reverse side.

Permittee Signature

Issuing Officer Signature and Title

Form 3-1383 (Rev. 6/85)

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME

P.O. Box 25526
JUNEAU, ALASKA 99802-5526

Permit No. 98-005

Expires 12/31/98

SCIENTIFIC OR EDUCATIONAL PERMIT

This permit authorizes University of Alaska Museum, Kevin Winker, Curator of Ornithology
(person, agency or organization)
of P.O. Box 756960, 907 Yukon Drive, Fairbanks, AK 99775-6960 to conduct the following
(address)
activities from February 3, 1998 to December 31, 1998 in accordance with AS 16.05.930.

Authority is granted the permittee to take birds, including migratory birds, eggs and nests, as necessary for the programs of the Museum and the College of Natural Sciences, University of Alaska. Also authorized to import, export, transport and possess specimens for scientific and educational purposes. The use of unattended mist nets is not authorized. Subpermittees are Joseph A. Cook, Gordon H. Jarrell, Brina Kessel, Daniel D. Gibson, Anna-Marie Barber, Robert W. Dickerman, Terry J. Doyle, Todd J. Eskelin, Steven C. Heinl, Dale Kohlmetz, Alec R. Lindsay, Douglas Siegel-Causey, Robert J. Scher, David W. Sonneborn, Marie Sutherlin, Jacqueline J. Weicker. Subpermittees may be added or removed from this list by sending a letter requesting such action to the Department of Fish and Game, Division of Wildlife Conservation, Permit Section. A letter requesting a subpermittee be added must be made prior to any specimen collection by that person.

This permit does NOT authorize the import or export of live birds, except under separate written authorization by the issuing office. All other conditions same as federal permit.

The annual report to the department shall include the following for each specimen collected under authority of this permit: specimen number, species, date and location of collection, name of collector, and location where the specimen is being housed. For each specimen exported under authority of this permit, the report shall include the specimen number, species, year of collection, and location where the specimen is to be housed.

FEDERAL PERMIT FRT-812229 AND THIS PERMIT MUST BE IN POSSESSION.

REPORT DUE January 31, 1999. The report shall include species, numbers, dates and locations of collection and disposition, sex, age, breeding condition, and any additional information specified above.

GENERAL CONDITIONS, EXCEPTIONS AND RESTRICTIONS

1. This permit must be carried by person(s) specified during approved activities who shall show it on request to persons authorized to enforce Alaska's fish and game laws. This permit is nontransferable and will be revoked or renewal denied by the Commissioner of Fish and Game if the permittee violates any of its conditions, exceptions or restrictions. No redelegation of authority may be allowed under this permit unless specifically noted.

2. No specimens taken under authority hereof may be sold or bartered. All specimens must be deposited in a public museum or a public scientific or educational institution unless otherwise stated herein. Subpermittees shall not retain possession of live animals or other specimens.

3. The permittee shall keep records of all activities conducted under authority of this permit, available for inspection at all reasonable hours upon request of any authorized state enforcement officer.

4. Permits will not be renewed until detailed reports, as specified above, have been received by the department.

5. UNLESS SPECIFICALLY STATED HEREIN, THIS PERMIT DOES NOT AUTHORIZE the exportation of specimens or the taking of specimens in areas otherwise closed to hunting and fishing; without appropriate licenses required by state regulations; during closed seasons; or in any manner, by any means, at any time not permitted by those regulations.

Wayne Regelin
Division of Wildlife Conservation

February 3, 1998
Date

Appendix B. (page 66 of 90)

Addendum D. (page 11 of 11)

Museum
UNIVERSITY OF ALASKA MUSEUM
Kevin Winker
Curator of Ornithology
Assistant Professor in
Biology and Wildlife
907 Yukon Drive
PO Box 756960 Fairbanks AK 99775-6960
E-mail: ffksw@uaf.edu
David D. Gibson 474-7352
907/474-7027
FAX 907/474-6469

Addendum E. List of equipment to be used on the August 1998 ADF&G St. Matthew Is. blue king crab survey.

EQUIPMENT FOR ADF&G PERSONNEL (one set per person)

1. Survival suit with attached EPIRB and strobe (4 total)
2. Rain gear, boots, gloves
3. Stormy Seas jacket
4. Project Operational Plan and Shipboard Instructions (7 total: 4 for ADF&G; 3 for vessel captain and crew)
5. Rite-in-Rain notebooks, 1 large and 1 small

DECK/SAMPLING EQUIPMENT

1. One 4'x8' aluminum sorting table with 4 stands
2. (2) wood dividers for sorting table
3. (2) aluminum measuring tables with adjustable legs
4. Assorted hex head bolds and appropriate-sized socket wrench for table assembly
5. (8) clipboards (6 legal size, 2 regular size)
6. (2) covered clipboards (aluminum or plastic)
7. Variety of wood screws 1"-3"
8. (4) pair calipers, large size with millimeter scale
9. (6) 5.5" measuring sticks
10. 10,000 Floy spaghetti tags (pink, series 'C')
11. (19) stainless steel rods (1/4" dia.) threaded with tags and mounted on a 4'x4'1/2" plywood board
12. (2) cans WD-40
13. (4) pair needlenose pliers
14. (2) pair small crimping pliers
15. (2) STR temperature probes. tubular housing and clips, with instructions and extra RS232-R12 cables
16. (4) sets of 10 clip-on number tags (plastic and wood)
17. (4) dump totes
18. (6) bushel baskets
19. (3) rolls flagging tape (each a different color)
20. (40) rolls electrical tape
21. One liter of 10% formalin
22. (2) syringes
23. (5) assorted specimen jars
24. RV *Instar* (26' aluminum skiff)

Addendum E. (page 2 of 2).

FORMS

1. 2000 black ink Crab Data forms (for male blue king crabs)
2. 1000 blue ink Crab Data forms (for female blue king crabs)
3. 1000 green ink Crab Data forms (for male and female snow crabs
4. 400 Ovary Sample forms
5. 10 Daily Check List forms (yellow paper)
6. 50 Pilot House Log forms (FV *Notorious*)
7. 25 Pilot House Log forms (RV *Instar*)
8. 18 Radio Log forms (general)
9. 18 Radio Log forms (MCI)
10. 20 Tag Recovery forms

CHARTS AND BOOKS

1. (2) NOAA St. Matthew NOS NP-2-7 charts, with overlays of offshore and nearshore stations
2. (1) Alaska's Saltwater Fishes and Other Sea Life (Kessler)
3. (1) Pacific Fishes of Canada (Hart)

OFFICE AND MISCELLANEOUS SUPPLIES

1. (2) crew leader notebooks (3-ring binders)
2. (2) hand-held calculators
3. (10) mechanical pencils
4. (5) ink pens
5. Ream plain paper
6. 50 sheets 8½x11 Rite-in-Rain paper
7. North Star medical kit
8. 25-ft power cord
9. Buss bar
10. Micron 486 notebook computer with cables and connectors
11. Cannon BubbleJet printer with cables, connectors, and spare ink cartridge
12. (10) 3.5" diskettes
13. (20) pair earplugs
14. Permanent markers (ass't colors)
15. Highlighting markers (ass't colors)
16. 3-ring hole punch
17. 50 rubber bands (ass't), including large (to fit clipboards)
18. (2) rolls each: Scotch tape, 3" 3-M type tape, and duct tape
19. Paper clips (ass't)
20. Envelopes (ass't)

STATE OF ALASKA ITB# 11-002-99
BLUE KING CRAB POT VESSEL CHARTER IN ST. MATTHEWS ISLAND (REGISTRATION AREA Q)

CONTRACTING OFFICER: Rolfe Wagoner

Phone: (907) 465-4131 Fax: (907) 465-6181

DOES YOUR BUSINESS QUALIFY FOR THE ALASKA BIDDER'S PREFERENCE?
[ ]YES [ ]NO
SEE ITB FOR EXPLANATION OF CRITERIA TO QUALIFY.

