OCS Study
MMS 92-0040

COASTAL FISHERIES OCEANOGRAPHY OF THE SOUTHERN BERING SEA AND NORTH ALEUTIAN BASIN: PORT MOLLER KING CRAB STUDIES

By T.C. Wainwright, D.A. Armstrong,
H.B. Andersen, P.A. Dinnel, D.W. Herren,
G. C. Jensen, J. M. Orensanz, and J. A. Shaffer

In collaboration with

J.E. Edinger and E.M. Buchak,
J.E. Edinger Assoc., Inc.

MMS U.S. DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE
ALASKA OCS REGION

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.

COASTAL FISHERIES OCEANOGRAPHY OF THE SOUTHERN BERING SEA AND NORTH ALEUTIAN BASIN: PORT MOLLER KING CRAB STUDIES

OCS Study
MMS 92-0040

By T.C. Wainwright, D.A. Armstrong,
H.B. Andersen, P.A. Dinnel, D.W. Herren,
G. C. Jensen, J. M. Orensanz, and J. A. Shaffer

In collaboration with

J.E. Edinger and E.M. Buchak,
J.E. Edinger Assoc., Inc.

U.S. DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE
ALASKA OCS REGION

September, 1992

The statements and conclusions contained in this report are those of the authors and do not necessarily reflect the view of the U.S. Department of the Interior, nor does mention of trade names or commercial products constitute endorsement or recommendation for use by the Federal Government.

ABSTRACT

A suite of biological sampling was undertaken to study the population status of commercial crabs in the Port Moller estuarine complex (Port Moller and Herendeen Bay) in the southeastern Bering Sea. Samples were collected between 25 April and 30 July 1990; methods included zooplankton sampling, benthic trawling and dredging, commercial crab pot sets, and intertidal surveys. Larvae, juveniles, and adults of red (*Paralithodes camtschaticus*) and blue (*P. platypus*) king crabs and Tanner crab (*Chionoecetes bairdi*) were found.

Larvae of all three species were concentrated in the Portage Creek arm of Herendeen Bay, a few were found in outer Herendeen Bay and Hague Channel, and virtually none were found in Port Moller. A stochastic larval development model was developed and used to simultaneously estimate hatch times, stage durations, and mortality rates for the two king crab species. For red king crab, peak hatch was calculated to be on 5 May, average zoeal duration (stages Z1 to Z4 combined) was 47 days, and instantaneous larval loss rates (calculated by assuming no export of larvae from Herendeen Bay) was 0.095 d^{-1}. For blue king crab, the corresponding estimates were 6 May, 53 days, and 0.075 d^{-1}.

A three-dimensional hydrodynamic transport model was used to explore patterns of red king crab larval transport under several assumed patterns of hatch timing and location, and larval vertical distribution. Results indicated that a substantial fraction of larvae hatched in inner Herendeen Bay remain there, and that larvae originating either in Port Moller or near the estuarine entrance could be entrained into inner Herendeen Bay. Results of the transport model were also used to estimate numbers of red king crab larvae hatched (0.7×10^9 to 1.3×10^9) in the estuary, and instantaneous mortality rate (0.06 d^{-1} to 0.08 d^{-1}).

Juveniles of both species were found on rocky substrata in inner Herendeen Bay, but no estimates of juvenile abundance were possible. Adult red king crab were caught in substantial numbers in inner Herendeen Bay, with a few caught in Hague Channel and none in Bristol Bay near the Port Moller entrance. Males and females were spatially segregated within inner Herendeen Bay. Five blue king crab (4 male, 1 female) were caught in inner Herendeen Bay. Fecundity estimates for female red king crab ranged from 15,000 to 130,000 eggs, with a relationship of egg number (Y) to carapace length (X) of Y = 2,170X - 135,500. A larval production method was used to estimate reproductive female stock size for the king crab species. Estimates for egg-bearing, female red and blue king crabs were 13,000 and 1,200, respectively. Juvenile and adult Tanner crab were also caught, and some results for this species are reported.

The local stocks of both king crab species are reproducing and appear to be capable of sustaining themselves. The red king crab stock is probably well-connected with the larger Bristol Bay stock by both larval transport and adult movements. The blue king crab stock appears to be reproductively isolated from other populations, constituting a small, self-sustaining population. Sampling of Tanner crab was insufficient to reach any conclusions regarding stock status.

Results provide background information that may be used in assessing local environmental effects of oil and gas development or other environmental problems.

PROJECT ORGANIZATION

Personnel

University of Washington
Seattle, Washington

Helle B. Andersen
David A. Armstrong
Paul A. Dinnel
Dwight W. Herren
Gregory C. Jensen
Brian Mulvey
Richard S. Nemeth
Jose M. Orensanz
J. Anne Shaffer
Yun-Bing Shi
Thomas C. Wainwright

J.E. Edinger Associates
Wayne, Pennsylvania

Edward M. Buchak
John E. Edinger

Responsibilities

Principal Investigators	DAA, PAD
Project coordinator	TCW
Field Crew	PAD, GCJ, DAA, JMO, HBA, JAS, YBS, RSN
Larval Analysis	GCJ, HBA, BM
Population Analysis	TCW
Fecundity Analysis	JAS
Transport Modeling	JEE, EMB, TCW
Data Management	TCW, DWH
Report Preparation	TCW, DWH, HBA

TABLE OF CONTENTS

LIST OF FIGURES

Figure

LIST OF TABLES

ACKNOWLEDGMENTS

We thank the many people who assisted with field work and logistical support. The herring crew from Triton, Ltd. (Mike McGurk and Dave Warburton) provided invaluable cooperation, allowing more extensive larval sampling than would otherwise have been possible. We particularly appreciate the assistance of NOAA field personnel (John Dermody, Pat Harman, and Rae Baxter) for their sampling efforts, and crews of the chartered gillnetter *Dawntreader* (Fred Dyson, skipper), and the crabber *Cascade* (Bob Miller, skipper). We are grateful for the support of the Alaska Crab Coalition (particularly Arni Thompson), especially for the provision of the *Cascade*, without which adult sampling would have been impossible, and we thank everyone at OCSEAP Anchorage (Lyman Thorsteinson, Laurie Jarvela, and John Dermody) and MMS (Robert Meyer) for help along the way. This program has benefited from cooperative interaction with, and logistical support provided by, the Alaska Department of Fish and Game, the National Marine Fisheries Service, and the Alaska Crab Coalition which, together, have enhanced our program on behalf of OCSEAP-MMS program needs.

This study was funded by the Minerals Management Service of the Department of the Interior, through an interagency agreement with the National Oceanic and Atmospheric Administration, Department of Commerce, as part of the Alaska Outer Continental Shelf Environmental Assessment Program (OCSEAP).

KEY WORDS

blue king crab, *Chionoecetes*, environmental assessment, larval development, larval transport, *Paralithodes*, population biology, red king crab, southeastern Bering Sea, Tanner crab

INTRODUCTION

Abundance of king (*Paralithodes* spp.) and Tanner (*Chionoecetes* spp.) crabs has varied tremendously in the southeastern Bering Sea over the last 20 years. Current explanations of such fluctuations are tenuous because many aspects of the ecology and distribution of various life history stages are poorly studied. For both red (*P. camtschaticus*; "RKC") and blue (*P. platypus*; "BKC") king crabs, research has focused on adult and sub-adult stages. The limited work on larvae and juvenile stages points to substantially different distributional patterns than for older animals (Sundberg and Clausen 1977, Armstrong et al. 1981; McMurray et al. 1984). In particular, small juveniles of both species occur nearshore in benthic substrate which provides refuge from predation, while adults typically occur on more open substrata farther offshore.

The importance of coastal lagoons and embayments as juvenile crab "nursery" habitat has long been a question, and the Port Moller Complex (Port Moller, Herendeen Bay, and Mud Bay; Fig. 1) is of particular interest. Commercial and subsistence crab fishing have occurred in Herendeen Bay, and both red and blue king crab are known to occur in the bay. BKC is of particular scientific interest because of its disjunct distribution, being known from the Pribilof, St. Matthew, and St. Lawrence islands, and in deep bays of Kodiak Island and Southeast Alaska.

The Port Moller Complex is a large inlet adjacent to Bristol Bay (Fig. 1), and is near the North Aleutian Basin oil and gas lease area. This area is thought to be of prime importance as nursery for juvenile crabs, which has prompted the Minerals Management Service (MMS) to fund research on crab populations in relation to oceanography in the Port Moller Complex. Both red and blue king crabs were found in Herendeen Bay during surveys in the 1940s (U.S. Fish and Wildlife Service, 1942). Reconnaissance studies completed in 1989 confirmed the presence of both RKC and BKC in the complex, where they were found mainly in inner Herendeen Bay (Armstrong et al. 1990).

The focus of the 1990 field work and subsequent analysis was as follows:

1. Document the spatial and temporal distributions of king crab larvae, and to estimate larval dispersion and mortality;
2. estimate larval exchange between the estuary and Bristol Bay;
3. evaluate estuarine habitat use by juvenile king crab;
4. describe spatial and temporal patterns in juvenile and adult king crab abundance; and
5. describe physio-chemical attributes of the Port Moller Complex that would enhance crab survival compared to the broad adjacent area in Bristol Bay.

While the focus of the study was on king crabs, numerous Tanner crab (*Chionoecetes bairdi*) were also caught in the sampling. Because Tanner crab are also commercially important, data on juveniles and adults of this species are included. However, few larvae of this species were found in zooplankton samples, so no larval data are reported.

METHODS

FIELD

Larvae

The survey for crab larvae was conducted jointly with a herring survey performed by Triton, Ltd. (Vancouver, British Columbia). Sampling commenced 25 April 1990 and continued through 30 July. Until mid-June the survey was conducted from the 11-m NOAA Vessel 1273 and then from the chartered gillnetter *Dawntreader*. Larval samples were collected at approximately weekly intervals at 21 stations throughout the estuary. About 600 larval samples were collected. Stations are listed in Table 1, and their locations are shown in Figure 2. A detailed list of samples collected is in Appendix A, Table A-5.

For the main series of larval samples, sampling consisted of double-oblique tows of a 60-cm bongo net from the surface to within 5 m of the bottom. For efficient sampling of herring larvae, net mesh size was changed through the season. Early in the season, both nets had 333 μm mesh. In mid-season, a combination net with 333 μm mesh on one side and 505 μm mesh on the other was used. Later (after 23 June) both nets had 505 μm mesh. All king crab larvae are retained by the larger mesh; the initial use of 333 μm mesh was strictly for purposes of the concurrent larval herring study. Catch from both sides of the net were combined into one sample except when different meshes were used. Tow distances were recorded with a flowmeter (General Oceanics Model 2030) mounted inside the net mouth.

In addition to the regular sample grid, some special purpose samples were collected. Early in the season, two series of "stacked" bongo tows were made in inner Herendeen Bay in an effort to assess vertical distribution of larvae. These samples consisted of a series of double-oblique tows at the same station with varying maximum depth: the first tow sampled 0-10 m, the second 0-20 m, and so on until the last tow sampled the entire water column. A limited number of samples were collected with a 1-m Methot net with 1000-μm mesh late in the season. In addition, 24-hour series of vertically stratified samples were taken with a 1-m^2 Tucker trawl with 505-μm mesh—twice in Herendeen Bay and once in Port Moller—to identify vertical migratory behavior of larvae.

All zooplankton samples were preserved in 5% buffered formalin in seawater. For analysis, tow distances were later converted to volume sampled by multiplying by the net opening area. Larval catch was then converted to density per 1000 m^3 by dividing numbers caught by volume filtered, or to density per 100 m^2 of surface by multiplying numbers per volume by bottom depth for the station.

Juveniles

Juvenile crab were sampled between 10 June and 24 July 1990 via three methods: benthic trawl, rock dredge, and intertidal sampling. Sites sampled are listed in Table 2; a complete list of samples is in Appendix A, Table A-3. Trawling was conducted mainly with a 3-m beam trawl (Gunderson and Ellis 1986); a small otter trawl was used at one station. Rocky areas were sampled with a small (39 x 15 cm) rock dredge. At low tide, project personnel walked transects parallel to the

water's edge, searching for juvenile king crab on the surface and under movable rocks. For all three methods, all king and Tanner crabs encountered were identified to species, sexed, and measured (carapace length, "CL", or width "CW") with vernier calipers.

Adults

Adult crab were sampled using commercial king crab pots from the vessel *Cascade* provided by the Alaska Crab Coalition. During 21-27 June 1990, pots were set in 111 locations, with 65 locations in Herendeen Bay, 25 locations in Hague Channel, and 21 locations along a transect outside the estuary in Bristol Bay. Locations within the estuary are shown in Figure 3; a complete list is in Appendix A, Table A-1. A total of 132 pots were set (1-3 sets per location). Crabs caught were sexed, measured to nearest mm CL, and eggs and shell condition recorded. A total of 1,963 crab (1,615 males, 348 females) were tagged using two types of tags. About half the males were tagged with National Marine Fisheries Service (NMFS) isthmus tags inserted through the isthmus and tied into muscle; the remaining males and all females were tagged with Floy anchor tags inserted through the carapace above the branchial area. Anchor tags are expected to be lost on molting, while the isthmus tags should be retained. A small reward for tags returned by commercial crabbers was offered through a joint NMFS-Alaska Dept. Fish & Game (ADFG) tag recovery program. Twenty-five adult female RKC were collected and shipped to ADFG (Gordon Kruse, Juneau) for electrophoretic analysis.

LABORATORY

Larvae

Plankton samples were completely sorted for king crab larvae, which were identified to species and larval stage using published descriptions and keys (Sato 1958; Hoffman 1968; Haynes 1984), as modified by Jensen et al. (1992). Larvae were transferred to and stored in a 70% ethanol 5% glycerol solution. On the basis of obvious timing of larval hatch and development, the sorting effort was focused on samples collected from late April through the first week in July. Later samples were spot-checked to ensure no presence of larvae that late in the season. No larvae were found in early-season samples from Port Moller, so later samples from that area were only spot-checked to be sure the pattern held. The samples processed for king crab included 246 bongo net, 40 Tucker trawl, and 2 Methot net samples. During the second year of effort, we began to sort samples for Tanner crab larvae. Initial effort focused on the period of highest expected larval abundance. Too few larvae were found (a maximum of 11 per sample, compared with 328 per sample for red king crab) to allow valid statistical analysis, so sorting was discontinued and effort reallocated to other tasks.

Fecundity

Gravid female RKC (n = 25) and Tanner crab (n = 23) were frozen and shipped back to the lab where they were thawed, measured, stomach dissected out and preserved, and eggs removed. One

subsample of two hundred eggs was taken from each egg mass. Subsample and remaining egg mass were dried to constant weight, and total number of eggs calculated as

$$N_T = \frac{N_S}{W_S} \cdot W_R + N_S,$$

where N_T = total number of eggs
N_S = number in subsample,
W_S = subsample weight, and
W_R = weight of remaining egg mass.

Egg number and carapace length (RKC) or width (Tanner) were then subjected to a simple regression analysis and the slope tested for significance. Results were compared to data for the same species previously reported by other investigators.

DATA MANAGEMENT AND ANALYSIS

Following completion of field work and laboratory analyses, data were coded into computer files for analysis. Coded data were verified by hand-checking against field and laboratory data sheets, and corrected data were archived on 9-track tape at the University of Washington Academic Computer Center; data will also be archived at the National Oceanographic Data Center (NODC). Most analyses were carried out using Microsoft Excel on MS-DOS-based personal computers, but more complicated statistical analyses were performed using S-Plus (Statistical Sciences Inc., Seattle, Washington) on UNIX-based workstations.

LARVAL MODELS

To analyze larval life-history characteristics and potential larval exchange between the estuary and Bristol Bay, we used two models: (1) a larval development model to estimate timing of hatch, stage durations, and rate of loss from Herendeen Bay, and (2) a hydrodynamic transport model to predict transport and estimate numbers hatched and mortality rate.

Larval Development

Hatch times, larval development rates, and larval loss (combined transport and mortality) rates were estimated for both species via a dynamic cohort model. Such models have been used extensively in larval insect work (Manly 1974; Stedinger and Shoemaker 1985), and copepod dynamics (Parslow et al. 1979; Sonntag and Parslow 1981). Recently, Shirley and Shirley (1989a) have applied an instar analysis technique to estimating mortality of RKC larvae in Auke Bay, Alaska. The technique they used is simpler than the cohort model approach, in that it does not account for variability of hatch times and stage durations.

The model we used consists of two components: a biological model that describes the dynamics of larval stages from hatch through the four zoeal stages, and a sampling model that describes the probability distributions of sampling error. Both models are described in detail in Appendix B. The biological model contains parameters that characterize larval dynamics: time of hatch, total

number hatched, durations of the larval stages, and mortality rates. The model is quite similar to the "lag-Manly" model described in Parslow et al. (1979); the only differences are that we allow individual variation in stage durations and we specify a common mortality rate for all larval stages. Biological parameters are defined in Table 3.

The sampling model differs substantially from that used by Parslow et al. (1979). They used simple nonlinear least squares to fit parameters to the data. In our view, this is unjustifiable for our data, which reflect relatively small sample sizes. Instead, we have used a technique first applied in fisheries work by Fournier and Archibald (1982) that separates the sampling error into two components: error in measuring total abundance, and error in estimating stage composition of the sample. We have modeled the first type of error as normal with constant coefficient of variation. The second error is multinomial if all stages are identified accurately and sampled randomly within the total catch.

This model was fit to the field data using numerical maximum likelihood estimation. The estimation procedure used a "simplex" function minimization algorithm (Press et al. 1986) interfaced to the S-Plus package. Approximate parameter standard errors and correlations were calculated from the inverse of the estimated information matrix.

Larval Transport and Survival

To examine potential movements of larvae to and from Herendeen Bay, and to estimate initial larval abundance and survival, we applied a three-dimensional hydrodynamic transport model, the Generalized Longitudinal, Lateral, and Vertical Hydrodynamic and Transport Model ("GLLVHT"; Edinger and Buchak 1980, 1985; McGurk et al. 1991). King crab larvae were incorporated into this model initially as passive drifters; later model runs used a simple model of vertical migration behavior that specified larval vertical swimming velocity as a sine function of time of day. The transport model gave predictions of the density (numbers m^{-2}) of a larval cohort expected to be found at each sample in the weekly sampling grid, assuming no larval mortality. These predictions were then used as the independent variable in a regression of observed larval densities to obtain estimates of initial cohort size (numbers hatched) and natural mortality rate. Details of the model and estimation technique are given in Appendix C. The transport model was used for three sets of comparisons:

1. the effect of hatch date on subsequent larval transport,
2. the effect of hatch location on subsequent transport, and
3. the effect of initial depth and vertical migration on both transport and estimates of natural mortality.

RESULTS

LARVAE

Geographic Distribution and Abundance

King crab larvae were present in the bongo samples from the beginning of the survey in late April until early July. RKC larvae were found throughout the Port Moller Complex; however, large

densities were only observed in the inner parts of Herendeen Bay. Of the total number of RKC larvae, 94.7% were found in Herendeen Bay, 5.2% in Johnson Strait and Hague Channel, and 0.1% in Port Moller. BKC larvae were only found in the inner parts of Herendeen Bay. The overall ratio of RKC to BKC larvae was 7:1.

King crab have five larval stages: four zoeal stages (Z1-Z4) and a megalopal stage. The highest abundance of RKC larvae was observed May 12 at Station 36 in Herendeen Bay, with a density of 67.73 larvae m^{-2}, of which 58.23 were Z1 and 9.50 Z2 larvae. Densities of the subsequent zoeal stages and the megalopal stage peaked every 1-2 weeks in the following 10 weeks until early July, when only a few megalopae were observed. Abundances of BKC larvae showed the same trends with the highest density of 12.80 larvae m^{-2} (12.18 Z1 and 0.62 Z2) on May 12. The total abundances of RKC and BKC larvae in the period of May through June are shown in Figures 4 and 5.

Tanner crab larvae were found in very low densities in inner Herendeen Bay, mainly as stage Z1 in samples from mid-June. Numbers caught were insufficient for any further analysis.

Vertical Distribution

Tucker trawl samples indicated a pattern of vertical migration by king crab larvae, which primarily existed in the upper 40 m of the water column (Fig. 6). The highest densities were found during the day at a depth of 30-40 m, which coincides with the thermocline (Fig. 7). At night, larvae were predominantly at depths of 10-20 m. Results on depth distribution from the "stacked" bongo tows taken in early May were inconsistent (i.e., the tows from surface to shallow depths had substantially more larvae than the tows to greater depths, indicating that larvae were patchy relative to the sample size) and so could not be used to estimate larval depth distributions.

Larval Development

Parameters of the dynamic cohort model were estimated using zoeal density data from the three innermost Herendeen Bay stations (35, 36, and 37). The fitted model is compared to these data for RKC and BKC in Figures 8 and 9. Parameter estimates are given in Table 4. Initial estimates indicated outliers on day 173 for both species, which were excluded from the estimates presented here. For both species, hatch peaked during the first week in May (day 125 for RKC, day 126 for BKC), and the hatch distributions had a standard deviation of about four days. Average stage durations ranged from 10.5 to 12.1 days for RKC, and 10.5 to 16.3 days for BKC (although the last estimate had quite a large standard error). Total average zoeal duration (from hatch until molt to megalopa) was 47 days for RKC and 53 days for BKC. Instantaneous loss rates were estimated as $Z = 0.095\ d^{-1}$ for RKC and $Z = 0.075\ d^{-1}$ for BKC, corresponding to average net survival within Herendeen Bay from hatch to megalopa of 1.2% for RKC and 1.9% for BKC. These rates, of course, represent the combined effects of mortality and transport, which are considered separately in the next section.

Larval transport and survival

Runs completed with the GLLVHT model are summarized in Table 5, which shows the characteristics of the larval cohort model used and the resulting estimates of initial numbers and

instantaneous natural mortality rate. More detailed results are in Appendix C. The model runs are divided into sets that relate to three comparisons: date of hatch, location of hatch, and vertical depth distribution. Because we are confident that larvae hatched in early May in inner Herendeen Bay, the date and location comparisons are only hypothetical to demonstrate what might have happened if larvae had originated elsewhere; estimates of initial abundance and mortality are not meaningful for these model runs. The third comparison encompasses initial larval depth and vertical migration behavior, and is intended to explore the sensitivity of transport and mortality estimates to uncertainties of larval behavior. One run, the "base" run (3.23), represents our best estimates of real initial conditions, and is included in all comparisons.

1. Variation in hatch date

Variation in hatch date (from early May to early June) had some effect on subsequent transport. Compared to the base-run hatch date of 7 May, hatch in mid-May resulted in lower initial outward transport and hatch in late May resulted in slightly greater early transport. This indicates that the flushing of larvae from the estuary varies over the season, and hatch date could influence subsequent retention of larvae.

2. Variation in hatch location

Hatch location, as expected, has a dramatic effect on subsequent export of larvae. The best larval retention resulted from hatch at the head of Herendeen Bay (Station 37, run 3.23). Hatch further out in Herendeen Bay (3.30) increased initial export, and larvae hatched in inner Port Moller (3.31) or near the entrance (3.32) were rapidly flushed from the system. However, for the latter two cases, even though losses from the estuary were high, the final densities were highest in inner Herendeen Bay and next highest in inner Port Moller. Thus, larvae hatched or transported to the entrance of the Port Moller Complex may be entrained into inner Herendeen Bay.

3. Variation in initial depth and vertical migration

Although larvae hatch on the bottom, the model is incapable of simulating their initial upward migration, so we chose an artificial initial depth distribution for the larvae. In comparison with larvae initialized uniformly over 0-40 m depth (3.23), initialization near the surface (0-10 m, 3.33) results in more rapid early flushing, and initialization at depth (30-40 m, 3.35) results in greater retention of larvae. Interestingly, initialization at mid-depth (20 m, 3.34) gave the best fit to observations. Both migration models resulted in poorer overall fits and negative mortality estimates, indicating that predicted outward transport of larvae was greater than the observed decline in abundance. (This may be an artifact of the implementation of migration behavior in the model—see Discussion.)

The nature of the transport model and mortality estimation technique allows us to partition the observed decline in larval abundance throughout the estuary into two components: export from the estuary, and natural mortality. Figure 10 summarizes this partitioning for the various depth and vertical migration assumptions. The pattern of total larvae remaining in the system is quite similar for all scenarios, but the proportion of loss due to transport is quite variable. The negative mortality estimates for the migration scenarios result in all observed losses being attributed to transport.

JUVENILES

Seventy-seven RKC, 7 BKC, and 39 Tanner crab were collected in trawl, dredge, and intertidal samples. Trawling for juvenile king crab was not as effective as had been expected, catching a total of only 4 king crab (3 red, 1 blue) and 36 Tanner crab. This is probably because the trawl is only effective on soft bottoms, while juvenile king crab are generally found in rock or shell habitats. The small rock dredge captured only three juvenile RKC and three Tanner crab. This low catch is not surprising considering the small size of the dredge used, which could sample very little habitat area. Surveys in low intertidal rocky areas found 70 RKC and 6 BKC. In addition, 102 carapaces of larger (90 to 125 mm CL) RKC were collected from high intertidal drift lines. No Tanner crab were found in intertidal samples.

Geographic Distribution and Abundance

All crab collected in trawl, dredge, and intertidal samples were found in Herendeen Bay, none were found in Port Moller. Of the 72 RKC found in intertidal surveys, 66 were located near Bold Bluff Point, 3 at Bluff Point, and 1 at Gull Island. All crab found in intertidal surveys were on rocky substrata. The trawl and dredge samples covered a variety of substrata. In these samples, most RKC (91%) occurred on rock/sand substrata, with 3% on plain rock and 6% on mud mixed with shell or rock (Fig. 11); all BKC were collected from rock/sand substrata; and Tanner crab occurred on rock (55%), mud (41%), and gravel (4%) substrata, but not on sand (Fig. 12).

Size Composition

In the trawl, dredge, and intertidal samples, juvenile RKC ranged mainly from 5 to 30 mm CL with a few larger individuals; BKC ranged from 5 to 30 mm CL; and Tanners ranged from 12 to 131 mm CW (Figs. 13, 14, and 15). Two obvious modes (5-10 mm CL and 20-30 mm CL) can be seen in the RKC size distribution; these probably correspond to ages of 1 and 2 years post-hatch (2 and 3 years post-mating). Many cast shells were found in intertidal samples in the size range 85-130 mm CL, indicating active molting of sub-adult and adult RKC at this time of year.

ADULTS

Geographic Distribution and Abundance

Unexpectedly high concentrations of adult RKC were encountered in Herendeen Bay. A total of 2021 males and 1137 females were caught by pots in Herendeen Bay, and 3 males were caught in Hague Channel. No king crab were caught in the 21 samples outside the estuary. Five BKC (4 male, 1 female) were also caught in Herendeen Bay. Most adult crab were caught in a relatively shallow (15 to 70 m) belt around Herendeen Bay, while three males were found in deeper (70 to 100 m) water. This contradicted our initial expectation that adults would be in deeper water. There was also a remarkable pattern of spatial segregation of the sexes. Samples in the western portion of Herendeen Bay consisted almost entirely of females with a few small males, while samples to the east were largely males (Fig. 16).

Movements

Nearly 2000 adult RKC were tagged as part of a planned mark-recapture study of growth and survival. While no directed resampling effort was possible, to date two tags have been returned from commercial fishing vessels; both were from males, recovered in Bristol Bay 100-150 km NW of Port Moller. These indicate some movement of adults from Herendeen Bay to Bristol Bay, but the sample size is too small to draw any conclusions about migration rates or proportion of population migrating. Because no tagging was conducted in Bristol Bay, no evidence regarding movements in the opposite direction is available.

Size Composition

Size distributions of the RKC are shown in Figures 17 and 18. Most males were of sub-legal size (<137 mm CL). The size distribution of Tanner crab is shown in Figure 19.

Fecundity

A large proportion (84%) of the females caught were carrying eggs. The size at 50% ovigery for RKC was between 85 and 90 mm CL (Fig. 18). Total number of eggs estimated for RKC ranged from 15,000-130,000, with an average of 78,800 eggs (SD = 27,100). Carapace length ranged from 84-129 mm ($\bar{X}$ = 101 mm, SD = 10.1). The relationship of egg count to carapace length is described by the regression equation

$$Y = 2170 \cdot X - 135{,}500$$

which is statistically significant ($p<0.001$). (One outlier—a large female with very low egg count—was dropped from the regression.)

Total number of eggs estimated for Tanner crab ranged from 39,000 to 400,000, with an average of 186,900 and a standard deviation of 76,900. Carapace width ranged from 77 to 110 mm, with an average of 94 mm and a standard deviation of 12.1. The regression equation that describes the relationship of egg count to carapace length is

$$Y = 4007 \cdot X - 190{,}300,$$

which is significant ($p = 0.004$).

DISCUSSION

LARVAE

The distribution of king crab larvae throughout the spring of 1990 indicates that most larvae remain in inner Herendeen Bay. BKC larvae were only found in Herendeen Bay, and the distribution of RKC larvae decreased from high densities in inner Herendeen Bay to very low densities at the

entrance of the Port Moller Complex. Taken in conjunction with the observed concentration of ovigerous females in that area, this suggests that Herendeen Bay may be a king crab larval retention area. This is particularly likely for BKC, for which the nearest other population is near the Pribilof Islands (Fig. 1).

King crab larvae existed primarily in the upper 40 m of the water column and exhibited a diel migration, rising to the shallower waters during the night and descending to deeper waters during the day. Other studies from the Bristol Bay area have found similar diel migration of RKC and BKC larvae (McMurray et al. 1984, Armstrong et al. 1981, 1987). However, one study from Auke Bay, Alaska, found that RKC larvae exhibited a reverse diel migration, rising to the surface after sunrise and descending below 30 m after sunset (Shirley and Shirley 1989b).

Predictions from the larval model (Appendix B) indicate that king crabs in Herendeen Bay hatched most eggs over a 2-week period centered on 5 May (RKC) or 6 May (BKC). This is about the middle of the range of hatch times (early April to late May) estimated by Armstrong et al. (1981) for RKC in the southeast Bering Sea. It is also in the middle of the range of peak Z1 abundance reported by Shirley and Shirley (1989a) for Auke Bay sampling in 1985-1988. The king crab larvae in Herendeen Bay completed zoeal development in less than 2 months, with zoeal durations ranging from 10.5 to 16 days per stage. These development rates are much faster than rates estimated by Armstrong et al. (1981) for the southeast Bering Sea, and they are in the upper end of the range of development times reported by Shirley and Shirley (1989a). This probably reflects the effect of relatively warm (4-7°C in May, 8-10°C in June) surface waters in Herendeen Bay during the larval period, but may also be influenced by food supply or other factors.

Initial results from the transport model (Edinger and Buchak 1991) indicated that while Herendeen Bay as a whole has a high flushing rate (0.512 d^{-1}), that for the inner part of the bay is quite low (ca. 0.016 d^{-1} for near-surface water). As a first approximation, this flushing rate can be interpreted as the instantaneous rate of larval emigration from the bay if larvae behave as passive, neutrally buoyant particles, and it can be used to correct the calculated natural mortality rates. Applying this simple correction to the zoeal mortality rates reported above, we obtain $Z = 0.079\ d^{-1}$ for RKC and $Z = 0.059\ d^{-1}$ for BKC, resulting in roughly double the net zoeal survival calculated without the correction. Results from the full transport model provide comparable mortality estimates for RKC larvae ranging from $Z = 0.060$ to $Z = 0.079\ d^{-1}$ (for the five best-fitting transport scenarios). These rates are slightly higher than the rates (average of 0.045 d^{-1}, based on 14-d stage duration and 53.6% average survival per stage) estimated by Shirley and Shirley (1989a) for Auke Bay.

The GLLVHT model was invaluable for evaluating larval transport and estimating larval mortality in a complex transport regime. Typical estuarine transport models are either one-dimensional (longitudinal) or two-dimensional (longitudinal-vertical or longitudinal-lateral) and are inadequate for integrating realistic larval behaviors. The GLLVHT model is similar in concept to the MECCA model used by Johnson and Hess (1990) to study blue crab (*Callinectes sapidus*) larval dispersal in Chesapeake Bay. Both use a three-dimensional eulerian grid to calculate water velocities at fixed grid points. However, the incorporation of larvae into the two models is considerably different. Johnson and Hess track larvae as individual lagrangian drifters moving through velocity fields calculated by the MECCA model. Our approach treats larvae as a water-body constituent, and

tracks the abundance of larvae in each model cell via mass-balance calculations. Both methods have advantages and disadvantages.

In theory, the lagrangian model can better represent the particulate nature of larvae, especially differences between particulate and molecular diffusion, but the present lack of understanding of diffusion processes makes this advantage somewhat dubious. The individual-drifter approach provides a direct representation of individual larval drift-tracks, resulting in easy interpretation of the fates of larvae with different hatch locations. Also, the lagrangian drifter framework could allow easier incorporation of complex larval behavior. These advantages come at the expense of high computation loads and difficulty in drawing population-level conclusions.

The mass-balance approach we used, which tracks total larval abundance in each cell, provides a direct population-level interpretation, thus allowing population analyses such as our method of estimating mortality. This approach can also give a probabilistic picture of individual drift-tracks in terms of the proportion of an initial cohort found in each grid cell at any given time. Obtaining this result reliably via the individual-drifter approach would require tracking thousands of drifters. Incorporating larval behavior, especially individual differences in behavior, is somewhat difficult in this approach.

Vertical migration of larvae has been shown to be important in coastal systems, especially if the period of migration correlates strongly with tidal currents (see reviews by Boehlert and Mundy 1988; Hill 1991). The vertical migration model we used is a first approximation, but it is (along with the parallel work on herring larval transport in the Port Moller Complex) among the first attempts to incorporate this type of behavior in a full three-dimensional hydrodynamic model. (Rothlisberg et al. [1983] applied a simpler but conceptually similar model to penaeid shrimp larvae.) One problem of the present implementation lies in specifying larval migration as a simple diel change in vertical swimming velocities, which act in addition to water velocity and diffusion to determine vertical position. Thus, depending on local hydrodynamics, the migrating larvae can drift upward or downward out of their observed depth range. We suspect this may be the reason that the vertical migration runs of the model resulted in very rapid larval export. Future work on this problem should incorporate restrictions on movement such as the imposition of boundaries beyond which larvae will not move, or larval swimming in response to a moving "preference zone."

The transport model itself is not without limitations. The GLLVHT, as implemented for the Port Moller Complex, was designed to represent estuarine-scale mass transport and water column properties. As demonstrated by comparisons with tidal height, temperature, and salinity records (McGurk et al. 1991), it does this remarkably well. For king crab larvae, which occur primarily in the deep inner portion of Herendeen Bay, the scale of the model is not ideal. The relevant portion of Herendeen Bay is represented by very few horizontal grid cells. This area is characterized by complex bottom topography (a narrow channel through shallow flats opening into a deep, steep-sided basin) with several streams providing variable freshwater inflow. The fit of the model to temperature and salinity profiles in this area is not as good as in other portions of the estuary; in particular, the model does not predict the strong thermocline at 35- to 40-m depth observed at Stations 36 and 37 (Fig. 7). For these reasons, we cannot fully trust the predictions of larval transport. However, we believe the general conclusion that export from inner Herendeen Bay is

lower than that from the rest of the estuary is valid, and the natural mortality rates derived from the transport model predictions are quite reasonable.

Larval abundance estimates could be affected by net performance problems, especially net avoidance or extrusion of larvae through the net mesh. Laboratory studies (T. Shirley, Univ. Alaska, Juneau, pers. comm.) have shown that all king crab larval stages are fully retained by 505-μm mesh, so extrusion is not a problem in this study. Net avoidance could be a problem for which we have no reliable means of correction. Net avoidance can be estimated by three methods: comparing catch in paired day and night samples, comparing catch in nets of different mouth size, and by theoretical calculation from swimming speed and net performance characteristics. To our knowledge, no studies of net avoidance are available for these species. In our own sampling, only one day-night series was completed within the larval season (Fig. 6); these samples show no substantial difference between total numbers caught during daylight and night. No net comparison sampling was completed during the larval season. While we have no reliable net performance data to use in theoretical calculations of net avoidance, the slow swimming speeds of king crab larvae (maximum of about 2 cm s^{-1}; Shirley and Shirley 1988) suggest a very limited ability to escape nets.

JUVENILES

Few conclusions can be reached from the limited samples of juveniles obtained during field work. Early juvenile king crab were primarily found in rocky habitats, which is consistent with previous descriptions of habitat requirements for the two species. These rocky habitats occur primarily in inner Herendeen Bay on steep slopes. We were unable to assess the subtidal extent of this habitat within the estuary.

The size distribution of early juvenile RKC in 1990 was quite similar to that observed in 1989 (Armstrong et al. 1990). Two size modes are apparent, one between 5 and 10 mm CL, the other between 20 and 30 mm CL. These probably represent 1- and 2-year-old crab, respectively. If these ages are correct, this indicates growth of 15-20 mm during the second year of life.

ADULTS

The distribution of adult RKC is similar to what one would expect from their typical depth distribution (50-100 m) in Bristol Bay. The sexual division of habitat is interesting and may relate to previously observed patterns of segregation by temperature (Chebanov 1965).

The size of RKC at 50% ovigery is very close to that found during NMFS Bristol Bay surveys in 1990, as was the percent of females with eggs above that size (B. Stevens, NMFS, Kodiak, Alaska, pers. comm.). Comparison of RKC fecundity estimates with findings reported by other investigators indicates that the total number of eggs estimated in this study appears to be smaller than previous reports by Nakazawa (1912), Marukawa (1933), Wallace et al. (1949), Rodin (1970), Fukuhara (1985), and Haynes (1968) (Table 6). Our small sample size precludes any conclusion on the causes for this difference. As with our results, Sasakawa (1975, BKC), Haynes (1968), and Wallace et al. (1949) reported a high variability in fecundity estimates, which they attributed to the reproductive stage of the female (primiparous or multiparous) and the age of clutch

of each female when collected. Kawasaki (1972), Matsuura and Takeshita (1985), and Takeshita et al. (1972) have shown that egg numbers are also related to the age of the female and the developmental stage of the clutch. Otto et al. (1982), Sasakawa (1975), and Somerton and MacIntosh (1985, BKC) all describe a positive curvilinear function between egg number and carapace length, although only Somerton and MacIntosh (1985) state a statistical significance for their findings. The linear regression equation stated by Haynes (1968) listed in Table 7 is similar to our equation in both slope and intercept. Kawasaki (1972) reported both a rectilinear and curvilinear relationship for egg number to crab size and age respectively.

Number of eggs and carapace width estimates for Tanner crab appear to be very similar to that reported by Hilsinger (1976), Somerton and Meyers (1983), and Paul (1982) (Table 8). Again, variability was high in both our findings and all other studies, which the above authors attributed to female mating stage and brooding time. A positive curvilinear relationship between number of eggs and carapace width was described by Somerton and Meyers (1983), Hilsinger (1976), and Paul (1982). Linear regression equations for summer and spring sampling reported by Hilsinger (1976) are listed in Table 9 and are comparable to our equation.

POPULATION STATUS

The discovery of reproductive stocks of red and blue king crab in Herendeen Bay was unexpected. From our survey and modeling results, we can draw some tentative conclusions about the status of red and blue king crab stocks in Herendeen Bay:

1. Both king crab species have been present in the Port Moller Complex at least since the 1930s (U. S. Fish and Wildlife Service 1942), at which time BKC was apparently more abundant than RKC;
2. both king crab species are clearly reproducing in Herendeen Bay;
3. larval retention and survival for both species appear to be sufficient to maintain local populations;
4. our results suggest that the local red king crab stock is strongly connected with the larger Bristol Bay stock by larval export/import and (possibly) adult migration; and
5. because of the distance and current patterns between Port Moller and the Pribilof Islands, the local blue king crab stock is probably reproductively isolated.

However, significant questions remain about the origin of these stocks and their relationships with stocks outside the estuary. Further information about RKC stock isolation may come from ADFG's electrophoresis work.

From larval dynamics and adult fecundity estimates, we can make a rough calculation of spawning stock size using a larval production method (Nichols et al. 1987). Accepting the estimates of initial cohort size (numbers hatched) calculated from the larval models, we can combine this with fecundity data to calculate approximate number of spawning females. For RKC, the estimates of numbers hatched were on the order of 10^9. The average fecundity from our sampling was 7.88×10^4 eggs per female, so we estimate a total of about 13,000 spawning females in Herendeen Bay. For BKC we have neither direct larval abundance estimates nor direct fecundity information. However, if we assume larval dynamics are the same as for RKC, then the observed larval ratio of 7:1

RKC:BKC gives an initial hatch of about 1.4×10^8. Applying Sasakawa's (1975) estimate of average fecundity for the species (120,000), total number of spawning females is expected to be about 1,200. In other areas, BKC have been found to spawn biennially (Jensen and Armstrong 1989); if only 50% of females spawn each year, the total adult female population would be about 2400. Because of inadequate larval sampling, the status of Tanner crab stocks remains uncertain.

APPLICATION OF STUDY TO ENVIRONMENTAL ASSESSMENT

This report provides basic biological information about crab stocks in Herendeen Bay which could be used in a variety of environmental assessments. Problems which could impact local crab stocks include potential oil and gas development, fishing vessel and fish processor pollution, coastal development (breakwaters, dredge and fill, etc.), major fishing efforts, and regional climatic change. The relationship of the local stocks to other crab populations is an important consideration. If the BKC stock in Herendeen Bay is isolated from other populations, any strong disturbance of the estuary could result in substantial changes in local abundance of the species. On the other hand, the suggested connections between RKC stocks in Herendeen Bay and Bristol Bay indicate that local declines could be offset by migration from nearby areas.

As an example of possible environmental problems, potential oil impacts on king crab stocks in Herendeen Bay could come from two sources: (1) from a drilling rig or tanker accident in Bristol Bay with the resulting slick being transported into the Port Moller Complex by currents and tides, and (2) from localized spills from an oil transshipment facility located inside the complex. In either case, surface slicks could have a detrimental impact to young juveniles living in the rocky intertidal/ shallow subtidal zone, and this habitat could be fouled for many years. Additionally, larvae would be affected if concentrations of water-soluble petroleum hydrocarbons are substantial and some larval stages (especially megalopae) could suffer direct exposure to surface slicks during near-surface periods of their diel migration. Subtidal juvenile and adult king and Tanner crabs could be at risk if a significant portion of the oil sinks to subtidal sediments. Reproductive potential could be especially affected, both through direct exposure of extruded egg masses to benthic oil and through concentration of ingested hydrocarbons in lipid-rich developing eggs. Both juveniles and adults could also suffer impairment of foraging success because oil can disrupt detection of food (Hyland and Miller 1979) and pollutants may adversely affect the molting process (Peddicord and McFarland 1976). Indeed, populations of the fiddler crab, *Uca pugnax*, suffered population declines due to oiled sediments following the 1969 West Falmouth oil spill (Krebs and Burns 1977).

REFERENCES

Armstrong, D. A., L. S. Incze, D. L. Wencker, and J. L. Armstrong. 1981. Distribution and abundance of decapod crustacean larvae in the southeast Bering Sea with emphasis on commercial species. OCSEAP Fin. Rep. of Princ. Inv. 53:479-878. U.S. Dept. Comm., NOAA-NOS, Anchorage, AK. (1986).

Armstrong D. A., J. L. Armstrong, G. Jensen, R. Palacios, and G. Williams. 1987. Distribution, abundance, and biology of blue king and Korean hair crabs around the Pribilof Islands. OCSEAP Fin. Rep. of Princ. Inv. 67:1-278. U.S. Dept. Comm., NOAA-NOS, Anchorage, AK. (1990).

Armstrong, D. A., P. A. Dinnel, R. A. McConnaughey, and T. C. Wainwright. 1990. Port Moller king crab program: 1989 reconnaissance study. Univ. of Washington, Fish. Res. Inst. Rep. FRI-UW-9018. 42 pp.

Boehlert, G. W., and B. C. Mundy. 1988. Roles of behavioral and physical factors in larval and juvenile fish recruitment to estuarine nursery areas. Am. Fish. Soc. Symp. 3:51-67.

Chebanov, S. M. 1965. Biology of the king crab *Paralithodes camtschatica* (Tilesius) in Bristol Bay. P. A. Moiseev (ed.) Soviet Fisheries Investigations in the Northeast Pacific, Part IV. (Izvestiya TINRO Vol. 53; Trudy VNIRO Vol. 58.) Israel Program for Scientific Translation, Jerusalem. (1968). Pp. 82-84.

Edinger, J. E., and E. M. Buchak. 1980. Numerical hydrodynamics of estuaries. *In* P. Hamilton and K. B. MacDonald (eds.), Estuarine and wetland processes with emphasis on modeling. Plenum Press, NY. Pp. 115-146.

Edinger, J. E., and E. M. Buchak. 1985. Numerical waterbody dynamics and small computers. *In* W. R. Waldrop (ed.), Hydraulics and hydrology in the small computer age. American Society of Civil Engineers, NY. Pp. 705-710.

Edinger, J. E., and E. M. Buchak. 1991. Hydrographic conditions in the Port Moller estuary in relation to the dispersion and mortality of herring larvae. J. E. Edinger Assoc., Inc., Wayne, Pennsylvania, Doc. No. 91-038-R.

Fournier, D., and C. P. Archibald. 1982. A general theory for analyzing catch at age data. Can. J. Fish. Aquat. Sci. 39:1195-1207.

Fukuhara, F. M. 1985. Biology and fishery of southeastern Bering Sea red king crab *P. camtschatica* Tilesius. NWAFC Processed Report 85-11. Nat. Mar. Fish. Serv., Seattle. 170 pp.

Gunderson, D. R., and I. E. Ellis. 1986. Development of a plumb staff beam trawl for sampling demersal fauna. Fish. Res. 4:35-41.

Haynes, E. B. 1968. Relation of fecundity and egg length to carapace length in the king crab, *Paralithodes camtschatica*. Proc. Nat. Shellfish. Assoc. 58:60-62.

Haynes, E. B. 1984. Early zoeal stages of *Placetron wosnessenskii* and *Rhinolithodes wosnessenskii* (Decapoda, Anomura, Lithodidae) and review of lithodid larvae of the northern North Pacific Ocean. Fish. Bull. U.S. 82:315-324.

Hill, A. E. 1991. Vertical migration in tidal currents. Mar. Ecol. Prog. Ser. 75:39-54.

Hilsinger, J. R. 1976. Aspects of the reproductive biology of the female snow crab, *Chionoecetes bairdi*, from Prince William Sound and the adjacent Gulf of Alaska. Mar. Sci. Commun. 26:201-235.

Hoffman, E.G. 1968. Description of laboratory-reared larvae of *Paralithodes platypus* (Decapoda, Anomura, Lithodidae). J. Fish. Res. Board Can. 25:439-455.

Hyland, J. L., and D. C. Miller. 1979. Effects of No. 2 fuel oil on chemically-evoked feeding behavior of the mud snail, *Ilyanassa obsoleta*. Proc. 1979 Oil Spill Conf., Am. Petr. Inst., Los Angeles, CA. Pp. 603-607.

Jensen, G. C., H. B. Andersen, and D. A. Armstrong. In press. Differentiating *Paralithodes* larvae using telson spines: a tail of two species. Fish. Bull. U.S. 90.

Jensen, G. C., and D. A. Armstrong. 1989. Biennial reproductive cycle of blue king crab, *Paralithodes platypus*, at the Pribilof Islands, Alaska, and comparison to a congener, *P. camtschatica*. Can. J. Fish. Aquat. Sci. 46:932-940.

Johnson, D. F., and K. W. Hess. 1990. Numerical simulations of blue crab larval dispersal and recruitment. Bull. Mar. Sci. 46:195-213.

Kawasaki, S. 1972. Reproduction and fecundity of the female king crab. *Paralithodes camtschatica* (Tilesius), in the waters of western Kamchatka. II. Determination of the fecundity based on the counts of the ovarian eggs and of the spawned eggs attached to pleopods. Bull. Far Seas Fish. Res. Lab. 6:169-190.

Krebs, C. T., and K. A. Burns. 1977. Long-term effects of an oil spill on populations of the salt marsh crab, *Uca pugnax*. Science 197:484-487.

Manly, B. J. F. 1974. Estimation of stage-specific survival rates and other parameters for insect populations developing through several stages. Oecologia 15:277-285.

Marukawa, H. 1933. Biological and fishery research on the Japanese king crab, *P. camtschatica*. J. Imp. Fish. Exp. Sta. Tokyo, Pap. 37, No.4. 152 pp.

Matsuura , S. and K. Takeshita. 1985. Development and decrease in number of eggs attached to pleopods of laboratory reared crabs, *Paralithodes camtschatica* (Tilesius). Proceedings of the International King Crab Symposium, January, 1985, Anchorage, Alaska. University of Alaska, Alaska Sea Grant Report 85-12:155-165 .

McGurk, M., D. Warburton, J. E. Edinger, E. M. Buchak. 1991. Fisheries oceanography of the southeast Bering Sea: relationships of growth, dispersion, and mortality of herring larvae to environmental conditions in the Port Moller Estuary. Triton Envir. Cons., Richmond, B.C., Canada. 58+ pp.

McMurray, G., A. H. Vogel, P. A. Fishman, D. A. Armstrong, and S. C. Jewett. 1984. Distribution of larval and juvenile red king crabs (*Paralithodes camtschatica*) in Bristol Bay. OCSEAP Fin. Rep. of Princ. Inv. 53:267-477. U.S. Dept. Comm., NOAA-NOS, Anchorage, AK. (1986).

Nakazawa, K. 1912. A study on the king crab of Hokkaido. Exper. Rep. Fish. Training Sch. 8(6):n.p.

Nichols, J. H., D. B. Bennett, D. J. Symonds, and J. R. Grainger. 1987. Estimation of the stock size of adult *Nephrops norvegicus* (L.) from larvae surveys in the western Irish Sea in 1982. J. Nat. Hist. 21:1433-1450.

Otto, R. S., R. A. MacIntosh, T. M. Armetta, W. S. Meyers, J. McBride, and D. A. Somerton. 1982. United States crab research in the eastern Bering Sea during 1982. Document submitted to the Annual Meeting of the International North Pacific Fisheries Commission, Tokyo, Japan, Oct. 1982. Nat. Mar. Fish. Serv., Northwest and Alaska Fisheries Center, Seattle. 57 pp.

Parslow, J., N. C. Sonntag, and J. B. L. Matthews. 1979. Technique of systems identification applied to estimating copepod population parameters. J. Plankt. Res. 1:137-151.

Paul, A. J. 1982. Mating frequency and sperm storage as factors affecting egg production in multiparous *C. bairdi*. Proc. Internat. Symp. on the genus *Chionoecetes*. Alaska Sea Grant Report 82-10:273-281.

Peddicord, R., and V. McFarland. 1976. Effects of suspended dredged material on the commercial crab, *Cancer magister*. Proc. Spec. Conf. on Dredging and its Environmental Effects, Am. Soc. of Civil Eng., New York. Pp. 633-644.

Press, W. H., B. P. Flannery, S. A. Teukalsky, and W. T. Vetterling. 1986. Numerical recipes: the art of scientific computing. Cambridge Univ. Press, Cambridge. 818 pp.

Rodin, V. E. 1970. Some data on the distribution of king crab *Paralithodes camtschatica* in the southeastern Bering Sea. Soviet Fisheries Investigation in the Northeastern Pacific part V. Pacific Sci. Res. Inst. of Fish. and Ocean. (TINRO) 72:143-148.

Rothlisberg, P. C., J. A. Church, and A. M. G. Forbes. 1983. Modelling the advection of vertically migrating shrimp larvae. J. Mar. Res. 41:511-538.

Sasakawa, Y. 1975. Studies on blue king crab resources in the western Bering Sea III. Ovarian weights, egg numbers carried and diameters. Bull. Jap. Soc. Sci. Fish. 41:941-944.

Sato, S. 1958. Studies on larval development and fishery biology of king crab, *Paralithodes camtschatica* (Tilesius). Bull. Hokkaido Reg. Fish. Res. Lab. 17:1-102.

Shirley, S. M., and T. C. Shirley. 1988. Behaviour of red king crab larvae: phototaxis, geotaxis and rheotaxis. Mar. Behav. Physiol. 13:369-388.

Shirley, S. M., and T. C. Shirley. 1989a. Interannual variability in density, timing and survival of Alaskan red king crab *Paralithodes camtschatica* larvae. Mar. Ecol. Prog. Ser. 54:51-59.

Shirley, S. M., and T. C. Shirley. 1989b. Diel feeding periodicity of larvae of the red king crab, *Paralithodes camtschatica*. Proc. Int. Symp. King and Tanner Crabs, Anchorage, Alaska, Nov. 28-30, 1989. Pp. 233-244.

Somerton, D. A., and R. A. MacIntosh. 1985. Reproductive biology of female blue king crab, *P. platypus* near the Pribilof Islands, Alaska. J. Crust. Biol. 5:365-376.

Somerton, D. A., and W. S. Meyers. 1983. Fecundity differences between primiparous and multiparous female Alaskan Tanner crab *Chionoecetes bairdi*. Unpublished report.

Sonntag, N. C., and J. Parslow. 1981. Technique of systems identification applied to estimating copepod production. J. Plankt. Res. 3:461-473.

Stedinger, J. R., and C. A. Shoemaker. 1985. A stochastic model of insect phenology for a population with spatially variable development rates. Biometrics 41:691-701.

Sundberg, K. A., and D. Clausen. 1977. Post larval king crab (*Paralithodes camtschatica*) distribution and abundance in Kachemak Bay Lower Cook Inlet, Alaska, 1976. *In* L. L. Trasky, L. B. Flagg, and D. C. Burbank (eds.). Environmental studies of Kachemak Bay and Lower Cook Inlet, Vol. 5. Alaska Dept. Fish and Game, Anchorage. 36 pp.

Takeshita K., H. Fujita, S. Kawasaki, and S. Matsuura. 1972. Reproduction and fecundity of the female king crab *Paralithodes camtschatica* (Tilesius), in the waters off western Kamchatka III. Evaluation of the population fecundity. Bull. Far Seas Fish. Res. Lab. 7:113-123.

U.S. Fish and Wildlife Service. 1942. Report of the Alaskan crab investigation. Fishery Market News, May 1942 Supplement, 4(5a):3-107.

Wallace, W. M., C. J. Pertuit and A. R. Hvatum. 1949. Contribution to the biology of the king crab (*Paralithodes camtschatica*). U.S. Fish Wildl. Serv. Fish. Leaf. No. 340. 50 pp.

FIGURES

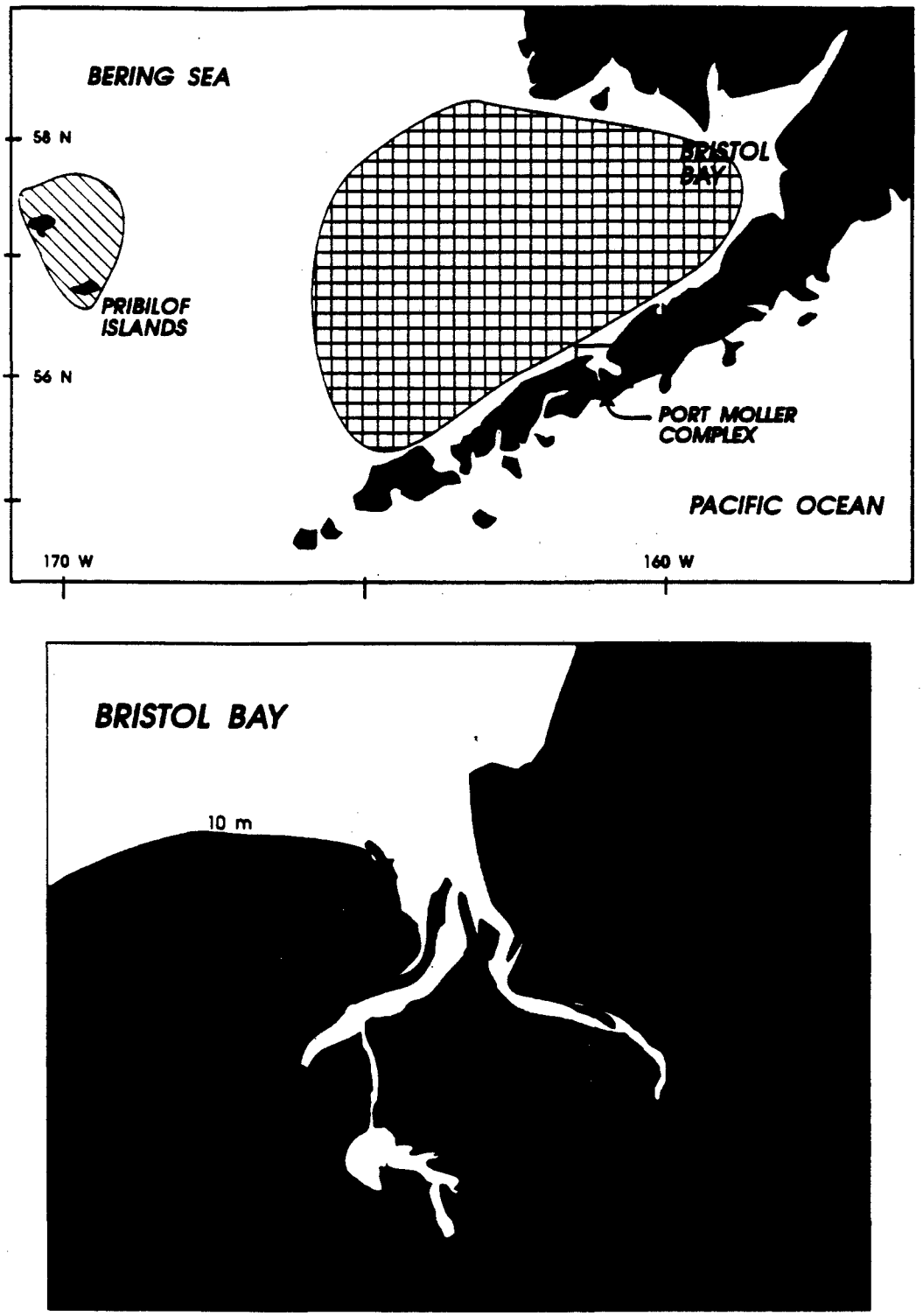


Figure 1. Study location. Upper: Southeastern Bering Sea, showing study site and general distribution of red (cross-hatch) and blue (diagonal hatch) king crab stocks. Lower: Port Moller and Herendeen Bay. Dark shading—land; light shading—shallow water (<10 m); white—deep water.

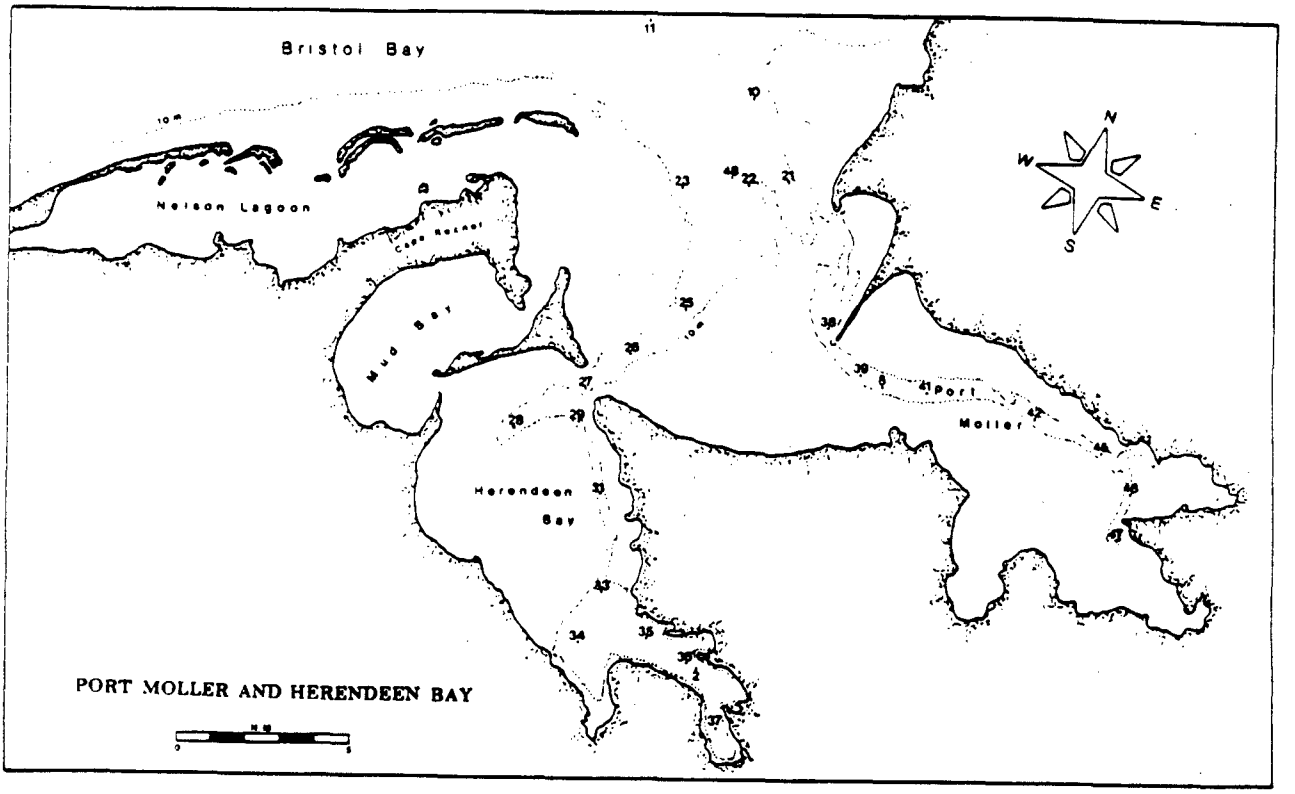


Figure 2. Locations of larval survey stations (numbered dots).

