Strait of Georgia Recreational Fishery Statistics for Salmon and Groundfish, 2011

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STRAIT OF GEORGIA RECREATIONAL FISHERY

STATISTICS FOR SALMON AND GROUNDFISH, 2011

by

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABSTRACT

Zetterberg, P.R., Watson, N.M., and O'Brien, D.S. 2017. Strait of Georgia recreational fishery statistics for salmon and groundfish, 2011. Can. Manuscr. Rep. Fish. Aquat. Sci. 3110: x + 101 p.

Recreational fisheries in the Strait of Georgia have been monitored since the 1960's and since 1980 the subject of an intensive creel survey. Annual reports of the results of this monitoring program are produced. This report documents recreational catch and effort estimates from the Strait of Georgia creel survey in 2011 and compares these to data from 2006 to 2010 to determine recent trends in catch and effort.

The 2011 Strait of Georgia creel survey estimates were derived from 5,829 fishing interviews and 85 aerial surveys. In addition to the creel survey, data were also collected through a recreational fishery logbook program and the resulting data are also presented in this report. The logbook data are treated as a census of catch obtained during logged trips, and are analysed with creel data to ensure that logged trips are not double counted in the creel survey estimates.

For the entire survey year (February through December) anglers conducted an estimated 118,261 boat trips and kept 35,210 chinook, 8,302 coho, 15,539 sockeye, 94,468 pink, 786 chum salmon, as well as 2,325 halibut, 5,053 lingcod, and 9,640 rockfish. The comparative (May to September) effort increased by 26.2% from 87,443 boat trips in 2010 to 110,371 in 2011 and was 19.3% above the five-year average of 92,515 trips. Comparative total salmon retained catch increased by 81.6% from 80,963 in 2010 to 146,992 in 2011 mainly due to an increase in abundance of Fraser River pinks. Salmon retention in 2011 was 82.7% higher than the 2006-2010 average of 80,440. Based on these estimates, the kept catch per boat trip (CPUE) across all salmon species during the entire survey period in 2011 was 1.31.

A total of 1,517 chinook and 534 coho salmon were examined for adipose fin clips by creel survey staff. Of these, 29.0% of chinook and 47.2% of coho had adipose fin clips. Scale samples were also collected from retained chinook and the results consisted of 3.5% age 2 fish, 28.6% age 3 fish, 57.5% age 4, 10.4% age 5 fish, and 0.0% age 6 fish.

RÉSUMÉ

Zetterberg, P.R., Watson, N.M., and O'Brien, D.S. 2017. Strait of Georgia recreational fishery statistics for salmon and groundfish, 2011. Can. Manuscr. Rep. Fish. Aquat. Sci. 3110: x + 101 p.

La pêche récréative dans le détroit de Géorgie a fait l'objet d'une surveillance depuis les années 1960 et, depuis 1980, elle a fait l'objet d'un sondage intensif. Des rapports annuels sur les résultats de ce programme de surveillance sont produits. Ce rapport documente les estimations des captures et des activités récréatives de l'enquête sur le creusage du détroit de Géorgie en 2011 et les compare aux données de 2006 à 2010 afin de déterminer les tendances récentes en matière de captures et d'effort.

Les estimations du sondage de creux de 2011 du détroit de Géorgie ont été tirées de 5 829 entrevues de pêche et de 85 levés aériens. En plus de l'enquête sur le canot, les données ont également été recueillies dans le cadre d'un programme de journal de pêche récréatif et les données qui en résultent sont également présentées dans le présent rapport. Les données du carnet de bord sont traitées comme un recensement de la capture obtenue au cours de trajets enregistrés et sont analysées avec des données de cartographie afin de s'assurer que les trajets enregistrés ne sont pas comptés deux fois dans les estimations de l'enquête de pêche.

Pour la totalité de l'année d'enquête (de février à décembre), les pêcheurs ont effectué environ 118 261 excursions en bateau et ont conservé 35 210 saumon quinnat, 8 302 saumons coho, 15 539 saumons rouges, 94 468 saumons roses, 786 chum, ainsi que 2 325 flétans, 5 053 lingacodes et 9 640 sébastes. L'effort comparatif (de mai à septembre) a augmenté de 26,2%, passant de 87 443 en 2010 à 110 371 en 2011 et de 19,3% par rapport à la moyenne quinquennale de 92 515 voyages. Les prises totales comparatives de saumon ont augmenté de 81,6%, passant de 80 963 en 2010 à 146 992 en 2011, principalement en raison de l'augmentation de l'abondance des roses roses du Fraser. La rétention du saumon en 2011 était 82,7% plus élevée que la moyenne 2006-2010 de 80 440. Sur la base de ces estimations, la capture gardée par excursion en bateau (CPUE) pour toutes les espèces de saumons durant toute la période de l'enquête en 2011 était de 1,31.

Un total de 1 517 saumons quinnats et 534 saumons coho ont été examinés pour les attaches de nageoires adipeuses par le personnel de l'arpentage. Parmi ceux-ci, 29,0% de saumon quinnat et 47,2% de coho avaient des pinces adipeuses. Des échantillons d'écailles ont également été recueillis à partir de chinook conservé et les résultats ont été constitués de 3,5% d'âge 2 poissons, 28,6% d'âge 3 poissons, 57,5% 4 ans, 10,4% 5 ans et 0,0% 6 ans.

INTRODUCTION

This report documents the 2011 Strait of Georgia (SG) creel survey catch and effort statistics from the tidal recreational finfish fishery, with comparisons to the 2006 to 2010 survey results (previous 5 year averages) and presents the methodology for collecting these data. Data are presented in tables and figures with catch and effort dating back to 1987. Catch and effort tables are displayed by month, Pacific Fishery Management Area (PFMA) and species. For comparison purposes and unless otherwise specified, the annual data presented are from the period May through September only. The SG creel survey collects information on all species but only finfish data is presented.

In addition to creel survey data, in 2011 we included log data from the voluntary logbook program. Logbooks were distributed by the Sport Fishing Institute of British Columbia (SFI) and Fisheries & Oceans Canada (DFO) for completion by selected fishers, including guides, and log data have been included in this year's report providing a more complete picture of the recreational fishery.

The 2011 report is one of a series documenting the activities of the creel survey and provides official SG tidal recreational fishery catch statistics. All official recreational fishery catch estimates are stored in the Catch and Release Estimation Survey Tool (CREST), a database maintained by DFO South Coast regional staff. Please contact the lead author for more details. A list of previous reports in this series may be found in Appendix A.

BACKGROUND

Historically, the SG fishery supported what was one of the most valuable recreational fisheries in British Columbia. Recent coded-wire tag (CWT) recoveries indicate chinook catches consist primarily of Puget Sound, Fraser River, and East Coast Vancouver Island salmon stocks. There has been evidence of declining stocks since the 1970's (Argue et al 1983) and the mid-1990's saw a decrease in recreational fishery success due to lower abundance of chinook (*Oncorhynchus tshawytscha*) and coho (*O. kisutch*).

An assessment of approximately 60 years of escapement and catch data for all five Pacific salmon species from the north and central coasts indicate that pink salmon (*O. gorbuscha*) are doing relatively well but coho and chinook are doing relatively poorly (DFO 2011). Salmon survivals appear to be strongly influenced by conditions in their early marine life and ocean survival and growth tends to be best when La Niña conditions and cool ocean waters are present in the first months that juveniles enter the ocean (DFO 2011). Various First Nation, commercial, and recreational groups on both sides of the Canada/U.S. border depend on these stocks, economically and for sustenance.

The SG creel survey study area comprises over 5,900 km^2 of ocean and has in excess of 2,400 km of shoreline. From its southern end near Victoria, the strait extends about 290

km northwest past Campbell River and at its greatest width is about 32 km wide. Two major population centres, Vancouver and Victoria, and many smaller centres such as Nanaimo and Campbell River are located within the study area. Over 500 boat launch ramps, marinas and public wharves as well as thousands of private boat launching facilities provide ocean access (Figure 1).

The recreational fishery is active throughout the year but over 85% of the effort occurs in the summer months of May to September (Collicutt and Shardlow 1993). The most sought after species in the SG recreational fishery are chinook and coho salmon, but in recent years significant fisheries directed at pink, sockeye (*O. nerka*), rockfish (*Sebastes* spp.) and particularly halibut (*Hippoglossus stenolepis*) have developed in certain areas.

The recreational fishery remains the primary harvester of chinook and coho in the SG. Effort in this fishery has fluctuated with an estimated 189,150 boat trips in 1960 to peaks of 562,113 in 1984 and 561,495 in 1988 (Table 3). The all-time low of 77,028 boat trips was estimated in 2008 and 2011 was 110,371.

Creel survey data are used for a variety of management and reporting purposes within DFO and to support international agreements. Catch estimates are used to support stock assessment analyses in the post season, as well as evaluation of catch relative to in-season catch limits for some species. In addition, effort and catch estimates from the creel survey are used to both predict the effects of regulation changes and to measure success of management actions. The adipose clip information for chinook and coho collected during the survey are provided to the Mark Recovery Program and it is used in combination with other data to estimate exploitation rate, marine survival and conduct stock distribution analyses (Kuhn *et al.* 1988).

OBJECTIVES

The specific objectives of the 2011 SG tidal creel survey were:

1. To estimate the recreational angler effort and catch (both releases and retention) of chinook, coho, chum (*O. keta*), pink, and sockeye salmon, halibut, lingcod (*Ophiodon elongatus*), rockfish and other finfish by month for PFMA 13 through 20(SG), 28, and 29.

2. To estimate the catch rate of adipose-clipped chinook and coho in the recreational fishery.

3. To estimate the age composition and mean length-at-age for chinook, and length frequency for chinook and coho retained in the recreational fishery.

4. To collect halibut and lingcod biological samples.

METHODS

STUDY DESIGN

The design of the SG tidal creel survey conducted in 2011 was similar to that used in the survey since its inception (DPA Consulting Ltd. 1982) with modifications to data analyses, sampling intensity, flight routes and data processing. It is comprised of two independent surveys: angler interviews and aerial surveys. Angler interviews provide data on recreational fishing catch per unit effort (CPUE) and daily activity patterns. Aerial surveys provide estimates of total recreational fishing effort in the study area at the time of the aerial survey. These data are combined to provide monthly estimates of total recreational fishing effort and total catch of salmon, groundfish and other finfish in the recreational fishery using the analytical methods described by English *et al.* (2002).

The fishery is stratified by the following characteristics for analysis:

1. Month. The survey operated from 01 May to 30 September for the entire SG and PFMA 19 and 20(SG) were surveyed from 01 February to 31 December in 2011.

2. Geographic area. Catch and effort estimates were produced at the creel sub-area (which differ from PFMA sub-areas) level and summarized by PFMA. These creel sub-areas are defined by Shardlow (1985) and plotted in Figures 3a and 3b. In reports prior to 2006, these were simply called 'Statistical Areas' which was changed to PFMAs starting with the 2002-2006 data report, Zetterberg *et al.* (2009). PFMA boundaries are legally defined and in some cases differed from the creel areas. After a review in 2010, changes were made to some creel area boundaries to align them to PFMA boundaries in 2011 (Ganton 2011). In this report, similar to Zetterberg et al. (2006, 2008) and Carter et al. (2007), we report catch at the PFMA level and compare these estimates with the appropriate creel area for historical comparisons. A detailed description of the survey area is provided in Appendix B.

3. Day type. Weekend and mid-week days were considered independently because recreational fishing effort is known to differ strongly between these day-types. Statutory Holidays were treated as weekend day-type.

4. Time of day. Sampling shifts were conducted during set time periods. A sampling shift is defined as a consecutive time period of interviewing anglers by one creel surveyor. The timing of sampling shifts varied during the year to account for varying fishing effort due to changes in sunrise and sunset timing. From April to August sampling shifts occur during one of two time periods within a day: AM shift (0800 to 1500 hours) or PM shift (1400 to 2100 hours). The timing of these shifts change in both September and October (September: AM 0800 to 1500 hours; PM 1300 to 2000 hours – October: AM 0900 to 1600 hours; PM 1200 to

1900 hours). Due to shorter daylight hours during winter, only single mid-day sampling shifts occur from November to March (November and February: 1000 to 1700 hours; December and January: 0900 to 1600 hours; March: 1100 to 1800 hours).

Specific landing sites were chosen as locations for sampling shifts. Site selection was based on four criteria: representativeness, traffic volume, site accessibility and adequate observation points. Discussions with local fishers, marina operators, Fishery Officers, and long term creel survey staff, along with data from previous surveys were used to choose sites that were representative of local recreational fishing activity with enough expected traffic volume. Sites with traffic volume of more than 15 boats per day in the summer were considered as possible sampling locations. Site accessibility refers to whether an interviewer can easily reach a site by car during the defined shift hours. Only sites with good accessibility were selected. As a result, landing sites on any of the islands in the SG were excluded from the survey. The final criterion of adequate observation points was essential for interviewers to obtain an accurate count of all boats returning to a landing site.

Selected access sites were grouped into one of five survey zones (1 - Victoria, 2 – Cowichan/Nanaimo, 3 - Campbell River/Comox, 4 - Sunshine Coast and 5 - Vancouver). These zones delineated areas within which local survey staff was hired. To reduce travel costs, survey staff conducted shifts only at sites within their survey zone.

In 2011, interviews were conducted at 35 designated landing sites (boat ramps, marinas, or resorts; Figure 1) representative of the recreational fishing activity in the survey area at a particular time. Within each month and survey zone, each site was randomly allocated between one and 17 sampling shifts. The survey effort at specific access sites was optimized prior to the 2011 season based on an analysis of reported fishing activity from various landing sites and observed fishing activity during overflights (O'Brien and Carter 2009). Sampling shifts were also divided equally among weekend and mid-week days and AM and PM daily time periods. The higher sampling effort on weekend days allows for a higher proportion of angling trips to be sampled (interviewed).

In 2011 marine recreational logbooks were distributed for completion by selected anglers. The purpose of these volunteer logbooks was to collect fishing activity and catch data in areas with less accessible landing sites where creel data are more difficult to acquire. Fishers frequenting these areas were asked to participate in this program.

Fisheries and Oceans staff coordinated data collection, data entry, and generated all catch and effort estimates.

DATA COLLECTION

Angler interviews

Surveyors were stationed at boat ramps or marinas for sampling shifts to interview anglers as they returned from fishing. The numbers of boats returning to a site during a sampling shift as well as number of interviews attempted, completed, refused and missed were recorded on a tally sheet. For each boating party landing after recreational fishing, the following information was recorded on an interview form (Figure 2):

1. Total number of licensed anglers in the boat.
2. Time of landing.
3. Whether the trip included services of an angling guide.
4. Time of departure and length of trip.
5. Total time during which fishing lines were in the water.
6. Average number of fishing lines or shellfish traps in the water.
7. Catch Summary: -Species and total number of kept and released fish for each creel sub-area fished (data sheets include the possibility of three sub-areas being fished during a single trip).
   -Number of hours directed at each species, type of fishing conducted (gear) and primary fishing location in each creel sub-area.
8. Adipose fin-clip status for kept and/or released chinook and coho.
9. Seal or sea lion encounter information.

Interviewers, who are trained in fish identification, inspected retained catch of each boating party willing to participate in the survey. Landed chinook and coho were checked for a missing adipose fin, which indicates that fish may be of hatchery origin and possibly the presence of a CWT (Kuhn *et al.* 1988). The interviewer informed anglers about the head recovery program and submission of heads when retaining an adipose clipped chinook or coho but did not facilitate head recoveries in any other way at the direction of the volunteer Mark Recovery Program. In addition, chinook and coho were measured (fork length) and DNA sampled and chinook scale samples were also collected for age determination.

Additionally, groundfish species were also biologically sampled. Retained lingcod (*Ophiodon elongates*) were measured (fork length), sex was determined and a portion of the dorsal fin was removed and placed in a labelled envelope for use in age determination (McFarlane and King 2001; MacLellan 2004). Other species including rockfish and halibut were identified to species and measured (fork length).

In 2011, SG creel surveyors continued electronically entering their data into the CREST system, a South Coast database and analysis tool for recreational data. This electronic entry system has been operational since 2008 and greatly facilitates rapid estimate generation. DFO provided laptop computers to each surveyor to facilitate field data entry.

Logbooks

In 2011, logbooks were distributed by representatives of the SFI in the Campbell River area and in the Victoria/Sooke area, and by DFO in the Nanaimo and lower Sunshine Coast areas. A portion of these logbooks were returned to DFO at the end of the fishing season and data were entered into CREST and verified, and these data are presented in Tables 5 to 14, alongside the creel data, by month and PFMA.

Effort counts

Effort, defined as individual boats actively fishing, is counted via aerial surveys of the study area. The study area is divided into approximately equal northern and southern sections for purposes of aerial effort counts (Figure 3a and b). Seaplane charter companies in Victoria and Courtenay (Pat Bay Air and Island Air, respectively) provided aircraft for this purpose. Aerial surveys travelled along the pre-defined routes and a single on-board observer counted all boats actively engaged in recreational fishing activity, using standard methods (Nagtegaal et al. 2009). Effort estimates, therefore, are the number of estimated finfishing boat trips by month and PFMA (Table 5 to 14).

Flight paths and times of departure were designed to cover major concentrations of recreational fishing activity at peak periods and the number of aerial surveys each month was governed by budget. There were between six and ten flights per month depending on the time of year, with the highest number of flights occurring during the peak period in July and August (Table 1). Planes flew at an altitude of 150-300 m (500-1000 feet) to facilitate a broad range of vision and still allow easy identification of vessel type. Aerial surveys conducted between May and September range between 3 to 4.5 hours covering a flight path of 600 to 670 km at speeds of 145 to 220 km per hour. During the March to April period in PFMA 19 and 20(SG), flights were 1.5 hours covering a 200 km route (Figure 3c). Days for aerial surveys during a month were randomly selected for each day type (weekday and weekend). Flight paths are reviewed annually and adjustments are made based on interview results indicating fishing activity outside of the current path.

DATA ANALYSIS

Data analysis of the results from the tidal creel survey program in 2011 included calculation of catch and effort statistics, calculation of variance of total fishing effort and catch (Standard Error = SE), estimating the proportion of marked (CWT) chinook and coho salmon, and estimation of age and length composition of retained chinook. Established analysis methods are detailed by English et al. (2002). The estimates in this report are a summary of those maintained in the CREST database.

Along with data from the 2011 creel survey program, recreational log information from guided and un-guided participants within the SG area was also collected. Logbook data are entered into CREST, and logged catch for areas and times consistent with the 2011

SG creel survey program are presented here. The logbook data are treated as a census of catch obtained during logged trips, and are analysed with creel data to ensure that logged trips are not double counted in the overall catch estimates.

RESULTS AND DISCUSSION

2011 FINFISH REGULATIONS

Catch is affected by fishery regulations; therefore to understand catch, details of the key finfish regulations are essential. Regulations are an important tool to conserve stocks by controlling angler impacts on various fish populations.

Chinook, pink, and chum salmon retention was open all year in the SG survey area in 2011. Due to early timed Fraser River chinook concerns, restrictions were initiated at the beginning of March until late July in the southern portion of the SG survey area. Coho retention was allowed from June to the end of December with two (2) hatchery fish per day being the most common retention regulation. Retention of sockeye in the SG survey area was allowed from early August till mid-September. Most groundfish species were open all year in the SG survey area in 2011. Halibut retention was open from March to the beginning of September. Lingcod and rockfish were open concurrently from May to the end of September. For further details on the regulations which affected the 2011 SG recreational fishery (for major finfish species) see Appendix G.

The retention of sub-legal chinook, defined as chinook smaller in length than the legal size limits stated in the regulations (< 45 cm in PFMA's 19 (south of Cadboro Point) and 20(SG) and also < 62 cm in PFMA's 13-18, 19 (north of Cadboro Point), 28, and 29), continues to be a minor issue in the SG survey area. Retention of sub-legal chinook by recreational fishers has been tracked since 1989 in the SG survey area, when the size limits were increased from 45 to 62 cm. Percentages are separated in Table 24 as Victoria versus the rest of the SG and are calculated based on the number of sub-legal chinook measured by the surveyors divided by the total number of chinook measured. According to the surveyors, most sub-legal chinook retentions are misidentified pink salmon.

DISTRIBUTION OF SAMPLING EFFORT

A total of 5,829 interviews with finfishing anglers at 35 landing sites, and 85 aerial surveys were conducted in 2011 (Table 1). Monthly distribution of interviews generally reflected monthly distribution of fishing effort (number of boat trips; Figure 4). While the

survey goal is to attain interviews from 10% of fishing effort, total interviews in 2011 represent 4.9% of estimated total fishing effort for the entire study area (118,261 full year boat trips; Table 5). Interview coverage for the SG survey from May to September in 2011 ranged from a low of 1.3% in PFMA 29 to a high of 8.4% in PFMA 19 (Table 1) based on the total estimated effort.

All 2011 SG recreational catch and effort statistics are summarised for key species by month and PFMA. Fishing effort and catch statistics by key species are presented for each combination of month and PFMA (Appendices C-1 to C-4, and C-9 to C-21).

Anglers made 110,371 boat trips during 2011 (May to September); this is a 26.2% increase in effort from 87,443 trips completed in 2010 and 19.3% above the five-year average of 92,515 trips (Table 3). Angler effort has varied over the previous five years from a high of 106,435 boat trips in 2009 to a low of 77,028 in 2008 (Figure 5). Fishing effort followed the same general seasonal pattern as seen in previous years where effort levels climbed steadily from April, peaked in August and declined in September and October (Figure 6). The highest effort expended in 2011, during the May to September period, was in PFMA 20(SG) (25.5%), 13 (21.5%), 17 (9.6%), and 14 (8.7%) respectively (Appendix C-1).

Ninety-six logbooks were distributed to 90 fishers in the Campbell River, Nanaimo, Victoria, and the lower Sunshine Coast areas and 60 (62.5%) of these were returned with data. Table 2 lists the number of logged boat trips received by DFO in 2011. The average number of logged trips per returned logbook was 36.2.

RECREATIONAL CATCH

Finfish retained in the SG recreational fishery for the May to September period in 2011 were estimated at 178,889 pieces and consisted of 82.2% (146,992) salmon (Table 5 and 6), 12.5% (22,286) groundfish, and 5.4% (9,612) rockfish (Table 11 and 13). Anglers also released an estimated 182,580 finfish pieces which consisted of 56.8% (103,768) salmon (Table 7 and 8), 29.8% (54,482) groundfish, and 13.3% (24,330) rockfish (Table 12 and 14) for this same period. Comparisons of CPUE between salmon and groundfish are summarized by month and PFMA in Appendices D-3 and D-7 for the creel survey and Appendices D-4 and D-8 for log data.

Salmon

Recreational salmon retention for the SG in 2011 totalled 146,992 pieces for May to September (Table 4) and 154,382 for the entire survey year (Tables 5 and 6). For the May to September period, retained catch consisted of 22.3% chinook, 2.5% coho, 10.6% sockeye, 64.2% pink, 0.4% chum, and 0.04% unidentified salmon. Salmon retention in

2011 was 82.7% higher than the 2006-2010 average of 80,440. Comparative salmon released and total salmon intercepted for 2011 is listed in Table 4.

In 2011, the highest effort expended was observed in PFMA 20(SG) (27.6%), 13 (20.1%), and 19 (10.5%) with a total salmon kept CPUE of 2.11, 2.06, and 0.54, respectively (Figure 15, Appendix D-7). The CPUE for all salmon kept by PFMA for log data are presented in Appendix D-8. Readers should note that sample sizes associated with these estimates are in Table 2. Fishing effort was highest during the May to September period in 2011 with the peak salmon kept CPUE observed during August at 1.74 (Appendix D-3). Although effort decreased substantially in October, CPUE was highest overall during this time (for both creel survey at 1.83 and logged trips at 5.83) due to coho catch. CPUE in 2011 for salmon in general is listed by month in Appendices D-3 for the creel survey, D-4 for log data, and by PFMA in D-7 for the creel survey and D-8 for log data.

Chinook

In 2011, chinook salmon retention was 32,742 pieces (five-year average = 26,652) during the May to September period (Table 3, Figure 5). Within the previous five years, retention ranged from 17,936 in 2008 to 37,460 in 2009. Monthly chinook retained increased steadily through May and June and peaked in August at 10,517 pieces (Table 5, Figure 7). For the entire survey period, PFMA 13 recorded 33.9% of the total estimated catch, followed by PFMA 20(SG) (29.8%), 19 (8.8%), and 14 (7.4 %) (Table 6, Figure 9, Appendix C-2).

Chinook salmon releases in 2011 was estimated at 28,466 pieces (five-year average = 24,101) during the May to September period (Table 3). Monthly chinook released increased from June to July and peaked in September (Table 7). Retained legal, and released legal and sub-legal sized chinook (smaller than the legal size limit - < 45 cm in PFMA 19 (north of Cadboro Point) and 20(SG) and <62 cm in PFMA 13-18, 19 (south of Cadboro Point), 28, and 29) are summarized in Table 9 by month and Table 10 by PFMA for 2011. Appendix F summarizes the number of retained chinook annually from 1960 to 1986. Table 3 summarizes the number of released chinook annually from 1987 to 2011.

Seasonal (May to September) average creel survey CPUE for chinook has remained fairly constant over the past five years with 2008 having the lowest (0.23) and 2009 having the highest (0.35). In 2011, chinook CPUE for retained catches had an average of 0.30 compared to the 2006 to 2010 average CPUE of 0.29 (Table 3, Figure 8). For the entire survey period, PFMA 13 recorded the highest CPUE at 0.40 followed by PFMA 20 (0.32), 14 (0.27), and 29 (0.26). Chinook CPUE is separated out for the creel survey in Appendix D-1 by month and D-5 by PFMA, and for logged records in D-2 by month and D-6 by PFMA.

Chinook retention improved in the early 2000's from the lows in the late 1990's, but declined again from 2003 to 2006. Retention increased slightly in 2007 and was at its

lowest level in 2008, since records began in 1960 (Table 3, Figure 5 and Appendix F respectively). Chinook CPUE increased in 2011 relative to 2010 (0.30/boat trip vs 0.26/boat trip, respectively), likely resulting from an increase in abundance of chinook. Chinook retention increased 45.7% from 22,471 in 2010 to 32,742 in 2011. An addition to this report is Appendix C-22 that documents the spatial distribution of retained chinook in the northern (PFMA 13-16) vs southern (PFMA 17-20(SG), 28 & 29) SG. Two patterns of retained catch dominate the time-series since 2000: 1.) Relatively low retained catch apparent from 2003 to 2009 in the north vs the south (~ 65% of the retained chinook catch coming from the south); and 2.) approximately equal catches north to south apparent in 2001, 2010 and 2011. Northern SG retained catches were only higher than in the southern portion in 2000 and 2002. The change in pattern from 2003-2009 to 2010 and 2011 is striking; and it's relation to abundance, stock distribution or fishing activity have yet to be evaluated. Spatial distribution of catches is an area for continued research.

Coho

Coho salmon retention in 2011 (May to September period) was 3,640 pieces (five-year average = 3,810) which was 5.5% higher than 2010 (3,452; Table 3, Figure 10). Retained catch peaked in August at 1,497 pieces for the May to September period, but then drastically increased to 4,649 (56% of the total coho retention) for the month of October (Table 5). For the entire survey period, PFMA 20(SG) recorded 76.6% of the total estimated catch, followed by PFMA 19 (6.5%) and 13 (6.2%; Table 6, Figure 9).

Coho retention has fluctuated widely and Table 3 shows the variation in retained coho catches since 1987 and releases since 1998. From a comparative high of 947,481 pieces in 1988, retention continued to decline over time. The 1999 estimate of coho retained was an all-time low of 310 pieces due to a majority of areas being closed to their retention. Coho catch numbers began to improve in the early 2000's as stocks showed some recovery as well as the advent of mark selective (adipose-clipped only) fisheries in selected areas on hatchery stocks. Appendix F summarizes retention of coho from 1960 to 1986.