COMPANY SUBMITTING BID: Notorious Partnership

AUTHORIZED SIGNATURE: [signature]

PRINTED NAME: Gretar Gudmundsson

STREET ADDRESS: 3600 15th Avenue W., Ste. 202

CITY, STATE, & ZIP: Seattle, WA 98119

PHONE NUMBER: (206) 281-7145 FAX NUMBER: (206) 281-7208

TAX ID#: 91-1645488

ALASKA BUSINESS LICENSE #: 206213

Checklist

The following checklist has been included with this ITB in order to highlight important provisions and to specify key items that must be furnished by the contractor. After reading each section on the following pages please check the boxes below to indicate that you understand each of the contract terms as outlined:

- ☑ Failure to comply with any items of contract may result in cancellation by the State.
- ☑ State may end the charter at any time due to insufficient funds.
- ☑ Charter begins and ends in Dutch Harbor and will take place in waters adjacent to St. Matthew Island. Charter period up to 28 days, Aug. 1-28, 1998.
- ☑ A valid USCG Commercial Fishing Vessel Exam Certificate will be required to validate the type/size and other specifications of the vessel offered.
- ☑ Vessel may be subject to US Coast Guard and ADF&G inspections (additional to above) following tentative contract award.
- ☑ Proof of $1,000,000.00 indemnity insurance for the charter period will be required.
- ☑ Four (4) Alaska Dept. Fish & Game personnel will be aboard the vessel during charter.
- ☑ USGC approved first-aid kit, fire-fighting equipment, life rafts, survival suits (vessel crew only).
- ☑ Vessel at least 115 feet long (centerline) with minimum of 900 horsepower, 10 knot cruising speed, 2 power blocks (1,000 lb.), hydraulic bait chopper, 4'x8' sorting table, lines & buoys to fish 80 pots concurrently up to 60 fathoms, 160-2 qt. bait jars; deck, stern or bow space to store 31 foot skiff, crane to load & unload skiff.
- ☑ Vessel crew minimum requirements: captain 5 yr. pot fishing in Bering Sea or St. Matthew Is.; engineer 5 yr. experience; crew 3 yr. experience.
- ☑ Sleeping space for 4 ADF&G and all vessel crew. Workspace table and storage requirements for ADF&G.
- ☑ All consumables will be provided by the contractor - including fuel and lubricants.
- ☑ Food preparation and storage requirements. Adequate food & water for 28 days will be provided by the contractor.
- ☑ No alcohol or controlled substances aboard the vessel during the charter period.

PURPOSE: Contract of a vessel, with captain and three (3) crew, for use of Alaska Department of Fish and Game (ADF&G) as living quarters and an operations base for research activities relating to blue king crab research in waters of the St. Matthew Island section of the northern district of the Bering Sea (Area 'Q'). ADF&G will place four (4) of their personnel aboard the vessel. Biologists will collect data on blue king crabs and associated marine life. This charter is scheduled to last for twenty-eight (28) days.

DEFAULT: A contractors failure to comply with any of the terms and conditions of this contract may result in a default action by the State.

COMPLIANCE: The bidder must comply with all applicable national, federal, State, local and borough regulations, codes, and laws; be liable for all required insurance, licenses, permits and bonds; pay all applicable federal, State, local and borough taxes.

NOTICE OF INTENT: After the responses to this invitation to Bid (ITB) have been opened and evaluated a tabulation of the bids will be prepared. This tabulation, called a Notice of Intent, serves two purposes: 1) it lists the name of each company or person that offered a bid and the price they bid; 2) it also serves as notice of the State's intent to award a contract(s) to the bidder(s) indicated. A copy of the Notice of Intent will be mailed to each company or person who responded to the ITB. Bidders, identified as the apparent low responsive bidders, are instructed not to proceed until a Purchase Order, Contract Award, Lease, or, some other form of written notice is given by the Contracting Officer. A company or person who proceeds prior to receiving a Purchase Order, Contract Award, Lease, or some other form of written notice from the Contracting Officer does so without a contract and at their own risk.

PAYMENT FOR STATE PURCHASES: Payment for agreements under $500,000, for the undisputed purchase of goods or services provided to a State agency, will be made within 30 days of the receipt of a proper billing or the delivery of the goods or services to the location(s) specified in the agreement, whichever is later. A late payment is subject to 1.5% interest per month on the unpaid balance. Interest will not be paid if there is a dispute or if there is an agreement which establishes a lower interest rate or precludes the charging of interest.

FEDERAL EXCISE TAX: The State of Alaska is exempt from the Federal Excise Tax except the following:

- Coal - Internal Revenue Code of 1986 (IRC), Section 4121 - on the purchase of coal;
- "Gas Guzzler" - IRC, Section 4064 - on the purchase of low m.p.g. automobiles, except that police and other emergency type vehicles are not subject to the tax;
- Air Cargo - IRC, Section 4271 - on the purchase of property transportation services by air;

- Air Passenger - IRC, Section 4261 - on the purchase of passenger transportation services by air charter.

CONTRACT ENFORCEMENT: Enforcement of this contract is the responsibility of the Division of General Services (DGS) Contracting Officer. When a State agency has a complaint concerning a contractor's performance the agency must contact DGS in writing. Facsimile notification at (907) 465 - 2189 is also acceptable. DGS will contact the contractor and resolve the matter.

FIRM AND UNQUALIFIED (UNCONDITIONAL) OFFER: Bidder's must provide enough information, with their bid, to constitute a definite, firm, and unqualified or unconditional offer. In order to be responsive a bid must constitute a definite, firm, and unqualified or unconditional offer to meet all of the meaningful or material terms of the ITB. Some meaningful or material terms are those items which could affect price, quantity, quality, or delivery. Also included as meaningful or material terms are those which are clearly identified in the ITB, and which, for reasons of policy, must be complied with at risk of bid rejection for non-responsiveness.

BIDDERS NOTE: This contract involves financial risks. Please read this ITB very carefully and make certain that you understand the risks and responsibilities. If you have any questions contact the Contracting Officer at: Voice (907) 465 - 5677, TDD (907) 465 - 2205 or FAX (907) 465 - 2189.

HOLD HARMLESS: The contractor will indemnify, save harmless and defend the State, it's officers, agents and employees from all liability, including costs and expenses, for all actions or claims resulting from injuries or damages sustained by any person or property arising directly or indirectly as a result of any error, omission or negligent act of the contractor, subcontractor or anyone directly or indirectly employed by them in the performance of this contract.