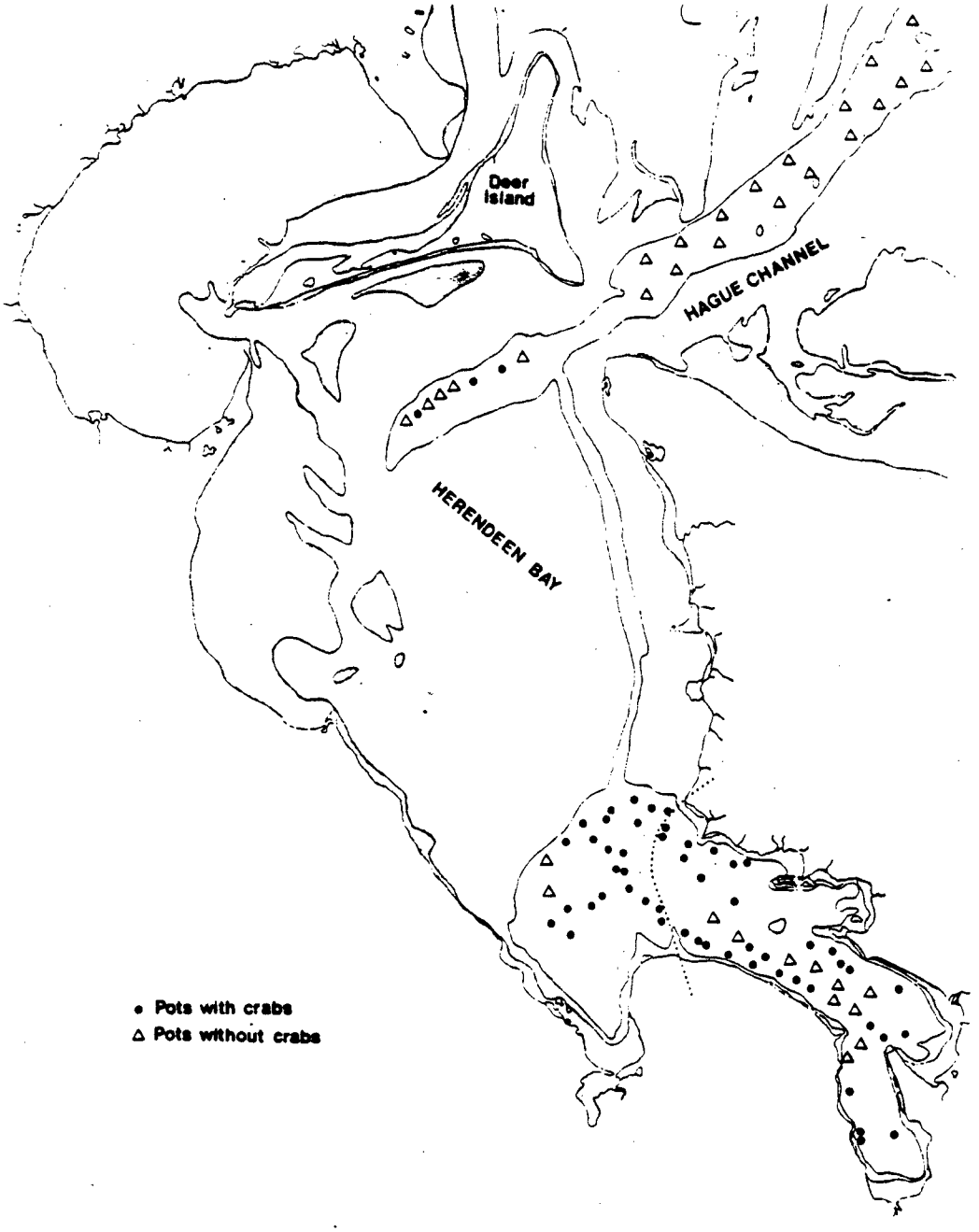


Figure 3. Locations of king crab pot samples in Herendeen Bay and Hague Channel. Dots—pots with king crab; triangles—pots with no king crab. The dotted line divides female-dominated (west) and male-dominated (east) areas.

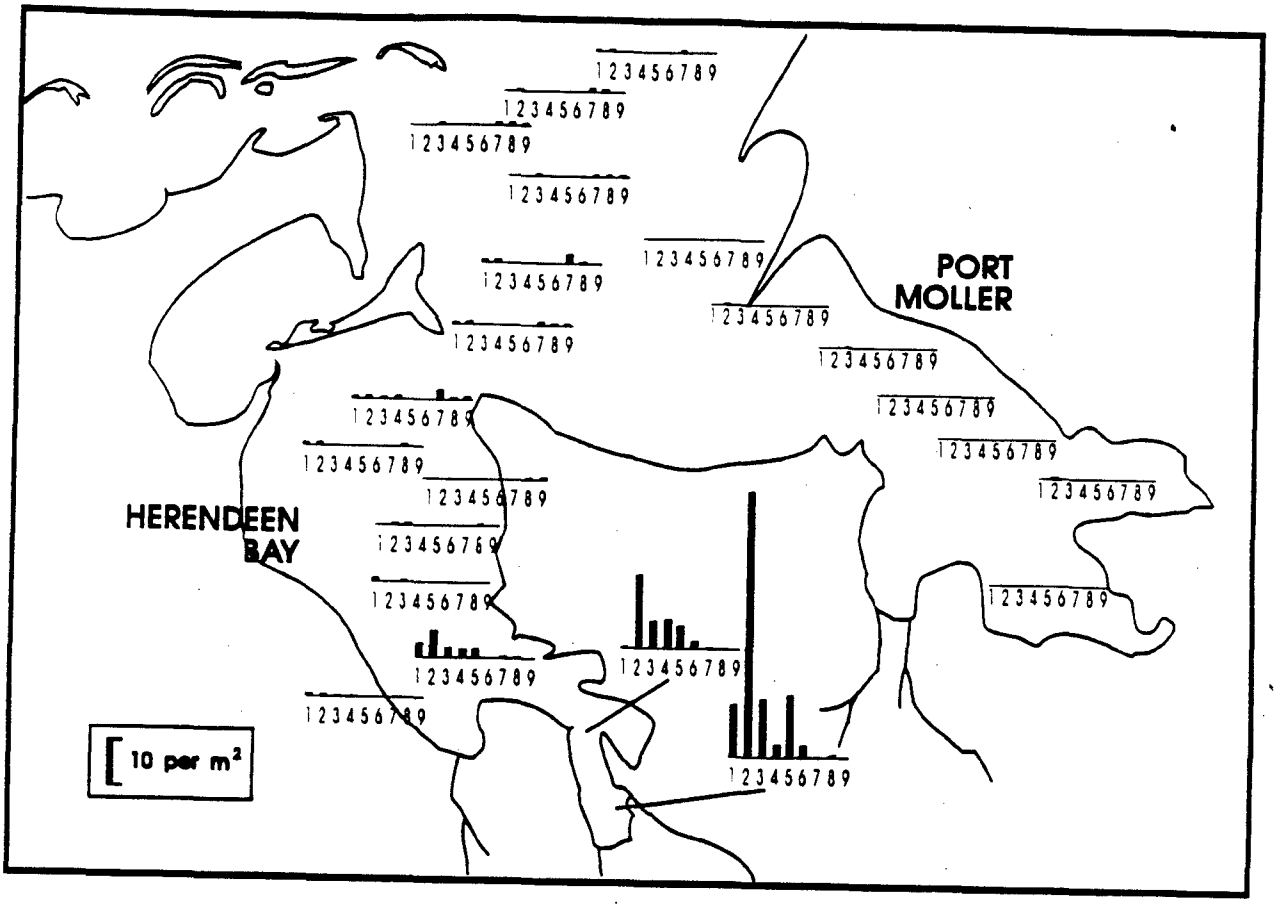


Figure 4. Red king crab larval abundance by week and sample location. Weeks are numbered consecutively from 1 May 1990.

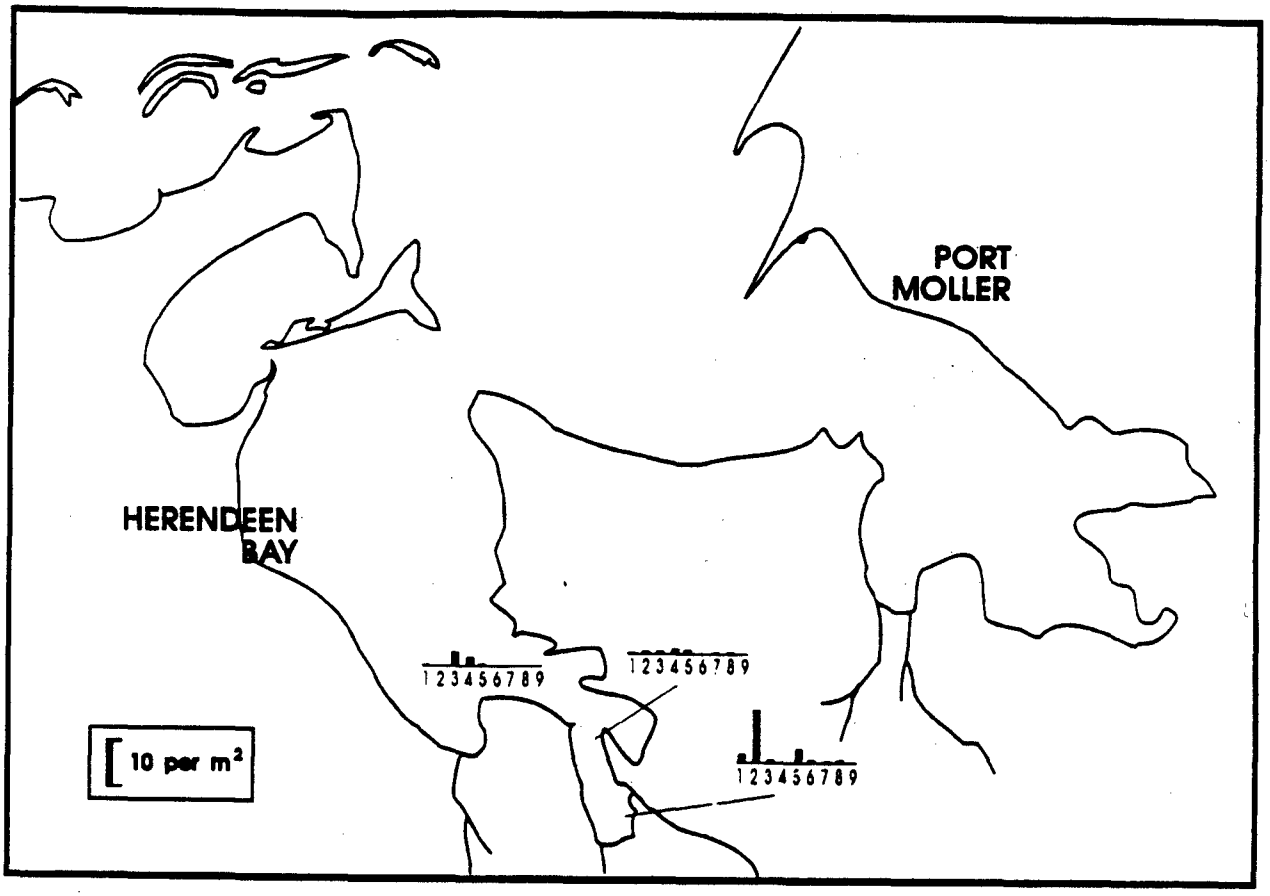


Figure 5. Blue king crab larval abundance by week and sample location. Weeks are numbered consecutively from 1 May 1990.

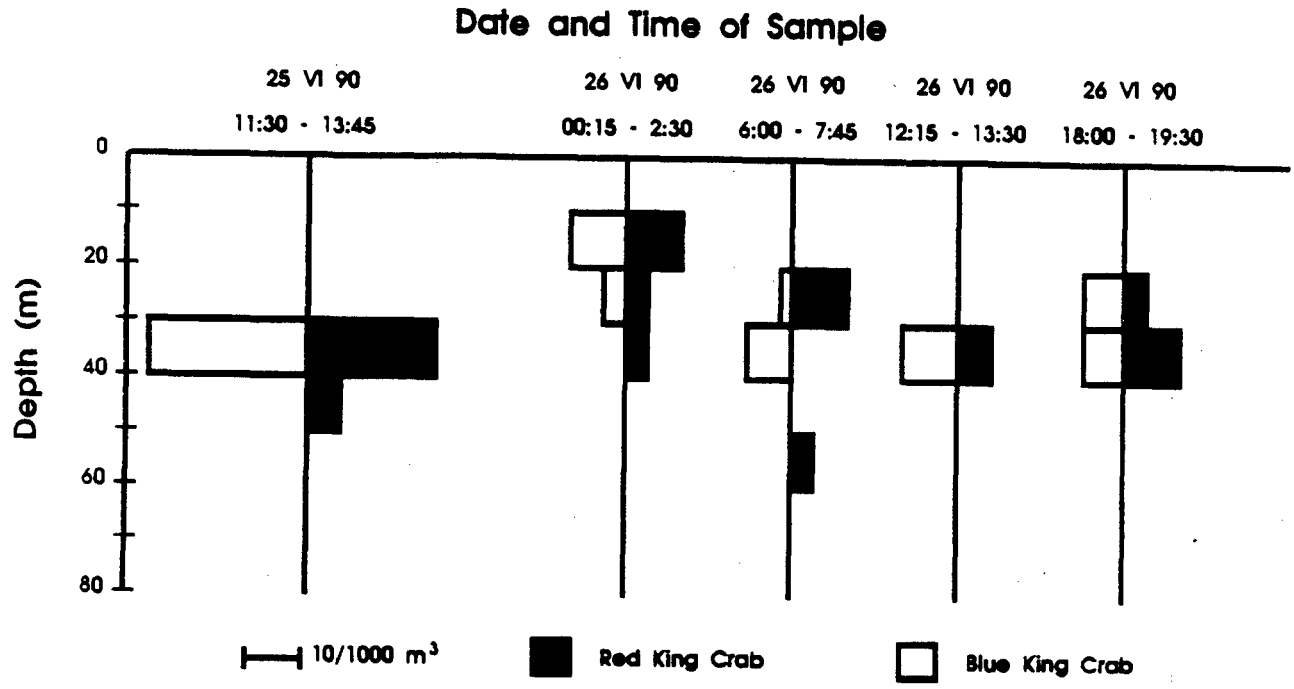


Figure 6. Diurnal depth distributions of king crab larvae at Station 36, 25-26 June 1990.

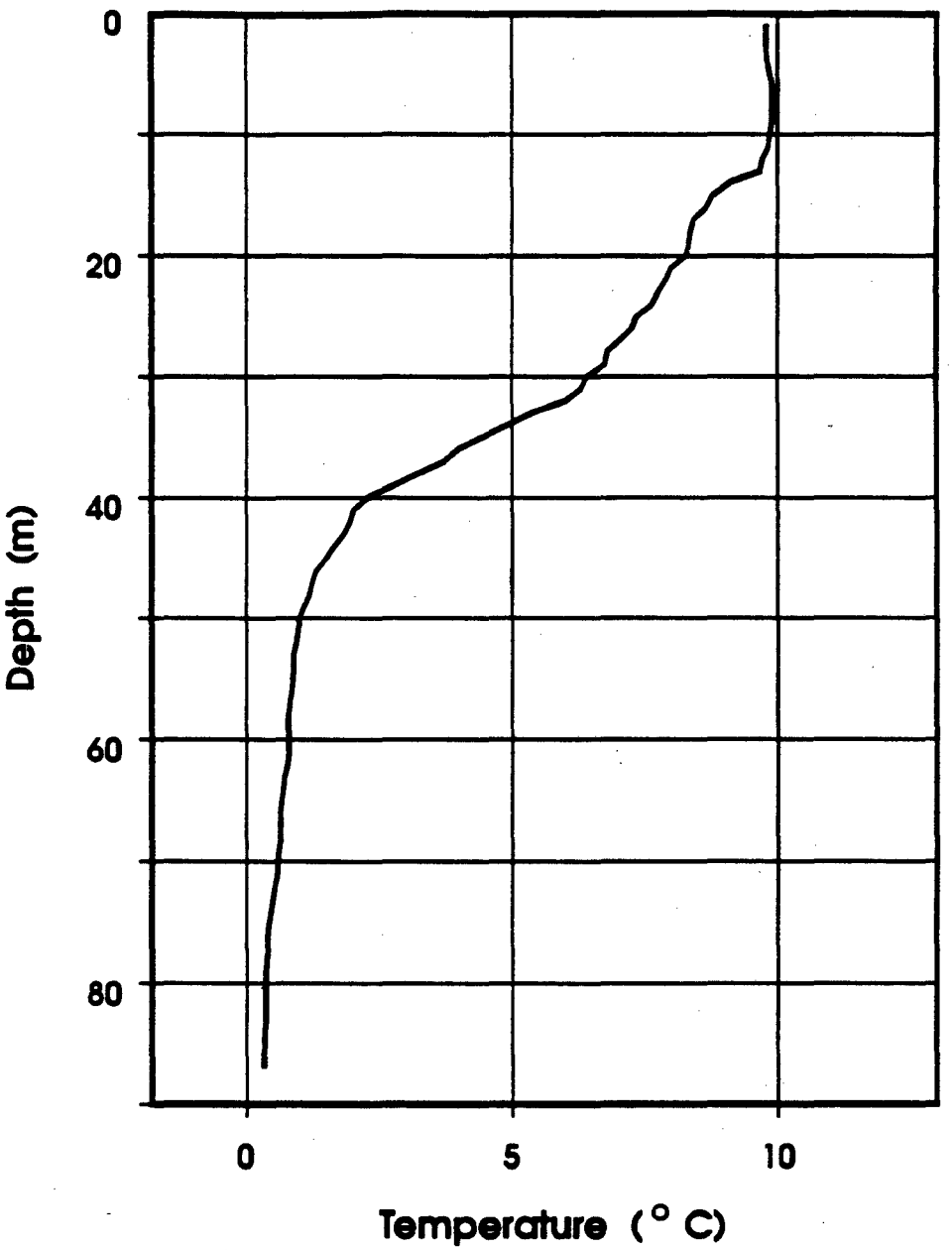


Figure 7. Temperature profile at Station 36, 26 June 1990.

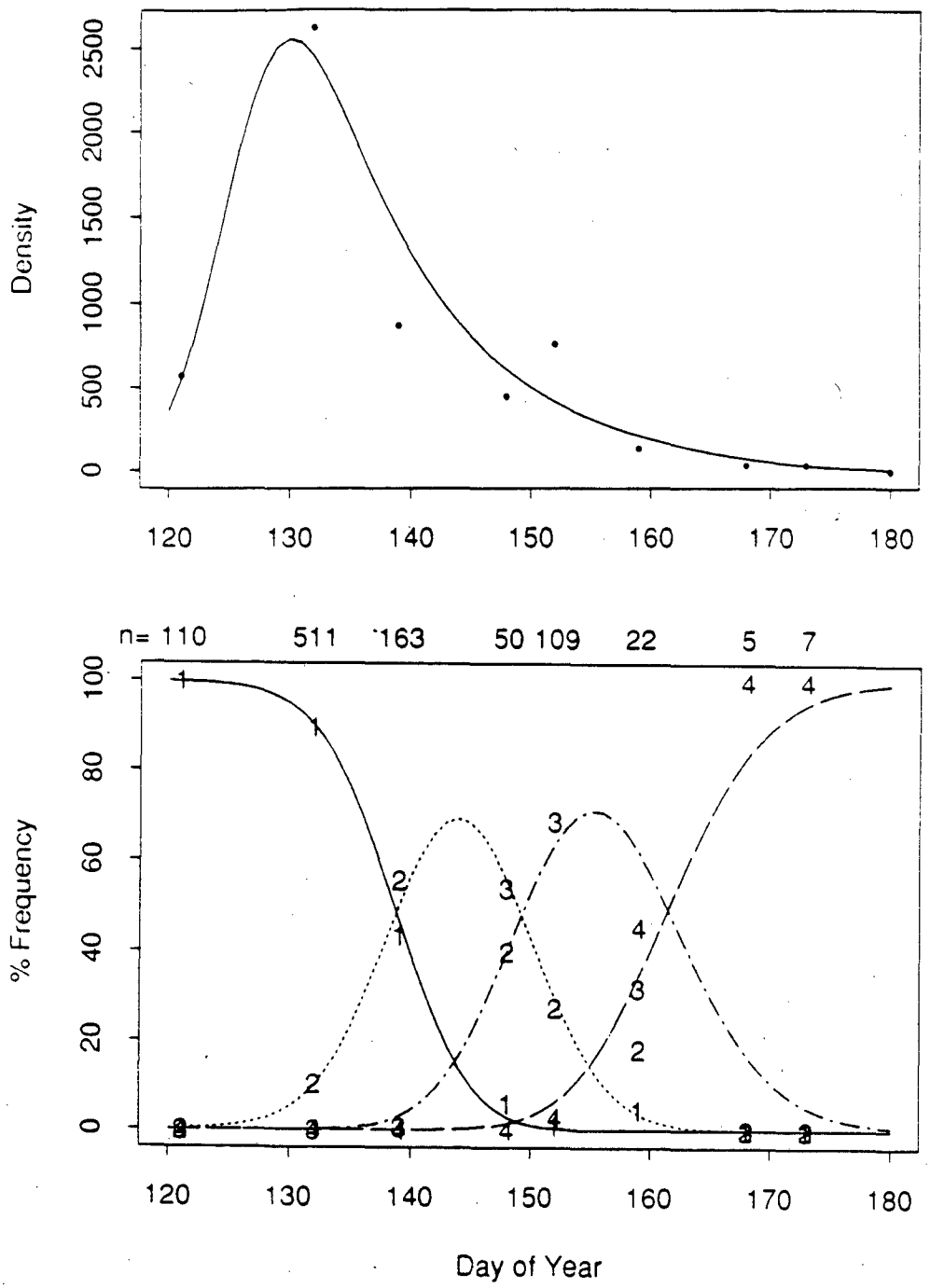


Figure 8. Temporal pattern of red king crab zoeal density, average for Stations 35, 36, and 37. Upper: total zoeal density (No. per 100 m^2), predicted (line) and observed (dots). Lower: percent frequency by stage, predicted (lines) and observed (symbols); "n" is the total number of larvae captured on each sample day. Stages are Z1 (solid line, octagon), Z2 (dotted line, triangle), Z3 (dot-dash line, "+"), Z4 (dashed line, "x").

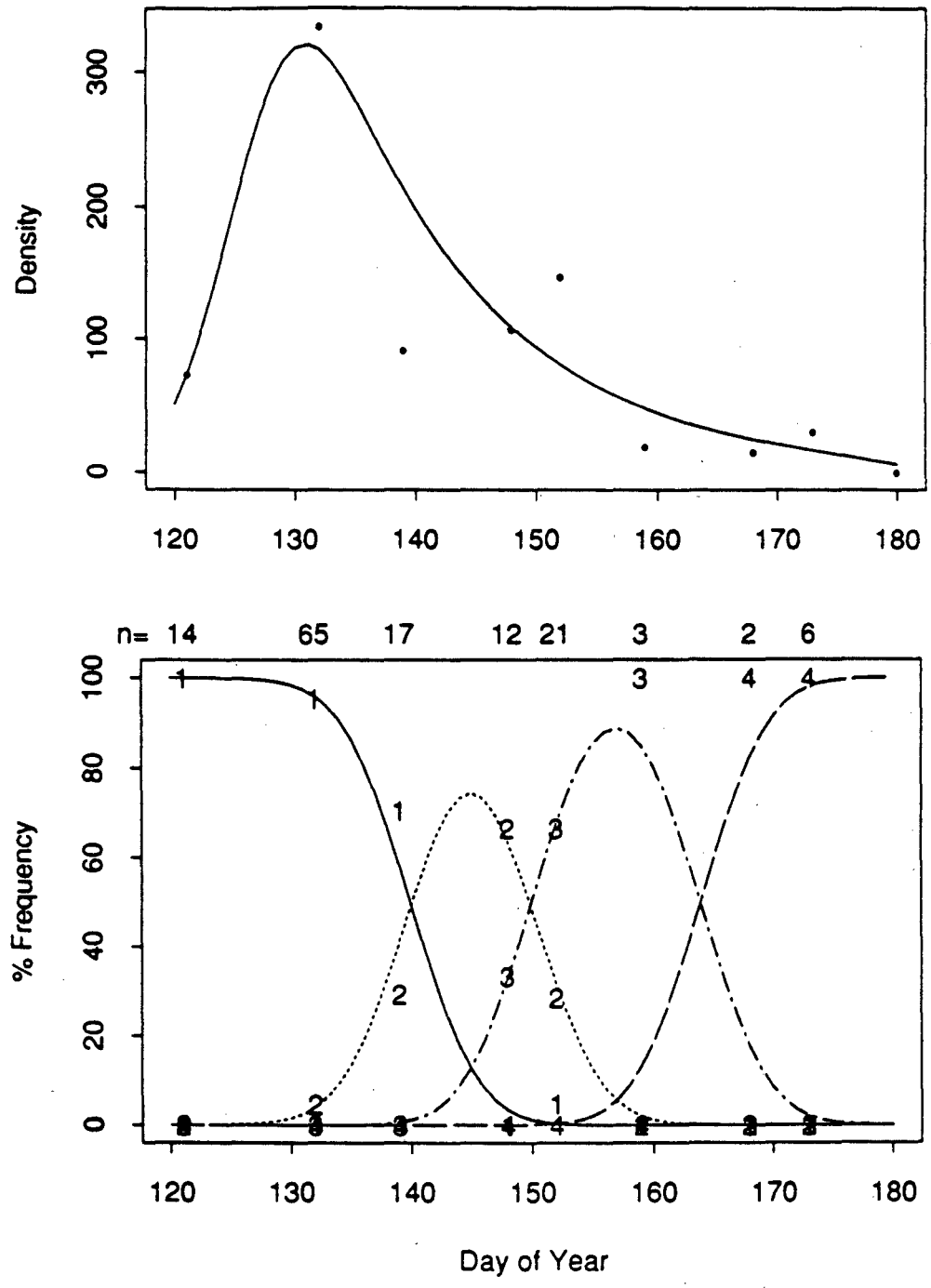


Figure 9. Temporal pattern of blue king crab zoeal density, average for Stations 35, 36, and 37. Upper: total zoeal density (No. per 100 m^2), predicted (line) and observed (dots). Lower: percent frequency by stage, predicted (lines) and observed (symbols); "n" is the total number of larvae captured on each sample day. Stages are Z1 (solid line, octagon), Z2 (dotted line, triangle), Z3 (dot-dash line, "+"), Z4 (dashed line, "x").

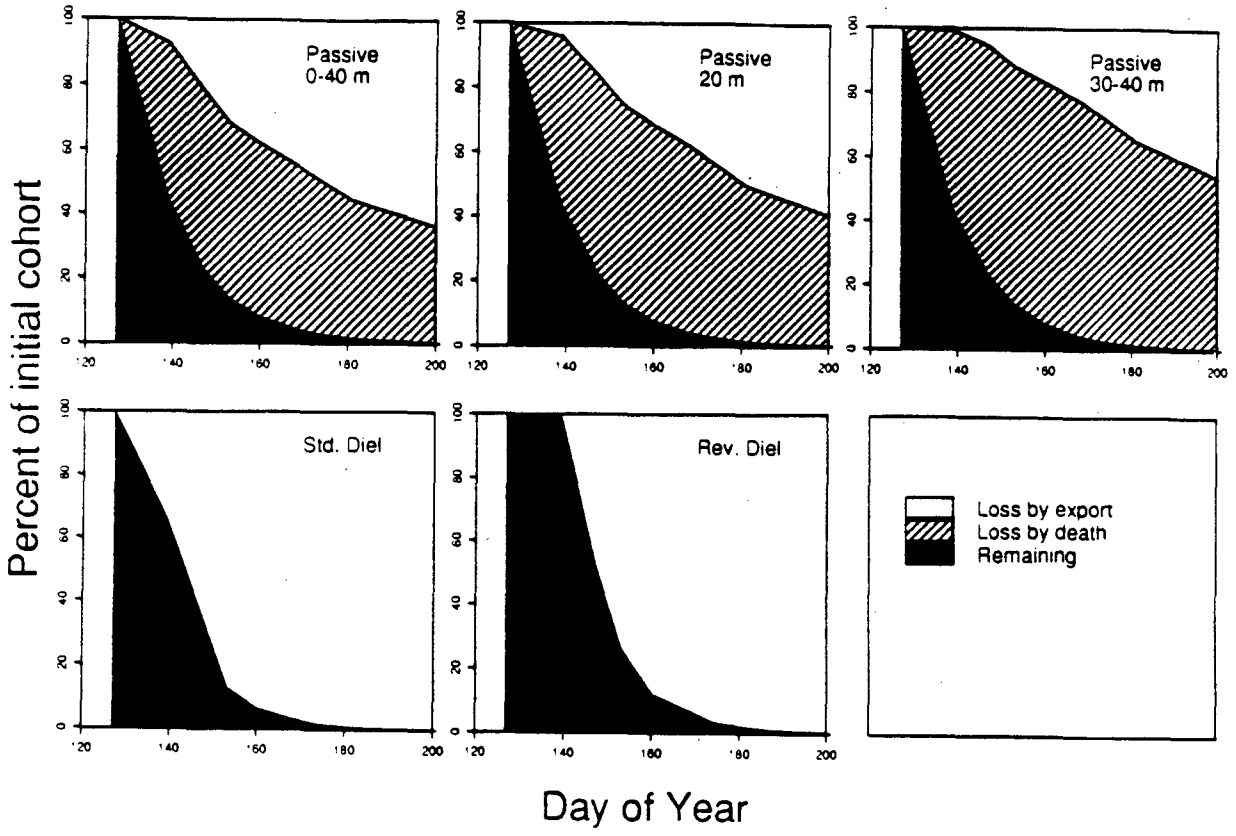


Figure 10. Summary of red king crab larval cohort survival and retention in the Port Moller Complex, based on results of the GLLVHT model with various assumptions about initial vertical distribution and vertical migration behavior.

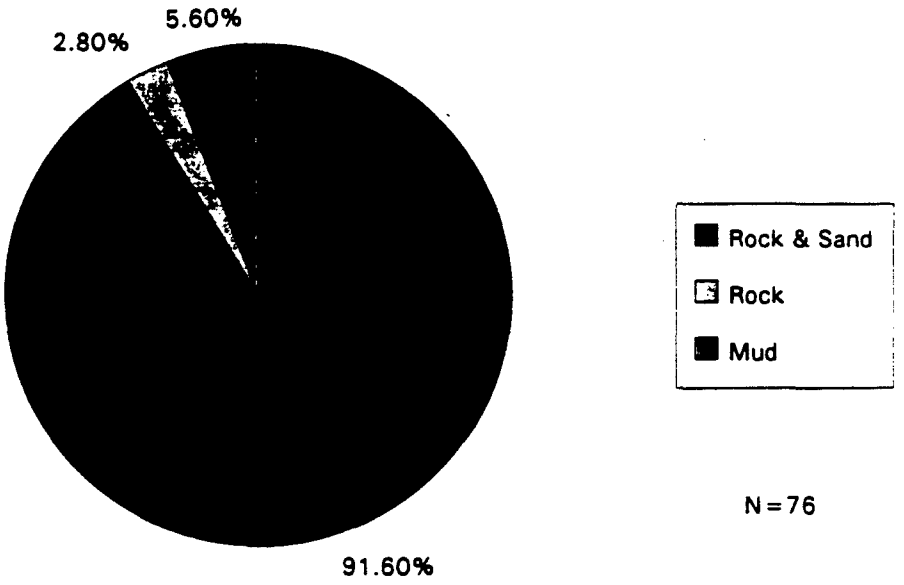


Figure 11. Frequency of benthic substrata where red king crab were caught in trawl and dredge samples.

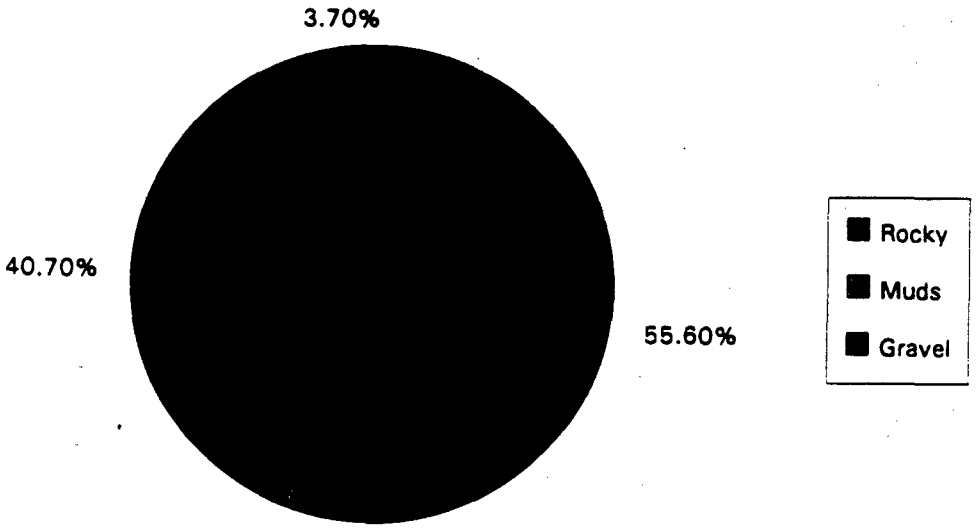


Figure 12. Frequency of benthic substrata where Tanner crab were caught in trawl and dredge samples.

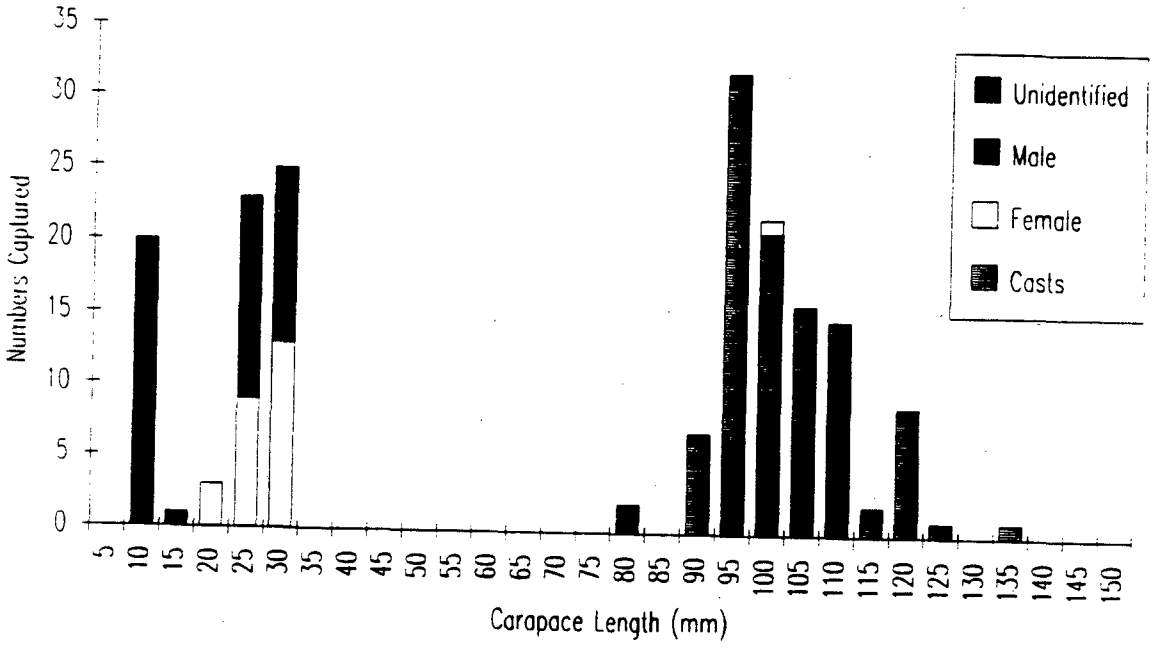


Figure 13. Size distribution of red king crab caught in trawl, dredge, and intertidal samples.

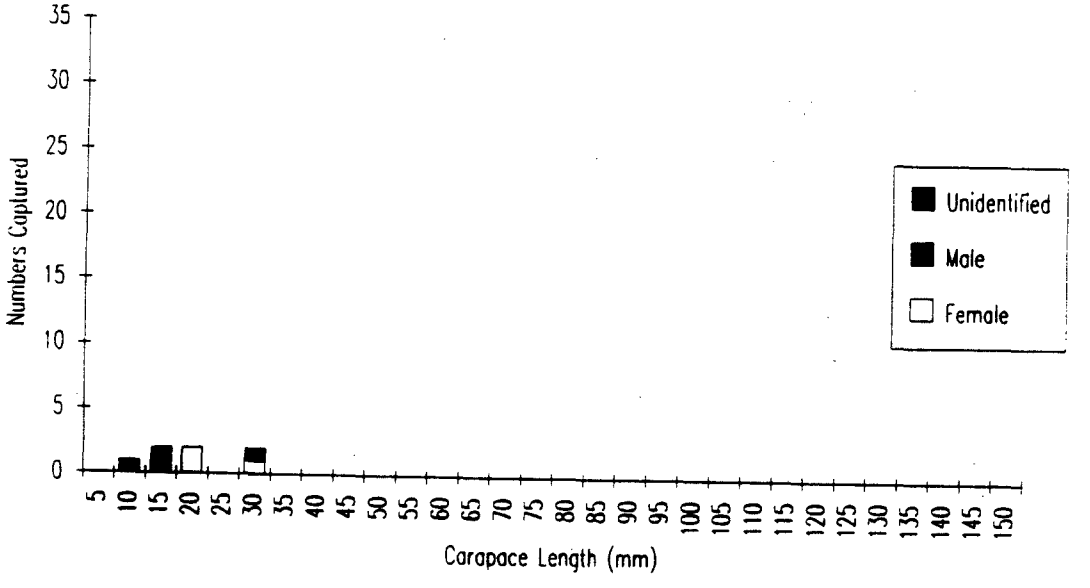


Figure 14. Size distribution of blue king crab caught in trawl, dredge, and intertidal samples.

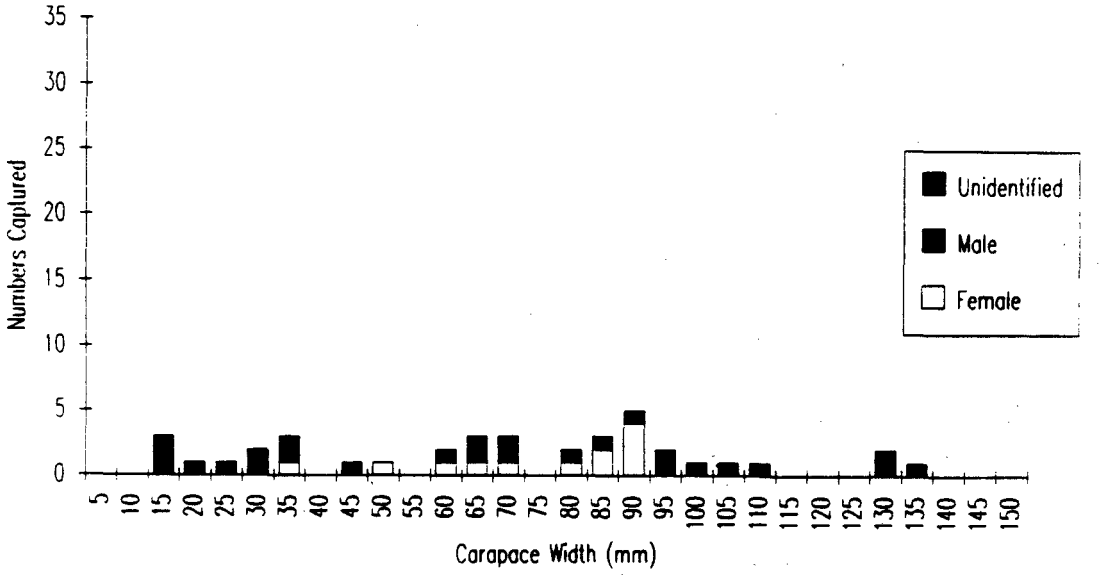


Figure 15. Size distribution of Tanner crab caught in trawl and dredge samples.

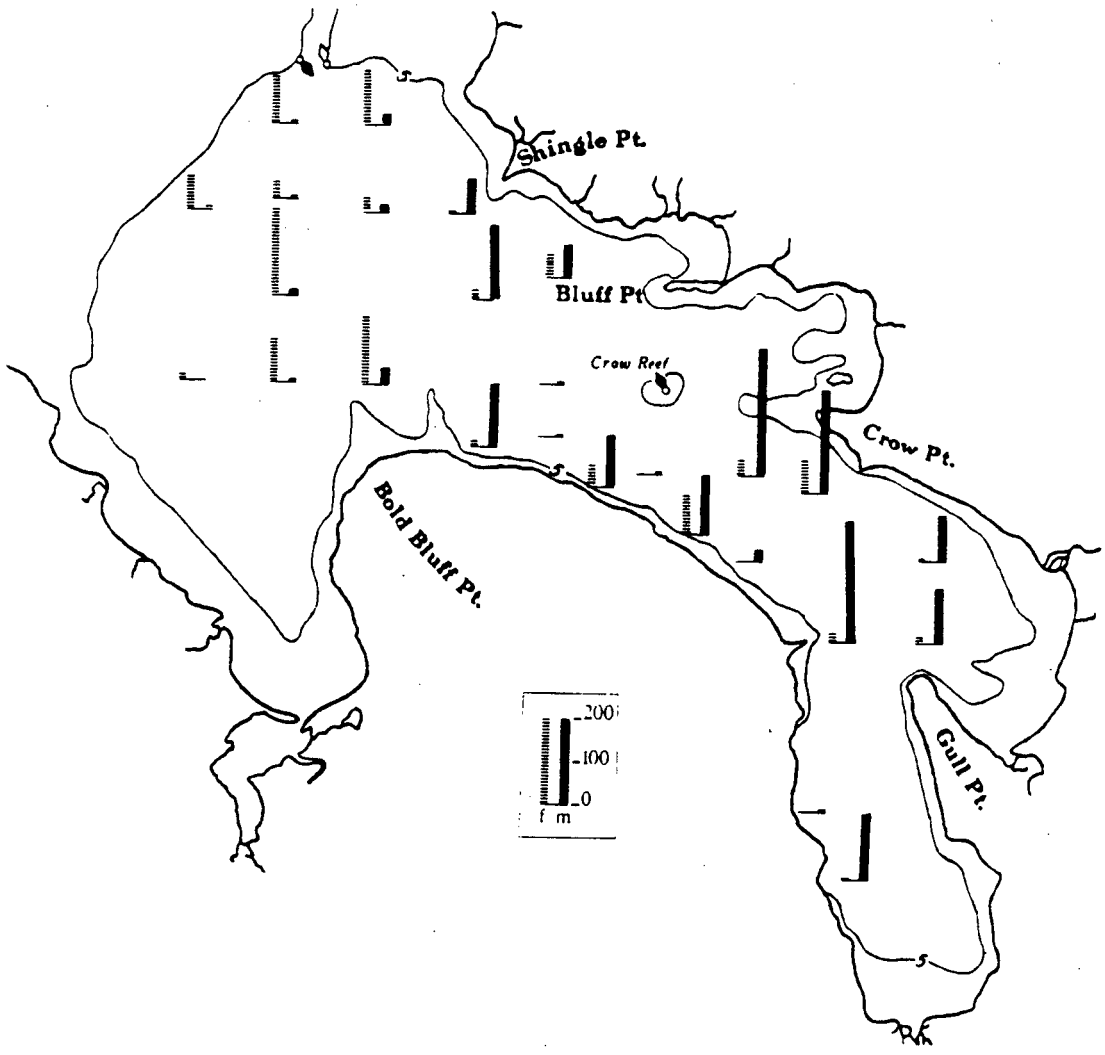


Figure 16. Sex composition of adult red king crab caught in pots, over 1 x 1/2 minute grid cells. Bars represent total numbers caught by all pots in that grid cell.

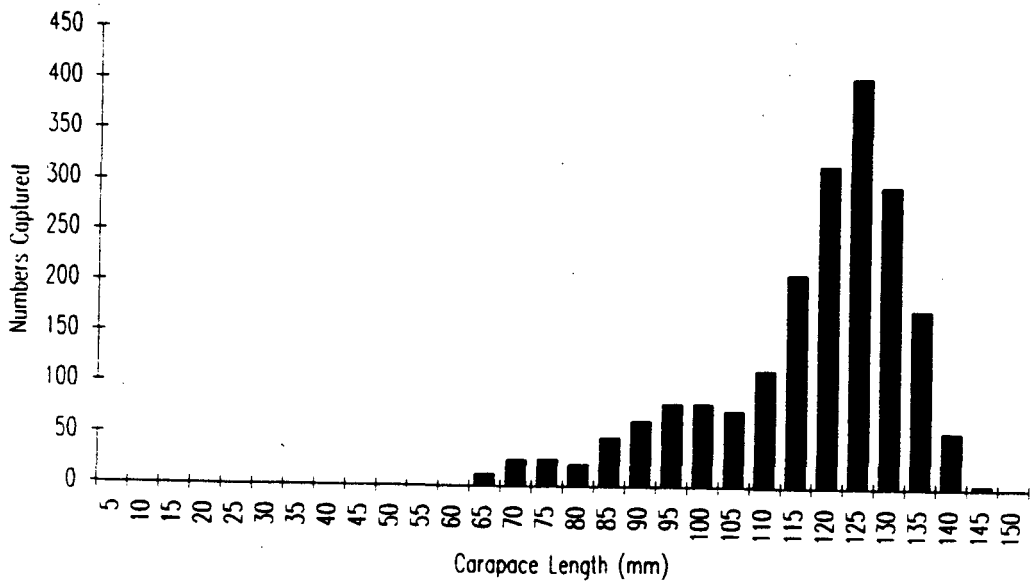


Figure 17. Size distribution of adult male red king crab caught in crab pots.

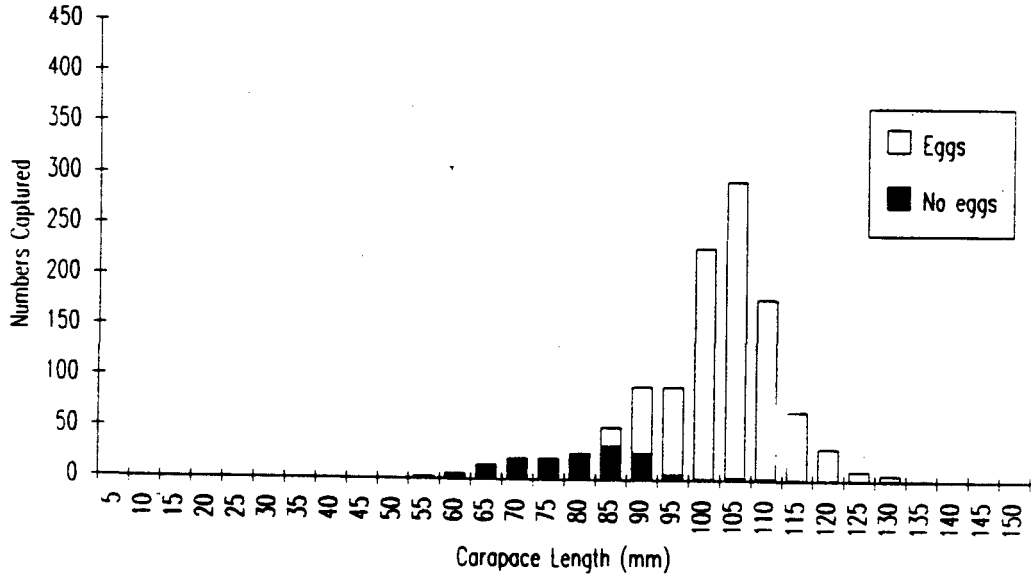


Figure 18. Size distribution of adult female red king crab caught in crab pots.

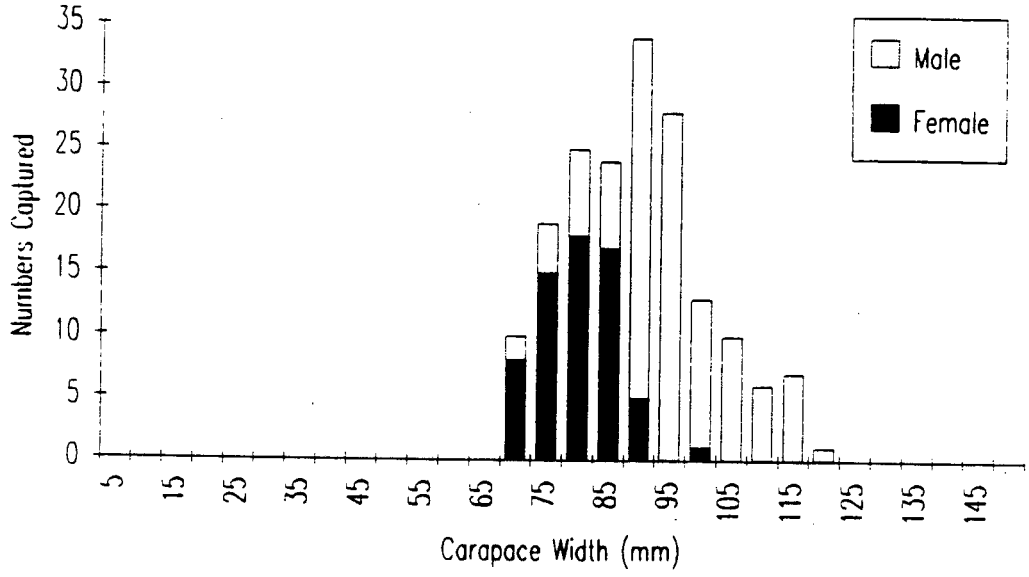


Figure 19. Size distribution of adult Tanner crab caught in crab pots.

TABLES

Table 1. Larval sampling stations.

Station	N. Latitude		W. Longitude	
2	55°	44.7'	160°	42.0'
3	55	46.2	110	46.9
7	55	55.4	160	43.4
8	55	53.1	160	32.7
9	55	57.1	160	40.8
10	56	1.6	160	40.0
11	56	4.4	160	44.4
12	55	52.2	160	22.6
21	55	59.1	160	36.4
22	55	59.1	160	39.1
23	55	59.1	160	42.6
25	55	57.1	160	40.6
26	55	55.3	160	43.6
27	55	53.4	160	48.1
28	55	52.3	160	51.8
29	55	51.2	160	47.6
31	55	49.1	160	46.9
33	55	46.9	160	47.2
34	55	44.8	160	47.8
35	55	45.6	160	44.7
36	55	44.7	160	42.0
37	55	42.9	160	41.4
38	55	56.0	160	35.2
39	55	53.6	160	32.6
41	55	53.4	160	28.4
42	55	52.7	160	24.4
45	55	51.8	160	21.8
46	55	50.0	160	19.4
47	55	48.2	160	18.5
48	56	0.7	160	39.0
49	56	1.9	160	42.3

Table 2. Benthic and intertidal samples collected.

Gear Type	Sample	Date	Location				Description
			N Lat.		W Long.		
Beam Trawl	1	10-Jun-90	55°	51.7'	160°	21.9'	
	2	10-Jun-90	55	53.5	160	28.5	
	3	10-Jun-90	55	56.0	160	35.2	
	4	11-Jun-90	55	53.2	160	53.3	HC, E end
	5	11-Jun-90	55	46.8	160	47.5	HB, Deer Valley Arm
	6	11-Jun-90	55	46.8	160	47.5	HB, Bold Bluff Pt.
	7	11-Jun-90	55	45.4	160	43.7	HB, Crow Pt.
	8	11-Jun-90	55	44.7	160	42.3	HB, Off Crow Pt.
	9	11-Jun-90	55	43.4	160	41.3	HB, Off Gull Pt.
	10	12-Jun-90	55	43.0	160	41.8	HB, Portage Ck. Arm
	11	12-Jun-90	55	43.5	160	40.9	HB, Gull Pt.
	12	12-Jun-90	55	45.2	160	42.0	HB, Crow Pt.
	13	12-Jun-90	55	46.0	160	43.3	HB, S side Bluff Pt.
	14	12-Jun-90	55	45.3	160	45.4	HB, Bold Bluff Pt.
	15	17-Jun-90	55	43.5	160	40.9	
	16	24-Jun-90	55	43.9	160	40.5	HB, N of Gull Pt.
	17	24-Jun-90	55	42.3	160	41.1	
	18	24-Jun-90	55	45.2	160	45.5	HB, Bold Bluff Pt.
	19	16-Jul-90	55	56.9	160	34.2	PM, N of Harbor Spit
	20	16-Jul-90	55	57.9	160	34.4	PM, N of Harbor Spit
	21	16-Jul-90	55	55.1	160	35.6	PM, N of Harbor Spit
	22	16-Jul-90	55	51.6	160	22.3	
	23	16-Jul-90	55	53.4	160	29.6	
	24	16-Jul-90	55	53.2	160	29.7	
	25	16-Jul-90	55	53.3	160	28.9	
	26	16-Jul-90	55	53.3	160	31.0	
Otter Trawl	1	11-Jun-90	55	45.8	160	42.5	HB, Mine Harbor
Rock Dredge	1	17-Jun-90	55	46.0	160	43.2	HB, S of Bluff Pt.
	2	23-Jun-90	55	45.1	160	42.4	
	3	23-Jun-90	55	45.2	160	42.6	
	4	23-Jun-90	55	44.6	160	43.1	
	5	23-Jun-90	55	44.6	160	43.3	
	6	23-Jun-90	55	43.6	160	42.4	
	7	24-Jun-90	55	43.9	160	40.6	HB
	8	24-Jun-90	55	44.2	160	41.5	HB, Gull Pt.
	9	24-Jul-90	55	42.4	160	42.2	
	10	24-Jul-90	55	42.4	160	42.0	
	11	24-Jul-90	55	43.3	160	42.4	
	12	24-Jul-90	55	43.6	160	42.4	
Intertidal	1	11-Jun-90	55	46.3	160	43.7	HB, Bluff Pt.
	2	12-Jun-90	55	45.5	160	46.2	HB, Bold Bluff Pt.
	2.5	20-Jun-90	55	46.3	160	43.7	HB, Bluff Pt.
	3	21-Jun-90	55	45.5	160	46.2	HB, Bold Bluff Pt.
	4	21-Jun-90	55	45.5	160	46.2	HB, Bold Bluff Pt.
	5	21-Jun-90	55	45.5	160	46.2	HB, Bold Bluff Pt.
	6	22-Jun-90	55	45.5	160	46.2	HB, Bold Bluff Pt.
	7	23-Jun-90	55	41.6	160	45.7	HB, Gull Isl.
	8	25-Jun-90	55	44.0	160	40.8	HB, Gull Pt.

HB—Herendeen Bay, HC—Hague Channel, PM—Port Moller

Table 3. Biological parameters of the larval cohort model.

Parameter	Definition
N_0	Number hatched
m	Mean hatch time (day of year)
s	Standard deviation of hatch time (days)
D_1	Stage duration, 1st Zoea (days)
D_2	Stage duration, 2nd Zoea
D_3	Stage duration, 3rd Zoea
D_4	Stage duration, 4th Zoea
CV	Coefficient of variation for durations
Z	Instantaneous mortality rate (per day)

Table 4. Estimates of biological parameters of the dynamic cohort model.

		RKC		BKC	
Parameter	Units	Value	S.E.	Value	S.E.
N_0	m^{-2}	50.09	1.61	5.40	0.40
m	d	125	<0.01	126	0.02
s	d	4.11	0.31	4.40	0.51
D_1	d	12.0	0.4	12.2	0.9
D_2	d	10.5	0.6	10.5	1.4
D_3	d	12.1	1.1	14.2	2.5
D_4	d	12.0	1.9	16.3	3.5
CV	%	22.1	3.8	24.7	7.6
Z	d^{-1}	0.095	0.002	0.075	0.004

Table 5. Summary of GLLVHT Model runs for red king crab larvae. Horizontal bars separate groups used for specific comparisons (see text).

Run no.	Behavior	Hatch day	Hatch loc.	Initial depth	Notes	Est. N_0	Est. Z	Change in deviance
3.23	Passive	127	St 37	0-40m		1.1×10^9	0.062	65%
3.27	Passive	135	St 37	0-40m		—	—	—
3.28	Passive	150	St 37	0-40m		—	—	—
3.29	Passive	126-136	St 37	0-40m	A	1.6×10^9	0.079	70%
3.30	Passive	127	Note B	0-40m	B	1.1×10^9	0.060	62%
3.31	Passive	127	St. 47	0-40m	A	—	—	—
3.32	Passive	127	St. 25	0-40m	A	—	—	—
3.33	Passive	127	St. 37	0-10m		1.0×10^9	0.054	54%
3.34	Passive	127	St 37	20m		1.2×10^9	0.066	70%
3.35	Passive	127	St 37	30-40m		1.3×10^9	0.071	69%
3.39	Rev. Diel	127	St. 37	20m		1.1×10^9	-0.03	51%
3.40	Std. Diel	127	St. 37	40m		0.7×10^9	-0.02	55%

NOTES:

A. Estimates of N0 and m are not valid for these models.

B. Hatch uniform over Portage Creek arm of Herendeen Bay.

Table 6. Fecundity estimates for RKC.

Author	N	Carapace width (mm) Mean	Range	SD	Carapace length (mm) Mean	Range	SD	Total No. of eggs Mean	Range	SD	Study area
Present study	25	108	92-131	9.15	101	84-129	10.1	78,367	15,000-130,000	27,094	Herendeen Bay
Nakazawa (1912)*			127-169						62,550-345,900		Hokkaido
Marukawa (1933)*			115-168						69,598-270,204		Hokkaido
Wallace, et.al. (1949)						128-145			148,349-446,639		Canoe Bay
Rodin (1970)*			94-171						55,408-444,651		Bristol Bay
Fukuhara (1985)	89		40-159						70,000-280,000		Southeast Bering Sea
Haynes (1968)**						98-175			77,000-333,000		Cook Inlet

*Cited in Fukuhara (1985).
**Calculated from regression equation.

Table 7. Size-fecundity regression equations for RKC.

Author	Area	Equation	N	P
Present Study	Herendeen Bay	Y = 2170X - 135,500	24	<0.001
Haynes (1968)	Cook Inlet	Y = 3,319X - 247,400	90	
Kawasaki (1972)	Kamchatka	Y = 2.3468X - 170		

Table 8. Fecundity estimates for Tanner crab.

Author	N	Carapace width (mm) Mean	Range	SD	Total No. of eggs Mean	Range	SD	Area
Present Study	23	94.12	77-110	12.13	186,900	39,000-400,000	76,900	Herendeen Bay
Hilsinger (1976) (summer)			79-115			24,000-318,000		Prince William Sound & Gulf of Alaska
Hilsinger (1976) (spring)			87-110			34,000-317,000		
Somerton and Meyers (1983) (primi-parous)			73-101			50,000-180,000		Pribilof Islands
Somerton and Meyers (1983) (multi-parous)			65-110			40,000-350,000		
Paul (1982)	222		80-120			150,00-350,000		

Table 9. Size-fecundity Regression equations for Tanner crab.

Author	Area	Equation	N	P (slope only)
Present study	Herendeen Bay	Y = 7.43X - 190,300	23	0.0045
Hilsinger (1976)	Prince William Sound	Y = 4610X - 275,800		Significant between the two
		Y = 2347X - 95,100		

APPENDICES

APPENDIX A. SUMMARY OF DATA COLLECTED

Data summaries are organized sampling method: adult crabs sampled with commercial king crab pots (Tables A-1 and A-2); juvenile and adult crabs sampled by trawl, dredge, or transect methods (Tables A-3 and A-4); and larval crabs sampled with zooplankton nets (Tables A-5 and A-6). For each sampling method, we first present a summary description of samples taken, then a summary of biological data for the commercial crab species. Each sample is uniquely identified by a combination of gear code and sample number, which may be used to cross-reference sample descriptions with biological data. The types of gear used were:

BN3	Bongo (333 mesh), single side
BN5	Bongo (505 mesh), single side
BC3	Bongo (333 mesh), combined sides
BC5	Bongo (505 mesh), combined sides
CF	Commercial Fishery Tag Return
TT	Tucker Trawl
MN	Methot Net
KP	King Crab Pot
OT	SCWRRP Otter Trawl
BT	3-m Beam Trawl
SD	Small Rock Dredge
IT	Intertidal/Subtidal Transects

Sample description tables include, where applicable:

Gear code	Three character gear code (see table).
Sample number	Samples are numbered sequentially within a gear type.
Station code	Used to identify repeated samples at one station.
Location	N latitude and W longitude, degrees and minutes (to tenths).
Start time of sample	Year, month, day, hour, and minute.
Performance code	G--good, F--fair, P--poor. Only good samples are used for quantitative analyses.
Depth	Maximum depth of sample
Duration	Duration of sample, hours and minutes
Sample size	Distance, area, or volume sampled.
Unit	Units for sample size. M--distance towed (m), A--area sampled (m^2), V--volume sampled (m^3).
Substrate	Bottom type code, combinations of: boulder, B; cobble, C; debris, D; gravel, G; shell hash, H; rock, R; sand, S.

Biological information differs for juvenile/adult samples and larval samples. For juveniles and adults (Tables A-2 and A-4), recorded data includes, where appropriate:

Species code	Red king crab (*Paralithodes camtschaticus*), PACA; blue king crab (*P. platypus*), PAPL; Tanner crab (*Chionoecetes bairdi*), CHBA.
Size method	Carapace width (CW) or length (CL).
Size	Size (mm).
Sex	M--male, F--female, U--unknown.
Shell condition	Molting, 0; soft and pliable, 1; firm to hard new shell, 2; hard old shell, 3; hard and worn; 4; cast carapace only, CO.
Egg percentage	Percent egg clutch fullness, blank implies no eggs.
Egg color	Brown, BRN; orange, ORG; purple, PPL; dark purple, DPP; brown-purple, B/P; orange-brown, O/B.
Tag number	Twelve character/digit tag number.
M/R	Code indicating an initial mark (M) or a recapture (R).