Coho salmon releases for 2011 were 21,497 pieces (five-year average = 14,956) during the May to September period. Releases in 2011 were 103.4% higher than 2010 (10,570). Table 3 summarizes the number of released coho annually from 1998 to 2011.

In 2011, coho retained CPUE averaged 0.02 for the May to September period (five-year average = 0.03; Appendix D-1, Figure 11). For the entire survey period, PFMA 20(SG) recorded the highest retained CPUE at 0.19 followed by PFMA 18 (0.05). Coho kept and released CPUE is separated out for the creel survey in Appendix D-1 by month and D-5 by PFMA, and for logged records in D-2 by month and D-6 by PFMA.

Sockeye, pink, and chum

The recreational fishery for sockeye in the SG in 2011 occurred from 10 August till closing on 16 September with some restrictions in PFMA 16 and 29 intended to conserve Fraser River and Sakinaw Lake stocks. The final diversion rate estimated for Fraser River sockeye was estimated at 62% through Johnstone Strait (Pacific Salmon Commission 2016). There were 15,539 pieces retained for the May to September period (five-year average =16,375; Table 3). For the entire survey period, PFMA 29 recorded 41.3% of the total estimated catch of sockeye followed by 13 (29.4%), and 28 (16.9%; Table 6). Retained catch peaked in August with 9,291 pieces (Table 5).

Estimated sockeye releases during 2011 were 4,115 pieces (five-year average = 1,838) for the May to September period (Table 3). Releases are listed by month and by PFMA in Tables 7 and 8 respectively. Detailed retained and released estimates by month and PFMA are listed in Appendices C-9 and C-10. A comparison of retained sockeye in 2011 is displayed with the five year average in Figure 12.

Pink salmon retention was 94,440 pieces (five-year odd cycle average = 89,676) for the May to September period in 2011 (Table 3). The final diversion rate estimated for Fraser River pink through Johnstone Strait was 44% (Pacific Salmon Commission 2016). A comparison between the 2011 and the five-year average of odd-year pink are presented in Figure 13. Retained catch peaked in August with 52,554 pieces (Table 5). For the entire survey period, PFMA 20(SG) recorded 52.8% of the total estimated catch of pink salmon followed by PFMA 13 (33.4%), and 18 (4.5%; Table 6, Appendix C-11). A comparison of retained pink in 2011 is displayed with the five-cycle average in Figure 13.

Estimated pink salmon releases for 2011 were 30,414 pieces for the May to September period (five-year even cycle average = 28,175) (Table 3). Pink releases for the entire survey period were highest in PFMA 20(SG) (39.3%) followed by 13 (29.5%) and 29 (10.0%; Table 8). Releases by month and PFMA are presented in Table 7 and Appendix C-12.

Chum salmon retention was 569 pieces (five-year average = 770) during the May to September period (Tables 3). Retained catch peaked during September at 526 pieces and for the entire survey period, 62.6% were taken in PFMA 13 and 35.9% in PFMA 20(SG) (Tables 5 and 6). A comparison of retained chum in 2011 is displayed with the five year average in Figure 14. Releases are presented in Table 7 by month and Table 8 by PFMA and detailed in Appendix C-1 and C-14.

CPUE for sockeye, pink, and chum is listed in Appendix D-1 by month for the creel survey, D-2 for log data, and by PFMA in D-5 for the creel survey and D-6 for log data.

Groundfish

Recreational groundfish retention for the SG in 2011 totalled 31,898 pieces for May to September and 33,584 for the entire survey period (Tables 11 and 13). For the May to September period, retained catch consisted of 6.9% halibut, 15.0% lingcod, 28.7% rockfish, and 49.3% other groundfish.

More accurate species identification has allowed catch estimates for most groundfish species, including rockfish. Previous reports (Hardie *et al.* 2003) have identified only three species of groundfish and nine species of rockfish; however, beginning in 2007 an additional nine species of groundfish were identified by creel surveyors. Lingcod, rockfish, and spiny dogfish (*Squalus acanthias*) catches have been recorded the longest (since 1981) and halibut recording began in 1998. Since 2000, all species of groundfish intercepted in the survey (i.e. retained catch that is observed by a creel surveyor) have had an estimate generated. A taxonomic reference of all species reported in 2011 is presented in Appendix E.

Groundfish retained for the May to September period in 2011 (31,898) increased 17.5% from 2010 (27,156). Rockfish comprised the largest proportion of this catch in 2011 at 9,612 (30.1%) pieces along with rock sole (*Lepidopsetta bilineata*) at 6,158 (19.3%) pieces, lingcod at 5,047 (15.8%) pieces, greenling (*Hexagrammidae spp*.) at 3,193 (10.0%), Starry Flounder (*Platichthys stellatus*) at 1,998 (6.3%) pieces, and halibut at 1,821 (5.7%) pieces. From May to September, halibut retentions have decreased relative to the five-year average by 24.5% (five-year average = 2,411) and lingcod has increased by 46.3% (five-year average = 3,449). Rockfish retention increased by 15.6% from the five-year average of 8,315 (Figure 16).

The 2011 catch of groundfish species was not evenly distributed across the study area. Retained rockfish was highest in PFMA's 20(SG), 17, 18, and 13 with 24.7%, 15.3%, 13.9%, and 11.8% of the total catch, respectively (Table 13). Lingcod retention was highest in PFMA 17 (29.9%), followed by PFMA's 14 (13.4%), 18 (12.5%), 13 (10.9%) and 20(SG) (10.6%; Table 13). Halibut retained was highest in PFMA's 19 (83.3%), 20(SG) (10.9%), and 13 (2.4%; Table 13). Table 15 provides a summary of groundfish kept for the entire survey period by major catch areas. Tables 12 and 14 provide summaries of groundfish releases by month and PFMA respectively. A breakdown of lingcod releases, by legal versus sub-legal size categories, is provided in Appendices C-20 and C-21 respectively.

Since 2001, nine species of rockfish have been identified throughout the survey. In 2009, kept and release estimates were grouped into two categories; group 1 and group 2. Rockfish group 1 consists of any catch for china (*Sebastes nebulosus*), copper (*S. caurinus*), quillback (*S. maliger*), tiger (*S. nigrocinctus*), and yelloweye (*S. ruberrimus*) and group 2 consists of any other rockfish species, including those that were unidentified. Of the identified species, only three species, copper and quillback, and yelloweye showed considerable retention in the SG for 2011 (Table 16). Tables 11 and 12 provide rockfish

catch summaries by month and Tables 13 and 14 by PFMA. Figure 16 displays monthly estimated catches along with the five year average.

The estimated retained CPUE for groundfish varied through the creel survey period across species, with a high of 0.37 in October and lows of 0.00 in December and February and averaged 0.20 for the year (Figure 17; Appendix D-3). Retained CPUE for rockfish ranged from a high of 0.13 in July to 0.00 in October and February to March and averaged 0.08 for the entire year. Kept and released CPUE for the creel survey is summarized by PFMA (Appendix D-7) and by month (Appendix D-3) for rockfish and groundfish. The CPUE for both groundfish and rockfish for log data are presented in Appendices D-4 and D-8 by month and PFMA respectively.

Kept CPUE for halibut during the creel survey ranged from 0.21 in April to 0.01 in July to September (and 0.00 from October to February) and averaged 0.02 for the year (Appendix D-1). Lingcod retention occurred from May to September and CPUE ranged from 0.08 in May to 0.03 in June, August, and September and averaged 0.04 for the year (Appendix D-1). Released CPUE for the creel survey is presented by month and PFMA in Appendix D-1 and D-5, respectively. The CPUE for the log data used with the estimates in 2011 are displayed in Appendix D-2 by month and Appendix D-6 by PFMA.

BIOLOGICAL DATA

Adipose-clipped chinook and coho

In 2011, for the entire survey period, 1,491 chinook (4.2% of total estimated catch; 88.6% of catch passing by creel observers) were examined for adipose fin clips. Of the chinook examined during the May to September period, 16.8% had clips (22.7% for Victoria region, 11.5% for South Gulf, and 4.8% for the North Gulf; Table 17). Chinook kept catch from May to September was 3,816 adipose-clipped, 28,419 unclipped, and 507 unknown for a total of 32,742 pieces (Appendix C-7). Of retained chinook with known mark status (for the entire survey period) 52.6% of adipose-clipped occurred in PFMA 20(SG), 31.6% in 19, 5.8% in 17, and 3.3% in 13 (Appendix C-8). Unclipped chinook retention was 40.2% in PFMA 13, 24.4% in 20(SG), 8.7% in 14, and 7.6% in 29 (Appendix C-8). Releases by marked, unmarked, and unknown status are also presented in Appendix C-7 by month and in Appendix C-8 by PFMA.

For the entire survey period, 535 coho (6.4% of total catch; 95.9% of catch passing by creel observers) were examined for adipose fin clips. Among coho examined for the May to September period, 83.8% had adipose clips. Regionally (for the same period), percentages of adipose clips were 85.8%, 71.4%, and 84.6% for Victoria, South Gulf, and North Gulf, respectively (Table 18). Coho kept catch from May to September was 2,764 adipose-clipped, 865 unclipped, and 11 unknown for a total of 3,640 pieces (Appendix C-5). Coho with known mark status (for the entire survey period) were 75.5% adipose-

clipped in PFMA 20(SG), 8.5% in 13, 5.9% in 28, and 3.3% in 19 (Appendix C-6). Unclipped coho retention was 77.6% in PFMA 20(SG), 10.1% in 19, 5.0% in 18, and 3.8% in 13 (Appendix C-6). Releases by marked, unmarked, and unknown status are also presented in Appendix C-5 by month and in Appendix C-6 by PFMA.

In 2011, 788 heads were returned to the Sport Head Recovery Program (SHRP) from the SG survey area, but 264 chinook heads were excluded from PFMA 20(SG) as they were listed as caught in PFMA 20 in general and potentially from catch areas outside our survey area. Of the remaining 329 adipose-clipped Chinook, 41.8% contained a CWT. The number of CWT's recovered by stock are summarized in Table 19. Further information on the SHRP can be obtained from the web at <http:// http://www.pac.dfo-mpo.gc.ca/fm-gp/rec/points/shrp-prts-eng.html > (accessed 2016 Nov 18) or by calling 1-866-483-9994.

Catch-at-age for chinook

During 2011, 593 chinook were sampled for scales. All scale samples were sent to the aging lab at the Pacific Biological Station (PBS) to be aged resulting in 461 readable samples; 132 could not be aged due to regenerated scales or incorrect mounting. Table 20 lists the monthly number and age composition of readable chinook samples. All ages represent total age at year of life caught (including both freshwater and marine life stages – i.e. Gilbert-Rich age (Groot and Margolis 1991)). Age data are summarized graphically in Figure 18.

Monthly age proportions were applied to estimated monthly chinook catches kept to provide a breakdown by age group (Table 21). The 2011 chinook recreational kept catch in the SG consisted of 3.5% 2-year olds (5-year average = 4.7%), 28.6% 3-year olds (5-year average = 46.3%), 57.5% 4-year olds (5-year average = 41.6%), and 10.5% 5-year olds or greater (5-year average = 7.4%; Table 23).

Mean length-at-age for chinook and length for coho

In 2011, the average fork length (FL) of measured chinook was 73.6 cm (n = 738; Figure 19). Length at age by month is presented in Table 22. The overall mean length of age 3 and 4 fish were 660 (n = 132) and 779 (n = 265) mm, respectively. The longest salmon sampled was a 1040 mm FL unclipped adipose chinook landed at Sunny Shores Marina on 26 July caught in PFMA 20(SG), and the scale age of this fish was determined to be 5_1 (Gilbert-Rich age, Age 5).

Of all chinook measured for length by SG creel survey staff in 2011, 11 (1.5%) were smaller than the legal size limit (< 45 cm in PFMA 19 (south of Cadboro Point) and 20(SG) and < 62 cm in PFMA 13-18, 19 (north of Cadboro Point), 28, and 29). Of the 547 retained chinook that were measured from May to September in all areas, 10 (1.8%) were sub-legal. Sub-legal chinook retention has been tracked since 1989 when the size

limit changed; this was also the highest retention year (~22%). Since 2000, retention rates have varied between ~ 1 to 6% for the entire SG study area, and was 3% in 2011. Historical rates of sub-legal sized retained chinook observed in the creel survey are presented in Table 24.

The average fork length of measured coho salmon was 604 mm in 2011 (n = 164; Figure 20). In total, 29.4% of coho observed during interviews (n = 558) were measured. The longest coho sampled was a 790 mm FL unclipped adipose fish landed at Pedder Bay Marina on 22 October, caught in PFMA 20(SG).

SUMMARY

A tidal recreational fishery creel survey was conducted in the Strait of Georgia (SG) in 2011 to estimate the catch of all reported recreational finfish species and the total recreational fishing boat trips. Logbook data were also collected. In this report, data are presented by month and PFMA.

For the entire creel survey period (May to September for the entire SG, PFMA 19 and 20(SG) were surveyed from February to December) recreational fishers made an estimated 118,261 boat trips. A total of 5,829 finfish boat trips (4.9%) were interviewed at 35 landing sites in the SG creel survey area. A total of 85 aerial surveys were used to count fishing effort.

Based on these data, recreational anglers retained an estimated 187,966 finfish pieces of which 82.1% were salmon and 17.9% were groundfish. The 154,382 landed salmon consisted of 35,210 (22.8%) chinook, 8,302 (5.4%) coho, 15,539 (10.1%) sockeye, 94,468 (61.2%) pink, 786 (0.5%) chum, and 78 unidentified salmon. The 33,584 landed groundfish consisted of 2,325 (6.9%) halibut, 5,053 (15.0%) lingcod, 9,639 (28.7%) rockfish, and 16,566 (49.3%) other groundfish. Anglers also released 200,801 finfish during the same period which consisted of 58.8% salmon and 41.2% groundfish. The 118,081 released salmon consisted of 31,235 (26.5%) chinook, 25,661 (21.7%) coho, 4,115 (3.5%) sockeye, 30,422 (25.8%) pink, 218 (0.2%) chum, and 26,429 (22.4%) unidentified salmon. The 82,720 released groundfish consisted of 195 (0.2%) halibut, 26,534 (32.1%) lingcod, 25,622 (31.0%) rockfish, and 30,369 (36.7%) other groundfish.

Comparisons of the 2011 estimates are made to the previous five years of catch estimates to determine trends in catch, effort, and catch per unit effort. Effort and chinook kept catch followed the same general pattern as the 2006 to 2010 five-year averages. Chinook kept CPUE was higher than average for April to July and dropped below in October. Coho kept CPUE was similar to the average until October when it increased over 13 times. Sockeye and pink kept catches were similar to the average while chum was well below. Based on biological samples from the creel survey, we estimate that 29.0% of

kept chinook and 47.2% of kept coho were adipose fin-clipped. In addition, age results from chinook scales indicate retained catch was 3.5% age 2 fish, 28.6% age 3 fish, 57.5% age 4, 10.4% age 5 fish, and 0.0% age 6 fish.

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TABLES

Table 1. Number of finfishing interviews by month and PFMA and number of aerial surveys in the Strait of Georgia (SG) creel survey, 2011.

Month	PFMA										Monthly Total	Monthly Aerial Surveys[1]
	13	14	15	16	17	18	19	20(SG)	28	29		
Jan	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	9	54	29	-	-	92	9
Mar	-	-	-	-	-	3	246	105	-	-	354	10
Apr	-	-	-	-	-	20	206	78	-	-	304	6
May	30	23	5	19	80	11	120	91	14	25	418	6
Jun	90	55	13	29	118	23	113	210	24	8	683	9
Jul	126	88	45	54	135	53	119	437	31	11	1099	10
Aug	134	118	35	25	107	71	243	764	47	39	1583	10
Sep	48	85	26	18	55	43	150	206	100	31	762	7
Oct	-	-	-	-	-	3	53	197	-	-	253	6
Nov	-	-	-	-	-	2	46	38	-	-	86	6
Dec	-	-	-	-	-	3	129	63	-	-	195	6
Total	428	369	124	145	495	241	1479	2218	216	114	5829	85

[1] Number of monthly aerial surveys is a summation of two separate flights enumerating the entire SG survey area as a whole.

Interviews showing in PFMA 18 outside the normal operating months are results of interviews conducted in PFMA 19 Sidney.

Table 2. Number of logged trips received by month and PFMA in the SG, 2011.

Month	PFMA										Monthly Total
	13	14	15	16	17	18	19	20(SG)	28	29	
Jan	2	0	0	0	0	0	0	0	0	0	2
Feb	4	0	0	0	0	0	0	1	0	0	5
Mar	5	0	0	0	0	0	8	1	0	0	14
Apr	49	0	1	2	0	0	24	7	0	0	83
May	30	3	1	41	4	0	32	15	0	3	129
Jun	184	5	5	23	0	0	41	28	0	2	288
Jul	554	8	11	36	0	0	11	34	5	8	667
Aug	586	4	12	26	1	0	10	90	0	4	733
Sep	141	3	4	2	1	0	7	36	0	9	203
Oct	17	0	0	0	0	0	0	22	0	1	40
Nov	3	0	0	0	0	0	0	0	0	0	3
Dec	4	0	0	0	0	0	0	2	0	0	6
Total	1579	23	34	130	6	0	133	236	5	27	2173

Table 3. Tidal effort (boat trips), kept, and released salmon catch estimates in the SG recreational fishery, 1987 to 2011[1].

Year	Effort	Kept					Released				
		Chinook	Coho	Sockeye	Pink	Chum	Chinook	Coho	Sockeye	Pink	Chum
1987	506550	94351	602075	8491	89833	682	-	-	-	-	-
1988	561495	85370	947481	16271	8486	663	-	-	-	-	-
1989	515762	101365	447555	13345	122840	3329	170588	-	-	-	-
1990	477995	85967	581952	30606	11549	652	181348	-	-	-	-
1991	394285	98831	123571	23401	248971	888	150429	-	-	-	-
1992	397322	92725	505289	6745	19075	843	134651	-	-	-	-
1993	459112	109060	777072	23600	172713	1766	167960	-	-	-	-
1994	410939	61312	273624	14038	18453	289	133835	-	-	-	-
1995	294339	56829	72999	5897	183859	1481	107784	-	-	-	-
1996	280354	87856	127107	2365	7779	3469	176607	-	-	-	-
1997	249439	53730	98540	16819	111003	481	60794	-	-	-	-
1998	146931	18914	1833	4474	6848	3556	32506	20570	-	-	-
1999	150847	41500	310	491	26458	790	13043	6021	-	-	-
2000[2]	148070	27193	4296	6367	9762	1098	50755	34577	468	3710	41
2001[2]	179654	44314	13310	3252	118592	405	53182	121527	2083	37284	214
2002[2]	191141	66198	6357	5133	11950	597	58133	32689	3203	796	0
2003[2]	156670	34442	16226	2917	104556	910	24155	43653	377	25468	20
2004[2]	114262	36207	10410	3340	4527	8649	22307	35564	1438	834	1349
2005[2]	92117	27306	4789	6949	68479	4507	15199	21156	2619	23332	454
2006[2]	95153	26728	1766	29800	1594	2644	6853	4430	2034	301	11
2007[2]	96515	28665	4593	191	76560	416	32903	20302	2137	29485	0
2008[2]	77028	17936	1056	79	2256	508	9675	4961	228	515	0
2009[2]	106435	37460	8182	197	80194	137	54203	34516	2220	25305	8
2010[2]	87443	22471	3452	51608	3277	145	16871	10570	2569	733	0
2011[2]	110371	32742	3640	15539	94440	569	28466	21497	4115	30414	151

[1]This table uses values from May to September inclusively for historical comparisons.

[2]Change in estimation methods (see English et al. 2002)

Table 4. Total effort, kept, and released catch estimates of all salmon in the SG recreational fishery, 1987 to 2011[1].

Year	Effort	Total Salmon Kept	Total Salmon Released	Total Kept and Released
1987	506550	795432	-	795432
1988	561495	1058271	-	1058271
1989	515762	688434	170588	859022
1990	477995	710726	181348	892074
1991	394285	495662	150429	646091
1992	397322	624677	134651	759328
1993	459112	1084211	167960	1252171
1994	410939	367716	133835	501551
1995	294339	321065	107784	428849
1996	280354	228576	176607	405183
1997	249439	280573	60794	341367
1998	146931	35625	53076	88701
1999	150847	69549	19064	88613
2000[2]	148070	48716	134328	183044
2001[2]	179654	180211	254234	434445
2002[2]	191141	90261	106884	197145
2003[2]	156670	159115	103273	262388
2004[2]	114262	63213	77670	140884
2005[2]	92117	112030	69080	181110
2006[2]	95153	62698	17054	79753
2007[2]	96515	110450	88168	198618
2008[2]	77028	21855	17392	39247
2009[2]	106435	126233	146928	273161
2010[2]	87443	80963	32965	113927
2011[2]	110371	146992	103768	250760

[1]This table uses values from May to September inclusively for historical comparisons.

[2]Change in estimation methods (see English et al. 2002)

Table 5. Salmon kept by month[1], effort, and species[2] in the SG, 2011.

Month	Type[3]	Effort	SE	Chin	SE	Coho	SE	Sock	SE	Pink	SE	Chum	SE	NO ID	SE	Total Monthly Kept	Total Monthly SE
Jan	Creel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	Creel	1066	113	476	108	0	0	0	0	0	0	0	0	0	0	476	108
Mar	Creel	1174	95	219	38	0	0	0	0	0	0	0	0	0	0	219	38
	Log	8	-	28	-	0	-	0	-	0	-	0	-	0	-	28	-
Apr	Creel	1337	206	503	101	0	0	0	0	0	0	0	0	0	0	503	101
	Log	29	-	38	-	0	-	0	-	0	-	0	-	0	-	38	-
May	Creel	12357	1060	2757	551	0	0	0	0	0	0	0	0	0	0	2757	551
	Log	116	-	80	-	0	-	0	-	0	-	0	-	0	-	80	-
Jun	Creel	10213	901	5303	675	0	0	0	0	12	8	0	0	0	0	5314	675
	Log	283	-	396	-	2	-	0	-	0	-	0	-	0	-	398	-
Jul	Creel	26221	834	6857	638	702	128	161	62	14332	1535	0	0	61	50	22113	1669
	Log	629	-	1331	-	20	-	0	-	0	-	0	-	0	-	1351	-
Aug	Creel	33187	1099	9080	718	1437	229	9291	1855	52554	3276	43	38	0	0	72405	3840
	Log	689	-	1437	-	60	-	0	-	0	-	0	-	0	-	1497	-
Sep	Creel	26482	1946	5395	830	1381	310	6087	1406	27542	3892	526	227	0	0	40931	4238
	Log	194	-	108	-	37	-	0	-	0	-	0	-	0	-	145	-
Oct	Creel	2813	571	338	87	4536	889	0	0	28	15	217	65	17	17	5136	896
	Log	22	-	2	-	113	-	0	-	0	-	0	-	0	-	115	-
Nov	Creel	353	79	303	72	13	15	0	0	0	0	0	0	0	0	315	74
Dec	Creel	1088	209	560	116	0	0	0	0	0	0	0	0	0	0	560	116
Total	All	118261	2840	35210	1555	8302	977	15539	2329	94468	5314	786	239	78	53	154382	6090

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]Chin = chinook, Sock=sockeye and NO ID = unidentified salmon

[3]Log = logbook reported data incorporated into final estimate

Table 6. Salmon kept by PFMA[1], effort, and species[2] in the SG, 2011.

PFMA	Type[3]	Effort	SE	Chin	SE	Coho	SE	Sock	SE	Pink	SE	Chum	SE	NO ID	SE	Total Area Kept	Total Area SE
13	Creel	22336	996	8967	1075	431	153	4563	1062	31507	4038	492	223	0	0	45961	4320
	Log	1446	-	2963	-	86	-	0	-	0	-	0	-	0	-	3049	-
14	Creel	9563	466	2594	356	123	51	26	21	648	170	0	0	0	0	3391	398
	Log	23	-	22	-	0	-	0	-	0	-	0	-	0	-	22	-
15	Creel	3188	273	693	151	16	14	31	18	204	92	2	3	0	0	947	178
	Log	28	-	14	-	0	-	0	-	0	-	0	-	0	-	14	-
16	Creel	2379	165	234	54	0	0	0	0	0	0	0	0	0	0	234	54
	Log	124	-	21	-	0	-	0	-	0	-	0	-	0	-	21	-
17	Creel	10622	689	2176	306	11	10	24	15	272	137	7	9	0	0	2490	335
	Log	6	-	6	-	0	-	0	-	0	-	0	-	0	-	6	-
18	Creel	6969	629	880	206	335	160	50	28	4229	681	0	0	0	0	5495	730
	Log	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
19	Creel	12233	609	2918	576	542	176	120	50	2967	541	2	2	0	0	6549	811
	Log	131	-	186	-	0	-	0	-	0	-	0	-	0	-	186	-
20 (SG)	Creel	32406	1988	10281	572	6211	925	1687	228	49837	3181	282	85	78	53	68375	3371
	Log	178	-	203	-	146	-	0	-	0	-	0	-	0	-	349	-
28	Creel	7606	637	747	208	272	100	2620	952	1718	522	0	0	0	0	5358	1110
	Log	6	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
29	Creel	8990	1076	2299	520	129	83	6417	1826	3086	857	0	0	0	0	11931	2085
	Log	28	-	5	-	0	-	0	-	0	-	0	-	0	-	5	-
Total	All	118261	2840	35210	1555	8302	977	15539	2329	94468	5314	786	239	78	53	154382	6090

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]Chin = chinook, Sock=sockeye and NO ID = unidentified salmon

[3]Log = logbook reported data incorporated into final estimate

Table 7. Salmon released by month[1], effort, and species[2] in the SG, 2011.

Month	Type[3]	Effort	SE	Chin	SE	Coho	SE	Sock	SE	Pink	SE	Chum	SE	NO ID	SE	Total Monthly Rel[4]	Total Monthly SE
Jan	Creel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	Creel	1066	113	263	72	0	0	0	0	0	0	0	0	41	31	305	78
Mar	Creel	1174	95	86	26	0	0	0	0	0	0	0	0	141	59	227	64
	Log	8	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
Apr	Creel	1337	206	130	39	0	0	0	0	0	0	0	0	11	11	140	41
	Log	29	-	3	-	0	-	0	-	0	-	0	-	0	-	3	-
May	Creel	12357	1060	1345	241	0	0	0	0	0	0	0	0	0	0	1345	241
	Log	116	-	40	-	3	-	0	-	0	-	0	-	0	-	43	-
Jun	Creel	10213	901	2813	350	60	29	0	0	0	0	0	0	62	57	2935	356
	Log	283	-	53	-	1	-	0	-	0	-	0	-	0	-	54	-
Jul	Creel	26221	834	6607	778	3556	826	1166	387	3142	583	94	85	699	346	15263	1380
	Log	629	-	123	-	41	-	0	-	0	-	0	-	0	-	164	-
Aug	Creel	33187	1099	7379	690	5052	916	2370	954	14726	1774	58	53	6990	1107	36575	2569
	Log	689	-	57	-	410	-	0	-	0	-	0	-	0	-	467	-
Sep	Creel	26482	1946	10036	1368	12168	1997	579	371	12546	3582	0	0	11375	2569	46703	5043
	Log	194	-	12	-	207	-	0	-	0	-	0	-	0	-	219	-
Oct	Creel	2813	571	868	318	4103	1593	0	0	8	9	67	54	6798	2258	11844	2782
	Log	22	-	0	-	61	-	0	-	0	-	0	-	0	-	61	-
Nov	Creel	353	79	279	93	0	0	0	0	0	0	0	0	285	172	565	195
Dec	Creel	1088	209	1139	234	0	0	0	0	0	0	0	0	29	13	1168	234
Total	All	118261	2840	31235	1818	25661	2837	4115	1094	30422	4040	218	114	26429	3617	118081	6478

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]Chin = chinook, Sock=sockeye and NO ID = unidentified salmon

[3]Log = logbook reported data incorporated into final estimate

[4]Rel = released

Table 8. Salmon released by PFMA[1], effort, and species[2] for the SG, 2011.