All actions or claims including costs and expenses resulting from injuries or damages sustained by any person or property arising directly or indirectly from the contractor's performance of this contract which are caused by the joint negligence of the State and the contractor will be apportioned on a comparative fault basis. Any such joint negligence on the part of the State must be direct result of active involvement by the State.

INSURANCE: The contractor will maintain insurance satisfactory the Division of Risk Management, Department of Administration. Certificates of Insurance will be furnished to the Contracting Officer which will provide for a 30 day prior notice of cancellation, non-renewal or material change in such insurance.

Proof of insurance is required for the following:

A. Protection and Indemnity, including crew exposure, in the amount of 1,000,000.00.

Failure to supply satisfactory proof of insurance within the time required will cause the State to declare the bidder non-responsive and reject the bid.

LENGTH OF CONTRACT: Approximately twenty-eight (28) continuous days, to occur on or about August 1 - 28, 1998. The length of the charter and starting date may vary by mutual agreement between the vessel owner and the State of Alaska, but payment will not exceed the twenty-eight (28) day period. Charter service will begin and end in Dutch Harbor, Alaska.

CANCELLATION: The State reserves the right to cancel the contract at the State's sole discretion.

The State will have the sole discretion to cancel any contract that results from this ITB after the charter has commenced, if it is determined by the State that there are insufficient funds to cover the State's expense and the cost of the charter.

ESTIMATED USE: The charter dates and length of the charter referenced in this ITB are the State's estimated requirements. The State does not guarantee a minimum or maximum number of charter days. However, for the purpose of bid evaluation the State will assume the use of twenty-eight (28) contract days.

LOCATION OF VESSEL OPERATION: The vessel is required to operate in waters comprising the St. Matthew Island Section of the Northern District of the Bering Sea (Area 'Q'). The charter will begin and end in Dutch Harbor, Alaska.

PAYMENT FOR THE CHARTER: The vessel owner/Captain will be paid the daily charter rate up to the maximum twenty-eight (28) days. Days or partial days spent shoreside by the vessel captain and crew conducting activities involving loading and unloading ADF&G gear and equipment will also be paid at the daily charter rate, up to and included within the maximum twenty-eight (28) days. Payment for partial calendar day charter vessel operation from the contractual commencement and conclusion date of the twenty-eight (28) continuous day charter period will be prorated on an hourly basis from the daily charter vessel rate. This contract requires a vessel Captain and three (3) crew members. The experience and licensing requirements are set out below.

STATE PERSONNEL ABOARD THE VESSEL: During the contract period the State will place four (4) ADF&G crew members aboard the vessel.

VESSEL INSPECTION: The vessel will be subject to inspection by the Department of Fish and Game. The bidder(s) must, upon 10 days notice, make the vessel available for inspection at Dutch Harbor, Alaska.

By the date set for the vessel inspection, all of the equipment called for in this ITB must be installed and functional. The successful bidder must pay the cost of all the equipment and any vessel alterations needed to meet the requirements of this ITB.

If, at the time of inspection, a vessel fails to meet the ITB requirements, the State may consider the offer non-responsive and reject the bid or terminate the contract.

A USCG Certificate of Inspection will be required to validate the type/size and other specifications of the vessel offered.

SEAWORTHINESS: Inspection of the vessel is not intended to convey acceptance by the State nor should it be considered conclusive evidence that the State believes the vessel is seaworthy. If during ADF&G's inspection or at any time during the subsequent term of the contract, conditions are noted that might affect the safety or seaworthiness of the vessel, the State will arrange for further inspection by a person with the appropriate credentials to determine if the condition of the vessel is acceptable.

VESSEL REQUIREMENTS:

A. Length of not less than one hundred fifteen (115) feet. Length will be determined by measuring the centerline.

B. Sleeping space for four (4) state personnel, in addition to the Captain and crew. Each sleeping space used by state personnel must be at least twenty-six (26) inches in width at the shoulders and seventy-seven (77) inches long.

C. Minimum nine (9) cubic feet of dry storage drawer space for State equipment.

D. Minimum twelve (12) square feet of flat, clear, interior work space for paper and computer work by ADF&G crew. Galley table is acceptable. One 110 volt AC outlet must be available near this area..

E. Minimum six (6) square feet of flat, clear, interior work space, either shelf or table, in a relatively undisturbed location, other than the galley table, where a portable computer can be set up and paperwork performed throughout the charter. One 110 volt AC outlet must be available near this area.

F. Minimum five hundred (500) square feet of flat, clear, exterior deck work space for state personnel. Vessels with shelter decks are highly preferred. The work area must be well lit to permit work at night, including data recording and tagging. If fixed lighting is unavailable, responsive vessels must have mobile lighting, power cords, and all associated accessories to make a temporary installation of required lighting.

G. Stove, oven, sink, galley table, and all materials and equipment necessary for daily meal preparation, cooking, and clean-up.

H. Refrigerated and freezer storage space sufficient to maintain perishable and frozen food for all personnel for the twenty-eight (28) days of the charter.

I. Freezer storage space sufficient to maintain frozen bait herring and any biological specimens collected by ADF&G personnel for the duration of the longest continuous period of at-sea operations.

J. Fresh water storage or sea water conversion capabilities sufficient to permit twenty-eight (28) continuous days of operation. Water supply must be sufficient to permit daily: drinking water washing of dishes, personal hygiene, food preparation, and dish washing. Fresh water must also be available for short showers every two (2) days and for clothes washing every four (4) days.

K. Two (2) radar systems in good operating condition, each with a minimum range of 60 miles.

L. Automatic pilot in good operating condition. Automatic readout Loran C, or GPS. Backup system is highly desirable. Fathometer with minimum 300 fathom range. Backup system is highly desirable. Minimum of two anchors with ground tackle; all of the size and type required for the size and type of vessel chartered.

M. Two (2) each of single side-band and VHF radio transmitter(s) and receiver(s) in good operating condition equipped. Single side-band radio transceiver; at minimum, with single side-band frequencies of 4125, 5195 and 3230 (for receiving) and 4125, 5195 and 3230 (for transmitting) to allow direct communication with marine operator (KMI). VHF channels 6 and 16. Vessels equipped with INMARSAT Standard C satellite communication capability are highly preferred.

N. USCG approved first-aid kit.

O. USCG approved fire-fighting equipment of the size and type required for the size and type vessel chartered.

P. USCG approved life rafts. The rated capacity of the rafts must be adequate (as required by CFR 46, part 28) to accommodate all of the people aboard the vessel; this includes the Captain, the vessel crew, and all of the ADF&G crew. Packing/Inspection certificates for all life rafts must be current.

Q. USCG approved survival suits of appropriate sizes are required for all the people aboard the vessel. The State will provide survival suits for the ADF&G crew members.

R. The vessel's main engine(s) must be diesel powered at a minimum of 900 horsepower. Bids offering gasoline powered engines will be rejected as non-responsive.

S. Minimum cruising speed (without pots on deck and without crabs in the holding tanks, and in calm seas) must be 10 knots.