Data for larvae (Table A-6) are simply numbers caught by stage for the two king crab species.

Z1	Number of first zoeae.
Z2	Number of second zoeae.
Z3	Number of third zoeae.
Z4	Number of fourth zoeae.
Meg.	Number of megalopae.
Total	Total number of larvae for species.

Table A-1. Samples collected with king crab pots, June 1990.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mon.	Day	Hr.	Min.	Dpth Prf.	Dpth (m)	Duration Hr.	Duration Min.
KP	1	P11A	55	52.3	160	52.5	90	6	21	11	58	G	22	44	12
KP	2	P38R	55	52.4	160	52.2	90	6	21	12	0	G	27	44	15
KP	3	P12	55	52.5	160	51.9	90	6	21	12	3	G	33	44	18
KP	4	PE88	55	52.6	160	51.5	90	6	21	12	5	G	37	44	25
KP	5	PX1	55	52.7	160	51.1	90	6	21	12	7	G	50	44	28
KP	6	P40T	55	52.9	160	50.7	90	6	21	12	12	G	44	44	28
KP	7	PE9	55	53.1	160	50.0	90	6	21	12	14	G	85	44	31
KP	8	P15R	55	53.2	160	49.7	90	6	21	12	17	G	93	44	38
KP	9	P17R	55	54.5	160	46.6	90	6	21	12	31	G	33	44	39
KP	10	P29L	55	54.8	160	46.2	90	6	21	12	36	G	32	44	44
KP	11	PX11	55	55.1	160	45.3	90	6	21	12	40	G	31	44	50
KP	12	P20R	55	55.6	160	44.4	90	6	21	12	45	G	27	44	50
KP	13	PE69	55	55.7	160	43.6	90	6	21	12	49	G	22	45	16
KP	14	P41L	55	56.6	160	42.4	90	6	21	12	55	G	18	45	25
KP	15	PS6	55	57.1	160	41.4	90	6	21	13	0	G	19	45	30
KP	16	PA8	55	57.6	160	40.5	90	6	21	13	5	G	13	45	30
KP	17	P17T	55	47.1	160	47.5	90	6	21	15	26	G	26	23	41
KP	18	P17T	55	47.1	160	47.5	90	6	22	9	30	G	26	42	18
KP	19	P13D	55	46.8	160	46.8	90	6	21	15	30	G	30	23	30
KP	20	P71L	55	46.6	160	46.4	90	6	21	15	32	G	21	23	18
KP	21	P16R	55	46.2	160	45.7	90	6	21	15	36	G	39	23	4
KP	22	P30R	55	46.0	160	45.2	90	6	21	15	38	G	48	22	2
KP	23	P6F	55	45.7	160	44.6	90	6	21	15	41	G	55	21	14
KP	24	PS2	55	45.5	160	45.0	90	6	21	15	44	G	52	21	6
KP	25	PS4	55	45.3	160	45.9	90	6	21	15	48	G	37	20	27
KP	26	PS4	55	45.3	160	45.9	90	6	22	14	45	G	37	26	30
KP	27	P15	55	45.3	160	44.6	90	6	21	16	12	G	60	19	53
KP	28	P70B	55	45.2	160	44.3	90	6	21	16	14	G	91	19	46
KP	29	P10X	55	45.1	160	43.8	90	6	21	16	16	G	86	19	39
KP	30	PE12	55	44.9	160	43.1	90	6	21	16	19	G	92	19	36
KP	31	PX35	55	44.9	160	41.9	90	6	21	16	22	G	95	18	53
KP	32	PC10	55	44.6	160	41.9	90	6	21	16	24	G	88	18	41
KP	33	PE17	55	44.4	160	41.2	90	6	21	16	28	G	66	18	27
KP	34	P42	55	44.2	160	41.6	90	6	21	16	31	G	71	18	14
KP	35	PX26	55	44.2	160	42.2	90	6	21	16	34	G	73	17	56
KP	36	PS4	55	45.3	160	45.9	90	6	23	14	45	G	38	42	45
KP	37	P68Z	55	43.6	160	42.0	90	6	21	16	39	G	69	17	41
KP	38	P50R	55	43.1	160	41.8	90	6	21	16	43	G	60	16	42
KP	39	P50R	55	43.1	160	41.8	90	6	22	9	25	G	60	33	57
KP	40	P16	55	42.6	160	41.6	90	6	21	16	47	G	51	16	43
KP	41	P040	55	46.1	160	47.1	90	6	21	17	38	G	24	21	37
KP	42	P23	55	45.8	160	47.9	90	6	21	17	43	G	23	22	27
KP	43	P23	55	45.8	160	47.9	90	6	22	16	30	G	23	42	35
KP	44	P27L	55	45.5	160	48.3	90	6	21	17	46	G	17	22	44
KP	45	P7B	55	45.6	160	48.8	90	6	21	17	50	G	15	22	50
KP	46	P25T	55	45.9	160	48.8	90	6	21	17	54	G	13	22	56
KP	47	PA6	55	46.4	160	49.1	90	6	21	17	57	G	13	22	58
KP	48	P71	55	46.6	160	46.6	90	6	21	18	0	G	16	23	0
KP	49	P6R	55	46.8	160	48.3	90	6	21	18	5	G	23	23	2
KP	50	P23C	55	45.2	160	45.4	90	6	22	12	32	G	44	26	21
KP	51	P23C	55	45.2	160	45.4	90	6	23	14	53	G	44	43	22
KP	52	P7X	55	45.1	160	45.0	90	6	22	12	36	G	48	26	34
KP	53	P7X	55	45.1	160	45.0	90	6	23	15	10	G	48	43	20
KP	54	P92L	55	45.0	160	44.6	90	6	22	12	40	G	50	27	0
KP	55	PX6	55	44.9	160	44.1	90	6	22	12	43	G	37	27	2
KP	56	PX6	55	44.9	160	44.1	90	6	23	15	45	G	37	43	20
KP	57	P16	55	42.6	160	41.6	90	6	22	9	30	G	51	34	20

Table A-1. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mon.	Day	Hr.	Min.	Dpth Prf.	Dpth (m)	Duration Hr.	Duration Min.
KP	58	P16	55	42.6	160	41.6	90	6	23	14	0	G	51	42	10
KP	59	P68Z	55	43.7	160	41.6	90	6	22	10	28	G	70	33	42
KP	60	PX26	55	44.0	160	41.1	90	6	22	10	40	G	46	33	40
KP	61	PX26	55	44.0	160	41.1	90	6	23	20	20	G	46	44	35
KP	62	P42	55	44.2	160	40.5	90	6	22	10	50	G	43	34	35
KP	63	P42	55	44.2	160	40.5	90	6	23	21	30	G	43	43	55
KP	64	PE17	55	44.6	160	40.8	90	6	22	11	0	G	35	34	50
KP	65	PE17	55	44.6	160	40.8	90	6	23	22	8	G	35	48	2
KP	66	PC10	55	44.9	160	41.8	90	6	22	11	10	G	40	35	5
KP	67	PC10	55	44.9	160	41.8	90	6	23	22	49	G	40	46	31
KP	68	PX35	55	44.8	160	42.5	90	6	22	11	20	G	99	35	36
KP	69	PE12	55	45.2	160	42.9	90	6	22	11	50	G	48	35	25
KP	70	PE12	55	45.2	160	42.9	90	6	23	23	15	G	48	43	50
KP	71	P6F	55	46.2	160	44.6	90	6	22	13	0	G	51	42	50
KP	72	PS2	55	46.3	160	44.4	90	6	22	13	5	G	26	42	52
KP	73	PS2	55	46.3	160	44.4	90	6	24	7	57	G	26	47	53
KP	74	P30R	55	46.4	160	45.1	90	6	22	13	50	G	42	42	5
KP	75	P30R	55	46.4	160	45.1	90	6	24	8	30	G	42	47	46
KP	76	P16R	55	46.5	160	45.6	90	6	22	14	45	G	42	42	10
KP	77	P16R	55	46.5	160	45.6	90	6	24	8	35	G	42	48	38
KP	78	P71L	55	46.7	160	46.3	90	6	22	14	52	G	37	41	58
KP	79	P13D	55	47.0	160	46.7	90	6	22	15	3	G	30	41	57
KP	80	P13D	55	47.0	160	46.7	90	6	24	9	0	G	30	49	20
KP	81	PD40	55	45.9	160	47.0	90	6	22	15	22	G	26	44	8
KP	82	P27L	55	45.8	160	48.4	90	6	22	16	40	G	18	42	20
KP	83	P7B	55	45.9	160	48.8	90	6	22	16	45	G	14	42	10
KP	84	P71	55	46.6	160	48.0	90	6	22	17	3	G	21	40	52
KP	85	P71	55	46.6	160	48.0	90	6	24	10	15	G	21	50	0
KP	86	P6R	55	46.8	160	47.7	90	6	22	17	10	G	21	41	22
KP	87	PA6	55	46.3	160	47.3	90	6	22	17	30	G	20	41	40
KP	88	P25T	55	45.7	160	46.5	90	6	22	17	37	G	30	42	13
KP	89	P71L	55	46.9	160	46.2	90	6	24	9	55	G	27	48	20
KP	90	P17T	55	47.1	160	47.0	90	6	24	9	30	G	32	49	5
KP	91	P6R	55	45.9	160	47.7	90	6	24	16	30	G	26	50	30
KP	92	P23	55	46.4	160	47.5	90	6	24	10	15	G	24	48	50
KP	93	PA6	55	46.1	160	47.2	90	6	24	11	25	G	27	48	20
KP	94	PD40	55	45.8	160	46.7	90	6	24	11	45	G	35	47	43
KP	95	P25T	55	45.6	160	46.4	90	6	24	12	28	G	33	46	37
KP	96	P15R	55	44.8	160	43.9	90	6	23	15	55	G	37	42	55
KP	97	P12	55	44.7	160	43.2	90	6	23	16	0	G	68	45	10
KP	98	P40T	55	44.5	160	42.9	90	6	23	16	5	G	50	45	20
KP	99	P50R	55	42.6	160	41.0	90	6	23	19	28	G	48	42	57
KP	100	P68Z	55	44.1	160	41.4	90	6	23	20	15	G	46	43	15
KP	101	PX35	55	45.1	160	42.3	90	6	23	22	56	G	44	45	24
KP	102	PA8	55	57.2	160	40.3	90	6	23	10	40	G	16	33	0
KP	103	PS6	55	56.9	160	40.8	90	6	23	10	45	G	16	33	5
KP	104	P41L	55	56.6	160	41.3	90	6	23	10	50	G	17	33	5
KP	105	PE69	55	56.2	160	42.1	90	6	23	10	55	G	18	33	5
KP	106	P20R	55	55.7	160	42.9	90	6	23	11	0	G	16	33	5
KP	107	PX11	55	55.3	160	43.7	90	6	23	11	10	G	18	33	5
KP	108	P29L	55	54.7	160	45.0	90	6	23	11	20	G	16	33	5
KP	109	P17R	55	54.2	160	46.2	90	6	23	11	25	G	16	33	15
KP	110	PE9	55	54.0	160	46.8	90	6	23	11	30	G	30	33	0
KP	112	P27L	56	2.3	160	43.0	90	6	24	14	0	G	20	49	0
KP	113	P7B	56	2.9	160	44.0	90	6	24	14	2	G	20	53	8
KP	114	P6F	56	3.4	160	45.0	90	6	24	14	5	G	20	53	1
KP	115	PX1	56	4.0	160	46.2	90	6	24	14	10	G	20	49	5

Table A-1. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mon.	Day	Hr.	Min.	Dpth Prf.	Dpth (m)	Duration Hr.	Duration Min.
KP	116	PE8B	56	4.7	160	47.5	90	6	24	14	15	G	20	52	30
KP	117	P38R	56	5.2	160	48.5	90	6	24	14	20	G	23	49	13
KP	118	P11A	56	5.7	160	49.5	90	6	24	14	25	G	25	52	10
KP	119	P15	56	6.2	160	50.5	90	6	24	14	30	G	26	49	15
KP	120	P708	56	6.8	160	51.5	90	6	24	14	35	G	26	51	45
KP	121	PX10	56	7.3	160	52.5	90	6	24	14	40	G	27	49	15
KP	122	PE27	56	7.8	160	53.6	90	6	24	14	45	G	28	51	25
KP	123	PD34	56	8.3	160	54.6	90	6	24	14	50	G	29	49	18
KP	124	P79	56	9.0	160	55.8	90	6	24	14	55	G	31	51	0
KP	125	P77Z	56	9.6	160	56.8	90	6	24	15	0	G	33	49	20
KP	126	P3C	56	10.2	160	57.5	90	6	24	15	5	G	35	50	40
KP	127	P3A	56	11.0	160	58.5	90	6	24	15	10	G	35	49	20
KP	128	PS3	56	11.6	160	59.2	90	6	24	15	14	G	39	50	21
KP	129	P20T	56	12.2	160	59.9	90	6	24	15	18	G	41	49	22
KP	130	P25R	56	12.9	161	0.7	90	6	24	15	21	G	42	49	59
KP	131	PS18	56	13.5	161	1.5	90	6	24	15	26	G	44	49	44
KP	132	PS1	56	14.2	161	2.4	90	6	24	15	30	G	47	49	30
CF	201		56	20.0	162	18.0	90	11	10						
CF	202		56	30.0	162	0.0	91	11	13						

Table A-2. Specimen records from crab pot samples, June 1990.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	2	PACA	CL	122	M	4			80060	M	
KP	6	PACA	CL	127	M	4			80059	M	
KP	7	PACA	CL	61	M	1					
KP	17	PACA	CL	109	F	3	50	BRN			
KP	17	PACA	CL	110	F	3	50	PPL			
KP	17	PACA	CL	98	F	3	50	PPL			
KP	17	PACA	CL	107	F	3	50	BRN			
KP	17	PACA	CL	99	F	3	50	PPL			
KP	17	PACA	CL	113	M	3					
KP	17	PACA	CL	86	F	3	0				
KP	17	PACA	CL	105	F	3	50	BRN			
KP	17	PACA	CL	103	F	3	50	B/P			
KP	17	PACA	CL	99	F	3	50	BRN			
KP	17	PACA	CL	106	F	3	50	BRN			
KP	17	PACA	CL	107	F	3.5	50	BRN			
KP	17	PACA	CL	108	F	3	50	BRN			
KP	17	PACA	CL	101	F	3.5	50	BRN			
KP	17	PACA	CL	96	F	3	50	BRN			
KP	17	PACA	CL	114	F	3	50	PPL			
KP	17	PACA	CL	105	F	3	50	BRN			
KP	17	PACA	CL	87	F	3	50	BRN			
KP	17	PACA	CL	96	F	3	50	BRN			
KP	17	PACA	CL	107	F	3	50	BRN			
KP	17	PACA	CL	93	F	3	50	BRN			
KP	17	PACA	CL	107	F	3	50	BRN			
KP	17	PACA	CL	102	F	3	50	BRN			
KP	17	PACA	CL	106	F	3	50	PPL			
KP	17	PACA	CL	110	F	3	50	BRN			
KP	17	PACA	CL	105	F	3	50	PPL			
KP	17	PACA	CL	101	F	3	50	BRN			
KP	17	PACA	CL	99	F	3	50	O/B			
KP	17	PACA	CL	86	F	3	50	BRN			
KP	17	PACA	CL	106	F	3	50	PPL			
KP	18	PACA	CL	94	F	2	50	BRN	3330	M	
KP	18	PACA	CL	99	F	3	75	PPL	3331	M	
KP	18	PACA	CL	114	F	2	25	O/B	3328	M	
KP	18	PACA	CL	102	F	3	50	BRN	3329	M	
KP	18	PACA	CL	97	F	2	50	BRN	3327	M	
KP	18	PACA	CL	106	F	3	50	BRN	3332	M	
KP	18	PACA	CL	102	F	2	50	PPL	3333	M	
KP	18	PACA	CL	96	F	3	50	BRN	3336	M	
KP	18	PACA	CL	104	F	3	50	BRN	3334	M	
KP	18	PACA	CL	86	F	3	75	BRN	3340	M	
KP	18	PACA	CL	117	F	2	50	B/P	3339	M	
KP	18	PACA	CL	98	F	3	50	PPL	3336	M	
KP	18	PACA	CL	97	F	2	50	BRN	3335	M	
KP	18	PACA	CL	108	F	3	50	BRN	3341	M	
KP	18	PACA	CL	107	F	2	25	BRN	3345	M	
KP	18	PACA	CL	123	F	3	25	BRN	3342	M	
KP	18	PACA	CL	108	F	3	50	BRN	3337	M	
KP	18	PACA	CL	95	F	3	50	PPL	3343	M	
KP	18	PACA	CL	103	F	2	50	BRN	3346	M	
KP	18	PACA	CL	99	F	3	50	BRN	3347	M	
KP	18	PACA	CL	113	F	4	50	PPL	3344	M	
KP	18	PACA	CL	98	F	3	50	PPL	3326	M	
KP	18	PACA	CL	102	F	2	50	O/B	3348	M	
KP	19	PACA	CL	99	F	3	50	BRN			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	19	PACA	CL	101	F	3	0				
KP	19	PACA	CL	118	F	3	50	BRN			
KP	19	PACA	CL	117	F	3	50	PPL			
KP	19	PACA	CL	112	F	3	50	BRN			
KP	19	PACA	CL	99	F	3	50	BRN			
KP	19	PACA	CL	101	F	4	50	PPL			
KP	19	PACA	CL	99	F	3	50	BRN			
KP	19	PACA	CL	95	F	3	50	PPL			
KP	20	PACA	CL	126	M	3					
KP	20	PACA	CL	121	M	3					
KP	20	PACA	CL	133	M	3			80052	M	
KP	21	PACA	CL	130	M	3					
KP	21	PACA	CL	126	M	3					
KP	21	PACA	CL	92	F		25	BRN			
KP	21	PACA	CL	131	M	3					
KP	21	PACA	CL	123	M	3					
KP	22	PACA	CL	128	M	3					
KP	23	PACA	CL	131	M	3					
KP	23	PACA	CL	108	M	3.5					
KP	23	PACA	CL	109	M	3					
KP	25	PACA	CL	127	M	3					
KP	25	PACA	CL	113	M	3					
KP	25	PACA	CL	116	M	3					
KP	25	PACA	CL	137	M	3					
KP	25	PACA	CL	130	M	3					
KP	25	PACA	CL	131	M	3					
KP	25	PACA	CL	125	M	3					
KP	25	PACA	CL	133	M	3					
KP	25	PACA	CL	90	M	2					
KP	25	PACA	CL	124	M	3					
KP	25	PACA	CL	131	M	3					
KP	25	PACA	CL	124	M	3					
KP	25	PACA	CL	120	M	3					
KP	25	PACA	CL	98	M	2					
KP	25	PACA	CL	121	M	3					
KP	25	PACA	CL	127	M	3					
KP	25	PACA	CL	131	M	3					
KP	25	PACA	CL	127	M	3					
KP	25	PACA	CL	123	M	4					
KP	25	PACA	CL	135	M	3					
KP	25	PACA	CL	122	M	3					
KP	25	PACA	CL	131	M	3					
KP	25	PACA	CL	118	M	3					
KP	25	PACA	CL	115	M	3					
KP	25	PACA	CL	131	M	3					
KP	25	PACA	CL	120	M	3					
KP	25	PACA	CL	115	M	3					
KP	25	PACA	CL	122	M	3					
KP	26	PACA	CL	123	M	3			80057	M	
KP	26	PACA	CL	130	M	3			80062	M	
KP	26	PACA	CL	132	M	3					
KP	26	PACA	CL	134	M	3			80063	M	
KP	26	PACA	CL	119	M	3			80064	M	
KP	26	PACA	CL	140	M	3			80067	M	
KP	26	PACA	CL	123	M	3					
KP	26	PACA	CL	127	M	3					
KP	26	PACA	CL	124	M	3					

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	26	PACA	CL	139	M	3					
KP	26	PACA	CL	120	M	4			80066	M	
KP	26	PACA	CL	110	M	3			80061	M	
KP	26	PACA	CL	74	M	3			3947	M	
KP	26	PACA	CL	105	M	3			3946	M	
KP	26	PACA	CL	118	M	3			80058	M	
KP	26	PACA	CL	113	M	3			80068	M	
KP	26	PACA	CL	112	M	3			80065	M	
KP	28	PACA	CL	117	M	3					
KP	29	PACA	CL	120	M	4					
KP	30	CHBA	CL	98	F	3	50	ORG			
KP	31	PACA	CL	130	M	3					
KP	31	CHBA	CL	110	M	4					
KP	36	PACA	CL	121	M	4			80515	M	
KP	36	PACA	CL	130	M	4			80114	M	
KP	36	PACA	CL	131	M	4			80051	M	
KP	36	PACA	CL	103	M	3					
KP	36	PACA	CL	124	M	3			8XXXX	M	
KP	36	PACA	CL	89	F	3	0				EGG PCT MISSING, ASSUMED 0
KP	36	PACA	CL	108	M	3					
KP	36	PACA	CL	123	M	3			80116	M	
KP	36	PACA	CL	121	M	3			80112	M	
KP	36	PACA	CL	116	M	3			80118	M	
KP	36	PACA	CL	124	M	3			80117	M	
KP	36	PACA	CL	74	M	3					
KP	36	PACA	CL	123	M	3			80119	M	
KP	36	PACA	CL	102	F	3	50	BRN			
KP	36	PACA	CL	132	M	3			80113	M	
KP	36	PACA	CL	92	M	3					
KP	36	PACA	CL	107	M	3.5					
KP	36	PACA	CL	118	M	4			80107	M	
KP	36	PACA	CL	111	M	3			80115	M	
KP	36	PACA	CL	109	M	3					
KP	36	PACA	CL	98	M	3					
KP	36	PACA	CL	108	F	3	50	BRN			
KP	36	PACA	CL	96	F	3	50	BRN			
KP	36	PACA	CL	96	M	3					
KP	36	PACA	CL	116	F	3	50	BRN			
KP	36	PACA	CL	91	M	3					
KP	36	PACA	CL	84	F	3	0				NO EGG PCT, ASSUMED 0
KP	36	PACA	CL	85	M	3					
KP	36	PACA	CL	101	M	3					
KP	36	PACA	CL	96	F	2	50	BRN			
KP	36	PACA	CL	105	M	3					
KP	36	PACA	CL	79	F	3					
KP	36	PACA	CL	132	M	2			80124	M	
KP	36	PACA	CL	130	M	4			80130	M	
KP	36	PACA	CL	113	M	3			80122	M	
KP	36	PACA	CL	114	M	3			80148	M	
KP	36	PACA	CL	121	M	3			80147	M	
KP	36	PACA	CL	121	M	3			80143	M	
KP	36	PACA	CL	116	M	3.5			80144	M	
KP	36	PACA	CL	118	M	3			80149	M	
KP	36	PACA	CL	114	M	3			80145	M	
KP	36	PACA	CL	120	M	3			80136	M	
KP	36	PACA	CL	124	M	3			80141	M	
KP	36	PACA	CL	127	M	3			80133	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	36	PACA	CL	112	M	3.5			80137	M	
KP	36	PACA	CL	122	M	3			80128	M	
KP	36	PACA	CL	120	M	3			80129	M	
KP	36	PACA	CL	121	M	3			80135	M	
KP	36	PACA	CL	122	M	3			80127	M	
KP	36	PACA	CL	129	M	3			80146	M	
KP	36	PACA	CL	128	M	4			80132	M	
KP	36	PACA	CL	116	M	3			80126	M	
KP	36	PACA	CL	129	M	3			80184	M	
KP	36	PACA	CL	127	M	3			80123	M	
KP	36	PACA	CL	110	M	3			80134	M	
KP	36	PACA	CL	117	M	4			80142	M	
KP	36	PACA	CL	123	M	3			80120	M	
KP	36	PACA	CL	133	M	3			80121	M	
KP	36	PACA	CL	127	M	4			80125	M	
KP	36	PACA	CL	116	M	3			80140	M	
KP	36	PACA	CL	121	M	3			80131	M	
KP	39	CHBA	CL	83	M	4					
KP	39	PACA	CL	126	M	4			3179	M	
KP	40	PACA	CL	126	M	3					
KP	40	PACA	CL	135	M	3					
KP	40	PACA	CL	128	M	3					
KP	40	PACA	CL	123	M	3.5					
KP	40	PACA	CL	122	M	3.5					
KP	40	PACA	CL	122	M	4					
KP	40	PACA	CL	131	M	3					
KP	40	PACA	CL	118	M	3					
KP	40	CHBA	CL	84	F	3	75	ORG			
KP	41	PACA	CL	119	M	3					
KP	41	PACA	CL	101	F	3	50	B/P			
KP	41	PACA	CL	100	F	3	50	BRN			
KP	41	PACA	CL	98	F	3	50	BRN			
KP	41	PACA	CL	96	F	3	50	BRN			
KP	41	PACA	CL	97	F	3	50	BRN			
KP	41	PACA	CL	108	F	3.5	50	O/B			
KP	41	PACA	CL	100	F	3.5	50	PPL			
KP	41	PACA	CL	102	F	3	50	BRN			
KP	41	PACA	CL	102	F	3	50	B/P			
KP	41	PACA	CL	88	F	3	50	BRN			
KP	41	PACA	CL	103	F	3	75	BRN			
KP	41	PACA	CL	93	F	3	50	BRN			
KP	41	PACA	CL	100	F	3	50	BRN			
KP	41	PACA	CL	103	F	3	50	PPL			
KP	41	PACA	CL	92	F	3	50	BRN			
KP	41	PACA	CL	113	F	3	50	PPL			
KP	41	PACA	CL	101	F	3	50	PPL			
KP	41	PACA	CL	98	F	3	50	BRN			
KP	41	PACA	CL	91	F	3	50	BRN			
KP	41	PACA	CL	101	F	3.5	50	PPL			
KP	41	PACA	CL	95	F	3	50	BRN			
KP	41	PACA	CL	120	M	4					
KP	41	PACA	CL	98	F	3.5	50	PPL			
KP	41	PACA	CL	105	F	3	50	PPL			
KP	41	PACA	CL	83	F	3	50	PPL			
KP	41	PACA	CL	99	F	3	50	PPL			
KP	41	PACA	CL	102	F	3	50	BRN			
KP	41	PACA	CL	111	F	3	50	B/P			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	41	PACA	CL	97	F	3	75	BRN			
KP	41	PACA	CL	98	F	3	50	BRN			
KP	41	PACA	CL	61	F	3	0				
KP	41	PACA	CL	92	F	3	50	PPL			
KP	41	PACA	CL	100	F	3	50	BRN			
KP	41	PACA	CL	89	M	3					
KP	41	PACA	CL	104	F	3	50	PPL			
KP	41	PACA	CL	89	M	3					
KP	41	PACA	CL	96	F	3	50	PPL			
KP	41	PACA	CL	81	F	3	0				
KP	41	PACA	CL	93	F	3	50	PPL			
KP	41	PACA	CL	105	F	3	50	PPL			
KP	41	PACA	CL	105	F	3	50	BRN			
KP	41	PACA	CL	95	F	3	50	BRN			
KP	41	PACA	CL	98	F	3	50	BRN			
KP	41	PACA	CL	105	F	3	50	O/B			
KP	41	PACA	CL	84	F	3	50	BRN			
KP	41	PACA	CL	103	F	3	50	B/P			
KP	41	PACA	CL	99	F	4	50	PPL			
KP	41	PACA	CL	100	F	3	50	PPL			
KP	41	PACA	CL	85	F	3.5	0				
KP	41	PACA	CL	104	F	3	50	PPL			
KP	41	PACA	CL	103	F	3.5	50	PPL			
KP	42	PACA	CL	101	F	3	50	BRN			
KP	42	PACA	CL	97	F	3.5	50	BRN			
KP	42	PACA	CL	105	F	3	50	BRN			
KP	42	PACA	CL	101	F	3	50	BRN			
KP	42	PACA	CL	105	F	3.5	50	BRN			
KP	42	PACA	CL	100	F	3	50	BRN			
KP	42	PACA	CL	102	F	3	50	BRN			
KP	42	PACA	CL	105	F	3	50	BRN			
KP	42	PACA	CL	97	F	3	50	BRN			
KP	42	PACA	CL	101	F	3	50	BRN			
KP	43	PACA	CL	109	F	3	50	ORG	REDTAG	M	
KP	43	PACA	CL	99	F	3	75	BRN	REDTAG	M	
KP	43	PACA	CL	101	F	3	50	BRN	REDTAG	M	
KP	43	PACA	CL	99	F	3	50	BRN	REDTAG	M	
KP	43	PACA	CL	93	F	3	50	PPL	REDTAG	M	
KP	43	PACA	CL	99	F	3	50	BRN	REDTAG	M	
KP	43	PACA	CL	100	F	3	75	PPL	REDTAG	M	
KP	43	PACA	CL	94	F	3	50	BRN	REDTAG	M	
KP	43	PACA	CL	98	F	3	75	BRN	REDTAG	M	
KP	43	PACA	CL	101	F	3	50	BRN	REDTAG	M	
KP	43	PACA	CL	100	F	3	50	BRN	REDTAG	M	
KP	43	PACA	CL	102	F	3	50	BRN	REDTAG	M	
KP	43	PACA	CL	103	F	3	25	BRN	REDTAG	M	
KP	43	PACA	CL	104	F	3	75	BRN	REDTAG	M	
KP	43	PACA	CL	90	M	3			REDTAG	M	
KP	43	PACA	CL	96	F	3	50	PPL	REDTAG	M	
KP	43	PACA	CL	98	F	3	75	PPL	REDTAG	M	
KP	44	PACA	CL	106	F	3	50	BRN			
KP	44	PACA	CL	103	F	3	50	BRN			
KP	44	PACA	CL	102	F	3	50	BRN			
KP	44	PACA	CL	101	F	4	50	BRN			
KP	44	PACA	CL	101	F	3	50	B/P			
KP	44	PACA	CL	94	F	3	50	BRN			
KP	45	PACA	CL	109	F	3	50	BRN			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	48	PACA	CL	101	M	3			80055	M	
KP	48	PACA	CL	102	F	3	50	PPL			
KP	48	PACA	CL	99	F	3	50	BRN			
KP	48	PACA	CL	100	F	3	50	BRN			
KP	48	PACA	CL	132	F	3	50	BRN			
KP	49	PACA	CL	99	M	3					
KP	49	PACA	CL	102	F	3.5	50	BRN			
KP	49	PACA	CL	102	F	3	50	PPL			
KP	49	PACA	CL	108	F	3	50	BRN			
KP	49	PACA	CL	103	F	3.5	50	BRN			
KP	49	PACA	CL	110	F	4	50	BRN			
KP	49	PACA	CL	100	F	3	50	BRN			
KP	49	PACA	CL	93	F	3	50	PPL			
KP	49	PACA	CL	100	F	3	50	PPL			
KP	49	PACA	CL	101	F	3	50	O/B			
KP	49	PACA	CL	97	F	3	50	BRN			
KP	49	PACA	CL	109	F	3	50	PPL			
KP	49	PACA	CL	82	F	4	50	BRN			
KP	49	PACA	CL	84	F	4	0				
KP	50	PACA	CL	130	M	3					
KP	50	PACA	CL	130	M	3					
KP	50	PACA	CL	124	M	3					
KP	50	PACA	CL	125	M	3			80072	M	
KP	50	PACA	CL	122	F	3	50	PPL	80076	M	
KP	50	PACA	CL	117	M	3			80077	M	
KP	50	PACA	CL	110	M	4					TAG INFO MISSING
KP	50	PACA	CL	104	F	3	50	PPL	3945	M	
KP	51	PACA	CL	98	M	4					
KP	51	PACA	CL	127	M	3			80121	M	
KP	51	PACA	CL	122	M	4			80150	M	
KP	51	PACA	CL	127	M	4			80159	M	
KP	51	PACA	CL	121	M	3			80160	M	
KP	51	PACA	CL	117	M	3.5			80164	M	
KP	51	PACA	CL	123	M	4			80158	M	
KP	51	PACA	CL	121	M	4			80163	M	
KP	51	PACA	CL	126	M	3			80000	M	
KP	52	PACA	CL	138	M	4					
KP	52	PACA	CL	131	M	4					
KP	52	PACA	CL	131	M	3			80078	M	
KP	52	PACA	CL	114	M	4			80081	M	
KP	52	PACA	CL	122	M	4			80082	M	
KP	52	PACA	CL	117	M	4			80083	M	
KP	52	PACA	CL	107	F	3	50	B/P	3944	M	
KP	52	PACA	CL	116	M	3			80080	M	
KP	52	PACA	CL	135	M	3			80085	M	
KP	52	PACA	CL	130	M	4			80086	M	
KP	52	PACA	CL	128	M	3			80073	M	
KP	52	PACA	CL	122	M	3			80087	M	
KP	52	PACA	CL	105	M	3			3943	M	
KP	52	PACA	CL	106	M	3			3942	M	
KP	52	PACA	CL	120	M	3			80090	M	
KP	52	PACA	CL	118	M	4			80089	M	
KP	53	PACA	CL	119	M	3			80170	M	
KP	53	PACA	CL	125	M	3.5			80171	M	
KP	53	PACA	CL	120	M	3			80161	M	
KP	53	PACA	CL	127	M	3			80000	M	
KP	53	PACA	CL	119	M	4			80167	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	53	PACA	CL	129	M	3.5			80165	M	
KP	53	PACA	CL	131	M	3			80166	M	
KP	54	PACA	CL	115	M	3			80088	M	
KP	54	PACA	CL	124	M	3			80075	M	
KP	54	PACA	CL	131	M	4			80074	M	
KP	55	PACA	CL	134	M	3			80100	M	
KP	55	PACA	CL	107	M	3			3904	M	
KP	55	PACA	CL	112	M	3			80103	M	
KP	55	PACA	CL	122	M	3			3906	M	
KP	55	PACA	CL	93	F	3	0		3907	M	EGG PCT MISSING, ASSUMED 0
KP	55	PACA	CL	117	M	3.5			3912	M	
KP	55	PACA	CL	108	M	3			3908	M	
KP	55	PACA	CL	102	M	3			3911	M	
KP	55	PACA	CL	109	M	3			3910	M	
KP	55	PACA	CL	99	M	3			3913	M	
KP	55	PACA	CL	125	M	3			80084	M	
KP	55	PACA	CL	87	M	3			3916	M	
KP	55	PACA	CL	80	M	3			3915	M	
KP	55	PACA	CL	82	M	3			3925	M	
KP	55	PACA	CL	76	M	3			3936	M	
KP	55	PACA	CL	121	M	3			96008	M	
KP	55	PACA	CL	120	M	3			80092	M	
KP	55	PACA	CL	65	F	3	0		3931	M	EGG PCT MISSING, ASSUMED 0
KP	55	PACA	CL	88	M	3			3937	M	
KP	55	PACA	CL	83	M	3			3935	M	
KP	55	PACA	CL	65	M	3			3918	M	
KP	55	PACA	CL	71	F	3	0		3923	M	
KP	55	PACA	CL	88	F	3	0		3920	M	
KP	55	PACA	CL	76	F	3	0		3917	M	
KP	55	PACA	CL	89	M	3			3914	M	
KP	55	PACA	CL	112	M	3			3905	M	
KP	55	PACA	CL	119	M	3			80091	M	
KP	55	PACA	CL	116	M	3			80095	M	
KP	55	PACA	CL	88	M	3			3921	M	
KP	55	PACA	CL	107	M	3			80102	M	
KP	55	PACA	CL	120	M	3			80094	M	
KP	55	PACA	CL	126	M	4			80079	M	
KP	55	PACA	CL	111	M	3			3903	M	
KP	55	PACA	CL	112	M	3			80070	M	
KP	55	PACA	CL	131	M	3			80069	M	
KP	55	PACA	CL	119	M	3			80099	M	
KP	55	PACA	CL	119	M	3			80093	M	
KP	55	PACA	CL	117	M	3			80101	M	
KP	55	PACA	CL	107	M	3.5			3902	M	
KP	55	PACA	CL	65	M	3			3924	M	
KP	55	PACA	CL	113	M	3			80071	M	
KP	55	PACA	CL	85	M	3			3919	M	
KP	55	PACA	CL	109	M	3			8XXXX	M	
KP	55	PACA	CL	93	F	3	0		3941	M	
KP	55	PACA	CL	81	M	3			3927	M	
KP	55	PACA	CL	71	M	3			3928	M	
KP	55	PACA	CL	83	M	3			3939	M	
KP	55	PACA	CL	81	M	3			3933	M	
KP	55	PACA	CL	70	M	2			3938	M	
KP	55	PACA	CL	76	F	3	0		3922	M	
KP	55	PACA	CL	99	F	3	50	BRN			
KP	55	PACA	CL	88	F	3	50	BRN			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	55	PACA	CL	101	F	3	50	BRN			
KP	55	PACA	CL	96	F	3	50	DPP			
KP	55	PACA	CL	84	F	3	50	BRN			
KP	55	PACA	CL	103	F	3	50	BRN			
KP	55	PACA	CL	97	F	3	50	BRN			
KP	55	PACA	CL	101	F	3	50	BRN			
KP	55	PACA	CL	88	F	3	50	BRN			
KP	55	PACA	CL	88	F	3	50	B/P			
KP	55	PACA	CL	98	F	3	50	BRN			
KP	55	CHBA	CL	91	M	3					
KP	55	CHBA	CL	82	F	3					
KP	55	CHBA	CL	67	F	3					
KP	55	CHBA	CL	77	F	3					
KP	55	CHBA	CL	75	F	3					
KP	55	CHBA	CL	88	M	3					
KP	55	CHBA	CL	77	F	3					
KP	56	PACA	CL	68	F	3	0				
KP	56	PACA	CL	82	M	3					
KP	56	PACA	CL	119	M	4			80174	M	
KP	56	PACA	CL	74	M	3					
KP	56	PACA	CL	98	M	3					
KP	56	PACA	CL	123	M	4			80173	M	
KP	56	PACA	CL	108	M	3					
KP	56	PACA	CL	102	M	3					
KP	56	PACA	CL	119	M	3			80172	M	
KP	56	PACA	CL	75	M	3					
KP	56	PACA	CL	83	F	3	50	BRN			
KP	56	PACA	CL	105	M	4					
KP	56	PACA	CL	123	M	3.5			80181	M	
KP	56	PACA	CL	93	M	3					
KP	56	PACA	CL	101	F	4	50	BRN			
KP	56	PACA	CL	96	F	3	50	PPL			
KP	56	PACA	CL	132	M	3.5			80175	M	
KP	56	PACA	CL	87	M	3.5					
KP	56	PACA	CL	98	F	3	50	PPL			
KP	56	PACA	CL	91	M	3					
KP	56	PACA	CL	122	M	3.5			80178	M	
KP	56	PACA	CL	69	F	3	0				
KP	56	CHBA	CL	94	M	4					
KP	56	CHBA	CL	96	M	4					
KP	56	CHBA	CL	93	M	4					
KP	56	CHBA	CL	92	M	4					
KP	56	CHBA	CL	88	M	4					
KP	56	CHBA	CL	86	M	4					
KP	56	CHBA	CL	83	F	3	50	ORG			
KP	56	CHBA	CL	71	M	4					
KP	56	CHBA	CL	100	M	4					
KP	56	CHBA	CL	101	M	4					
KP	56	PACA	CL	125	M	4			80199	M	
KP	56	PACA	CL	110	M	3			80201	M	
KP	56	PACA	CL	132	M	3			80198	M	
KP	56	PACA	CL	121	M	3.5			80188	M	
KP	56	PACA	CL	115	M	3.5			80187	M	
KP	56	PACA	CL	111	M	3.5			80195	M	
KP	56	PACA	CL	119	M	3			80200	M	
KP	56	PACA	CL	110	M	3			80203	M	
KP	56	PACA	CL	113	M	3			80202	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	56	PACA	CL	128	M	3			80168	M	
KP	56	PACA	CL	132	M	3			80174	M	
KP	56	PACA	CL	115	M	3.5			80152	M	
KP	56	PACA	CL	90	M	3					
KP	56	PACA	CL	125	M	3.5			80161	M	
KP	56	PACA	CL	90	F	3	50	BRN			
KP	56	PACA	CL	117	M	3			80156	M	
KP	56	PACA	CL	70	F	3	0				
KP	56	PACA	CL	91	M	3					
KP	56	PACA	CL	118	M	4			80157	M	
KP	56	PACA	CL	88	F	3	50	PPL			
KP	56	PACA	CL	122	M	3			80155	M	
KP	56	PACA	CL	80	M	3					
KP	56	PACA	CL	103	M	3					
KP	56	PACA	CL	96	F	3.5	50	BRN			
KP	56	PACA	CL	130	M	4			80154	M	
KP	56	PACA	CL	79	M	3					
KP	56	PACA	CL	124	M	3			80153	M	
KP	56	PACA	CL	86	F	3	50	BRN			
KP	56	PACA	CL	61	F	3	0				
KP	56	PACA	CL	102	F	3	50	BRN			
KP	56	PACA	CL	98	M	3					
KP	56	PACA	CL	66	F	3	0				
KP	56	PACA	CL	105	F	3.5	50	BRN			
KP	56	PACA	CL	71	M	3					
KP	56	PACA	CL	80	M	3					
KP	56	PACA	CL	77	F	3	0				
KP	56	PACA	CL	66	M	3					
KP	56	PACA	CL	68	M	3					
KP	56	PACA	CL	72	M	3					
KP	56	PACA	CL	78	M	3					
KP	56	PACA	CL	100	M	3					
KP	56	PACA	CL	105	F	3	50	BRN			
KP	56	PACA	CL	67	M	3					
KP	56	PACA	CL	74	M	3					
KP	56	PACA	CL	81	F	3.5	0				
KP	56	PACA	CL	84	M	3					
KP	56	PACA	CL	104	M	3					
KP	56	PACA	CL	81	F	3	0				
KP	56	PACA	CL	67	M	3					
KP	56	PACA	CL	137	M	3			80184	M	
KP	56	PACA	CL	75	F	3	0				
KP	56	PACA	CL	127	M	3			80179	M	
KP	56	PACA	CL	95	M	3					
KP	56	PACA	CL	70	F	3	0				
KP	56	PACA	CL	87	F	3	50	BRN			
KP	56	PACA	CL	122	M	3			80182	M	
KP	56	PACA	CL	91	M	3					
KP	56	PACA	CL	68	M	3.5					
KP	56	PACA	CL	117	M	3			80183	M	
KP	56	PACA	CL	110	M	3			80186	M	
KP	56	PACA	CL	126	M	3			80176	M	
KP	56	PACA	CL	68	M	3					
KP	56	PACA	CL	79	M	3					
KP	56	PACA	CL	95	M	3					
KP	56	PACA	CL	80	M	3					
KP	56	PACA	CL	77	F	3.5	0				

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	56	PACA	CL	123	M	3.5			80177	M	
KP	56	PACA	CL	100	M	3					
KP	56	PACA	CL	71	F	3	0				
KP	56	PACA	CL	103	M	3					
KP	56	PACA	CL	125	M	3.5			80185	M	
KP	56	PACA	CL	74	F	3	0				
KP	56	PACA	CL	119	M	3			80180	M	
KP	56	PACA	CL	117	M	4			80196	M	
KP	56	PACA	CL	122	M	3			80189	M	
KP	56	PACA	CL	114	M	3.5			80192	M	
KP	56	PACA	CL	131	M	3			80194	M	
KP	56	PACA	CL	112	M	3			80197	M	
KP	56	PACA	CL	121	M	3.5			80191	M	
KP	56	PACA	CL	122	M	3.5			80193	M	
KP	56	PACA	CL	110	M	3.5			80190	M	
KP	57	PACA	CL	134	M	3.5					
KP	57	PACA	CL	124	M	3					
KP	57	PACA	CL	129	M	3					
KP	57	PACA	CL	125	M	3					
KP	57	PACA	CL	133	M	3					
KP	57	PACA	CL	123	M	3			3901	M	
KP	57	PACA	CL	123	M	3			3151	M	
KP	57	PACA	CL	114	M	3.5			3153	M	
KP	57	PACA	CL	129	M	3			3154	M	
KP	57	PACA	CL	112	M	3			3155	M	
KP	57	PACA	CL	121	M	4			3158	M	
KP	57	PACA	CL	102	M	3			3161	M	
KP	57	PACA	CL	111	M	3			3162	M	
KP	57	PACA	CL	110	M	3			3165	M	
KP	57	PACA	CL	124	M	3			3166	M	
KP	57	PACA	CL	120	M	3			3170	M	
KP	57	PACA	CL	133	M	3			3171	M	
KP	57	PACA	CL	127	M	3			3173	M	
KP	57	PACA	CL	114	M	3			3175	M	
KP	57	PACA	CL	122	M	3			3157	M	
KP	57	PACA	CL	114	M	3			3178	M	
KP	57	PACA	CL	112	M	3			3177	M	
KP	57	PACA	CL	125	M	3			3169	M	
KP	57	PACA	CL	135	M	3			3168	M	
KP	57	PACA	CL	90	M	3			3160	M	
KP	57	PACA	CL	122	M	3			3167	M	
KP	57	PACA	CL	121	M	3			3163	M	
KP	57	PACA	CL	97	M	3			3156	M	
KP	57	PACA	CL	125	M	3			3172	M	
KP	57	PACA	CL	116	M	3			3174	M	
KP	57	PACA	CL	83	M	3			3164	M	
KP	57	PACA	CL	110	M	3			3176	M	
KP	58	PACA	CL	100	M	3					
KP	58	PACA	CL	107	F	3	50	B/P			
KP	58	PACA	CL	108	M	4					
KP	58	PACA	CL	106	M	4					
KP	58	CHBA	CL	91	M	4					
KP	58	PACA	CL	116	M	4			80315	M	
KP	58	PACA	CL	114	M	3.5			80310	M	
KP	58	PACA	CL	130	M	4			80313	M	
KP	58	PACA	CL	122	M	3			80328	M	
KP	58	PACA	CL	122	M	3			80329	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	58	PACA	CL	137	M	3			80316	M	
KP	58	PACA	CL	114	M	4			80307	M	
KP	58	PACA	CL	132	M	4			80281	M	
KP	58	PACA	CL	117	M	3			80323	M	
KP	58	PACA	CL	124	M	3.5			80326	M	
KP	58	PACA	CL	127	M	4			80324	M	
KP	58	PACA	CL	125	M	3			80308	M	
KP	58	PACA	CL	123	M	4			80319	M	
KP	58	PACA	CL	130	M	3			80318	M	
KP	58	PACA	CL	120	M	3.5			8XXXX	M	
KP	58	PACA	CL	116	M	4			80309	M	
KP	58	PACA	CL	123	M	3			80317	M	
KP	58	PACA	CL	131	M	3			80311	M	
KP	58	PACA	CL	122	M	3			80331	M	
KP	58	PACA	CL	132	M	4			80320	M	
KP	58	PACA	CL	132	M	3.5			80305	M	
KP	58	PACA	CL	120	M	3			80325	M	
KP	58	PACA	CL	133	M	3			80306	M	
KP	58	PACA	CL	119	M	4			80314	M	
KP	58	PACA	CL	120	M	3.5			80330	M	
KP	58	PACA	CL	124	M	3			80296	M	
KP	58	PACA	CL	126	M	3			80312	M	
KP	58	PACA	CL	119	M	3			80321	M	
KP	58	PACA	CL	116	M	3			80327	M	
KP	60	PACA	CL	130	M	4			3180	M	
KP	60	PACA	CL	125	M	3			3181	M	
KP	60	PACA	CL	127	M	3			3182	M	
KP	60	PACA	CL	122	M	3			3183	M	
KP	60	PACA	CL	110	M	3			3184	M	
KP	60	PACA	CL	127	M	4			3185	M	
KP	60	PACA	CL	119	M	3			3186	M	
KP	60	PACA	CL	118	M	4			3187	M	
KP	60	PACA	CL	92	M	3			3188	M	
KP	60	PACA	CL	115	M	3			3189	M	
KP	60	PACA	CL	98	M	3			3190	M	
KP	60	PACA	CL	115	M	4			3191	M	
KP	60	PACA	CL	119	M	3			3192	M	
KP	60	PACA	CL	122	M	4			3193	M	
KP	60	PACA	CL	122	M	3			3194	M	
KP	60	PACA	CL	75	M	3			3195	M	
KP	60	PACA	CL	130	M	4			3196	M	
KP	60	PACA	CL	117	M	3			3197	M	
KP	60	PACA	CL	110	M	3			3198	M	
KP	60	PACA	CL	100	M	3			3199	M	
KP	60	PACA	CL	120	M	3			3200	M	
KP	60	PACA	CL	132	M	4			3150	M	
KP	60	PACA	CL	126	M	3			3149	M	
KP	60	PACA	CL	86	M	3			3148	M	
KP	60	PACA	CL	123	M	3			3147	M	
KP	60	PACA	CL	121	M	3			3146	M	
KP	60	PACA	CL	124	M	3			3145	M	
KP	60	PACA	CL	117	M	4			3142	M	
KP	60	PACA	CL	115	M	3			3141	M	
KP	60	PACA	CL	121	M	4			3140	M	
KP	60	PACA	CL	128	M	4			3139	M	
KP	60	PACA	CL	121	M	3			3138	M	
KP	60	PACA	CL	131	M	3			3137	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	60	PACA	CL	128	M	3			3136	M	
KP	60	PACA	CL	133	M	3			3135	M	
KP	60	PACA	CL	131	M	4			3134	M	
KP	60	PACA	CL	121	M	4			3133	M	
KP	60	PACA	CL	121	M	3			3132	M	
KP	60	PACA	CL	117	M	3			3131	M	
KP	60	PACA	CL	120	M	3			3130	M	
KP	60	PACA	CL	114	M	3			3129	M	
KP	60	PACA	CL	127	M	3			3128	M	
KP	60	PACA	CL	126	M	3			3127	M	
KP	60	PACA	CL	122	M	3			3129	M	
KP	60	PACA	CL	124	M	3			3124	M	
KP	60	PACA	CL	117	M	3			3123	M	
KP	60	PACA	CL	93	M	3			3122	M	
KP	60	PACA	CL	105	M	3			3121	M	
KP	60	PACA	CL	94	F	3	50	B/P	3120	M	
KP	60	PACA	CL	123	M	4			3119	M	
KP	60	PACA	CL	105	M	2			3118	M	
KP	60	PACA	CL	120	M	3			3117	M	
KP	60	PACA	CL	118	M	3			3116	M	
KP	60	PACA	CL	108	M	3			3115	M	
KP	60	PACA	CL	125	M	3			3114	M	
KP	60	PACA	CL	105	M	4			3113	M	
KP	60	PACA	CL	114	M	3			3112	M	
KP	60	PACA	CL	117	M	4			3111	M	
KP	60	PACA	CL	111	F	3	75	B/P	3110	M	
KP	60	PACA	CL	129	M	3			3109	M	
KP	60	PACA	CL	133	M	3			3107	M	
KP	60	PACA	CL	127	M	3			3106	M	
KP	60								3108		DOUBLE-TAGGED, SEE TAG 03106
KP	60	PACA	CL	122	M	3			3105	M	
KP	60	PACA	CL	116	M	3			3103	M	
KP	60	PACA	CL	135	M	3			3102	M	
KP	60	PACA	CL	120	M	3			3101	M	
KP	60	PACA	CL	114	M	3			3850	M	
KP	60	PACA	CL	115	M	3			3849	M	
KP	60	PACA	CL	129	M	3			3848	M	
KP	60	PACA	CL	133	M	3			3847	M	
KP	60	PACA	CL	100	M	3			3846	M	
KP	60	PACA	CL	127	M	3			3845	M	
KP	60	PACA	CL	125	M	4			3844	M	
KP	60	PACA	CL	129	M	3			3843	M	
KP	60	PACA	CL	126	M	4			3841	M	
KP	60	PACA	CL	120	M	3			3842	M	
KP	60	PACA	CL	105	M	3			3840	M	
KP	60	PACA	CL	121	M	3			3839	M	
KP	60	PACA	CL	88	M	3			3838	M	
KP	60	PACA	CL	112	M	3			3837	M	
KP	60	PACA	CL	122	M	3			3836	M	
KP	60	PACA	CL	97	M	3			3834	M	
KP	60	PACA	CL	120	M	3			3833	M	
KP	60	PACA	CL	118	M	3			3830	M	
KP	60	PACA	CL	124	M	3			3829	M	
KP	60	PACA	CL	123	M	3			3828	M	
KP	60	PACA	CL	100	M	3			3827	M	
KP	60	PACA	CL	119	M	3			3826	M	
KP	60	PACA	CL	127	M	3			3825	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	60	PACA	CL	98	F	3	75	B/P	3824	M	
KP	60	PACA	CL	100	F	3	50	BRN	3823	M	
KP	60	PACA	CL	98	M	3			3822	M	
KP	60	PACA	CL	116	M	4			3820	M	
KP	60	PACA	CL	96	F	3	50	BRN	3821	M	
KP	60	PACA	CL	102	F	3	75	B/P	3819	M	
KP	60	PACA	CL	126	M	3			3818	M	
KP	60	PACA	CL	100	F	3	50	BRN	3817	M	
KP	60	PACA	CL	84	F	3	0		3816	M	
KP	60	PACA	CL	112	F	3	75	B/P	3815	M	
KP	60	PACA	CL	121	M	3			3814	M	
KP	60	PACA	CL	124	M	4			3813	M	
KP	60	PACA	CL	136	M	3			3812	M	
KP	60	PACA	CL	124	M	3			3811	M	
KP	60	PACA	CL	101	M	3			3810	M	
KP	60	PACA	CL	114	M	4			3809	M	
KP	60	PACA	CL	102	M	3			3808	M	
KP	60	PACA	CL	85	M	3			3807	M	
KP	60	PACA	CL	118	M	4			3806	M	
KP	60	PACA	CL	112	M	3			3805	M	
KP	60	PACA	CL	95	M	3			3804	M	
KP	60	PACA	CL	99	M	3			3803	M	
KP	60	PACA	CL	109	M	4			3802	M	
KP	60	PACA	CL	109	M	3			3801	M	
KP	60	PACA	CL	109	M	3			3851	M	
KP	60	PAPL	CL	94	M	3			3125	M	
KP	60	CHBA	CL	72	F		NA	ORG			
KP	60	CHBA	CL	85	M						
KP	60	CHBA	CL	94	M						
KP	60	CHBA	CL	88	M						
KP	60	CHBA	CL	111	M						
KP	60	CHBA	CL	107	M						
KP	60	CHBA	CL	89	M						
KP	60	CHBA	CL	85	M						
KP	60	CHBA	CL	83	F		NA	ORG			
KP	60	CHBA	CL	85	F		NA	ORG			
KP	60	CHBA	CL	79	F		NA	ORG			
KP	60	CHBA	CL	73	F		NA	ORG			
KP	60	CHBA	CL	75	F		NA	ORG			
KP	60	CHBA	CL	78	F		NA	ORG			
KP	60	CHBA	CL	80	F		NA	ORG			
KP	60	CHBA	CL	81	F		NA	ORG			
KP	60	CHBA	CL	78	F		NA	ORG			
KP	60	CHBA	CL	79	F		NA	ORG			
KP	60	CHBA	CL	81	F		NA	ORG			
KP	60	CHBA	CL	70	F		NA	ORG			
KP	61	PACA	CL	116	M	4			3111	R	
KP	61								80473		RETAG ON RECAP., SEE 03111
KP	61	PACA	CL	122	M	4			3196	R	
KP	61								80470		RETAG ON RECAP., SEE 03196
KP	61	PACA	CL	97	M	3					
KP	61	PACA	CL	77	M	3					
KP	61	PACA	CL	114	M	3			80469	M	
KP	61	PACA	CL	103	F	3	50	B/P			
KP	61	PACA	CL	118	M	3			80468	M	
KP	61	PACA	CL	124	M	4			80472	M	
KP	61	PACA	CL	123	M	3			80465	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	61	PACA	CL	84	M	3					
KP	61	PACA	CL	124	M	3			80467	M	
KP	61	PACA	CL	119	M	4			80471	M	
KP	61	PACA	CL	95	M	3					
KP	61	PACA	CL	118	M	3			80462	M	
KP	61	PACA	CL	90	M	3					
KP	61	PACA	CL	104	M	3					
KP	61	PACA	CL	90	F	3	50	PPL			
KP	61	PACA	CL	117	M	3			80464	M	
KP	61	PACA	CL	98	M	3.5					
KP	61	PACA	CL	139	M	4			80466	M	
KP	61	PACA	CL	99	F	3	50	PPL			
KP	61	PACA	CL	97	M	3					
KP	61	PACA	CL	95	M	3					
KP	61	PACA	CL	87	M	3					
KP	61	PACA	CL	91	M	3					
KP	61	PACA	CL	98	F	3	50	BRN			
KP	61	CHBA	CL	113	M	2					
KP	61	CHBA	CL	84	F	4	50	ORG			
KP	61	CHBA	CL	74	F	4	50	ORG			
KP	61	CHBA	CL	104	M	3					
KP	61	CHBA	CL	102	M	4					
KP	61	CHBA	CL	112	M	4					
KP	61	PACA	CL	82	M	3					
KP	61	PACA	CL	85	M	3					
KP	61	PACA	CL	101	M	4					
KP	61	PACA	CL	104	M	3					
KP	61	PACA	CL	107	M	3					
KP	61	PACA	CL	114	M	3			80483	M	
KP	61	PACA	CL	107	M	3			80485	M	
KP	61	PACA	CL	133	M	4			80476	M	
KP	61	PACA	CL	120	M	3			80486	M	
KP	61	PACA	CL	139	M	3			80482	M	
KP	61	PACA	CL	99	M	3					
KP	61	PACA	CL	84	M	3					
KP	61	PACA	CL	100	F	3	50	PPL			
KP	61	PACA	CL	101	M	3					
KP	61	PACA	CL	101	M	3					
KP	61	PACA	CL	99	M	3					
KP	61	PACA	CL	85	M	3					
KP	61	PACA	CL	83	F	3	0				
KP	61	PACA	CL	119	M	4			80487	M	
KP	61	PACA	CL	119	M	4			80488	M	
KP	61	PACA	CL	115	M	4			80481	M	
KP	61	PACA	CL	111	M	3.5			80475	M	
KP	61	PACA	CL	89	M	3					
KP	61	PACA	CL	127	M	4			80484	M	
KP	61	CHBA	CL	81	F	4	50	ORG			
KP	61	CHBA	CL	89	M	4					
KP	61	CHBA	CL	89	M	4					
KP	61	CHBA	CL	74	M	4					
KP	61	CHBA	CL	79	F	4	50	ORG			
KP	61	CHBA	CL	67	F	3	50	O/B			
KP	61	PACA	CL	106	M	3.5			80478	M	
KP	61	PACA	CL	112	M	3			80474	M	
KP	61	PACA	CL	114	M	3			80531	M	
KP	61	PACA	CL	111	M	3			80539	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	61	PACA	CL	122	M	3.5			80512	M	
KP	61	PACA	CL	97	M	3			80506	M	
KP	61	PACA	CL	118	M	3			80522	M	
KP	61	PACA	CL	117	M	4			80509	M	
KP	61	PACA	CL	119	M	3			80519	M	
KP	61	PACA	CL	122	M	3			80521	M	
KP	61	PACA	CL	115	M	4			80500	M	
KP	61	PACA	CL	121	M	3			80505	M	
KP	61	PACA	CL	136	M	3			80546	M	
KP	61	PACA	CL	108	M	3			80537	M	
KP	61	PACA	CL	120	M	3			80507	M	
KP	61	PACA	CL	120	M	3			80547	M	
KP	61	PACA	CL	107	M	4			80528	M	
KP	61	PACA	CL	119	M	4			80502	M	
KP	61	PACA	CL	133	M	3			80538	M	
KP	61	PACA	CL	114	M	4			80479	M	
KP	61	PACA	CL	104	M	3			80493	M	
KP	61	PACA	CL	132	M	3			80543	M	
KP	61	PACA	CL	120	M	3			80544	M	
KP	61	PACA	CL	115	M	3			80514	M	
KP	61	PACA	CL	121	M	3.5			80543	M	
KP	61	PACA	CL	118	M	3			80515	M	
KP	61	PACA	CL	115	M	4			80548	M	
KP	61	PACA	CL	124	M	3			80499	M	
KP	61	PACA	CL	125	M	3			80494	M	
KP	61	PACA	CL	114	M	3.5			3142	R	
KP	61								80518		RETAG ON RECAP., SEE 03142
KP	61	PACA	CL	139	M	3.5			80503	M	
KP	61	PACA	CL	127	M	3			80501	M	
KP	61	PACA	CL	121	M	3			80534	M	
KP	61	PACA	CL	135	M	3			80495	M	
KP	61	PACA	CL	123	M	3			80496	M	
KP	61	PACA	CL	128	M	3.5			80530	M	
KP	61	PACA	CL	132	M	4			80535	M	
KP	61	PACA	CL	123	M	3			80525	M	
KP	61	PACA	CL	116	M	4			80533	M	
KP	61	PACA	CL	116	M	3			80549	M	
KP	61	PACA	CL	115	M	3			80526	M	
KP	61	PACA	CL	129	M	3			80532	M	
KP	61	PACA	CL	115	M	3			80540	M	
KP	61	PACA	CL	118	M	3			80536	M	
KP	61	PACA	CL	115	M	3			80527	M	
KP	61	PACA	CL	112	M	3.5			80516	M	
KP	61	PACA	CL	109	M	4			80511	M	
KP	61	PACA	CL	116	M	3			80513	M	
KP	61	PACA	CL	114	M	3.5			80520	M	
KP	61	PACA	CL	126	M	4			80523	M	
KP	61	PACA	CL	104	M	3			80529	M	
KP	61	PACA	CL	128	M	3.5			80489	M	
KP	61	PACA	CL	117	M	3			80521	M	
KP	61	PACA	CL	108	M	3			80508	M	
KP	61	PACA	CL	114	M	4			80517	M	
KP	61	PACA	CL	108	M	3.5			80477	M	
KP	61	PACA	CL	127	M	3.5			80510	M	
KP	61	PACA	CL	121	M	3			80524	M	
KP	61	PACA	CL	126	M	4			80491	M	
KP	61	PACA	CL	124	M	3.5			80497	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	61	PACA	CL	122	M	3.5			80492	M	
KP	61	PACA	CL	118	M	4			80490	M	
KP	61	PACA	CL	123	M	3			80480	M	
KP	61	PACA	CL	114	M	3.5			80498	M	
KP	61	PACA	CL	126	M	3.5			80559	M	
KP	61	PACA	CL	110	M	4			80554	M	
KP	61	PACA	CL	120	M	4			80550	M	
KP	61	PACA	CL	117	M	3			80552	M	
KP	61	PACA	CL	117	M	3.5			80551	M	
KP	62	PACA	CL	124	M	3			3852	M	
KP	62	PACA	CL	88	M	3			3854	M	
KP	62	PACA	CL	119	M	3			3855	M	
KP	62	PACA	CL	111	M	3			3856	M	
KP	62	PACA	CL	96	M	3			3858	M	
KP	62	PACA	CL	119	M	3			3859	M	
KP	62	PACA	CL	120	M	3			3860	M	
KP	62	PACA	CL	139	M	3			3861	M	
KP	62	PACA	CL	71	M	3			3862	M	
KP	62	PACA	CL	111	M	4			3863	M	
KP	62	PACA	CL	121	M	3			3864	M	
KP	62	PACA	CL	92	F	3	75	BRN	3865	M	
KP	62	PACA	CL	124	M	3			3866	M	
KP	62	PACA	CL	105	F	3	75	PPL	3867	M	
KP	62	PACA	CL	110	M	3			3868	M	
KP	62	PACA	CL	123	M	4			3869	M	
KP	62	PACA	CL	121	M	3			3870	M	
KP	62	PACA	CL	125	M	4			3871	M	
KP	62	PACA	CL	118	M	3			3872	M	
KP	62	PACA	CL	109	M	3			3873	M	
KP	62	PACA	CL	106	M	3			3874	M	
KP	62	PACA	CL	103	M	3			3875	M	
KP	62	PACA	CL	113	M	3			3876	M	
KP	62	PACA	CL	131	M	3			3877	M	
KP	62	PACA	CL	110	M	3			3878	M	
KP	62	PACA	CL	118	M	3			3879	M	
KP	62	PACA	CL	119	M	3			3880	M	
KP	62	PACA	CL	119	M	3			3881	M	
KP	62	PACA	CL	122	M	3			3882	M	
KP	62	PACA	CL	123	M	3			3883	M	
KP	62	PACA	CL	109	M	3			3884	M	
KP	62	PACA	CL	115	M	3			3885	M	
KP	62	PACA	CL	118	M	3			3886	M	
KP	62	PACA	CL	116	M	3			3887	M	
KP	62	PACA	CL	122	M	4			3888	M	
KP	62	PACA	CL	126	M	3			3889	M	
KP	62	PACA	CL	125	M	3			3890	M	
KP	62	PACA	CL	137	M	3			3891	M	
KP	62	PACA	CL	128	M	3			3892	M	
KP	62	PACA	CL	116	M	3			3893	M	
KP	62	PACA	CL	125	M	4			3894	M	
KP	62	PACA	CL	123	M	3			3895	M	
KP	62	PACA	CL	94	M	3			3896	M	
KP	62	PACA	CL	111	M	3			3897	M	
KP	62	PACA	CL	96	M	3			3898	M	
KP	62	PACA	CL	122	M	3			3899	M	
KP	62	PACA	CL	129	M	4			3900	M	
KP	62	PACA	CL	123	M	3			3550	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	62	PACA	CL	76	F	3	0		3549	M	
KP	62	PACA	CL	91	F	3	50	B/P	3547	M	
KP	62								3548		DOUBLE-TAGGED, SEE 03547
KP	62	PACA	CL	92	M	4			3546	M	
KP	62	PACA	CL	121	M	3			3545	M	
KP	62	PACA	CL	114	M	4			3544	M	
KP	62	PACA	CL	129	M	4			3543	M	
KP	62	PACA	CL	115	M	3			3542	M	
KP	62	PACA	CL	118	M	4			3541	M	
KP	62	PACA	CL	132	M	4			3540	M	
KP	62	PACA	CL	137	M	3			3539	M	
KP	62	PACA	CL	112	M	3			3538	M	
KP	62	PACA	CL	116	M	3			3537	M	
KP	62	PACA	CL	122	M	3			3536	M	
KP	62	PACA	CL	89	M	3			3535	M	
KP	62	PACA	CL	82	M	3			3534	M	
KP	62	PACA	CL	97	F	3	50	B/P	3533	M	
KP	62	PACA	CL	94	M	3			3532	M	
KP	62	PACA	CL	124	M	3			3531	M	
KP	62	PACA	CL	90	M	3			3530	M	
KP	62	PACA	CL	113	M	3			3529	M	
KP	62	PACA	CL	118	M	3			3528	M	
KP	62	PACA	CL	124	M	3			3526	M	
KP	62	PACA	CL	94	F	3	0		3525	M	
KP	62	PACA	CL	116	M	3			3524	M	
KP	62	PACA	CL	117	M	3			3523	M	
KP	62	PACA	CL	119	M	3			3522	M	
KP	62	PACA	CL	111	M	3			3521	M	
KP	62	PACA	CL	91	M	3			3520	M	
KP	62	PACA	CL	71	M	3			3519	M	
KP	62	PACA	CL	128	M	3			3518	M	
KP	62	PACA	CL	106	F	3	50	B/P	3517	M	
KP	62	PACA	CL	110	M	3			3516	M	
KP	62	PACA	CL	98	M	3			3513	M	
KP	62	PACA	CL	115	M	3			3512	M	
KP	62	PACA	CL	93	M	3			3511	M	
KP	62	PACA	CL	95	M	3			3510	M	
KP	62	PACA	CL	103	M	3			3509	M	
KP	62	PACA	CL	127	M	3			3508	M	
KP	62	PACA	CL	91	F	3	50	B/P	3506	M	
KP	62	CHBA	CL	94	M						
KP	62	CHBA	CL	95	M						
KP	62	CHBA	CL	87	F		NA	ORG			
KP	62	CHBA	CL	102	M						
KP	62	CHBA	CL	98	M						
KP	62	CHBA	CL	89	M						
KP	62	CHBA	CL	103	M						
KP	62	CHBA	CL	82	F		NA	ORG			
KP	62	CHBA	CL	87	M						
KP	62	CHBA	CL	84	M						
KP	62	CHBA	CL	80	F		NA	ORG			
KP	62	CHBA	CL	82	F		NA	ORG			
KP	63	PACA	CL	104	M	3					
KP	63	PACA	CL	106	F	3	50	PPL			
KP	63	PACA	CL	87	M	3					
KP	63	PACA	CL	107	F	3	50	PPL			
KP	63	PACA	CL	101	M	3					