PFMA	Type[3]	Effort	SE	Chin	SE	Coho	SE	Sock	SE	Pink	SE	Chum	SE	NO ID	SE	Total Area Kept	Total Area SE
13	Creel	22336	996	5239	760	11670	2054	783	386	8980	3362	94	85	1020	698	27786	4092
	Log	1446	-	217	-	614	-	0	-	0	-	0	-	0	-	831	-
14	Creel	9563	466	4573	683	695	209	35	27	316	148	0	0	1927	534	7546	905
	Log	23	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
15	Creel	3188	273	1063	201	223	118	1	1	62	53	0	0	0	0	1349	239
	Log	28	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
16	Creel	2379	165	308	80	66	42	0	0	0	0	0	0	0	0	374	90
	Log	124	-	0	-	1	-	0	-	0	-	0	-	0	-	1	-
17	Creel	10622	689	4111	576	613	185	2	2	305	193	0	0	884	263	5915	688
	Log	6	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
18	Creel	6969	629	1247	302	811	544	3	2	2125	577	58	53	52	30	4296	851
	Log	0	-	0	-	0	-	0	-	0	-	0	-	0	-	0	-
19	Creel	12233	609	1938	315	299	101	0	0	2199	624	0	0	2122	985	6558	1212
	Log	131	-	54	-	0	-	0	-	0	-	0	-	0	-	54	-
20 (SG)	Creel	32406	1988	8967	1142	10365	1849	1364	242	11957	1185	67	54	20347	3357	53067	4178
	Log	178	-	15	-	108	-	0	-	0	-	0	-	0	-	123	-
28	Creel	7606	637	848	334	16	22	260	250	1423	939	0	0	0	0	2547	1028
	Log	6	-	1	-	0	-	0	-	0	-	0	-	0	-	1	-
29	Creel	8990	1076	2653	526	180	101	1666	963	3055	1395	0	0	77	25	7631	1777
	Log	28	-	1	-	0	-	0	-	0	-	0	-	0	-	1	-
Total	All	118261	2840	31235	1818	25661	2837	4115	1094	30422	4040	218	114	26429	3617	118081	6478

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]Chin = chinook, Sock=sockeye and NO ID = unidentified salmon

[3]Log = logbook reported data incorporated into final estimate

Table 9. Legal and sub-legal chinook[1] kept and released by month[2], effort, and species in the SG, 2011.

Month	Type[3]	Effort	SE	Chinook Kept	SE	Legal Chinook Released	SE	Sub-Legal Chinook Released	SE	Total Monthly Chinook Released	Total Monthly Chinook Released SE
Jan	Creel	-	-	-	-	-	-	-	-	-	-
Feb	Creel	1066	113	476	108	37	22	227	68	263	72
Mar	Creel	1174	95	219	38	26	13	60	22	86	26
	Log	8	-	28	-	0	-	0	-	0	-
Apr	Creel	1337	206	503	101	93	36	37	15	130	39
	Log	29	-	38	-	3	-	0	-	3	-
May	Creel	12357	1060	2757	551	259	90	1086	223	1345	241
	Log	116	-	80	-	40	-	0	-	40	-
Jun	Creel	10213	901	5303	675	688	208	2125	282	2813	350
	Log	283	-	396	-	53	-	0	-	53	-
Jul	Creel	26221	834	6857	638	954	258	5654	734	6607	778
	Log	629	-	1331	-	123	-	0	-	123	-
Aug	Creel	33187	1099	9080	718	481	119	6898	680	7379	690
	Log	689	-	1437	-	57	-	0	-	57	-
Sep	Creel	26482	1946	5395	830	756	290	9280	1337	10036	1368
	Log	194	-	108	-	12	-	0	-	12	-
Oct	Creel	2813	571	338	87	122	59	745	312	868	318
	Log	22	-	2	-	0	-	0	-	0	-
Nov	Creel	353	79	303	72	55	29	224	88	279	93
Dec	Creel	1088	209	560	116	166	67	972	224	1139	234
Total	All	118261	2840	35210	1555	3925	477	27310	1755	31235	1818

[1]78 unidentified salmon were kept and 26,429 unidentified salmon were released in the SG in 2011and were not included.

[2]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[3]Log = logbook reported data incorporated into final estimate

No sub-legal chinook were reported released in the useable logbook data.

Table 10. Legal and sub-legal chinook[1] kept and released by PFMA[2], effort, and species in the SG, 2011.

PFMA	Type[3]	Effort	SE	Chinook Kept	SE	Legal Chinook Released	SE	Sub-Legal Chinook Released	SE	Total Area Chinook Released	Total Area Chinook Released SE
13	Creel	22336	996	8967	1075	130	93	5110	754	5239	760
	Log	1446	-	2963	-	217	-	0	-	217	-
14	Creel	9563	466	2594	356	363	189	4209	657	4573	683
	Log	23	-	22	-	0	-	0	-	0	-
15	Creel	3188	273	693	151	0	0	1063	201	1063	201
	Log	28	-	14	-	0	-	0	-	0	-
16	Creel	2379	165	234	54	4	3	304	79	308	80
	Log	124	-	21	-	0	-	0	-	0	-
17	Creel	10622	689	2176	306	783	199	3328	541	4111	576
	Log	6	-	6	-	0	-	0	-	0	-
18	Creel	6969	629	880	206	128	60	1119	296	1247	302
	Log	0	-	0	-	0	-	0	-	0	-
19	Creel	12233	609	2918	576	424	209	1514	236	1938	315
	Log	131	-	186	-	54	-	0	-	54	-
20 (SG)	Creel	32406	1988	10281	572	1365	287	7602	1105	8967	1142
	Log	178	-	203	-	15	-	0	-	15	-
28	Creel	7606	637	747	208	16	9	832	334	848	334
	Log	6	-	0	-	1	-	0	-	1	-
29	Creel	8990	1076	2299	520	424	117	2229	513	2653	526
	Log	28	-	5	-	1	-	0	-	1	-
Total	All	118261	2840	35210	1555	3925	477	27310	1755	31235	1818

[1]78 unidentified salmon were kept and 26,429 unidentified salmon were released in the SG in 2011 and were not included.

[2]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[3]Log = logbook reported data incorporated into final estimate

No sub-legal chinook were reported released in the useable logbook data.

Table 11. Groundfish kept by month[1], effort, and species in the SG, 2011.

Month	Type[5]	Effort	SE	Halibut	SE	Lingcod	SE	Other Ground-fish[2]	SE	Rockfish Group 1[3]	SE	Rockfish Group 2[4]	SE	Total Monthly Kept	Total Monthly SE
Jan	Creel	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	Creel	1066	113	0	0	0	0	0	0	0	0	0	0	0	0
Mar	Creel	1174	95	199	39	0	0	42	22	0	0	0	0	241	45
	Log	8	-	3	-	0	-	0	-	0	-	0	-	3	-
Apr	Creel	1337	206	284	102	0	0	10	7	0	0	0	0	295	102
	Log	29	-	18	-	0	-	0	-	0	-	0	-	18	-
May	Creel	12357	1060	466	124	931	218	1318	405	297	83	272	114	3284	497
	Log	116	-	40	-	6	-	13	-	14	-	2	-	75	-
Jun	Creel	10213	901	252	156	327	66	2309	468	562	98	382	120	3832	521
	Log	283	-	49	-	35	-	40	-	35	-	3	-	162	-
Jul	Creel	26221	834	280	106	1756	290	4688	827	2510	352	888	163	10122	965
	Log	629	-	16	-	55	-	10	-	38	-	2	-	121	-
Aug	Creel	33187	1099	341	122	1062	279	3037	846	1350	300	658	179	6448	964
	Log	689	-	27	-	41	-	15	-	23	-	2	-	108	-
Sep	Creel	26482	1946	342	206	822	249	3986	1050	1565	381	993	553	7708	1288
	Log	194	-	8	-	11	-	3	-	16	-	0	-	38	-
Oct	Creel	2813	571	0	0	6	7	1035	297	0	0	0	0	1041	297
	Log	22	-	0	-	0	-	0	-	0	-	0	-	0	-
Nov	Creel	353	79	0	0	0	0	56	54	12	11	8	10	76	56
Dec	Creel	1088	209	0	0	0	0	5	5	8	6	0	0	12	7
Total	All	118261	2840	2325	347	5053	526	16566	1725	6429	612	3210	626	33584	2035

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]Other Groundfish includes all other groundfish except halibut, lingcod, and any rockfish.

[3]Rockfish Group 1 includes china, copper, quillback, tiger, and yelloweye.

[4]Rockfish Group 2 includes all other rockfish not included in Rockfish Group 1.

[5]Log = logbook reported data incorporated into final estimate

Table 12. Groundfish released by month[1], effort, and species in the SG, 2011.

Month	Type[5]	Effort	SE	Halibut	SE	Lingcod	SE	Other Ground-fish[2]	SE	Rockfish Group 1[3]	SE	Rockfish Group 2[4]	SE	Total Monthly Released	Total Monthly SE
Jan	Creel	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	Creel	1066	113	0	0	53	58	27	29	0	0	111	68	191	94
Mar	Creel	1174	95	10	5	104	33	689	106	0	0	96	35	899	116
	Log	8	-	0	-	2	-	0	-	0	-	0	-	2	-
Apr	Creel	1337	206	4	3	53	20	634	175	68	60	79	26	838	188
	Log	29	-	0	-	3	-	1	-	0	-	0	-	4	-
May	Creel	12357	1060	42	47	7798	1523	1872	394	2066	602	2035	397	13814	1731
	Log	116	-	6	-	126	-	17	-	32	-	3	-	184	-
Jun	Creel	10213	901	69	87	2922	510	3379	592	1208	234	1665	517	9242	970
	Log	283	-	7	-	185	-	310	-	42	-	6	-	550	-
Jul	Creel	26221	834	14	14	7424	1440	11525	1410	2193	346	3828	800	24985	2196
	Log	629	-	1	-	127	-	100	-	73	-	18	-	319	-
Aug	Creel	33187	1099	21	21	3881	527	6256	1127	2136	766	3520	735	15814	1636
	Log	689	-	0	-	42	-	41	-	50	-	6	-	139	-
Sep	Creel	26482	1946	8	8	3164	753	5083	935	972	277	4457	2101	13684	2435
	Log	194	-	0	-	47	-	14	-	19	-	1	-	81	-
Oct	Creel	2813	571	0	0	467	174	365	225	25	24	711	208	1568	353
	Log	22	-	0	-	0	-	0	-	0	-	0	-	0	-
Nov	Creel	353	79	0	0	29	13	26	14	1	1	88	57	144	61
Dec	Creel	1088	209	14	8	106	58	30	24	0	0	113	70	263	95
Total	All	118261	2840	195	103	26534	2353	30369	2175	8886	1097	16736	2465	82720	4191

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]Other Groundfish includes all other groundfish except halibut, lingcod, and any rockfish.

[3]Rockfish Group 1 includes china, copper, quillback, tiger, and yelloweye.

[4]Rockfish Group 2 includes all other rockfish not included in Rockfish Group 1.

[5]Log = logbook reported data incorporated into final estimate

Table 13. Groundfish kept by PFMA[2], effort, and species in the SG, 2011.

PFMA	Type[5]	Effort	SE	Halibut	SE	Lingcod	SE	Other Ground-fish[2]	SE	Rockfish Group 1[3]	SE	Rockfish Group 2[4]	SE	Total Area Kept	Total Area SE
13	Creel	22336	996	47	44	436	114	897	324	1084	345	0	0	2463	489
	Log	1446	-	8	-	115	-	43	-	55	-	1	-	222	-
14	Creel	9563	466	17	16	667	216	1727	427	592	192	31	18	3035	516
	Log	23	-	0	-	10	-	5	-	5	-	2	-	22	-
15	Creel	3188	273	2	2	331	156	187	102	275	99	26	23	822	212
	Log	28	-	0	-	1	-	8	-	0	-	0	-	9	-
16	Creel	2379	165	0	0	272	68	865	255	580	130	32	15	1750	295
	Log	124	-	1	-	18	-	20	-	51	-	3	-	93	-
17	Creel	10622	689	32	25	1507	263	2377	854	855	167	616	177	5387	926
	Log	6	-	0	-	4	-	0	-	2	-	0	-	6	-
18	Creel	6969	629	30	22	631	286	285	104	696	267	640	514	2282	654
	Log	0	-	0	-	0	-	0	-	0	-	0	-	0	-
19	Creel	12233	609	1785	305	238	72	2269	408	561	109	403	124	5255	541
	Log	131	-	151	-	0	-	0	-	0	-	0	-	151	-
20 (SG)	Creel	32406	1988	253	154	536	163	3385	887	1290	257	1079	261	6542	986
	Log	178	-	1	-	0	-	5	-	5	-	3	-	14	-
28	Creel	7606	637	0	0	35	29	1973	649	0	0	0	0	2008	650
	Log	6	-	0	-	0	-	0	-	0	-	0	-	0	-
29	Creel	8990	1076	0	0	253	63	2519	706	370	122	374	110	3515	728
	Log	28	-	0	-	0	-	0	-	8	-	0	-	8	-
Total	All	118261	2840	2325	347	5053	526	16566	1725	6429	612	3210	626	33584	2035

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]Other Groundfish includes all other groundfish except halibut, lingcod, and any rockfish.

[3]Rockfish Group 1 includes china, copper, quillback, tiger, and yelloweye.

[4]Rockfish Group 2 includes all other rockfish not included in Rockfish Group 1.

[5]Log = logbook reported data incorporated into final estimate

Table 14. Groundfish released by PFMA[3], effort, and species in the SG, 2011.

PFMA	Type[5]	Effort	SE	Halibut	SE	Lingcod	SE	Other Ground-fish[2]	SE	Rockfish Group 1[3]	SE	Rockfish Group 2[4]	SE	Total Area Released	Total Area SE
13	Creel	22336	996	0	0	3441	1121	401	274	110	128	30	21	3982	1161
	Log	1446	-	0	-	216	-	380	-	120	-	21	-	737	-
14	Creel	9563	466	0	0	3257	1261	3233	580	42	28	1340	309	7874	1422
	Log	23	-	0	-	27	-	8	-	27	-	0	-	62	-
15	Creel	3188	273	0	0	1093	552	467	139	173	141	101	62	1834	590
	Log	28	-	0	-	10	-	0	-	5	-	1	-	16	-
16	Creel	2379	165	0	0	1252	199	786	340	483	153	488	113	3009	438
	Log	124	-	0	-	188	-	75	-	50	-	6	-	319	-
17	Creel	10622	689	0	0	6772	1124	6220	1397	4423	961	3643	821	21058	2194
	Log	6	-	0	-	1	-	0	-	0	-	0	-	1	-
18	Creel	6969	629	0	0	1943	620	2904	592	1049	259	3675	2114	9570	2296
	Log	0	-	0	-	0	-	0	-	0	-	0	-	0	-
19	Creel	12233	609	44	24	2513	345	9419	954	907	215	2032	306	14915	1082
	Log	131	-	14	-	17	-	0	-	0	-	0	-	31	-
20 (SG)	Creel	32406	1988	136	100	4779	715	5528	925	1173	306	4676	788	16292	1446
	Log	178	-	0	-	32	-	13	-	4	-	6	-	55	-
28	Creel	7606	637	0	0	26	14	13	11	11	9	0	0	49	20
	Log	6	-	0	-	0	-	0	-	0	-	0	-	0	-
29	Creel	8990	1076	0	0	926	261	915	343	298	115	717	327	2857	553
	Log	28	-	0	-	41	-	7	-	10	-	0	-	58	-
Total	All	118261	2840	195	103	26534	2353	30369	2175	8886	1097	16736	2465	82720	4191

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]Other Groundfish includes all other groundfish except halibut, lingcod, and any rockfish.

[3]Rockfish Group 1 includes china, copper, quillback, tiger, and yelloweye.

[4]Rockfish Group 2 includes all other rockfish not included in Rockfish Group 1.

[5]Log = logbook reported data incorporated into final estimate

Table 15. Groundfish retained catch summary in the SG, 2011.

Groundfish Species	Catch	% of Total Groundfish Catch	Major Catch Area
Halibut (*Hippoglossus stenolepis)*	2,325	6.9%	19
Lingcod (*Ophiodon elongatus*)	5,053	15.0%	17, 14, and 18
Rockfish (*Sebastes* spp.)	9,640	28.7%	20(SG), 17, and 18
Other groundfish	16,566	49.3%	20(SG), 29, and 17
Total	33,584	100%	

Table 16. Rockfish retained catch summary in the SG, 2011.

Rockfish Species	Catch	% of Total Groundfish Catch	Major Catch Area
Copper (Sebastes caurinus)	2,592	26.9%	17, 18, and 20(SG)
Quillback (Sebastes maliger)	2,573	26.7%	13, 20(SG), and 16
Yelloweye (Sebastes ruberrimus)	1,063	11.0%	14, 29, and 13
Other (Sebastes spp.)	3,412	35.4%	20(SG), 18, and 17
Total	9,640	100%	

Table 17. Number of adipose-clipped chinook observed by month[1] and region[2] in the SG creel survey, 2011.

Month		North SG	South SG	Victoria	Total
Jan	Unmarked	-	-	9	9
to	Marked	-	-	25	25
Feb	Total	-	-	34	34
Mar	Unmarked	-	-	15	15
Mar	Marked	-	-	49	49
Mar	Total	-	-	64	64
Apr	Unmarked	-	-	14	14
Apr	Marked	-	-	67	67
Apr	Total	-	-	81	81
May	Unmarked	6	28	6	40
May	Marked	0	2	22	24
May	Total	6	30	28	64
Jun	Unmarked	63	59	60	182
Jun	Marked	7	12	38	57
Jun	Total	70	71	98	239
Jul	Unmarked	68	23	127	218
Jul	Marked	2	7	32	41
Jul	Total	70	30	159	259
Aug	Unmarked	62	28	304	394
Aug	Marked	3	1	43	47
Aug	Total	65	29	347	441
Sep	Unmarked	37	39	28	104
Sep	Marked	0	1	19	20
Sep	Total	37	40	47	124
Oct	Unmarked	-	-	11	11
Oct	Marked	-	-	19	19
Oct	Total	-	-	30	30
Nov	Unmarked	-	-	70	70
to	Marked	-	-	85	85
Dec	Total	-	-	155	155
Total	Unmarked	236	177	644	1057
	Marked	12	23	399	434
	Total	248	200	1043	1491

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.
[2]North SG represented by PFMA 13 to 16; South SG represented by PFMA 17, 18, 28, and 29 and Victoria represented by PFMA 19 and 20(SG).

Table 18. Number of adipose-clipped coho observed by month[1] and region[2] in the SG creel survey, 2011.

Month		North SG	South SG	Victoria	Total
Jan	Unmarked	-	-	0	0
to	Marked	-	-	0	0
Feb	Total	-	-	0	0
Mar	Unmarked	-	-	0	0
Mar	Marked	-	-	0	0
Mar	Total	-	-	0	0
Apr	Unmarked	-	-	0	0
Apr	Marked	-	-	0	0
Apr	Total	-	-	0	0
May	Unmarked	0	0	0	0
May	Marked	0	0	0	0
May	Total	0	0	0	0
Jun	Unmarked	0	0	0	0
Jun	Marked	0	0	0	0
Jun	Total	0	0	0	0
Jul	Unmarked	0	0	8	8
Jul	Marked	2	1	22	25
Jul	Total	2	1	30	33
Aug	Unmarked	0	2	5	7
Aug	Marked	2	5	62	69
Aug	Total	2	7	67	76
Sep	Unmarked	2	4	4	10
Sep	Marked	7	9	19	35
Sep	Total	9	13	23	45
Oct	Unmarked	-	-	259	259
Oct	Marked	-	-	120	120
Oct	Total	-	-	379	379
Nov	Unmarked	-	-	0	0
to	Marked	-	-	2	2
Dec	Total	-	-	2	2
Total	Unmarked	2	6	276	284
	Marked	11	15	225	251
	Total	13	21	501	535

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.
[2]North SG represented by PFMA 13 to 16; South SG represented by PFMA 17, 18, 28, and 29 and Victoria represented by PFMA 19 and 20(SG).

Table 19. Origin of coded-wire tagged chinook caught in the SG, 2011.

Origin	Country	Total Submitted[1]	Percent
Cowichan R	CAN	40	12.2%
Chilliwack R	CAN	38	11.6%
Shuswap R Low	CAN	32	9.7%
Harrison R	CAN	29	8.8%
Puntledge R	CAN	18	5.5%
Big Qualicum R	CAN	8	2.4%
Nicola R	CAN	7	2.1%
Quinsam R	CAN	6	1.8%
Robertson Cr	CAN	5	1.5%
Woss R	CAN	5	1.5%
Phillips R	CAN	4	1.2%
Nimpkish R	CAN	1	0.3%
Shuswap R Middle	CAN	1	0.3%
Skagit R	USA	21	6.4%
Samish (Friday Cr)	USA	19	5.8%
Finch Cr	USA	13	4.0%
Skykomish R	USA	12	3.6%
Stillaguamish R -NF	USA	10	3.0%
Big Soos Cr	USA	9	2.7%
George Adams (Purdy)	USA	8	2.4%
Nooksack -SF	USA	8	2.4%
Wells hatchery	USA	7	2.1%
Grovers Cr	USA	5	1.5%
Sooes R	USA	3	0.9%
Deschutes R	USA	3	0.9%
Voight Cr	USA	2	0.6%
Lyons Ferry hatchery	USA	2	0.6%
Snake R	USA	2	0.6%
Methow and Okanogan	USA	2	0.6%
Clear Cr	USA	2	0.6%
Spring Cr	USA	1	0.3%
Santium R - NF	USA	1	0.3%
Big Cr hatchery	USA	1	0.3%
Hoko R	USA	1	0.3%
Minter Cr	USA	1	0.3%
Wenatchee R	USA	1	0.3%
White R	USA	1	0.3%
	TOTAL	329	100.0%

[1]Total submitted coded-wire tagged chinook within the SG survey area for January to December
Source: MRP_PUB.Releases (CWT) JOIN Recoveries (MRP Data Extractor) - Date Run:12/21/2012

Table 20. Monthly[2] number and percent age[1] composition of chinook sampled for age in the SG creel survey, 2011.

Month	Age 2		Age 3		Age 4		Age 5		Age 6		Total Sampled
	n	%	n	%	n	%	n	%	n	%	
Jan	-	-	-	-	-	-	-	-	-	-	-
Feb	0	0.0%	1	10.0%	8	80.0%	1	10.0%	0	0.0%	10
Mar	0	0.0%	4	22.2%	10	55.6%	4	22.2%	0	0.0%	18
Apr	0	0.0%	3	15.8%	15	78.9%	1	5.3%	0	0.0%	19
May	0	0.0%	9	32.1%	17	60.7%	2	7.1%	0	0.0%	28
Jun	1	1.0%	27	27.6%	60	61.2%	10	10.2%	0	0.0%	98
Jul	0	0.0%	21	23.3%	52	57.8%	17	18.9%	0	0.0%	90
Aug	1	0.9%	19	17.9%	76	71.7%	10	9.4%	0	0.0%	106
Sep	5	11.1%	18	40.0%	19	42.2%	3	6.7%	0	0.0%	45
Oct	2	25.0%	5	62.5%	1	12.5%	0	0.0%	0	0.0%	8
Nov	6	40.0%	8	53.3%	1	6.7%	0	0.0%	0	0.0%	15
Dec	1	4.2%	17	70.8%	6	25.0%	0	0.0%	0	0.0%	24
Total	16		132		265		48		0		461
Overall age composition of catch		3.5%		28.6%		57.5%		10.4%		0.0%	

[1]For the purposes of this report, age is defined as the year of life caught based on the Gilbert-Rich age.

[2]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Table 21. Monthly[2] estimated retained catches at age[1] of chinook in the SG, 2011.

Month	Age 2	Age 3	Age 4	Age 5	Age 6	Total
Jan	-	-	-	-	-	-
Feb	0	48	381	48	0	476
Mar	0	55	137	55	0	247
Apr	0	85	427	28	0	541
May	0	912	1722	203	0	2837
Jun	58	1570	3489	582	0	5699
Jul	0	1911	4731	1547	0	8188
Aug	99	1885	7540	992	0	10517
Sep	611	2201	2323	367	0	5503
Oct	85	213	43	0	0	340
Nov	121	162	20	0	0	303
Dec	23	397	140	0	0	560
Total	998	9438	20954	3821	0	35211
Annual Percentage	3.5%	28.6%	57.5%	10.4%	0.0%	100%

[1]For the purposes of this report, age is defined as the year of life caught based on the Gilbert-Rich age.
[2]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Table 22. Monthly[2] mean nose-fork length (L) at age[1] of chinook sampled in the SG creel survey, 2011.

Month	Age 2		Age 3		Age 4		Age 5		Age 6		Total
	n	L (mm)	n	L (mm)	n	L (mm)	n	L (mm)	n	L (mm)	Sampled
Jan	-	-	-	-	-	-	-	-	-	-	-
Feb	0	-	1	610	8	667	1	750	0	-	10
Mar	0	-	4	601	10	611	4	711	0	-	18
Apr	0	-	3	680	15	711	1	640	0	-	19
May	0	-	9	647	17	768	2	875	0	-	28
Jun	1	450	27	699	60	783	10	868	0	-	98
Jul	0	-	21	630	52	812	17	898	0	-	90
Aug	1	450	19	661	76	801	10	915	0	-	106
Sep	5	520	18	707	19	816	3	823	0	-	45
Oct	2	455	5	612	1	550	0	-	0	-	8
Nov	6	519	8	631	1	800	0	-	0	-	15
Dec	1	600	17	636	6	723	0	-	0	-	24
Total Samples/Mean	16	508	132	660	265	779	48	866	0	0	461

[1]For the purposes of this report, age is defined as the year of life caught based on the Gilbert-Rich age.

[2]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Table 23. Percent age[1] composition of chinook in the SG creel survey, 1987 to 2011.

Catch Year	2	3	4	5+	Reference
1987	7.8	62.1	25	5.2	Shardlow and Collicutt (1989a)
1988	26.4	35.3	35.4	2.8	Shardlow and Collicutt (1989b)
1989	3.1	83.3	10.5	3.1	Collicutt and Shardlow (1990)
1990	4	37	53	6	Hardie et al. (1999)
1991	2	67	25	6	Hardie et al. (1999)
1992	7	58	28	7	Hardie et al. (1999)
1993	1	69	26	4	Hardie et al. (1999)
1994	2	50	40	8	Hardie et al. (1999)
1995	2	62	29	7	Hardie et al. (1999)
1996	1	70	26	3	Hardie et al. (1999)
1997	0	66	29	5	Hardie et al. (1999)
1998	5	31	55	9	Hardie et al. (1999)
1999	0.3	73.4	21.4	4.9	Hardie et al. (2001)
2000	2.2	56.6	35.0	6.2	Hardie et al. (2002)
2001	1.4	59	32.8	4.4	Hardie et al. (2003)
2002	2.1	53.9	41.5	2.5	Unpublished data
2003	3.9	45.7	43.4	7.0	Unpublished data
2004	6.8	46.2	41.7	5.3	Unpublished data
2005	6.6	44.0	45.4	4.0	Unpublished data
2006	5.4	46.2	41.6	6.8	Unpublished data
2007	5.2	43.0	44.0	7.8	Carter and Zetterberg (2010)
2008	1.8	60.2	33.5	4.5	Zetterberg and Carter (2010)
2009	10.4	28.2	48.0	13.3	Zetterberg et al (2012a)
2010	0.7	54.1	40.8	4.4	Zetterberg et al (2012b)
2011	3.5	28.6	57.5	10.4	Calculated from 2011 data

[1]For the purposes of this report, age is defined as the year of life caught based on the Gilbert-Rich age.