T. Two (2) power block (one spare) to pull crab gear, minimum capacity 1,000 pounds.

U. Hydraulic (or motor operated) bait chopper.

V. Catch sorting table, minimum 4 feet by 8 feet.

X. Lines and buoys to fish 80 single 7'X7' king crab pots concurrently to a maximum depth of approximately 60 fathoms.

Y. Number of bait jars must be sufficient to fish 80 pots concurrently with at least one (1) gallon (i.e. two 2-quart containers) of bait per pot; sufficient bait containers to fish at least 15 additional pots in the same manner must be onboard the vessel at the start of the charter.

Z. Provide deck, stern or bow space to securely stow a twenty-six (26) foot aluminum skiff for the entire twenty-eight day charter period. Safe storage of accompanying 55 gallon gas drums will also be necessary. Vessel crane with appropriate rating will also be required to deploy skiff periodically during the charter period.

Skiff dimensions: overall length (with outboard) - 31 feet;
width - 9'8"; maximum height - approx. 11 foot (from V-bottom to cabin electronics); Gross weight (max.) - approx. 7,000 lb.

VESSEL CREW REQUIREMENTS:

A. Crew to consist of a Captain with at least five (5) years of single pot fishing for blue king crabs in the St. Matthew Island Section of the Northern District of the Bering Sea (area Q) waters, and three (3) experienced fishermen. One of the fishermen must be an engineer with five (5) years experience aboard fishing vessels and fully knowledgeable of the vessel and equipment. Vessel crew will be expected to perform cooking and cleaning duties in addition to operating the vessel and assisting biologists by handling catches as prescribed by the ADF&G crew leader.

B. The vessel crew will set and retrieve all gear.

C. The State will have the right to require replacement of any vessel crew member. If the vessel operates shorthanded due to replacement or illness of a vessel crew member for a period in excess of twenty-four (24) hours, the State will deduct from the charter rate for that period of time in an amount equal to the missing crewman's wages and related direct cost of employment (i.e., social security tax, unemployment insurance, etc.). The total cost of replacing a vessel crew member aboard the vessel will be at the owner's expense. The owner will be responsible for payment of wages, direct cost of employment and will be responsible for all vessel crew members. The State will be responsible for payment of daily charter rates only, and will not reimburse the owner for vessel crew wages.

D. Captain will be required to accurately complete ADF&G skipper forms (on paper or electronically) for each day of fishing, including recording string and pot locations, date, depth, pot setting and retrieval times, etc. Captain and crew will be required to locate designated fishing stations regardless of time of day or night.

E. There shall be no alcohol or controlled substances aboard the charter vessel during the charter.

UNUSUAL HOURS: It may be necessary to run the vessel thirty-six (36) to forty-eight (48) hours continuously to travel from one location to another (i.e. from Dutch Harbor to survey area near St. Matthew Island). It will be necessary to set and/or lift gear after minimum soak time requirements have been met regardless of daytime or nighttime hours, or hours worked.

DELAYS OR INTERRUPTIONS OF OPERATIONS: For each hour of contract time lost, for any reason other than weather or an act directly attributable to ADF&G personnel aboard the vessel, the State will on each occasion, be entitled to deduct from the total contract payment, an amount equal to the hourly contract rate for each of the hours the vessel or essential equipment on the vessel is out of service.

TERMINATION OF THE CONTRACT: The State may, without fault or liability, terminate the contract for any of the following reasons:

1) failure of the Captain, vessel, or vessel crew to report at the time and location specified in this ITB to begin the contract;

2) lack of sufficient funds for the charter contract;

3) insubordination and/or lack of cooperation by the Captain or vessel crew;

4) the condition of the vessel or essential equipment on the vessel remains such that it cannot be used for work by the ADF&G crew for a period of more than seventy-two (72) hours.

In the event of early termination of the contract, State-owned gear may be placed in storage or returned to a location that is mutually agreed upon by the State and vessel owner. Charges for state-owned gear storage will be paid by the State. The State will not assume any liability for transporting the Captain and vessel crew to their home port. Contract payments will cease on the hour and date the vessel is unable to continue normal operations.

PERFORMANCE REQUIREMENTS OF THE VESSEL CAPTAIN & COMMAND OF THE VESSEL:

A. The vessel Captain's orders will be final in matters regarding the general operation of the vessel (either underway or at anchor); the operation of the vessel's equipment and fishing gear; any emergency situations that endanger the vessel or pose a direct or indirect threat to the safety and well being of the Captain, vessel crew and ADF&G crew; the general activities and safety of the vessel crew and ADF&G crew; and the navigation of the vessel.

B. The vessel Captain will comply with all directives given by the ADF&G crew leader regarding the State's research activities and cost recovery fishing objectives, provided that those orders do not endanger the vessel or pose a direct or indirect threat to the safety and well being of the Captain, vessel crew and ADF&G crew.

C. The vessel Captain will obey all USCG, State and other applicable regulations, rules, and statutes pertaining to the safe and legal operation of the vessel.

PERFORMANCE REQUIREMENTS OF THE VESSEL CREW MEMBERS: In the role of an operations base and living quarters for State personnel, the vessel, its Captain and crew will be required to provide the following services and accommodations:

A. General navigation and operation of the vessel either underway or at anchor.

B. Space for compiling and analyzing the data collected.

C. Communications base for dispersing information.

D. Basic living accommodations for four (4) ADF&G personnel.

E. Meal preparation, cooking and clean-up.

F. General cleaning of the interior and exterior of the vessel.

G. General assistance to the ADF&G personnel in the performance of their work. Vessel crew will be expected to handle catches as prescribed by the ADF&G crew leader and will be expected to fish the gear.

H. The Captain must provide a safety orientation briefing to all vessel and ADF&G crew members prior to embarking from Dutch Harbor. Both the vessel crew and ADF&G personnel must have general instructions on the following:

1. the location and operation of lifesaving and emergency equipment (life rings, life rafts, immersion/survival suits, activating the general alarm);

2. operation of assigned equipment;

3. instructions for making a distress call;

4. what to do in the event of a person overboard;

5. what to do in the event of a fire;

6. what to do in the event of flooding;

7. what to do in the event of an abandon ship order.

...e event of an abandon ship order.

...ABLES TO BE PROVIDED BY THE CONTRACTOR AND INCLUDED IN ...PER DAY CONTRACT PRICE:

A. The contractor will provide all fuel, lubricants, oils, greases and filters required during the entire charter period. At the beginning of the contract all fuel and lubricant tanks must be full and all filters must be fresh. In addition, the vessel must have aboard extra lubricants, oils, greases and filters in amounts sufficient for the entire charter period.

B. The contractor will provide all bait for the entire charter period; up to a maximum of twenty-six (26) fishing days with thirty-six (36) pots fished per day with one (1) gallon of (chopped) frozen herring per pot.

C. The contractor will provide three ample, balanced, and nutritious meals each day for all ADF&G crew, the vessel Captain and the vessel crew.

MISCELLANEOUS PROVISIONS: The State may, at it's own expense and only for the term of the contract, install and retain in the vessel equipment necessary to accomplish the objectives of the charter. The State will remove this equipment at the termination of the contract period without permanent alteration or damage to the vessel.

VESSEL INFORMATION FORM: Bidders must complete the vessel information form below. A bidder's failure to complete the vessel information form may cause the State to reject the bid as non-responsive.