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	63	PACA	CL	112	M	3			80560	M	
KP	63	PACA	CL	112	M	4			80556	M	
KP	63	PACA	CL	122	M	3			80565	M	
KP	63	CHBA	CL	113	M	4					
KP	63	CHBA	CL	93	M	4					
KP	63	CHBA	CL	98	M	4					
KP	63	CHBA	CL	95	M	4					
KP	63	CHBA	CL	65	F	4	50	ORG			
KP	63	CHBA	CL	88	M	4					
KP	63	CHBA	CL	77	M	4					
KP	63	CHBA	CL	78	M	4					
KP	63	PACA	CL	128	M	3			80553	M	
KP	63	PACA	CL	113	M	3.5			8XXXX	M	
KP	63	PACA	CL	136	M	3			80562	M	
KP	63	PACA	CL	127	M	3.5			80555	M	
KP	63	PACA	CL	122	M	3.5			80580	M	
KP	63	PACA	CL	129	M	3			80587	M	
KP	63	PACA	CL	134	M	3			80596	M	
KP	63	PACA	CL	122	M	3			80578	M	
KP	63	PACA	CL	123	M	3			80584	M	
KP	63	PACA	CL	135	M	3			80582	M	
KP	63	PACA	CL	130	M	3.5			80577	M	
KP	63	PACA	CL	130	M	3.5			80583	M	
KP	63	PACA	CL	120	M	3			80575	M	
KP	63	PACA	CL	124	M	3.5			80570	M	
KP	63	PACA	CL	116	M	3			80595	M	
KP	63	PACA	CL	130	M	3			80572	M	
KP	63	PACA	CL	121	M	3			80591	M	
KP	63	PACA	CL	118	M	3.5			80561	M	
KP	63	PACA	CL	115	M	3			80567	M	
KP	63	PACA	CL	117	M	4			80564	M	
KP	63	PACA	CL	130	M	3.5			80550	M	
KP	63	PACA	CL	114	M	4			80593	M	
KP	63	PACA	CL	114	M	3.5			80590	M	
KP	63	PACA	CL	128	M	3.5			80576	M	
KP	63	PACA	CL	119	M	3			80594	M	
KP	63	PACA	CL	122	M	4			80597	M	
KP	63	PACA	CL	111	M	4			80589	M	
KP	63	PACA	CL	128	M	3			80588	M	
KP	63	PACA	CL	126	M	3.5			80566	M	
KP	63	PACA	CL	114	M	4			80571	M	
KP	63	PACA	CL	127	M	3			80557	M	
KP	63	PACA	CL	124	M	4			80581	M	
KP	63	PACA	CL	138	M	3.5			80598	M	
KP	63	PACA	CL	118	M	4			80568	M	
KP	63	PACA	CL	124	M	3.5			80579	M	
KP	63	PACA	CL	108	M	3.5			80569	M	
KP	63	PACA	CL	108	M	3.5			80600	M	
KP	63	PACA	CL	111	M	3.5			80585	M	
KP	64	PACA	CL	128	M	4			3505	M	
KP	64	PACA	CL	111	M	3			3504	M	
KP	64	PACA	CL	132	M	3			3503	M	
KP	64	PACA	CL	107	M	3			3502	M	
KP	64	PACA	CL	115	M	3			3501	M	
KP	64	PACA	CL	111	M	3			3600	M	
KP	64	PACA	CL	101	M	3			3599	M	
KP	64	PACA	CL	124	M	3			3598	M	
KP	64	PACA	CL	119	M	3			3597	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	64	PACA	CL	126	M	3			3596	M	
KP	64	PACA	CL	121	M	4			3595	M	
KP	64	PACA	CL	120	M	4			3594	M	
KP	64	PACA	CL	87	M	3			3593	M	
KP	64	PACA	CL	122	M	3			3592	M	
KP	64	PACA	CL	115	M	4			3591	M	
KP	64	PACA	CL	125	M	4			3590	M	
KP	64	PACA	CL	110	M	3			3589	M	
KP	64	PACA	CL	119	M	3			3588	M	
KP	64	PACA	CL	121	M	3			3587	M	
KP	64	PACA	CL	130	M	3			3586	M	
KP	64	PACA	CL	110	M	3			3585	M	
KP	64	PACA	CL	121	M	3			3584	M	
KP	64	PACA	CL	120	M	3			3583	M	
KP	64	PACA	CL	138	M	3			3582	M	
KP	64	PACA	CL	87	F	3	50	BRN	3581	M	
KP	64	PACA	CL	123	M	4			3580	M	
KP	64	PACA	CL	125	M	3			3579	M	
KP	64	PACA	CL	90	M	3			3578	M	
KP	64	PACA	CL	119	M	3			3577	M	
KP	64	PACA	CL	124	M	4			3576	M	
KP	64	PACA	CL	127	M	1			3575	M	
KP	64	PACA	CL	113	M	4			3574	M	
KP	64	PACA	CL	116	M	4			3573	M	
KP	64	PACA	CL	132	M	3			3572	M	
KP	64	PACA	CL	123	M	3			3571	M	
KP	64	PACA	CL	132	M	3			3570	M	
KP	64	PACA	CL	125	M	3			3569	M	
KP	64	PACA	CL	122	M	3			3568	M	
KP	64	PACA	CL	126	M	3			3567	M	
KP	64	PACA	CL	95	M	3			3566	M	
KP	64	PACA	CL	123	M	3			3565	M	
KP	64	PACA	CL	113	M	3			3564	M	
KP	64	PACA	CL	125	M	4			3563	M	
KP	64	PACA	CL	124	M	3			3562	M	
KP	64	PACA	CL	121	M	3			3561	M	
KP	64	PACA	CL	124	M	3			3560	M	
KP	64	PACA	CL	127	M	3			3559	M	
KP	64	PACA	CL	91	M	3			3558	M	
KP	64	PACA	CL	134	M	3			3557	M	
KP	64	PACA	CL	127	M	3			3556	M	
KP	64	PACA	CL	118	M	3			3555	M	
KP	64	PACA	CL	127	M	3			3554	M	
KP	64	PACA	CL	111	F	3	50	B/P	3553	M	
KP	64	PACA	CL	129	M	3			3554	M	
KP	64	PACA	CL	107	M	3			3001	M	
KP	64	PACA	CL	125	M	3			3002	M	
KP	64	PACA	CL	133	M	4			3003	M	
KP	64	PACA	CL	118	M	3			3004	M	
KP	64	PACA	CL	119	M	3			3005	M	
KP	64	PACA	CL	129	M	3			3006	M	
KP	64	PACA	CL	126	M	3			3007	M	
KP	64	PACA	CL	129	M	3			3008	M	
KP	64	PACA	CL	120	M	3			3009	M	
KP	64	PACA	CL	116	M	3			3010	M	
KP	64	PACA	CL	96	F	3	50	O/B	3011	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	64	PACA	CL	114	M	3			3012	M	
KP	64	PACA	CL	77	M	3			3013	M	
KP	64	PACA	CL	127	M	3			3014	M	
KP	64	PACA	CL	126	M	3			3015	M	
KP	64	PACA	CL	130	M	3			3016	M	
KP	64	PACA	CL	127	M	3			3017	M	
KP	64	PACA	CL	122	M	3			3018	M	
KP	64	PACA	CL	120	M	3			3019	M	
KP	64	PACA	CL	122	M	3			3020	M	
KP	64	PACA	CL	128	M	3			3021	M	
KP	64	PACA	CL	88	M	3			3022	M	
KP	64	PACA	CL	83	M	3			3023	M	
KP	64	PACA	CL	115	M	3			3024	M	
KP	64	CHBA	CL	97	M	4					
KP	64	CHBA	CL	109	M	4					
KP	64	CHBA	CL	87	M	4					
KP	64	CHBA	CL	88	M	4					
KP	64	CHBA	CL	79	F	4	25	ORG			
KP	64	CHBA	CL	90	M	4					
KP	64	CHBA	CL	93	M	3					
KP	64	CHBA	CL	70	F	4	50	ORG			
KP	64	CHBA	CL	71	F	3	50	ORG			
KP	64	CHBA	CL	70	F	4	25	ORG			
KP	64	CHBA	CL	85	F	3	75	ORG			
KP	64	CHBA	CL	96	M	3					
KP	64	CHBA	CL	91	M	4					
KP	64	CHBA	CL	76	F	3	50	ORG			
KP	64	CHBA	CL	78	F	4	75	ORG			
KP	64	CHBA	CL	89	M	4					
KP	64	CHBA	CL	84	F	4	25	ORG			
KP	64	CHBA	CL	90	M	4					
KP	64	CHBA	CL	79	F	3	75	ORG			
KP	64	CHBA	CL	70	F	4	25	ORG			
KP	64	CHBA	CL	74	F	4	75	ORG			
KP	64	CHBA	CL	75	F	4	0				
KP	64	CHBA	CL	65	F	4	75	ORG			
KP	64	CHBA	CL	94	M	3					
KP	64	CHBA	CL	86	F	4	50	ORG			
KP	64	CHBA	CL	85	M	3					
KP	65	PACA	CL	89	M	3					
KP	65	PACA	CL	87	M	3					
KP	65	PACA	CL	88	M	3					
KP	65	PACA	CL	88	M	3					
KP	65	PACA	CL	101	M	3					
KP	65	PACA	CL	106	M	3					
KP	65	PACA	CL	122	F	3	50	B/P			
KP	65	PACA	CL	98	M	3					
KP	65	CHBA	CL	86	M	4					
KP	65	CHBA	CL	95	M	4					
KP	65	CHBA	CL	83	F	4	50	ORG			
KP	65	CHBA	CL	112	M	4					
KP	65	CHBA	CL	106	M	4					
KP	65	CHBA	CL	91	M	4					
KP	65	PACA	CL	131	M	4			80797	M	
KP	65	PACA	CL	132	M	4			80798	M	
KP	65	PACA	CL	117	M	3			80786	M	
KP	65	PACA	CL	127	M	4			80800	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	65	PACA	CL	130	M	3.5			80805	M	
KP	65	PACA	CL	126	M	3			80799	M	
KP	65	PACA	CL	122	M	3			80790	M	
KP	65	PACA	CL	123	M	3			80791	M	
KP	65	PACA	CL	129	M	3			80794	M	
KP	65	PACA	CL	115	M	4			80789	M	
KP	65	PACA	CL	114	M	3.5			80801	M	
KP	65	PACA	CL	121	M	3			80804	M	
KP	65	PACA	CL	122	M	3			80808	M	
KP	65	PACA	CL	117	M	4			80803	M	
KP	65	PACA	CL	123	M	3			80802	M	
KP	65	PACA	CL	117	M	4			80810	M	
KP	65	PACA	CL	123	M	3			80802	M	
KP	65	PACA	CL	129	M	3.5			80806	M	
KP	66	PACA	CL	116	M	3			3027	M	
KP	66	PACA	CL	126	M	3			3028	M	
KP	66	PACA	CL	92	M	4			3029	M	
KP	66	PACA	CL	128	M	3			3030	M	
KP	66	PACA	CL	80	F	3	0		3031	M	
KP	66	PACA	CL	122	M	3			3032	M	
KP	66	PACA	CL	115	M	4			3033	M	
KP	66	PACA	CL	117	M	3			3034	M	
KP	66	PACA	CL	90	F	3	75	B/P	3036	M	
KP	66	PACA	CL	121	M	3			3037	M	
KP	66	PACA	CL	80	M	3			3038	M	
KP	66	PACA	CL	122	M	3			3039	M	
KP	66	PACA	CL	114	M	3			3040	M	
KP	66	PACA	CL	106	M	3			3041	M	
KP	66	PACA	CL	116	M	3			3042	M	
KP	66	PACA	CL	107	M	2			3043	M	
KP	66	PACA	CL	113	M	3			3044	M	
KP	66	PACA	CL	113	M	3			3045	M	
KP	66	PACA	CL	124	M	3			3046	M	
KP	66	PACA	CL	106	F	2	50	PPL	3047	M	
KP	66	PACA	CL	91	F	3	50	B/P	3048	M	
KP	66	PACA	CL	88	F	4	50	O/B	3049	M	
KP	66	PACA	CL	89	F	3	75	B/P	3050	M	
KP	66	PACA	CL	120	M	3			3100	M	
KP	66	PACA	CL	86	F	3	75	BRN	3099	M	
KP	66	PACA	CL	96	F	3	75	B/P	3098	M	
KP	66	PACA	CL	116	M	3			3097	M	
KP	66	PACA	CL	112	M	3			3095	M	
KP	66	PACA	CL	97	F	3	75	B/P	3094	M	
KP	66	PACA	CL	101	M	3			3093	M	
KP	66	PACA	CL	83	F	3	0		3092	M	
KP	66	PACA	CL	125	M	3			3090	M	
KB									3091		DOUBLE-TAGGED--SEE 03090
KP	66	PACA	CL	92	M	3			3089	M	
KP	66	PACA	CL	117	M	3			3088	M	
KP	66	PACA	CL	117	M	3			3087	M	
KP	66	PACA	CL	120	M	3			3086	M	
KP	66	PACA	CL	117	M	3			3085	M	
KP	66	PACA	CL	128	M	3			3084	M	
KP	66	PACA	CL	124	M	3			3083	M	
KP	66	PACA	CL	78	M	2			3082	M	
KP	66	PACA	CL	86	F	3	50	B/P	3081	M	
KP	66	PACA	CL	88	M	3			3080	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	66	PACA	CL	128	M	2			3079	M	
KP	66	PACA	CL	89	F	3	50	O/B	3078	M	
KP	66	PACA	CL	75	F	3	0		3077	M	
KP	66	PACA	CL	98	M	3			3076	M	
KP	66	PACA	CL	94	M	3			3075	M	
KP	66	PACA	CL	99	F	2	50	BRN	3073	M	
KP	66	PACA	CL	123	M	3			3072	M	
KP	66	PACA	CL	86	F	3	0		3071	M	
KP	66	PACA	CL	107	M	3			3070	M	
KP	66	PACA	CL	130	M	3			3069	M	
KP	66	PACA	CL	77	M	2			3067	M	
KP	66	PACA	CL	84	M	3			3066	M	
KP	66	PACA	CL	87	M	3			3065	M	
KP	66	PACA	CL	93	F	2	50	BRN	3064	M	
KP	66	PACA	CL	85	F	3	0		3062	M	
KP	66	PACA	CL	85	M	3			3061	M	
KP	66	PACA	CL	78	F	3	0		3060	M	
KP	66	PACA	CL	125	M	4			3059	M	
KP	66	PACA	CL	92	M	3			3058	M	
KP	66	PACA	CL	76	M	3			3057	M	
KP	66	PACA	CL	117	M	3			3056	M	
KP	66	PACA	CL	123	M	3			3055	M	
KP	66	PACA	CL	116	M	3			3054	M	
KP	66	PACA	CL	123	M	3			3053	M	
KP	66	PACA	CL	92	M	3			3052	M	
KP	66	PACA	CL	128	M	3			3051	M	
KP	66	PACA	CL	125	M	3			3500	M	
KP	66	PACA	CL	85	F	3	0		3499	M	
KP	66	PACA	CL	80	F	3	75	BRN	3497	M	
KP	66	PACA	CL	94	F	3	75	O/B	3496	M	
KP	66	PACA	CL	90	F	3	50	BRN	3495	M	
KP	66	PACA	CL	115	M	4			3494	M	
KP	66	PACA	CL	92	M	3			3493	M	
KP	66	PACA	CL	117	M	3			3492	M	
KP	66	PACA	CL	114	M	3			3491	M	
KP	66	PACA	CL	125	M	3			3490	M	
KP	66	PACA	CL	126	M	3			3489	M	
KP	66	PACA	CL	89	F	3	50	BRN	3488	M	
KP	66	PACA	CL	124	M	3			3487	M	
KP	66	PACA	CL	121	M	3			3486	M	
KP	66	PACA	CL	118	M	3			3485	M	
KP	66	PACA	CL	122	M	3			3484	M	
KP	66	PACA	CL	99	M	3			3483	M	
KP	66	PACA	CL	115	M	3			3482	M	
KP	66	PACA	CL	97	F	2	50	B/P	3481	M	
KP	66	PACA	CL	85	M	3			3480	M	
KP	66	PACA	CL	87	F	3	75	BRN	3479	M	
KP	66	PACA	CL	112	M	3			3478	M	
KP	66	PACA	CL	98	F	3	50	BRN	3477	M	
KP	66	PACA	CL	116	M	4			3476	M	
KP	66	PACA	CL	113	M	3			3475	M	
KP	66	PACA	CL	113	M	3			3474	M	
KP	66	PACA	CL	104	M	3			3473	M	
KP	66	PACA	CL	100	M	3			3472	M	
KP	66	PACA	CL	85	M	3			3471	M	
KP	66	PACA	CL	87	M	3			3470	M	
KP	66	PACA	CL	111	M	3			3468	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	66	PACA	CL	95	M	3			3467	M	
KP	66	PACA	CL	124	M	3			3466	M	
KP	66	PACA	CL	93	M	3			3465	M	
KP	66	PACA	CL	85	F	3	0		3464	M	
KP	66	PACA	CL	93	M	3			3463	M	
KP	66	PACA	CL	137	M	3			3462	M	
KP	66	PACA	CL	85	M	3			3461	M	
KP	66	PACA	CL	90	M	3			3460	M	
KP	66	PACA	CL	95	F	3	50	B/P	3459	M	
KP	66	PACA	CL	136	M	3			3458	M	
KP	66	PACA	CL	89	F	3	50	ORG	3457	M	
KP	66	PACA	CL	89	F	3	50	O/B	3456	M	
KP	66	PACA	CL	118	M	3			3455	M	
KP	66	PACA	CL	96	M	3			3454	M	
KP	66	PACA	CL	97	M	3			3453	M	
KP	66	PACA	CL	118	M	3			3452	M	
KP	66	PACA	CL	88	F	3	0		3451	M	
KP	66	PACA	CL	116	M	3			3401	M	
KP	66	PACA	CL	114	M	3			3402	M	
KP	66	PACA	CL	89	F	3	50	BRN	3403	M	
KP	66	PACA	CL	119	M	3			3404	M	
KP	66	PACA	CL	79	M	3			3406	M	
KP	66	PACA	CL	103	M	4			3407	M	
KP	66	PACA	CL	72	M	2			3408	M	
KP	66	PACA	CL	100	M	3			3409	M	
KP	66	PACA	CL	97	M	3			3410	M	
KP	66	PACA	CL	127	M	3			3411	M	
KP	66	PACA	CL	86	F	3	50	BRN	3412	M	
KP	66	PACA	CL	80	F	3	0		3413	M	
KP	66	PACA	CL	98	M	3			3414	M	
KP	66	PACA	CL	121	M	3			3415	M	
KP	66	PACA	CL	124	M	3			3416	M	
KP	66	PACA	CL	122	M	3			3418	M	
KP	66	PACA	CL	114	M	3			3417	M	
KP	66	PACA	CL	112	M	3			3420	M	
KP	66	PACA	CL	93	F	3	50	BRN	3421	M	
KP	66	PACA	CL	115	M	3			3422	M	
KP	66	PACA	CL	97	M	3			3423	M	
KP	66	PACA	CL	115	M	3			3424	M	
KP	66	PACA	CL	124	M	4			3425	M	
KP	66	PACA	CL	100	M	3			3426	M	
KP	66	PACA	CL	81	M	3			3427	M	
KP	66	PACA	CL	104	F	2	50	B/P	3428	M	
KP	66	PACA	CL	72	F	2	0		3429	M	
KP	66	PACA	CL	109	M	3			3430	M	
KP	66	PACA	CL	116	M	4			3431	M	
KP	66	PACA	CL	94	M	3			3432	M	
KP	66	PACA	CL	75	M	3			3433	M	
KP	66	PACA	CL	115	M	3			3434	M	
KP	66	PACA	CL	93	M	3			3435	M	
KP	66	PACA	CL	112	M	3			3436	M	
KP	66	PACA	CL	105	M	3			3438	M	
KP	66	PACA	CL	87	M	3			3437	M	
KP	66	PACA	CL	112	M	3			3439	M	
KP	66	PACA	CL	90	M	3			3440	M	
KP	66	PACA	CL	84	M	3			3441	M	
KP	66	PACA	CL	88	M	3			3442	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	66	PACA	CL	91	M	3			3443	M	
KP	66	PACA	CL	98	M	3			3444	M	
KP	66	CHBA	CL	96	M	4					
KP	66	CHBA	CL	94	M	4					
KP	66	CHBA	CL	92	M	4					
KP	66	CHBA	CL	97	M	4					
KP	66	CHBA	CL	85	M	4					
KP	66	CHBA	CL	67	F	4	25	ORG			
KP	66	CHBA	CL	109	M	4					
KP	66	CHBA	CL	84	F	3	50	ORG			
KP	66	CHBA	CL	86	M	4					
KP	66	CHBA	CL	98	M	4					
KP	66	CHBA	CL	73	F	3	25	ORG			
KP	66	CHBA	CL	74	F	3	75	ORG			
KP	66	CHBA	CL	75	F	3	50	ORG			
KP	67	PACA	CL	117	M	4			80746	M	
KP	67	PACA	CL	120	M	3			80742	M	
KP	67	PACA	CL	123	M	4			80751	M	
KP	67	PACA	CL	122	M	3			80745	M	
KP	67	PACA	CL	106	M	4			80754	M	
KP	67	PACA	CL	125	M	3			80743	M	
KP	67	PACA	CL	138	M	4			80719	M	
KP	67	PACA	CL	115	M	3.5			3010	R	
KP	67								80750		RETAG ON RECAP., SEE 3010
KP	67	PACA	CL	129	M	3.5			80748	M	
KP	67	PACA	CL	126	M	3			3028	R	
KP	67								80755		RETAG ON RECAP., SEE 3028
KP	67	PACA	CL	123	M	3			80736	M	
KP	67	PACA	CL	110	M	3			3600	R	
KP	67								80734		RETAG ON RECAP., SEE 03600
KP	67	PACA	CL	135	M	4			80733	M	
KP	67	PACA	CL	118	M	3			80715	M	
KP	67	PACA	CL	117	M	4			80739	M	
KP	67	PACA	CL	114	M	3			80731	M	
KP	67	PACA	CL	124	M	4			80734	M	
KP	67	PACA	CL	126	M	4			80732	M	
KP	67	PACA	CL	122	M	4			80718	M	
KP	67	PACA	CL	129	M	4			80735	M	
KP	67	PACA	CL	123	M	3			3565	R	
KP	67								80729		RETAG ON RECAP., SEE 03565
KP	67	PACA	CL	119	M	4			80697	M	
KP	67	PACA	CL	121	M	3			80738	M	
KP	67	PACA	CL	129	M	3.5			80757	M	
KP	67	PACA	CL	119	M	3			80756	M	
KP	67	PACA	CL	132	M	3			80753	M	
KP	67	PACA	CL	117	M	3			80755	M	
KP	67	PACA	CL	130	M	3.5			80783	M	
KP	67	PACA	CL	107	M	3			80784	M	
KP	67	PACA	CL	133	M	3			80774	M	
KP	67	PACA	CL	123	M	4			80776	M	
KP	67	PACA	CL	113	M	3			80778	M	
KP	67	PACA	CL	110	M	3					
KP	67	PACA	CL	100	M	3					
KP	67	PACA	CL	107	M	3			3554	R	
KP	67								80730		RETAG ON RECAP., SEE 03554
KP	67	PACA	CL	98	M	3			03XXX	R	
KP	67	PACA	CL	117	M	3			3087	R	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	67								8XXXX		RETAG ON RECAP., SEE 03087
KP	67	PACA	CL	92	M	3					
KP	67	PACA	CL	87	F	3	0				
KP	67	PACA	CL	105	M	4					
KP	67	PACA	CL	102	M	3					
KP	67	PACA	CL	91	M	3					
KP	67	PACA	CL	87	F	3	0				
KP	67	PACA	CL	79	F	3	0				
KP	67	PACA	CL	107	M	3					
KP	67	PACA	CL	78	M	3.5					
KP	67	PACA	CL	100	M	3					
KP	67	PACA	CL	95	F	3	50	BRN			
KP	67	PACA	CL	105	M	3					
KP	67	PACA	CL	86	M	3					
KP	67	PACA	CL	87	F	3	50	BRN			
KP	67	PACA	CL	91	M	3					
KP	67	PACA	CL	104	M	3					
KP	67	PACA	CL	80	F	3	0				
KP	67	PACA	CL	90	M	3					
KP	67	PACA	CL	84	M	3					
KP	67	PACA	CL	92	F	3	0				
KP	67	PACA	CL	84	F	3	50	BRN			
KP	67	PACA	CL	80	F	3	0				
KP	67	PACA	CL	108	M	3					
KP	67	PACA	CL	91	F	3	50	B/P			
KP	67	PACA	CL	88	F	3	50	BRN			
KP	67	PACA	CL	89	M	3					
KP	67	PACA	CL	83	F	3	0				
KP	67	PACA	CL	93	F	3.5	50	BRN			
KP	67	PACA	CL	86	F	3	0		3171	R	
KP	67	PACA	CL	122	M	3			80773	M	
KP	67	PACA	CL	122	M	4			80780	M	
KP	67	PACA	CL	112	M	3.5			80769	M	
KP	67	PACA	CL	117	M	3			80777	M	
KP	67	PACA	CL	123	M	3.5			80760	M	
KP	67	PACA	CL	126	M	3.5			80765	M	
KP	67	PACA	CL	118	M	3			80761	M	
KP	67	PACA	CL	120	M	3.5			80758	M	
KP	67	PACA	CL	116	M	3			80766	M	
KP	67	PACA	CL	115	M	4			80764	M	
KP	67	PACA	CL	108	M	4			80779	M	
KP	67	PACA	CL	115	M	3			80763	M	
KP	67	PACA	CL	128	M	4			80782	M	
KP	67	PACA	CL	129	M	3			80771	M	
KP	67	PACA	CL	127	M	3			80770	M	
KP	67	PACA	CL	110	M	3.5			80767	M	
KP	67	PACA	CL	112	M	3.5			80772	M	
KP	67	PACA	CL	120	M	3			80762	M	
KP	67	PACA	CL	112	M	3			80781	M	
KP	67	PACA	CL	117	M	4			80759	M	
KP	67	PACA	CL	130	M	3			80768	M	
KP	67	PACA	CL	116	M	3.5			80775	M	
KP	67	PACA	CL	114	M	3.5			8XXXX	M	
KP	67	PACA	CL	124	M	3.5			3072	R	
KP	67								80788		RETAG ON RECAP.,SEE 03072
KP	67	PACA	CL	128	M	3			3017	R	
KP	67								80792		RETAG ON RECAP., SEE 03017

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	67	PACA	CL	107	M	3			80795	M	
KP	67	PACA	CL	112	M	3			80787	M	
KP	67	PACA	CL	123	M	3.5			80793	M	
KP	67	PACA	CL	108	M	4			80785	M	
KP	67	PACA	CL	112	M	3			80796	M	
KP	67	PACA	CL	100	M	3					
KP	67	PACA	CL	80	M	3					
KP	67	PACA	CL	85	M	3					
KP	67	PACA	CL	99	M	3					
KP	67	PACA	CL	104	F	3	50	BRN			
KP	67	PACA	CL	107	M	3					
KP	67	PACA	CL	88	M	3					
KP	67	PACA	CL	86	F	3	50	PPL			
KP	67	PACA	CL	85	M	3					
KP	67	PACA	CL	99	M	3					
KP	67	PACA	CL	85	F	3	50	BRN			
KP	67	PACA	CL	92	F	3.5	50	BRN			
KP	67	PACA	CL	99	M	4					
KP	67	PACA	CL	82	F	3	0				
KP	67	PACA	CL	101	M	3					
KP	67	PACA	CL	90	M	3					
KP	67	PACA	CL	93	F	3.5	50	PPL			
KP	67	PACA	CL	82	M	3					
KP	67	PACA	CL	91	M	3					
KP	67	PACA	CL	96	F	3	0				
KP	67	PACA	CL	86	M	3					
KP	67	PACA	CL	89	M	3					
KP	67	PACA	CL	83	M	3					
KP	67	PACA	CL	69	M	3					
KP	67	PACA	CL	88	M	4					
KP	67	PACA	CL	103	M	3					
KP	67	PACA	CL	90	M	3					
KP	67	PACA	CL	99	M	3					
KP	67	PACA	CL	90	M	3					
KP	67	PACA	CL	85	F	3	0				
KP	67	PACA	CL	93	M	3					
KP	67	PACA	CL	84	F	3	50	BRN			
KP	67	PACA	CL	80	M	3					
KP	67	PACA	CL	106	F	3	50	PPL			
KP	67	PACA	CL	85	M	3					
KP	67	PACA	CL	108	M	3					
KP	67	PACA	CL	106	F	3	50	B/P			
KP	67	PACA	CL	93	M	3					
KP	67	PACA	CL	91	F	3	50	BRN			
KP	67	PACA	CL	107	F	3.5	50	PPL			
KP	67	PACA	CL	101	M	3					
KP	67	PACA	CL	84	M	3					
KP	67	PACA	CL	91	F	3	50	BRN			
KP	67	PACA	CL	88	F	3	50	BRN	3581	R	
KP	67	PACA	CL	103	F	3	50	ORG			
KP	67	PACA	CL	98	F	3	50	BRN			
KP	67	PACA	CL	92	M	3					
KP	67	PACA	CL	74	M	3					
KP	67	CHBA	CL	90	M	4					
KP	67	CHBA	CL	92	M	4					
KP	67	CHBA	CL	92	M	4					
KP	67	CHBA	CL	101	M	4					

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	67	CHBA	CL	86	M	4					
KP	67	CHBA	CL	94	M	4					
KP	67	CHBA	CL	71	F	4	50	ORG			
KP	67	CHBA	CL	99	M	4					
KP	67	CHBA	CL	71	F	4	50	ORG			
KP	67	CHBA	CL	91	M	4					
KP	67	CHBA	CL	77	F	4	50	ORG			
KP	67	CHBA	CL	87	M	4					
KP	67	CHBA	CL	67	F	4	50	ORG			
KP	67	CHBA	CL	84	M	4					
KP	67	CHBA	CL	92	M	4					
KP	67	CHBA	CL	90	M	4					
KP	67	CHBA	CL	74	M	4					
KP	67	CHBA	CL	80	F	4	50	ORG			
KP	67	CHBA	CL	67	F	4	50	ORG			
KP	67	PACA	CL	121	M	3			80745	M	
KP	67	PACA	CL	115	M	3			3501	R	
KP	67								80749		RETAG ON RECAP., SEE 03501
KP	67	PACA	CL	119	M	4			80744	M	
KP	67	PACA	CL	130	M	3			80752	M	
KP	69	PACA	CL	125	M	4			3446	M	
KP	69	PACA	CL	128	M	3			3445	M	
KP	69	PACA	CL	125	M	3			3447	M	
KP	69	PACA	CL	115	M	3			3448	M	
KP	69	PACA	CL	120	M	3			3449	M	
KP	69	PACA	CL	128	M	3			3450	M	
KP	69	PACA	CL	111	M	3			3751	M	
KP	69	PACA	CL	118	M	3			3752	M	
KP	69	PACA	CL	113	M	3			3753	M	
KP	69	PACA	CL	97	M	3			3755	M	
KP	69	PACA	CL	127	M	3			3754	M	
KP	69	PACA	CL	99	M	3			3756	M	
KP	69	PACA	CL	118	M	4			3757	M	
KP	69	PACA	CL	126	M	3			3758	M	
KP	69	PACA	CL	114	M	3			3759	M	
KP	69	PACA	CL	109	M	4			3760	M	
KP	69	PACA	CL	125	M	4			3761	M	
KP	69	PACA	CL	120	M	3			3762	M	
KP	69	PACA	CL	103	M	3			3763	M	
KP	69	PACA	CL	127	M	3			3764	M	
KP	69	PACA	CL	121	M	3			3765	M	
KP	69	PACA	CL	99	M	3			3766	M	
KP	69	PACA	CL	92	M	3			3767	M	
KP	69	PACA	CL	99	M	3			3768	M	
KP	69	PACA	CL	125	M	3			3769	M	
KP	69	PACA	CL	110	M	3			3770	M	
KP	69	PACA	CL	122	M	3			3771	M	
KP	69	PACA	CL	123	M	3			3772	M	
KP	69	PACA	CL	94	F	3	50	BRN	3773	M	
KP	69	PACA	CL	128	M	3			3774	M	
KP	69	PACA	CL	90	M	3			3775	M	
KP	69	PACA	CL	128	M	3			3777	M	
KP	69	PACA	CL	118	M	3			3778	M	
KP	69	PACA	CL	119	M	4			3779	M	
KP	69	PACA	CL	113	M	4			3780	M	
KP	69	PACA	CL	116	M	4			3781	M	
KP	69	PACA	CL	74	M	3			3783	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	69	PACA	CL	129	M	3			3784	M	
KP	69	PACA	CL	133	M	3			3785	M	
KP	69	PACA	CL	120	M	3			3786	M	
KP	69	PACA	CL	123	M	4			3787	M	
KP	69	PACA	CL	131	M	4			3788	M	
KP	69	PACA	CL	118	M	3			3789	M	
KP	69	PACA	CL	118	M	3			3790	M	
KP	69	PACA	CL	127	M	3			3791	M	
KP	69	PACA	CL	128	M	4			3792	M	
KP	69	PACA	CL	104	M	4			3793	M	
KP	69	PACA	CL	113	M	3			3794	M	
KP	69	PACA	CL	125	M	3			3795	M	
KP	69	PACA	CL	121	M	3			3796	M	
KP	69	PACA	CL	128	M	3			3797	M	
KP	69	PACA	CL	110	M	4			3798	M	
KP	69	PACA	CL	107	M	3			3799	M	
KP	69	PACA	CL	83	F	3	0		3201	M	
KP	69	PACA	CL	111	M	3			3202	M	
KP	69	PACA	CL	122	M	3			3203	M	
KP	69	PACA	CL	119	M	3			3204	M	
KP	69	PACA	CL	94	F	3	50	BRN	3206	M	
KP	69	PACA	CL	134	M	4			3207	M	
KP	69	PACA	CL	126	M	3			3208	M	
KP	69	PACA	CL	88	M	3			3209	M	
KP	69	PACA	CL	115	M	3			3210	M	
KP	69	PACA	CL	132	M	3			3211	M	
KP	69	PACA	CL	120	M	3			3212	M	
KP	69	PACA	CL	119	M	4			3213	M	
KP	69	PACA	CL	122	M	3			3214	M	
KP	69	PACA	CL	120	M	3			3215	M	
KP	69	PACA	CL	122	M	3			3216	M	
KP	69	PACA	CL	122	M	3			3217	M	
KP	69	PACA	CL	133	M	3			3218	M	
KP	69	PACA	CL	126	M	3			3219	M	
KP	69	PACA	CL	122	M	4			3220	M	
KP	69	PACA	CL	128	M	4			3221	M	
KP	69	PACA	CL	127	M	3			3222	M	
KP	69	PACA	CL	128	M	4			3223	M	
KP	69	PACA	CL	111	M	3			3224	M	
KP	69	PACA	CL	106	M	3			3225	M	
KP	69	PACA	CL	112	M	3			3226	M	
KP	69	PACA	CL	96	M	3			3227	M	
KP	69	PACA	CL	111	M	3			3228	M	
KP	69	PACA	CL	133	M	4			3229	M	
KP	69	PACA	CL	106	F	2	50	O/B	3230	M	
KP	69	PACA	CL	80	M	3			3231	M	
KP	69	PACA	CL	96	F	3	75	DPP	3232	M	
KP	69	PACA	CL	107	M	4			3233	M	
KP	69	PACA	CL	131	M	3			3234	M	
KP	69	PACA	CL	107	M	3			3235	M	
KP	69	PACA	CL	107	M	3			3236	M	
KP	69	PACA	CL	110	M	3			3237	M	
KP	69	PACA	CL	84	M	3			3238	M	
KP	69	PACA	CL	109	M	3			3239	M	
KP	69	PACA	CL	91	M	3			3240	M	
KP	69	PACA	CL	102	M	3			3241	M	
KP	69	PACA	CL	98	M	3			3243	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	69	PACA	CL	91	F	3	50	B/P	3244	M	
KP	69	CHBA	CL	93	M	3					
KP	69	CHBA	CL	87	M	4					
KP	69	CHBA	CL	101	M	4					
KP	69	CHBA	CL	85	M	4					
KP	70	PACA	CL	83	M	3					
KP	70	PACA	CL	83	M	3					
KP	70	PACA	CL	94	M	3					
KP	70	PACA	CL	113	M	3.5			3475	R	
KP	70								80563		RETAG ON RECAP., SEE 03475
KP	70	PACA	CL	92	M	3					
KP	70	PACA	CL	129	M	3.5			3079	R	
KP	70								80604		RETAG ON RECAP., SEE 03079
KP	70	PACA	CL	78	M	3					
KP	70	PACA	CL	91	M	3					
KP	70	PACA	CL	102	M	3					
KP	70	PACA	CL	96	M	4					
KP	70	PACA	CL	124	M	3.5			3046	R	
KP	70								80601		RETAG ON RECAP., SEE 03046
KP	70	PACA	CL	102	M	3					
KP	70	PACA	CL	94	M	3.5					
KP	70	PACA	CL	84	F	3.5	50	BRN			
KP	70	PACA	CL	102	M	3			3089	R	
KP	70	PACA	CL	109	M	3					
KP	70	PACA	CL	122	M	4			80599	M	
KP	70	PACA	CL	122	M	4			80607	M	
KP	70	PACA	CL	113	M	4					
KP	70	PACA	CL	118	M	3			80603	M	
KP	70	PACA	CL	111	M	4					
KP	70	PACA	CL	85	F	3	50	PPL			
KP	70	PACA	CL	108	M	3					
KP	70	PACA	CL	122	M	3.5			80605	M	
KP	70	PACA	CL	71	M	3					
KP	70	PACA	CL	129	M	3			80602	M	
KP	70	PACA	CL	89	M	3.5					
KP	70	PACA	CL	106	M	3.5					
KP	70	PACA	CL	131	M	3.5			80606	M	
KP	70	PACA	CL	100	M	3.5					
KP	70	PACA	CL	90	M	3					
KP	70	PACA	CL	87	M	3					
KP	70	PACA	CL	132	M	3.5			80592	M	
KP	70	PACA	CL	96	F	3	50	PPL			
KP	70	PACA	CL	99	F	3	50	BRN			
KP	70	PACA	CL	125	M	4			80586	M	
KP	70	PACA	CL	84	F	3	0				
KP	70	PACA	CL	88	F	3	0				
KP	70	PACA	CL	89	M	3					
KP	70	PACA	CL	96	M	3					
KP	70	PAPL	CL	107	M	3.5					
KP	70	CHBA	CL	91	M	4					
KP	70	CHBA	CL	86	M	4					
KP	70	CHBA	CL	87	M	4					
KP	70	CHBA	CL	94	M	4					
KP	70	CHBA	CL	81	M	4					
KP	70	CHBA	CL	76	M	4					
KP	70	CHBA	CL	86	M	4					
KP	70	CHBA	CL	118	M	2					

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	70	PACA	CL	115	M	3			80630	M	
KP	70	PACA	CL	125	M	4			80628	M	
KP	70	PACA	CL	127	M	3			80632	M	
KP	70	PACA	CL	120	M	4			80624	M	
KP	70	PACA	CL	124	M	3			80610	M	
KP	70	PACA	CL	126	M	4			80618	M	
KP	70	PACA	CL	126	M	3			80611	M	
KP	70	PACA	CL	116	M	4			80625	M	
KP	70	PACA	CL	118	M	3.5			80645	M	
KP	70	PACA	CL	116	M	4			80614	M	
KP	70	PACA	CL	123	M	3.5			80622	M	
KP	70	PACA	CL	117	M	3			80616	M	
KP	70	PACA	CL	127	M	3.5			80633	M	
KP	70	PACA	CL	118	M	3			80613	M	
KP	70	PACA	CL	114	M	4			80624	M	
KP	70	PACA	CL	128	M	3			80617	M	
KP	70	PACA	CL	128	M	3			80612	M	
KP	70	PACA	CL	130	M	3			80651	M	
KP	70	PACA	CL	133	M	3.5			80631	M	
KP	70	PACA	CL	122	M	4			80627	M	
KP	70	PACA	CL	122	M	3			80649	M	
KP	70	PACA	CL	118	M	3			80620	M	
KP	70	PACA	CL	121	M	3			80619	M	
KP	70	PACA	CL	123	M	4			80623	M	
KP	70	PACA	CL	129	M	3			80626	M	
KP	70	PACA	CL	131	M	3.5			80648	M	
KP	70	PACA	CL	113	M	3.5			80629	M	
KP	70	PACA	CL	120	M	3			80636	M	
KP	70	PACA	CL	119	M	4			80608	M	
KP	70	PACA	CL	126	M	3.5			80609	M	
KP	70	PACA	CL	120	M	3			80656	M	
KP	70	PACA	CL	119	M	3			80637	M	
KP	70	PACA	CL	135	M	3			80643	M	
KP	70	PACA	CL	126	M	4			80661	M	
KP	70	PACA	CL	121	M	4			80653	M	
KP	70	PACA	CL	117	M	4			80663	M	
KP	70	PACA	CL	123	M	3.5			80626	M	
KP	70	PACA	CL	117	M	4			80635	M	
KP	70	PACA	CL	119	M	3.5			80658	M	
KP	70	PACA	CL	125	M	4			80660	M	
KP	70	PACA	CL	122	M	3			80639	M	
KP	70	PACA	CL	125	M	4			80655	M	
KP	70	PACA	CL	118	M	4			80634	M	
KP	70	PACA	CL	129	M	3			80638	M	
KP	70	PACA	CL	111	M	3.5			80642	M	
KP	70	PACA	CL	123	M	3			80657	M	
KP	70	PACA	CL	127	M	3.5			80654	M	
KP	70	PACA	CL	112	M	3			80652	M	
KP	70	PACA	CL	123	M	3.5			80641	M	
KP	70	PACA	CL	124	M	4			80662	M	
KP	70	PACA	CL	134	M	3			80659	M	
KP	70	PACA	CL	124	M	3.5			80640	M	
KP	70	PACA	CL	129	M	4			80637	M	
KP	71	PACA	CL	137	M	4			3246	M	
KP	71	PACA	CL	121	M	4			3245	M	
KP	71	CHBA	CL	77	M						
KP	72	PACA	CL	112	F	2	50	BRN	3247	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	72	PACA	CL	112	F	2	75	PPL	3253	M	
KP	72	PACA	CL	96	F	3	50	BRN	3254	M	
KP	72	PACA	CL	79	F	3	0		3257	M	
KP	72	PACA	CL	110	F	2	75	PPL	3259	M	
KP	72	PACA	CL	105	F	3	75	B/P	3250	M	
KP	72	PACA	CL	107	M	4			3264	M	
KP	72	PACA	CL	109	F	3	50	B/P	3265	M	
KP	72	PACA	CL	104	F	2	50	B/P	3261	M	
KP	72	PACA	CL	111	M	3			3258	M	
KP	72	PACA	CL	119	M	3			3249	M	
KP	72	PACA	CL	96	F	3	50	B/P	3256	M	
KP	72	PACA	CL	98	F	3	50	BRN	3262	M	
KP	72	PACA	CL	97	F	3	75	O/B	3263	M	
KP	72	PACA	CL	95	F	2	75	PPL	3251	M	
KP	72	PACA	CL	96	M	2			3260	M	
KP	72	PACA	CL	127	M	4			3248	M	
KP	72	PACA	CL	84	F	3	50	BRN	3255	M	
KP	72	PACA	CL	81	F	3	50	BRN	3252	M	
KP	72	CHBA	CL	78	M	4					
KP	72	CHBA	CL	91	M	4					
KP	73	PACA	CL	68	M	3					
KP	73	PACA	CL	95	F	3	50	BRN			
KP	73	PACA	CL	86	M	3					
KP	73	PACA	CL	80	F	3	0				
KP	73	PACA	CL	82	F	3	50	PPL			
KP	73	PACA	CL	97	F	3.5	50	BRN			
KP	73	PACA	CL	88	F	4	50	BRN			
KP	73	PACA	CL	99	M	3.5					
KP	73	PACA	CL	105	F	3	50	PPL			
KP	73	PACA	CL	96	M	3					
KP	73	PACA	CL	93	F	4	50	BRN			
KP	73	PACA	CL	72	M	3					
KP	73	PACA	CL	94	F	3	50	BRN			
KP	73	PACA	CL	76	F	3	0				
KP	73	PACA	CL	98	F	3	50	BRN			
KP	73	PACA	CL	111	F	3	50	PPL			
KP	73	PACA	CL	102	F	3	50	BRN			
KP	73	PACA	CL	104	M	3					
KP	73	PACA	CL	96	F	3	50	BRN			
KP	73	PACA	CL	96	F	3	50	BRN			
KP	73	PACA	CL	100	M	4					
KP	73	PACA	CL	99	M	3					
KP	73	PACA	CL	93	M	3					
KP	73	PACA	CL	110	M	3					
KP	73	PACA	CL	108	M	3					
KP	73	PACA	CL	90	F	3	50	BRN			
KP	73	PACA	CL	108	M	3					
KP	73	PACA	CL	107	M	3					
KP	73	PACA	CL	107	M	3					
KP	73	PACA	CL	89	F	3	0				
KP	73	PACA	CL	103	F	3	50	BRN			
KP	73	PACA	CL	89	F	3	50	BRN			
KP	73	PACA	CL	89	F	3	50	PPL			
KP	73	PACA	CL	78	F	4	0				
KP	73	PACA	CL	92	M	3					
KP	73	PACA	CL	97	F	3	50	PPL			
KP	73	PACA	CL	92	F	4	50	BRN			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	73	PACA	CL	88	F	3	50	BRN			
KP	73	PACA	CL	86	M	3					
KP	73	PACA	CL	100	F	3	50	B/P			
KP	73	PACA	CL	89	M	3					
KP	73	PACA	CL	97	M	3					
KP	73	PACA	CL	94	F	4	50	PPL			
KP	73	PACA	CL	69	M	3					
KP	73	PACA	CL	91	F	3.5	50	PPL			
KP	73	PACA	CL	96	F	3	50	BRN			
KP	73	PACA	CL	98	M	3					
KP	73	PACA	CL	98	F	3	50	PPL			
KP	73	PACA	CL	78	F	3	0				
KP	73	PACA	CL	82	M	3					
KP	73	PACA	CL	74	M	3					
KP	73	PACA	CL	87	F	3	50	BRN			
KP	73	PACA	CL	96	M	3.5					
KP	73	PACA	CL	85	F	3.5	50	PPL			
KP	73	PACA	CL	93	F	3.5	50	BRN			
KP	73	PACA	CL	107	F	3	50	BRN			
KP	73	PACA	CL	98	F	3.5	50	BRN			
KP	73	PACA	CL	95	M	3					
KP	73	PACA	CL	99	F	3.5	25	BRN			
KP	73	PACA	CL	107	F	3.5	50	BRN			
KP	73	PACA	CL	98	F	3.5	50	PPL			
KP	73	CHBA	CL	78	F	4	75	ORG			
KP	73	CHBA	CL	70	M	3					
KP	73	PACA	CL	129	M	3.5			80814	M	
KP	73	PACA	CL	120	M	3			3640	R	
KP	73								80823		RETAG ON RECAP.,SEE 03640
KP	73	PACA	CL	135	M	3			80813	M	
KP	73	PACA	CL	127	M	3.5			80827	M	
KP	73	PACA	CL	118	M	3.5			80817	M	
KP	73	PACA	CL	124	M	5			80826	M	
KP	73	PACA	CL	115	M	3.5			80809	M	
KP	73	PACA	CL	116	M	3			80819	M	
KP	73	PACA	CL	123	M	4			80811	M	
KP	73	PACA	CL	119	M	4			80838	M	
KP	73	PACA	CL	131	M	4			3628	R	
KP	73								80816		RETAG ON RECAP., SEE 03628
KP	73	PACA	CL	120	M	4			80832	M	
KP	73	PACA	CL	126	M	3			80818	M	
KP	73	PACA	CL	124	M	3			80812	M	
KP	73	PACA	CL	117	M	3			80830	M	
KP	73	PACA	CL	137	M	3.5			80824	M	
KP	73	PACA	CL	120	M	3.5			80829	M	
KP	73	PACA	CL	129	M	3.5			80825	M	
KP	73	PACA	CL	119	M	3			80822	M	
KP	73	PACA	CL	123	M	3			80821	M	
KP	73	PACA	CL	125	M	4			80818	M	
KP	73	PACA	CL	132	M	3.5			80831	M	
KP	73	PACA	CL	125	M	3			80852	M	
KP	73	PACA	CL	121	M	4			80851	M	
KP	73	PACA	CL	109	M	3			80835	M	
KP	73	PACA	CL	130	M	3			80840	M	
KP	73	PACA	CL	112	M	4			80850	M	
KP	73	PACA	CL	130	M	3.5			80841	M	
KP	73	PACA	CL	127	M	3			80854	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	73	PACA	CL	121	M	3.5			80836	M	
KP	73	PACA	CL	106	M	3			80845	M	
KP	73	PACA	CL	126	M	4			80833	M	
KP	73	PACA	CL	125	M	3.5			80839	M	
KP	73	PACA	CL	121	M	3			80844	M	
KP	73	PACA	CL	117	M	4			80831	M	
KP	73	PACA	CL	113	M	4			80843	M	
KP	73	PACA	CL	116	M	3.5			80842	M	
KP	73	PACA	CL	115	M	4			80837	M	
KP	73	PACA	CL	114	M	3.5			80834	M	
KP	73	PACA	CL	113	M	3.5			80853	M	
KP	73	PACA	CL	130	M	3			80841	M	
KP	74	PACA	CL	123	M	3			3268	M	
KP	74	PACA	CL	124	M	3			3269	M	
KP	74	PACA	CL	114	M	3			3267	M	
KP	74	PACA	CL	123	M	4			3270	M	
KP	74	PACA	CL	124	M	3			3654	M	
KP	74	PACA	CL	113	M	3			3655	M	
KP	74	PACA	CL	117	M	3			3656	M	
KP	74	PACA	CL	121	M	3			3657	M	
KP	74	PACA	CL	121	M	3			3658	M	
KP	74	PACA	CL	125	M	4			3660	M	
KP	74	PACA	CL	126	M	3			3661	M	
KP	74	PACA	CL	116	M	3			3662	M	
KP	74	PACA	CL	124	M	4			3663	M	
KP	74	PACA	CL	129	M	3			3664	M	
KP	74	PACA	CL	126	M	3			3665	M	
KP	74	PACA	CL	124	M	3			3666	M	
KP	74	PACA	CL	125	M	3			3667	M	
KP	74	PACA	CL	111	M	3			3668	M	
KP	74	PACA	CL	114	M	3			3669	M	
KP	74	PACA	CL	125	M	4			3670	M	
KP	74	PACA	CL	118	M	3			3671	M	
KP	74	PACA	CL	133	M	3			3672	M	
KP	74	PACA	CL	91	M	3			3673	M	
KP	74	PACA	CL	91	M	2			3674	M	
KP	74	PACA	CL	127	M	3			3675	M	
KP	74	PACA	CL	124	M	4			3676	M	
KP	74	PACA	CL	120	M	3			3677	M	
KP	74	PACA	CL	125	M	4			3678	M	
KP	74	PACA	CL	114	M	3			3679	M	
KP	74	PACA	CL	130	M	3			3680	M	
KP	74	PACA	CL	120	M	3			3681	M	
KP	74	PACA	CL	115	M	3			3682	M	
KP	74	PACA	CL	117	M	3			3683	M	
KP	74	PACA	CL	123	M	3			3684	M	
KP	74	PACA	CL	120	M	4			3685	M	
KP	74	PACA	CL	126	M	3			3271	M	
KP	74	PACA	CL	130	M	2			3272	M	
KP	74	PACA	CL	126	M	4			3273	M	
KP	74	PACA	CL	134	M	4			3274	M	
KP	74	PACA	CL	128	M	3			3275	M	
KP	74	PACA	CL	113	M	3			3276	M	
KP	74	PACA	CL	124	M	3			3277	M	
KP	74	PACA	CL	121	M	3			3278	M	
KP	74	PACA	CL	130	M	3			3279	M	
KP	74	PACA	CL	109	M	3			3280	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	74	PACA	CL	121	M	3			3281	M	
KP	74	PACA	CL	124	M	3			3282	M	
KP	74	PACA	CL	126	M	3			3283	M	
KP	74	PACA	CL	124	M	3			3284	M	
KP	74	PACA	CL	124	M	3			3285	M	
KP	74	PACA	CL	118	M	3			3286	M	
KP	74	PACA	CL	129	M	3			3287	M	
KP	74	PACA	CL	122	M	3			3288	M	
KP	74	PACA	CL	126	M	3			3289	M	
KP	74	PACA	CL	128	M	4			3290	M	
KP	74	PACA	CL	147	M	3			3291	M	
KP	74	PACA	CL	128	M	3			3292	M	
KP	74	PACA	CL	134	M	3			3293	M	
KP	74	PACA	CL	122	M	3			3294	M	
KP	74	PACA	CL	113	M	4			3295	M	
KP	74	PACA	CL	122	M	4			3296	M	
KP	74	PACA	CL	125	M	3			3297	M	
KP	74	PACA	CL	120	M	3			3298	M	
KP	74	PACA	CL	124	M	3			3651	M	
KP	74	PACA	CL	114	M	3			3652	M	
KP	74	PACA	CL	118	M	3			3653	M	
KP	74	PACA	CL	131	M	3			3686	M	
KP	74	PACA	CL	130	M	3			3687	M	
KP	74	PACA	CL	129	M	3			3688	M	
KP	74	PACA	CL	128	M	3			3689	M	
KP	74	PACA	CL	130	M	3			3690	M	
KP	74	PACA	CL	131	M	3			3691	M	
KP	74	PACA	CL	111	M	3			3692	M	
KP	74	PACA	CL	116	M	4			3693	M	
KP	74	CHBA	CL	110	M	2					
KP	75	PACA	CL	108	M	3					
KP	75	PACA	CL	105	F	3	0				
KP	75	PACA	CL	105	M	3					
KP	75	PACA	CL	108	M	3.5					
KP	75	PACA	CL	110	F	3	50	BRN			
KP	75	PACA	CL	102	M	3					
KP	75	PACA	CL	83	M	4					
KP	75	PACA	CL	88	F	3	50	BRN			
KP	75	PACA	CL	95	F	3	50	PPL			
KP	75	PACA	CL	107	M	3.5			3633	R	
KP	75	PACA	CL	97	M	3					
KP	75	PACA	CL	108	M	3					
KP	75	PACA	CL	90	F	3	0				
KP	75	PACA	CL	107	F	3	50	PPL			
KP	75	PACA	CL	101	F	3	50	PPL			
KP	75	PACA	CL	115	F	3	50	BRN			
KP	75	PACA	CL	105	F	3	50	BRN			
KP	75	PACA	CL	116	F	3	50	B/P			
KP	75	PACA	CL	91	M	3					
KP	75	PACA	CL	105	F	3	75	PPL			
KP	75	PACA	CL	100	F	3.5	50	BRN			
KP	75	PACA	CL	103	M	3.5					
KP	75	PACA	CL	112	M	3.5					
KP	75	PACA	CL	103	M	3.5					
KP	75	PACA	CL	102	F	3	75	PPL			
KP	75	PACA	CL	110	M	3					
KP	75	PACA	CL	88	M	3					