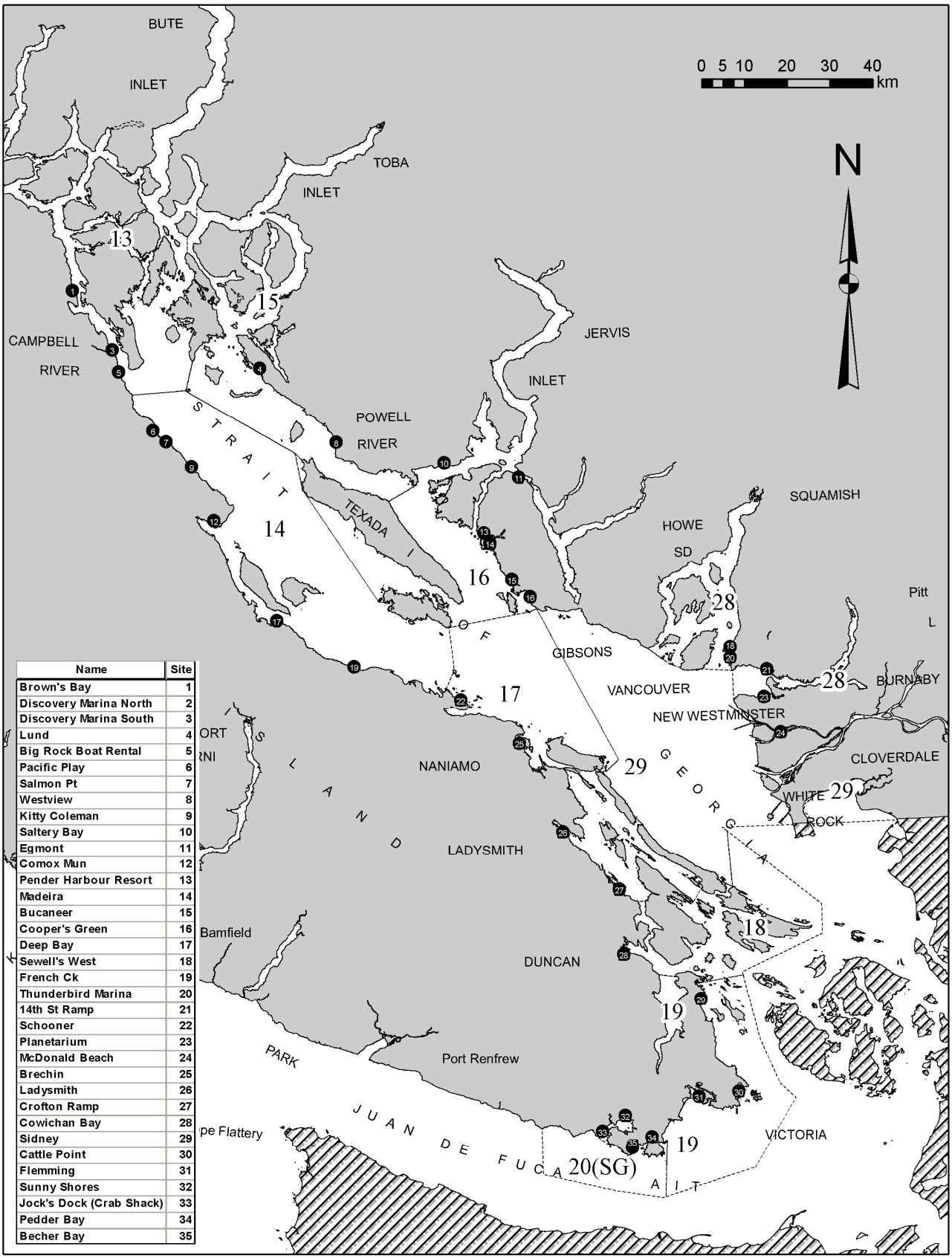
Table 24. Sub-legal chinook retention in the SG creel survey, 1989 to 2011[1].

Year	Victoria[1]	Strait of Georgia[2]	Reference
1989	2%	20%	Collicutt and Shardlow (1990)
1990	1%	10%	Collicutt and Shardlow (1992)
1991	<1%	7%	Collicutt and Shardlow (1993)
1992	2%	2%	Hardie et al. (1999)
1993	1%	2%	Hardie et al. (1999)
1994	0%	2%	Hardie et al. (1999)
1995	0%	3%	Hardie et al. (1999)
1996	0%	1%	Hardie et al. (1999)
1997	0%	2%	Hardie et al. (1999)
1998	1%	6%	Hardie et al. (1999)
1999	0%	<1%	Hardie et al. (2001)
2000	1%	2%	Hardie et al. (2002)
2001	1%	2%	Hardie et al. (2003)
2002	0%	2%	Unpublished data
2003	<1%	1%	Unpublished data
2004	0%	2%	Unpublished data
2005	<1%	3%	Unpublished data
2006	2%	1%	Unpublished data
2007	1%	5%	Carter and Zetterberg (2010)
2008	2%	2%	Zetterberg and Carter (2010)
2009	2%	4%	Zetterberg et al (2012a)
2010	1%	1%	Zetterberg et al (2012b)
2011	2%	1%	Calculated from 2011 data

[1]Victoria represents creel area 19 and 20(SG).

[2]Strait of Georgia represents creel area 13 to 18, 28 and 29.

FIGURES



Name	Site
Brown's Bay	1
Discovery Marina North	2
Discovery Marina South	3
Lund	4
Big Rock Boat Rental	5
Pacific Play	6
Salmon Pt	7
Westview	8
Kitty Coleman	9
Saltery Bay	10
Egmont	11
Comox Mun	12
Pender Harbour Resort	13
Madeira	14
Bucaneer	15
Cooper's Green	16
Deep Bay	17
Sewell's West	18
French Ck	19
Thunderbird Marina	20
14th St Ramp	21
Schooner	22
Planetarium	23
McDonald Beach	24
Brechin	25
Ladysmith	26
Crofton Ramp	27
Cowichan Bay	28
Sidney	29
Cattle Point	30
Flemming	31
Sunny Shores	32
Jock's Dock (Crab Shack)	33
Pedder Bay	34
Becher Bay	35

Figure 1. SG creel survey study area and landing site locations, 2011.

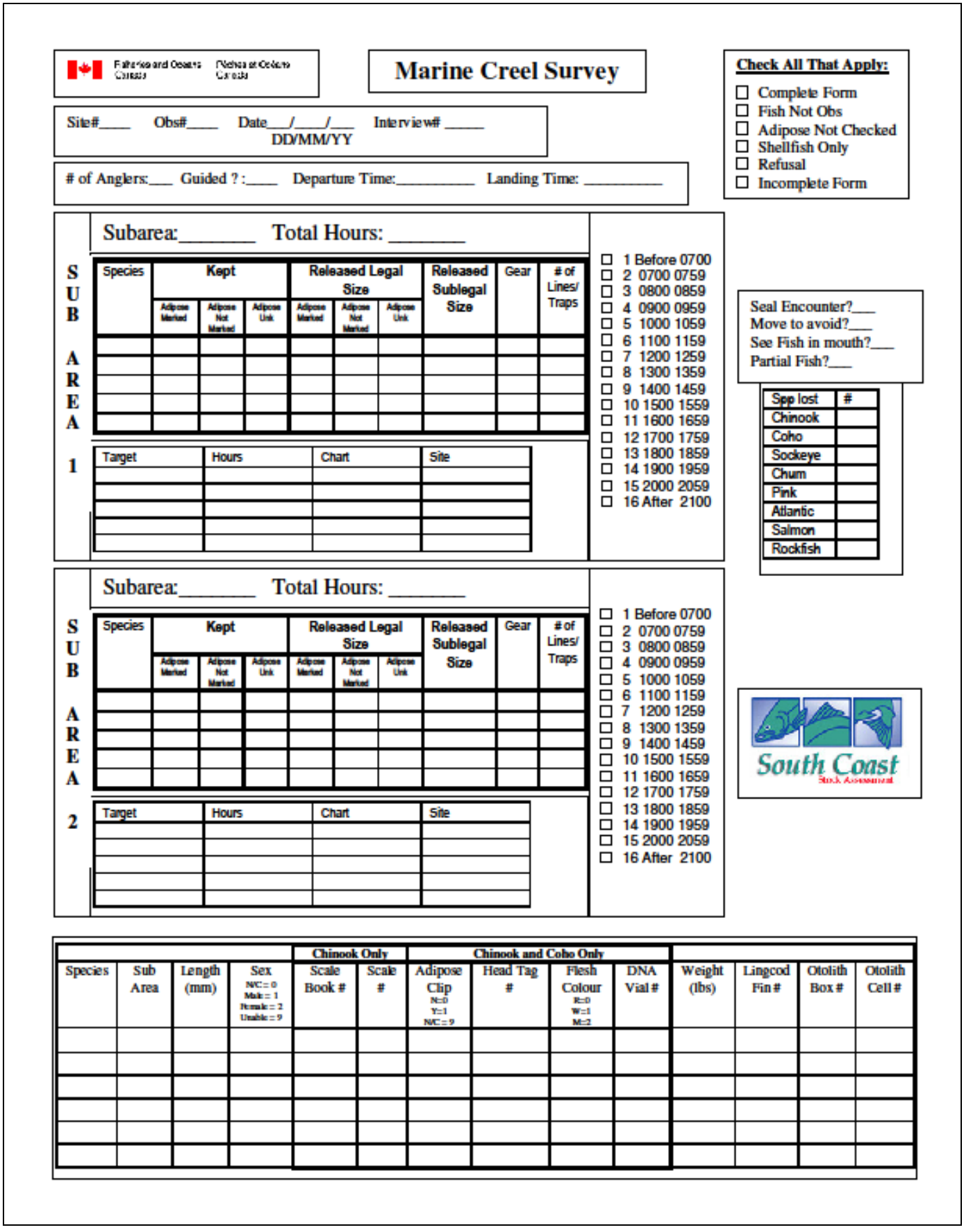


Figure 2. SG creel survey interview form, 2011.

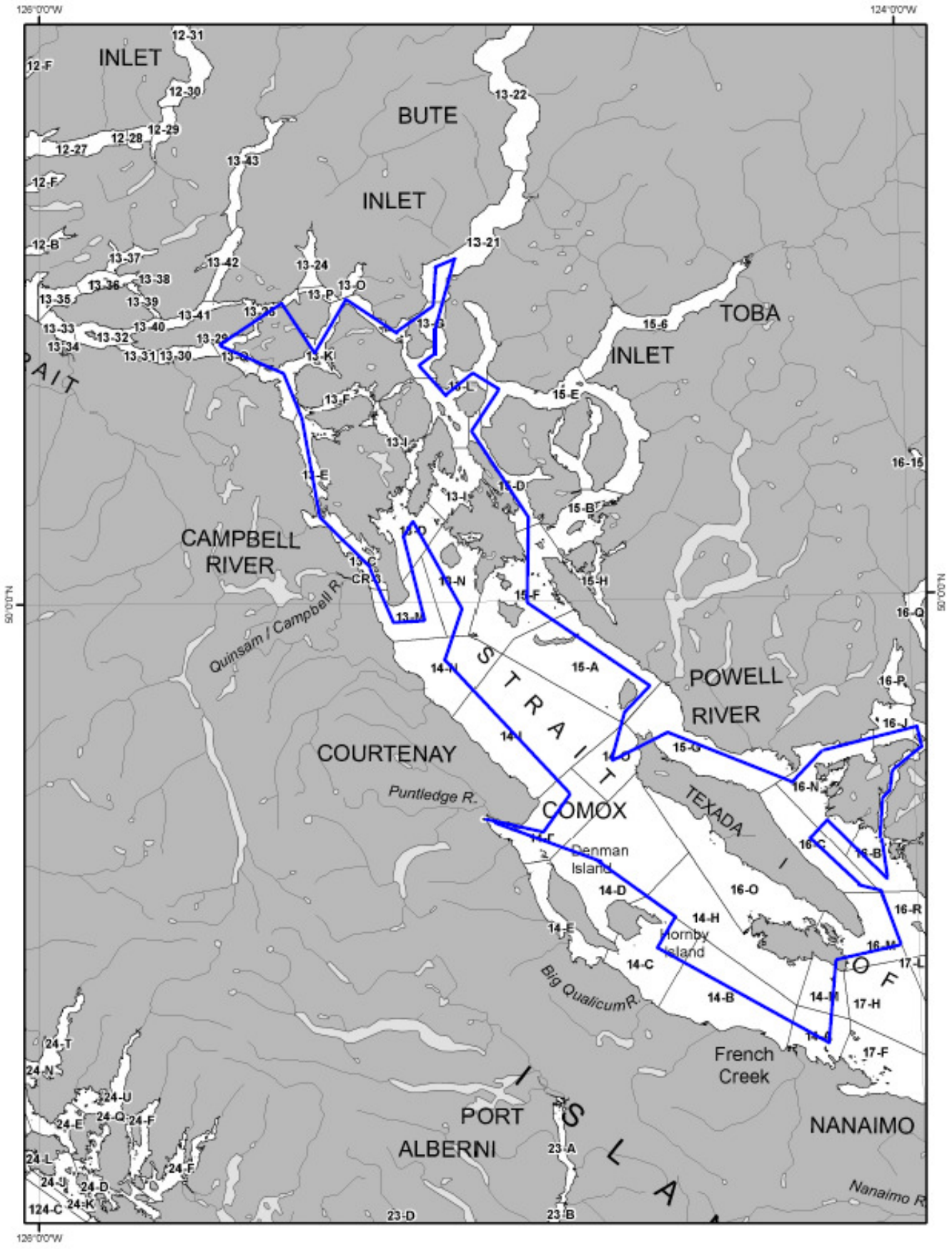


Figure 3a. SG creel survey northern aerial survey route, 2011.

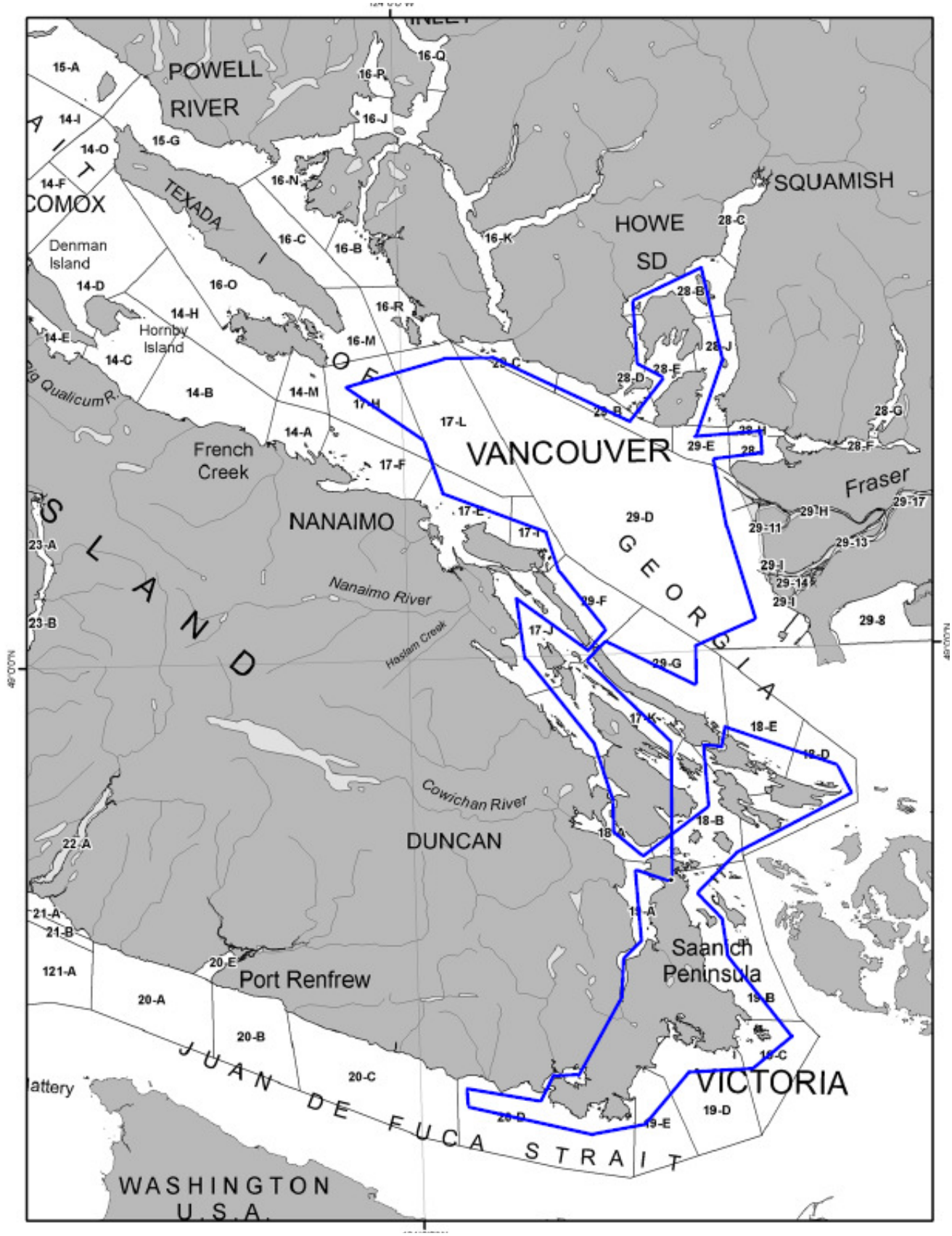


Figure 3b. SG creel survey southern aerial survey route, 2011.

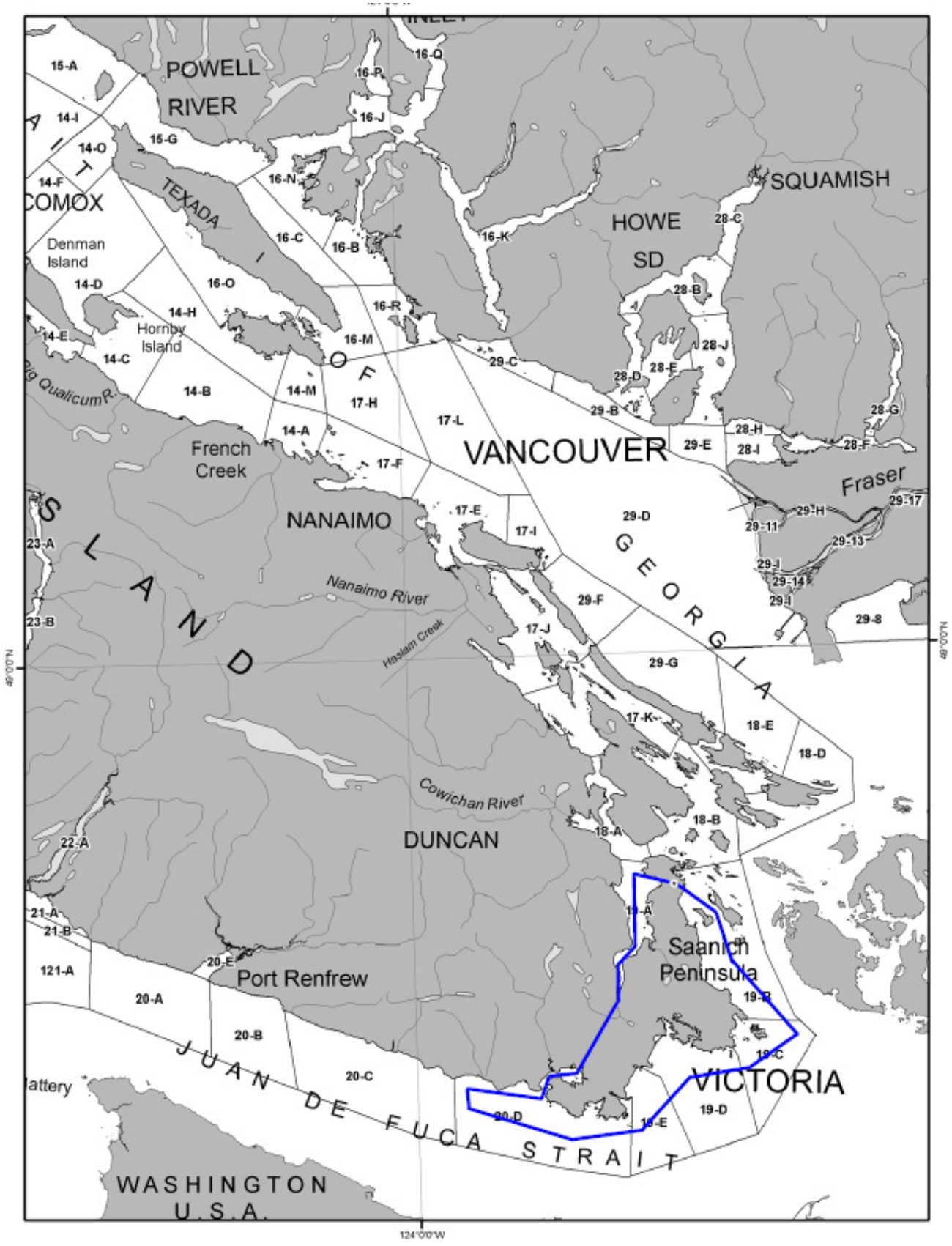


Figure 3c. SG creel survey southern aerial survey winter route, 2011.

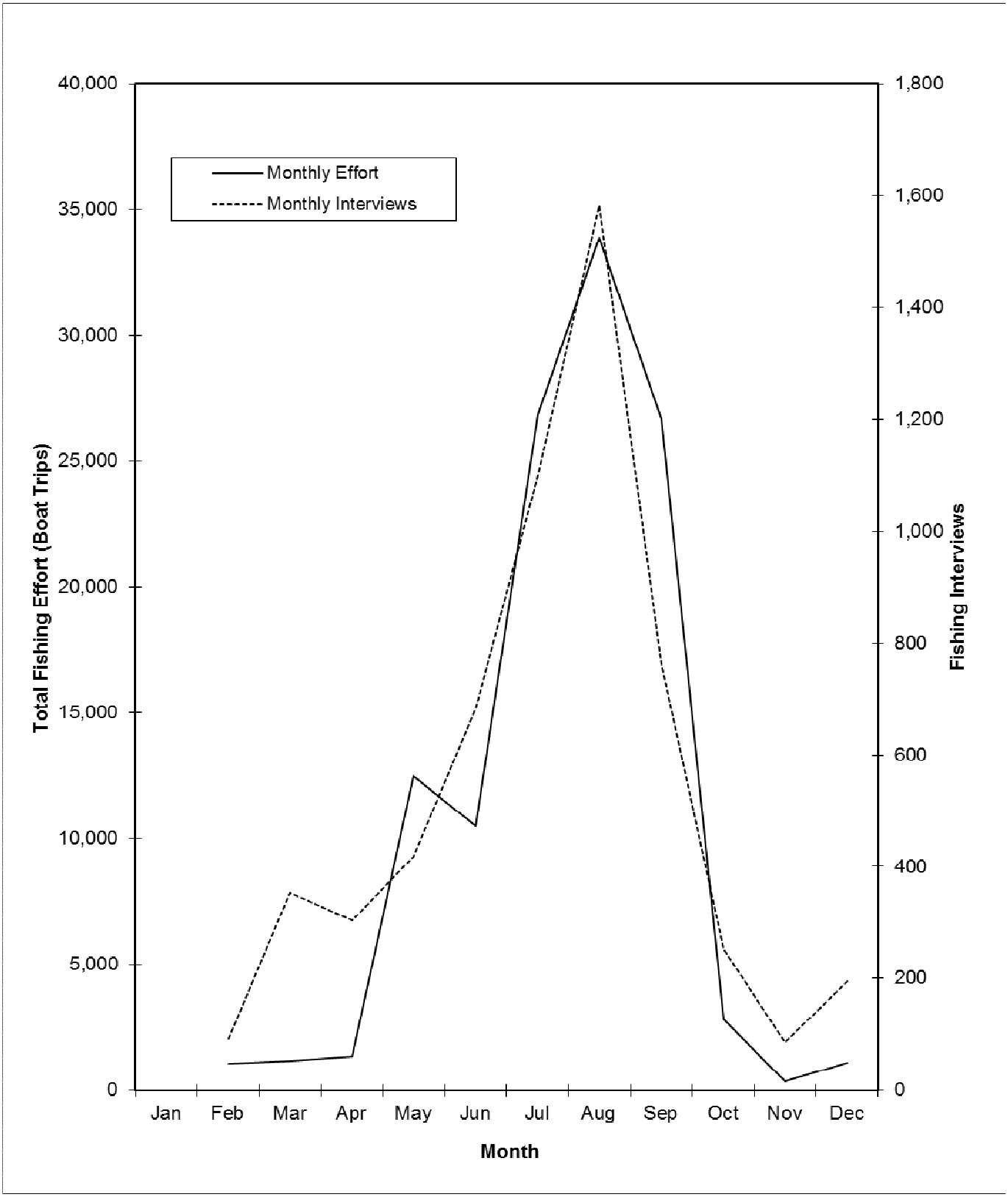


Figure 4. Comparison of monthly[1] total fishing effort in the SG and monthly[1] interviews in the SG creel survey, 2011.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

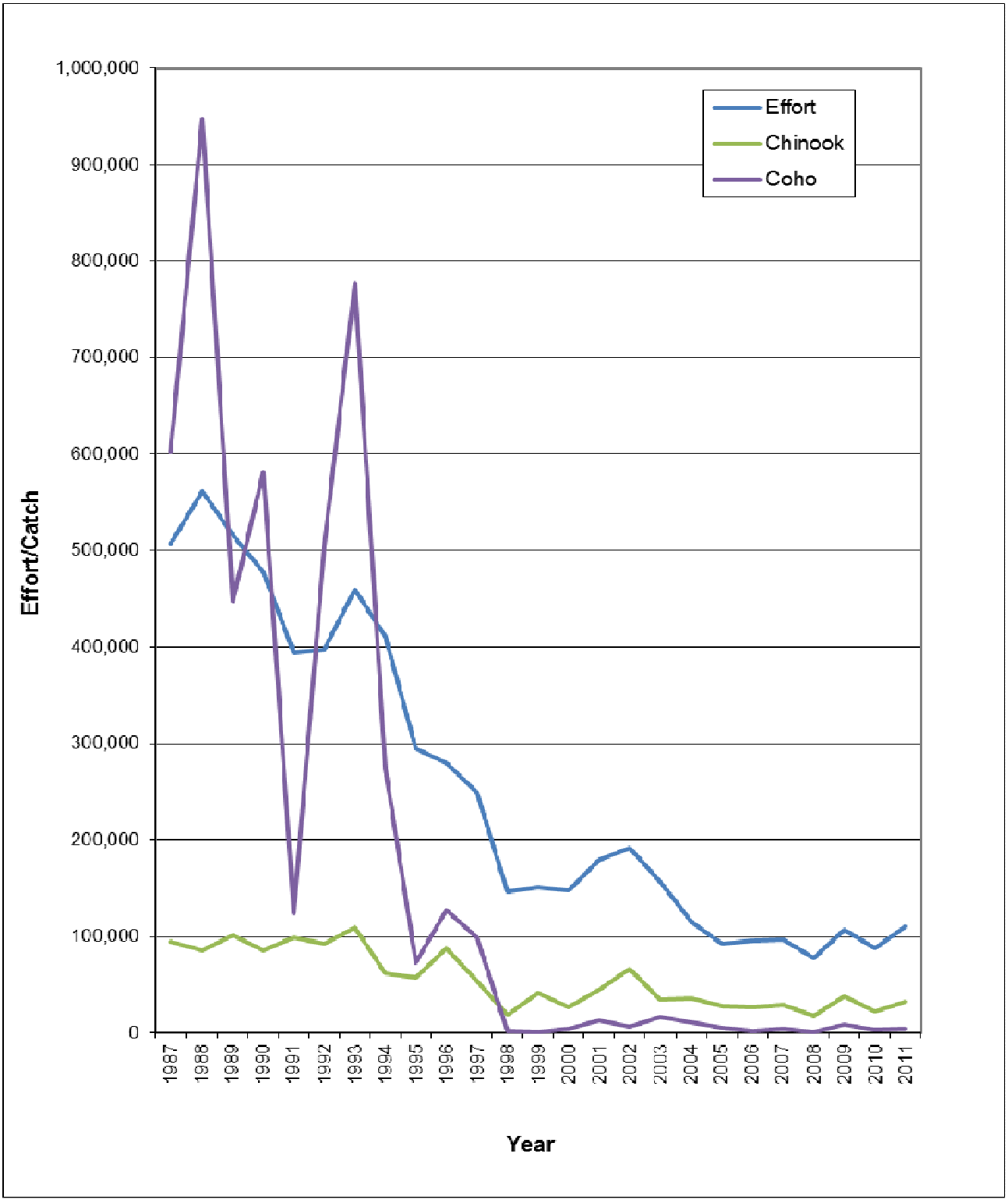


Figure 5. Effort (boat trips) statistics and estimated kept catches[1] of chinook and coho salmon in the SG, 1987 to 2011.