OWNERS NAME(S): Gretar Gudmundsson, Gudjon Gudmundsson

ADDRESS: 3600 15th Avenue W., Ste. 202, Seattle, WA 98119

PHONE: (206) 281-7145

VESSEL NAME AND ADF&G NUMBER: Notorious, ADF&G# 00987

VESSEL USCG DOCUMENTED NO.: 291882

VESSEL TYPE (crabber, trawler, etc.): Crabber

CURRENT LOCATION OF VESSEL: Dutch Harbor, AK

CALL NUMBERS AND FREQUENCY: WCL5674

Appendix B. (page 81 of 90) STATE OF ALASKA ITB# 11-002-99
BLUE KING CRAB POT VESSEL CHARTER IN ST. MATTHEWS ISLAND (REGISTRATION AREA Q)

Addendum F. (page 13 of 22)

YEAR BUILT: 1944

REGISTRY NUMBER: 291882

CRUISING SPEED (KNOTS): 10

OVERALL LENGTH (FEET): 127'
(Straight line measurement from end to end over the deck, excluding sheer, measured parallel to the centerline)

VESSEL WEIGHT (TONS): 296

DIESEL POWERED MAIN ENGINE: [X] YES [ ] NO

MAIN ENGINE HORSEPOWER: 1125

HAS THE VESSEL BEEN INSPECTED BY THE USCG IN THE LAST 12 MONTHS?
[x] YES [ ] NO
If yes, please furnish a copy of the USCG "Commercial Vessel Safety Examination" letter with your bid.

SURVIVAL EQUIPMENT: The State requires that the life rafts carried aboard the vessel be USCG approved. The rated capacity of the life rafts must be adequate to accommodate all of the people aboard the vessel; this includes the ADF&G crew, the vessel Captain and vessel crew members.

Indicate the brand, capacity and USCG approval number for the life raft(s) you will carry aboard the vessel.

RAFT BRAND	CAPACITY	USCG APPROVAL NUMBER
EXAMPLE: Beaufort	8	
A. Viking	10	DK USCG H051088
B.		
C.		
D.		

Bidders must provide at least enough survival suits for all those onboard. Indicate the brand and model of survival suits you carry aboard the vessel.

SURVIVAL SUIT BRAND AND MODEL	NUMBER OF SUITS
A. Imperial & Rednindsdfakt	9
B.	
C.	
D.	
E.	
F.	

Failure to specify survival suits and USCG approved life rafts to accommodate all those on board will cause the State to declare the bidder non-responsive and to reject the bid.

Is all of the equipment called for in this ITB installed and functional on the date of the bid opening?

[x] YES [ ] NO

If "NO", indicate exceptions which will be corrected prior to the date set for the inspection by the State:

_____

_____

_____

BIDDERS NOTE: All of the equipment listed above and called for in this ITB must be installed and functional at the time of the vessel inspection.

USCG LICENSE: In the space provided, bidder's must enter the name of the person who will serve as Captain of the vessel. The Captain must be properly licensed by the USCG for the size/type vessel being offered. A photo copy of that person's USCG license should be submitted with the bid and must be submitted within 10 days of the State's request. A bidder's failure to provide a copy of the license, as stated above, may cause the State to consider the offer non-responsive and reject the bid.

If during the term of the contract, a different person is retained as Captain, a photo copy of that person's license must be submitted to the Contracting Officer prior to the time the person begins working as vessel Captain. The Contracting Officer must accept and authorize the change of Captains. The contractor's failure to follow this procedure may cause the State to terminate the contract.

On the line below, print the name of the person who will serve as Captain.

Gretar Gudmundsson

VESSEL CAPTAIN

Identify the rating(s) held by the person named above.

[ ] Operator of Uninspected Six Passenger Vessel

[ ] Master, 25 Ton vessels	[ ] Inland	[ ] Near coastal	
[ ] Master, 50 Ton vessels	[ ] Inland	[ ] Near coastal	
[ ] Master, 100 Ton vessels	[ ] Inland	[ ] Near coastal	
[ ] Master, 150 Ton vessels	[ ] Inland	[ ] Near coastal	
[ ] Master, 200 Ton vessels	[ ] Inland	[ ] Near coastal	
[ ] Master, 500 Ton vessels	[ ] Inland	[ ] Near coastal	
[x] Master, 1600 Ton vessels	[ ] Inland	[x] Near coastal [x[OCEANS	

CREW REQUIREMENTS: At a minimum, the vessel crew will consist of a Captain and three (3) crew members. The contractor will be responsible for payment of wages, direct cost of employment and fringe benefits, if any, to the vessel crew members. The State will be responsible for payment of the daily charter rate only and will not reimburse the contractor for crew wages in addition to the charter rate.

CAPTAIN AND CREW EXPERIENCE INFORMATION: Bidders must complete the Captain and crew information form below. Bidders failure to complete the Captain and crew information may cause the State to reject the bid as non-responsive.

CAPTAIN EXPERIENCE REQUIREMENTS: The vessel Captain must have a minimum of five (5) years experience single pot fishing for blue king crabs in the St. Matthew Island Section of the Northern District of the Bering Sea (Area Q). The Captain must also have a minimum of one (1) year experience, as a Captain, in the type and size vessel specified for this contract.

- Captain's experience operating in Alaska waters. 10 years.

- Captain's experience, as a Captain, in various size, type/class vessels.

  a) Size type/class of vessel: 100+' fishing vessels.
  Number of years experience in this size type/class of vessel: 10 years.

  b) Size type/class of vessel: _____.
  Number of years experience in this size type/class of vessel: _____ years.

  c) Size type/class of vessel: _____.
  Number of years experience in this size type/class of vessel: _____ years.

  d) Size type/class of vessel: _____.
  Number of years experience in this size type/class of vessel: _____ years.

CREW EXPERIENCE REQUIREMENTS:

1. ENGINEER Still to be determined

   One of the vessel crew members must be an engineer. The engineer must have a minimum of five (5) years (full years, not 5 seasons) certified experience as an engineer. The engineer must also have a minimum of one (1) year experience, as an engineer, in the type and size vessel specified for this contract.

Engineer's experience, as an engineer, in various size, type/class vessels.

a) Size type/class of vessel: _____.
Number of years experience in this size type/class of vessel: _____ years.

b) Size type/class of vessel: _____.
Number of years experience in this size type/class of vessel: _____ years.

c) Size type/class of vessel: _____.
Number of years experience in this size type/class of vessel: _____ years.

d) Size type/class of vessel: _____.
Number of years experience in this size type/class of vessel: _____ years.

2. REMAINING CREW MEMBERS Still to be determined

The remaining crew members must have a minimum of three (3) years (full years, not 3 seasons) experience commercial crab fishing at-sea.

a) First crew member's experience fishing at sea: _____ years.

b) Second crew member's experience fishing at sea: _____ years.

c) Third crew member's experience fishing at sea: _____ years.

d) If applicable, fourth crew member's experience fishing at sea: _____ years.

METHOD OF AWARD: Award will be made to the lowest responsive and responsible bidder.

BID SCHEDULE

CONTRACT RATE PER DAY $3,250.00 X 28 DAYS = $91,000.00 TOTAL BID PRICE

[redacted]

DEPT. OF TRANSP. U. S. COAST GUARD, CG-2849 (REV. 8-67) FILE NO.