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	75	PACA	CL	95	M	3					
KP	75	PACA	CL	109	M	3					
KP	75	PACA	CL	111	M	4					
KP	75	PACA	CL	102	M	4					
KP	75	PACA	CL	100	F	3	50	PPL			
KP	75	PACA	CL	92	F	3	50	BRN			
KP	75	PACA	CL	102	M	3					
KP	75	PACA	CL	123	M	3			80857	M	
KP	75	PACA	CL	125	M	3			80847	M	
KP	75	PACA	CL	117	M	3			80861	M	
KP	75	PACA	CL	120	M	3.5			80856	M	
KP	75	PACA	CL	115	M	3.5			80860	M	
KP	75	PACA	CL	130	M	3.5			80848	M	
KP	75	PACA	CL	122	M	4			80858	M	
KP	75	PACA	CL	131	M	4			80862	M	
KP	75	PACA	CL	119	M	4			80855	M	
KP	75	PACA	CL	111	M	3			80865	M	
KP	75	PACA	CL	120	M	3			80868	M	
KP	75	PACA	CL	138	M	3			80884	M	
KP	75	PACA	CL	131	M	3.5			80897	M	
KP	75	PACA	CL	124	M	3.5			80863	M	
KP	75	PACA	CL	132	M	3			80876	M	
KP	75	PACA	CL	115	M	3			80890	M	
KP	75	PACA	CL	132	M	3			80892	M	
KP	75	PACA	CL	120	M	3			80880	M	
KP	75	PACA	CL	137	M	3			80895	M	
KP	75	PACA	CL	117	M	3			80889	M	
KP	75	PACA	CL	135	M	4			80888	M	
KP	75	PACA	CL	113	M	3.5			80898	M	
KP	75	PACA	CL	126	M	3			80881	M	
KP	75	PACA	CL	125	M	3.5			80877	M	
KP	75	PACA	CL	132	M	4			80873	M	
KP	75	PACA	CL	124	M	4			80887	M	
KP	75	PACA	CL	127	M	3			80883	M	
KP	75	PACA	CL	122	M	4			80870	M	
KP	75	PACA	CL	122	M	3.5			80867	M	
KP	75	PACA	CL	113	M	3.5			3262	R	
KP	75								80822		RETAG ON RECAP., SEE 03262
KP	75	PACA	CL	123	M	4			80875	M	
KP	75	PACA	CL	118	M	4			80891	M	
KP	75	PACA	CL	115	M	3.5			80893	M	
KP	75	PACA	CL	115	M	3			80869	M	
KP	75	PACA	CL	126	M	3			80894	M	
KP	75	PACA	CL	122	M	3.5			80879	M	
KP	75	PACA	CL	135	M	3			80885	M	
KP	75	PACA	CL	122	M	3.5			3288	R	
KP	75								80872		RETAG ON RECAP., SEE 03288
KP	75	PACA	CL	122	M	3			80871	M	
KP	75	PACA	CL	124	M	4			80846	M	
KP	75	PACA	CL	126	M	3.5			80896	M	
KP	75	PACA	CL	117	M	3			80874	M	
KP	75	PACA	CL	114	M	4			80878	M	
KP	75	PACA	CL	120	M	4			80859	M	
KP	75	PACA	CL	112	M	3			80886	M	
KP	75	PACA	CL	119	M	3			80864	M	
KP	75	PACA	CL	119	M	4			80866	M	
KP	75	PACA	CL	130	M	3			80906	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	75	PACA	CL	116	M	4			80904	M	
KP	75	PACA	CL	122	M	3			80905	M	
KP	75	PACA	CL	132	M	3			80901	M	
KP	75	PACA	CL	112	M	3			80923	M	
KP	75	PACA	CL	115	M	4			80910	M	
KP	75	PACA	CL	122	M	3.5			80916	M	
KP	75	PACA	CL	121	M	3			80919	M	
KP	75	PACA	CL	125	M	4			80911	M	
KP	75	PACA	CL	111	M	4			3295	R	
KP	75								80921		RETAG ON RECAP., SEE 03295
KP	75	PACA	CL	123	M	4			80918	M	
KP	75	PACA	CL	119	M	3			80916	M	
KP	75	PACA	CL	125	M	3.5			80899	M	
KP	75	PACA	CL	123	M	3.5			80920	M	
KP	75	PACA	CL	131	M	3			80909	M	
KP	75	PACA	CL	128	M	4			80915	M	
KP	75	PACA	CL	111	M	3			80937	M	
KP	75	PACA	CL	133	M	3			3630	R	
KP	75								80908		RETAG ON RECAP., SEE 03630
KP	75	PACA	CL	133	M	3.5			80926	M	
KP	75	PACA	CL	131	M	3.5			80902	M	
KP	75	PACA	CL	124	M	3			80924	M	
KP	75	PACA	CL	119	M	3			80903	M	
KP	75	PACA	CL	112	M	3.5			80925	M	
KP	75	PACA	CL	125	M	3			80907	M	
KP	75	PACA	CL	117	M	3			80912	M	
KP	75	PACA	CL	118	M	3.5			80913	M	
KP	75	PACA	CL	120	M	3			80900	M	
KP	76	PACA	CL	127	M	3			3695	M	
KP	76	PACA	CL	119	M	3			3694	M	
KP	76	PACA	CL	119	M	3			3696	M	
KP	76	PACA	CL	123	M	3			3697	M	
KP	76	PACA	CL	130	M	3			3698	M	
KP	76	PACA	CL	110	F	2	50	O/B	3699	M	
KP	76	PACA	CL	115	M	4			3700	M	
KP	76	PACA	CL	136	M	3			3601	M	
KP	76	PACA	CL	128	M	4			3602	M	
KP	76	PACA	CL	125	M	3			3603	M	
KP	76	PACA	CL	117	M	3			3604	M	
KP	76	PACA	CL	119	M	3			3605	M	
KP	76	PACA	CL	123	M	3			3606	M	
KP	76	PACA	CL	137	M	3			3607	M	
KP	76	PACA	CL	137	M	3			3608	M	
KP	76	PACA	CL	125	M	3			3609	M	
KP	76	PACA	CL	131	M	3			3610	M	
KP	76	PACA	CL	127	M	3			3611	M	
KP	76	PACA	CL	133	M	3			3612	M	
KP	76	PACA	CL	130	M	3			3613	M	
KP	76	PACA	CL	121	M	3			3614	M	
KP	76	PACA	CL	130	M	3			3615	M	
KP	76	PACA	CL	132	M	3			3616	M	
KP	76	PACA	CL	132	M	3			3617	M	
KP	76	PACA	CL	130	M	3			3618	M	
KP	76	PACA	CL	119	M	3			3619	M	
KP	76	PACA	CL	123	M	4			3620	M	
KP	76	PACA	CL	120	M	3			3621	M	
KP	76	PACA	CL	120	M	3			3622	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	76	PACA	CL	123	M	3			3623	M	
KP	76	PACA	CL	133	M	3			3624	M	
KP	76	PACA	CL	132	M	3			3625	M	
KP	76	PACA	CL	128	M	3			3626	M	
KP	76	PACA	CL	114	M	3			3627	M	
KP	76	PACA	CL	130	M	4			3628	M	
KP	76	PACA	CL	122	M	3			3629	M	
KP	76	PACA	CL	132	M	3			3630	M	
KP	76	PACA	CL	136	M	3			3631	M	
KP	76	PACA	CL	121	M	3			3632	M	
KP	76	PACA	CL	106	M	3			3633	M	
KP	76	PACA	CL	136	M	3			3634	M	
KP	76	PACA	CL	124	M	3			3635	M	
KP	76	PACA	CL	91	M	4			3636	M	
KP	76	PACA	CL	122	M	3			3637	M	
KP	76	PACA	CL	130	M	3			3638	M	
KP	76	PACA	CL	128	M	3			3639	M	
KP	76	PACA	CL	120	M	3			3640	M	
KP	76	PACA	CL	126	M	4			3641	M	
KP	76	PACA	CL	121	M	3			3642	M	
KP	76	PACA	CL	131	M	3			3643	M	
KP	77	CHBA	CL	65	M	3					
KP	77	PACA	CL	108	M	3					
KP	77	PACA	CL	136	M	3.5			80940	M	
KP	77	PACA	CL	137	M	3			80933	M	
KP	77	PACA	CL	132	M	3			80943	M	
KP	77	PACA	CL	124	M	3			80942	M	
KP	77	PACA	CL	127	M	4			80937	M	
KP	77	PACA	CL	115	M	4			80928	M	
KP	77	PACA	CL	126	M	3			80937	M	
KP	77	PACA	CL	126	M	3			80925	M	
KP	77	PACA	CL	113	M	3.5			80938	M	
KP	77	PACA	CL	123	M	3.5			80929	M	
KP	77	PACA	CL	139	M	3			80945	M	
KP	77	PACA	CL	135	M	3			80932	M	
KP	77	PACA	CL	121	M	4			80944	M	
KP	77	PACA	CL	129	M	3.5			8XXX	M	
KP	77	PACA	CL	130	M	3.5			8XXX	M	
KP	77	PACA	CL	113	M	4			80922	M	
KP	77	PACA	CL	130	M	3.5			80936	M	
KP	77	PACA	CL	133	M	4			80931	M	
KP	77	PACA	CL	133	M	4			80941	M	
KP	77	PACA	CL	124	M	4			80959	M	
KP	77	PACA	CL	118	M	3			80914	M	
KP	77	PACA	CL	119	M	4			80930	M	
KP	77	PACA	CL	134	M	3			80956	M	
KP	77	PACA	CL	118	M	4			80948	M	
KP	77	PACA	CL	131	M	4			80933	M	
KP	77	PACA	CL	122	M	3.5			80952	M	
KP	77	PACA	CL	134	M	3			80966	M	
KP	77	PACA	CL	137	M	3.5			80964	M	
KP	77	PACA	CL	118	M	3.5			80967	M	
KP	77	PACA	CL	126	M	3			80926	M	
KP	77	PACA	CL	121	M	3.5			80949	M	
KP	77	PACA	CL	125	M	4			80950	M	
KP	77	PACA	CL	116	M	4			80951	M	
KP	77	PACA	CL	128	M	3			80955	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	77	PACA	CL	120	M	4			80954	M	
KP	78	PACA	CL	117	M	3			3646	M	
KP	78	PACA	CL	137	M	3			3645	M	
KP	78	PACA	CL	126	M	3			3647	M	
KP	78	PACA	CL	124	M	3			3745	M	
KP	78	PACA	CL	116	M	3			3746	M	
KP	78	PACA	CL	89	F	4	50	BRN	3650	M	
KP	78	PACA	CL	115	M	3			3747	M	
KP	78	PACA	CL	94	M	3			3744	M	
KP	78	PACA	CL	119	M	3			3648	M	
KP	78	PACA	CL	117	M	3			3644	M	
KP	78	PACA	CL	117	M	3			3749	M	
KP	79	PACA	CL	99	M	3			3743	M	
KP	79	PACA	CL	97	F	2	50	PPL	3741	M	
KP	79	PACA	CL	89	M	3			3738	M	
KP	79	PACA	CL	104	F	2	50	PPL	3736	M	
KP	79	PACA	CL	108	M	2			3733	M	
KP	79	PACA	CL	90	F	2	50	PPL	3731	M	
KP	79	PACA	CL	93	F	2	50	P/B	3728	M	
KP	79	PACA	CL	95	F	3	50	BRN	3726	M	
KP	79	PACA	CL	102	F	2	75	PPL	3722	M	
KP	79	PACA	CL	93	F	2	50	B/P	3716	M	
KP	79	PACA	CL	106	F	2	75	BRN	3712	M	
KP	79	PACA	CL	107	F	2	50	PPL	3713	M	
KP	79	PACA	CL	98	F	2	25	BRN	3706	M	
KP	79	PACA	CL	141	M	3			3715	M	
KP	79	PACA	CL	109	F	2	50	B/P	3701	M	
KP	79	PACA	CL	96	F	2	50	B/P	3709	M	
KP	79	PACA	CL	98	F	3	50	BRN	3353	M	
KP	79	PACA	CL	120	F	2	50	BRN	3357	M	
KP	79	PACA	CL	126	M	3			3704	M	
KP	79	PACA	CL	88	F	2	75	BRN	3362	M	
KP	79	PACA	CL	101	F	2	50	BRN	3368	M	
KP	79	PACA	CL	105	F	2	50	BRN	3372	M	
KP	79	PACA	CL	117	F	2	75	BRN	3373	M	
KP	79	PACA	CL	110	F	2	50	BRN	3369	M	
KP	79	PACA	CL	102	F	2	75	B/P	3380	M	
KP	79	PACA	CL	114	F	2	50	B/P	3377	M	
KP	79	PACA	CL	90	F	3	50	BRN	3386	M	
KP	79	PACA	CL	101	F	2	50	O/B	3384	M	
KP	79	PACA	CL	114	F	2	50	B/P	3400	M	
KP	79	PACA	CL	119	F	2	25	O/B	3399	M	
KP	79	PACA	CL	98	F	2	75	BRN	3397	M	
KP	79	PACA	CL	68	M	3			3349	M	
KP	79	PACA	CL	98	F	3	50	PPL	3370	M	
KP	79	PACA	CL	101	F	2	50	B/P	3396	M	
KP	79	PACA	CL	66	F	3	0		3376	M	
KP	79	PACA	CL	107	F	2	50	PPL	3378	M	
KP	79	PACA	CL	110	F	3	75	PPL	3370	M	
KP	79	PACA	CL	80	F	4	0		3350	M	
KP	79	PACA	CL	94	F	3	75	BRN	3707	M	
KP	79	PACA	CL	81	F	3	0		3395	M	
KP	79	PACA	CL	109	F	3	50	BRN	3730	M	
KP	79	PACA	CL	106	F	2	50	PPL	3390	M	
KP	79	PACA	CL	110	F	4	75	BRN	3371	M	
KP	79	PACA	CL	100	F	2	50	BRN	3358	M	
KP	79	PACA	CL	80	F	3	0		3393	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	79	PACA	CL	97	F	3	50	O/B	3394	M	
KP	79	PACA	CL	98	F	3	75	PPL	3725	M	
KP	79	PACA	CL	100	F	2	75	PPL	3392	M	
KP	79	PACA	CL	106	F	3	50	BRN	3739	M	
KP	79	PACA	CL	108	F	2	50	BRN	3388	M	
KP	79	PACA	CL	101	F	3	75	BRN	3381	M	
KP	79	PACA	CL	96	F	4	50	BRN	3391	M	
KP	79	PACA	CL	68	M	3			3708	M	
KP	79	PACA	CL	98	F	2	75	BRN	3389	M	
KP	79	PACA	CL	101	F		50	BRN	3365	M	
KP	79	PACA	CL	100	F	2	50	PPL	3387	M	
KP	79	PACA	CL	102	F	3	50	BRN	3735	M	
KP	79	PACA	CL	89	F	3	50	BRN	3359	M	
KP	79	PACA	CL	107	F	3	50	O/B	3705	M	
KP	79	PACA	CL	119	F	2	50	B/P	3385	M	
KP	79	PACA	CL	95	F	3	25	BRN	3382	M	
KP	79	PACA	CL	98	F	2	50	BRN	3366	M	
KP	79	PACA	CL	125	M	3			3724	M	
KP	79	PACA	CL	88	F	4	16	NA	3361	M	
KP	79	PACA	CL	103	F	3	50	PPL	3721	M	
KP	79	PACA	CL	114	F	2	50	BRN	3364	M	
KP	79	PACA	CL	106	F	3	50	DBR	3352	M	
KP	79	PACA	CL	83	F	2	0		3742	M	
KP	79	PACA	CL	103	F	3	75	BRN	3367	M	
KP	79	PACA	CL	92	F	2	50	PPL	3363	M	
KP	79	PACA	CL	117	F	1	25	PPL	3714	M	
KP	79	PACA	CL	102	F	2	25	PPL	3720	M	
KP	79	PACA	CL	72	M	3			3703	M	
KP	79	PACA	CL	88	F	3	0		3355	M	
KP	79	PACA	CL	55	F	2	0		3354	M	
KP	79	PACA	CL	97	F	3	75	BRN	3732	M	
KP	79	PACA	CL	95	F	3	50	BRN	3379	M	
KP	79	PACA	CL	96	M	3			3737	M	
KP	79	PACA	CL	104	F	3	50	B/P	3360	M	
KP	79	PACA	CL	126	M	3			3723	M	
KP	79	PACA	CL	108	F	3	50	PPL	3383	M	
KP	79	PACA	CL	115	M	3			3740	M	
KP	79	PACA	CL	110	F	3	50	BRN	3734	M	
KP	79	PACA	CL	72	M	3			3356	M	
KP	79	PACA	CL	111	F	3	50	BRN	3727	M	
KP	79	PACA	CL	107	F	2	75	BRN	3711	M	
KP	79	PACA	CL	106	F	3	75	BRN	3374	M	
KP	79	PACA	CL	95	F	3	50	B/P	3398	M	
KP	79	PACA	CL	72	M	3			3729	M	
KP	79	PACA	CL	104	F	2	50	PPL	3702	M	
KP	79	PACA	CL	100	F	3	50	O/B	3708	M	
KP	79	PACA	CL	102	F	2	50	O/B	3719	M	
KP	80	PACA	CL	132	M	4			80955	M	
KP	80	PACA	CL	113	M	4			80960	M	
KP	80	PACA	CL	112	M	3.5			80963	M	
KP	80	PACA	CL	99	F	3	50	PPL			
KP	80	PACA	CL	113	F	3	75	PPL			
KP	80	PACA	CL	110	F	3.5	50	PPL			
KP	80	PACA	CL	97	F	3	75	B/P			
KP	80	PACA	CL	88	F	4	50	BRN			
KP	80	PACA	CL	111	F	3.5	50	BRN			
KP	80	PACA	CL	104	F	3	50	PPL			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	80	PACA	CL	79	M	3					
KP	80	PACA	CL	96	F	3	50	PPL			
KP	80	PACA	CL	104	F	3	50	B/P			
KP	80	PACA	CL	85	M	3					
KP	80	PACA	CL	103	F	3.5	50	BRN			
KP	80	PACA	CL	95	F	3	50	BRN			
KP	80	PACA	CL	115	F	3	50	BRN			
KP	80	PACA	CL	107	F	3	50	BRN			
KP	80	PACA	CL	123	F	3	50	BRN			
KP	80	PACA	CL	103	F	3	50	PPL			
KP	80	PACA	CL	102	F	3	50	BRN			
KP	80	PACA	CL	103	F	3	50	BRN			
KP	80	PACA	CL	96	F	3	75	BRN			
KP	80	PACA	CL	107	F	3	50	PPL			
KP	80	PACA	CL	115	F	3	50	BRN			
KP	80	PACA	CL	113	F	3	50	PPL			
KP	80	PACA	CL	101	F	3	50	PPL			
KP	80	PACA	CL	101	F	3	75	BRN			
KP	80	PACA	CL	104	F	3	50	BRN			
KP	80	PACA	CL	111	F	3	50	PPL			
KP	80	PACA	CL	103	F	3	75	PPL	3702	R	
KP	80	PACA	CL	96	F	3	50	PPL			
KP	80	PACA	CL	119	F	3	50	BRN			
KP	80	PACA	CL	106	F	3	50	PPL			
KP	80	PACA	CL	101	F	3	75	PPL			
KP	80	PACA	CL	102	F	3	50	BRN			
KP	80	PACA	CL	95	F	3	50	BRN			
KP	80	PACA	CL	100	F	3	50	PPL			
KP	80	PACA	CL	96	F	3	50	BRN			
KP	80	PACA	CL	102	F	3	50	BRN			
KP	80	PACA	CL	106	F	3	75	PPL			
KP	80	PACA	CL	103	F	3	75	PPL			
KP	80	PACA	CL	102	F	3	75	BRN			
KP	80	PACA	CL	104	F	3	50	BRN			
KP	81	PACA	CL	117	F	3	50	BRN			
KP	81	PACA	CL	102	F	2	50	PPL			
KP	81	PACA	CL	102	F	2	50	PPL			
KP	81	PACA	CL	103	F	2	25	BRN			
KP	81	PACA	CL	99	F	2	50	PPL			
KP	81	PACA	CL	102	F	3	50	BRN			
KP	81	PACA	CL	106	F	3	50	BRN			
KP	81	PACA	CL	109	F	2	25	BRN			
KP	81	PACA	CL	96	F	2	50	BRN			
KP	81	PACA	CL	97	F	2	50	PPL			
KP	81	PACA	CL	101	F	3	50	BRN			
KP	81	PACA	CL	110	F	3	25	BRN			
KP	81	PACA	CL	95	F	2	50	BRN			
KP	81	PACA	CL	106	F	2	25	BRN			
KP	81	PACA	CL	104	F	2	50	BRN			
KP	81	PACA	CL	127	F	3	25	BRN			
KP	81	PACA	CL	102	F	3	50	PPL			
KP	81	PACA	CL	101	F	3	50	BRN			
KP	81	PACA	CL	101	F	2	75	PPL			
KP	81	PACA	CL	103	F	3	75	B/P			
KP	81	PACA	CL	108	F	2	50	BRN			
KP	81	PACA	CL	98	F	2	25	BRN			
KP	81	PACA	CL	96	F	2	50	PPL			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	81	PACA	CL	106	F	2	50	BRN			
KP	81	PACA	CL	105	F	3	25	BRN			
KP	81	PACA	CL	103	F	3	25	BRN			
KP	81	PACA	CL	87	F	3	0				
KP	81	PACA	CL	103	F	2	25	BRN			
KP	81	PACA	CL	94	F	2	25	PPL			
KP	81	PACA	CL	113	F	3	25	B/P			
KP	81	PACA	CL	88	F	3.5	50	BRN			
KP	81	PACA	CL	109	F	2	50	BRN			
KP	81	PACA	CL	108	F	3	50	BRN			
KP	81	PACA	CL	112	F	3	50	BRN			
KP	81	PACA	CL	106	F	2	50	BRN			
KP	81	PACA	CL	98	M	3					
KP	81	PACA	CL	107	F	3	50	ORG			
KP	81	PACA	CL	101	F	2	50	PPL			
KP	81	PACA	CL	102	F	2	50	BRN			
KP	81	PACA	CL	87	F	3	25	BRN			
KP	81	PACA	CL	99	F	2	75	PPL			
KP	82	PACA	CL	99	F	3	50	BRN	REDTAG	M	
KP	82	PACA	CL	92	F	2	25	PPL	REDTAG	M	
KP	82	PACA	CL	118	F	3	25	PPL	REDTAG	M	
KP	82	PACA	CL	98	F	3	50	PPL	REDTAG	M	
KP	83	PACA	CL	125	F	3	50	BRN	REDTAG	M	
KP	84	PACA	CL	117	F	3	25	BRN	3995	M	
KP	84	PACA	CL	107	F	3	50	BRN	4000	M	
KP	84	PACA	CL	97	F	3	50	PPL	3999	M	
KP	84	PACA	CL	112	F	3	50	PPL	REDTAG	M	
KP	84	PACA	CL	113	F	3	50	B/P	REDTAG	M	
KP	84	PACA	CL	113	F	2	50	PPL	REDTAG	M	
KP	84	PACA	CL	117	F	3	50	BRN	REDTAG	M	
KP	84	PACA	CL	109	F	3	50	BRN	REDTAG	M	
KP	84	PACA	CL	105	F	2.5	50	BRN	3992	M	
KP	84	PACA	CL	98	F	2	50	PPL	REDTAG	M	
KP	84	PACA	CL	105	F	2.5	50	PPL	3986	M	
KP	84	PACA	CL	97	F	2	50	BRN	REDTAG	M	
KP	84	PACA	CL	99	F	3	75	BRN	REDTAG	M	
KP	84	PACA	CL	104	F	3	50	BRN	3997	M	
KP	84	PACA	CL	105	F	2	50	BRN	REDTAG	M	
KP	84	PACA	CL	100	F	2	50	BRN	REDTAG	M	
KP	84	PACA	CL	103	F	3	50	PPL	REDTAG	M	
KP	84	PACA	CL	101	F	2	50	BRN	3990	M	
KP	84	PACA	CL	100	F	3	50	DBR	REDTAG	M	
KP	84	PACA	CL	94	F	3	75	PPL	REDTAG	M	
KP	84	PACA	CL	94	F	3	50	BRN	3994	M	
KP	84	PACA	CL	107	F	2	50	BRN	REDTAG	M	
KP	84	PACA	CL	104	F	3	25	BRN	3993	M	
KP	84	PACA	CL	111	F	2	50	BRN	3991	M	
KP	84	PACA	CL	117	F	3	75	BRN	3985	M	
KP	84	PACA	CL	115	F	3	50	PPL	3998	M	
KP	84	PACA	CL	108	F	3	50	PPL	3984	M	
KP	84	PACA	CL	102	F	3	75	B/P	3983	M	
KP	84	PACA	CL	104	F	3	50	ORG	3981	M	
KP	84	PACA	CL	108	F	2	50	BRN	3982	M	
KP	84	PACA	CL	103	F	3	50	PPL	3977	M	
KP	84	PACA	CL	100	F	2	50	PPL	3988	M	
KP	84	PACA	CL	107	F	3	50	PPL	3979	M	
KP	84	PACA	CL	105	F	2	50	BRN	3989	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	84	PACA	CL	100	F	3	50	BRN	3987	M	
KP	84	PACA	CL	105	F	2	75	PPL	3980	M	
KP	84	PACA	CL	99	F	3	25	BRN	3974	M	
KP	84	PACA	CL	90	F	3	25	PPL	3996	M	
KP	84	PACA	CL	104	F	3	50	O/B	3973	M	
KP	84	PACA	CL	102	F	2	50	BRN	3978	M	
KP	84	PACA	CL	122	F	3	25	PPL	3970	M	
KP	84	PACA	CL	98	F	2	50	BRN	3975	M	
KP	84	PACA	CL	108	F	3	50	BRN	3971	M	
KP	84	PACA	CL	105	F	3	25	BRN	3976	M	
KP	84	PACA	CL	104	F	3	50	BRN	3969	M	
KP	84	PACA	CL	103	F	3	50	PPL	3972	M	
KP	85	PACA	CL	108	F	3	50	PPL			
KP	85	PACA	CL	97	F	3	75	LBR			
KP	85	PACA	CL	97	F	3	50	BRN			
KP	85	PACA	CL	100	F	3	50	PPL			
KP	85	PACA	CL	105	F	3	50	BRN			
KP	85	PACA	CL	104	F	3	0				
KP	85	PACA	CL	103	F	3	50	BRN			
KP	85	PACA	CL	115	F	3	50	BRN			
KP	85	PACA	CL	107	F	3	75	PPL			
KP	85	PACA	CL	102	F	3	50	LPP			
KP	85	PACA	CL	116	F	3	50	BRN			
KP	85	PACA	CL	104	F	3	75	DBR			
KP	86	PACA	CL	69	F	3	50	PPL	3325	M	
KP	86	PACA	CL	106	F	3	50	PPL	3323	M	
KP	86	PACA	CL	123	F	3	50	PPL	3321	M	
KP	86	PACA	CL	116	M	3			3320	M	
KP	86	PACA	CL	105	F	3	50	BRN	3315	M	
KP	86	PACA	CL	100	F	3	50	BRN	3310	M	
KP	86	PACA	CL	101	F	2	50	PPL	3304	M	
KP	86	PACA	CL	106	F	3	25	BRN	3302	M	
KP	86	PACA	CL	101	F	2	50	BRN	3301	M	
KP	86	PACA	CL	93	F	2	50	BRN	3303	M	
KP	86	PACA	CL	108	F	3	50	B/P	3953	M	
KP	86	PACA	CL	98	F	3	50	BRN	3957	M	
KP	86	PACA	CL	116	F	2	25	PPL	3962	M	
KP	86	PACA	CL	100	F	3	50	BRN	3967	M	
KP	86	PACA	CL	104	F	3	75	BRN	3964	M	
KP	86	PACA	CL	92	M	3			3966	M	
KP	86	PACA	CL	100	F	3	50	BRN	3965	M	
KP	86	PACA	CL	110	F	3	50	PPL	3954	M	
KP	86	PACA	CL	99	F	3	75	BRN	3959	M	
KP	86	PACA	CL	92	F	3	50	O/B	3955	M	
KP	86	PACA	CL	94	F	3	50	BRN	3960	M	
KP	86	PACA	CL	100	F	2	50	O/B	3952	M	
KP	86	PACA	CL	89	F	3	50	BRN	3956	M	
KP	86	PACA	CL	113	F	2	50	BRN	3951	M	
KP	86	PACA	CL	98	F	2.5	50	BRN	3961	M	
KP	86	PACA	CL	109	F	3	50	BRN	3307	M	
KP	86	PACA	CL	91	M	3			3309	M	
KP	86	PACA	CL	113	F	2	50	BRN	3305	M	
KP	86	PACA	CL	114	F	3	75	PPL	3313	M	
KP	86	PACA	CL	102	F	2	50	BRN	3312	M	
KP	86	PACA	CL	96	F	3	50	PPL	3963	M	
KP	86	PACA	CL	105	F	3	50	PPL	3314	M	
KP	86	PACA	CL	105	F	3	50	BRN	3322	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	86	PACA	CL	95	F	3	50	BRN	3319	M	
KP	86	PACA	CL	100	F	3	75	BRN	3316	M	
KP	86	PACA	CL	106	F	3	50	BRN	3968	M	
KP	86	PACA	CL	92	F	3	50	BRN	3308	M	
KP	86	PACA	CL	101	F	3	75	BRN	3318	M	
KP	86	PACA	CL	98	F	2	25	BRN	3311	M	
KP	86	PACA	CL	99	F	2.5	50	PPL	3324	M	
KP	87	PACA	CL	95	F	2	50	PPL	REDTAG	M	
KP	87	PACA	CL	97	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	127	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	109	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	89	F	3	50	BRN	REDTAG	M	
KP	87	PACA	CL	101	F	1	50	BRN	REDTAG	M	
KP	87	PACA	CL	102	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	98	F	3	50	BRN	REDTAG	M	
KP	87	PACA	CL	87	F	3	50	O/B	REDTAG	M	
KP	87	PACA	CL	99	F	1	50	PPL	REDTAG	M	
KP	87	PACA	CL	105	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	98	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	95	F	2	25	BRN	REDTAG	M	
KP	87	PACA	CL	103	F	2	50	B/P	REDTAG	M	
KP	87	PACA	CL	105	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	95	F	3	50	ORG	REDTAG	M	
KP	87	PACA	CL	103	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	103	F	3	50	ORG	REDTAG	M	
KP	87	PACA	CL	104	F	2	50	ORG	REDTAG	M	
KP	87	PACA	CL	96	F	3	25	ORG	REDTAG	M	
KP	87	PACA	CL	97	F	3	50	BRN	REDTAG	M	
KP	87	PACA	CL	115	F	3	50	PPL	REDTAG	M	
KP	87	PACA	CL	99	F	2	50	PPL	REDTAG	M	
KP	87	PACA	CL	118	M	3			REDTAG	M	
KP	87	PACA	CL	104	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	102	M	3			REDTAG	M	
KP	87	PACA	CL	111	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	67	M	3			REDTAG	M	
KP	87	PACA	CL	86	F	3	50	B/P	REDTAG	M	
KP	87	PACA	CL	101	F	3	50	PPL	REDTAG	M	
KP	87	PACA	CL	95	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	99	F	3	50	PPL	REDTAG	M	
KP	87	PACA	CL	97	F	2	25	PPL	REDTAG	M	
KP	87	PACA	CL	99	F	3	75	ORG	REDTAG	M	
KP	87	PACA	CL	117	F	2	25	B/P	REDTAG	M	
KP	87	PACA	CL	103	F	3	75	PPL	REDTAG	M	
KP	87	PACA	CL	104	F	2	50	PPL	REDTAG	M	
KP	87	PACA	CL	91	F	3	50	BRN	REDTAG	M	
KP	87	PACA	CL	105	F	2	50	PPL	REDTAG	M	
KP	87	PACA	CL	98	F	3	75	BRN	REDTAG	M	
KP	87	PACA	CL	114	F	2	50	PPL	REDTAG	M	
KP	87	PACA	CL	97	F	2	50	ORG	REDTAG	M	
KP	87	PACA	CL	98	F	3	50	BRN	REDTAG	M	
KP	87	PACA	CL	104	F	3	75	ORG	REDTAG	M	
KP	87	PACA	CL	91	F	3	50	BRN	REDTAG	M	
KP	87	PACA	CL	108	F	3	25	BRN	REDTAG	M	
KP	87	PACA	CL	90	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	102	F	3	50	BRN	REDTAG	M	
KP	87	PACA	CL	98	F	3	50	BRN	REDTAG	M	
KP	87	PACA	CL	108	F	2	25	BRN	REDTAG	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	87	PACA	CL	98	F	3	75	BRN	REDTAG	M	
KP	87	PACA	CL	99	F	3	50	PPL	REDTAG	M	
KP	87	PACA	CL	100	F	3	50	BRN	REDTAG	M	
KP	87	PACA	CL	120	F	3	25	BRN	REDTAG	M	
KP	87	PACA	CL	108	F	2	50	BRN	REDTAG	M	
KP	87	PACA	CL	98	F	2.5	50	ORG			
KP	87	PACA	CL	99	F	2	50	BRN			
KP	87	PACA	CL	104	F	3	50	ORG			
KP	87	PACA	CL	100	F	3	50	BRN			
KP	87	PACA	CL	105	F	3	50	PPL			
KP	87	PACA	CL	104	F	2	50	BRN			
KP	87	PACA	CL	103	F	2.5	25	PPL			
KP	87	PACA	CL	97	F	2	50	BRN			
KP	87	PACA	CL	101	F	2	75	PPL			
KP	87	PACA	CL	99	F	2	50	BRN			
KP	87	PACA	CL	101	F	3	75	BRN			
KP	87	PACA	CL	105	F	2	50	BRN			
KP	87	PACA	CL	101	F	3	50	BRN			
KP	87	PACA	CL	105	F	2	50	BRN			
KP	87	PACA	CL	99	F	2.5	50	PPL			
KP	87	PACA	CL	113	F	2	50	B/P			
KP	87	PACA	CL	99	F	3	50	BRN			
KP	87	PACA	CL	107	F	3	50	BRN			
KP	87	PACA	CL	100	F	3	75	BRN			
KP	87	PACA	CL	95	F	2	50	B/P			
KP	87	CHBA	CL	69	M						
KP	88	PACA	CL	99	F	2	50	BRN			
KP	88	PACA	CL	107	F	2	50	BRN			
KP	88	PACA	CL	94	M	3					
KP	88	PACA	CL	105	F	2	50	BRN			
KP	88	PACA	CL	107	F	3	50	BRN			
KP	88	PACA	CL	87	M	3.5					
KP	88	PACA	CL	103	F	3	50	PPL			
KP	88	PACA	CL	91	F	3	50	BRN			
KP	88	PACA	CL	78	F	3	0				
KP	88	PACA	CL	104	F	2	25	B/P			
KP	88	PACA	CL	109	F	2	25	BRN			
KP	88	PACA	CL	99	F	2	50	PPL			
KP	88	PACA	CL	101	F	2	50	BRN			
KP	88	PACA	CL	106	F	2	25	BRN			
KP	88	PACA	CL	109	F	2	25	PPL			
KP	88	PACA	CL	111	F	2	50	PPL			
KP	88	PACA	CL	69	M	3					
KP	88	PACA	CL	72	F	2	0				
KP	88	PACA	CL	72	F	2	0				
KP	88	PACA	CL	100	M	3					
KP	88	PACA	CL	99	F	3	16	B/P			
KP	88	PACA	CL	93	F	3	25	BRN			
KP	88	PACA	CL	123	M	3			80104	M	
KP	88	PACA	CL	66	M	2					
KP	88	PACA	CL	88	F	2	25	BRN			
KP	88	PACA	CL	76	F	3	0				
KP	88	PACA	CL	101	F	3	25	BRN			
KP	88	PACA	CL	72	F	3	0				
KP	88	PACA	CL	94	F	3	50	BRN			
KP	88	PACA	CL	101	F	2	50	BRN			
KP	88	PACA	CL	122	M	3			80098	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	88	PACA	CL	114	M	3			80105	M	
KP	88	PACA	CL	119	M	3			80111	M	
KP	88	PACA	CL	126	M	4			80106	M	
KP	88	PACA	CL	116	M	3			80110	M	
KP	88	PACA	CL	99	M	3					
KP	88	PACA	CL	105	F	2	50	PPL			
KP	88	PACA	CL	88	F	4	0				
KP	88	PACA	CL	91	F	3	50	BRN			
KP	88	PACA	CL	128	M	3			80108	M	
KP	88	PACA	CL	103	F	2	50	BRN			
KP	88	PACA	CL	109	M	3					
KP	88	PACA	CL	80	F	3.5	0				
KP	88	PACA	CL	93	M	3					
KP	88	PACA	CL	125	M	3.5			80097	M	
KP	88	PACA	CL	100	F	2	50	BRN			
KP	88	PACA	CL	87	F	3	0				
KP	88	PACA	CL	100	F	3	50	BRN			
KP	88	PACA	CL	98	F	2	50	PPL			
KP	88	PACA	CL	99	F	2	25	BRN			
KP	88	PACA	CL	126	M	3			80109	M	
KP	88	PACA	CL	103	F	2	50	PPL			
KP	88	PACA	CL	93	F	3.5	25	PPL			
KP	88	PACA	CL	104	F	3	50	BRN			
KP	88	PACA	CL	85	F	3	50	BRN			
KP	88	PACA	CL	101	F	2	50	BRN			
KP	88	PACA	CL	102	F	3	25	BRN			
KP	88	PACA	CL	84	F	3	0				
KP	88	PACA	CL	83	F	3	50	B/P			
KP	88	PACA	CL	102	F	2	25	PPL			
KP	88	PACA	CL	88	F	3	50	BRN			
KP	88	PACA	CL	103	F	2	50	BRN			
KP	88	PACA	CL	81	F	3	0				
KP	88	PACA	CL	110	F	2	25	PPL			
KP	89	PACA	CL	106	F	3	50	PPL			
KP	89	PACA	CL	105	F	3	50	PPL			
KP	89	PACA	CL	101	F	3	50	BRN			
KP	89	PACA	CL	101	F	3	75	PPL			
KP	89	PACA	CL	103	F	3	50	B/P			
KP	89	PACA	CL	100	F	3	50	B/P			
KP	89	PACA	CL	99	F	3	50	BRN			
KP	89	PACA	CL	103	F	3	50	BRN			
KP	89	PACA	CL	103	F	3.5	50	BRN			
KP	89	PACA	CL	102	F	3	50	PPL			
KP	89	PACA	CL	107	F	3	50	PPL			
KP	89	PACA	CL	104	F	3	50	PPL			
KP	89	PACA	CL	90	F	3	75	BRN			
KP	89	PACA	CL	104	F	3	50	BRN			
KP	89	PACA	CL	110	F	3	75	BRN			
KP	89	PACA	CL	94	F	3	75	B/P			
KP	89	PACA	CL	133	M	3.5			80958	M	
KP	90	PACA	CL	117	M	3			80959	M	
KP	90	PACA	CL	125	M	3			80968	M	
KP	90	PACA	CL	112	M	3			80969	M	
KP	90	PACA	CL	115	F	3	75	BRN			
KP	90	PACA	CL	109	F	3	50	PPL			
KP	90	PACA	CL	101	F	3	50	BRN			
KP	90	PACA	CL	111	F	3	75	PPL			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	90	PACA	CL	102	F	3	75	BRN			
KP	90	PACA	CL	97	F	3	50	BRN			
KP	90	PACA	CL	112	F	3	75	BRN			
KP	90	PACA	CL	112	F	3	75	BRN			
KP	90	PACA	CL	122	F	3	75	BRN			
KP	90	PACA	CL	87	F	3	75	BRN			
KP	90	PACA	CL	101	F	3	75	BRN			
KP	90	PACA	CL	101	F	3	75	BRN			
KP	90	PACA	CL	101	F	3	75	PPL			
KP	90	PACA	CL	107	F	3	50	BRN			
KP	90	PACA	CL	97	F	3	75	BRN			
KP	90	PACA	CL	128	F	3	75	PPL			
KP	90	PACA	CL	104	F	3	25	PPL			
KP	90	PACA	CL	96	F	3	50	O/B			
KP	90	PACA	CL	118	F	3	50	BRN			
KP	90	PACA	CL	99	F	3	50	BRN			
KP	90	PACA	CL	105	F	3	50	O/B			
KP	90	PACA	CL	104	F	3	50	BRN			
KP	90	PACA	CL	102	F	3	50	BRN			
KP	90	PACA	CL	115	F	3	50	BRN			
KP	90	PACA	CL	105	F	3	50	B/P			
KP	90	PACA	CL	96	F	3	50	BRN			
KP	90	PACA	CL	106	F	3.5	50	PPL			
KP	90	PACA	CL	97	F	3	50	PPL			
KP	90	PACA	CL	110	F	3	75	PPL			
KP	90	PACA	CL	101	F	3	75	BRN			
KP	90	PACA	CL	103	F	3	75	PPL	3736	R	
KP	90	PACA	CL	108	F	3	75	PPL			
KP	90	PACA	CL	106	F	3	50	PPL			
KP	90	PACA	CL	103	F	3	75	O/B			
KP	90	PACA	CL	104	F	3	75	LPP			
KP	90	PACA	CL	107	F	3	75	BRN			
KP	90	PACA	CL	99	F	3	50	LPP			
KP	90	PACA	CL	97	F	3	75	BRN			
KP	90	PACA	CL	110	F	3	50	PPL			
KP	90	PACA	CL	101	F	3	50	BRN			
KP	90	PACA	CL	103	F	3	75	PPL			
KP	90	PACA	CL	101	F	3	50	LBR			
KP	90	PACA	CL	96	F	3	50	DBR			
KP	90	PACA	CL	94	F	3	50	LBR			
KP	90	PACA	CL	104	F	3	50	BRN			
KP	90	PACA	CL	94	F	3	50	PPL			
KP	90	PACA	CL	106	F	3	50	BRN			
KP	90	PACA	CL	102	F	3	50	PPL			
KP	90	PACA	CL	105	F	3	50	PPL			
KP	90	PACA	CL	95	F	3	50	BRN			
KP	91	PACA	CL	90	F	3	50	BRN			
KP	91	PACA	CL	106	F	3	50	BRN			
KP	91	PACA	CL	111	F	3	50	BRN			
KP	91	PACA	CL	107	F	3.5	75	PPL			
KP	91	PACA	CL	99	F	3	75	BRN			
KP	91	PACA	CL	100	F	3	50	PPL			
KP	91	PACA	CL	103	F	3	50	PPL			
KP	91	PACA	CL	109	F	3.5	75	PPL			
KP	91	PACA	CL	103	F	3	50	BRN			
KP	91	PACA	CL	101	F	3	75	PPL			
KP	91	PACA	CL	98	F	3	75	BRN			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	91	PACA	CL	107	F	2.5	50	PPL			
KP	91	PACA	CL	100	F	3	50	BRN			
KP	91	PACA	CL	109	F	3	50	LPP			
KP	91	PACA	CL	97	F	3	75	BRN			
KP	91	PACA	CL	102	F	3	50	LPP			
KP	91	PACA	CL	96	F	3	75	BRN			
KP	91	PACA	CL	110	F	3	75	BRN			
KP	91	PACA	CL	101	F	3	75	PPL			
KP	91	PACA	CL	98	F	3	75	BRN			
KP	91	PACA	CL	97	F	3	50	PPL			
KP	91	PACA	CL	98	F	3	75	LBR			
KP	91	PACA	CL	114	F	3	75	LPP			
KP	91	PACA	CL	91	F	3	75	PPL			
KP	91	PACA	CL	106	F	3	50	LPP			
KP	91	PACA	CL	99	F	3	50	BRN			
KP	91	PACA	CL	101	F	3	75	LBR			
KP	91	PACA	CL	102	F	3	50	LBR			
KP	91	PAPL	CL	78	F	3	0				
KP	92	PACA	CL	109	F	3	50	BRN			
KP	92	PACA	CL	95	F	3	50	DBR			
KP	92	PACA	CL	103	F	3	75	LBR			
KP	92	PACA	CL	115	F	3	75	LPP			
KP	92	PACA	CL	100	F	3	50	LLP			
KP	92	PACA	CL	110	F	3	50	BRN			
KP	92	PACA	CL	101	F	3	50	BRN			
KP	92	PACA	CL	101	F	3	50	DBR			
KP	92	PACA	CL	102	F	3	25	BRN			
KP	92	PACA	CL	103	F	3	50	LBR			
KP	92	PACA	CL	96	F	3	75	BRN			
KP	92	PACA	CL	97	F	3	75	PPL			
KP	92	PACA	CL	98	F	3	50	PPL			
KP	92	PACA	CL	100	F	3	50	BRN			
KP	92	PACA	CL	101	F	3	50	BRN			
KP	92	PACA	CL	110	F	3	75	LPP			
KP	92	PACA	CL	92	F	3	50	DBR			
KP	92	PACA	CL	106	F	3	75	PPL			
KP	92	PACA	CL	110	F	3	75	LPP			
KP	92	PACA	CL	103	F	3	50	BRN			
KP	92	PACA	CL	100	F	3	50	BRN			
KP	92	PACA	CL	103	F	3	75	LBR			
KP	92	PACA	CL	96	F	3	50	BRN			
KP	92	PACA	CL	106	F	3	50	BRN			
KP	92	PACA	CL	102	F	3	75	PPL			
KP	92	PACA	CL	104	F	3	50	PPL			
KP	92	PACA	CL	97	F	3	75	BRN			
KP	92	PACA	CL	106	F	3	50	PPL			
KP	92	PACA	CL	112	F	3	50	PPL			
KP	92	PACA	CL	108	F	3	25	BRN			
KP	92	PACA	CL	99	F	3	50	PPL			
KP	92	PACA	CL	120	F	3	75	PPL			
KP	92	PACA	CL	95	F	3	50	PPL			
KP	92	PACA	CL	105	F	3	75	PPL			
KP	92	PACA	CL	94	F	3	50	DBR			
KP	92	PACA	CL	106	F	3	50	PPL			
KP	92	PACA	CL	104	F	3	75	PPL			
KP	92	PACA	CL	106	F	3	75	BRN			
KP	92	PACA	CL	109	F	3	75	LPP			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	92	PACA	CL	95	F	3	50	PPL			
KP	92	PACA	CL	99	F	3	50	LBR			
KP	92	PACA	CL	98	F	3	75	LPP			
KP	92	PACA	CL	100	F	3	75	BRN			
KP	92	PACA	CL	106	F	3	50	BRN			
KP	92	PACA	CL	93	F	3	50	BRN			
KP	92	PACA	CL	115	F	3	50	BRN			
KP	92	PACA	CL	103	F	3	50	BRN			
KP	92	PACA	CL	112	F	3	75	PPL			
KP	92	PACA	CL	101	F	3	50	LBR			
KP	92	PACA	CL	97	F	3	50	BRN			
KP	93	PACA	CL	115	F	3	50	LPP			
KP	93	PACA	CL	111	F	3	50	PPL			
KP	93	PACA	CL	99	F	3	50	PPL			
KP	93	PACA	CL	91	F	4	75	DBR			
KP	93	PACA	CL	109	F	3	75	LPP			
KP	93	PACA	CL	91	M	3					
KP	93	PACA	CL	102	F	3	50	BRN			
KP	93	PACA	CL	109	F	3	50	BRN			
KP	93	PACA	CL	114	M	3			80979	M	
KP	93	PACA	CL	101	F	3	75	PPL			
KP	93	PACA	CL	123	M	3.5			80977	M	
KP	93	PACA	CL	100	F	3	75	PPL			
KP	93	PACA	CL	106	F	3	75	LPP			
KP	93	PACA	CL	79	F	3	0				
KP	93	PACA	CL	93	F	3	50	BRN			
KP	93	PACA	CL	94	F	3	50	PPL			
KP	93	PACA	CL	105	F	3	75	LPP			
KP	93	PACA	CL	119	F	3	50	PPL			
KP	93	PACA	CL	101	F	3	50	PPL			
KP	93	PACA	CL	104	F	3	75	PPL			
KP	93	PACA	CL	102	F	3	50	DBR			
KP	93	PACA	CL	102	F	3	75	PPL			
KP	93	PACA	CL	96	F	3.5	75	BRN			
KP	93	PACA	CL	94	F	3	75	PPL			
KP	93	PACA	CL	97	F	3	50	PPL			
KP	93	PACA	CL	109	F	3	50	LBR			
KP	93	PACA	CL	94	F	3	50	PPL			
KP	93	PACA	CL	106	F	3	50	BRN			
KP	93	PACA	CL	102	F	3	75	LBR			
KP	94	PACA	CL	114	M	3			80978	M	
KP	94	PACA	CL	128	F	3	75	BRN			
KP	94	PACA	CL	129	F	3	50	PPL			
KP	94	PACA	CL	98	F	3	50	BRN			
KP	94	PACA	CL	106	M	3					
KP	94	PACA	CL	104	F	3	25	BRN			
KP	94	PACA	CL	96	F	3	75	PPL			
KP	94	PACA	CL	100	F	3	50	PPL			
KP	94	PACA	CL	93	F	3	75	PPL			
KP	94	PACA	CL	101	F	3	50	BRN			
KP	94	PACA	CL	104	F	3	50	PPL			
KP	94	PACA	CL	97	F	3	50	PPL			
KP	94	PACA	CL	99	F	3	75	BRN			
KP	94	PACA	CL	91	M	3					
KP	94	PACA	CL	106	F	3	50	BRN			
KP	94	PACA	CL	96	F	3	25	BRN			
KP	94	PACA	CL	94	M	4					

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	94	PACA	CL	89	F	3	75	LBR			
KP	94	PACA	CL	105	F	3	75	LPP			
KP	94	PACA	CL	99	F	3	75	LBR			
KP	94	PACA	CL	107	F	3	50	BRN			
KP	94	PACA	CL	103	F	3	50	BRN			
KP	94	PACA	CL	102	F	3	50	PPL			
KP	94	PACA	CL	102	F	3	50	LBR			
KP	94	PACA	CL	105	F	3	50	PPL			
KP	94	PACA	CL	104	F	3	50	PPL	3986	M	
KP	94	PACA	CL	97	F	3	50	PPL			
KP	94	PACA	CL	101	F	3	50	BRN			
KP	94	PACA	CL	104	F	3	75	LPP			
KP	94	PACA	CL	101	F	3	50	BRN			
KP	94	PACA	CL	101	F	3	50	BRN			
KP	94	PACA	CL	108	F	3	25	LBR			
KP	94	PACA	CL	101	F	3	50	LPP			
KP	94	PACA	CL	99	F	3	75	LBR			
KP	94	PACA	CL	104	F	3.5	75	DBR			
KP	94	PACA	CL	91	F	3	50	PPL			
KP	94	PACA	CL	103	F	3	75	LBR			
KP	94	PACA	CL	93	F	3	25	BRN			
KP	94	PACA	CL	88	F	3	50	LBR			
KP	94	PACA	CL	102	F	3	50	LBR			
KP	94	PACA	CL	106	F	3	50	BRN			
KP	94	PACA	CL	111	F	3	50	BRN			
KP	94	PACA	CL	110	F	3	50	BRN			
KP	94	PACA	CL	109	F	3	75	PPL			
KP	94	PACA	CL	104	F	3	75	PPL			
KP	94	PACA	CL	109	F	3	50	BRN			
KP	94	PACA	CL	114	F	3	50	BRN			
KP	94	PACA	CL	99	F	3	75	BRN			
KP	94	PACA	CL	101	F	3	50	BRN			
KP	94	PACA	CL	97	M	3.5					
KP	94	PACA	CL	96	F	3	75	BRN			
KP	94	PACA	CL	104	F	3	75	DBR			
KP	94	PACA	CL	94	F	3	75	PPL			
KP	94	PACA	CL	110	F	3	50	LPP			
KP	94	PACA	CL	105	F	3	75	DBR			
KP	94	PACA	CL	100	F	3	75	BRN			
KP	94	PACA	CL	102	F	3	75	PPL			
KP	94	PACA	CL	105	F	3	50	LBR			
KP	94	PACA	CL	99	F	3	50	LBR			
KP	94	PACA	CL	98	F	3	25	BRN			
KP	94	PACA	CL	103	F	3	50	DBR			
KP	95	PACA	CL	106	M	3					
KP	95	PACA	CL	100	F	3	75	BRN			
KP	95	PACA	CL	105	F	3	50	LPP			
KP	95	PACA	CL	103	F	3	75	PPL			
KP	95	PACA	CL	122	M	4			80952	M	
KP	95	PACA	CL	115	M	4			80953	M	
KP	95	PACA	CL	116	M	3.5			80961	M	
KP	95	PACA	CL	106	F	3	75	BRN			
KP	95	PACA	CL	95	F	3	50	BRN			
KP	95	PACA	CL	113	F	3	75	PPL			
KP	95	PACA	CL	94	M	3					
KP	95	PACA	CL	101	F	3	50	BRN			
KP	95	PACA	CL	100	F	3	50	PPL			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	95	PACA	CL	100	F	4	50	LPP			
KP	95	PACA	CL	105	F	3	50	PPL			
KP	95	PACA	CL	107	F	3	75	PPL			
KP	95	PACA	CL	96	F	3	50	LPP			
KP	95	PACA	CL	99	F	3	75	PPL			
KP	95	PACA	CL	112	F	3	50	LPP			
KP	95	PACA	CL	105	F	3	50	LPP			
KP	95	PACA	CL	106	F	3	50	LPP			
KP	95	PACA	CL	104	F	3	75	LPP			
KP	95	PACA	CL	116	M	3			80973	M	
KP	95	PACA	CL	101	F	3	50	PPL			
KP	95	PACA	CL	97	F	3	50	LBR			
KP	95	PACA	CL	105	F	3	50	BRN			
KP	95	PACA	CL	100	F	3	50	PPL			
KP	95	PACA	CL	97	F	3	50	BRN			
KP	95	PACA	CL	102	F	3	50	BRN			
KP	95	PACA	CL	105	M	3					
KP	95	PACA	CL	118	F	3	50	LPP			
KP	95	PACA	CL	107	M	3					
KP	95	PACA	CL	84	F	3.5	0				
KP	95	PACA	CL	101	F	3	75	PPL			
KP	95	PACA	CL	85	M	3					
KP	95	PACA	CL	72	F	3	0				
KP	95	PACA	CL	84	F	3	0				
KP	95	PACA	CL	77	F	3	50	PPL			
KP	95	PACA	CL	104	F	3	50	PPL			
KP	95	PACA	CL	108	M	3					
KP	95	PACA	CL	109	F	3	50	PPL			
KP	95	PACA	CL	95	F	3	75	DBR			
KP	95	PACA	CL	99	F	3	75	PPL			
KP	95	PACA	CL	100	F	3	50	BRN			
KP	95	PACA	CL	97	F	3	75	DBR			
KP	95	PACA	CL	97	F	3	50	DBR			
KP	95	PACA	CL	103	F	3	50	DBR			
KP	95	PACA	CL	101	F	3	75	DBR			
KP	95	PACA	CL	93	F	3.5	75	DBR			
KP	95	PACA	CL	109	F	3	50	LPP			
KP	95	PACA	CL	84	F	3	50	BRN			
KP	95	PACA	CL	101	F	3.5	50	DBR			
KP	95	PACA	CL	99	F	3	50	DBR			
KP	95	PACA	CL	101	F	3	75	BRN			
KP	95	PACA	CL	96	F	3	50	PPL			
KP	95	PACA	CL	88	F	2.5	0				
KP	95	PACA	CL	97	F	3	75	PPL			
KP	95	PACA	CL	78	M	2					
KP	96	PACA	CL	67	M	3					
KP	96	PACA	CL	65	F	3	0				
KP	96	PACA	CL	106	M	3.5					
KP	96	PACA	CL	79	F	3	0				
KP	96	PACA	CL	79	F	3	0				
KP	96	PACA	CL	98	M	3.5					
KP	96	PACA	CL	80	F	3	0				
KP	96	PACA	CL	63	F	3	0				
KP	96	PACA	CL	80	F	3	0				
KP	96	PACA	CL	68	F	3	0				
KP	96	PACA	CL	88	F	3	50	PPL			
KP	96	PACA	CL	61	F	3	0				

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	96	PACA	CL	59	F	3	0				
KP	96	PACA	CL	72	M	3					
KP	96	PACA	CL	95	F	3	50	BRN			
KP	96	PACA	CL	80	F	3	50	B/P			
KP	96	PACA	CL	88	F	3	0				
KP	96	PACA	CL	99	F	3	50	BRN			
KP	96	PACA	CL	88	F	3.5	0				
KP	96	PACA	CL	60	F	3	0				
KP	96	PACA	CL	87	F	3	50	BRN			
KP	96	PACA	CL	58	F	3	0				
KP	96	PACA	CL	72	F	3.5	0				
KP	96	PACA	CL	62	F	4	0				
KP	96	PACA	CL	77	F	3	0				
KP	96	PACA	CL	81	F	3	0				
KP	96	PACA	CL	71	F	3	0				
KP	96	PACA	CL	80	F	3	0				
KP	96	PACA	CL	66	F	3	0				
KP	96	PACA	CL	84	F	3	50	BRN			
KP	96	PACA	CL	64	F	3	0				
KP	96	PACA	CL	82	M	3					
KP	96	PACA	CL	70	M	3					
KP	96	PACA	CL	105	F	3	50	BRN			
KP	96	PACA	CL	89	F	3	50	BRN			
KP	96	PACA	CL	78	M	3					
KP	96	PACA	CL	77	F	3	0				
KP	96	PACA	CL	80	M	3					
KP	96	PACA	CL	93	M	3					
KP	96	PACA	CL	66	F	3	0				
KP	96	PACA	CL	65	M	3					
KP	96	PACA	CL	64	M	3					
KP	96	PACA	CL	93	F	3.5	50	BRN			
KP	96	PACA	CL	62	M	3					
KP	96	PACA	CL	102	F	3.5	50	PPL			
KP	96	PACA	CL	95	M	3					
KP	96	PACA	CL	97	F	3	50	O/B			
KP	96	PACA	CL	63	F	3.5	0				
KP	96	PACA	CL	53	F	3	0				
KP	96	PACA	CL	63	M	3					
KP	96	PACA	CL	77	M	3					
KP	96	PACA	CL	82	M	3					
KP	96	PACA	CL	85	F	3.5	0				
KP	96	PACA	CL	77	F	3.5	0				
KP	96	PACA	CL	73	M	3					
KP	96	PACA	CL	58	F	3	0				
KP	96	PACA	CL	84	F	3.5	0				
KP	96	PACA	CL	100	M	3.5					
KP	96	PACA	CL	101	F	3.5	50	BRN			
KP	96	PACA	CL	64	F	3	0				
KP	96	PACA	CL	79	F	3.5	0				
KP	96	PACA	CL	70	F	3	0				
KP	96	PACA	CL	92	F	3	50	O/B			
KP	96	PACA	CL	64	M	3					
KP	96	PACA	CL	94	M	3					
KP	96	PACA	CL	81	M	3.5					
KP	96	PACA	CL	69	M	3					
KP	96	PACA	CL	62	M	3					
KP	96	PACA	CL	87	F	3	0				

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	96	PACA	CL	90	M	3					
KP	96	PACA	CL	70	F	3	0				
KP	96	PACA	CL	63	F	3	0				
KP	96	PACA	CL	74	F	3	0				
KP	96	PACA	CL	72	F	3.5	0				
KP	96	PACA	CL	78	M	3					
KP	96	PACA	CL	89	F	3	50	BRN			
KP	96	PACA	CL	102	F	3	50	O/B			
KP	96	PACA	CL	82	F	3.5	50	O/B			
KP	96	PACA	CL	69	F	3	0				
KP	96	PACA	CL	65	F	3	0				
KP	96	PACA	CL	67	F	3	0				
KP	96	PACA	CL	106	M	3					
KP	96	PACA	CL	53	F	3	0				
KP	96	PACA	CL	69	M	3					
KP	96	PACA	CL	89	F	3	50	BRN			
KP	96	PACA	CL	86	F	3	50	BRN			
KP	96	PACA	CL	61	F	3	0				
KP	96	PACA	CL	84	F	3	0				
KP	96	PACA	CL	106	M	3					
KP	96	PACA	CL	64	F	3	0				
KP	96	PACA	CL	81	M	3					
KP	96	PACA	CL	85	F	3	0				
KP	96	PACA	CL	106	M	3					
KP	96	PACA	CL	88	F	3	50	BRN			
KP	96	PACA	CL	62	M	3					
KP	96	PACA	CL	65	F	3	0				
KP	96	PACA	CL	65	M	3					
KP	96	PACA	CL	66	F	3	0				
KP	96	PACA	CL	86	F	3	50	BRN			
KP	96	PACA	CL	68	M	3					
KP	96	PACA	CL	84	F	3	50	BRN			
KP	96	PACA	CL	63	M	3					
KP	96	PACA	CL	75	M	3					
KP	96	PACA	CL	72	F	3	0				
KP	96	PACA	CL	70	M	3					
KP	96	PACA	CL	67	M	3					
KP	96	PACA	CL	80	F	3	50	BRN			
KP	96	PACA	CL	89	F	3	50	PPL			
KP	96	PACA	CL	81	M	3					
KP	96	PACA	CL	68	F	3.5	0				
KP	96	PACA	CL	101	M	3					
KP	96	PACA	CL	68	F	3	0				
KP	96	PACA	CL	100	F	3	50	BRN			
KP	96	PACA	CL	64	M	3					
KP	96	PACA	CL	62	F	3	0				
KP	96	PACA	CL	60	M	3					
KP	96	PACA	CL	76	F	3	0				
KP	96	PACA	CL	88	M	3					
KP	96	PACA	CL	65	M	3					
KP	96	PACA	CL	82	M	3					
KP	96	PACA	CL	66	F	3.5	0				
KP	96	PACA	CL	65	M	3					
KP	96	PACA	CL	71	M	3					
KP	96	PACA	CL	76	F	3.5	0				
KP	96	PACA	CL	66	F	3	0				
KP	96	PACA	CL	73	F	3.5	0				