[1]This figure uses estimate values from May to September inclusively for historical comparisons.

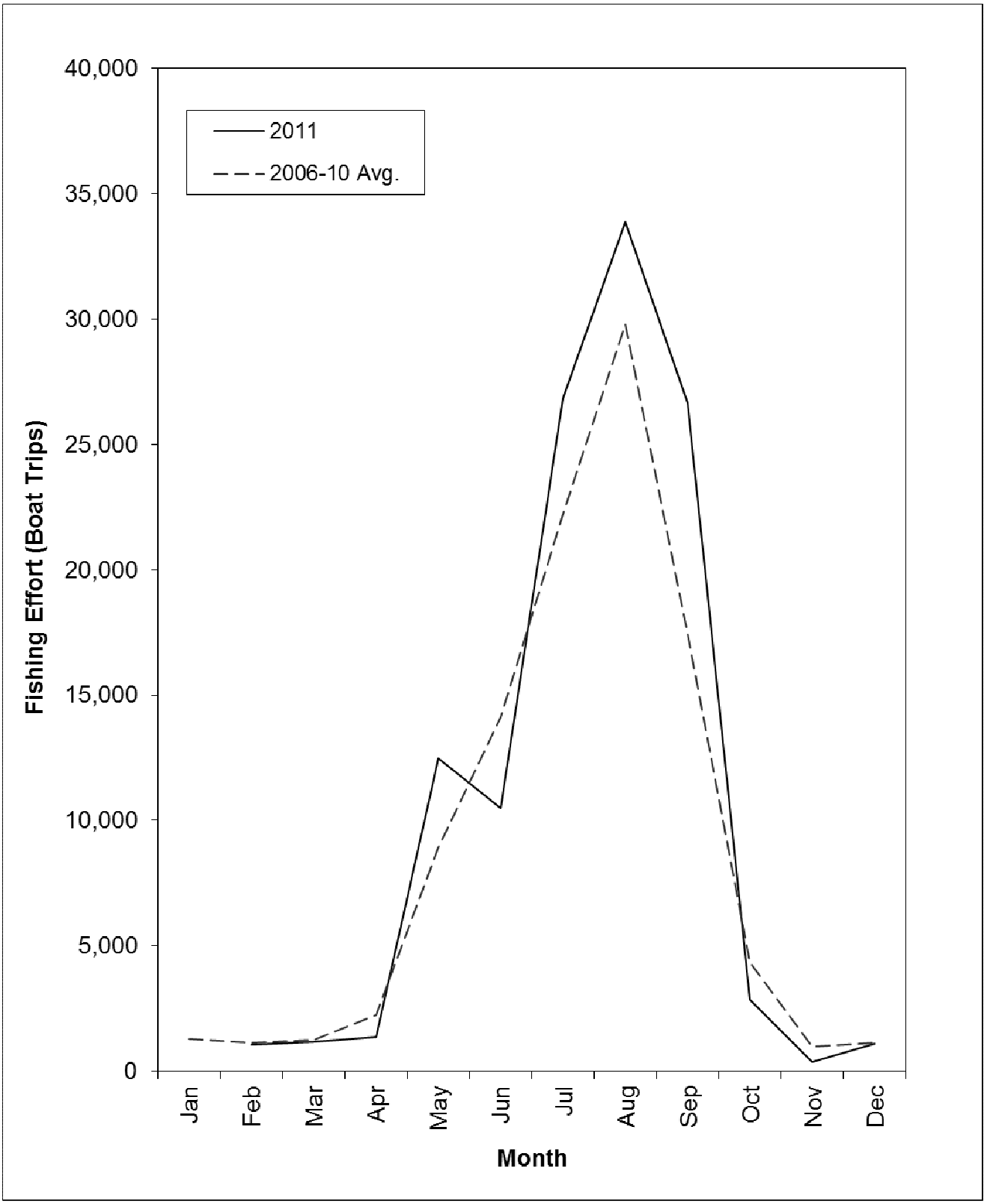


Figure 6. Monthly[1] fishing effort estimates (boat trips) in the SG during 2011 and the five-year average for 2006 to 2010.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

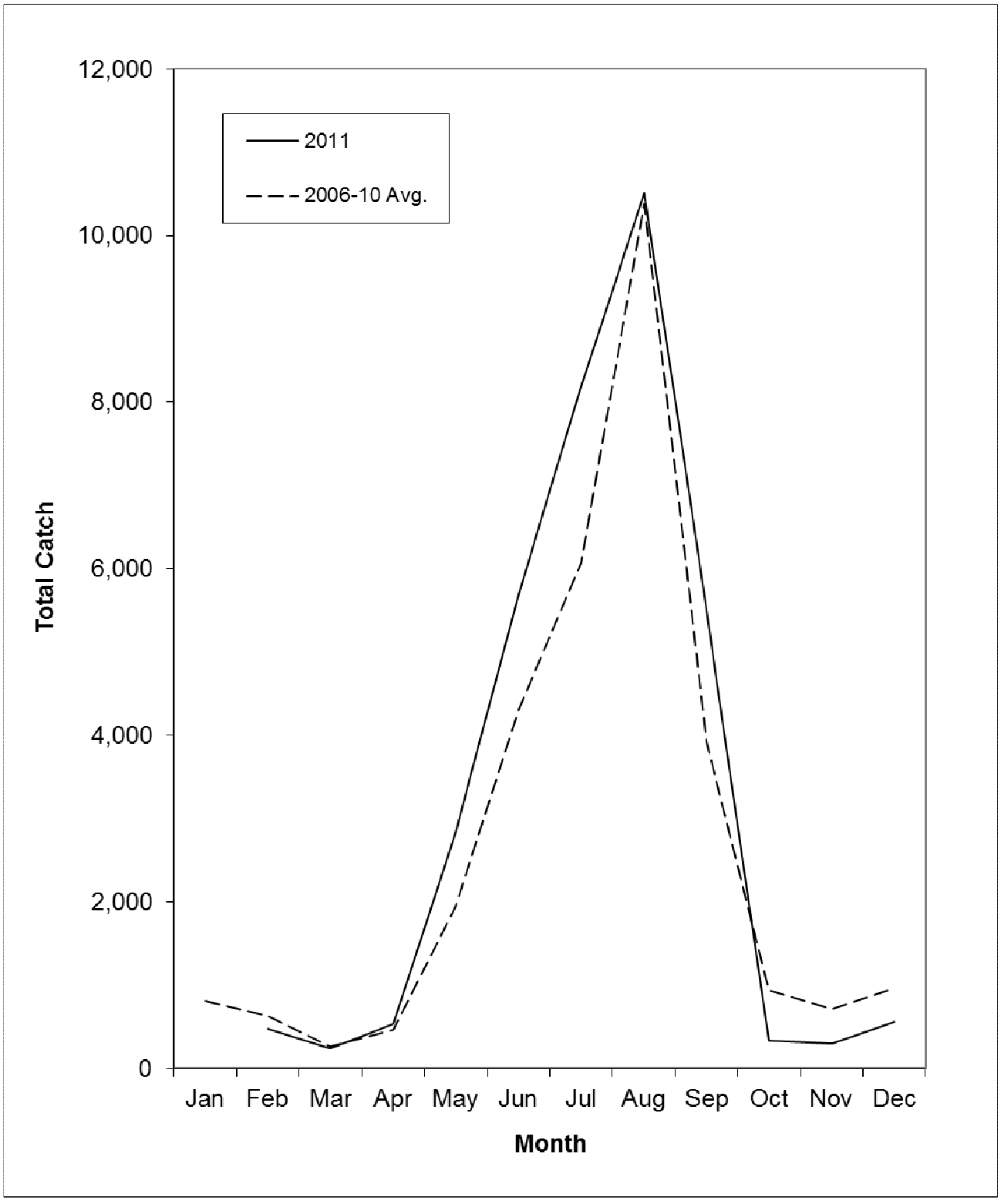


Figure 7. Monthly[1] chinook kept catches in the SG during 2011 and the five-year average for 2006 to 2010.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

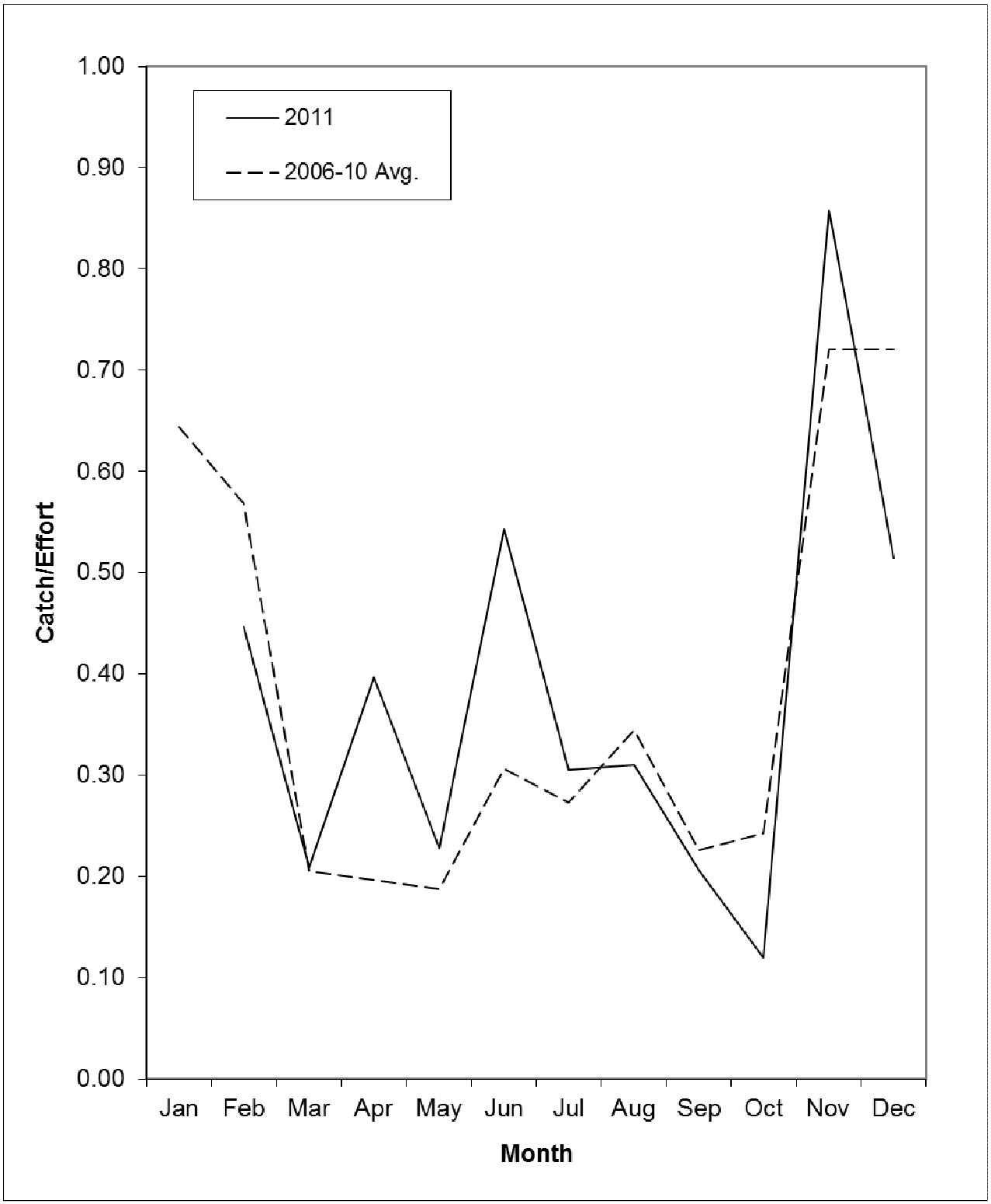


Figure 8. Monthly[1] chinook kept catch per boat trip in the SG during 2011 and the five-year average for 2006 to 2010.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

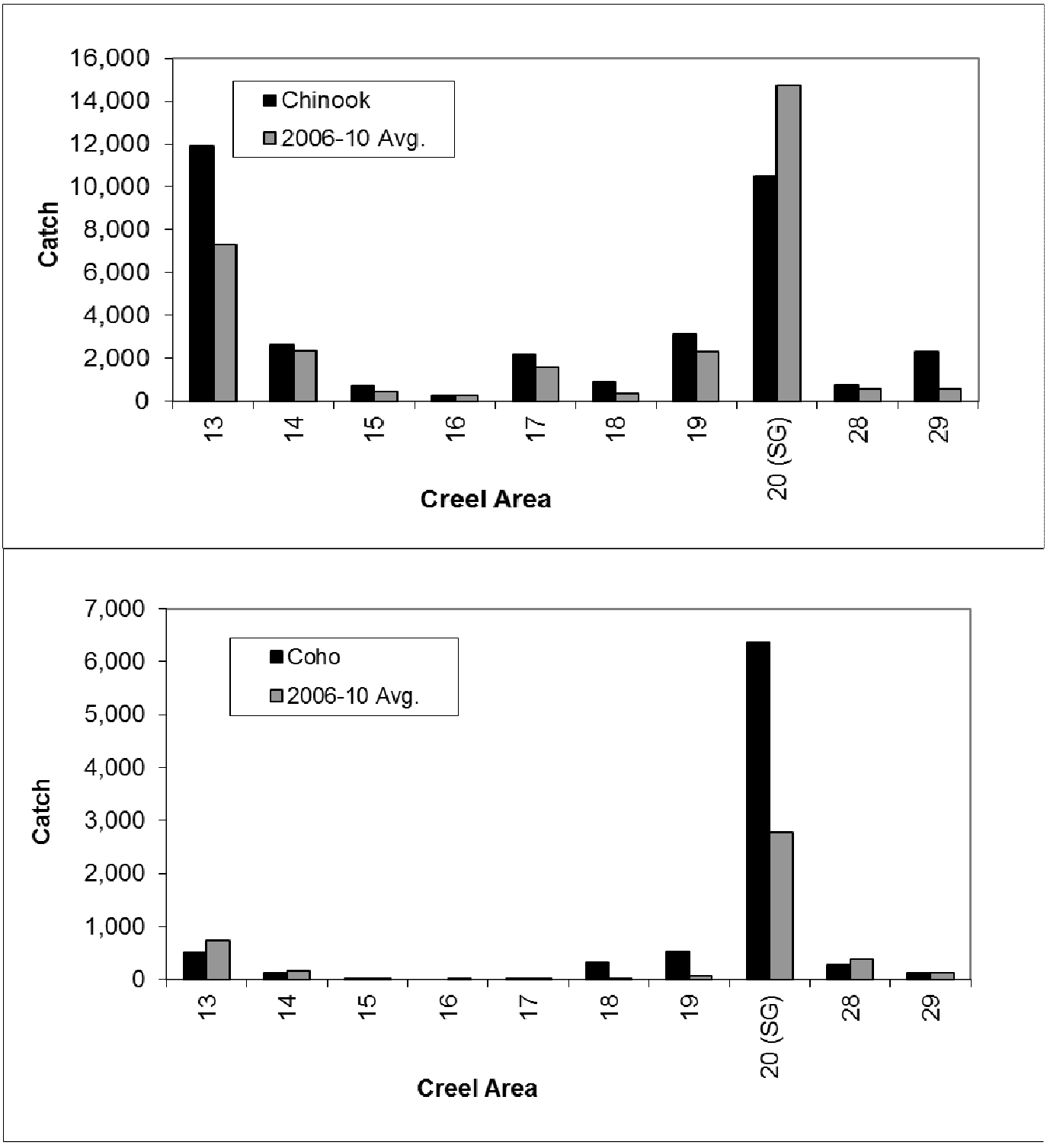


Figure 9. Annual estimated kept catches of chinook and coho salmon by PFMA[1] in the SG during 2011 and the five-year average for 2006 to 2010.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

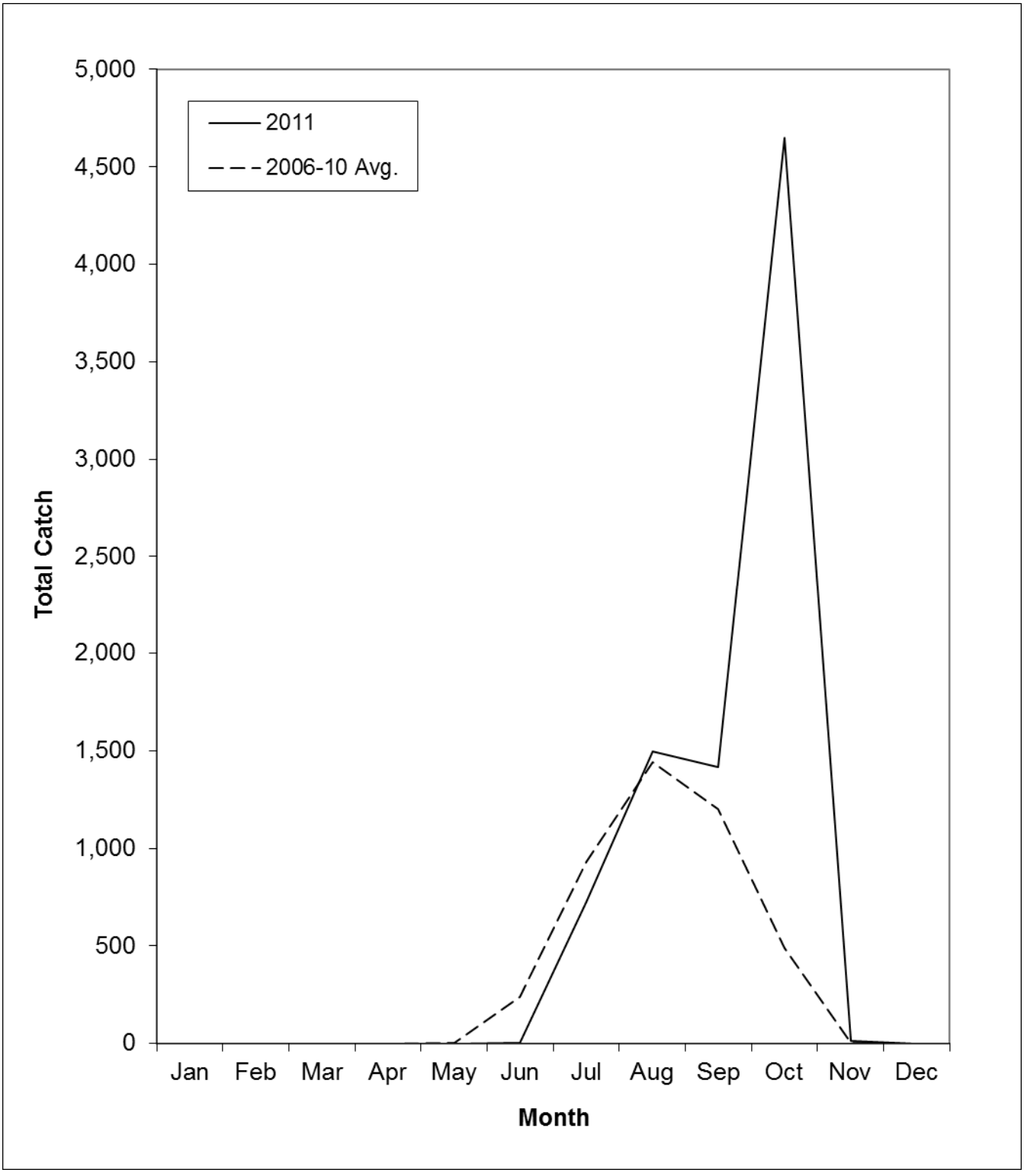


Figure 10. Monthly[1] estimated coho kept catches in the SG during 2011 and the five-year average for 2006 to 2010.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

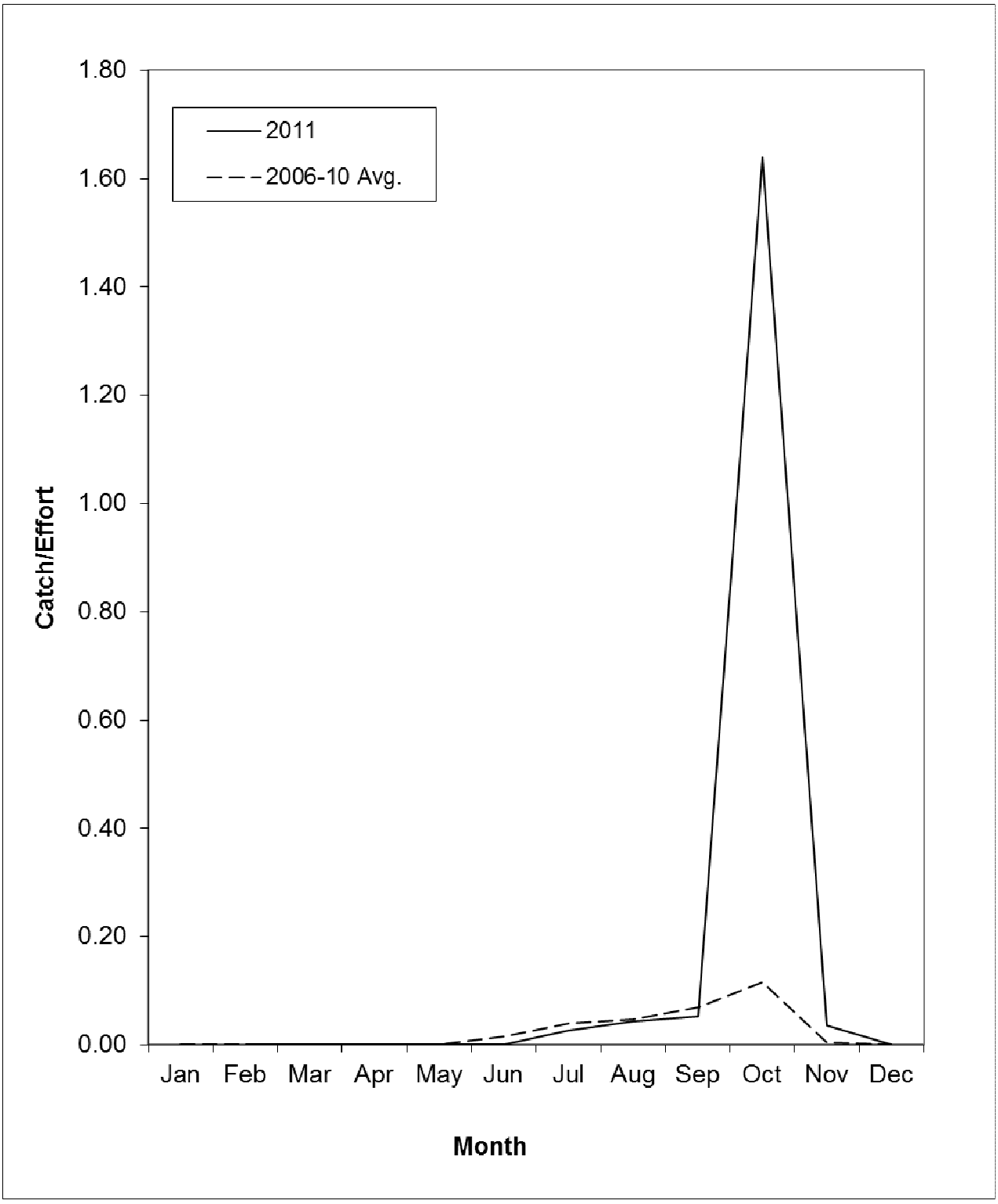


Figure 11. Monthly[1] estimated coho kept catch per boat trip in the SG during 2011 and the five-year average for 2006 to 2010.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

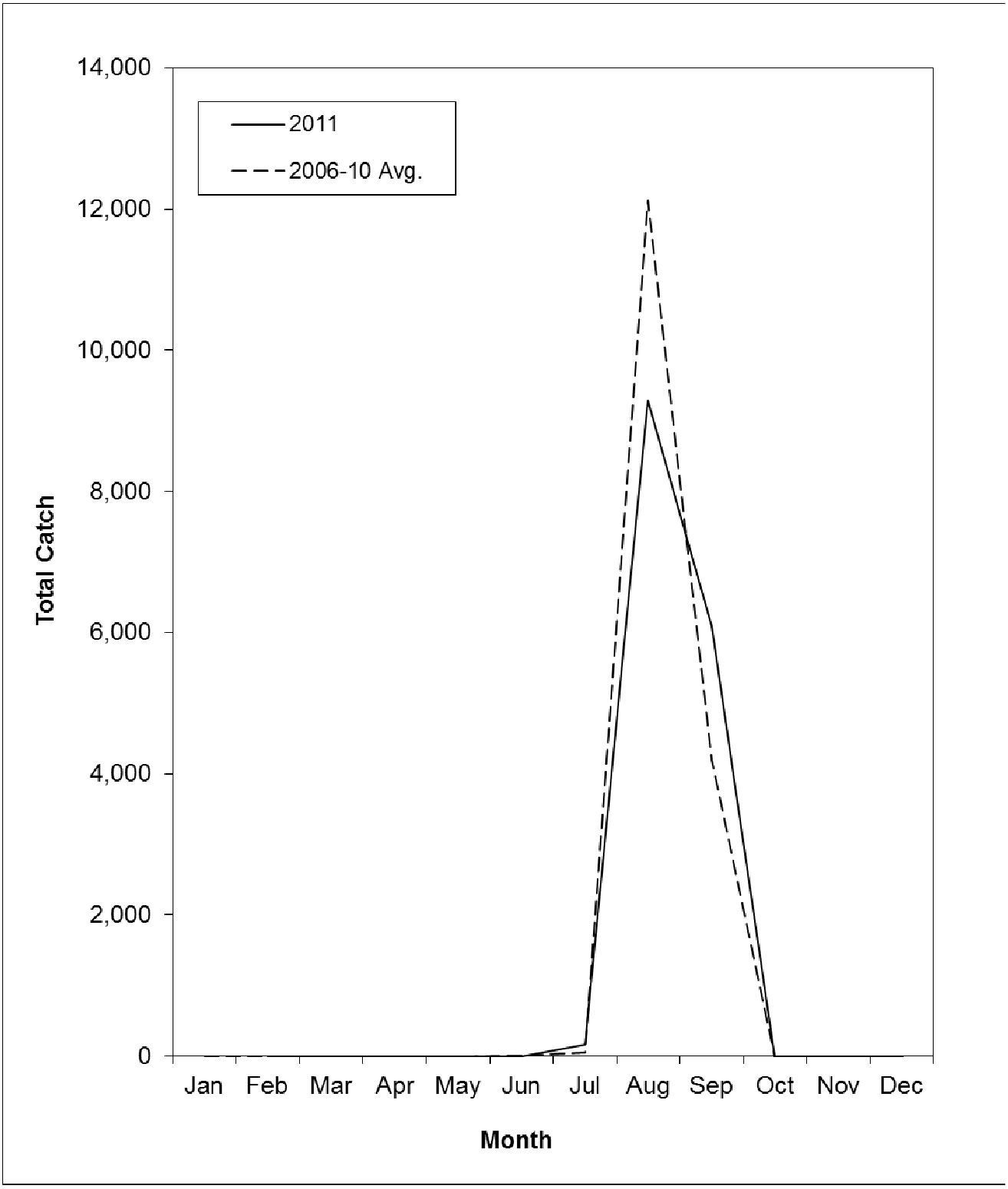


Figure 12. Monthly[1] estimated sockeye kept catches in the SG during 2011 and the five-year average for 2006 to 2010.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