SERIAL NUMBER 783436 ISSUE NUMBER 2-2

UNITED STATES COAST GUARD

LICENSE

TO U. S. MERCHANT MARINE OFFICER

This is to certify that *******WILLIAM J. ESSELSTROM*******
having been duly examined and found competent by the undersigned, is licensed to serve as ----------MASTER----------
OF NEAR COASTAL STEAM OR MOTOR VESSELS OF NOT MORE THAN 200 GROSS TONS;
MASTER OF NEAR COASTAL UNINSPECTED FISHING INDUSTRY VESSELS OF NOT MORE THAN 1600 GROSS TONS; MATE OF NEAR COASTAL STEAM OR MOTOR VESSELS OF NOT MORE THAN 1600 GROSS TONS; ALSO MATE OF NEAR COASTAL UNINSPECTED FISHING INDUSTRY VESSELS OF NOT MORE THAN 1600 GROSS TONS.----------
---
for the term of five years from this date.

Given under my hand this 13th day of June, 19 96.

Seattle, WA
Port

M. J. MATTIE,
Officer in Charge of Marine Inspection
By Direction Of

Additional Endorsements: PUGET SOUND, WASHINGTON; 19 JUNE 1996; THIS LICENSE IS AMENDED TO INCLUDE:

"RADAR OBSERVER (UNLIMITED) RADAR EXPIRES ON 18 JUNE 2001".

(THIS LICENSE EXPIRES 13 JUNE 2001)

SCHUMER
rrection of OCMI

Signature of Licensee

LEFT THUMB PRINT

Z or Book Number 350-44-6210

Date of Birth 06/08/56

Place of Birth ILLINOIS

Present Address 7211 NORTH SHORE ROAD, BELFAIR, WA 98528

CITIZENSHIP: Merchant Mariner Document

William J. Esselstrom
20 N.E Rainier Pl. South
Belfair, Wa.98528

Re:ST. Matts blue crab survey F/V NOTORIOUS
relief skipper

Dear sir,
I am writing to introduce my self to you and give a brief description of my fishing experiance.

From 1977 to 1989,I had fished the east coast of the U.S. longlining sword and tuna with a year setting up a fishery in Honduras ,South America. During this time I had also fished lobster,driftnetted shark and mackrel as well as blue crab and stone crab.

In 1989 I came to Dutch Harbor on a new long liner for Alaska Frontier co. of Seattle where I sailed as deck boss and started fishing P-Cod. Shortly there after I had moved to crabbing working for Sorn Sorensen on the Airedale.fishing ST.Matts blue crab and Adak reds as licenced mate. After earning my master 1600 ton license I have been involved in both the crab and longlining fisheries targeting blue crab, opilio,brown crab and p-cod.

During my career I have operated vessels as master for 12 years.I have been fortunate enough to enjoy a reputation as a safe and prudent master.Please feel free to contact me in Dutch Harbor on the F/V Notorious before June 18th as we will be departing for Bristol Bay tendering charter.I am extremely confident you will be well impresed by myself and crew aboard our vessel to expidite the needs for a successful blue crab survey.

Respectfully, I am

William J. Esselstrom

U.S. Department of Transportation
United States Coast Guard

Officer in Charge
Marine Inspections
Western Alaska

510 L Street, Suite 100
Anchorage, AK 99501
Phone: (907) 271-6700

16711
JUNE 26, 1998

LETTER OF INSPECTION FOR CHARTERED COMMERCIAL FISHING VESSELS

This letter expires on August 28, 1998

The F/V NOTORIOUS, (O.N. 291882), was inspected by the Coast Guard on JUNE 12, 1998, at the Port of Dutch Harbor, Alaska and was found to be in compliance with the applicable inspection criteria approved jointly by the National Marine Fisheries Service and the U. S. Coast Guard.

This vessel is considered satisfactory for operation during the period of charter, August 01, 1998 through August 28, 1998, on the Bering Sea within 200 miles from shore.

It is understood that a maximum of 09 total persons will be carried. The below listed lifesaving and fire fighting equipment must be carried:

Lifesaving Equipment	Portable and Fixed Fire Fighting Equipment
09 Immersion Suits	3 BC-I Fire Extinguishers
3 Ring Life Buoys	6 ABC-II Fire Extinguishers
1 Inflatable Liferafts, SOLAS A pack; 10 person total capacity	2 BC-III & A-II Fire Extinguishers
1 406 MHz Cat 1 EPIRB	Fixed CO2 Fire Extinguisher; 700 TOTAL Lbs

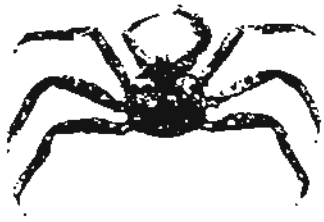
Sincerely,

A. L Cawley, LT, USCG
FOR

E. P. THOMPSON
Captain, U. S. Coast Guard
Officer in Charge, Marine Inspection
Western Alaska

Copy: NMFS
D17 (moc)

Appendix C.1. News release for the 1998 St. Matthew blue king crab tag recovery and reward program.



NEWS RELEASE

ALASKA DEPARTMENT OF FISH & GAME

STATE OF ALASKA
Department of Fish and Game
Frank Rue, Commissioner

Robert C. Clasby, Director
Commercial Fisheries Management
and Development Division

Westward Region
211 Mission Road
Kodiak, AK 99615

Contact: Donn Tracy
Bering Sea and
Aleutian Islands Area
Research Biologist
Westward Region

IMMEDIATE RELEASE

Date: August 29, 1998

ATTENTION ST. MATTHEW ISLAND BLUE KING CRAB FISHERMEN AND PROCESSORS

The Alaska Department of Fish and Game (ADF&G) is asking for your help in the recovery of tagged blue king crabs during the 1998 St. Matthew Island fishery. ADF&G has completed two tagging surveys of the St. Matthew Island blue king crab population since 1995. The most recent of these surveys was conducted between August 1 and August 26 of this year, and during which approximately 3,000 legal male and 2,600 sublegal male blue king crabs were tagged and released. A total of 2,300 legal male blue king crabs and 450 female blue king crabs were tagged during the 1995 survey, which was also conducted in August. More than 490 tags from retained crabs (and tag numbers from re-released crabs) have been received to-date from fishermen and processors The continued recovery and documentation of re-captured tagged blue king crabs during the commercial fishery will provide ADF&G with important information on the biology and distribution of the St. Matthew population.

The tag used during the 1995 survey is approximately 8 to 10 inches in length and made of soft yellow tubing labeled with the **LETTER 'A'** followed by a 5-digit sequential number. Each of these tags also have an orange tab attached which is imprinted with the letters **"LEAVE TAG ON CRAB-NOTIFY ADF&G"**. Tags deployed during this year's survey are nearly identical to those used in 1995, but are pink in color with a fluorescent green tab attached, and are labeled with the **LETTER 'C'** followed by a 5-digit sequential number. Both tag types can be located on the crab at a midway point between the tail section and the rear margin of the shell.