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	96	PACA	CL	87	F	3.5	50	BRN			
KP	96	PACA	CL	67	F	3	0				
KP	96	PACA	CL	70	F	3	0				
KP	96	PACA	CL	59	F	3	0				
KP	96	PACA	CL	95	M	3					
KP	96	PACA	CL	74	F	3	0				
KP	96	PACA	CL	73	M	3					
KP	96	PACA	CL	68	M	3					
KP	96	PACA	CL	60	M	3					
KP	96	PACA	CL	64	F	3	0				
KP	96	PACA	CL	95	F	3.5	50	BRN			
KP	96	PACA	CL	79	F	3	0				
KP	96	PACA	CL	63	F	3	0				
KP	96	PAPL	CL	94	M	4					
KP	96	PACA	CL	62	M	3					
KP	96	PACA	CL	73	M	3					
KP	96	CHBA	CL	81	F	4	50	ORG			
KP	96	CHBA	CL	68	F	4	50	ORG			
KP	96	CHBA	CL	107	M	2.5					
KP	96	CHBA	CL	101	M	2.5					
KP	96	CHBA	CL	91	M	4					
KP	96	PACA	CL	128	M	3			80224	M	
KP	96	PACA	CL	113	M	3.5			80229	M	
KP	96	PACA	CL	116	M	4			80235	M	
KP	96	PACA	CL	121	M	3.5			80231	M	
KP	96	PACA	CL	126	M	3			80232	M	
KP	96	PACA	CL	118	M	3			80245	M	
KP	96	PACA	CL	111	M	3			80223	M	
KP	96	PACA	CL	119	M	4			80230	M	
KP	96	PACA	CL	126	M	3.5			80217	M	
KP	96	PACA	CL	122	M	3.5			80222	M	
KP	96	PACA	CL	109	M	4			80220	M	
KP	96	PACA	CL	117	M	3			80237	M	
KP	96	PACA	CL	134	M	4			80210	M	
KP	96	PACA	CL	124	M	3			80219	M	
KP	96	PACA	CL	118	M	3			80226	M	
KP	96	PACA	CL	122	M	3			80234	M	
KP	96	PACA	CL	113	M	3			80228	M	
KP	96	PACA	CL	136	M	3.5			80225	M	
KP	96	PACA	CL	130	M	3.5			80211	M	
KP	96	PACA	CL	123	M	3.5			80240	M	
KP	96	PACA	CL	126	M	3			80215	M	
KP	96	PACA	CL	124	M	3			80233	M	
KP	96	PACA	CL	121	M	3.5			80209	M	
KP	96	PACA	CL	127	M	3			80208	M	
KP	96	PACA	CL	112	M	4			80241	M	
KP	96	PACA	CL	127	M	4			80212	M	
KP	96	PACA	CL	119	M	4			80238	M	
KP	96	PACA	CL	126	M	4			80236	M	
KP	96	PACA	CL	111	M	3			80221	M	
KP	96	PACA	CL	135	M	3			80213	M	
KP	96	PACA	CL	116	M	3			80216	M	
KP	96	PACA	CL	117	M	3			80248	M	
KP	96	PACA	CL	115	M	3.5			80205	M	
KP	96	PACA	CL	110	M	4			80243	M	
KP	96	PACA	CL	124	M	3			80246	M	
KP	96	PACA	CL	125	M	3			80257	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	96	PACA	CL	112	M	3			80218	M	
KP	96	PACA	CL	118	M	4			80227	M	
KP	96	PACA	CL	113	M	3.5			80204	M	
KP	96	PACA	CL	122	M	3			80206	M	
KP	96	PACA	CL	115	M	3			80207	M	
KP	96	PACA	CL	119	M	4			80247	M	
KP	96	PACA	CL	118	M	3			80251	M	
KP	96	PACA	CL	115	M	3			80249	M	
KP	96	PACA	CL	127	M	3			80263	M	
KP	96	PACA	CL	119	M	3.5			80254	M	
KP	96	PACA	CL	112	M	3			80244	M	
KP	96	PACA	CL	122	M	3			80252	M	
KP	96	PACA	CL	112	M	4			80255	M	
KP	96	PACA	CL	116	M	4			80270	M	
KP	96	PACA	CL	123	M	3			80259	M	
KP	96	PACA	CL	118	M	3			80242	M	
KP	96	PACA	CL	129	M	3			80269	M	
KP	96	PACA	CL	114	M	3.5			80283	M	
KP	96	PACA	CL	120	M	3.5			80260	M	
KP	96	PACA	CL	137	M	3.5			80272	M	
KP	96	PACA	CL	122	M	3			80273	M	
KP	96	PACA	CL	130	M	4			80276	M	
KP	96	PACA	CL	126	M	3			80256	M	
KP	96	PACA	CL	122	M	4			80267	M	
KP	96	PACA	CL	117	M	4			80250	M	
KP	96	PACA	CL	127	M	4			80271	M	
KP	96	PACA	CL	126	M	3			80277	M	
KP	96	PACA	CL	128	M	3			80274	M	
KP	96	PACA	CL	119	M	3.5			80265	M	
KP	96	PACA	CL	125	M	3			80268	M	
KP	96	PACA	CL	114	M	3.5			80262	M	
KP	96	PACA	CL	127	M	3			80239	M	
KP	96	PACA	CL	113	M	4			80264	M	
KP	96	PACA	CL	106	M	3			80278	M	
KP	96	PACA	CL	114	M	3			80266	M	
KP	96	PACA	CL	117	M	3			80275	M	
KP	96	PACA	CL	111	M	3.5			80261	M	
KP	96	PACA	CL	120	M	3			80253	M	
KP	96	PACA	CL	126	M	3			80258	M	
KP	96	PACA	CL	120	M	3.5			80279	M	
KP	97	PACA	CL	125	M	4			80290	M	
KP	97	PACA	CL	136	M	3.5			80285	M	
KP	97	PACA	CL	128	M	4			80291	M	
KP	97	CHBA	CL	101	M	4					
KP	98	PACA	CL	106	M	3					
KP	98	PACA	CL	95	M	3.5					
KP	98	CHBA	CL	84	M	4					
KP	98	CHBA	CL	108	M	4					
KP	98	PACA	CL	135	M	3.5			80288	M	
KP	98	PACA	CL	111	M	3			80295	M	
KP	98	PACA	CL	131	M	4			80280	M	
KP	98	PACA	CL	113	M	3			80292	M	
KP	98	PACA	CL	118	M	3			80298	M	
KP	98	PACA	CL	128	M	4			80302	M	
KP	98	PACA	CL	134	M	3.5			80304	M	
KP	98	PACA	CL	126	M	3			80297	M	
KP	98	PACA	CL	129	M	3			80301	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	98	PACA	CL	132	M	3			80293	M	
KP	98	PACA	CL	131	M	3.5			80299	M	
KP	98	PACA	CL	121	M	4			80303	M	
KP	98	PACA	CL	128	M	4			80282	M	
KP	98	PACA	CL	113	M	4			80289	M	
KP	98	PACA	CL	123	M	4			80300	M	
KP	98	PACA	CL	126	M	4			80294	M	
KP	98	PACA	CL	115	M	3			80286	M	
KP	98	PACA	CL	111	M	3.5			80287	M	
KP	99	PACA	CL	130	M	3			80379	M	
KP	99	PACA	CL	132	M	3			80364	M	
KP	99	PACA	CL	130	M	4			80362	M	
KP	99	PACA	CL	132	M	3			80356	M	
KP	99	PACA	CL	124	M	3			80360	M	
KP	99	PACA	CL	131	M	3			80322	M	
KP	99	PACA	CL	127	M	4			80353	M	
KP	99	PACA	CL	112	M	3			80358	M	
KP	99	PACA	CL	112	M	3			80382	M	
KP	99	PACA	CL	108	M	3.5					
KP	99	PACA	CL	116	M	3.5			80374	M	
KP	99	PACA	CL	127	M	3			80383	M	
KP	99	PACA	CL	121	M	4			80359	M	
KP	99	PACA	CL	109	M	3					
KP	99	PACA	CL	133	M	3			80375	M	
KP	99	PACA	CL	143	M	3.5			80350	M	
KP	99	PACA	CL	114	M	3			80361	M	
KP	99	PACA	CL	117	M	3.5			80345	M	
KP	99	PACA	CL	116	M	3.5			80373	M	
KP	99	PACA	CL	125	M	4			80348	M	
KP	99	PACA	CL	123	M	3			80341	M	
KP	99	PACA	CL	124	M	3			80339	M	
KP	99	PACA	CL	126	M	3			80338	M	
KP	99	PACA	CL	122	M	3			80346	M	
KP	99	PACA	CL	120	M	3.5			80334	M	
KP	99	PACA	CL	115	M	3			80369	M	
KP	99	PACA	CL	125	M	4			80363	M	
KP	99	PACA	CL	130	M	3			80376	M	
KP	99	PACA	CL	128	M	3			80381	M	
KP	99	PACA	CL	131	M	3.5			80377	M	
KP	99	PACA	CL	113	M	3			80365	M	
KP	99	PACA	CL	110	M	3			80370	M	
KP	99	PACA	CL	122	M	3			80378	M	
KP	99	PACA	CL	95	M	3					
KP	99	PACA	CL	127	M	3.5			80340	M	
KP	99	PACA	CL	120	M	3			80367	M	
KP	99	PACA	CL	111	M	3.5			80333	M	
KP	99	PACA	CL	114	M	3			80344	M	
KP	99	PACA	CL	115	M	3.5			80366	M	
KP	99	PACA	CL	112	M	3			80372	M	
KP	99	PACA	CL	126	M	3			80355	M	
KP	99	PACA	CL	131	M	3			80336	M	
KP	99	PACA	CL	110	M	4			80384	M	
KP	99	PACA	CL	121	M	3.5			80388	M	
KP	99	PACA	CL	137	M	3			80349	M	
KP	99	PACA	CL	130	M	3			80351	M	
KP	99	PACA	CL	119	M	3			80386	M	
KP	99	PACA	CL	120	M	3			80352	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	99	PACA	CL	128	M	3			80343	M	
KP	99	PACA	CL	123	M	4			80342	M	
KP	99	PACA	CL	115	M	3			80389	M	
KP	99	PACA	CL	119	M	3			80332	M	
KP	99	PACA	CL	122	M	3			80343	M	
KP	99	PACA	CL	125	M	4			80337	M	
KP	99	PACA	CL	131	M	3			80394	M	
KP	99	PACA	CL	130	M	3			80368	M	
KP	99	PACA	CL	124	M	4			80347	M	
KP	99	PACA	CL	125	M	4			80335	M	
KP	99	PACA	CL	121	M	3			80387	M	
KP	99	PACA	CL	104	M	3			80354	M	
KP	99	PACA	CL	129	M	3			80357	M	
KP	99	PACA	CL	143	M	4					
KP	99	PACA	CL	105	M	3			80393	M	
KP	99	PACA	CL	120	M	3			80392	M	
KP	99	PACA	CL	129	M	3			80396	M	
KP	99	PACA	CL	102	M	3					
KP	99	PACA	CL	100	M	3					
KP	99	PACA	CL	117	M	3			80371	M	
KP	99	PACA	CL	112	M	4			80397	M	
KP	99	PACA	CL	120	M	3			80380	M	
KP	99	PACA	CL	113	M	3			80395	M	
KP	99	PACA	CL	128	M	3			80390	M	
KP	99	PACA	CL	127	M	3			80391	M	
KP	99	PACA	CL	108	M	3			80388	M	
KP	99	CHBA	CL	81	M	4					
KP	99	CHBA	CL	88	M	4					
KP	99	CHBA	CL	85	M	4					
KP	99	PACA	CL	116	M	3			80398	M	
KP	99	PACA	CL	122	M	3			80405	M	
KP	99	PACA	CL	124	M	3			80407	M	
KP	99	PACA	CL	123	M	3.5			80402	M	
KP	99	PACA	CL	119	M	3.5			80404	M	
KP	99	PACA	CL	123	M	3			80401	M	
KP	99	PACA	CL	128	M	3			80406	M	
KP	100	PACA	CL	106	M	3					
KP	100	PACA	CL	93	M	3					
KP	100	PACA	CL	100	F	3	50	PPL			
KP	100	PACA	CL	102	M	3.5					
KP	100	PACA	CL	106	M	3					
KP	100	PACA	CL	85	M	3					
KP	100	PACA	CL	108	M	3					
KP	100	PACA	CL	106	F	3	50	BRN			
KP	100	PACA	CL	97	M	3					
KP	100	CHBA	CL	84	M	4					
KP	100	PACA	CL	95	M	3					
KP	100	PACA	CL	125	M	3.5			80410	M	
KP	100	PACA	CL	120	M	3.5			80412	M	
KP	100	PACA	CL	129	M	4			80449	M	
KP	100	PACA	CL	126	M	3			80441	M	
KP	100	PACA	CL	133	M	3			80450	M	
KP	100	PACA	CL	123	M	3			80435	M	
KP	100	PACA	CL	129	M	3			80432	M	
KP	100	PACA	CL	120	M	3			80453	M	
KP	100	PACA	CL	129	M	3			80428	M	
KP	100	PACA	CL	120	M	3			80443	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	100	PACA	CL	124	M	3			80419	M	
KP	100	PACA	CL	119	M	3.5			80431	M	
KP	100	PACA	CL	119	M	3.5			80425	M	
KP	100	PACA	CL	107	M	3			80434	M	
KP	100	PACA	CL	112	M	3.5			80424	M	
KP	100	PACA	CL	126	M	4			80429	M	
KP	100	PACA	CL	115	M	3			80399	M	
KP	100	PACA	CL	129	M				80403	M	
KP	100	PACA	CL	113	M	3			80408	M	
KP	100	PACA	CL	126	M	3			80422	M	
KP	100	PACA	CL	105	M	3			80414	M	
KP	100	PACA	CL	104	M	3			80418	M	
KP	100	PACA	CL	114	M	3.5			80445	M	
KP	100	PACA	CL	126	M	3			80448	M	
KP	100	PACA	CL	125	M	3			80413	M	
KP	100	PACA	CL	123	M	3.5			80400	M	
KP	100	PACA	CL	136	M	3.5			80439	M	
KP	100	PACA	CL	128	M	3			80433	M	
KP	100	PACA	CL	132	M	4			80409	M	
KP	100	PACA	CL	112	M	3.5			80440	M	
KP	100	PACA	CL	116	M	4			80446	M	
KP	100	PACA	CL	125	M	4			80447	M	
KP	100	PACA	CL	123	M	3			80438	M	
KP	100	PACA	CL	116	M	4			80430	M	
KP	100	PACA	CL	126	M	3			8XXXX	M	
KP	100	PACA	CL	120	M	3			80421	M	
KP	100	PACA	CL	116	M	4			80436	M	
KP	100	PACA	CL	128	M	4			80420	M	
KP	100	PACA	CL	126	M	3			80411	M	
KP	100	PACA	CL	124	M	3			80427	M	
KP	100	PACA	CL	124	M	3			80442	M	
KP	100	PACA	CL	135	M	3.5			8XXXX	M	
KP	100	PACA	CL	124	M	3			80444	M	
KP	100	PACA	CL	119	M	3			80416	M	
KP	100	PACA	CL	115	M	3			80415	M	
KP	100	PACA	CL	123	M	3.5			80437	M	
KP	100	PACA	CL	124	M	3			80417	M	
KP	100	PACA	CL	122	M	3			80426	M	
KP	100	PACA	CL	120	M	3			80459	M	
KP	100	PACA	CL	130	M	3			80456	M	
KP	100	PACA	CL	116	M	3			80457	M	
KP	100	PACA	CL	114	M	3			80452	M	
KP	100	PACA	CL	120	M	4			80423	M	
KP	100	PACA	CL	123	M	3			80460	M	
KP	100	PACA	CL	116	M	3.5			80458	M	
KP	100	PACA	CL	118	M	3			80454	M	
KP	100	PACA	CL	132	M	4			80455	M	
KP	100	PACA	CL	110	M	3			80451	M	
KP	100	PACA	CL	125	M	3.5			80461	M	
KP	101	PACA	CL	104	M	3.5			3473	R	
KP	101	PACA	CL	89	F	3.5	50	BRN	3049	M	
KP	101	PACA	CL	122	M	3.5			3084	R	
KP	101								80665		RETAG ON RECAP., SEE 03084
KP	101	PACA	CL	83	M	3					
KP	101	PACA	CL	117	M	3.5			3088	R	
KP	101								80672		RETAG ON RECAP., SEE 03088
KP	101	PACA	CL	108	M	3.5					

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	101	PACA	CL	83	M	3					
KP	101	PACA	CL	100	M	3					
KP	101	PACA	CL	93	M	3					
KP	101	PACA	CL	100	M	3.5					
KP	101	PACA	CL	94	M	3					
KP	101	PACA	CL	82	M	3					
KP	101	PACA	CL	100	M	3					
KP	101	PACA	CL	97	M	3.5					
KP	101	PACA	CL	87	M	3					
KP	101	PACA	CL	87	F	3	0				
KP	101	PACA	CL	79	M	3.5					
KP	101	PACA	CL	89	M	3					
KP	101	PACA	CL	103	M	3					
KP	101	PACA	CL	87	F	3	50	BRN			
KP	101	PACA	CL	92	M	3					
KP	101	PACA	CL	90	F	3.5	50	PPL			
KP	101	PACA	CL	94	M	3					
KP	101	PACA	CL	76	M	3					
KP	101	PACA	CL	83	M	3					
KP	101	PACA	CL	100	M	3.5					
KP	101	PACA	CL	95	M	3					
KP	101	PACA	CL	73	F	3	0				
KP	101	PACA	CL	86	M	3					
KP	101	PACA	CL	84	M	3					
KP	101	PACA	CL	98	M	3					
KP	101	PACA	CL	108	M	3.5					
KP	101	PACA	CL	113	M	3					
KP	101	PACA	CL	94	M	3					
KP	101	PACA	CL	96	M	3					
KP	101	PACA	CL	86	M	3					
KP	101	PACA	CL	83	M	3					
KP	101	PACA	CL	95	F	4	50	BRN			
KP	101	PACA	CL	106	M	4					
KP	101	PACA	CL	89	M	3					
KP	101	PACA	CL	83	F	3	0				
KP	101	PACA	CL	100	F	3	50	PPL			
KP	101	PACA	CL	97	M	4					
KP	101	PACA	CL	98	M	3					
KP	101	PACA	CL	95	M	3					
KP	101	PACA	CL	95	F	3.5	50	BRN			
KP	101	PACA	CL	84	M	3					
KP	101	PACA	CL	93	M	3					
KP	101	PACA	CL	92	F	3	50	PPL			
KP	101	PACA	CL	67	F	3	0				
KP	101	PACA	CL	106	M	3					
KP	101	PACA	CL	92	M	3			3558	R	
KP	101	PACA	CL	105	M	3.5					
KP	101	PACA	CL	88	M	3.5					
KP	101	PACA	CL	86	M	3					
KP	101	PACA	CL	99	M	3					
KP	101	PACA	CL	93	M	3					
KP	101	PACA	CL	93	M	3					
KP	101	PACA	CL	105	F	3	50	PPL			
KP	101	PACA	CL	102	M	3					
KP	101	PACA	CL	102	F	3	50	BRN			
KP	101	PACA	CL	81	M	3					
KP	101	PACA	CL	89	F	3	50	B/P			

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	101	PACA	CL	85	M	3					
KP	101	PACA	CL	86	F	3	50	B/P			
KP	101	PACA	CL	72	M	3					
KP	101	PACA	CL	59	F	3	0				
KP	101	PAPL	CL	103	M	4					
KP	101	CHBA	CL	76	M	4					
KP	101	CHBA	CL	76	M	3					
KP	101	CHBA	CL	71	F	4	0				
KP	101	CHBA	CL	89	F	4	50	ORG			
KP	101	CHBA	CL	85	M	4					
KP	101	CHBA	CL	70	F	4	50	ORG			
KP	101	CHBA	CL	79	F	4	50	ORG			
KP	101	PACA	CL	104	M	3					
KP	101	PACA	CL	112	M	3			80675	M	
KP	101	PACA	CL	132	M	4			80681	M	
KP	101	PACA	CL	111	M	3			80674	M	
KP	101	PACA	CL	123	M	3.5			80679	M	
KP	101	PACA	CL	117	M	3.5			80667	M	
KP	101	PACA	CL	120	M	3			80678	M	
KP	101	PACA	CL	121	M	3.5			80666	M	
KP	101	PACA	CL	122	M	3.5			80677	M	
KP	101	PACA	CL	126	M	4			80669	M	
KP	101	PACA	CL	123	M	3			80684	M	
KP	101	PACA	CL	131	M	3			80670	M	
KP	101	PACA	CL	118	M	3			80682	M	
KP	101	PACA	CL	113	M	3			80673	M	
KP	101	PACA	CL	128	M	3.5			80671	M	
KP	101	PACA	CL	121	M	3			80680	M	
KP	101	PACA	CL	124	M	3.5			80685	M	
KP	101	PACA	CL	121	M	3.5			80650	M	
KP	101	PACA	CL	120	M	4			80668	M	
KP	101	PACA	CL	119	M	3.5			80664	M	
KP	101	PACA	CL	126	M	3			80676	M	
KP	101	PACA	CL	120	M	3			80688	M	
KP	101	PACA	CL	118	M	3			80683	M	
KP	101	PACA	CL	113	M	3			80708	M	
KP	101	PACA	CL	119	M	3.5			80716	M	
KP	101	PACA	CL	132	M	3			80736	M	
KP	101	PACA	CL	116	M	3			80722	M	
KP	101	PACA	CL	130	M	4			80721	M	
KP	101	PACA	CL	108	M	3			80713	M	
KP	101	PACA	CL	122	M	3			80691	M	
KP	101	PACA	CL	134	M	3			80705	M	
KP	101	PACA	CL	120	M	4			80706	M	
KP	101	PACA	CL	121	M	4			80699	M	
KP	101	PACA	CL	121	M	3			80687	M	
KP	101	PACA	CL	121	M	4			80685	M	
KP	101	PACA	CL	114	M	3			80709	M	
KP	101	PACA	CL	112	M	4			80714	M	
KP	101	PACA	CL	130	M	3			80690	M	
KP	101	PACA	CL	111	M	3.5			80704	M	
KP	101	PACA	CL	130	M	3.5			80692	M	
KP	101	PACA	CL	119	M	3			80702	M	
KP	101	PACA	CL	119	M	3.5			80717	M	
KP	101	PACA	CL	135	M	3.5			80710	M	
KP	101	PACA	CL	117	M	3.5			80728	M	
KP	101	PACA	CL	119	M	3			80695	M	

Table A-2. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R	Comments
KP	101	PACA	CL	115	M	3			80727	M	
KP	101	PACA	CL	115	M	4			80707	M	
KP	101	PACA	CL	122	M	4			80698	M	
KP	101	PACA	CL	114	M	3			80720	M	
KP	101	PACA	CL	117	M	3			80725	M	
KP	101	PACA	CL	136	M	4			80724	M	
KP	101	PACA	CL	121	M	3			80723	M	
KP	101	PACA	CL	131	M	3.5			80711	M	
KP	101	PACA	CL	126	M	3			80712	M	
KP	101	PACA	CL	129	M	3.5			80703	M	
KP	101	PACA	CL	111	M	3			80693	M	
KP	101	PACA	CL	129	M	3			80700	M	
KP	101	PACA	CL	125	M	3			80689	M	
KP	101	PACA	CL	111	M	3			80701	M	
KP	101	PACA	CL	119	M	3					
KP	101	PACA	CL	123	M	4			80696	M	
KP	101	PACA	CL	116	M	3.5			80694	M	
CF	201	PACA			M				80059	R	Commercial Fishery Recapture
CF	202	PACA	CL	136	M	3			80884	R	Commercial Fishery Recapture

Table A-3. Samples collected by trawl, dredge, and intertidal methods, June-July 1990.

Gear	Samp.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Yr	Mo	Dy	Hr	Mn	Prf.	Dpth (m)	Duration Hr.	Duration Min.	Samp. Size	Size Unit	Sub-str.
BT	1	55	51.7	160	21.9	90	6	10			G			5			S
BT	2	55	53.5	160	28.5	90	6	10			G				103	M	S
BT	3	55	56.0	160	35.2	90	6	10			G				281	M	
BT	4	55	53.2	160	53.3	90	6	11	9	45	F	44					B
BT	5	55	46.8	160	47.5	90	6	11	11	45	G	26			257	M	
BT	6	55	46.8	160	47.5	90	6	11	12	45	G	24			207	M	MD
BT	7	55	45.4	160	43.7	90	6	11			G	75					M
BT	8	55	44.7	160	42.3	90	6	11	14	54	G	93			28	M	M
BT	9	55	43.4	160	41.3	90	6	11	16	0	G	67			194	M	M
IT	1	55	46.3	160	43.7	90	6	11	18	0	G	0					BS
OT	1	55	45.8	160	42.5	90	6	11			G						
BT	10	55	43.0	160	41.8	90	6	12	10	1	G	29		5			MB
BT	11	55	43.5	160	40.9	90	6	12	12	13	G	46			87	M	M
BT	12	55	45.2	160	42.0	90	6	12	13	58	G	29			1407	M	B
BT	13	55	46.0	160	43.4	90	6	12	14	47	G	28			141	M	B
BT	14	55	45.3	160	45.5	90	6	12	15	56	G	34			204	M	M
IT	2	55	45.5	160	46.2	90	6	12			G	0					BS
BT	15	55	43.5	160	40.9	90	6	17	9	8	F	17		1	35	M	B
SD	1	55	46.0	160	43.2	90	6	17			G	17		1			
IT	2.5	55	46.3	160	43.7	90	6	20			G	0					
IT	3	55	45.5	160	46.2	90	6	21	15	0	G	1	2	0			BS
IT	4	55	45.5	160	46.2	90	6	21	15	0	G	0	2	0			BS
IT	5	55	45.5	160	46.2	90	6	21	15	0	G	0	2	0			BS
IT	6	55	45.5	160	46.2	90	6	22	16	0	G	0	2	0			BS
IT	7	55	45.7	160	41.6	90	6	23	16	0	G	0	2	0			B
IT	8	55	44.0	160	40.8	90	6	25	17	30	G	0					B
SD	2	55	45.1	160	42.4	90	6	23	17	38	G	3					M
SD	3	55	45.2	160	42.6	90	6	23			G						M
SD	4	55	44.6	160	43.1	90	6	23			G	5					
SD	5	55	44.6	160	43.3	90	6	23			G	4					
SD	6	55	43.6	160	42.4	90	6	23			G	3					
SD	7	55	43.9	160	40.6	90	6	24	10	5	G	12		2			MG
BT	16	55	43.9	160	40.5	90	6	24	10	50	G	39		8			MHD
BT	17	55	42.3	160	41.1	90	6	24	12	50	G	37					MD
SD	8	55	44.2	160	41.5	90	6	24	17	0	G	27		3			MB
BT	18	55	45.2	160	45.5	90	6	24	21	10	G	18					MD
BT	19	55	56.7	160	34.4	90	7	16	10	12	G	16		5			S
BT	20	55	57.9	160	34.4	90	7	16	10	27	G	14		6			S
BT	21	55	55.1	160	35.6	90	7	16	11	1	G	25		17			S
BT	22	55	51.6	160	22.3	90	7	16	13	1	G	16		16			SC
BT	23	55	53.4	160	29.4	90	7	16	14	33	P			10			
BT	24	55	53.3	160	29.7	90	7	16	14	56	P						
BT	25	55	53.3	160	27.3	90	7	16	15	24	G						
BT	26	55	53.3	160	31.0	90	7	16	16	10	G						
SD	9	55	42.4	160	42.2	90	7	24	15	30	G	8		3			G
SD	10	55	42.6	160	42.0	90	7	24	15	55	G	22		4			GR
SD	11	55	43.3	160	42.4	90	7	24	16	50	P	31		5			
SD	12	55	43.6	160	42.4	90	7	24	17	0	G	29		5			MG

Table A-4. Crab specimen records from trawl, dredge, and intertidal samples, June-July 1990.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R
BT	5	CHBA	CW	12.4	U					
BT	5	CHBA	CW	12.5	U					
IT	1	PACA	CL	24.1	U					
IT	1	PACA	CL	8.3	U					
IT	1	PACA	CL	121	U	CO				
IT	1	PACA	CL	134	U	CO				
IT	1	PACA	CL	89	U	CO				
IT	1	PACA	CL	91	U	CO				
IT	1	PACA	CL	97	U	CO				
IT	1	PACA	CL	97	U	CO				
IT	1	PACA	CL	102	U	CO				
IT	1	PACA	CL	109	U	CO				
IT	1	PACA	CL	94	U	CO				
IT	1	PACA	CL	95	U	CO				
IT	1	PACA	CL	90	U	CO				
IT	1	PACA	CL	94	U	CO				
OT	1	PACA	CL	119	M	3				
OT	1	CHBA	CW	98.6	M					
OT	1	CHBA	CW	68.8	M					
OT	1	CHBA	CW	75	M					
BT	10	PACA	CL	77.7	M	2				
BT	10	CHBA	CW	64	M	2				
BT	10	CHBA	CW	55.1	M	2				
BT	10	CHBA	CW	85.8	F	2				
BT	10	CHBA	CW	78.2	F	3				
BT	10	CHBA	CW	80.3	F	2				
BT	10	CHBA	CW	44.4	M	2				
BT	10	CHBA	CW	87.9	F	2				
BT	11	CHBA	CW	86.3	M	3				
BT	11	CHBA	CW	27.1	M					
BT	11	CHBA	CW	129.2	U	CO				
BT	12	CHBA	CW	81.4	F	2				
BT	12	CHBA	CW	62.2	M	2				
BT	12	CHBA	CW	45.7	F	2				
BT	12	CHBA	CW	66.6	M	2				
BT	12	CHBA	CW	129.2	M	2				
BT	12	CHBA	CW	56.5	F	2				
BT	12	CHBA	CW	64	F	2				
BT	12	CHBA	CW	27.4	M					
BT	12	CHBA	CW	33.5	M					
BT	12	CHBA	CW	30.1	M					
BT	12	CHBA	CW	21	M					
BT	12	CHBA	CW	14	U					
BT	13	CHBA	CW	88	F	4				
IT	2	PACA	CL	88	U	CO				
IT	2	PACA	CL	117	U	CO				
IT	2	PACA	CL	105	U	CO				
IT	2	PACA	CL	115	U	CO				
IT	2	PACA	CL	93	U	CO				
IT	2	PACA	CL	105	U	CO				
IT	2	PACA	CL	100	U	CO				
IT	2	PACA	CL	109	U	CO				
IT	2	PACA	CL	107	U	CO				
IT	2	PACA	CL	116	U	CO				
IT	2	PACA	CL	119	U	CO				
IT	2	PACA	CL	100	U	CO				

Table A-4. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R
IT	2	PACA	CL	92	U	CO				
IT	2	PACA	CL	91	U	CO				
IT	2	PACA	CL	97	U	CO				
IT	2	PACA	CL	105	U	CO				
IT	2	PACA	CL	97	U	CO				
IT	2	PACA	CL	92	U	CO				
IT	2	PACA	CL	108	U	CO				
IT	2	PACA	CL	104	U	CO				
IT	2	PACA	CL	87	U	CO				
IT	2	PACA	CL	105	U	CO				
IT	2	PACA	CL	106	U	CO				
IT	2	PACA	CL	117	U	CO				
IT	2	PACA	CL	100	U	CO				
IT	2	PACA	CL	96	U	CO				
IT	2	PACA	CL	94	U	CO				
IT	2	PACA	CL	98	U	CO				
IT	2	PACA	CL	89	U	CO				
IT	2	PACA	CL	109	U	CO				
IT	2	PACA	CL	94	U	CO				
IT	2	PACA	CL	96	U	CO				
IT	2	PACA	CL	90	U	CO				
IT	2	PACA	CL	101	U	CO				
IT	2	PACA	CL	108	U	CO				
IT	2	PACA	CL	107	U	CO				
IT	2	PACA	CL	104	U	CO				
IT	2	PACA	CL	98	U	CO				
IT	2	PACA	CL	95	U	CO				
IT	2	PACA	CL	106	U	CO				
IT	2	PACA	CL	102	U	CO				
IT	2	PACA	CL	91	U	CO				
IT	2	PACA	CL	95	U	CO				
IT	2	PACA	CL	92	U	CO				
IT	2	PACA	CL	87	U	CO				
IT	2	PACA	CL	91	U	CO				
IT	2	PACA	CL	95	U	CO				
IT	2	PACA	CL	101	U	CO				
IT	2	PACA	CL	100	U	CO				
IT	2	PACA	CL	91	U	CO				
IT	2	PACA	CL	97	U	CO				
IT	2	PACA	CL	118	U	CO				
IT	2	PACA	CL	115	U	CO				
IT	2	PACA	CL	100	U	CO				
IT	2	PACA	CL	90	U	CO				
IT	2	PACA	CL	103	U	CO				
IT	2	PACA	CL	98	U	CO				
IT	2	PACA	CL	94	U	CO				
IT	2	PACA	CL	103	U	CO				
IT	2	PACA	CL	95	U	CO				
IT	2	PACA	CL	96	U	CO				
IT	2	PACA	CL	90	U	CO				
IT	2	PACA	CL	90	U	CO				
IT	2	PACA	CL	91	U	CO				
IT	2	PACA	CL	101	U	CO				
IT	2	PACA	CL	91	U	CO				
IT	2	PACA	CL	91	U	CO				
IT	2	PACA	CL	100	U	CO				
IT	2	PACA	CL	90	U	CO				

Table A-4. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R
IT	2	PACA	CL	88	U	CO				
IT	2	PACA	CL	109	U	CO				
IT	2	PACA	CL	97	U	CO				
IT	2	PACA	CL	95	U	CO				
IT	2	PACA	CL	97	U	CO				
IT	2	PACA	CL	95	U	CO				
IT	2	PACA	CL	112	U	CO				
IT	2	PACA	CL	88	U	CO				
IT	2	PACA	CL	93	U	CO				
IT	2	PACA	CL	91	U	CO				
IT	2	PACA	CL	108	U	CO				
IT	2	PACA	CL	94	U	CO				
IT	2	PACA	CL	90	U	CO				
IT	2	PACA	CL	119	U	CO				
IT	2	PACA	CL	94	U	CO				
IT	2	PACA	CL	94	U	CO				
IT	2	PACA	CL	92	U	CO				
IT	2	PACA	CL	103	U	CO				
IT	2	PACA	CL	114	U	CO				
IT	2	PACA	CL	99	U	CO				
IT	2	PACA	CL	91	U	CO				
BT	15	PACA	CL	9.5	U					
BT	15	PAPL	CL	5.3	U					
SD	1	PACA	CL	6.9	U					
IT	2.5	PACA	CL	21	U					
SD	1	CHBA	CW	90	M	4				
IT	3	PACA	CL	27.4	U					
IT	3	PACA	CL	25.1	U					
IT	3	PACA	CL	22.5	U					
IT	3	PACA	CL	20.4	U					
IT	3	PACA	CL	20.8	U					
IT	6	PAPL	CL	26.2	M					
IT	6	PAPL	CL	25	F					
IT	6	PAPL	CL	15	F					
IT	6	PAPL	CL	18.5	F					
IT	6	PACA	CL	24.5	M					
IT	6	PACA	CL	23.7	M					
IT	6	PACA	CL	24	F					
IT	6	PACA	CL	26.1	F					
IT	6	PACA	CL	24.5	F					
IT	6	PACA	CL	27	M					
IT	6	PACA	CL	25	M					
IT	6	PACA	CL	24	F					
IT	6	PACA	CL	27	F					
IT	6	PACA	CL	25.7	M					
IT	6	PACA	CL	23.6	M					
IT	6	PACA	CL	22.1	F					
IT	6	PACA	CL	27.9	F					
IT	6	PACA	CL	24.3	M					
IT	6	PACA	CL	24.2	F					
IT	6	PACA	CL	25.5	M					
IT	6	PACA	CL	17.3	F					
IT	6	PACA	CL	27.4	M					
IT	6	PACA	CL	27	F					
IT	6	PACA	CL	27.3	M					
IT	6	PACA	CL	26.3	F					
IT	6	PACA	CL	27.3	F					

Table A-4. Continued.

Gear	Samp.	Spec.	Size Type	Size (mm)	Sex	Shell Cond.	Egg %	Egg Color	Tag No.	M/R
IT	6	PACA	CL	26	M					
IT	6	PACA	CL	26.1	F					
IT	6	PACA	CL	17	F					
IT	6	PACA	CL	16.7	F					
IT	6	PACA	CL	24.7	F					
IT	6	PACA	CL	23.4	M					
IT	6	PACA	CL	29.8	M					
IT	6	PACA	CL	20.5	M					
IT	6	PACA	CL	27	F					
IT	6	PACA	CL	24.5	M					
IT	6	PACA	CL	26.7	F					
IT	6	PACA	CL	25.6	F					
IT	6	PACA	CL	25.2	F					
IT	6	PACA	CL	25.9	M					
IT	6	PACA	CL	25	F					
IT	6	PACA	CL	25	M					
IT	6	PACA	CL	27.7	F					
IT	6	PACA	CL	23.5	F					
IT	6	PACA	CL	22.1	M					
IT	6	PACA	CL	21.3	F					
IT	6	PACA	CL	26.2	F					
IT	6	PACA	CL	21.5	F					
IT	6	PACA	CL	7.9	U					
IT	6	PACA	CL	7.4	U					
IT	6	PACA	CL	8	U					
IT	6	PACA	CL	7.3	U					
IT	6	PACA	CL	7.3	U					
IT	6	PACA	CL	9.6	U					
IT	6	PACA	CL	7.4	U					
IT	6	PACA	CL	9.3	U					
IT	6	PACA	CL	6	U					
IT	6	PACA	CL	9.5	U					
IT	6	PACA	CL	8.5	U					
IT	6	PACA	CL	9.3	U					
IT	6	PACA	CL	8.1	U					
IT	6	PACA	CL	7	U					
IT	6	PACA	CL	8.8	U					
IT	6	PACA	CL	8	U					
IT	6	PACA	CL	24.6	U					
IT	7	PAPL	CL	11.1						
IT	7	PAPL	CL	12.6						
IT	7	PACA	CL	10.1						
SD	5	PACA	CL	5.5						
SD	5	PACA	CL	5.5						
BT	16	PACA	CL	96	F					
BT	16	CHBA	CL	73	M					
BT	17	PACA	CL	77	M	3				
BT	17	PACA	CL	91	M	3				
BT	17	CHBA	CL	24	F	3				
BT	17	CHBA	CL	69	F	4				
BT	17	CHBA	CL	102	M	4				
BT	17	CHBA	CL	79	M	4				
BT	17	CHBA	CL	82	M	3				
BT	17	CHBA	CL	63	M	3				
BT	17	CHBA	CL	53	F	3				
SD	10	CHBA	CW	15	U					

Table A-5. Zooplankton samples collected, April-July 1990.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
BN3	R1	2	55	44.7	160	42.0	90	4	25	12	22	F	90	250.5	V
BN3	R7	11	56	4.4	160	44.4	90	4	27	8	39	G	18	133.9	V
BN5	R7	11	56	4.4	160	44.4	90	4	27	8	39	G	18	131.1	V
BN3	R11	10	56	1.6	160	40.0	90	4	27	11	37	G	14	186.5	V
BN5	R11	10	56	1.6	160	40.0	90	4	27	11	37	G	14	193.6	V
BN3	R13	9	55	57.1	160	40.8	90	4	27	12	46	G	14	123.8	V
BN5	R13	9	55	57.1	160	40.8	90	4	27	12	46	G	14	124.0	V
BN3	R16	8	55	53.1	160	32.7	90	4	27	15	28	G	17	124.3	V
BN5	R16	8	55	53.1	160	32.7	90	4	27	15	28	G	17	124.4	V
BN3	R19	7	55	55.4	160	43.4	90	4	29	13	15	G	40	113.2	V
BN5	R19	7	55	55.4	160	43.4	90	4	29	13	15	G	40	110.1	V
BN3	R23	3	55	46.2	160	46.9	90	4	29	15	30	G	30	100.9	V
BN5	R23	3	55	46.2	160	46.9	90	4	29	15	30	G	30	98.9	V
BN3	R29	12	55	52.2	160	22.6	90	4	30	12	43	G	25	96.8	V
BN5	R29	12	55	52.2	160	22.6	90	4	30	12	43	G	25	91.9	V
BN3	R32	2	55	44.7	160	42.0	90	5	7	13	45	G	10	110.0	V
BN5	R32	2	55	44.7	160	42.0	90	5	7	13	45	G	10	110.0	V
BN3	R33	2	55	44.7	160	42.0	90	5	7	14	11	G	20	171.6	V
BN5	R33	2	55	44.7	160	42.0	90	5	7	14	11	G	20	171.6	V
BN3	R34	2	55	44.7	160	42.0	90	5	7	14	32	G	30	178.8	V
BN5	R34	2	55	44.7	160	42.0	90	5	7	14	32	G	30	178.8	V
BN3	R35	2	55	44.7	160	42.0	90	5	7	14	58	G	40	190.1	V
BN5	R35	2	55	44.7	160	42.0	90	5	7	14	58	G	40	190.1	V
BN3	R36	2	55	44.7	160	42.0	90	5	7	15	20	G	50	213.5	V
BN5	R36	2	55	44.7	160	42.0	90	5	7	15	20	G	50	213.5	V
BN3	R37	2	55	44.7	160	42.0	90	5	7	15	45	G	60	233.1	V
BN5	R37	2	55	44.7	160	42.0	90	5	7	15	45	G	60	233.1	V
BN3	R38	2	55	44.7	160	42.0	90	5	7	16	9	G	70	264.6	V
BN5	R38	2	55	44.7	160	42.0	90	5	7	16	9	G	70	264.6	V
BN5	R39	2	55	44.7	160	42.0	90	5	7	16	35	G	80	218.6	V
BN3	R39	2	55	44.7	160	42.0	90	5	7	16	35	G	80	218.6	V
BN3	R42	2	55	44.7	160	42.0	90	5	8	8	46	G	10	151.0	V
BN5	R42	2	55	44.7	160	42.0	90	5	8	8	46	G	10	151.0	V
BN5	R43	2	55	44.7	160	42.0	90	5	8	9	2	G	20	192.2	V
BN3	R43	2	55	44.7	160	42.0	90	5	8	9	2	G	20	192.2	V
BN5	R44	2	55	44.7	160	42.0	90	5	8	9	22	G	30	193.6	V
BN3	R44	2	55	44.7	160	42.0	90	5	8	9	22	G	30	193.6	V
BN3	R45	2	55	44.7	160	42.0	90	5	8	9	40	G	40	193.8	V
BN5	R45	2	55	44.7	160	42.0	90	5	8	9	40	G	40	193.8	V
BN3	R46	2	55	44.7	160	42.0	90	5	8	9	59	G	50	208.5	V
BN5	R46	2	55	44.7	160	42.0	90	5	8	9	59	G	50	208.5	V
BN3	R47	2	55	44.7	160	42.0	90	5	8	10	24	G	60	241.9	V
BN5	R47	2	55	44.7	160	42.0	90	5	8	10	24	G	60	241.9	V
BN3	R48	2	55	44.7	160	42.0	90	5	8	10	47	G	70	292.1	V
BN5	R48	2	55	44.7	160	42.0	90	5	8	10	47	G	70	292.1	V
BN3	R49	2	55	44.7	160	42.0	90	5	8	11	11	G	80	268.4	V
BN5	R49	2	55	44.7	160	42.0	90	5	8	11	11	G	80	268.4	V
BC3	1	37	55	42.9	160	41.4	90	5	1	13	36	G	40	282.0	V
BC3	2	36	55	44.7	160	42.0	90	5	1	14	12	G	60	388.1	V
SB	3	36	55	44.7	160	42.0	90	5	1	14	37	G	60	31.4	V
B30	4	36	55	44.7	160	42.0	90	5	1	14	54	G	10	0.0	V
B30	5	36	55	44.7	160	42.0	90	5	1	14	58	G	20	0.0	V
B30	6	36	55	44.7	160	42.0	90	5	1	15	5	G	30	0.0	V
B30	7	36	55	44.7	160	42.0	90	5	1	15	10	G	40	0.0	V
BC3	8	35	55	45.6	160	44.7	90	5	1	15	58	G	35	197.4	V
BC3	9	34	55	44.8	160	47.8	90	5	1	16	47	G	15	165.6	V
BC3	10	33	55	46.9	160	47.2	90	5	1	17	40	G	10	151.8	V

Table A-5. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
BC3	11	31	55	49.1	160	46.9	90	5	1	18	8	G	15	256.9	V
BC3	12	29	55	51.2	160	47.6	90	5	1	18	45	G	15	190.5	V
BC3	13	28	55	52.3	160	51.8	90	5	1	19	30	G	10	200.3	V
BC3	14	27	55	53.4	160	48.1	90	5	1	20	20	G	25	233.6	V
BC3	15	38	55	56.0	160	35.2	90	5	2	10	22	G	10	220.0	V
BC3	16	39	55	53.6	160	32.6	90	5	2	11	15	G	25	166.0	V
SB	17	39	55	53.6	160	32.6	90	5	2	11	28	G	25	33.6	V
B30	18	39	55	53.6	160	32.6	90	5	2	11	45	G	25	0.0	V
B30	19	39	55	53.6	160	32.6	90	5	2	11	47	G	25	0.0	V
B30	20	39	55	53.6	160	32.6	90	5	2	11	50	G	25	0.0	V
B30	21	39	55	53.6	160	32.6	90	5	2	12	0	G	25	0.0	V
BC3	22	46	55	50.0	160	19.4	90	5	3	14	12	G	5	290.6	V
BC3	23	45	55	51.8	160	21.8	90	5	3	14	52	G	15	243.5	V
BC3	24	42	55	52.7	160	24.4	90	5	3	15	23	G	10	237.0	V
BC3	25	41	55	53.4	160	28.4	90	5	3	16	2	G	15	214.4	V
BC3	26	21	55	59.1	160	36.4	90	5	4	8	20	G	20	310.0	V
BC3	27	22	55	59.1	160	39.1	90	5	4	8	50	G	7	240.6	V
BC3	28	23	55	59.1	160	42.6	90	5	4	9	27	G	10	313.5	V
BC3	29	25	55	57.1	160	40.6	90	5	4	10	56	G	10	189.2	V
BC3	30	26	55	55.3	160	43.6	90	5	4	11	40	G	15	141.1	V
BC3	31	23	55	59.1	160	42.6	90	5	9	14	30	G	7	135.6	V
BC3	32	22	55	59.1	160	39.1	90	5	9	15	0	G	5	154.1	V
BC3	33	21	55	59.1	160	36.4	90	5	12	10	25	G	17	221.4	V
BC3	34	25	55	57.1	160	40.6	90	5	12	10	10	G	10	174.5	V
BC3	35	26	55	55.3	160	43.6	90	5	12	11	39	G	20	250.8	V
BC3	36	27	55	53.4	160	48.1	90	5	12	12	15	G	25	286.8	V
BC3	37	28	55	52.3	160	51.8	90	5	12	13	0	G	20	173.4	V
BC3	38	29	55	51.2	160	47.6	90	5	12	13	43	G	20	219.4	V
BC3	39	31	55	49.1	160	46.9	90	5	12	14	16	G	15	191.0	V
BC3	40	33	55	46.9	160	47.2	90	5	12	14	45	G	30	196.9	V
BC3	41	34	55	44.8	160	47.8	90	5	12	15	15	G	15	202.3	V
BC3	42	35	55	45.6	160	44.7	90	5	12	15	50	G	40	331.7	V
BC3	43	36	55	44.7	160	42.0	90	5	12	16	15	G	50	315.4	V
SB	44	36	55	44.7	160	42.0	90	5	12	16	35	G	50	40.5	V
B30	45	36	55	44.7	160	42.0	90	5	12	16	50	G	10	0.0	V
B30	46	36	55	44.7	160	42.0	90	5	12	16	55	G	20	0.0	V
B30	47	36	55	44.7	160	42.0	90	5	12	17	0	G	30	0.0	V
B30	48	36	55	44.7	160	42.0	90	5	12	17	5	G	40	0.0	V
BC3	49	37	55	42.9	160	41.4	90	5	12	17	45	G	50	242.1	V
BC3	50	46	55	50.0	160	19.4	90	5	13	9	5	G	5	147.7	V
BC3	51	45	55	51.8	160	21.8	90	5	13	9	40	G	20	222.8	V
BC3	52	42	55	52.7	160	24.4	90	5	13	10	10	G	10	231.5	V
BC3	53	41	55	53.4	160	28.4	90	5	13	10	45	G	15	235.6	V
BC3	54	39	55	53.6	160	32.6	90	5	13	11	25	G	25	234.3	V
SB	55	39	55	53.6	160	32.6	90	5	13	11	46	G	25	32.0	V
B30	56	39	55	53.6	160	32.6	90	5	13	11	55	G	5	0.0	V
B30	57	39	55	53.6	160	32.6	90	5	13	12	0	G	10	0.0	V
B30	58	39	55	53.6	160	32.6	90	5	13	12	3	G	15	0.0	V
BC3	59	38	55	56.0	160	35.2	90	5	13	12	45	G	10	208.4	V
BC3	60	21	55	59.1	160	36.4	90	5	18	9	50	G	17	235.3	V
BC3	61	22	55	59.1	160	39.1	90	5	18	10	25	G	5	213.3	V
BC3	62	23	55	59.1	160	42.6	90	5	18	11	5	G	10	195.2	V
BC3	63	25	55	57.1	160	40.6	90	5	18	12	10	G	10	178.6	V
BC3	64	26	55	55.3	160	43.6	90	5	18	12	50	G	20	206.9	V
BC3	65	27	55	53.4	160	48.1	90	5	18	13	25	G	25	256.2	V
BC3	66	28	55	52.3	160	51.8	90	5	18	14	0	G	20	186.7	V
BC3	67	37	55	42.9	160	41.4	90	5	19	11	40	G	45	328.9	V

Table A-5. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
BC3	68	36	55	44.7	160	42.0	90	5	19	13	10	G	45	242.2	V
BC3	69	36	55	44.7	160	42.0	90	5	19	13	25	G	45	299.1	V
SB	70	36	55	44.7	160	42.0	90	5	19	13	0	G	45	28.4	V
B30	71	36	55	44.7	160	42.0	90	5	19	12	35	G	10	0.0	V
B30	72	36	55	44.7	160	42.0	90	5	19	12	40	G	20	0.0	V
B30	73	36	55	44.7	160	42.0	90	5	19	12	45	G	30	0.0	V
B30	74	36	55	44.7	160	42.0	90	5	19	12	50	G	40	0.0	V
BC3	75	35	55	45.6	160	44.7	90	5	19	13	50	G	40	236.8	V
BC3	76	34	55	44.8	160	47.8	90	5	19	14	40	G	10	203.5	V
BC3	77	33	55	46.9	160	47.2	90	5	19	15	10	G	15	258.3	V
BC3	78	31	55	49.1	160	46.9	90	5	19	15	45	G	15	233.0	V
BC3	79	29	55	51.2	160	47.6	90	5	19	16	25	G	25	255.8	V
BC3	80	46	55	50.0	160	19.4	90	5	20	11	0	G	7	175.7	V
BC3	81	45	55	51.8	160	21.8	90	5	20	11	30	G	20	216.1	V
BC3	82	42	55	52.7	160	24.4	90	5	20	11	50	G	10	281.2	V
BC3	83	41	55	53.4	160	28.4	90	5	20	12	20	G	17	253.8	V
BC3	84	39	55	53.6	160	32.6	90	5	20	12	45	G	25	249.2	V
SB	85	39	55	53.6	160	32.6	90	5	20	13	0	G	25	34.7	V
B30	86	39	55	53.6	160	32.6	90	5	20	13	15	G	5	0.0	V
B30	87	39	55	53.6	160	32.6	90	5	20	13	20	G	10	0.0	V
B30	88	39	55	53.6	160	32.6	90	5	20	13	25	G	15	0.0	V
B30	89	39	55	53.6	160	32.6	90	5	20	13	30	G	20	0.0	V
BC3	90	38	55	56.0	160	35.2	90	5	20	14	0	G	15	218.5	V
BC3	91	21	55	59.1	160	36.4	90	5	26	8	35	G	15	184.3	V
BC3	92	22	55	59.1	160	39.1	90	5	26	9	5	G	5	184.5	V
BC3	93	23	55	59.1	160	42.6	90	5	26	9	40	F	10	92.6	V
BC3	94	25	55	57.1	160	40.6	90	5	26	10	25	G	10	198.7	V
BC3	95	26	55	55.3	160	43.6	90	5	26	10	50	G	20	210.4	V
BC3	96	27	55	53.4	160	48.1	90	5	26	11	25	G	23	301.8	V
BC3	97	28	55	52.3	160	51.8	90	5	26	11	55	G	15	206.3	V
BC3	98	29	55	51.2	160	47.6	90	5	26	12	45	G	25	265.3	V
BC3	99	31	55	49.1	160	46.9	90	5	26	13	15	G	15	181.2	V
BC3	100	39	55	53.6	160	32.6	90	5	27	8	15	G	23	244.9	V
SB	101	39	55	53.6	160	32.6	90	5	27	8	35	G	20	30.7	V
B30	102	39	55	53.6	160	32.6	90	5	27	8	50	G	5	0.0	V
B30	103	39	55	53.6	160	32.6	90	5	27	8	55	G	10	0.0	V
B30	104	39	55	53.6	160	32.6	90	5	27	9	0	G	15	0.0	V
B30	105	39	55	53.6	160	32.6	90	5	27	9	5	G	20	0.0	V
BC3	106	46	55	50.0	160	19.4	90	5	27	10	25	G	10	177.7	V
BC3	107	45	55	51.8	160	21.8	90	5	27	11	5	G	20	223.8	V
BC3	108	42	55	52.7	160	24.4	90	5	27	12	45	G	15	191.1	V
BC3	109	41	55	53.4	160	28.4	90	5	27	13	5	G	20	194.4	V
BC3	110	38	55	56.0	160	35.2	90	5	27	14	0	G	15	176.4	V
BC3	111	37	55	42.9	160	41.4	90	5	28	10	30	F	70	164.9	V
B30	112	36	55	44.7	160	42.0	90	5	28	11	47	G	10	0.0	V
B30	113	36	55	44.7	160	42.0	90	5	28	11	55	G	20	0.0	V
B30	114	36	55	44.7	160	42.0	90	5	28	12	0	G	30	0.0	V
B30	115	36	55	44.7	160	42.0	90	5	28	12	5	G	40	0.0	V
SB	116	36	55	44.7	160	42.0	90	5	28	12	10	G	40	20.1	V
BC3	117	36	55	44.7	160	42.0	90	5	28	12	25	G	80	313.0	V
BC3	118	36	55	44.7	160	42.0	90	5	28	12	45	G	40	161.1	V
BC3	119	35	55	45.6	160	44.7	90	5	28	13	15	G	40	194.7	V
BC3	120	34	55	44.8	160	47.8	90	5	28	14	0	G	15	164.3	V
BC3	121	33	55	46.9	160	47.2	90	5	28	14	35	G	20	154.4	V
BC3	125	37	55	42.9	160	41.4	90	6	1	12	5	G	60	250.9	V
BC3	126	36	55	44.7	160	42.0	90	6	1	13	35	G	60	271.7	V
BC3	127	36	55	44.7	160	42.0	90	6	1	13	50	G	40	207.7	V

Table A-5. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
SB	128	36	55	44.7	160	42.0	90	6	1	13	20	F	40	11.1	V
B30	129	36	55	44.7	160	42.0	90	6	1	13	0	G	10	0.0	V
B30	130	36	55	44.7	160	42.0	90	6	1	13	3	G	20	0.0	V
B30	131	36	55	44.7	160	42.0	90	6	1	13	6	G	30	0.0	V
B30	132	36	55	44.7	160	42.0	90	6	1	13	9	G	40	0.0	V
BC3	133	35	55	45.6	160	44.7	90	6	1	14	20	G	40	222.6	V
BC3	134	34	55	44.8	160	47.8	90	6	1	15	5	G	10	176.6	V
BC3	135	33	55	46.9	160	47.2	90	6	1	15	40	G	20	164.2	V
BC3	136	31	55	49.1	160	46.9	90	6	1	16	15	G	15	161.0	V
BC3	137	29	55	51.2	160	47.6	90	6	1	16	50	G	20	150.7	V
BC3	138	46	55	50.0	160	19.4	90	6	2	9	12	G	15	206.4	V
BC3	139	45	55	51.8	160	21.8	90	6	2	9	45	G	20	207.9	V
BC3	140	42	55	52.7	160	24.4	90	6	2	10	5	G	15	145.1	V
BC3	141	41	55	53.4	160	28.4	90	6	2	10	30	G	15	192.5	V
BC3	142	39	55	53.6	160	32.6	90	6	2	10	55	G	25	180.1	V
SB	143	39	55	53.6	160	32.6	90	6	2	11	45	G	20	38.6	V
B30	144	39	55	53.6	160	32.6	90	6	2	12	10	G	5	0.0	V
B30	145	39	55	53.6	160	32.6	90	6	2	12	15	G	10	0.0	V
B30	146	39	55	53.6	160	32.6	90	6	2	12	20	G	15	0.0	V
B30	147	39	55	53.6	160	32.6	90	6	2	12	25	G	20	0.0	V
BC3	148	38	55	56.0	160	35.2	90	6	2	13	55	G	15	127.1	V
BC3	149	21	55	59.1	160	36.4	90	6	2	13	40	G	15	173.7	V
BC3	150	22	55	59.1	160	39.1	90	6	2	14	5	G	5	156.4	V
BC3	151	23	55	59.1	160	42.6	90	6	2	14	35	G	10	215.7	V
BC3	152	25	55	57.1	160	40.6	90	6	2	15	18	G	15	219.6	V
BC3	153	26	55	55.3	160	43.6	90	6	2	13	48	G	25	220.6	V
BC3	154	27	55	53.4	160	48.1	90	6	2	16	20	G	25	187.7	V
BC3	155	28	55	52.3	160	51.8	90	6	2	16	45	G	15	163.4	V
BC3	156	37	55	42.9	160	41.4	90	6	8	10	11	G	60	278.9	V
BC3	157	36	55	44.7	160	42.0	90	6	8	11	20	G	60	337.6	V
SB	158	36	55	44.7	160	42.0	90	6	8	11	55	G	40	17.6	V
B30	159	36	55	44.7	160	42.0	90	6	8	12	10	G	10	0.0	V
B30	160	36	55	44.7	160	42.0	90	6	8	12	13	G	20	0.0	V
B30	161	36	55	44.7	160	42.0	90	6	8	12	16	G	30	0.0	V
B30	162	36	55	44.7	160	42.0	90	6	8	12	20	G	40	0.0	V
BC3	163	36	55	44.7	160	42.0	90	6	8	11	40	G	40	131.6	V
BC3	164	35	55	45.6	160	44.7	90	6	8	12	45	G	40	218.4	V
BC3	165	34	55	44.8	160	47.8	90	6	8	13	25	G	15	186.2	V
BC3	166	33	55	46.9	160	47.2	90	6	8	13	57	G	20	142.7	V
BC3	167	31	55	49.1	160	46.9	90	6	8	14	30	G	15	200.8	V
BC3	168	29	55	51.2	160	47.6	90	6	8	14	55	G	25	160.3	V
BC3	169	28	55	52.3	160	51.8	90	6	8	15	35	G	15	202.6	V
BC3	170	27	55	53.4	160	48.1	90	6	8	16	10	G	20	210.1	V
BC3	171	26	55	55.3	160	43.6	90	6	8	16	40	G	20	271.1	V
BC3	172	25	55	57.1	160	40.6	90	6	8	17	12	G	10	211.9	V
BC3	173	22	55	59.1	160	39.1	90	6	8	17	40	G	7	165.5	V
BC3	174	21	55	59.1	160	36.4	90	6	8	18	55	G	15	229.7	V
BC3	175	23	55	59.1	160	42.6	90	6	8	18	10	G	10	166.4	V
BC3	176	47	55	48.2	160	18.5	90	6	10	9	10	G	10	157.7	V
BC3	177	46	55	50.0	160	19.4	90	6	10	9	40	G	10	222.3	V
BC3	178	45	55	51.8	160	21.8	90	6	10	10	12	G	15	284.6	V
BC3	179	42	55	52.7	160	24.4	90	6	10	11	20	G	15	250.2	V
BC3	180	41	55	53.4	160	28.4	90	6	10	11	52	G	15	265.8	V
B30	181	39	55	53.6	160	32.6	90	6	10	13	45	G	5	0.0	V
B30	182	39	55	53.6	160	32.6	90	6	10	13	50	G	10	0.0	V
B30	183	39	55	53.6	160	32.6	90	6	10	13	55	G	15	0.0	V
B30	184	39	55	53.6	160	32.6	90	6	10	14	0	G	20	0.0	V