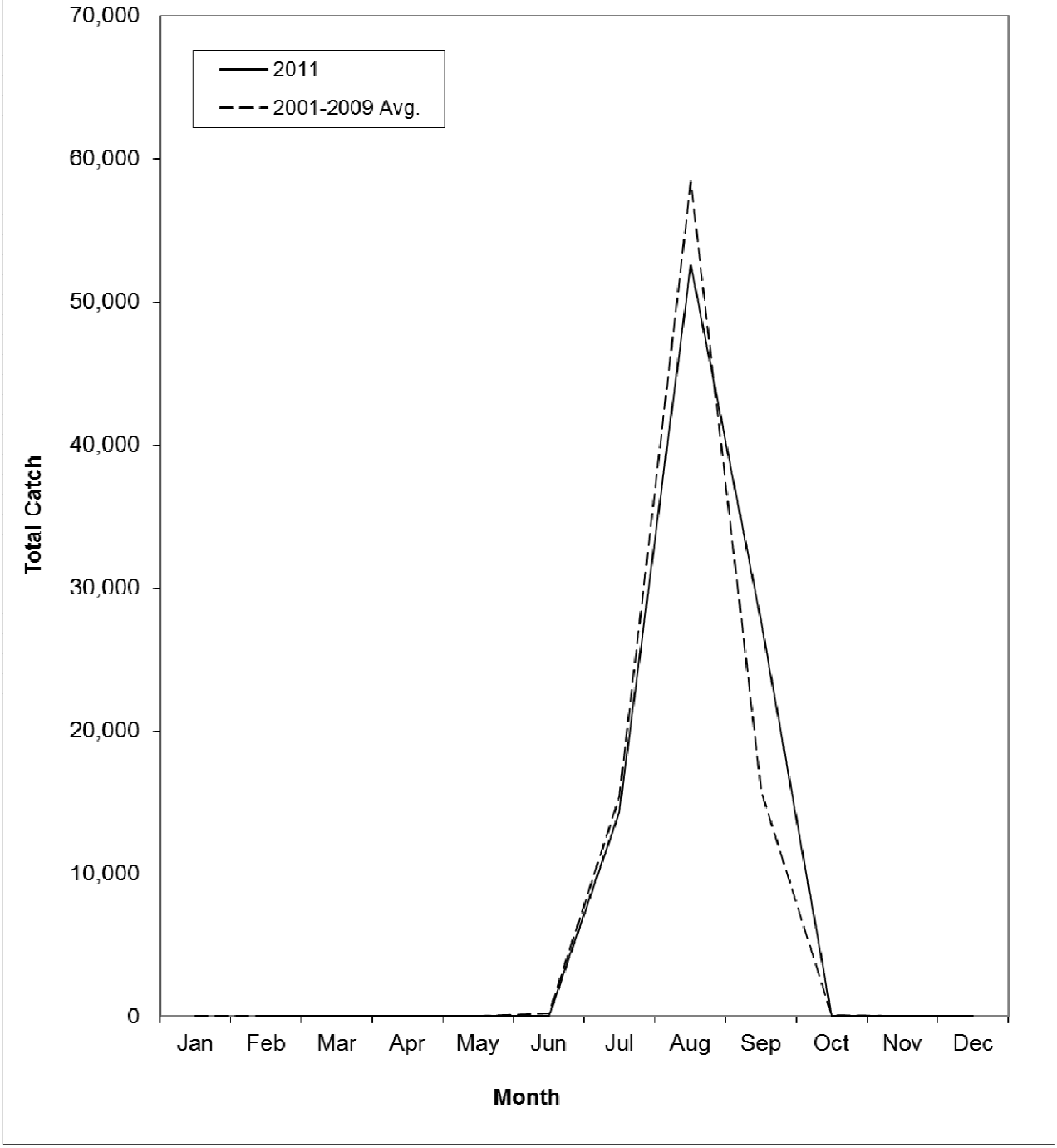


Figure 13. Monthly[1] estimated even year pink kept catches in the SG during 2011 and the five-cycle average for 2001 to 2009.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

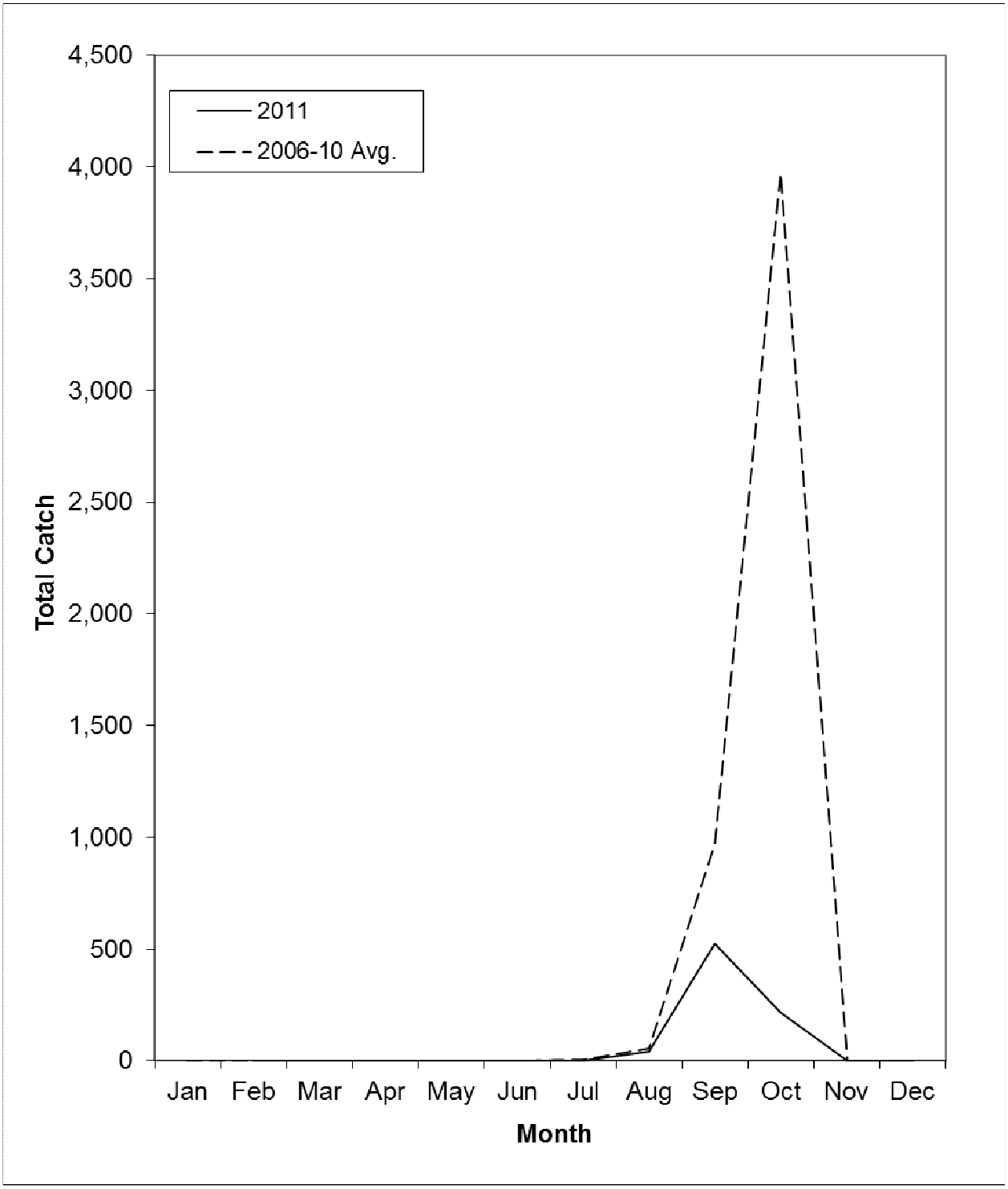
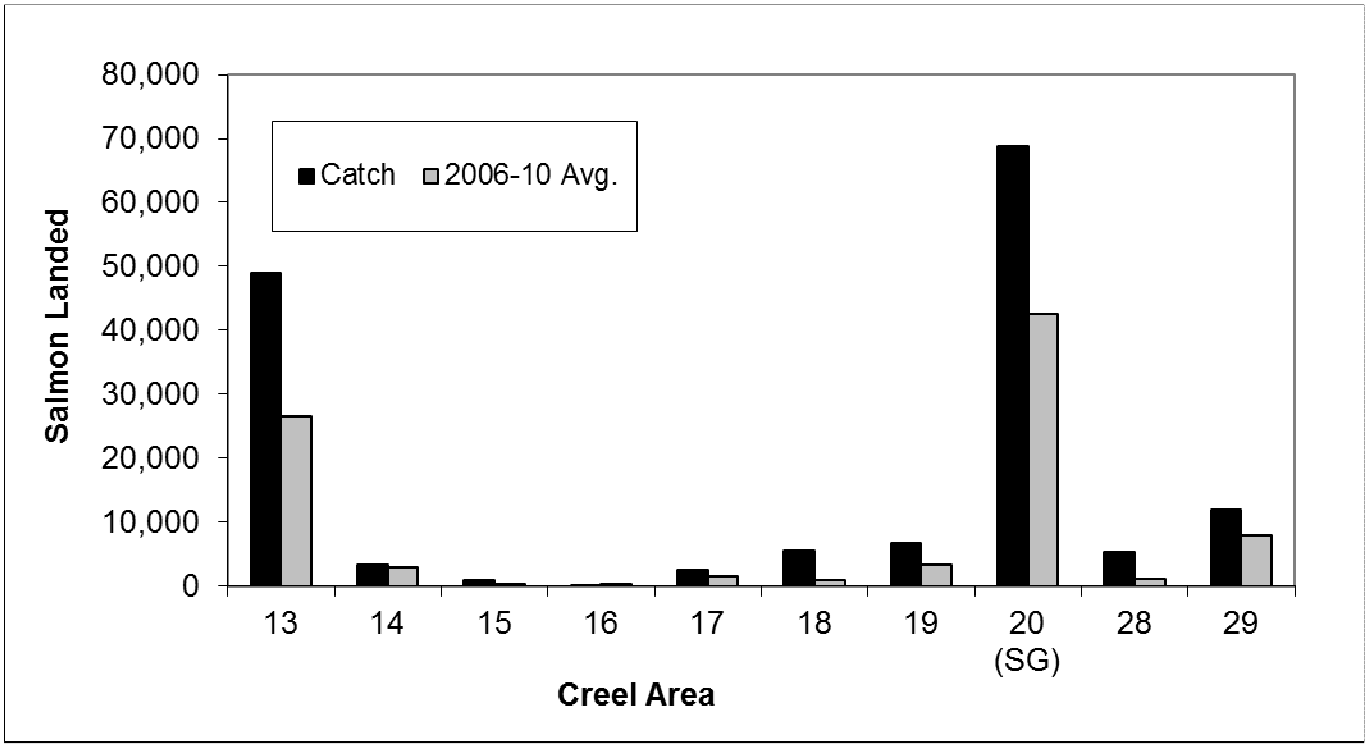


Figure 14. Monthly[1] estimated chum kept catches in the SG during 2011 and the five-year average for 2006 to 2010.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.



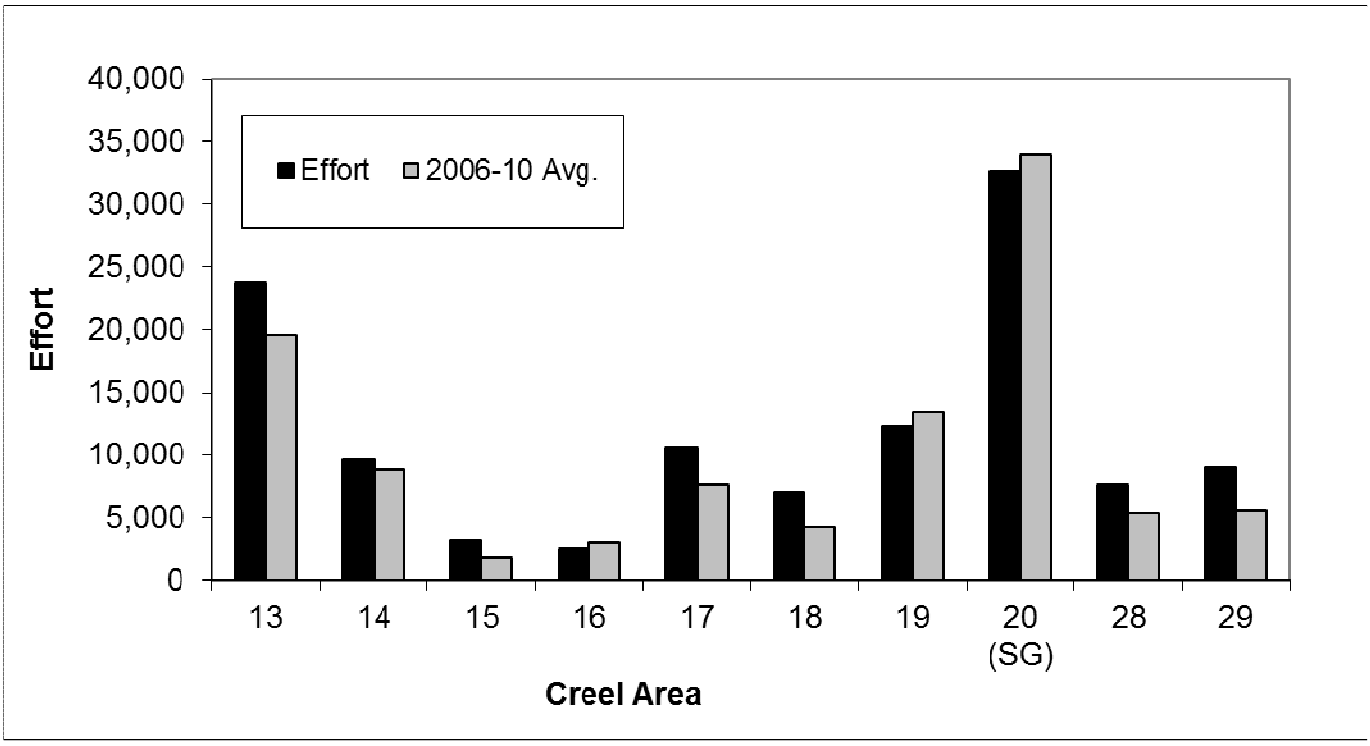


Figure 15. Total salmon landed and total fishing effort by PFMA[1] in the SG during 2011 and the five-year average for 2006 to 2010.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

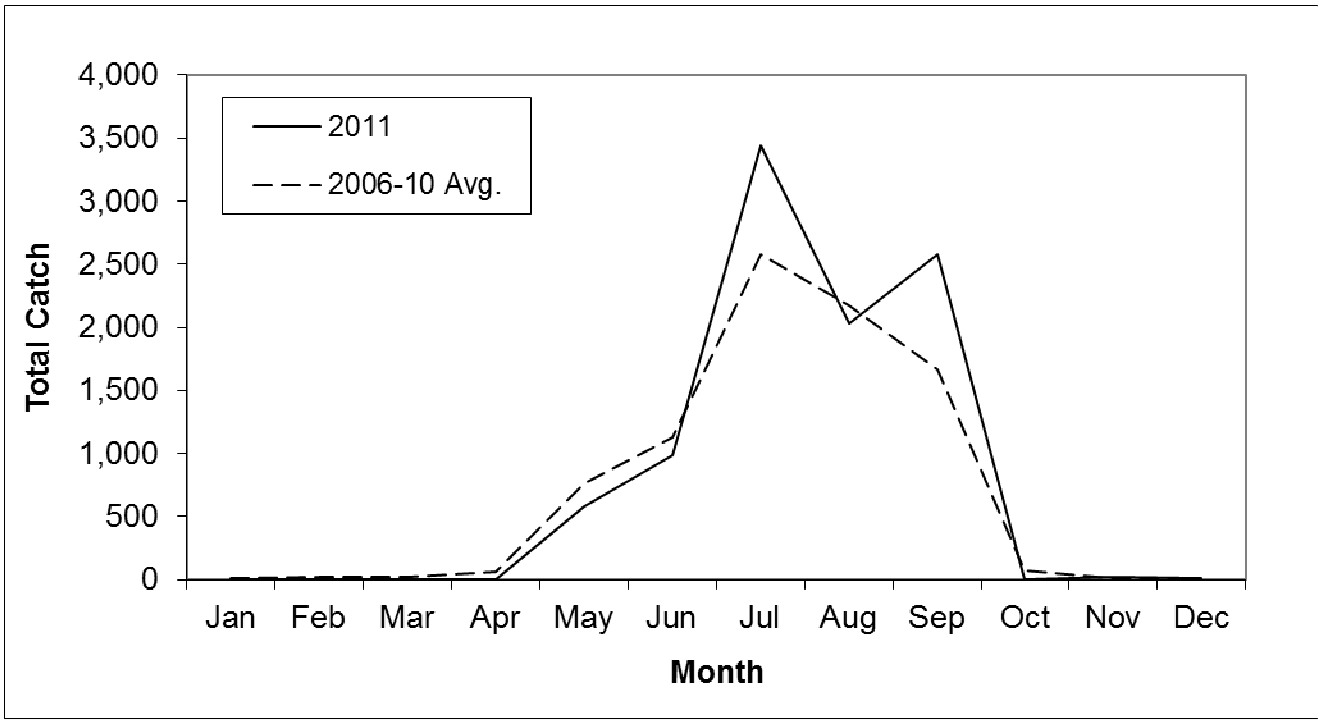


Figure 16. Monthly[1] estimated rockfish (all species) kept catches in the SG during 2011 and the five-year average for 2006 to 2010.

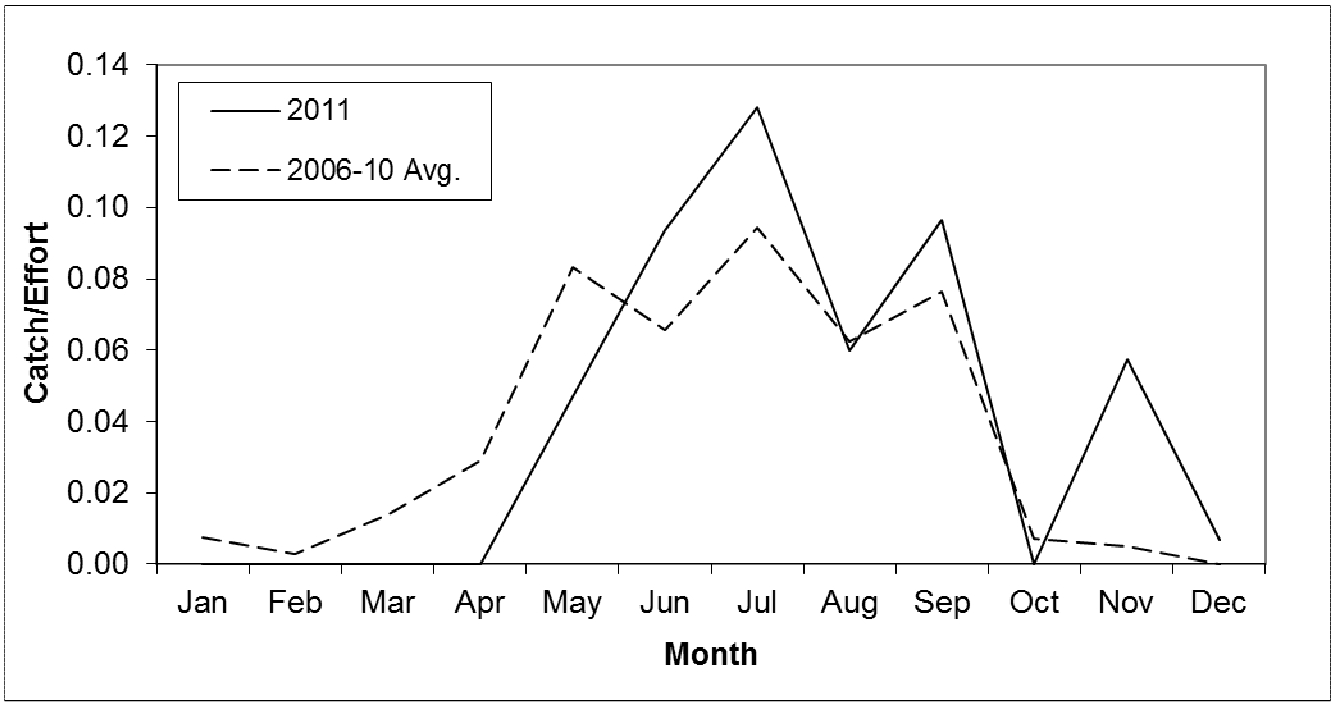


Figure 17. Monthly[1] estimated rockfish (all species) kept catch per boat trip in the SG during 2011 and the five-year average for 2006 to 2010.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

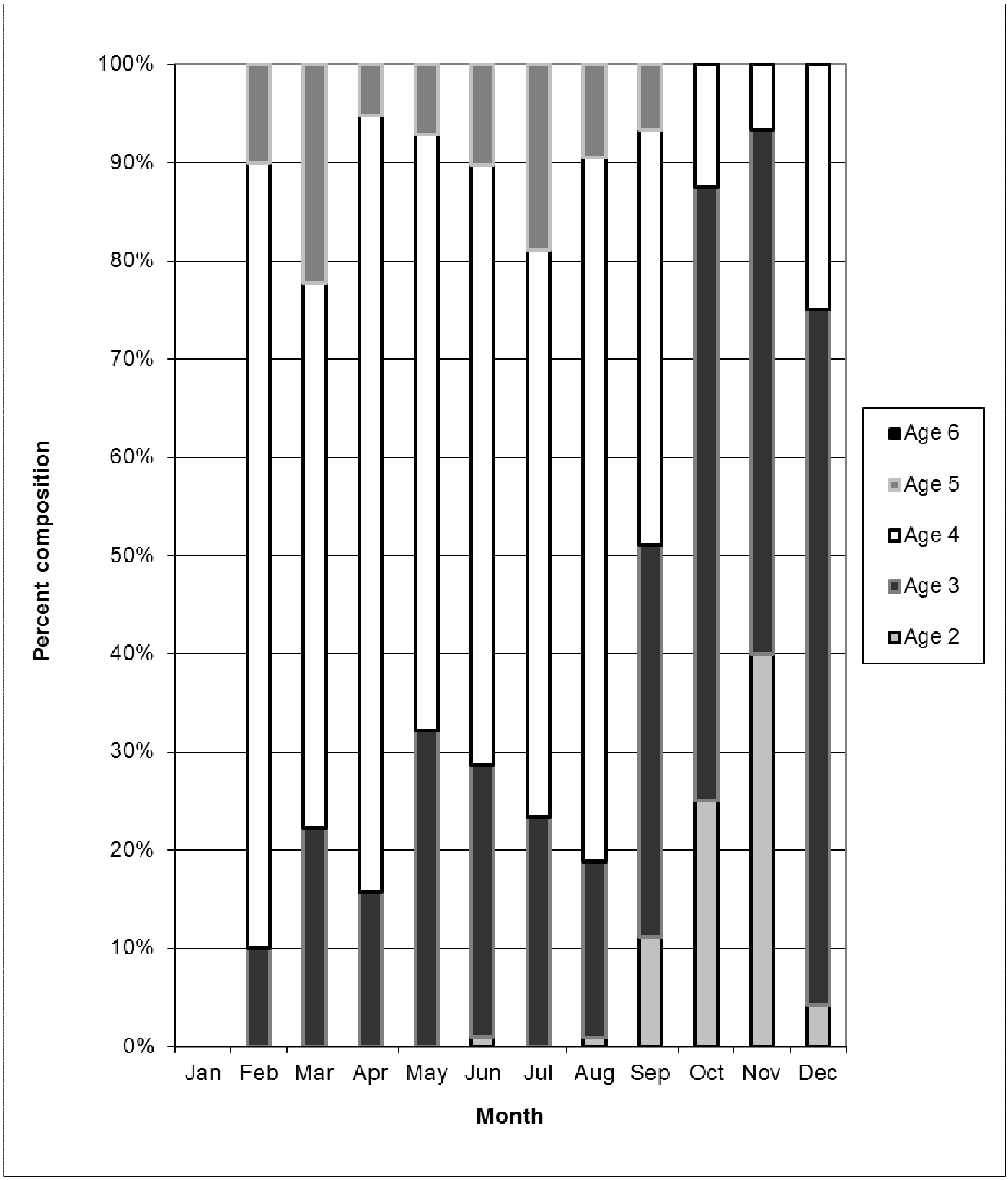


Figure 18. Monthly[1] percent age composition of chinook salmon sampled in the SG creel survey, 2011.

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

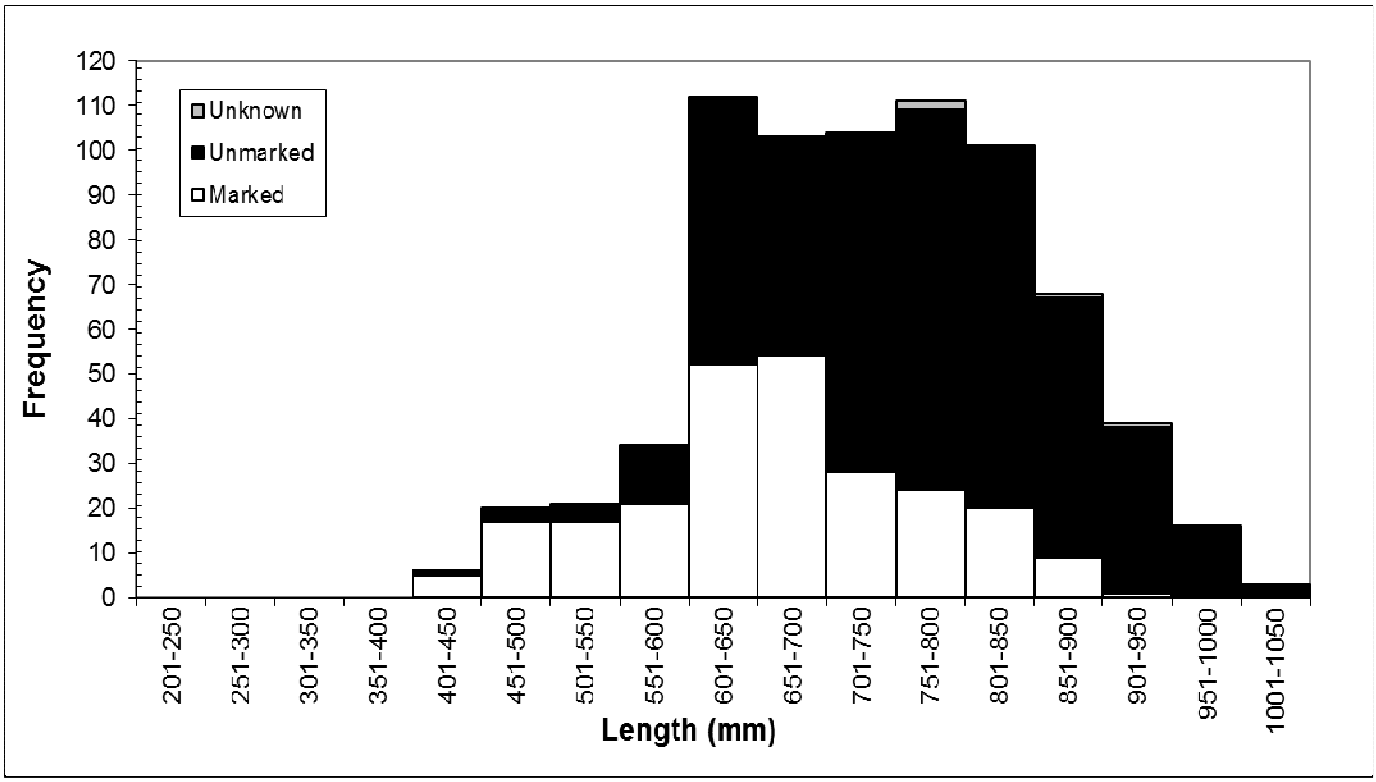


Figure 19. Length frequency distribution of chinook salmon sampled in the SG creel survey, 2011.