--CONTINUED--

News Release August 29, 1998

A baseball-style poplin hat bearing the embroidered inscription 'St. Matthew 98' (over an image of a blue king crab) will be exchanged for each valid tag recovered from legal-sized male crabs harvested during the fishery. ADF&G is requesting that all captains and crewmembers discovering tagged crabs use the form provided to document them as follows:

1. Record the captain's name, the vessel name, the expected catch offloading and processing location; the tag series letter and number, the sex, legal status and fate of each tagged crab; and pertinent capture data, including the catch date, location, depth and statistical catch area.

2. **Catcher-processors and floater-processors -** Please notify the onboard observer immediately when tagged crabs are captured. The observer will remove tags from legal males, record all capture and reward information, and return the crab to the processing line or vessel hold. Tagged sublegal male and female crabs should also be given to the observer for sampling; these crabs will be re-released with the tag intact.

3. **Catcher-only vessels -** Please leave tags attached to recovered legal male crabs and record all requested information as specified above. Contact the observer or ADF&G representative upon delivery of your catch to a processing facility so that tagged male crabs can be sampled and capture and reward information recorded. Tagged sublegal male and female crabs should be re-released on the fishing grounds as quickly as possible with their tags intact after all information requested above has been recorded.

4. Please forward all tags and recapture information not collected by observers or ADF&G samplers to either the Dutch Harbor or Kodiak ADF&G office at the addresses provided on the tag recovery form. Vessel captains will receive original data from the survey for each recaptured tagged crab documented by themselves or their crewmembers. Tag reward hats will be issued at the time tags are returned to a department representative. Unless otherwise instructed by the vessel captain, onboard observers will credit tag reward hats to the individual who presents the tagged crab to him/her for sampling. ADF&G samplers have also been instructed to credit tag reward hats to the individual who presents them with tags and tagged crab(s). If feasible, it is highly desirable for vessel crews to separate tagged legal male crabs from the rest of their catch prior to delivery.

Thank you for your participation in ADF&G's tag recovery program.

— END —

Appendix C.1. (page 3 of 3) **ALASKA DEPARTMENT OF FISH AND GAME**
1998 ST. MATTHEW IS. BLUE KING CRAB TAG RECOVERY FORM

CAPTAIN NAME:_____ VESSEL NAME:_____

PROCESSOR NAME:_____

CAPTURE INFORMATION

	TAG LETTER	TAG NUMBER	SEX	LEGAL	FATE	CATCH DATE MO	CATCH DATE DA	CATCH DATE YR	CATCH LOCATION N. LATITUDE	CATCH LOCATION W. LONGITUDE	DEPTH	STATISTICAL CATCH AREA
1									.	.		
2									.	.		
3									.	.		
4									.	.		
5									.	.		
6									.	.		
7									.	.		
8									.	.		
9									.	.		
10									.	.		

SEX 1=MALE; 2=FEMALE LEGAL: 1=LEGAL; 2=SUBLEGAL FATE: 1=RETAINED FOR SALE; 2=RELEASED ALIVE

TAG REWARD INFORMATION

	NAME	ADDRESS	PHONE
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

PLEASE RETURN TAGS AND FORMS TO:

HOLLY MOORE
ALASKA DEPARTMENT OF FISH AND GAME
BOX 920587
DUTCH HARBOR, AK 99692-0587
TEL (907) 581-1239
FAX (907) 581-1572
EMAIL: HOLLYM@FISHGAME.STATE.AK.US

OR

LESLIE WATSON
ALASKA DEPARTMENT OF FISH AND GAME
211 MISSION RD.
KODIAK, AK 99615
TEL (907) 486-1854
FAX (907) 486 - 1824
EMAIL: LESLIEW@FISHGAME.STATE.AK.US

Appendix C.2. 1998 St. Matthew blue king crab tag recovery instructions and forms for shellfish research staff. Similar instructions for shellfish observers are on file at the Kodiak Shellfish Research office.

Introduction

ADF&G has completed two tagging surveys of the St. Matthew Island blue king crab population since 1995. The most recent of these surveys was conducted between August 1 and August 26 of this year, during which approximately 3,000 legal male and 2,600 sublegal male blue king crabs were tagged and released. A total of 2,300 legal male blue king crabs and 450 female blue king crabs were tagged during the first survey in 1995, which was also conducted in August. More than 490 tags from retained crabs (and tag numbers from re-released crabs) have been received to-date from fishermen and processors. The success of tag recovery efforts during the 1995, 1996 and 1997 St. Matthew seasons are in no small measure attributable to the role dockside samplers and observers have played in the retrieval of tagged crabs and tag recovery information during skipper interviews and catch sampling.

The tag used during the 1995 survey is approximately 8 to 10 inches in length and made of soft yellow tubing labeled with the letter **'A'** followed by a 5-digit sequential number. Each of these tags also has an orange tab attached, which is imprinted with the letters **"LEAVE TAG ON CRAB-NOTIFY ADF&G"**. Tags deployed during this year's survey are nearly identical to those used in 1995, but are pink in color with a fluorescent green tab attached, and are labeled with the letter **'C'** followed by a 5-digit sequential number. Both tag types should be easily visible (especially the pink ones) on the crab at a midway point between the tail section and the rear margin of the carapace.

General Instructions

The attached news release has been issued to St. Matthew blue king crab fishermen and processors requesting their help in the recovery of tagged crabs. ADF&G seasonal staff and shellfish observers designated for routine catch delivery sampling and enforcement monitoring will be deployed at shoreside processors and floater-processors, respectively. These personnel will also be actively involved in the tag recovery effort. However, it is still imperative that all research staff deployed at processing facilities brief the employees at each location on ADF&G's tag recovery effort and request for all offloaders and butchers to be on the look-out for tagged crabs during catcher vessel deliveries and crab processing operations. You must be present for the duration of every catcher vessel delivery to your processor; you must also ask the captain and crew of each vessel if there are tags or tagged crabs aboard, if they have recapture information for any tagged crabs, and if they have recovery information for any tagged crabs they may have caught and re-released at sea. Please collect this information and sample any tagged crabs that are presented to you. Your diligence to this task will help ensure that ADF&G does not miss an opportunity to collect tag data.

Before and during each delivery, be sure to let the offloading crew know that there are (or may be) tagged crabs amongst the catch. Keep an eye out for tags as the offloaders throw crabs into braillers, and ask the processing line foreman to tell his butchers to look for tags. If on any occasion you are given only a tag but are unable to obtain any recovery information, note this fact

-Continued-

on the recovery form and record the 'fate' of the crab as dead. Sample all tagged crabs and record pertinent data as specified in the instructions provided (refer to the attached example of a completed tag recovery form if necessary). After tagged crabs are sampled, please handle them as follows:

Legal-sized males – After all required data is recorded and the tags are removed, legal-sized males must be returned to either the vessel or processing line, depending on which location they were removed from initially.

Sublegal-sized males – If any of these crabs are inadvertently landed by the vessel (instead of appropriately being re-released on the fishing grounds), remove the tag after recording all required data and place each animal in the vessel's dead loss pile. Be sure to record its 'fate' as dead on the recovery form.

Females – After all required data is recorded and the tags are removed, place these crabs in bag or container with the tag number written on a piece of write-in-rain paper , freeze them, and present them to either Holly Moore or Donn Tracy when you return to Dutch Harbor or Kodiak.