Table A-5. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
BC3	185	39	55	53.6	160	32.6	90	6	10	12	57	G	20	227.6	V
SB	186	39	55	53.6	160	32.6	90	6	10	13	30	G	20	27.0	V
BC3	187	38	55	56.0	160	35.2	90	6	10	14	40	G	10	197.5	V
BC3	188	37	55	42.9	160	41.4	90	6	17	7	35	G	60	298.9	V
BC3	189	36	55	44.7	160	42.0	90	6	17	8	50	G	60	241.0	V
BC3	190	36	55	44.7	160	42.0	90	6	17	9	15	G	40	158.8	V
SB	191	36	55	44.7	160	42.0	90	6	17	9	35	G	40	15.2	V
B30	192	36	55	44.7	160	42.0	90	6	17	10	50	G	10	0.0	V
B30	193	36	55	44.7	160	42.0	90	6	17	10	55	G	20	0.0	V
B30	194	36	55	44.7	160	42.0	90	6	17	11	0	G	30	0.0	V
B30	195	36	55	44.7	160	42.0	90	6	17	11	5	G	40	0.0	V
BC3	196	35	55	45.6	160	44.7	90	6	17	11	30	G	40	166.4	V
BC3	197	34	55	44.8	160	47.8	90	6	17	12	27	G	15	211.0	V
BC3	198	33	55	46.9	160	47.2	90	6	17	12	57	G	20	157.1	V
BC3	199	31	55	49.1	160	46.9	90	6	17	13	30	G	15	205.3	V
BC3	200	29	55	51.2	160	47.6	90	6	17	13	55	G	25	134.8	V
BC3	201	28	55	52.3	160	51.8	90	6	17	14	40	G	10	180.0	V
BC3	202	27	55	53.4	160	48.1	90	6	17	15	15	G	25	175.2	V
BC3	203	26	55	55.3	160	43.6	90	6	17	16	15	G	15	175.2	V
BC3	204	25	55	57.1	160	40.6	90	6	17	16	50	G	10	217.9	V
BC3	205	22	55	59.1	160	39.1	90	6	17	17	25	G	15	197.3	V
BC3	206	23	55	59.1	160	42.6	90	6	17	17	55	G	10	140.0	V
BC3	207	21	55	59.1	160	36.4	90	6	17	18	32	G	15	161.9	V
BC3	208	38	55	56.0	160	35.2	90	6	18	8	45	G	10	210.1	V
BC3	209	39	55	53.6	160	32.6	90	6	18	9	30	G	20	193.8	V
SB	210	39	55	53.6	160	32.6	90	6	18	9	40	G	20	29.3	V
B30	211	39	55	53.6	160	32.6	90	6	18	9	50	G	5	0.0	V
B30	212	39	55	53.6	160	32.6	90	6	18	9	55	G	10	0.0	V
B30	213	39	55	53.6	160	32.6	90	6	18	10	0	G	15	0.0	V
B30	214	39	55	53.6	160	32.6	90	6	18	10	5	G	20	0.0	V
BC3	215	41	55	53.4	160	28.4	90	6	18	14	20	G	15	201.4	V
BC3	216	42	55	52.7	160	24.4	90	6	18	13	50	G	15	209.2	V
BC3	217	45	55	51.8	160	21.8	90	6	18	13	22	F	15	91.4	V
BC3	218	46	55	50.0	160	19.4	90	6	18	12	45	G	10	212.3	V
BC3	219	47	55	48.2	160	18.5	90	6	18	12	30	G	7	162.1	V
BN3	220	37	55	42.9	160	41.4	90	6	22	9	25	G	60	164.4	V
BN5	221	37	55	42.9	160	41.4	90	6	22	9	25	G	60	159.5	V
BN3	222	36	55	44.7	160	42.0	90	6	22	10	7	G	60	144.4	V
BN5	223	36	55	44.7	160	42.0	90	6	22	10	7	G	60	143.3	V
SB	224	36	55	44.7	160	42.0	90	6	22	10	37	G	40	26.3	V
B30	225	36	55	44.7	160	42.0	90	6	22	10	55	G	10	0.0	V
B30	226	36	55	44.7	160	42.0	90	6	22	11	0	G	20	0.0	V
B30	227	36	55	44.7	160	42.0	90	6	22	11	10	G	30	0.0	V
B30	228	36	55	44.7	160	42.0	90	6	22	11	20	G	40	0.0	V
BN3	229	35	55	45.6	160	44.7	90	6	22	12	30	G	40	119.1	V
BN5	230	35	55	45.6	160	44.7	90	6	22	12	30	G	40	117.7	V
BN5	231	36	55	44.7	160	42.0	90	6	22	12	0	G	40	-	V
BN3	232	34	55	44.8	160	47.8	90	6	22	14	5	G	15	91.3	V
BN5	233	34	55	44.8	160	47.8	90	6	22	14	5	G	15	92.6	V
BN3	234	33	55	46.9	160	47.2	90	6	22	14	25	G	15	122.5	V
BN5	235	33	55	46.9	160	47.2	90	6	22	14	25	G	15	123.9	V
BN3	236	31	55	49.1	160	46.9	90	6	22	15	25	G	15	122.5	V
BN5	237	31	55	49.1	160	46.9	90	6	22	15	25	G	15	125.0	V
BN3	238	29	55	51.2	160	47.6	90	6	22	15	50	G	25	97.5	V
BN5	239	29	55	51.2	160	47.6	90	6	22	15	50	G	25	97.0	V
BN3	240	28	55	52.3	160	51.8	90	6	22	16	30	G	12	90.5	V
BN5	241	28	55	52.3	160	51.8	90	6	22	16	30	G	12	93.9	V

Table A-5. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
BN3	242	27	55	53.4	160	48.1	90	6	22	16	55	G	25	71.1	V
BN5	243	27	55	53.4	160	48.1	90	6	22	16	55	G	25	69.3	V
BN3	244	26	55	55.3	160	43.6	90	6	22	17	30	G	7	99.6	V
BN5	245	26	55	55.3	160	43.6	90	6	22	17	30	G	7	102.7	V
BN3	246	25	55	57.1	160	40.6	90	6	22	18	20	G	10	90.2	V
BN5	247	25	55	57.1	160	40.6	90	6	22	18	20	G	10	92.1	V
BN3	248	22	55	59.1	160	39.1	90	6	22	19	25	G	15	89.0	V
BN5	249	22	55	59.1	160	39.1	90	6	22	19	25	G	15	83.4	V
MN	250	37	55	42.9	160	41.4	90	6	22	10	0	G	45	852.7	V
MN	251	36	55	44.7	160	42.0	90	6	22	11	20	F	55	707.1	V
MN	252	35	55	45.6	160	44.7	90	6	22	14	21	F	45	1196.2	V
MN	253	34	55	44.8	160	47.8	90	6	22	16	16	G	20	675.3	V
MN	254	33	55	46.9	160	47.2	90	6	22	17	15	G	20	592.4	V
MN	255	31	55	49.1	160	46.9	90	6	22	19	36	G	15	796.9	V
MN	256	29	55	51.2	160	47.6	90	6	22	20	0	G	15	732.7	V
MN	257	27	55	53.4	160	48.1	90	6	23	12	0	G	15	753.9	V
BN3	258	27	55	53.4	160	48.1	90	6	23	12	17	G	20	71.2	V
BN5	259	27	55	53.4	160	48.1	90	6	23	12	17	G	20	68.3	V
BN3	260	28	55	52.3	160	51.8	90	6	23	12	39	G	25	81.2	V
BN5	261	28	55	52.3	160	51.8	90	6	23	12	39	G	25	83.2	V
MN	262	28	55	52.3	160	51.8	90	6	23	12	50	G	15	561.5	V
MN	263	29	55	51.2	160	47.6	90	6	23	13	20	G	20	663.5	V
BN3	264	29	55	51.2	160	47.6	90	6	23	13	35	G	30	87.0	V
BN5	265	29	55	51.2	160	47.6	90	6	23	13	35	G	30	87.1	V
BN5	266	33	55	46.9	160	47.2	90	6	23	14	11	G	25	83.7	V
BN3	267	33	55	46.9	160	47.2	90	6	23	14	11	G	25	82.8	V
MN	268	33	55	46.9	160	47.2	90	6	23	14	25	G	20	706.8	V
MN	269	36	55	44.7	160	42.0	90	6	23	16	36	G	50	1051.8	V
BN3	280	23	55	59.1	160	42.6	90	6	22	18	55	G	15	68.6	V
BN5	281	23	55	59.1	160	42.6	90	6	22	18	55	G	15	69.7	V
BN3	282	21	55	59.1	160	36.4	90	6	22	20	0	G	15	68.4	V
BN5	283	21	55	59.1	160	36.4	90	6	22	20	0	G	15	68.8	V
BC5	284	47	55	48.2	160	18.5	90	6	23	14	30	G	7	209.8	V
BC5	285	46	55	50.0	160	19.4	90	6	23	14	55	G	15	230.4	V
BC5	286	45	55	51.8	160	21.8	90	6	23	15	20	G	25	227.2	V
BC5	287	42	55	52.7	160	24.4	90	6	23	15	45	G	15	230.7	V
BC5	288	41	55	53.4	160	28.4	90	6	23	16	5	G	20	248.9	V
BC5	289	39	55	53.6	160	32.6	90	6	23	16	35	G	25	220.5	V
SB	290	39	55	53.6	160	32.6	90	6	23	16	50	G	25	23.4	V
B30	291	39	55	53.6	160	32.6	90	6	23			G	5	0.0	V
B30	292	39	55	53.6	160	32.6	90	6	23	17	15	G	10	0.0	V
B30	293	39	55	53.6	160	32.6	90	6	23	17	20	G	15	0.0	V
B30	294	39	55	53.6	160	32.6	90	6	23	17	25	G	20	0.0	V
BC5	295	38	55	56.0	160	35.2	90	6	23	18	10	G	20	199.4	V
TT	296	36	55	44.7	160	42.0	90	6	25	11	37	F	5	317.6	V
TT	297	36	55	44.7	160	42.0	90	6	25	11	55	F	15	394.7	V
TT	298	36	55	44.7	160	42.0	90	6	25	12	9	F	25	401.2	V
TT	299	36	55	44.7	160	42.0	90	6	25	12	29	F	35	171.4	V
TT	300	36	55	44.7	160	42.0	90	6	25	12	53	F	45	283.5	V
TT	301	36	55	44.7	160	42.0	90	6	25	13	10	G	55	185.9	V
TT	302	36	55	44.7	160	42.0	90	6	25	13	26	G	65	294.0	V
TT	303	36	55	44.7	160	42.0	90	6	25	13	43	G	75	270.3	V
TT	304	36	55	44.7	160	42.0	90	6	26	0	12	G	5	406.3	V
TT	305	36	55	44.7	160	42.0	90	6	26	0	47	G	15	351.1	V
TT	306	36	55	44.7	160	42.0	90	6	26	1	9	G	25	283.7	V
TT	307	36	55	44.7	160	42.0	90	6	26	1	26	G	35	264.1	V
TT	308	36	55	44.7	160	42.0	90	6	26	1	44	G	45	233.7	V

Table A-5. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
TT	309	36	55	44.7	160	42.0	90	6	26	2	1	G	55	235.8	V
TT	310	36	55	44.7	160	42.0	90	6	26	2	18	G	65	274.1	V
TT	311	36	55	44.7	160	42.0	90	6	26	2	36	G	75	71.0	V
TT	312	36	55	44.7	160	42.0	90	6	26	6	4	G	5	320.5	V
TT	313	36	55	44.7	160	42.0	90	6	26	6	17	G	15	329.2	V
TT	314	36	55	44.7	160	42.0	90	6	26	6	32	G	25	310.3	V
TT	315	36	55	44.7	160	42.0	90	6	26	6	47	G	35	244.2	V
TT	316	36	55	44.7	160	42.0	90	6	26	6	59	G	45	269.0	V
TT	317	36	55	44.7	160	42.0	90	6	26	7	14	G	55	239.9	V
TT	318	36	55	44.7	160	42.0	90	6	26	7	28	G	65	245.2	V
TT	319	36	55	44.7	160	42.0	90	6	26	7	45	G	75	251.5	V
BC3	320	36	55	44.7	160	42.0	90	6	23	17	7	G	55	100.2	V
BC5	321	36	55	44.7	160	42.0	90	6	23	17	7	G	55	101.1	V
BC3	322	49	56	1.9	160	42.3	90	6	24	17	30	G	15	131.6	V
BC5	323	49	56	1.9	160	42.3	90	6	24	17	30	G	15	154.6	V
MN	324	49	56	1.9	160	42.3	90	6	24	17	48	G	12	747.5	V
MN	325	48	56	0.7	160	39.0	90	6	24	18	13	G	12	677.7	V
BC3	326	48	56	0.7	160	39.0	90	6	24	18	23	G	15	104.0	V
BC5	327	48	56	0.7	160	39.0	90	6	24	18	23	G	15	118.2	V
BC3	328	22	55	59.1	160	39.1	90	6	24	18	38	G	15	72.2	V
BC5	329	22	55	59.1	160	39.1	90	6	24	18	38	G	15	79.6	V
MN	330	22	55	59.1	160	39.1	90	6	24	18	49	G	12	615.2	V
MN	331	25	55	57.1	160	40.6	90	6	24	19	20	G	12	558.0	V
BC3	332	25	55	57.1	160	40.6	90	6	24	19	31	G	10	95.8	V
BC5	333	25	55	57.1	160	40.6	90	6	24	19	31	G	10	127.3	V
MN	334	26	55	55.3	160	43.6	90	6	24	20	57	G	15	621.1	V
BC5	336	26	55	55.3	160	43.6	90	6	24	21	8	G	15	118.1	V
BC3	335	26	55	55.3	160	43.6	90	6	24	21	8	G	15	112.8	V
TT	351	36	55	44.7	160	42.0	90	6	26	12	8	G	5	252.5	V
TT	352	36	55	44.7	160	42.0	90	6	26	12	20	G	15	284.0	V
TT	353	36	55	44.7	160	42.0	90	6	26	12	30	G	25	287.5	V
TT	354	36	55	44.7	160	42.0	90	6	26	12	42	G	35	288.6	V
TT	355	36	55	44.7	160	42.0	90	6	26	12	56	G	45	234.4	V
TT	356	36	55	44.7	160	42.0	90	6	26	13	10	G	55	229.0	V
TT	357	36	55	44.7	160	42.0	90	6	26	13	20	G	65	244.9	V
TT	358	36	55	44.7	160	42.0	90	6	26	13	35	G	75	214.0	V
TT	359	36	55	44.7	160	42.0	90	6	26	18	1	G	5	325.2	V
TT	360	36	55	44.7	160	42.0	90	6	26	18	14	G	15	249.8	V
TT	361	36	55	44.7	160	42.0	90	6	26	18	25	G	25	277.7	V
TT	362	36	55	44.7	160	42.0	90	6	26	18	42	G	35	284.6	V
TT	363	36	55	44.7	160	42.0	90	6	26	18	54	G	45	241.1	V
TT	364	36	55	44.7	160	42.0	90	6	26	19	7	G	55	248.1	V
TT	365	36	55	44.7	160	42.0	90	6	26	19	21	G	65	238.4	V
TT	366	36	55	44.7	160	42.0	90	6	26	19	35	G	75	250.8	V
BC5	367	37	55	42.9	160	41.4	90	6	29	12	5	G	60	310.6	V
BC5	368	36	55	44.7	160	42.0	90	6	29	13	0	G	75	319.8	V
BC5	369	36	55	44.7	160	42.0	90	6	29	13	20	G	40	206.9	V
SB	370	36	55	44.7	160	42.0	90	6	29	13	30	G	40	15.0	V
B30	371	36	55	44.7	160	42.0	90	6	29	13	45	G	10	0.0	V
B30	372	36	55	44.7	160	42.0	90	6	29	13	50	G	20	0.0	V
B30	373	36	55	44.7	160	42.0	90	6	29	13	55	G	30	0.0	V
B30	374	36	55	44.7	160	42.0	90	6	29	14	0	G	40	0.0	V
BC5	375	35	55	45.6	160	44.7	90	6	29	15	45	G	50	210.0	V
BC5	376	34	55	44.8	160	47.8	90	6	29	16	35	G	15	148.8	V
BC5	377	33	55	46.9	160	47.2	90	6	29	17	10	G	25	180.1	V
BC5	378	31	55	49.1	160	46.9	90	6	29	17	40	G	20	141.7	V
BC5	379	29	55	51.2	160	47.6	90	6	29	18	10	G	25	168.7	V

Table A-5. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
BCS	380	28	55	52.3	160	51.8	90	6	29	18	50	G	25	160.4	V
BCS	381	27	55	53.4	160	48.1	90	6	29	19	20	G	20	136.2	V
BCS	382	26	55	55.3	160	43.6	90	6	29	19	45	G	25	188.9	V
BCS	383	25	55	57.1	160	40.6	90	6	29	20	15	G	15	165.6	V
BCS	384	23	55	59.1	160	42.6	90	6	30	10	20	G	10	103.4	V
BCS	385	22	55	59.1	160	39.1	90	6	30	11	5	G	7	155.5	V
BCS	386	21	55	59.1	160	36.4	90	6	30	11	27	G	20	127.1	V
BCS	387	38	55	56.0	160	35.2	90	6	30	12	17	G	25	175.0	V
BCS	388	39	55	53.6	160	32.6	90	6	30	12	55	G	25	174.2	V
SB	389	39	55	53.6	160	32.6	90	6	30	13	5	G	25	20.9	V
B30	390	39	55	53.6	160	32.6	90	6	30	13	15	G	5	0.0	V
B30	391	39	55	53.6	160	32.6	90	6	30	13	20	G	10	0.0	V
B30	392	39	55	53.6	160	32.6	90	6	30	13	25	G	15	0.0	V
B30	393	39	55	53.6	160	32.6	90	6	30	13	30	G	20	0.0	V
BCS	394	41	55	53.4	160	28.4	90	6	30	14	45	G	25	179.0	V
BCS	395	42	55	52.7	160	24.4	90	6	30	15	15	G	15	134.5	V
BCS	396	45	55	51.8	160	21.8	90	6	30	15	40	G	17	147.6	V
BCS	397	46	55	50.0	160	19.4	90	6	30	16	5	G	10	138.1	V
BCS	398	47	55	48.2	160	18.5	90	6	30	16	25	G	10	85.5	V
TT	399	39	55	53.6	160	32.6	90	7	2	0	5	G	5	277.9	V
TT	400	39	55	53.6	160	32.6	90	7	2	0	17	G	15	276.8	V
TT	401	39	55	53.6	160	32.6	90	7	2	0	29	G	25	291.6	V
TT	402	39	55	53.6	160	32.6	90	7	2	0	40	G	5	308.4	V
TT	403	39	55	53.6	160	32.6	90	7	2	0	50	G	15	318.8	V
TT	404	39	55	53.6	160	32.6	90	7	2	1	3	G	25	276.9	V
TT	405	39	55	53.6	160	32.6	90	7	2	5	45	G	5	291.5	V
TT	406	39	55	53.6	160	32.6	90	7	2	5	54	G	15	306.5	V
TT	407	39	55	53.6	160	32.6	90	7	2	6	6	G	25	268.0	V
TT	408	39	55	53.6	160	32.6	90	7	2	6	18	G	5	296.0	V
TT	409	39	55	53.6	160	32.6	90	7	2	6	28	G	15	254.2	V
TT	410	39	55	53.6	160	32.6	90	7	2	6	39	G	25	258.2	V
TT	411	39	55	53.6	160	32.6	90	7	2	11	58	G	5	325.9	V
TT	412	39	55	53.6	160	32.6	90	7	2	12	7	G	15	292.0	V
TT	413	39	55	53.6	160	32.6	90	7	2	12	18	G	25	251.7	V
TT	414	39	55	53.6	160	32.6	90	7	2	12	30	G	5	334.0	V
TT	415	39	55	53.6	160	32.6	90	7	2	12	45	G	15	260.5	V
TT	416	39	55	53.6	160	32.6	90	7	2	12	56	G	25	295.0	V
TT	417	39	55	53.6	160	32.6	90	7	2	17	51	G	5	312.1	V
TT	418	39	55	53.6	160	32.6	90	7	2	18	22	G	15	369.1	V
TT	419	39	55	53.6	160	32.6	90	7	2	18	34	G	25	361.1	V
TT	420	39	55	53.6	160	32.6	90	7	2	19	0	G	5	376.7	V
TT	421	39	55	53.6	160	32.6	90	7	2	19	10	G	15	326.3	V
TT	422	39	55	53.6	160	32.6	90	7	2	19	37	G	25	350.0	V
BCS	423	37	55	42.9	160	41.4	90	7	6	10	30	G	60	329.6	V
BCS	424	36	55	44.7	160	42.0	90	7	6	11	15	G	65	408.4	V
SB	425	36	55	44.7	160	42.0	90	7	6	11	45	G	40	50.4	V
B30	426	36	55	44.7	160	42.0	90	7	6	12	0	G	10	0.0	V
B30	427	36	55	44.7	160	42.0	90	7	6	12	5	G	20	0.0	V
B30	428	36	55	44.7	160	42.0	90	7	6	12	10	G	30	0.0	V
B30	429	36	55	44.7	160	42.0	90	7	6	12	15	G	40	0.0	V
BCS	430	35	55	45.6	160	44.7	90	7	6	13	15	G	40	275.2	V
BCS	431	34	55	44.8	160	47.8	90	7	6	14	0	G	15	196.8	V
BCS	432	33	55	46.9	160	47.2	90	7	6	14	30	G	25	180.6	V
BCS	433	31	55	49.1	160	46.9	90	7	6	15	0	G	15	199.9	V
BCS	434	29	55	51.2	160	47.6	90	7	6	15	20	G	25	253.2	V
BCS	435	28	55	52.3	160	51.8	90	7	6	15	55	G	15	243.9	V
BCS	436	27	55	53.4	160	48.1	90	7	6	16	20	G	25	237.0	V

Table A-5. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
BCS	437	26	55	55.3	160	43.6	90	7	6	16	50	G	20	154.2	V
BCS	438	25	55	57.1	160	40.6	90	7	6	17	15	G	10	221.3	V
BCS	439	23	55	59.1	160	42.6	90	7	6	16	48	G	7	228.4	V
BCS	440	22	55	59.1	160	39.1	90	7	6	18	10	G	5	216.1	V
BCS	441	21	55	59.1	160	36.4	90	7	6	18	35	G	10	208.6	V
BCS	442	47	55	48.2	160	18.5	90	7	7	10	30	G	7	208.3	V
BCS	443	46	55	50.0	160	19.4	90	7	7	10	58	G	15	289.7	V
BCS	444	45	55	51.8	160	21.8	90	7	7	11	25	G	20	364.5	V
BCS	445	42	55	52.7	160	24.4	90	7	7	11	50	G	15	228.2	V
BCS	446	41	55	53.4	160	28.4	90	7	7	12	15	G	17	270.8	V
BCS	447	39	55	53.6	160	32.6	90	7	7	12	45	G	25	292.3	V
SB	448	39	55	53.6	160	32.6	90	7	7	12	55	G	25	36.2	V
B30	449	39	55	53.6	160	32.6	90	7	7	13	10	G	5	0.0	V
B30	450	39	55	53.6	160	32.6	90	7	7	13	15	G	10	0.0	V
B30	451	39	55	53.6	160	32.6	90	7	7	13	20	G	15	0.0	V
B30	452	39	55	53.6	160	32.6	90	7	7	13	25	G	20	0.0	V
BCS	453	38	55	56.0	160	35.2	90	7	7	14	40	G	15	213.2	V
MN	454	38	55	56.0	160	35.2	90	7	11	18	10	G	20	512.7	V
BCS	455	38	55	56.0	160	35.2	90	7	11	18	40	G	15	214.9	V
BCS	456	39	55	53.6	160	32.6	90	7	11	19	25	G	25	274.3	V
MN	457	39	55	53.6	160	32.6	90	7	11	19	50	G	25	598.1	V
MN	458	41	55	53.4	160	28.4	90	7	11	20	25	G	15	990.3	V
BCS	459	41	55	53.4	160	28.4	90	7	11	20	40	G	15	323.8	V
BCS	460	42	55	52.7	160	24.4	90	7	11	21	20	G	15	255.3	V
MN	461	42	55	52.7	160	24.4	90	7	11	21	30	G	15	1481.6	V
MN	462	37	55	42.9	160	41.4	90	7	13	11	5	G	50	1138.6	V
BCS	463	37	55	42.9	160	41.4	90	7	13	11	30	G	50	433.9	V
SB	464	36	55	44.7	160	42.0	90	7	13	12	25	G	40	55.4	V
B30	465	36	55	44.7	160	42.0	90	7	13	12	45	G	10	0.0	V
B30	466	36	55	44.7	160	42.0	90	7	13	12	50	G	20	0.0	V
B30	467	36	55	44.7	160	42.0	90	7	13	12	55	G	30	0.0	V
B30	468	36	55	44.7	160	42.0	90	7	13	13	0	G	40	0.0	V
BCS	469	36	55	44.7	160	42.0	90	7	13	14	0	G	60	450.2	V
BCS	470	35	55	45.6	160	44.7	90	7	13	14	20	G	40	246.7	V
MN	471	35	55	45.6	160	44.7	90	7	13	14	35	G	40	1020.9	V
BCS	472	34	55	44.8	160	47.8	90	7	13	15	23	G	15	158.3	V
BCS	473	33	55	46.9	160	47.2	90	7	13	15	55	G	20	199.1	V
MN	474	33	55	46.9	160	47.2	90	7	13	16	5	G	20	1082.7	V
BCS	475	31	55	49.1	160	46.9	90	7	13	16	45	G	15	187.3	V
BCS	476	29	55	51.2	160	47.6	90	7	13	17	10	G	25	271.8	V
MN	477	29	55	51.2	160	47.6	90	7	13	17	25	G	25	1136.2	V
BCS	478	28	55	52.3	160	51.8	90	7	13	18	10	G	10	238.0	V
BCS	479	27	55	53.4	160	48.1	90	7	13	18	35	G	25	275.7	V
MN	480	27	55	53.4	160	48.1	90	7	13	18	55	G	20	1270.5	V
BCS	481	26	55	55.3	160	43.6	90	7	13	19	30	G	15	234.7	V
BCS	482	25	55	57.1	160	40.6	90	7	13	19	55	G	10	175.9	V
MN	483	25	55	57.1	160	40.6	90	7	13	20	7	G	10	931.5	V
BCS	484	21	55	59.1	160	36.4	90	7	14	8	40	G	15	252.8	V
BCS	485	22	55	59.1	160	39.1	90	7	14	9	5	G	5	214.1	V
MN	486	22	55	59.1	160	39.1	90	7	14	9	25	G	5	994.3	V
BCS	487	23	55	59.1	160	42.6	90	7	14	10	0	G	7	167.1	V
BCS	488	47	55	48.2	160	18.5	90	7	14	12	35	G	7	191.9	V
BCS	489	46	55	50.0	160	19.4	90	7	14	13	10	G	10	231.8	V
MN	490	46	55	50.0	160	19.4	90	7	14	13	25	G	10	1001.7	V
MN	491	45	55	51.8	160	21.8	90	7	14	14	5	G	20	1381.7	V
BCS	492	45	55	51.8	160	21.8	90	7	14	14	30	G	20	240.5	V
BCS	493	42	55	52.7	160	24.4	90	7	14	15	0	G	15	265.1	V

Table A-5. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
BCS	494	41	55	53.4	160	28.4	90	7	14	15	35	G	15	298.6	V
BCS	495	39	55	53.6	160	32.6	90	7	14	16	5	G	25	323.8	V
SB	496	39	55	53.6	160	32.6	90	7	14	16	25	G	25	42.7	V
B30	497	39	55	53.6	160	32.6	90	7	14	16	35	G	5	0.0	V
B30	498	39	55	53.6	160	32.6	90	7	14	17	0	G	10	0.0	V
B30	499	39	55	53.6	160	32.6	90	7	14	17	5	G	15	0.0	V
B30	500	39	55	53.6	160	32.6	90	7	14	17	10	G	20	0.0	V
BCS	501	38	55	56.0	160	35.2	90	7	14	17	35	G	15	177.9	V
BCS	502	21	55	59.1	160	36.4	90	7	21	9	40	G	20	211.2	V
BCS	503	22	55	59.1	160	39.1	90	7	21	9	59	G	10	203.5	V
BCS	504	23	55	59.1	160	42.6	90	7	21	10	30	G	12	211.0	V
BCS	505	25	55	57.1	160	40.6	90	7	21	11	30	G	13	160.5	V
BCS	506	26	55	55.3	160	43.6	90	7	21	12	10	G	28	185.9	V
BCS	507	27	55	53.4	160	48.1	90	7	21	13	7	G	28	170.9	V
BCS	508	38	55	56.0	160	35.2	90	7	21	15	8	G	7	88.6	V
BCS	509	39	55	53.6	160	32.6	90	7	21	19	10	G	23	198.5	V
SB	510	39	55	53.6	160	32.6	90	7	21	19	28	G	20	29.7	V
B30	511	39	55	53.6	160	32.6	90	7	21	19	38	G	5	0.0	V
B30	512	39	55	53.6	160	32.6	90	7	21	19	49	G	10	0.0	V
B30	513	39	55	53.6	160	32.6	90	7	21	19	53	G	15	0.0	V
B30	514	39	55	53.6	160	32.6	90	7	21	19	57	G	20	0.0	V
BCS	516	41	55	53.4	160	28.4	90	7	21	20	10	G	17	178.3	V
BCS	517	42	55	52.7	160	24.4	90	7	22	8	0	G	13	76.9	V
BCS	518	45	55	51.8	160	21.8	90	7	22	8	21	G	22	214.5	V
BCS	519	46	55	50.0	160	19.4	90	7	22	8	52	G	17	126.7	V
BCS	520	47	55	48.2	160	18.5	90	7	22	9	20	G	12	198.6	V
BCS	521	28	55	52.3	160	51.8	90	7	22	12	55	G	15	240.5	V
BCS	522	29	55	51.2	160	47.6	90	7	22	13	31	G	29	199.5	V
BCS	523	31	55	49.1	160	46.9	90	7	22	14	4	G	18	159.7	V
BCS	524	33	55	46.9	160	47.2	90	7	22	14	40	G	23	138.8	V
BCS	525	34	55	44.8	160	47.8	90	7	22	15	10	G	16	211.0	V
BCS	526	35	55	45.6	160	44.7	90	7	22	15	46	G	40	299.7	V
BCS	527	37	55	42.9	160	41.4	90	7	22	19	31	G	56	328.8	V
BCS	528	36	55	44.7	160	42.0	90	7	22	20	10	G	89	523.1	V
SB	529	36	55	44.7	160	42.0	90	7	22	20	30	G	89	28.4	V
B30	530	36	55	44.7	160	42.0	90	7	22	20	42	G	10	0.0	V
B30	531	36	55	44.7	160	42.0	90	7	22	20	55	G	20	0.0	V
B30	532	36	55	44.7	160	42.0	90	7	22	21	0	G	30	0.0	V
B30	533	36	55	44.7	160	42.0	90	7	22	21	5	G	40	0.0	V
TT	534	36	55	44.7	160	42.0	90	7	24	12	35	G	5	147.4	V
TT	535	36	55	44.7	160	42.0	90	7	24	12	53	G	15	251.9	V
TT	536	36	55	44.7	160	42.0	90	7	24	13	16	G	25	280.7	V
TT	537	36	55	44.7	160	42.0	90	7	24	13	31	G	35	211.9	V
TT	538	36	55	44.7	160	42.0	90	7	24	13	48	G	45	124.2	V
TT	539	36	55	44.7	160	42.0	90	7	24	14	0	G	55	277.9	V
TT	540	36	55	44.7	160	42.0	90	7	24	14	24	G	65	185.6	V
TT	541	36	55	44.7	160	42.0	90	7	24	14	36	G	75	295.9	V
TT	542	36	55	44.7	160	42.0	90	7	24	18	9	G	5	187.0	V
TT	543	36	55	44.7	160	42.0	90	7	24	18	23	G	15	219.2	V
TT	544	36	55	44.7	160	42.0	90	7	24	18	34	G	25	378.4	V
TT	545	36	55	44.7	160	42.0	90	7	24	18	53	G	35	388.8	V
TT	546	36	55	44.7	160	42.0	90	7	24	19	8	G	45	290.3	V
TT	547	36	55	44.7	160	42.0	90	7	24	19	30	G	55	231.8	V
TT	548	36	55	44.7	160	42.0	90	7	24	19	44	G	65	290.4	V
TT	549	36	55	44.7	160	42.0	90	7	24	20	6	F	75	#N/A	V
TT	550	36	55	44.7	160	42.0	90	7	25	0	11	F	5	#N/A	V
TT	551	36	55	44.7	160	42.0	90	7	25	0	25	F	15	#N/A	V

Table A-5. Continued.

Gear	Samp.	Sta.	N. Lat. Deg.	N. Lat. Min.	W. Long. Deg.	W. Long. Min.	Time of Sample Year	Mo.	Day	Hr.	Min.	Prf.	Dpth (m)	Samp. Size	Size Unit
TT	552	36	55	44.7	160	42.0	90	7	25	1	3	G	25	270.3	V
TT	553	36	55	44.7	160	42.0	90	7	25	1	18	G	35	222.4	V
TT	554	36	55	44.7	160	42.0	90	7	25	1	35	G	45	289.7	V
TT	555	36	55	44.7	160	42.0	90	7	25	1	55	G	55	267.3	V
TT	556	36	55	44.7	160	42.0	90	7	25	2	15	G	65	298.4	V
TT	557	36	55	44.7	160	42.0	90	7	25	2	30	G	75	92.8	V
TT	558	36	55	44.7	160	42.0	90	7	25	6	20	G	5	239.0	V
TT	559	36	55	44.7	160	42.0	90	7	25	6	33	G	15	144.8	V
TT	560	36	55	44.7	160	42.0	90	7	25	6	45	G	25	142.7	V
TT	561	36	55	44.7	160	42.0	90	7	25	6	58	G	35	136.9	V
TT	562	36	55	44.7	160	42.0	90	7	25	7	11	G	45	7.7	V
TT	563	36	55	44.7	160	42.0	90	7	25	7	25	G	55	10.7	V
TT	564	36	55	44.7	160	42.0	90	7	25	7	53	G	65	223.6	V
TT	565	36	55	44.7	160	42.0	90	7	25	8	40	G	75	240.6	V
BC5	566	25	55	57.1	160	40.6	90	7	26	8	36	G	11	210.7	V
BC5	567	26	55	55.3	160	43.6	90	7	26	9	8	G	18	238.6	V
BC5	568	27	55	53.4	160	48.1	90	7	26	9	46	G	24	209.0	V
BC5	569	28	55	52.3	160	51.8	90	7	26	10	14	G	14	148.0	V
BC5	570	29	55	51.2	160	47.6	90	7	26	10	45	G	28	223.6	V
BC5	571	31	55	49.1	160	46.9	90	7	26	11	10	G	16	154.3	V
BC5	572	33	55	46.9	160	47.2	90	7	26	11	31	G	17	237.9	V
BC5	573	34	55	44.8	160	47.8	90	7	26	12	6	G	17	176.9	V
BC5	574	35	55	45.6	160	44.7	90	7	26	12	30	G	53	273.7	V
B30	575	36	55	44.7	160	42.0	90	7	26	13	17	G	10	0.0	V
B30	576	36	55	44.7	160	42.0	90	7	26	13	20	G	20	0.0	V
B30	577	36	55	44.7	160	42.0	90	7	26	13	24	G	30	0.0	V
B30	578	36	55	44.7	160	42.0	90	7	26	13	30	G	40	0.0	V
SB	579	36	55	44.7	160	42.0	90	7	26	13	37	G	93	14.6	V
BC5	580	36	55	44.7	160	42.0	90	7	26	13	56	G	93	209.4	V
BC5	581	37	55	42.9	160	41.4	90	7	26	14	17	G	61	156.0	V
BC5	582	38	55	56.0	160	35.2	90	7	27	9	6	G	16	237.6	V
BC5	583	39	55	53.6	160	32.6	90	7	27	9	40	G	29	234.7	V
SB	584	39	55	53.6	160	32.6	90	7	27	9	50	G	30	36.4	V
B30	585	39	55	53.6	160	32.6	90	7	27	10	3	G	5	0.0	V
B30	586	39	55	53.6	160	32.6	90	7	27	10	6	G	10	0.0	V
B30	587	39	55	53.6	160	32.6	90	7	27	10	10	G	15	0.0	V
B30	588	39	55	53.6	160	32.6	90	7	27	10	15	G	20	0.0	V
BC5	589	41	55	53.4	160	28.4	90	7	27	10	18	G	16	204.9	V
BC5	590	42	55	52.7	160	24.4	90	7	27	11	8	G	14	220.2	V
BC5	591	45	55	51.8	160	21.8	90	7	27	11	36	G	20	254.0	V
BC5	592	46	55	50.0	160	19.4	90	7	27	12	0	G	14	213.3	V
BC5	593	47	55	48.2	160	18.5	90	7	27	12	28	G	10	264.2	V
BC5	594	21	55	59.1	160	36.4	90	7	27	15	59	G	20	167.1	V
BC5	595	22	55	59.1	160	39.1	90	7	27	16	23	G	10	186.0	V
BC5	596	23	55	59.1	160	42.6	90	7	27	16	43	G	12	159.3	V

Table A-6. Numbers of king crab larvae caught in zooplankton samples, by stage.

		Red King Crab Larvae						Blue King Crab Larvae					
Gear	Sample	Z1	Z2	Z3	Z4	Meg.	Total	Z1	Z2	Z3	Z4	Meg.	Total
BN5	R00	0	0	0	0	0	0	0	0	0	0	0	2
BN*	R01	2	0	0	0	0	2	0	0	0	0	0	0
BN3	R07	0	0	0	0	0	0	0	0	0	0	0	0
BN5	R07	1	0	0	0	0	1	0	0	0	0	0	0
BN3	R11	1	0	0	0	0	1	0	0	0	0	0	0
BN5	R11	0	0	0	0	0	0	0	0	0	0	0	0
BN3	R13	0	0	0	0	0	0	0	0	0	0	0	0
BN5	R13	0	0	0	0	0	0	0	0	0	0	0	0
BN3	R16	0	0	0	0	0	0	0	0	0	0	0	0
BN5	R16	1	0	0	0	0	1	0	0	0	0	0	0
BN3	R19	1	0	0	0	0	1	0	0	0	0	0	0
BN5	R19	1	0	0	0	0	1	0	0	0	0	0	0
BN3	R23	3	0	0	0	0	3	0	0	0	0	0	0
BN5	R23	3	0	0	0	0	3	0	0	0	0	0	0
BN3	R29	0	0	0	0	0	0	0	0	0	0	0	0
BN5	R29	0	0	0	0	0	0	0	0	0	0	0	0
BN5	R42	37	0	0	0	0	37	0	0	0	0	0	0
BN5	R43	69	1	0	0	0	70	1	0	0	0	0	0
BN5	R44	44	1	0	0	0	45	0	0	0	0	0	0
BN5	R45	40	0	0	0	0	40	0	0	0	0	0	0
BN5	R46	12	0	0	0	0	12	0	0	0	0	0	0
BN5	R47	3	0	0	0	0	3	0	0	0	0	0	0
BN5	R48	5	0	0	0	0	5	0	0	0	0	0	0
BN5	R49	7	0	0	0	0	7	0	0	0	0	0	0
BC3	1	85	0	0	0	0	85	12	0	0	0	0	0
BC3	2	5	0	0	0	0	5	1	0	0	0	0	0
BC3	8	20	0	0	0	0	20	1	0	0	0	0	0
BC3	9	5	0	0	0	0	5	0	0	0	0	0	0
BC3	10	10	0	0	0	0	10	0	0	0	0	0	0
BC3	11	0	0	0	0	0	0	0	0	0	0	0	0
BC3	12	0	0	0	0	0	0	0	0	0	0	0	0
BC3	13	2	0	0	0	0	2	0	0	0	0	0	0
BC3	14	1	0	0	0	0	1	0	0	0	0	0	0
BC3	15	0	0	0	0	0	0	0	0	0	0	0	0
BC3	16	0	0	0	0	0	0	0	0	0	0	0	0
BC3	22	0	0	0	0	0	0	0	0	0	0	0	0
BN3	23	0	0	0	0	0	0	0	0	0	0	0	0
BC3	24	0	0	0	0	0	0	0	0	0	0	0	0
BC3	25	0	0	0	0	0	0	0	0	0	0	0	0
BC3	26	1	0	0	0	0	1	0	0	0	0	0	0
BC3	27	0	0	0	0	0	0	0	0	0	0	0	12
BC3	28	0	0	0	0	0	0	0	0	0	0	0	0
BN3	29	3	0	0	0	0	3	0	0	0	0	0	0
BC3	30	1	0	0	0	0	1	0	0	0	0	0	0
BC3	31	0	0	0	0	0	0	0	0	0	0	0	0
BC3	32	4	0	0	0	0	4	0	0	0	0	0	0
BC3	33	1	0	0	0	0	1	0	0	0	0	0	1
BC3	34	1	0	0	0	0	1	0	0	0	0	0	1
BC3	35	5	0	0	0	0	5	0	0	0	0	0	0
BC3	36	2	0	0	0	0	2	0	0	0	0	0	0
BC3	37	3	0	0	0	0	3	0	0	0	0	0	0
BC3	38	0	0	0	0	0	0	0	0	0	0	0	0
BC3	39	1	0	0	0	0	1	0	0	0	0	0	0
BC3	40	0	0	0	0	0	0	0	0	0	0	0	0
BC3	41	10	0	0	0	0	10	0	0	0	0	0	0
BC3	42	57	1	0	0	0	58	0	0	0	0	0	0
BC3	43	119	6	0	0	0	125	3	0	0	0	0	0

Table A-6. Numbers of king crab larvae caught in zooplankton samples, by stage.

		Red King Crab Larvae						Blue King Crab Larvae					
Gear	Samp.	Z1	Z2	Z3	Z4	Meg.	Total	Z1	Z2	Z3	Z4	Meg.	Total
BC3	49	282	46	0	0	0	328	59	3	0	0	0	0
BC3	50	0	1	0	0	0	1	0	0	0	0	0	3
BC3	51	0	0	0	0	0	0	0	0	0	0	0	62
BC3	52	0	0	0	0	0	0	0	0	0	0	0	5
BC3	53	0	0	0	0	0	0	0	0	0	0	0	0
BC3	54	1	0	0	0	0	1	0	0	0	0	0	0
BC3	59	0	0	0	0	0	0	0	0	0	0	0	0
BC3	60	0	0	0	0	0	0	0	0	0	0	0	10
BC3	61	0	0	0	0	0	0	0	0	0	0	0	2
BC3	62	3	0	0	0	0	3	0	0	0	0	0	0
BC3	63	0	0	0	0	0	0	0	0	0	0	0	0
BC3	64	0	0	0	0	0	0	0	0	0	0	0	6
BC3	65	0	1	0	0	0	1	0	0	0	0	0	0
BC3	66	0	0	0	0	0	0	0	0	0	0	0	0
BC3	67	53	55	1	0	0	109	5	0	0	0	0	2
BC3	68	12	29	0	0	0	41	1	1	0	0	0	5
BC3	75	6	7	0	0	0	13	6	4	0	0	0	14
BC3	76	1	0	0	0	0	1	0	0	0	0	0	0
BC3	77	3	2	0	0	0	5	0	0	0	0	0	0
BC3	78	1	0	0	0	0	1	0	0	0	0	0	0
BC3	79	0	0	0	0	0	0	0	0	0	0	0	0
BC3	80	0	0	0	0	0	0	0	0	0	0	0	0
BC3	81	0	0	0	0	0	0	0	0	0	0	0	0
BC3	82	0	0	0	0	0	0	0	0	0	0	0	0
BC3	83	1	0	0	0	0	1	0	0	0	0	0	0
BC3	84	0	0	0	0	0	0	0	0	0	0	0	0
BC3	90	0	0	0	0	0	0	0	0	0	0	0	1
BC3	91	0	0	0	0	0	0	0	0	0	0	0	1
BC3	92	0	0	0	0	0	0	0	0	0	0	0	0
BC3	93	0	0	0	0	0	0	0	0	0	0	0	0
BC3	94	0	0	0	0	0	0	0	0	0	0	0	0
BC3	95	0	0	0	0	0	0	0	0	0	0	0	0
BC3	96	2	0	0	0	0	2	0	0	0	0	0	0
BC3	97	0	0	0	0	0	0	0	0	0	0	0	0
BC3	98	0	0	0	0	0	0	0	0	0	0	0	0
BC3	99	0	0	0	0	0	0	0	0	0	0	0	0
BC3	110	0	0	0	0	0	0	0	0	0	0	0	0
BC3	111	0	3	5	0	0	8	0	0	0	0	0	0
BC3	117	3	10	20	0	0	33	0	5	1	0	0	0
BC3	119	0	7	2	0	0	9	0	3	3	0	0	0
BC3	120	0	1	0	0	0	1	0	0	0	0	0	0
BC3	121	0	0	0	0	0	0	0	0	0	0	0	0
BC3	125	0	20	47	3	0	70	1	3	10	0	0	2
BC3	126	1	7	20	0	0	28	0	2	3	0	0	1
BC3	133	0	3	8	0	0	11	0	1	1	0	0	0
BC3	134	0	0	0	0	0	0	0	0	0	0	0	0
BC3	135	0	0	0	0	0	0	0	0	0	0	0	0
BC3	136	0	0	0	0	0	0	0	0	0	0	0	0
BC3	137	0	0	0	0	0	0	0	0	0	0	0	0
BC3	138	0	0	0	0	0	0	0	0	0	0	0	0
BC3	139	0	0	0	0	0	0	0	0	0	0	0	0
BC3	142	0	0	0	0	0	0	0	0	0	0	0	0
BC3	149	0	0	0	0	0	0	0	0	0	0	0	0
BC3	150	0	0	0	0	0	0	0	0	0	0	0	0
BC3	151	0	0	0	0	0	0	0	0	0	0	0	0
BC3	152	0	0	0	0	0	0	0	0	0	0	0	0
BC3	153	0	0	0	0	0	0	0	0	0	0	0	0

Table A-6. Numbers of king crab larvae caught in zooplankton samples, by stage.

Gear	Samp.	Red King Crab Larvae						Blue King Crab Larvae					
		Z1	Z2	Z3	Z4	Meg.	Total	Z1	Z2	Z3	Z4	Meg.	Total
BC3	154	0	0	0	0	0	0	0	0	0	0	0	0
BC3	155	0	0	0	0	0	0	0	0	0	0	0	0
BC3	156	0	2	3	7	0	12	0	0	3	0	0	0
BC3	157	1	2	4	3	0	10	0	0	0	0	0	0
BC3	164	0	0	0	0	0	0	0	0	0	0	0	0
BC3	165	0	0	0	0	0	0	0	0	0	0	0	0
BC3	166	0	0	0	0	0	0	0	0	0	0	0	0
BC3	167	0	0	0	0	0	0	0	0	0	0	0	0
BC3	168	0	0	0	0	0	0	0	0	0	0	0	0
BC3	169	0	0	0	0	0	0	0	0	0	0	0	1
BC3	170	0	0	0	0	0	0	0	0	0	0	0	0
BC3	171	0	0	0	0	0	0	0	0	0	0	0	0
BC3	173	0	0	0	0	0	0	0	0	0	0	0	0
BC3	174	0	0	0	0	0	0	0	0	0	0	0	0
BC3	175	0	0	0	0	0	0	0	0	0	0	0	0
BC3	176	0	0	0	0	0	0	0	0	0	0	0	0
BC3	177	0	0	0	0	0	0	0	0	0	0	0	0
BC3	178	0	0	0	0	0	0	0	0	0	0	0	0
BC3	179	0	0	0	0	0	0	0	0	0	0	0	0
BC3	180	0	0	0	0	0	0	0	0	0	0	0	0
BC3	185	0	0	0	0	0	0	0	0	0	0	0	0
BC3	187	0	0	0	0	0	0	0	0	0	0	0	0
BC3	188	0	0	0	0	0	0	0	0	0	1	0	0
BC3	189	0	0	0	3	0	3	0	0	0	1	0	0
BC3	196	0	0	0	2	0	2	0	0	0	0	0	0
BC3	197	0	0	0	0	0	0	0	0	0	0	0	0
BC3	198	0	0	0	0	0	0	0	0	0	0	0	0
BC3	199	0	0	0	0	0	0	0	0	0	0	0	0
BC3	200	0	0	0	0	0	0	0	0	0	0	0	0
BC3	201	0	0	0	0	0	0	0	0	0	0	0	0
BC3	202	0	0	1	13	1	15	0	0	0	0	0	0
BC3	203	0	0	0	1	5	6	0	0	0	0	0	0
BC3	204	0	0	7	36	1	44	0	0	0	0	0	0
BC3	205	0	0	1	5	1	7	0	0	0	0	0	3
BC3	206	0	0	3	1	0	4	0	0	0	0	0	0
BC3	207	0	0	0	1	1	2	0	0	0	0	0	0
BC3	215	0	0	0	0	0	0	0	0	0	0	0	0
BC3	216	0	0	0	0	0	0	0	0	0	0	0	0
BC3	217	0	0	0	0	0	0	0	0	0	0	0	0
BC3	219	0	0	0	0	0	0	0	0	0	0	0	0
BN3	220	0	0	1	2	0	3	0	1	0	1	0	0
BN5	221	0	0	0	2	0	2	0	0	0	1	0	0
BN3	222	0	0	0	2	0	2	0	0	0	2	0	0
BN5	223	0	0	0	0	0	0	0	0	0	2	0	0
BN3	229	0	0	0	0	0	0	0	0	0	0	0	0
BN5	230	0	0	0	1	0	1	0	0	0	0	0	0
BN3	232	0	0	0	0	0	0	0	0	0	0	0	0
BN5	233	0	0	0	0	0	0	0	0	0	0	0	0
BN3	234	0	0	0	0	0	0	0	0	0	0	0	0
BN5	235	0	0	0	0	0	0	0	0	0	0	0	6
BN3	236	0	0	0	1	0	1	0	0	0	0	0	0
BN5	237	0	0	0	0	0	0	0	0	0	0	0	0
BN3	238	0	0	0	0	0	0	0	0	0	0	0	0
BN5	239	0	0	0	0	0	0	0	0	0	0	0	0
TT	240	0	0	0	2	0	2	0	0	0	0	0	0
BN5	241	0	0	0	1	0	1	0	0	0	0	0	0
BN3	242	0	0	0	1	0	1	0	0	0	0	0	0

Table A-6. Numbers of king crab larvae caught in zooplankton samples, by stage.

		Red King Crab Larvae						Blue King Crab Larvae					
Gear	Samp.	Z1	Z2	Z3	Z4	Meg.	Total	Z1	Z2	Z3	Z4	Meg.	Total
BN5	243	0	0	0	0	0	0	0	0	0	0	0	0
BN3	244	0	0	0	0	0	0	0	0	0	0	0	0
BN5	245	0	0	0	0	0	0	0	0	0	0	0	0
BN3	246	0	0	0	0	0	0	0	0	0	0	0	0
BN5	247	0	0	0	0	1	1	0	0	0	0	0	0
BN3	248	0	0	0	0	0	0	0	0	0	0	0	0
BN5	249	0	0	0	0	0	0	0	0	0	0	0	0
MN	251	0	0	0	4	4	8	0	0	0	2	0	0
BN3	258	0	0	0	0	0	0	0	0	0	0	0	0
BN5	259	0	0	0	0	0	0	0	0	0	0	0	0
BN3	260	0	0	0	0	1	1	0	0	0	0	0	0
BN5	261	0	0	0	0	0	0	0	0	0	0	0	0
BN3	264	0	0	0	1	0	1	0	0	0	0	0	0
BN5	265	0	0	0	0	0	0	0	0	0	0	0	0
BN5	266	0	0	0	0	0	0	0	0	0	0	0	0
BN3	267	0	0	0	0	0	0	0	0	0	0	0	0
MN	269	0	0	0	1	0	1	0	0	0	2	0	0
BN3	280	0	0	0	0	1	1	0	0	0	0	0	0
BN3	280	0	0	0	1	1	2	0	0	0	0	0	0
BN5	281	0	0	0	0	2	2	0	0	0	0	0	0
BN3	282	0	0	0	0	0	0	0	0	0	0	0	0
BN5	283	0	0	0	0	0	0	0	0	0	0	0	0
BC5	284	0	0	0	0	0	0	0	0	0	0	0	0
BC5	285	0	0	0	0	0	0	0	0	0	0	0	0
BC5	287	0	0	0	0	0	0	0	0	0	0	0	0
BC5	289	0	0	0	0	0	0	0	0	0	0	0	0
TT	296	0	0	0	0	0	0	0	0	0	0	0	0
TT	297	0	0	0	0	0	0	0	0	0	0	0	0
TT	298	0	0	0	0	0	0	0	0	0	0	0	0
TT	299	0	0	0	4	0	4	0	0	0	5	0	0
TT	300	0	0	0	1	1	2	0	0	0	0	0	0
TT	301	0	0	0	0	0	0	0	0	0	0	0	0
TT	302	0	0	0	0	0	0	0	0	0	0	0	0
TT	303	0	0	0	0	0	0	0	0	0	0	0	5
TT	304	0	0	0	0	0	0	0	0	0	0	0	0
TT	305	0	0	0	1	3	4	0	0	0	3	0	0
TT	306	0	0	0	1	0	1	0	0	0	1	0	0
TT	307	0	0	0	1	0	1	0	0	0	0	0	0
TT	308	0	0	0	0	0	0	0	0	0	0	0	0
TT	309	0	0	0	0	0	0	0	0	0	0	0	0
TT	310	0	0	0	0	0	0	0	0	0	0	0	2
TT	311	0	0	0	0	0	0	0	0	0	0	0	0
TT	312	0	0	0	0	0	0	0	0	0	0	0	2
TT	313	0	0	0	0	0	0	0	0	0	0	0	0
TT	314	0	0	0	2	1	3	0	0	0	0	1	0
TT	315	0	0	0	0	0	0	0	0	0	2	0	0
TT	316	0	0	0	0	0	0	0	0	0	0	0	0
TT	317	0	0	0	0	1	1	0	0	0	0	0	0
TT	318	0	0	0	0	0	0	0	0	0	0	0	2
TT	319	0	0	0	0	0	0	0	0	0	0	0	0
BC3	320	0	0	0	0	2	2	0	0	0	0	0	0
BC5	321	0	0	0	0	0	0	0	0	0	0	0	0
BC3	322	0	0	0	0	1	1	0	0	0	0	0	0
BC5	323	0	0	0	3	3	6	0	0	0	0	0	0
BC5	327	0	0	0	0	1	1	0	0	0	0	0	0
BC3	328	0	0	0	0	0	0	0	0	0	0	0	2
BC5	329	0	0	0	1	0	1	0	0	0	0	0	0

Table A-6. Numbers of king crab larvae caught in zooplankton samples, by stage.

Gear	Samp.	Red King Crab Larvae						Blue King Crab Larvae					
		Z1	Z2	Z3	Z4	Meg.	Total	Z1	Z2	Z3	Z4	Meg.	Total
BC3	332	0	0	0	0	2	2	0	0	0	0	0	3
BC5	333	0	0	0	0	0	0	0	0	0	0	0	0
BC3	335	0	0	0	2	3	5	0	0	0	0	0	0
BC3	336	0	0	0	0	1	1	0	0	0	0	0	0
TT	351	0	0	0	0	0	0	0	0	0	0	0	0
TT	352	0	0	0	0	0	0	0	0	0	0	0	0
TT	353	0	0	0	0	0	0	0	0	0	0	0	0
TT	354	0	0	0	2	0	2	0	0	0	3	0	0
TT	355	0	0	0	0	0	0	0	0	0	0	0	0
TT	356	0	0	0	0	0	0	0	0	0	0	0	0
TT	357	0	0	0	0	0	0	0	0	0	0	0	0
TT	358	0	0	0	0	0	0	0	0	0	0	0	0
TT	359	0	0	0	0	0	0	0	0	0	0	0	0
TT	360	0	0	0	0	0	0	0	0	0	0	0	0
TT	361	0	0	0	1	0	1	0	0	0	2	0	0
TT	362	0	0	0	3	0	3	0	0	0	2	0	0
TT	363	0	0	0	0	0	0	0	0	0	0	0	0
TT	364	0	0	0	0	0	0	0	0	0	0	0	0
TT	365	0	0	0	0	0	0	0	0	0	0	0	0
TT	366	0	0	0	0	0	0	0	0	0	0	0	0
BC5	367	0	0	0	0	0	0	0	0	0	0	0	0
BC5	368	0	0	0	0	0	0	0	0	0	0	0	0
BC5	375	0	0	0	0	0	0	0	0	0	0	0	0
BC5	376	0	0	0	0	0	0	0	0	0	0	0	0
BC3	377	0	0	0	0	0	0	0	0	0	0	0	0
BC5	378	0	0	0	0	0	0	0	0	0	0	0	0
BC5	379	0	0	0	1	1	2	0	0	0	0	0	0
BC5	380	0	0	0	0	0	0	0	0	0	0	0	0
BC5	381	0	0	0	0	1	1	0	0	0	0	0	1
BC5	382	0	0	0	0	1	1	0	0	0	0	0	1
BC5	383	0	0	0	0	0	0	0	0	0	0	0	0
BC3	384	0	0	0	0	1	1	0	0	0	0	0	3
BC5	385	0	0	0	0	0	0	0	0	0	0	0	0
BC5	386	0	0	0	0	0	0	0	0	0	0	0	0
BC5	387	0	0	0	0	0	0	0	0	0	0	0	0
BC5	394	0	0	0	0	0	0	0	0	0	0	0	0
BC5	396	0	0	0	0	0	0	0	0	0	0	0	0
BC5	423	0	0	0	0	0	0	0	0	0	0	0	0
BC5	424	0	0	0	0	0	0	0	0	0	0	0	0
BC5	430	0	0	0	0	0	0	0	0	0	0	0	0
BC5	431	0	0	0	0	0	0	0	0	0	0	0	0
BC5	432	0	0	0	0	0	0	0	0	0	0	0	0
BC5	433	0	0	0	0	0	0	0	0	0	0	0	0
BC5	434	0	0	0	0	0	0	0	0	0	0	0	0
BC5	435	0	0	0	0	1	1	0	0	0	0	0	0
BC5	436	0	0	0	0	0	0	0	0	0	0	0	0
BC5	437	0	0	0	0	0	0	0	0	0	0	0	0
BC5	438	0	0	0	0	0	0	0	0	0	0	0	0
BC5	439	0	0	0	0	0	0	0	0	0	0	0	0
BC5	440	0	0	0	0	0	0	0	0	0	0	0	0
BC5	441	0	0	0	0	0	0	0	0	0	0	0	2
BC5	566	0	0	0	0	0	0	0	0	0	0	0	0
BC5	567	0	0	0	0	0	0	0	0	0	0	0	0
BC5	568	0	0	0	0	0	0	0	0	0	0	0	0
BC5	569	0	0	0	0	0	0	0	0	0	0	0	0
BC5	570	0	0	0	0	0	0	0	0	0	0	0	0
BC5	571	0	0	0	0	0	0	0	0	0	0	0	0

Table A-6. Numbers of king crab larvae caught in zooplankton samples, by stage.

		Red King Crab Larvae						Blue King Crab Larvae					
Gear	Samp.	Z1	Z2	Z3	Z4	Meg.	Total	Z1	Z2	Z3	Z4	Meg.	Total
BC5	572	0	0	0	0	0	0	0	0	0	0	0	0
BC5	573	0	0	0	0	0	0	0	0	0	0	0	0
BC5	574	0	0	0	0	0	0	0	0	0	0	0	0
BC5	580	0	0	0	0	0	0	0	0	0	0	0	2
BC5	581	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX B. LARVAL DEVELOPMENT MODEL

The larval cohort model used is similar to the Manly (1974) larval insect model and the "lag-Manly" model used by Parslow and colleagues (Parslow et al. 1979; Sonntag and Parslow 1981) for copepod populations. The model follows the dynamics of a cohort from hatch through several larval stages, accounting for mortality, variation in hatch time among individuals, and variation in development rates among individuals. The model as applied has two components: a biological model, and a sampling model relating the biological model to observations.

BIOLOGICAL MODEL

The biological model makes the following assumptions:

1) Mortality is constant, equal for all stages, and independent of growth.
2) Development rate for an individual is constant in time and space.
3) The population is closed (specifically no advection or diffusion)
4) Individual differences in hatch time and development rate are normally distributed.
5) The population is sufficiently large that stochasticities average out.

Define:

J = No. of larval stages

τ_j = time of transition from stage j to j+1 (τ_0 is hatch time)

$f_j(t)$ = probability density function (pdf) of τ_j

$F_j(t)$ = cumulative density function (cdf) of τ_j

Then, with no mortality, the population can be described as a renewal process (Cox 1962). The expected proportion of individuals in stage j at time t is

$$\overline{q}_j(t) = F_{j-1}(t) - F_j(t) \qquad [B\text{-}1]$$

or, conditioning on τ_0

$$\overline{q}_j(t|\tau_0) = F_{j-1}(t|\tau_0) - F_j(t|\tau_0). \qquad [B\text{-}2]$$

Adding simple exponential mortality from hatch, we define the probability that an individual is alive at time t, given τ_0, as

$$\bar{s}(t|t0) = e^{-z\cdot(t-t0)}. \qquad [B\text{-}3]$$

The total expected proportion of individuals alive and in stage j at time t, conditional on τ_0 is

$$\bar{p}_j(t|\tau_0) = \bar{q}_j(t|\tau_0)\cdot\bar{s}(t|\tau_0). \qquad [B\text{-}4]$$

For a cohort with varying individual hatch times, the total expected proportion of individuals alive and in stage j at time t is

$$\begin{aligned}\bar{p}_j(t) &= \int_{-\infty}^{\infty} f_0(\tau_0)\cdot\bar{q}_j(t|\tau_0)\cdot\bar{s}(t|\tau_0)\cdot d\tau_0 \\ &= \int_{-\infty}^{\infty} f_0(\tau_0)\cdot[F_{j-1}(t|\tau_0) - F_j(t|\tau_0)]\cdot e^{-z\cdot(t-\tau_0)}\cdot d\tau_0 \end{aligned} \qquad [B\text{-}5]$$

For a sufficiently large population, we can (by the law of large numbers) assume that actual instar proportions are equal to the expectations, i.e.

$$n_j(t) = \bar{p}_j(t)\cdot N_0, \qquad [B\text{-}6]$$

where $n_j(t)$ is the population of individuals in stage j at time t, and N_0 is the total number hatched for the cohort.