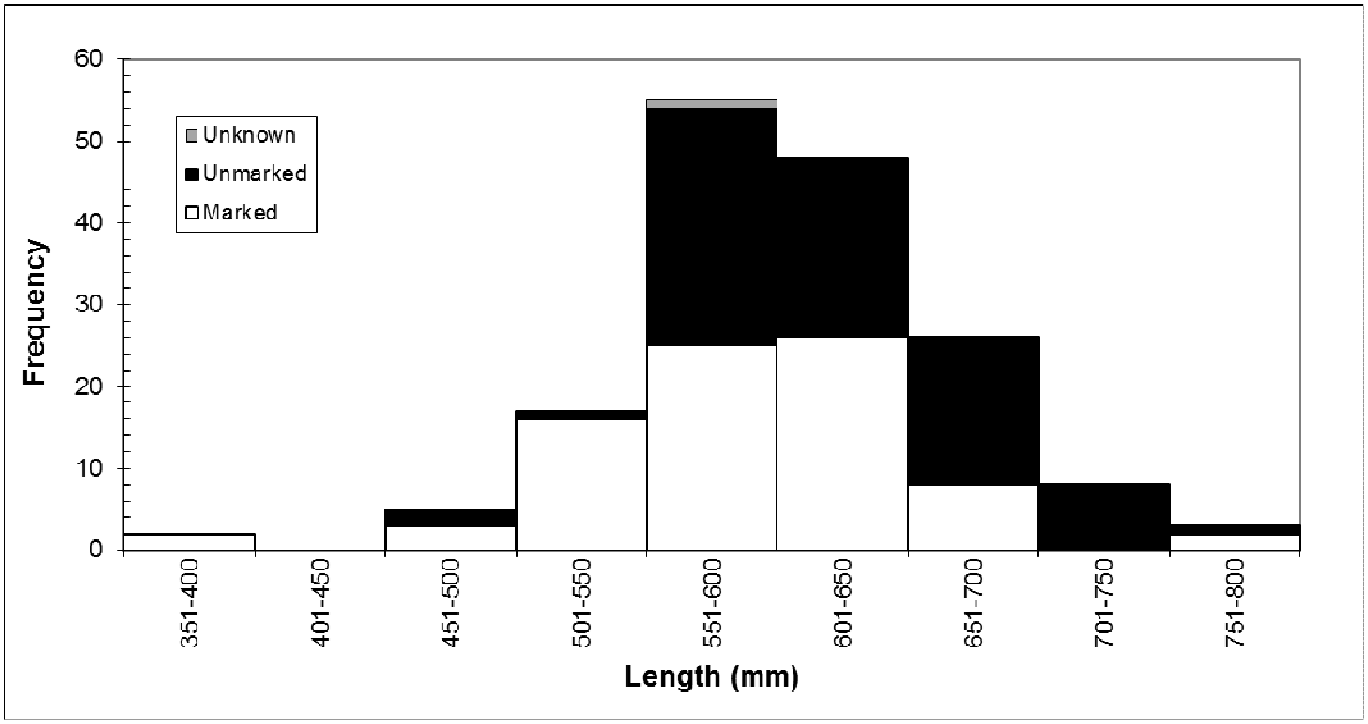


Figure 20. Length frequency distribution of coho salmon sampled in the SG creel survey, 2011.

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APPENDICES

Appendix A. Previous SG and northern Vancouver Island creel survey reports.

Shardlow, T.F., English, K.K., Hoyt, T., Gillespie, G.E., and Calvin, T.A. 1989. Strait of Georgia Creel Survey sport fishery statistics, 1983. Can. Manuscr. Rep. Fish. Aquat. Sci. 1872: 53 p.

Shardlow, T.F., and Collicutt, L.D. 1989a. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1984. Can. Manuscr. Rep. Fish. Aquat. Sci. 2032: 61 p.

Shardlow, T.F., and Collicutt, L.D. 1989b. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1985. Can. Manuscr. Rep. Fish. Aquat. Sci. 2033: 60 p.

Shardlow, T.F., and Collicutt, L.D. 1989c. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1986. Can. Manuscr. Rep. Fish. Aquat. Sci. 2034: 61 p.

Shardlow, T.F., and Collicutt, L.D. 1989d. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1987. Can. Manuscr. Rep. Fish. Aquat. Sci. 2035: 62 p.

Shardlow, T.F., and Collicutt, L.D. 1989e. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1988. Can. Manuscr. Rep. Fish. Aquat. Sci. 2036: 63 p.

Collicutt, L.D., and Shardlow, T.F. 1990. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1989. Can. Manuscr. Rep. Fish. Aquat. Sci. 2087: 75 p.

Collicutt, L.D., and Shardlow, T.F. 1992. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1990. Can. Manuscr. Rep. Fish. Aquat. Sci. 2109: 76 p.

Collicutt, L.D., and Shardlow, T.F. 1995. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1991. Can. Manuscr. Rep. Fish. Aquat. Sci. 2137: 75 p.

Collicutt, L.D., Naito, B.G., Ryall, P., and Lapi, L. 1992. Northern Vancouver Island sport fishery creel survey statistics for salmon and groundfish, 1991. Can. Tech. Rep. Fish. Aquat. Sci. 1857: 121 p.

Collicutt, L. D., and Shardlow, T.F. 1994. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 1992. Can. Manuscr. Rep. Fish. Aquat. Sci. 2221: 75 p.

Collicutt, L.D., Shardlow, T.F., Smith, B.D., and Gillespie, G.E. 1994. Northern Vancouver Island sport fishery creel survey statistics for salmon and groundfish, 1992. Can. Tech. Rep. Fish. Aquat. Sci. 1973: 53 p.

Collicutt, L.D., Shardlow, T.F., Smith, B.D., and Gillespie, G.E. 1994. Northern Vancouver Island sport fishery creel survey statistics for salmon and groundfish, 1993. Can. Manuscr. Rep. Fish. Aquat. Sci. 1974: 53 p.

Hardie, D.C., Nagtegaal, D.A., and Nagy, L. 1999. Strait of Georgia sport fishery and Northern Vancouver Island creel survey statistics for salmon and groundfish, 1998. Can. Manuscr. Rep. Fish. Aquat. Sci. 2500: 92 p.

Hardie, D.C., Nagtegaal, D.A., and Nagy, L. 2001. Strait of Georgia sport fishery and Northern Vancouver Island creel survey statistics for salmon and groundfish, 1999. Can. Manuscr. Rep. Fish. Aquat. Sci. 2553: 111 p.

Hardie, D.C., Nagtegaal, D.A., Hein, K., and Sturhahn, J. 2002. Strait of Georgia sport fishery and Northern Vancouver Island creel survey statistics for salmon and groundfish, 2000. Can. Manuscr. Rep. Fish. Aquat. Sci. 2608: 112 p.

Hardie, D.C., Nagtegaal, D.A., Hein, K., and Sturhahn, J. 2003. Strait of Georgia and Northern Vancouver Island sport fishery creel survey statistics for salmon and groundfish, 2001. Can. Manuscr. Rep. Fish. Aquat. Sci. 2640: 107 p.

Zetterberg, P.R., Maher, J.M., and Watson, N.M. 2009. Strait of Georgia recreational fishery creel survey finfish data, 2002 to 2006. Can. Data Rep. Fish. Aquat. Sci. 1212: xix + 299 p.

Carter, E.W., and Zetterberg, P.R. 2010. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 2007. Can. Manuscr. Rep. Fish. Aquat. Sci. 2914: xiii + 125 p.

Zetterberg, P.R., and Carter, E.W. 2010. Strait of Georgia sport fishery creel survey statistics for salmon and groundfish, 2008. Can. Manuscr. Rep. Fish. Aquat. Sci. 2929: xiv + 123 p.

Zetterberg, P.R., Watson, N.M. and O'Brien, D.S. 2012a. Strait of Georgia recreational fishery statistics for salmon and groundfish, 2009. Can. Manuscr. Rep. Fish. Aquat. Sci. 2979: xii + 104 p.

Zetterberg, P.R., Watson, N.M. and O'Brien, D.S. 2012b. Strait of Georgia recreational fishery statistics for salmon and groundfish, 2010. Can. Manuscr. Rep. Fish. Aquat. Sci. 3000: xii + 106 p.

Appendix B. Strait of Georgia creel (SG) survey study area.

The creel 'Areas' delineated within the SG creel survey prior to 2011 were statistical salmon purse-seine fishing areas used previous to the current PFMAs (Shardlow 1985). In 2010 a review was done which resulted in certain creel sub-areas being realigned (Ganton 2011) so that each creel 'Area' matched each PFMA as legally described in schedule 2 (Management Area boundary descriptions) of the Pacific Management Areas Regulations, 2007, SOR/2007-77. Catch and effort estimates were produced for PFMA 13 through 19, 20(SG), 28, and 29 and these areas are further divided for the purpose of the creel survey into creel sub-areas (Figure 3 a, b and c). Sub-areas being delineated by observed sport fishing patterns and concentrations.

The SG creel survey study area and landing site locations used in 2011 are shown in Figure 1. The study area for which these statistics apply includes those waters of JDF Strait and the SG bounded in the south by a line from Sheringham Pt. on Vancouver Island due south to an intersection with the International Boundary and along the International Boundary to the B.C, Mainland coast at Blaine (Boundary Bay) and in the northern by the following boundary lines:

1. A line in Johnstone Strait from Rock Point just west of Rock Bay to a point approximately 1 km west of the western-most point of Turn Island.
2. Includes the waters of Nodales Channel south of East Thurlow Island bound by a line from Johns Point on East Thurlow Island to Owen Point on the mainland coast.
3. Bute Inlet below a line from Lawrence Point across the inlet. This coincides with the intersection of PFMA sub-areas 13-21 and 13-22.
4. A line from Raza Point on Raza Island northwest to the mainland coast off Calm Channel.
5. A line from the southern-most point of Raza Island to the western-most point of West Redonda Island.
6. A line from the eastern-most point of West Redonda Island from Marylebone Point to Horace Head on East Redonda Island.
7. Desolation Sound bound by a line from the southern-most point of East Redonda Island to Price Point on the mainland coast.
8. A line from Zephine Head on Gifford Peninsula south of Desolation Sound to Sarah Point on the Malaspina Peninsula.
9. A line from Elephant Point on the mainland coast northeast of Saint Vincent Bay to intersect with the peak of Mount Foley approximately 1.5 km south southwest of Lapan Creek.
10. A line starting at a point approximately 2.5 km north of Dacres Point on the mainland coast to a point approximately 1 km north of Treat Creek.
11. A line that coincides with the intersection of PFMA sub-areas 16-9 and 16-11 from Egmont Point on the mainland coast to the Sechelt Peninsula.
12. A line that coincides with the intersection of the boundaries of PFMA sub-areas 28-1 and 28-3 in Howe Sound.
13. A line from the southern-most point of Halkett Point on Gambier Island due east till it intersects with the mainland coast at Lions Bay.
14. A line directly under the Lions Gate Bridge from Prospect Point northeast to the West Vancouver shoreline.

Appendix C-1. Effort by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	544	86	521	73	-	-	-	-	1066	113
Mar	-	-	-	-	-	-	-	-	-	-	-	-	832	59	350	75	-	-	-	-	1182	95
Apr	-	-	-	-	-	-	-	-	-	-	-	-	869	164	497	124	-	-	-	-	1366	206
May	1096	293	1148	203	174	54	310	59	3230	557	427	62	1805	168	1532	318	565	118	2185	729	12473	1060
Jun	2274	342	831	67	168	30	274	48	1366	151	465	71	1369	154	2309	776	669	88	771	158	10496	901
Jul	5591	300	2201	192	782	101	624	57	3268	290	1148	95	1696	156	7488	571	2463	296	1588	154	26850	834
Aug	8813	524	2360	261	937	116	529	60	1829	188	2717	202	2095	203	10339	588	1811	299	2446	545	33876	1099
Sep	6007	651	3047	259	1154	217	767	121	934	147	2211	581	1912	435	6512	1483	2104	455	2027	530	26676	1946
Oct	-	-	-	-	-	-	-	-	-	-	-	-	624	112	2211	560	-	-	-	-	2835	571
Nov	-	-	-	-	-	-	-	-	-	-	-	-	150	35	203	71	-	-	-	-	353	79
Dec	-	-	-	-	-	-	-	-	-	-	-	-	466	110	622	178	-	-	-	-	1088	209
Total	23782	996	9586	466	3216	273	2503	165	10628	689	6969	629	12364	609	32584	1988	7612	637	9018	1076	118261	2840

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-2. Chinook[2] kept by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	201	61	275	89	-	-	-	-	476	108
Mar	-	-	-	-	-	-	-	-	-	-	-	-	144	26	104	27	-	-	-	-	247	38
Apr	-	-	-	-	-	-	-	-	-	-	-	-	190	57	351	83	-	-	-	-	541	101
May	47	19	305	122	40	38	111	33	613	236	24	18	69	21	338	92	134	39	1155	468	2837	551
Jun	2816	620	240	65	122	42	25	18	786	116	108	27	403	90	774	174	0	0	426	108	5699	675
Jul	3711	529	360	98	189	80	21	6	483	132	178	71	342	90	2600	274	75	42	230	63	8188	638
Aug	3889	511	673	239	205	85	60	29	133	51	547	190	503	109	4304	357	63	43	140	92	10517	718
Sep	1468	480	1038	203	151	76	39	25	167	64	24	12	883	540	905	221	475	195	353	167	5503	830
Oct	-	-	-	-	-	-	-	-	-	-	-	-	87	34	254	80	-	-	-	-	340	87
Nov	-	-	-	-	-	-	-	-	-	-	-	-	107	32	196	65	-	-	-	-	303	72
Dec	-	-	-	-	-	-	-	-	-	-	-	-	176	41	383	109	-	-	-	-	560	116
Total	11930	1075	2616	356	707	151	255	54	2182	306	880	206	3104	576	10484	572	747	208	2304	520	35210	1555

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]78 unidentified salmon were kept in the SG in 2011 and were not included.

Appendix C-3. Legal chinook[2] released by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	9	9	28	20	-	-	-	-	37	22
Mar	-	-	-	-	-	-	-	-	-	-	-	-	12	8	14	10	-	-	-	-	26	13
Apr	-	-	-	-	-	-	-	-	-	-	-	-	6	4	90	36	-	-	-	-	96	36
May	2	0	0	0	0	0	0	0	144	77	0	0	34	0	96	45	0	0	23	13	299	90
Jun	32	0	0	0	0	0	4	3	225	65	11	9	68	39	313	189	0	0	89	40	741	208
Jul	213	85	16	11	0	0	0	0	341	167	23	18	9	7	261	154	1	0	214	85	1077	258
Aug	93	37	89	62	0	0	0	0	51	34	77	55	31	24	197	64	0	0	0	0	538	119
Sep	7	0	259	178	0	0	0	0	22	18	17	12	186	199	161	88	16	9	100	68	768	290
Oct	-	-	-	-	-	-	-	-	-	-	-	-	52	30	71	51	-	-	-	-	122	59
Nov	-	-	-	-	-	-	-	-	-	-	-	-	45	28	10	9	-	-	-	-	55	29
Dec	-	-	-	-	-	-	-	-	-	-	-	-	26	18	140	65	-	-	-	-	166	67
Total	347	93	363	189	0	0	4	3	783	199	128	60	478	209	1380	287	17	9	425	117	3925	477

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2] 26,429 unidentified salmon were released in the SG in 2011 and were not included.

Appendix C-4. Sub-legal chinook[2] released by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	90	36	136	58	-	-	-	-	227	68
Mar	-	-	-	-	-	-	-	-	-	-	-	-	35	15	26	16	-	-	-	-	60	22
Apr	-	-	-	-	-	-	-	-	-	-	-	-	21	8	16	13	-	-	-	-	37	15
May	336	143	269	90	41	23	19	7	160	70	53	60	10	17	9	10	17	11	171	108	1086	223
Jun	385	131	479	164	34	19	13	17	584	131	36	16	63	37	180	81	26	17	326	94	2125	282
Jul	2465	597	393	119	148	57	11	8	765	290	234	91	76	42	994	229	17	12	549	134	5654	734
Aug	1188	316	1202	346	378	128	31	17	795	242	509	184	272	110	1793	249	211	78	519	230	6898	680
Sep	735	272	1867	512	463	141	229	75	1024	357	287	205	86	41	3364	989	561	324	664	414	9280	1337
Oct	-	-	-	-	-	-	-	-	-	-	-	-	118	55	628	308	-	-	-	-	745	312
Nov	-	-	-	-	-	-	-	-	-	-	-	-	74	41	150	78	-	-	-	-	224	88
Dec	-	-	-	-	-	-	-	-	-	-	-	-	667	179	305	134	-	-	-	-	972	224
Total	5110	754	4209	657	1063	201	304	79	3328	541	1119	296	1514	236	7602	1105	832	334	2229	513	27310	1755

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2] 26,429 unidentified salmon were released in the SG in 2011 and were not included.

Appendix C-5. Clipped Adipose (CA) and unclipped adipose (UA) coho[1] kept and released by month[3], effort, and mark type in the SG, 2011.

Month	Effort	SE	Coho CA Kept	SE	Coho UA Kept	SE	Coho Un-known Kept	SE	Monthly Coho Kept	Monthly Coho Kept SE	Coho CA Rel[2]	SE	Coho UA Rel[2]	SE	Coho Un-known Rel[2]	SE	Monthly Coho Rel[2]	Monthly Coho Rel[2] SE
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	1066	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	1182	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	1366	206	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	12473	1060	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
Jun	10496	901	2	0	0	0	0	0	2	0	0	0	1	0	60	29	61	29
Jul	26850	834	555	111	168	63	0	0	722	128	77	34	3302	821	218	90	3597	826
Aug	33876	1099	1203	183	284	137	11	11	1497	229	0	0	4145	863	1317	307	5462	916
Sep	26676	1946	1005	265	414	161	0	0	1418	310	8	0	9439	1811	2928	842	12375	1997
Oct	2835	571	1552	473	3097	753	0	0	4649	889	8	9	3650	1577	506	219	4164	1593
Nov	353	79	13	15	0	0	0	0	13	15	0	0	0	0	0	0	0	0
Dec	1088	209	0	583	0	0	0	0	0	583	0	0	0	0	0	0	0	0
Total	118261	2840	4329	825	3962	784	11	11	8302	1138	93	35	20540	2680	5028	928	25661	2837

[1]78 unidentified salmon were kept and 26,429 unidentified salmon were released in the SG in 2011 and were not included.

[2]Rel = released.

[3]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-6. Clipped adipose (CA) and unclipped adipose (UA) coho[1] kept and released by PFMA[3], effort, and species in the SG, 2011.

PFMA	Effort	SE	Coho CA Kept	SE	Coho UA Kept	SE	Coho Un-known Kept	SE	Area Coho Kept	Area Coho Kept SE	Coho CA Rel[2]	SE	Coho UA Rel[2]	SE	Coho Un-known Rel[2]	SE	Area Coho Rel[2]	Area Coho Rel[2] SE
13	23782	996	368	117	149	99	0	0	517	153	0	0	10089	1897	2195	787	12284	2054
14	9586	466	85	43	38	28	0	0	123	51	35	23	255	83	405	191	695	209
15	3216	273	11	13	5	5	0	0	16	14	0	0	70	47	153	109	223	118
16	2503	165	0	0	0	0	0	0	0	0	0	0	1	0	66	42	67	42
17	10628	689	11	10	0	0	0	0	11	10	0	0	18	16	595	184	613	185
18	6969	629	137	102	198	123	0	0	335	160	0	0	782	543	29	27	811	544
19	12364	609	142	45	400	170	0	0	542	176	0	0	215	91	83	43	299	101
20 (SG)	32584	1988	3270	549	3076	744	11	11	6357	925	59	26	9015	1808	1399	386	10473	1849
28	7612	637	256	98	16	22	0	0	272	100	0	0	16	22	0	0	16	22
29	9018	1076	50	31	79	77	0	0	129	83	0	0	78	63	103	79	180	101
Total	118261	2840	4329	583	3962	784	11	11	8302	977	93	35	20540	2680	5028	928	25661	2837

[1]78 unidentified salmon were kept and 26,429 unidentified salmon were released in the SG in 2011 and were not included.

[2]Rel = released.

[3]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-7. Clipped Adipose (CA) and unclipped adipose (UA) chinook[1] kept and released by month[3], effort, and mark type in the SG, 2011.

Month	Effort	SE	Chinook CA Kept	SE	Chinook UA Kept	SE	Chinook Un-known Kept	SE	Monthly Chinook Kept	Monthly Chinook Kept SE	Chinook CA Rel[2]	SE	Chinook UA Rel[2]	SE	Chinook Un-known Rel[2]	SE	Monthly Chinook Rel[2]	Monthly Chinook Rel[2] SE
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	1066	113	364	101	111	38	0	0	476	108	0	0	9	9	255	71	263	72
Mar	1182	95	182	32	65	20	0	0	247	38	0	0	12	8	74	24	86	26
Apr	1366	206	392	81	131	57	17	4	541	99	43	29	52	21	37	15	133	39
May	12473	1060	454	108	2383	540	0	0	2837	551	144	62	155	65	1086	223	1385	241
Jun	10496	901	957	150	4741	658	0	0	5699	675	75	48	335	187	2456	292	2866	350
Jul	26850	834	795	141	7255	619	138	12	8188	636	3	0	246	89	6481	773	6730	778
Aug	33876	1099	604	108	9543	698	369	19	10517	707	22	22	241	79	7173	685	7436	690
Sep	26676	1946	1006	539	4497	631	0	0	5503	830	0	0	258	100	9790	1364	10048	1368
Oct	2835	571	217	73	123	47	0	0	340	87	0	0	63	50	805	314	868	318
Nov	353	79	171	57	119	41	13	4	303	71	14	12	0	0	265	92	279	93
Dec	1088	209	335	96	225	66	0	0	560	116	0	0	0	0	1139	234	1139	234
Total	118261	2840	5478	626	29194	1417	537	23	35210	1549	301	87	1372	258	29562	1798	31235	1818

[1]78 unidentified salmon were kept and 26,429 unidentified salmon were released in the SG in 2011 and were not included.

[2]Rel = released.

[3]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-8. Clipped adipose (CA) and unclipped adipose (UA) chinook[1] kept and released by PFMA[3], effort, and species in the SG, 2011.

PFMA	Effort	SE	Chinook CA Kept	SE	Chinook UA Kept	SE	Chinook Un-known Kept	SE	Area Chinook Kept	Area Chinook Kept SE	Chinook CA Rel[2]	SE	Chinook UA Rel[2]	SE	Chinook Un-known Rel[2]	SE	Area Chinook Rel[2]	Area Chinook Rel[2] SE
13	23782	996	181	66	11749	1073	0	0	11930	1075	4	0	343	93	5110	754	5456	760
14	9586	466	80	33	2536	354	0	0	2616	356	0	0	90	62	4483	680	4573	683
15	3216	273	40	22	667	149	0	0	707	151	0	0	0	0	1063	201	1063	201
16	2503	165	5	2	250	54	0	0	255	54	0	0	4	3	304	79	308	80
17	10628	689	319	105	1863	287	0	0	2182	306	72	54	115	62	3923	570	4111	576
18	6969	629	158	60	708	197	14	15	880	206	0	0	15	11	1232	302	1247	302
19	12364	609	1729	537	1336	209	39	20	3104	576	93	40	79	28	1820	312	1992	315
20 (SG)	32584	1988	2883	285	7118	476	484	140	10484	572	120	55	616	212	8246	1121	8982	1142
28	7612	637	0	0	747	208	0	0	747	208	0	0	17	9	832	334	849	334
29	9018	1076	83	32	2221	519	0	0	2304	520	12	9	94	66	2548	522	2654	526
Total	118261	2840	5478	626	29194	1417	537	142	35210	1555	301	87	1372	258	29562	1798	31235	1818

[1]78 unidentified salmon were kept and 26,429 unidentified salmon were released in the SG in 2011 and were not included.

[2]Rel = released.

[3]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-9. Sockeye[2] kept by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	3	3	0	0	127	61	9	6	23	12	161	62
Aug	3439	1002	26	21	21	16	0	0	10	10	0	0	116	49	1448	205	25	34	4204	1547	9291	1855
Sep	1124	352	0	0	10	7	0	0	13	11	48	27	4	5	112	78	2586	951	2190	970	6087	1406
Oct	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	4563	1062	26	21	31	18	0	0	24	15	50	28	120	50	1687	228	2620	952	6417	1826	15539	2329

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]78 unidentified salmon were kept in the SG in 2011 and were not included.

Appendix C-10. Sockeye[2] released by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	561	352	0	0	0	0	0	0	0	0	0	0	0	0	605	161	0	0	0	0	1166	387
Aug	222	157	0	0	1	1	0	0	0	0	0	0	0	0	759	181	0	0	1388	924	2370	954
Sep	0	0	35	27	0	0	0	0	2	2	3	2	0	0	0	0	260	250	278	272	579	371
Oct	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	783	386	35	27	1	1	0	0	2	2	3	2	0	0	1364	242	260	250	1666	963	4115	1094

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]26,429 unidentified salmon were released in the SG in 2011 and were not included.

Appendix C-11. Pink[2] kept by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	6	6	1	1	0	0	0	0	0	0	4	4	12	8
Jul	206	106	8	9	14	14	0	0	0	0	3	3	261	104	13760	1528	45	29	36	16	14332	1535
Aug	13468	2022	538	160	47	26	0	0	238	135	3838	670	2391	490	30498	2365	259	108	1277	552	52554	3276
Sep	17833	3493	102	58	144	87	0	0	28	21	387	118	304	205	5562	1479	1415	510	1769	655	27542	3892
Oct	-	-	-	-	-	-	-	-	-	-	-	-	11	9	17	12	-	-	-	-	28	15
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	31507	4038	648	170	204	92	0	0	272	137	4229	681	2967	541	49837	3181	1718	522	3086	857	94468	5314

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]78 unidentified salmon were kept in the SG in 2011 and were not included.