All tags and tag recovery forms (including those retrieved from vessel captains and crews) collected should also be turned into either Holly Moore or Donn Tracy when you return to Dutch Harbor or Kodiak..

Tag Rewards

Tags and tagged crabs may be received from vessel captains, crews or processing workers. All tag recovery information (catch date, catch location, etc.) received by anyone other than the captain of the vessel must be verified by that captain. Tag information not received from or verified by the captain must be noted as such on the tag recovery form. A baseball-style hat bearing the embroidered inscription 'St. Matthew 98' (over an image of a blue king crab) will be exchanged for each valid tag recovered blue king crabs (male and female). Please note that the St. Matthew news release and other tag information distributed to fishermen and processors specifies that tag reward hats will only be exchanged for validly tagged legal-sized male crabs. Do not contradict this information, unless you actually receive a tagged sublegal male crab or tagged female crab after the season closure. Be sure to record the rewardee's address (and telephone) so that a tag reward hat can be mailed to that person at a later date.

-Continued-

Please read these instructions carefully and record information on the tag recovery form as accurately as possible, referring to attached sample forms as necessary.

Recapture Information:

Species – blue king crab;

Fishery code – record QP98;

Sequential pot number – for observers deployed on catcher-processors only; record the appropriate sequential pot number for any tagged crabs retrieved from pots selected for Bycatch sampling;

Floy tag series and number – refer to the tag description on the previous page and record both the series and number for the appropriate type;

Size – record the carapace length in millimeters for each crab sampled;

Legal – determine the legal status of each male crab sampled and record as either 1=sublegal, or 2=legal; the minimum legal size of blue king crabs is 5.5" (139.7mm) or greater in carapace width outside the lateral spines;

Sex – record as male=1, and female=2;

Shell – refer to the attached table for a description of shell characteristics based upon the most recent ADF&G blue king crab survey, and record using the following categories: 0=soft; 9=new-pliable; 1=new (or new-hard); 2=old; 3=very old;

Fate – record as 1=retained for sale; 2=released alive; 3=dead (if legal crab retrieved in dead loss pile, if only a tag is received, if tagged crab is a female, or if a tagged sublegal male crab is recovered from a catcher vessel delivery to any type of processor);

Capture date – the date the tagged crab was captured (not delivered)by the vessel;

Capture location – Latitude and longitude coordinates received from the captain (or verified by the captain) in degrees, minutes, and 2-place decimal minutes (convert seconds if necessary); write "N/A" across this row if capture location is not available;

Depth – record in whole fathoms only;

Statistical area – record using lat./long. coordinates, or statarea provided by the vessel captain; if not available write "N/A" across this row;

-Continued-

ADF&G vessel number – record the ADF&G number for the vessel that landed the tagged crab;

Received tag or tagged crab from – record the name, address and telephone number of the individual from which you received the tag or tagged crab from, and check the 'Needs hat' box if hats are not available to exchange for tags; check the 'Hat issued' box if a hat has been issued at the time the tag is received;

Received recovery location data from – record the name, address and telephone number; please make note if this individual is not the vessel captain;

Vessel name – record the name of the vessel that landed the tagged crab;

Processor name – name of the processors that the tagged crab was delivered to;

Sample date – self-explanatory.

Female reproductive information:

This section of the tag recovery form is used for recording data on the reproductive condition of female crabs and any additional pertinent information (in the 'Comments' column) not addressed in the first section for tagged male crabs. Please refer to codes on the bottom of the form for appropriate assignment of egg color, stage of development, clutch condition and percent fullness. Also, use the column labeled 'Other' to record any anomalies (such as parasite and disease infections) for both male and female crabs. Use the 'Comments' column for recording more than one of these codes for an individual crab.

-Continued-

ADF&G WESTWARD REGION TAGGED CRAB RECOVERY FORM

SPECIES _____ **FISHERY CODE** _____ **OBSERVER/ DOCKSIDE SAMPLER** _____

	SEQ. POT NO.	FLOY TAG SERIES & NUMBER	SIZE (mm) KING - CL TANNER - CW	LEGAL (a)	SEX (b)	SHELL (c)	FATE (d)	CAPTURE DATE MO.	DAY	YEAR	CAPTURE LOCATION (Note: "E." longitude if applicable) N. LATITUDE	W. LONGITUDE	DEPTH (FM)	STATISTICAL AREA	ADF&G VESSEL NO.
1															
2															
3															
4															
5															

(a) **LEGAL**: 1=Sublegal; 2=Legal. (b) **SEX**: 1=Male; 2=Female. (c) **SHELL AGE**: 0=Soft; 1=New; 2=Old; 3= Very Old.

(d) **FATE**: 1=Retained for sale; 2=Released alive; 3=Dead (not retained for sale; found in deadloss pile or frozen whole for ADF&G/Observer sampling).

NOTE: If a tagged female crab, record additional information on the back of this form. Record comments for males and females on the back of this form.

	Received Tag or Tagged Crab From: Name, Address & Phone	Received Recovery Location Data From: Name, Address & Phone	Vessel Name	Processor Name	Sampling Date Mo.	Day	Year
1	Needs hat ☐ Issued hat ☐						
2	Needs hat ☐ Issued hat ☐						
3	Needs hat ☐ Issued hat ☐						
4	Needs hat ☐ Issued hat ☐						
5	Needs hat ☐ Issued hat ☐						

Edited by: Date: Entered by: Date:

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ADF&G WESTWARD REGION TAGGED CRAB RECOVERY FORM

(REVERSE SIDE)

*	SEQ. POT NO.	EMBRYOS				OTHER	COMMENTS
		COLOR	DEVELOPMENT	CONDITION	% CLUTCH		
1							
2							
3							
4							
5							

LIVE EMBRYO COLOR

1-Tan
2-Purple
3-Brown
4-Orange
5-Purple-brown
6-Pink
7-Reddish
0-Other; describe in Comments.

EMBRYO DEVELOPMENT

1-Uneyed
2-Eyed

CLUTCH CONDITION

1-Dead embryos not apparent
2-Dead embryos <20 %
3-Dead embryos >20%

PERCENT CLUTCH

1-Barren, clean pleopods
2-Barren, with empty embryo cases and/or stalks
3-Clutch 1-29% full
4-Clutch 30-59% full
5-Clutch 60-89% full
6-Clutch 90-100% full

OTHER

3-Nemerteans in clutch
4-Turbellarians in clutch
5-Black mat syndrome
6-Bitter crab syndrome
7-"Cottage cheese" disease
8-Shell rust
9-*Briarosaccus callosus* (sac-like parasitic barnacle on king crab abdomens)
0-Leatherback: male brown king crab w/soft carapace & is old or very old shell

SPECIES	CHANGES IN EMBRYO COLOR		COMMENTS
	UNEYED	EYED-WELL DEVELOPED	
Red King	Purple	Reddish	Occasionlly brown or gray intermediate.
Blue King	Purple	Pinkish-reddish	
Golden (brown) king	Orange	Tan	
Tanner (*C. bairdi)*	Orange	Brown or purple brown	
Snow (*C. opilio)*	Orange	Brown or purple brown	

Note: If other species are tagged, update this form before use.

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