Applying this general model to king crab zoea, the distribution of hatch times was assumed to be normal with mean μ and standard deviation σ. Durations for the four zoeal stages were also modeled as normal, with means D_i for each stage and a common coefficient of variation (CV) for all stages.

SAMPLING MODEL

Much population dynamics methodology has come from engineering systems analysis, where simple least squares is widely used to fit models to large data sets. This was the method used by Parslow et al. (1979) and Sonntag and Parslow (1981). However, most plankton populations are patchy, which leads to high sampling variability and correlations in the data . Sampling populations classified by stage or age leads to further complications. For age-classified fish populations, Fournier and Archibald (1982) recognized that sampling error has two components: variation in total catch relative to overall population abundance, and error in age-frequencies within the

sample relative to those in the population. The same considerations apply to stage-classified samples. Variation in total catch results from population patchiness and variation in sampling effectiveness. This variation has been modeled in several ways, including log-normal (Fournier and Archibald 1982), normal with constant CV, and normal with variance following Taylor's power law. If sampling is equally effective for all stages and the population stage structure is spatially homogenous, the sample stage-frequencies will be multinomial with expectations equal to the true population frequencies. (For a case where the spatial homogeneity assumption does not hold, Stedinger and Shoemaker [1985] applied a Dirichlet-multinomial model.)

As an initial application of our model, we used normal, constant CV error for total catch, and simple multinomial error for stage composition. We had no replicate samples from which to estimate CV, so CV was set to 50% based on experience with other data sets. Parameter estimates were found to be insensitive to choice of CV from 25% to 50%, although using a higher CV puts relatively more weight on stage composition data than on total catch.

Under this sampling model, the log-likelihood equation used to obtain parameter estimates is

$$L(\Theta|\mathbf{C}) = \sum_{i} \frac{(C_i - \hat{C}_i)^2}{0.5 \cdot \hat{C}_i} + \sum_{ij} c_{ij} \cdot \ln(p_{ij}) \qquad [B\text{-}7]$$

where i indexes sample times, j indexes stages, **C** is the matrix of catches by stage at sample times, C_i are total observed catches at sample times, c_{ij} are observed catches by stage, $\hat{C}_i$ are total predicted catches, p_{ij} are predicted stage proportions, and Θ is the vector of parameters defined in Table 3.

REFERENCES

Cox, D. R. 1962. Renewal Theory. Methuen, London. 142 pp.

Fournier, D., and C. P. Archibald. 1982. A general theory for analyzing catch at age data. Can. J. Fish. Aquat. Sci. 39:1195-1207.

Manly, B. J. F. 1974. Estimation of stage-specific survival rates and other parameters for insect populations developing through several stages. Oecologia 15:277-285.

Parslow, J., N. C. Sonntag, and J. B. L. Matthews. 1979. Technique of systems identification applied to estimating copepod population parameters. J. Plankt. Res. 1:137-151.

Sonntag, N. C., and J. Parslow. 1981. Technique of systems identification applied to estimating copepod production. J. Plankt. Res. 3:461-473.

Stedinger, J. R., and C. A. Shoemaker. 1985. A stochastic model of insect phenology for a population with spatially variable development rates. Biometrics 41:691-701.

APPENDIX C. LARVAL TRANSPORT ANALYSIS

PROBLEM

To describe the dynamics of king crab larvae in the Port Moller Complex (PMC), we must recognize that observations of change in abundance through time at particular stations confound hydrodynamic transport, mortality, hatch, and metamorphosis. Confounding of transport and mortality has been approached historically by either (1) ignoring transport by assuming balanced boundary exchanges across the study area, or (2) using the Okubo diffusion, drift, and mortality equations (Okubo 1980; McGurk et al. 1991), which assume uniform currents. Neither approach is good in an estuary with tidal currents through a complex channel structure. Our approach here is to (a) replace the diffusion and drift part of the Okubo equations with a detailed hydrodynamic model (the Generalized Longitudinal, Lateral, and Vertical Hydrodynamic and Transport Model, "GLLVHT"; Edinger and Buchak 1980, 1985; McGurk et al. 1991), (b) use this model (under various assumptions regarding larval behavior and timing and location of hatch) to predict the space-time distribution of larvae in the absence of natural mortality, and (c) then (assuming mortality is independent of location and transport) estimate natural mortality by fitting observed larval abundance to the GLLVHT predictions. The effects of hatch and metamorphisis are avoided by restricting the analysis to sample dates between the end of hatch and the beginning of metamorphosis from zoeae to megalopae, as estimated with the life-history model (Appendix B).

The GLLVHT is a three-dimensional euclidean model driven by tidal flows at the estuarine entrance and meteorological inputs (wind, freshwater inflow, insolation). The model grid resolution is 2.1 km by 2.1 km horizontally, and 2 m vertically (Fig. C-1). The time step is variable, ranging from 2 to 15 minutes. The model computes horizontal and vertical velocities, salinity, temperature, and larval density through time at each of the points in the three-dimensional grid. Within the model, larvae were treated either as passive drifters (moving with the local water velocity and diffusion) or with vertical migratory behavior. Details of model design may be found in McGurk et al. (1991).

Vertical migration was incorporated in the model as a vertical velocity term that adjusted larval position in addition to changes in position due to water mass movements. Diel migrations were represented by a sinusoidal function with a period of 24 h. By fitting a cosine function to larval vertical migration data (main report, Fig. 6) we obtained a function describing the depth of larvae (Z, in meters) at any time of day (t, in fractions of days):

$$Z(t) = 8.7 \cdot \cos(2\pi t) - 30 \qquad [C\text{-}1]$$

from which we derived the velocity components (assuming vertical water mass flow is negligible):

$$dZ/dt = -17.4 \cdot \pi \cdot \sin(2\pi t). \qquad [C\text{-}2]$$

Two versions of this model were used: standard diel migration, from near-surface at night to deeper water during the day, and reverse diel migration, from depth at night to surface during the day. These two models are distinguished by changing the sign in equation C-2, and adjusting the depth at which larvae are initialized (at midnight) in the model (see Table C-1).

DATA

Larval data consist of approximately weekly samples at 20 stations along channels in the complex. Samples consisted of double-oblique surface-to-bottom bongo net tows, providing a depth-integrated estimate of larval density. These were supplemented with a 24-h series of depth-stratified Tucker-trawl samples at the deepest station (Sta. 36) late in the season.

Physical characteristics measured included CTD probes in conjunction with each bongo-net sample, tide (pressure) meters at the PMC entrance and at the head of Herendeen Bay (near Station 37), and meteorological data from Cold Bay (ca. 150 km west of PMC). Details of these measurements can be found in the main report and McGurk et al. (1991).

ESTIMATION

Results of the larval life-history model (Appendix B) showed larvae to hatch in inner Herendeen Bay over a period of time centered on 5 May (day 125), with a standard deviation of 4 d. Metamorphosis from the fourth zoeal stage to the megalops (at which time larvae were no longer caught reliably by the bongo nets) occurred about 50 d after hatch, and became substantial after day 180 (30 June). Reliable predictions from the GLLVHT model are only available after day 127. For these reasons, the estimation below includes only the eight sample weeks between day 127 and day 180.

We estimate total hatch (N_0) and instantaneous mortality rate (m) from the following regression model:

$$E[n_{ij}] = V_{ij}E[d_{ij}] = N_0 [\, V_{ij}d_{ij}^*/N_0^*]\exp(-m(t_j - t_0)) \qquad [C\text{-}3]$$

where

$E[x]$	=	expected value (mean) of x,
n_{ij}	=	number of larvae caught, station i, time t_j,
V_{ij}	=	volume sampled, sta. i, time t_j,
d_{ij}	=	"true" larval density (m^{-3}),
d_{ij}^*	=	density predicted by transport model,
N_0	=	"true" initial population size at time t_0,
N_0^*	=	initial population size in transport model, and
m	=	instantaneous natural mortality rate.

The model was fit using a Generalized Linear Model (GLM) with Poisson errors. Results below report estimates of initial number and mortality obtained from the log-transformed model:

$$\log(E[n_{ij}]) = a - b(t_j - t_0) + \log(V_{ij} d_{ij}^* / N_0^*), \qquad [C\text{-}4]$$

where the last term represents a constant "offset" for each sample. From this, we obtain estimates of m ($= b$), and N_0 ($= e^a$). The GLM method uses a minimum deviance criterion rather than least squares, so no R^2 value is available. We report the % change in deviance (%ΔD), which is analogous to R^2 in representing the percentage of total error explained by the model.

RESULTS

We conducted three sets of comparisons using the model: 1) the effect of hatch date on subsequent transport, 2) the effect of hatch location on transport, and 3) the effect of initial depth and vertical migration on transport. The first two sets of comparisons used the passive-drifter behavior submodel, while the third set compares passive drifter and diel migration models. All passive-drifter model runs were performed by J.E. Edinger Associates, Inc. at their facility in Pennsylvania. Diel migration runs were performed at the University of Washington. The runs made to date and estimates of m, N_0, and %ΔD are summarized in Table C-1, and full results for selected runs are shown in Figures C-2 to C-4.

In general, all the passive-drifter models with hatch in inner Herendeen Bay in early May fit the data reasonably well. For these models there was a general pattern of good fit in inner Herendeen Bay (Sta. 35-37), too high a predicted abundance in middle Herendeen Bay (stations 28-34), and a close fit to the low abundance elsewhere, except for extreme under-prediction of abundance near the entrance (Stations 21-27) in late June (ca. day 175). We suspect the observed larvae here are drifting in from Bristol Bay, because no densities near

those observed were present anywhere in PMC immediately before this time. The two diel migration models (standard and reverse diel migration) did not fit as well as the best passive-drifter model.

1) Variation in hatch date (Runs 3.23, 3.27-3.29)

The distribution of hatch over a ten-day period in early May (Run 3.29) improved the fit to data somewhat. Later hatch dates can't really be compared to the data because they exclude the early high-abundance larval period, so they show poor fits. More importantly, the model cohort hatched on 15 May (day 135, 3.27) showed somewhat less initial outward transport than did the base run (hatch 7 May, 3.23). The cohort hatched at the end of May (day 150, 3.28) showed slightly more early transport. This suggests that variation in larval hatch date can, as expected, influence the flushing of larvae from the PMC.

2) Variation in hatch location (Runs 3.23, 3.30-3.32) (Fig. C-4)

Distributing larval hatch uniformly throughout inner Herendeen Bay (3.30) provided a slightly worse fit to the data, with more rapid early export. Larvae hatched in inner Port Moller (Sta. 47, 3.31) were rapidly flushed outward, so overall final densities were low (< 1 m^{-2}) everywhere. But, the final distribution (day 180) was +/- symmetric in the two bays, with highest abundance at the heads of Herendeen Bay and Port Moller. Larvae hatched near the entrance (Sta. 25, 3.32) exhibited a similar rapid loss, with final concentration near the head of Herendeen Bay (0.1-1.0 m^{-2}) and, to a lesser extent, Port Moller (0.01-0.1 m^{-2}). This suggests the possible entrainment of low numbers of larvae from Bristol Bay into the PMC.

3) Variation in vertical distribution (Runs 3.23, 3.33-3.35, 3.39-3.40) (Fig. C-4)

In comparison with larvae originating uniformly over 0-40 m depth (3.23), origin near the surface (0-10 m, 3.33) results in more rapid early flushing, and origin at depth (30-40 m, 3.35) results in greater retention of larvae. Interestingly, origin at mid-depth (20 m, 3.34) gave the best fit to observations. Both migration models resulted poorer overall fit and negative mortality estimates, indicating that predicted outward transport of larvae was greater than the observed decline in abundance.

REFERENCES

Edinger, J. E., and E. M. Buchak. 1980. Numerical hydrodynamics of estuaries. *In* P. Hamilton and K. B. MacDonald (eds.), Estuarine and wetland processes with emphasis on modeling. Plenum Press, NY. Pp. 115-146.

Edinger, J. E., and E. M. Buchak. 1985. Numerical waterbody dynamics and small computers. *In* W. R. Waldrop (ed.), Hydraulics and hydrology in the small computer age. American Society of Civil Engineers, NY. Pp. 705-710.

McGurk, M., D. Warburton, J. E. Edinger, E. M. Buchak. 1991. Fisheries oceanography of the southeast Bering Sea: relationships of growth, dispersion, and mortality of herring larvae to environmental conditions in the Port Moller Estuary. Triton Envir. Cons., Richmond, B.C., Canada. 58+ pp.

Okubo, A. 1980. Diffusion and ecological problems: mathematical models. Lecture notes in biomathematics 10. Springer-Verlag, Berlin. 254 pp.

Table C-1. Summary of GLLVHT Model runs for red king crab larvae

Run No.	Run Date	Behavior	Hatch Day	Hatch Loc.	Initial Depth	Notes	Est. N_0	Est. m	Change in Deviance
3.23	5/27	Passive	127	St 37	0-40m		1.1×10^9	0.062	65%
3.27	5/28	Passive	135	St 37	0-40m		3.5×10^8	0.038	47%
3.28	5/28	Passive	150	St 37	0-40m		2.5×10^8	0.068	14%
3.29	6/2	Passive	126-136	St 37	0-40m	A	1.6×10^9	0.079	70%
3.30	6/3	Passive	127	Note B	0-40m	B	1.1×10^9	0.060	62%
3.31	6/4	Passive	127	St. 47	0-40m	A	8.0×10^{11}	0.354	-8562%
3.32	6/4	Passive	127	St. 25	0-40m	A	2.0×10^{10}	-0.01	-109%
3.33	6/5	Passive	127	St. 37	0-10m		1.0×10^9	0.054	54%
3.34	6/5	Passive	127	St 37	20m		1.2×10^9	0.066	70%
3.35	6/5	Passive	127	St 37	30-40m		1.3×10^9	0.071	69%
3.39	7/3	Rev. Diel	127	St. 37	20m		1.1×10^9	-0.03	51%
3.40	7/6	Std. Diel	127	St. 37	40m		0.7×10^9	-0.02	55%

NOTES:

A. Estimates of N0 and m are not valid for these models.

B. Hatch uniform over Portage Creek arm of Herendeen Bay.

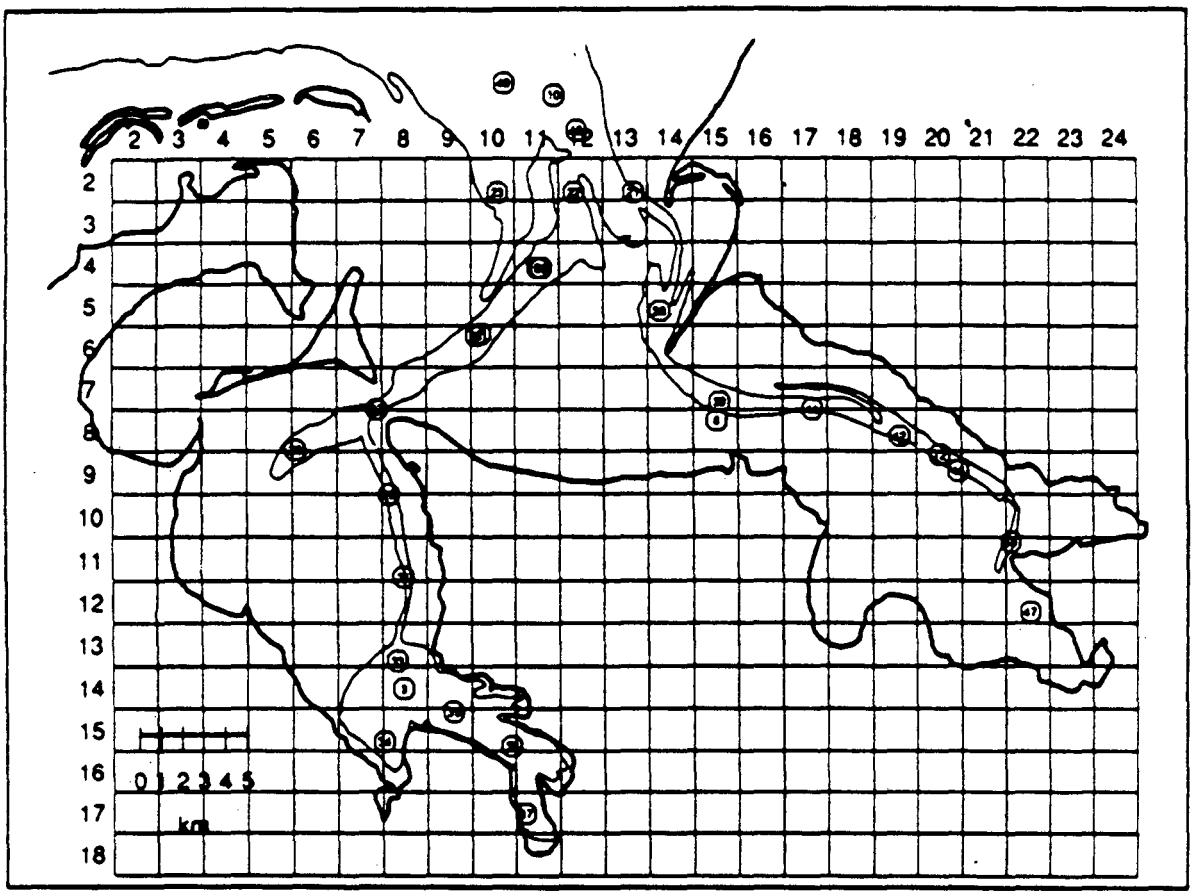


Figure C-1. Chart of Port Moller Complex, showing larval sample stations (numbered octagons) and the GLLVHT model grid. The main weekly sampling consisted of Stations 21-46; other stations were sampled only occasionally.

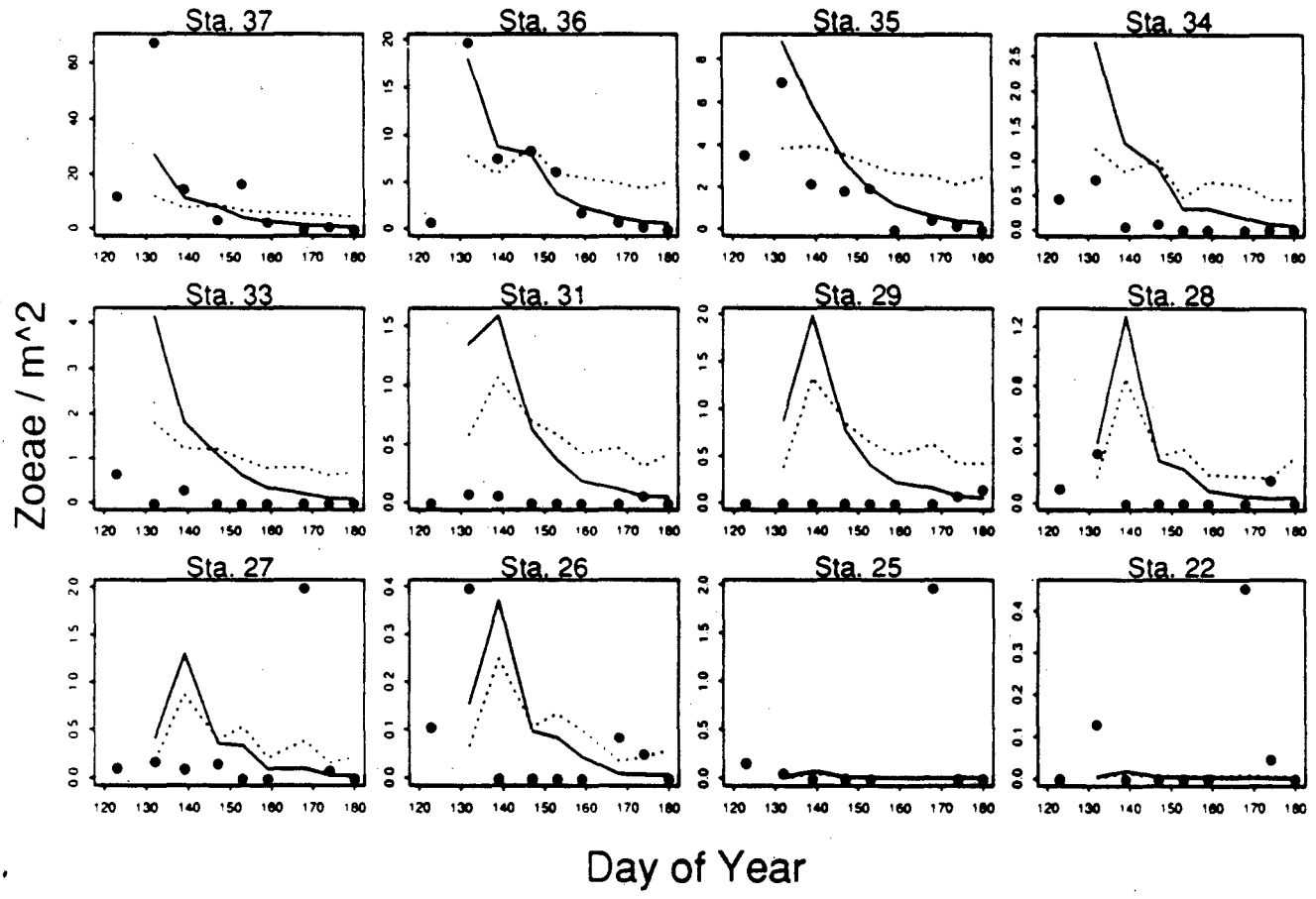
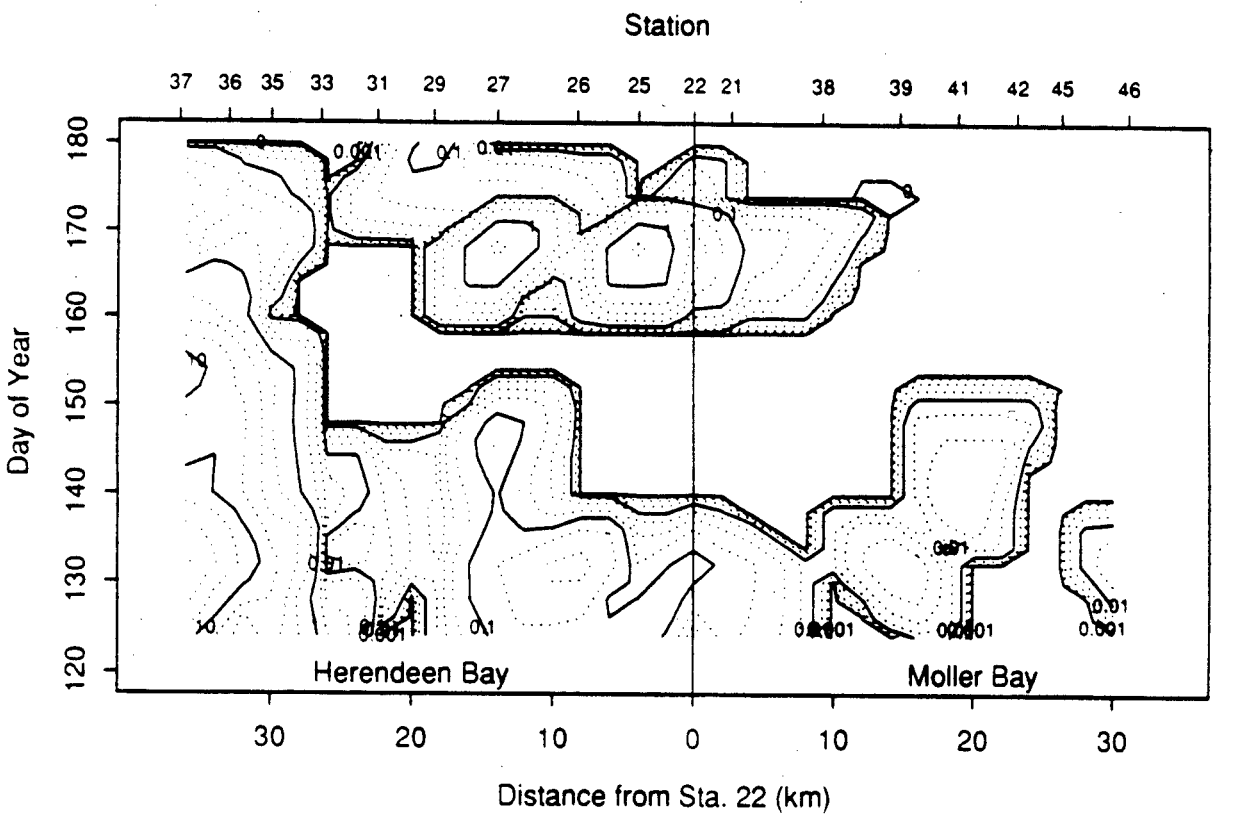
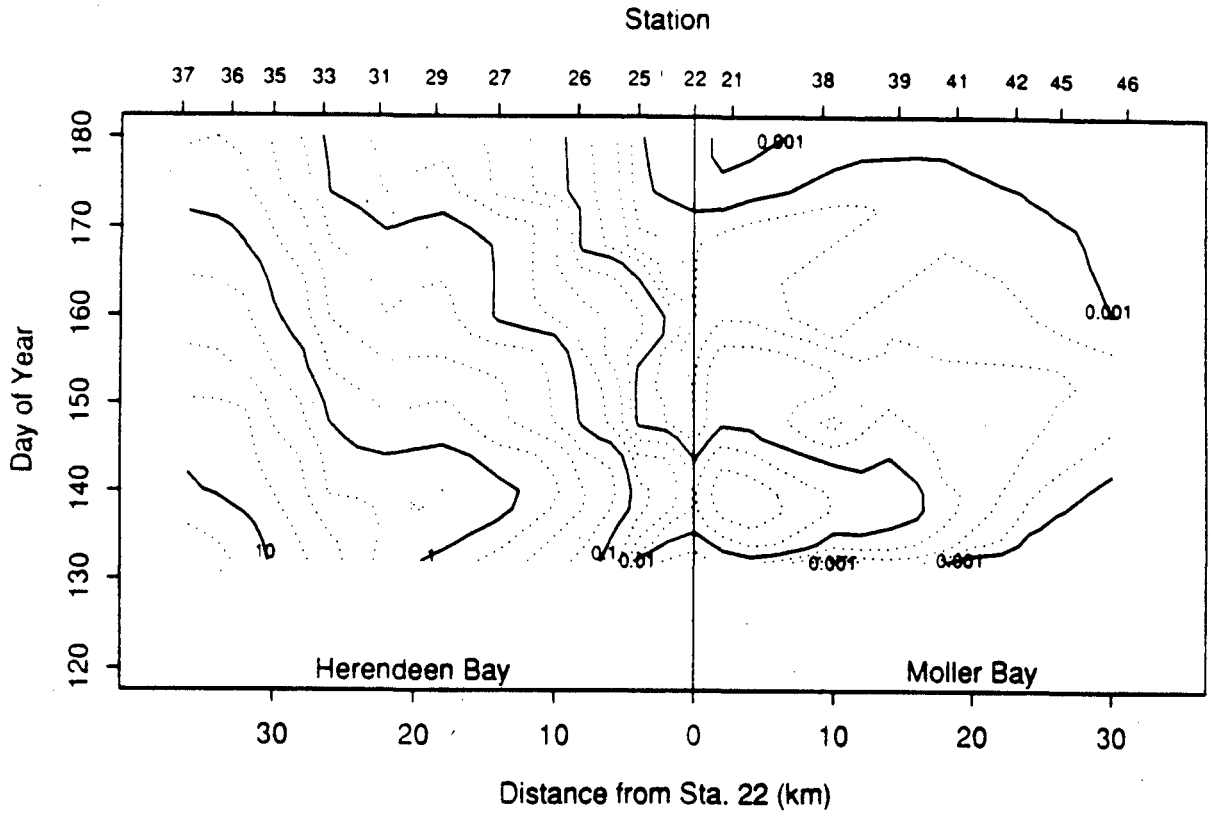


Figure C-2. Predicted and observed larval density (per square meter of surface area) for the station-time matrix for the base model (run 3.23, hatch at Sta. 37, day 127, 0-40 m). Dots are observed (bongo-net) densities. Solid lines are the final prediction, including estimated N_0 and m. Dashed lines are the raw transport model predictions, scaled to the overall mean density.

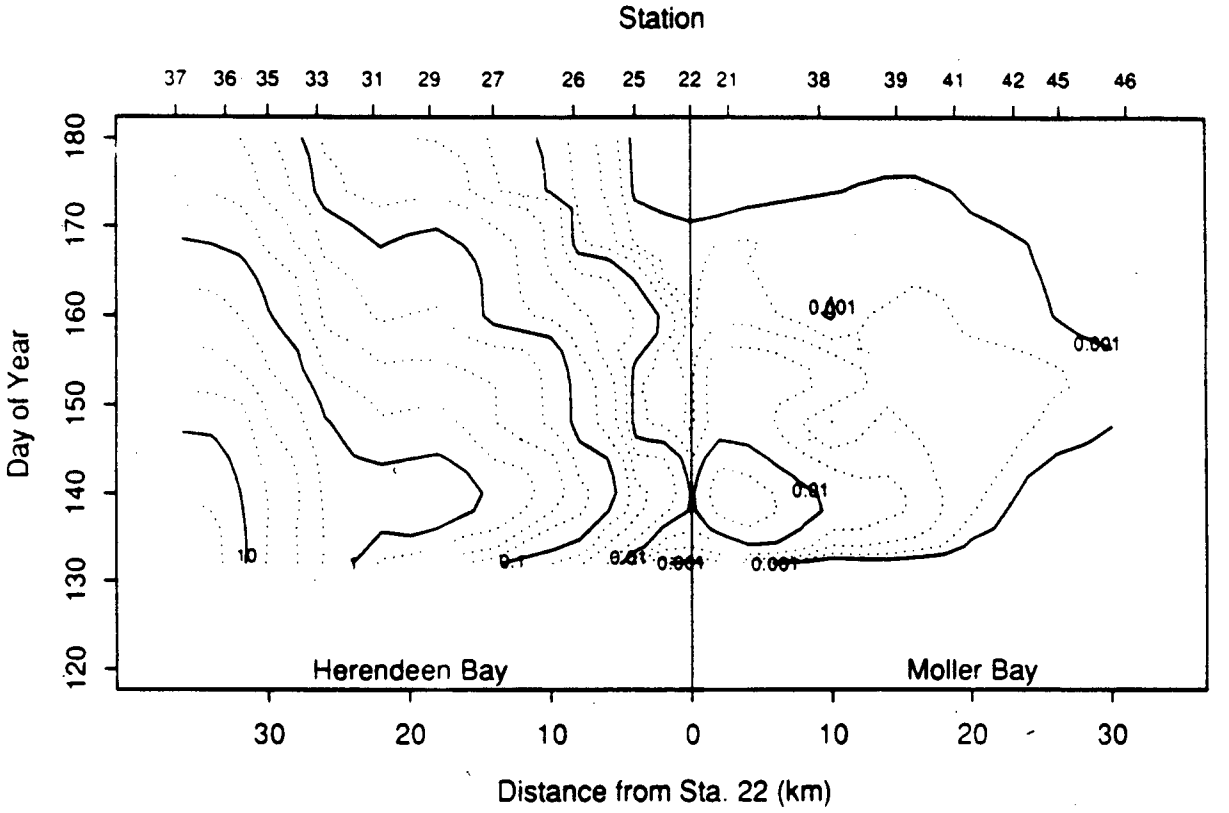
Figure C-3. (Following pages.) Contour plots of observed (A) or predicted (B-H) larval density as a function of time (vertical axis) and position along a transect following main channels from inner Herendeen Bay to inner Moller Bay (horizontal axis).



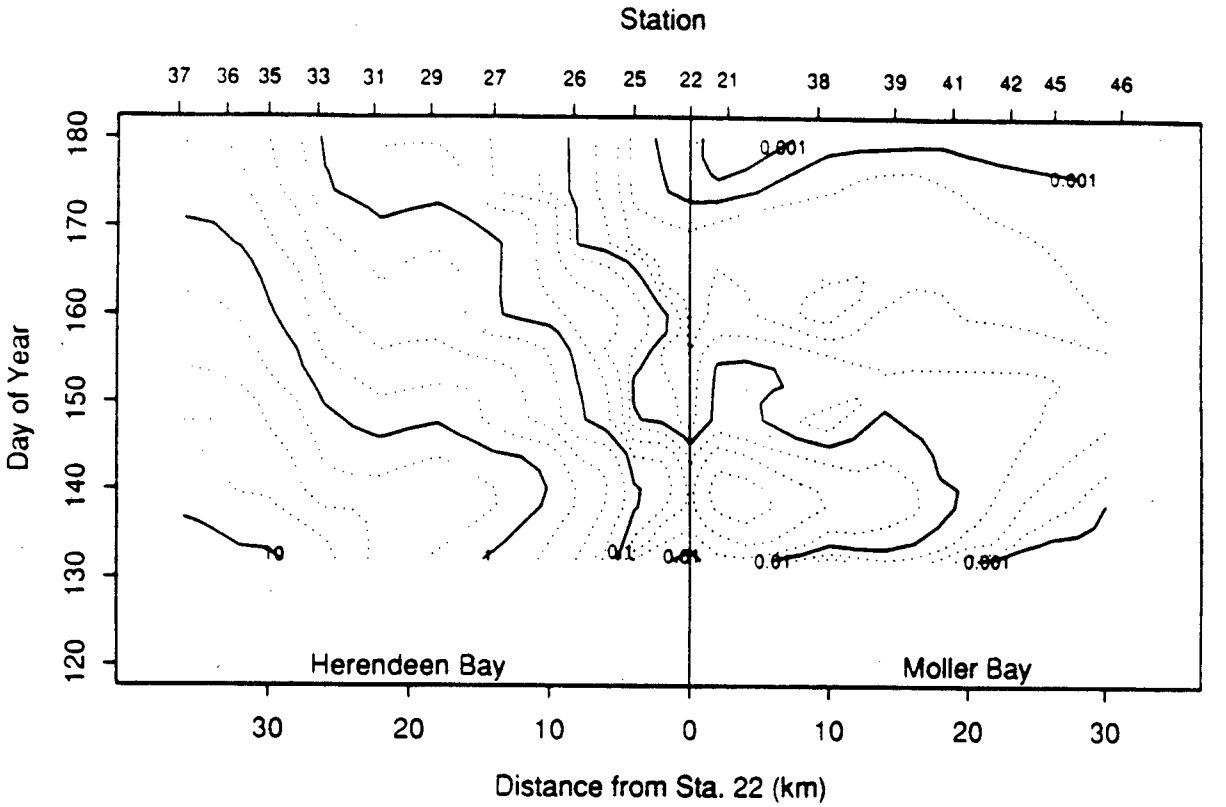
C-3-A. Observed larval density.



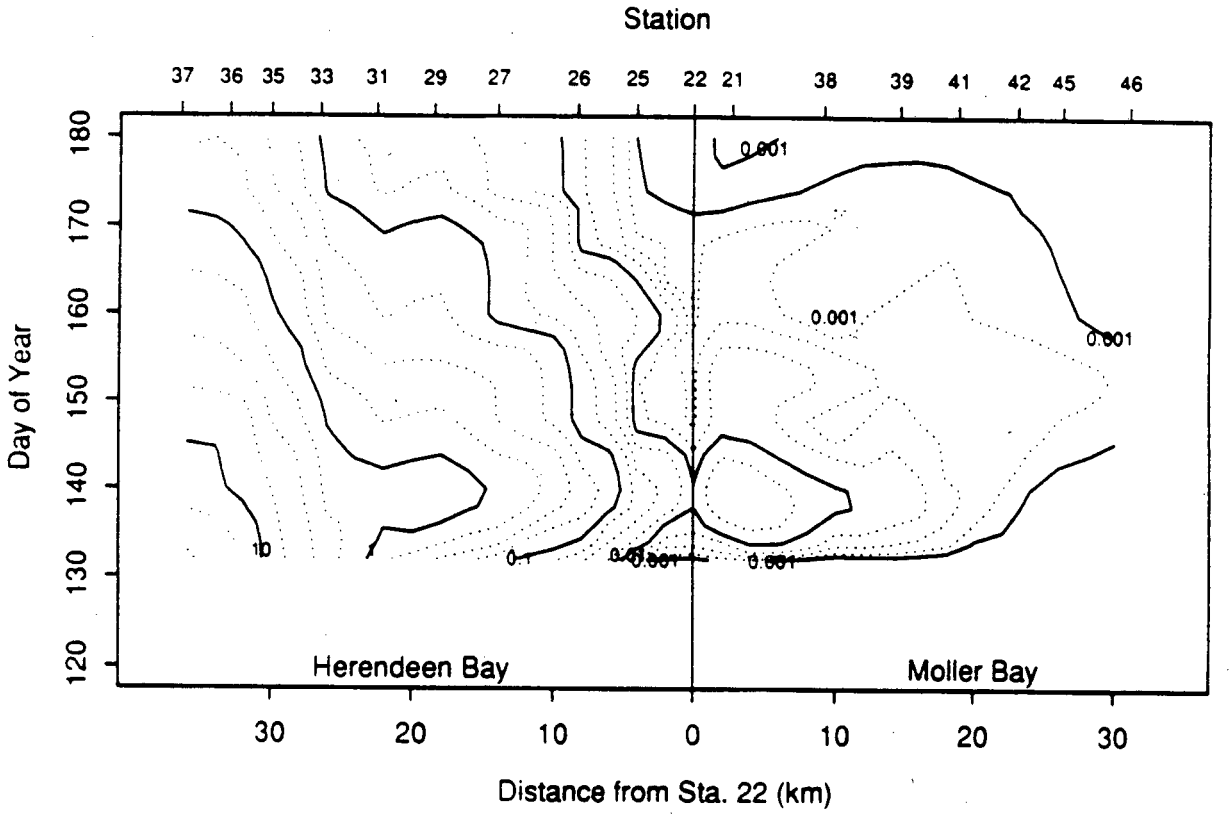
C-3-B. Run 3.23, hatch at Sta. 37, day 127, 0-40 m, passive-drifter.



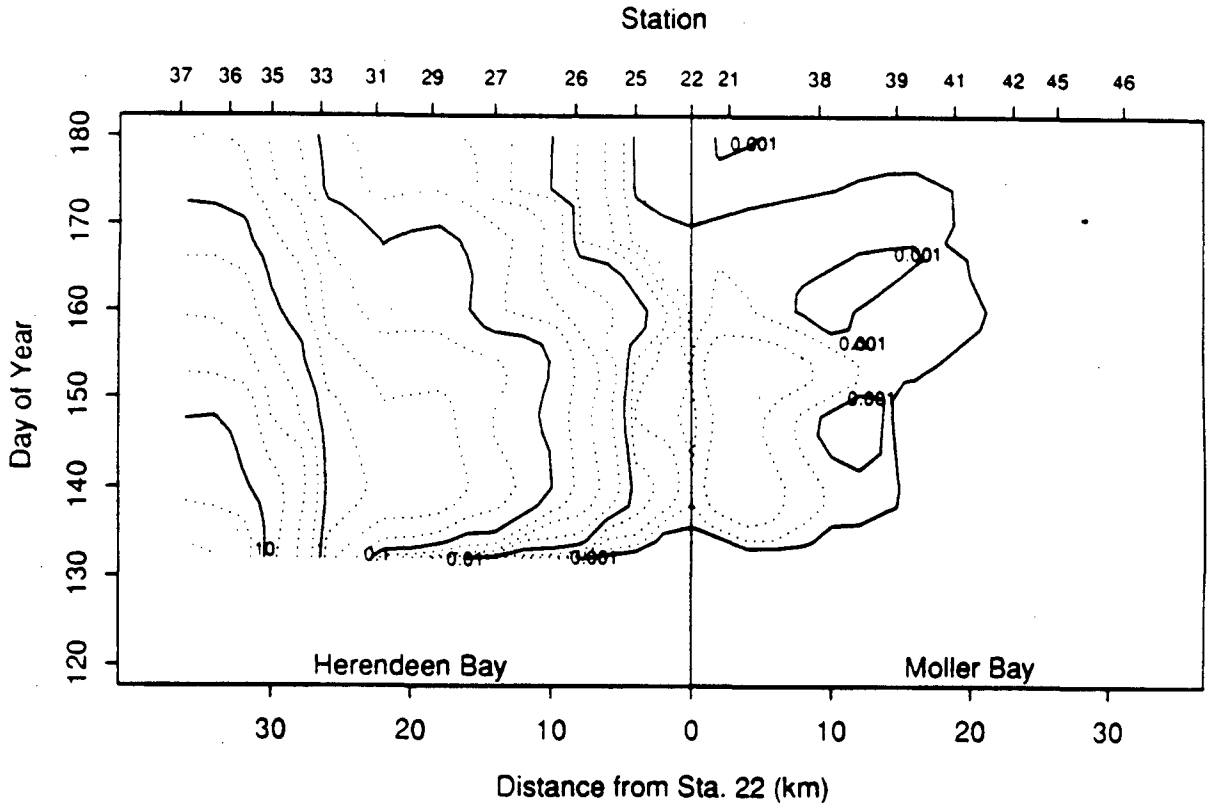
C-3-C. Run 3.29, hatch over inner Herendeen Bay, day 127, 0-40 m, passive-drifter.



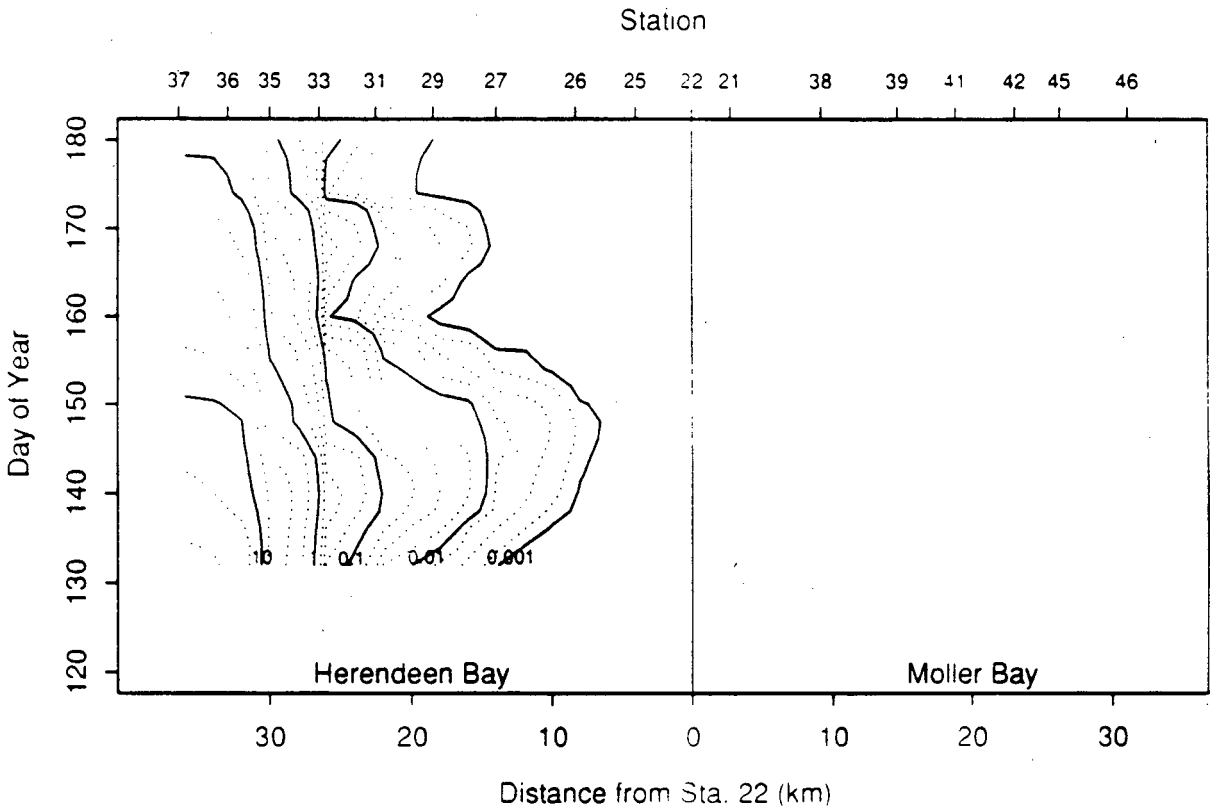
C-3-D. Run 3.33, hatch at Sta. 37, day 127, 0-10 m, passive-drifter.



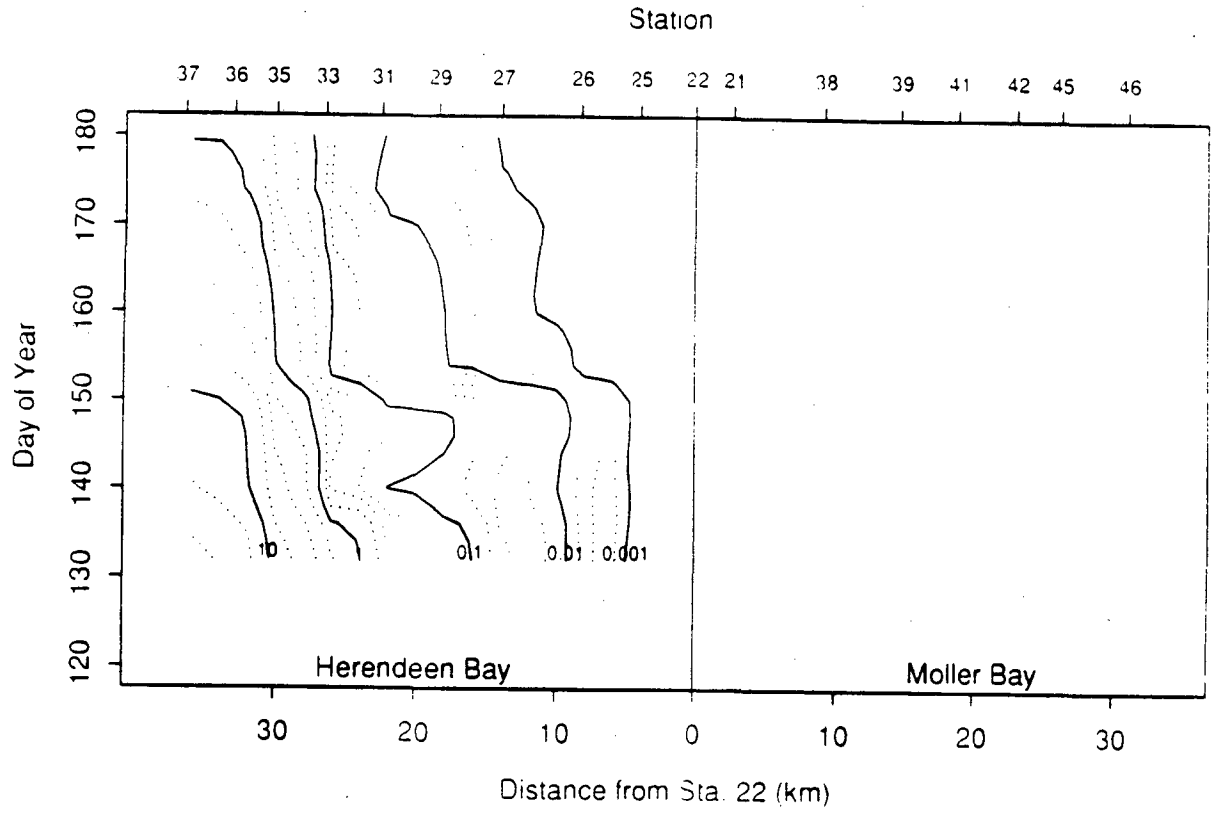
C-3-E. Run 3.34, hatch at Sta. 37, day 127, 20 m, passive-drifter.



C-3-F. Run 3.35, hatch at Sta. 37, day 127, 30-40 m, passive-drifter.

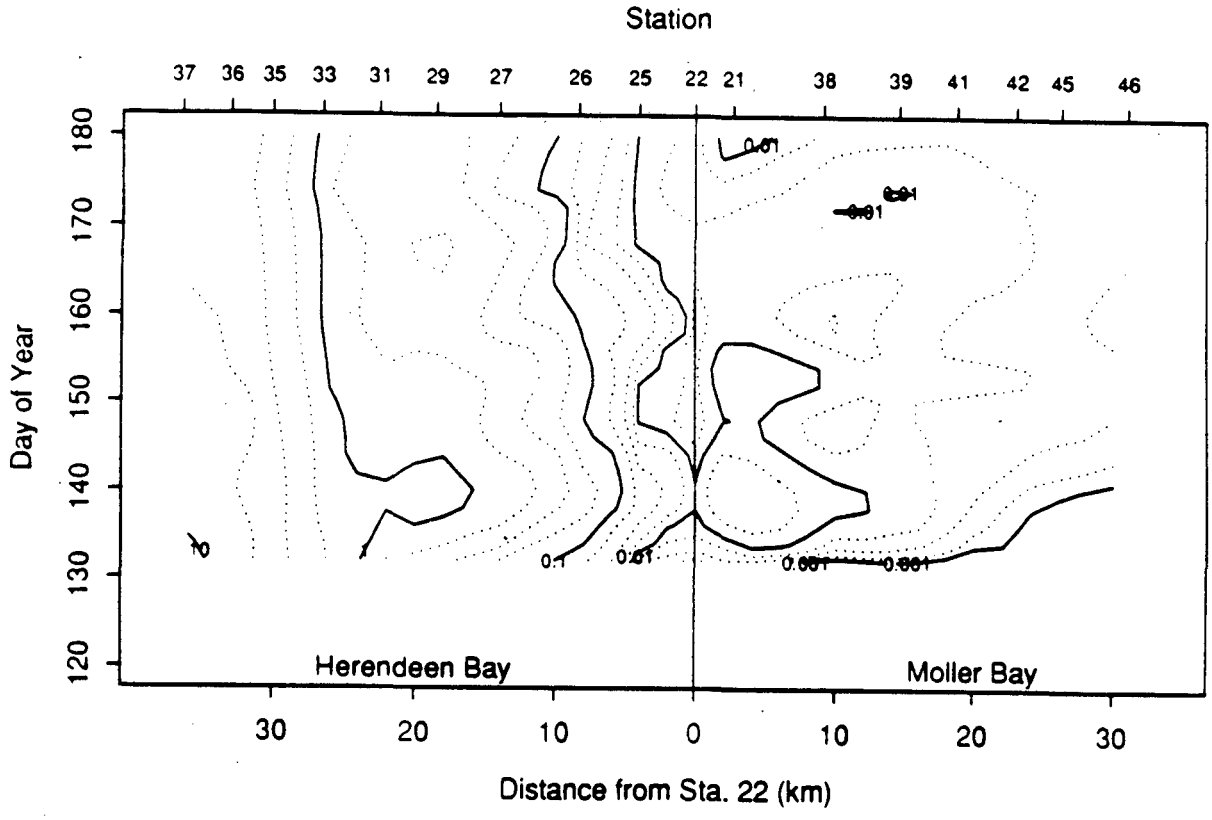


C-3-G. Run 3.39, hatch at Sta. 37, day 127, 20 m, reverse diel migration.

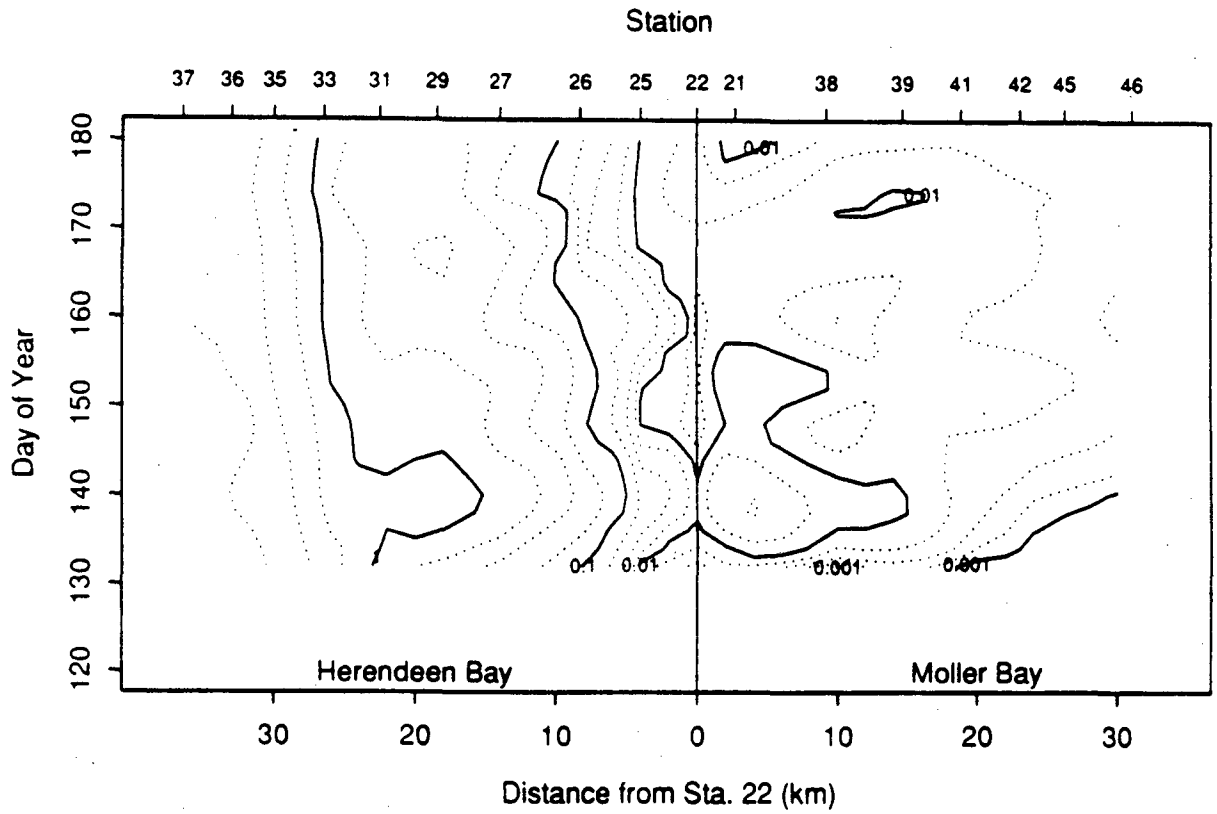


C-3-H. Run 3.40, hatch at Sta. 37, day 127, 40 m, standard diel migration.

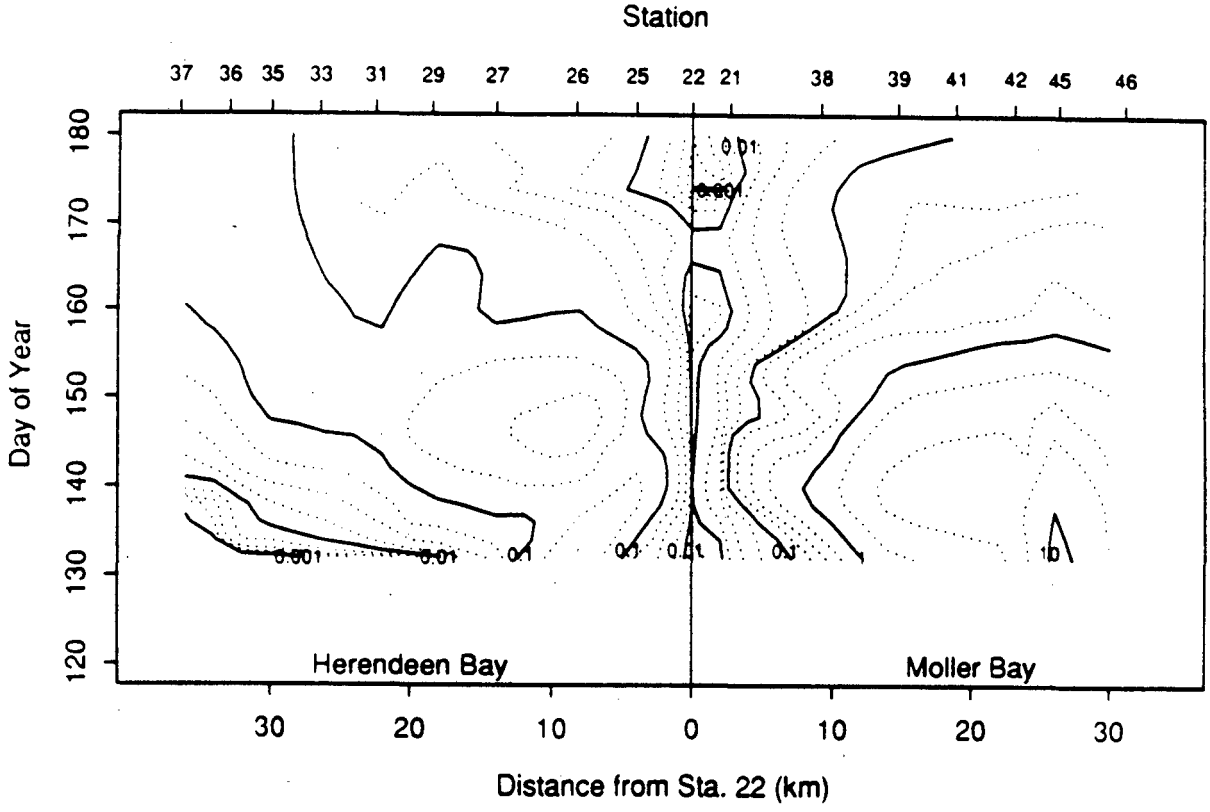
Figure C-4. (Following pages, A-D.) Contour plots comparing different hatch locations and depths. As in Figure C-3, except mortality has been left out of the predictions to show the results of transport only.



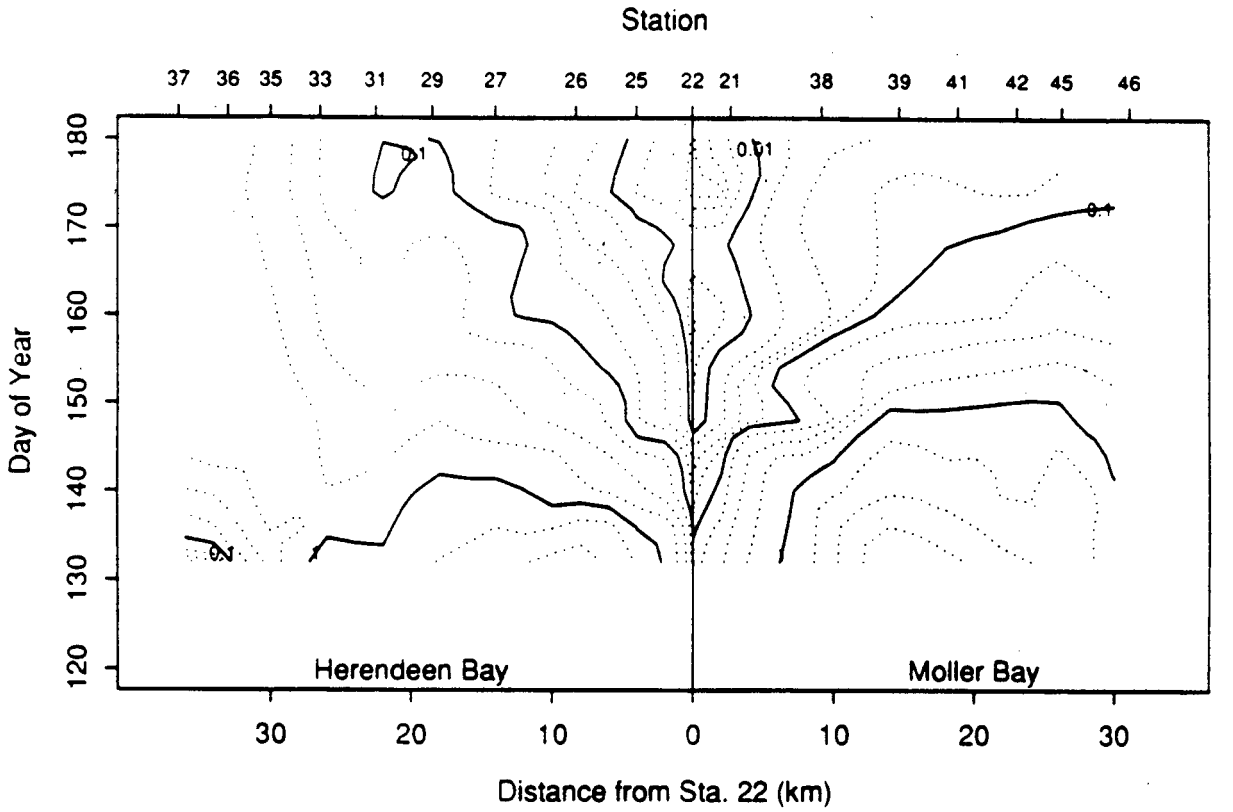
C-4-A. Run 3.23--Hatch at Sta. 37 (inner Herendeen Bay), 0-40 m depth.



C-4-B. Run 3.30--Hatch uniform over inner Herendeen Bay.



C-4-C. Run 3.31--Hatch at Sta. 47 (inner Moller Bay).



C-4-D. Run 3.32--Hatch at Sta. 25 (near entrance to bays).