Appendix C-12. Pink[2] released by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	323	176	0	0	0	0	0	0	0	0	24	18	35	25	2760	555	0	0	0	0	3142	583
Aug	1541	951	139	96	4	6	0	0	266	189	1741	561	1736	537	8291	977	0	0	1008	800	14726	1774
Sep	7116	3220	176	113	58	52	0	0	39	36	361	133	428	317	898	377	1423	939	2047	1142	12546	3582
Oct	-	-	-	-	-	-	-	-	-	-	-	-	0	0	8	9	-	-	-	-	8	9
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	8980	3362	316	148	62	53	0	0	305	193	2125	577	2199	624	11957	1185	1423	939	3055	1395	30422	4040

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]26,429 unidentified salmon were released in the SG in 2011 and were not included.

Appendix C-13. Chum[2] kept by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	36	37	0	0	0	0	0	0	7	9	0	0	0	0	0	0	0	0	0	0	43	38
Sep	456	220	0	0	2	3	0	0	0	0	0	0	0	0	67	55	0	0	0	0	526	227
Oct	-	-	-	-	-	-	-	-	-	-	-	-	2	2	215	65	-	-	-	-	217	65
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	492	223	0	0	2	3	0	0	7	9	0	0	2	2	282	85	0	0	0	0	786	239

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]78 unidentified salmon were kept in the SG in 2011 and were not included.

Appendix C-14. Chum[2] released by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	94	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	94	85
Aug	0	0	0	0	0	0	0	0	0	0	58	53	0	0	0	0	0	0	0	0	58	53
Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oct	-	-	-	-	-	-	-	-	-	-	-	-	0	0	67	54	-	-	-	-	67	54
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	94	85	0	0	0	0	0	0	0	0	58	53	0	0	67	54	0	0	0	0	218	114

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

[2]26,429 unidentified salmon were released in the SG in 2011 and were not included.

Appendix C-15. All salmon[1] kept by month[2] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	201	61	275	89	-	-	-	-	476	108
Mar	-	-	-	-	-	-	-	-	-	-	-	-	144	26	104	27	-	-	-	-	247	38
Apr	-	-	-	-	-	-	-	-	-	-	-	-	190	57	351	83	-	-	-	-	541	101
May	47	19	305	122	40	38	111	33	613	236	24	18	69	21	338	92	134	39	1155	468	2837	551
Jun	2816	620	240	65	122	42	25	18	792	116	109	27	403	90	776	174	0	0	430	108	5712	675
Jul	3998	541	387	99	203	81	21	6	483	132	184	71	632	140	17060	1558	203	67	294	66	23464	1669
Aug	20908	2314	1245	288	273	91	60	29	399	145	4616	712	3049	505	37235	2405	411	128	5707	1647	73902	3840
Sep	21241	3553	1236	216	323	116	39	25	209	68	562	136	1336	587	7171	1516	4610	1100	4349	1183	41076	4238
Oct	-	-	-	-	-	-	-	-	-	-	-	-	428	143	4823	884	-	-	-	-	5251	896
Nov	-	-	-	-	-	-	-	-	-	-	-	-	107	32	209	67	-	-	-	-	315	74
Dec	-	-	-	-	-	-	-	-	-	-	-	-	176	41	383	109	-	-	-	-	560	116
Total	49010	4320	3413	398	961	178	255	54	2496	335	5495	730	6735	811	68724	3371	5358	1110	11936	2085	154382	6090

[1]All salmon includes unidentified salmonids

[2]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-16. All salmon[1] released by month[2] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	113	39	191	68	-	-	-	-	305	78
Mar	-	-	-	-	-	-	-	-	-	-	-	-	183	61	44	20	-	-	-	-	227	64
Apr	-	-	-	-	-	-	-	-	-	-	-	-	27	9	116	40	-	-	-	-	143	41
May	341	143	269	90	41	23	19	7	305	104	53	60	44	17	105	46	17	11	194	109	1388	241
Jun	418	131	479	164	34	19	17	17	839	148	55	21	179	77	505	206	26	17	438	104	2989	356
Jul	5279	962	527	130	148	57	11	8	1186	337	295	95	138	51	6986	899	18	12	839	160	15427	1380
Aug	5127	1296	2329	510	531	168	98	46	2099	412	2764	632	2282	553	18605	1483	211	78	2995	1246	37042	2569
Sep	17451	3755	3943	712	596	158	229	75	1487	397	1130	558	2204	1044	14442	2574	2275	1025	3166	1248	46922	5043
Oct	-	-	-	-	-	-	-	-	-	-	-	-	577	152	11328	2778	-	-	-	-	11905	2782
Nov	-	-	-	-	-	-	-	-	-	-	-	-	166	57	399	187	-	-	-	-	565	195
Dec	-	-	-	-	-	-	-	-	-	-	-	-	700	180	468	150	-	-	-	-	1168	234
Total	28617	4092	7546	905	1349	239	375	90	5915	688	4296	851	6612	1212	53190	4178	2548	1028	7632	1777	118081	6478

[1]All salmon includes unidentified salmonids

[2]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-17. Halibut kept by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	177	36	25	14	-	-	-	-	202	39
Apr	-	-	-	-	-	-	-	-	-	-	-	-	287	101	16	13	-	-	-	-	302	102
May	0	0	0	0	0	0	0	0	0	0	30	22	457	121	19	14	0	0	0	0	506	124
Jun	51	44	17	16	2	2	0	0	0	0	0	0	111	32	120	145	0	0	0	0	301	156
Jul	2	0	0	0	0	0	1	0	0	0	0	0	264	102	28	28	0	0	0	0	296	106
Aug	2	0	0	0	0	0	0	0	0	0	0	0	322	117	44	35	0	0	0	0	368	122
Sep	0	0	0	0	0	0	0	0	32	25	0	0	318	205	0	0	0	0	0	0	350	206
Oct	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	55	44	17	16	2	2	1	0	32	25	30	22	1936	305	254	154	0	0	0	0	2325	347

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-18. Halibut released by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	7	5	2	2	-	-	-	-	10	5
Apr	-	-	-	-	-	-	-	-	-	-	-	-	4	3	0	0	-	-	-	-	4	3
May	0	0	0	0	0	0	0	0	0	0	0	0	6	0	42	47	0	0	0	0	48	47
Jun	0	0	0	0	0	0	0	0	0	0	0	0	7	0	69	87	0	0	0	0	76	87
Jul	0	0	0	0	0	0	0	0	0	0	0	0	1	0	14	14	0	0	0	0	15	14
Aug	0	0	0	0	0	0	0	0	0	0	0	0	21	21	0	0	0	0	0	0	21	21
Sep	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0	0	0	0	0	0	8	8
Oct	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	4	4	9	7	-	-	-	-	14	8
Total	0	0	0	0	0	0	0	0	0	0	0	0	58	24	136	100	0	0	0	0	195	103

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-19. Lingcod kept by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Apr	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
May	95	51	154	107	6	5	40	17	454	169	58	37	71	45	28	29	0	0	32	24	937	218
Jun	86	26	4	1	13	9	45	16	110	35	6	6	62	43	19	11	0	0	17	12	362	66
Jul	210	69	486	186	225	147	45	13	399	122	102	44	37	21	103	44	35	29	170	53	1811	290
Aug	156	71	29	23	88	52	50	27	353	129	291	223	41	24	95	46	0	0	0	0	1103	279
Sep	5	0	4	0	0	0	110	56	195	90	174	169	20	17	292	147	0	0	34	23	833	249
Oct	-	-	-	-	-	-	-	-	-	-	-	-	6	7	0	0	-	-	-	-	6	7
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Total	551	114	677	216	332	156	290	68	1511	263	631	286	238	72	536	163	35	29	253	63	5053	526

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-20. Legal Lingcod released by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	53	58	-	-	-	-	53	58
Mar	-	-	-	-	-	-	-	-	-	-	-	-	8	4	0	0	-	-	-	-	8	4
Apr	-	-	-	-	-	-	-	-	-	-	-	-	4	1	0	0	-	-	-	-	4	1
May	84	53	111	60	13	10	101	9	137	55	0	0	1	0	39	19	0	0	2	0	487	100
Jun	110	0	18	10	3	0	46	0	32	16	4	3	10	0	6	0	0	0	17	10	246	22
Jul	66	0	51	32	4	0	42	0	109	79	14	15	3	2	0	0	0	0	6	0	294	87
Aug	21	0	4	0	3	0	7	0	120	75	6	7	7	7	13	11	0	0	18	11	199	78
Sep	0	0	9	0	0	0	10	0	42	26	0	0	2	2	3	0	0	0	25	0	91	26
Oct	-	-	-	-	-	-	-	-	-	-	-	-	15	10	0	0	-	-	-	-	15	10
Nov	-	-	-	-	-	-	-	-	-	-	-	-	0	0	4	5	-	-	-	-	4	5
Dec	-	-	-	-	-	-	-	-	-	-	-	-	0	0	39	33	-	-	-	-	39	33
Total	281	53	193	68	23	10	206	9	439	126	24	17	49	13	158	70	0	0	68	15	1440	171

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-21. Sub-legal lingcod released by month[1] and PFMA in the SG, 2011.

Month	PFMA																				Est Total	SE Total
	13		14		15		16		17		18		19		20 (SG)		28		29			
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE		
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	-	-	-	-	0	0
Mar	-	-	-	-	-	-	-	-	-	-	-	-	71	30	27	13	-	-	-	-	98	33
Apr	-	-	-	-	-	-	-	-	-	-	-	-	23	10	30	18	-	-	-	-	53	20
May	2165	1079	747	249	78	72	113	41	2718	963	365	210	378	157	576	216	26	14	272	186	7437	1520
Jun	426	196	76	40	23	13	156	46	635	193	175	75	501	156	788	386	0	0	81	38	2861	510
Jul	179	73	2067	1231	893	545	573	126	1586	405	344	128	499	142	775	155	0	0	342	100	7257	1438
Aug	499	202	126	65	66	43	114	43	1003	316	543	253	507	155	867	185	0	0	0	0	3724	521
Sep	108	70	76	51	21	12	278	134	392	142	491	504	225	112	1323	481	0	0	205	148	3120	753
Oct	-	-	-	-	-	-	-	-	-	-	-	-	256	110	196	135	-	-	-	-	452	174
Nov	-	-	-	-	-	-	-	-	-	-	-	-	11	7	14	11	-	-	-	-	25	12
Dec	-	-	-	-	-	-	-	-	-	-	-	-	9	10	58	47	-	-	-	-	67	48
Total	3376	1120	3092	1259	1080	552	1235	199	6333	1117	1918	620	2481	345	4654	711	26	14	900	261	25094	2347

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix C-22. Chinook percent kept catch by SG sub-region 2000 to 2011.

Year	North[1]	South[2]	Total Chinook Catch[3]
2000	62.6%	37.4%	27193
2001	48.2%	51.8%	44314
2002	65.4%	34.6%	66198
2003	40.1%	59.9%	34442
2004	27.7%	72.3%	36207
2005	37.9%	62.1%	27306
2006	35.3%	64.7%	26728
2007	41.8%	58.2%	28665
2008	33.9%	66.1%	17936
2009	32.3%	67.7%	37460
2010	52.7%	47.3%	22471
2011	47.4%	52.6%	32742

[1]North represents PFMA 13 to 16.

[2]South represents PFMA17 to 20(SG), 28 and 29.

[3]This table uses values from May to September inclusively for historical comparisons.

Appendix D-1. Kept and released catch per unit effort (CPUE) for salmon, lingcod, and halibut by month[3] in the SG creel survey, 2011.

Month	Kept								Released							
	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Kept	Halibut	Lingcod	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Rel.[2]	Halibut	Lingcod
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	0.45	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.25	0.00	0.05
Mar	0.19	0.00	0.00	0.00	0.00	0.19	0.17	0.00	0.07	0.00	0.00	0.00	0.00	0.07	0.01	0.09
Apr	0.38	0.00	0.00	0.00	0.00	0.38	0.21	0.00	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.04
May	0.22	0.00	0.00	0.00	0.00	0.22	0.04	0.08	0.11	0.00	0.00	0.00	0.00	0.11	0.00	0.63
Jun	0.52	0.00	0.00	0.00	0.00	0.52	0.02	0.03	0.28	0.01	0.00	0.00	0.00	0.28	0.01	0.29
Jul	0.26	0.03	0.01	0.55	0.00	0.84	0.01	0.07	0.25	0.14	0.04	0.12	0.00	0.56	0.00	0.28
Aug	0.27	0.04	0.28	1.58	0.00	2.18	0.01	0.03	0.22	0.15	0.07	0.44	0.00	0.89	0.00	0.12
Sep	0.20	0.05	0.23	1.04	0.02	1.55	0.01	0.03	0.38	0.46	0.02	0.47	0.00	1.33	0.00	0.12
Oct	0.12	1.61	0.00	0.01	0.08	1.82	0.00	0.00	0.31	1.46	0.00	0.00	0.02	1.79	0.00	0.17
Nov	0.86	0.04	0.00	0.00	0.00	0.89	0.00	0.00	0.79	0.00	0.00	0.00	0.00	0.79	0.00	0.08
Dec	0.51	0.00	0.00	0.00	0.00	0.51	0.00	0.00	1.05	0.00	0.00	0.00	0.00	1.05	0.01	0.10
Total	0.27	0.07	0.13	0.81	0.01	1.30	0.02	0.04	0.27	0.21	0.04	0.26	0.00	0.78	0.00	0.22

[1]Total includes species listed in table only.

[2]Rel. = released.

[3]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix D-2. Kept and released catch per unit effort (CPUE) for salmon, lingcod, and halibut by month for logbook reported catch used in the SG estimates, 2011.

Month	Kept								Released							
	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Kept	Halibut	Lingcod	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Rel.[2]	Halibut	Lingcod
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar	3.50	0.00	0.00	0.00	0.00	3.50	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
Apr	1.31	0.00	0.00	0.00	0.00	1.31	0.62	0.00	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.10
May	0.69	0.00	0.00	0.00	0.00	0.69	0.34	0.05	0.34	0.03	0.00	0.00	0.00	0.37	0.05	1.09
Jun	1.40	0.01	0.00	0.00	0.00	1.41	0.17	0.12	0.19	0.00	0.00	0.00	0.00	0.19	0.02	0.65
Jul	2.12	0.03	0.00	0.00	0.00	2.15	0.03	0.09	0.20	0.07	0.00	0.00	0.00	0.26	0.00	0.20
Aug	2.09	0.09	0.00	0.00	0.00	2.17	0.04	0.06	0.08	0.60	0.00	0.00	0.00	0.68	0.00	0.06
Sep	0.56	0.19	0.00	0.00	0.00	0.75	0.04	0.06	0.06	1.07	0.00	0.00	0.00	1.13	0.00	0.24
Oct	0.09	5.14	0.00	0.00	0.00	5.23	0.00	0.00	0.00	2.77	0.00	0.00	0.00	2.77	0.00	0.00
Nov	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.74	0.12	0.00	0.00	0.00	1.85	0.08	0.08	0.15	0.37	0.00	0.00	0.00	0.51	0.01	0.27

[1]Total includes species listed in table only.

[2]Rel. = released.

Appendix D-3. Kept and released CPUE for all salmon, all groundfish, and all rockfish by month[1] in the SG creel survey, 2011.

Month	Kept			Released		
	Salmon	Groundfish	Rockfish	Salmon	Groundfish	Rockfish
Jan	-	-	-	-	-	-
Feb	0.45	0.00	0.00	0.29	0.08	0.10
Mar	0.19	0.21	0.00	0.19	0.68	0.08
Apr	0.38	0.22	0.00	0.11	0.52	0.11
May	0.22	0.22	0.05	0.11	0.79	0.33
Jun	0.33	0.28	0.09	0.29	0.62	0.28
Jul	0.36	0.26	0.13	0.58	0.72	0.23
Aug	1.74	0.13	0.06	1.10	0.31	0.17
Sep	1.55	0.19	0.10	1.76	0.31	0.21
Oct	1.83	0.37	0.00	4.21	0.30	0.26
Nov	0.89	0.16	0.06	1.60	0.16	0.25
Dec	0.51	0.00	0.01	1.07	0.14	0.10
Total	1.30	0.20	0.08	1.01	0.48	0.22

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix D-4. Kept and released CPUE for all salmon, all groundfish, and all rockfish by month for logbook reported catch used in the SG estimates, 2011.

Month	Kept			Released		
	Salmon	Groundfish	Rockfish	Salmon	Groundfish	Rockfish
Jan	-	-	-	-	-	-
Feb	0.00	0.00	0.00	0.00	0.00	0.00
Mar	3.50	0.38	0.00	0.00	0.25	0.00
Apr	1.31	0.62	0.00	0.10	0.14	0.00
May	0.69	0.51	0.14	0.37	1.28	0.30
Jun	1.41	0.44	0.13	0.19	1.77	0.17
Jul	2.15	0.13	0.06	0.26	0.36	0.14
Aug	2.17	0.12	0.04	0.68	0.12	0.08
Sep	0.75	0.11	0.08	1.13	0.31	0.10
Oct	5.23	0.00	0.00	2.77	0.00	0.00
Nov	0.00	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00	0.00
Total	1.85	0.20	0.07	0.51	0.52	0.13

Appendix D-5. Kept and released CPUE for salmon, lingcod, and halibut by PFMA[3] in the SG creel survey, 2011.

PFMA	Kept								Released							
	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Kept	Halibut	Lingcod	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Rel.[2]	Halibut	Lingcod
13	0.40	0.02	0.20	1.41	0.02	2.06	0.00	0.02	0.23	0.52	0.04	0.40	0.00	1.20	0.00	0.15
14	0.27	0.01	0.00	0.07	0.00	0.35	0.00	0.07	0.48	0.07	0.00	0.03	0.00	0.59	0.00	0.34
15	0.22	0.01	0.01	0.06	0.00	0.30	0.00	0.10	0.33	0.07	0.00	0.02	0.00	0.42	0.00	0.34
16	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.11	0.13	0.03	0.00	0.00	0.00	0.16	0.00	0.53
17	0.20	0.00	0.00	0.03	0.00	0.23	0.00	0.14	0.39	0.06	0.00	0.03	0.00	0.47	0.00	0.64
18	0.13	0.05	0.01	0.61	0.00	0.79	0.00	0.09	0.18	0.12	0.00	0.30	0.01	0.61	0.00	0.28
19	0.24	0.04	0.01	0.24	0.00	0.54	0.15	0.02	0.16	0.02	0.00	0.18	0.00	0.36	0.00	0.21
20 (SG)	0.32	0.19	0.05	1.54	0.01	2.11	0.01	0.02	0.28	0.32	0.04	0.37	0.00	1.01	0.00	0.15
28	0.10	0.04	0.34	0.23	0.00	0.70	0.00	0.00	0.11	0.00	0.03	0.19	0.00	0.33	0.00	0.00
29	0.26	0.01	0.71	0.34	0.00	1.33	0.00	0.03	0.30	0.02	0.19	0.34	0.00	0.84	0.00	0.10
Total	0.27	0.07	0.13	0.81	0.01	1.30	0.02	0.04	0.27	0.21	0.04	0.26	0.00	0.78	0.00	0.22

[1]Total includes species listed in table only.

[2]Rel. = released.

[3]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix D-6. Kept and released CPUE for salmon, lingcod, and halibut by PFMA for logbook reported catch used in the SG estimates, 2011.

PFMA	Kept								Released							
	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Kept	Halibut	Lingcod	Chinook	Coho	Sockeye	Pink	Chum	Total Salmon[1] Rel.[2]	Halibut	Lingcod
13	2.05	0.06	0.00	0.00	0.00	2.11	0.01	0.08	0.15	0.42	0.00	0.00	0.00	0.57	0.00	0.15
14	0.96	0.00	0.00	0.00	0.00	0.96	0.00	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.17
15	0.50	0.00	0.00	0.00	0.00	0.50	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.36
16	0.17	0.00	0.00	0.00	0.00	0.17	0.01	0.15	0.00	0.01	0.00	0.00	0.00	0.01	0.00	1.52
17	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	1.42	0.00	0.00	0.00	0.00	1.42	1.15	0.00	0.41	0.00	0.00	0.00	0.00	0.41	0.11	0.13
20 (SG)	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.17	0.00	0.00
29	0.18	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.04	0.00	1.46
Total	1.74	0.12	0.00	0.00	0.00	1.85	0.08	0.08	0.15	0.37	0.00	0.00	0.00	0.51	0.01	0.27

[1]Total includes species listed in table only.

[2]Rel. = released.

Appendix D-7. Kept and released CPUE for all salmon, all groundfish, and all rockfish by PFMA[1] in the SG creel survey, 2011.

PFMA	Kept			Released		
	Salmon	Groundfish	Rockfish	Salmon	Groundfish	Rockfish
13	2.06	0.06	0.05	1.24	0.17	0.01
14	0.35	0.25	0.07	0.79	0.68	0.14
15	0.30	0.16	0.09	0.42	0.49	0.09
16	0.10	0.48	0.26	0.16	0.86	0.41
17	0.23	0.37	0.14	0.56	1.22	0.76
18	0.79	0.14	0.19	0.62	0.70	0.68
19	0.54	0.35	0.08	0.54	0.98	0.24
20 (SG)	2.11	0.13	0.07	1.64	0.32	0.18
28	0.70	0.26	0.00	0.33	0.01	0.00
29	1.33	0.31	0.08	0.85	0.20	0.11
Total	1.30	0.20	0.08	1.01	0.48	0.22

[1]In 2011 PFMA 19 and 20(SG) were surveyed February to December. All other PFMAs were surveyed between May and September.

Appendix D-8. Kept and released CPUE for all salmon, all groundfish, and all rockfish by PFMA for logbook reported catch used in the SG estimates, 2011.

PFMA	Kept			Released		
	Salmon	Groundfish	Rockfish	Salmon	Groundfish	Rockfish
13	2.11	0.11	0.04	0.57	0.41	0.10
14	0.96	0.65	0.30	0.00	1.52	1.17
15	0.50	0.32	0.00	0.00	0.36	0.21
16	0.17	0.31	0.44	0.01	2.12	0.45
17	1.00	0.67	0.33	0.00	0.17	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00
19	1.42	1.15	0.00	0.41	0.24	0.00
20 (SG)	1.96	0.03	0.04	0.69	0.25	0.06
28	0.00	0.00	0.00	0.17	0.00	0.00
29	0.18	0.00	0.29	0.04	1.71	0.36
Total	1.85	0.20	0.07	0.51	0.52	0.13

Appendix E. Taxonomic reference of species reported in 2011.

*Listed alphabetically by common name.

Black rockfish	*Sebastes melanops*
Brown Irish lord	*Hemilepidotus spinosus*
Cabezon	*Scorpaenichthys marmoratus*
Canary rockfish	*Sebastes pinniger*
China rockfish	*Sebastes nebulosus*
Chinook salmon	*Oncorhynchus tshawytscha*
Chum salmon	*Oncorhynchus keta*
Coho salmon	*Oncorhynchus kisutch*
Copper rockfish	*Sebastes caurinus*
Dogfish (spiny dogfish)	*Squalus acanthias*
Flatfishes	*Heterosomata, Plueronectiforme spp.*
Flounder	*Bothidae, Pleuronectidae spp.*
Greenling	*Hexagrammidae spp.*
Hake (Pacific)	*Merluccius productus*
Halibut (Pacific)	*Hippoglossus stenolepis*
Herring (Pacific)	*Clupea harengus pallasi*
Kelp greenling	*Hexagrammos decagrammus*
Lingcod	*Ophiodon elongatus*
Mackerel (chub)	*Scomber japonicus*
Not identified salmonids	*Salmonidae spp.*
Other groundfish	Other species in class Chondricthyes and Osteichthyes
Other rockfish	*Sebastes, Sebastodes, Sebastolobus spp.*
Other sole	*Bothidae, Pleuronectidae spp.*
Pacific cod	*Gadus macrocephalus*
Pacific sandab	*Citharichthys sordidus*
Pink salmon	*Oncorhynchus gorbuscha*
Quillback rockfish	*Sebastes maliger*
Ratfish	*Hydrolagus colliei*
Red Irish lord	*Hemilepidotus hemilepidotus*
Rock sole	*Lepidopsetta bilineata*
Sculpins	*Cottidae spp.*
Skates	*Rajidae spp.*
Sockeye salmon	*Oncorhynchus nerka*
Starry flounder	*Platichthys stellatus, Inopsetta ischyra*
Tiger rockfish	*Sebastes nigrocinctus*
Vermillion rockfish	*Sebastes miniatus*
Yelloweye rockfish	*Sebastes rubberimus*
Yellowtail rockfish	*Sebastes flavidus*

Appendix F. Tidal effort statistics and recreational estimates of chinook and coho kept for the SG, 1960 to 1985.

Year	Effort[1]	Kept	
	(boat trips)	Chinook	Coho
1960	189,150	83,000	238,000
1961	199,935	63,000	152,000
1962	205,547	86,000	167,000
1963	247,590	65,000	199,000
1964	198,120	51,000	182,000
1965	250,020	53,000	175,000
1966	259,100	80,000	249,000
1967	254,500	115,000	200,000
1968	265,030	150,000	250,000
1969	281,475	185,000	200,000
1970	306,255	220,000	500,000
1971	341,123	255,000	800,000
1972	300,349	287,000	335,000
1973	293,141	272,000	373,000
1974	443,441	269,000	772,000
1975	334,490	398,000	454,000
1976	340,729	490,000	415,000
1977	363,350	372,000	682,000
1978	369,035	500,000	1,103,000
1979	404,710	350,000	708,735
1980	510,400	204,100	393,500
1981	494,604	197,239	317,091
1982	559,395	124,390	411,686
1983	435,335	139,982	344,664
1984	562,113	315,913	401,628
1985	549,986	196,888	670,753
1986	502,334	146,781	530,345

[1]Effort prior to 1980 (the start of the creel survey) may not represent boat trips.

Appendix G. Species and area specific tidal regulations for major finfish in the SG, 2011.

General regulations which affected the 2011 SG recreational fishery for major finfish species are summarized below (these regulations do not include tidal and non-tidal portions of the Fraser River):

- All coho, sockeye, pink and chum must measure 30 cm or more (tip of nose to fork of tail) and the daily limit was four (4), possession eight (8) except for coho which was two (2) per day and possession four (4). There were no annual limits on these species.
- The minimum size limit for chinook was 62 cm. Daily limit of chinook was two (2), possession of four (4). In a portion of PFMA 19/20 (Cadboro Bay to Sheringham Pt.), the minimum size limit for chinook was 45 cm.
- The annual limit for chinook coast wide was 30. The annual limit for PFMA 13 to 19 (north of Cadboro Point) is 15 chinook. The annual limit for PFMA 19 and 20 (south of Cadboro Point to Sheringham Point) was 20 chinook.
- Conservation measures were implemented again in specific PFMAs to protect certain chinook stocks including early timed Fraser River and lower SG. Please see the website at the bottom of the page for specific details.
- Two (2) adipose marked coho per day could be retained from 01 June to 31 December.
- The recreational fishery for Fraser River sockeye in South Coast marine waters was open to sockeye retention from 10 August until 16 September.
- The recreational rockfish and lingcod fisheries in the SG were operated concurrently and were open from 01 May to 30 September.
- The recreational halibut fishery was open from 01 March to 05 September. The daily limit was one (1) per day with a possession limit of two (2).
- Program details for the halibut experimental recreational fishery for the 2011 fishing season are now available at: http://www.pac.dfo-mpo.gc.ca/index-eng.htm. Included on this website is an expression of interest form as well as a presentation that describes program details.
- Anglers are reminded that there are 164 Rockfish Conservation Areas (RCA's) coast wide and that fin fishing is prohibited in these areas. Maps and descriptions of RCA's are available on the DFO website and at local DFO offices.

For a comprehensive list of area and species specific regulations in the SG for 2011, please refer to the 2011-2013 British Columbia Tidal Waters Sport Fishing Guide and the following website: <http://www-ops2.pac.dfo-mpo.gc.ca/fns-sap/index-eng.cfm> (Accessed Nov 21, 2016).