NPAFC
Doc. 1617
Rev.____

Annual Survey of Juvenile Salmon, Ecologically-Related Species, and Biophysical Factors in the Marine Waters of Southeastern Alaska, May–August 2014

by

Joseph A. Orsi and Emily A. Fergusson

National Oceanic and Atmospheric Administration,
National Marine Fisheries Service,
Alaska Fisheries Science Center, Auke Bay Laboratories,
Ted Stevens Marine Research Institute
17109 Point Lena Loop Road,
Juneau, AK 99801 USA

Submitted to the

NORTH PACIFIC ANADROMOUS FISH COMMISSION

by

United States of America

December 2015

THIS PAPER MAY BE CITED IN THE FOLLOWING MANNER:
Orsi, J. A. and E. A. Fergusson. 2015. Annual survey of juvenile salmon, ecologically-related species, and biophysical factors in the marine waters of southeastern Alaska, May–August 2014. NPAFC Doc. 1617. 64 pp. National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Alaska Fisheries Science Center, Auke Bay Laboratories, Ted Stevens Marine Research Institute (Available at http://www.npafc.org).

Annual Survey of Juvenile Salmon, Ecologically-Related Species, and Biophysical Factors in the Marine Waters of Southeastern Alaska, May–August 2014

Keywords: marine trophic ecology, juvenile salmon, biophysical coastal monitoring, juvenile salmon, Southeast Alaska

ABSTRACT

Juvenile Pacific salmon (*Oncorhynchus* spp.), ecologically-related species, and associated biophysical data were collected from the marine waters of the northern region of southeastern Alaska (SEAK) in 2014. This annual survey, conducted by the Southeast Coastal Monitoring (SECM) project, marks 18 consecutive years of systematically monitoring how juvenile salmon utilize marine ecosystems during a period of climate change. The survey was implemented to identify the relationships between year-class strength of juvenile salmon and biophysical parameters that influence their habitat use, marine growth, prey fields, predation, and stock interactions. Up to 13 stations were sampled monthly in epipelagic waters from May to August (total of 23 sampling days). Fish, zooplankton, surface water samples, and physical profile data were collected during daylight at each station using a surface rope trawl, bongo nets, a water sampler, and a conductivity-temperature-depth profiler. Surface (3-m) temperatures and salinities ranged from approximately 8 to 15 ºC and 18 to 32 PSU across inshore, strait, and coastal habitats for the four months. A total of 79,524 fish and squid, representing 29 taxa, were captured in 97 rope trawl hauls fished from June to August. Juvenile salmon comprised approximately 13% of the total fish. Juvenile pink (*O. gorbuscha*), chum (*O. keta*), sockeye (*O. nerka*), and coho (*O. kisutch*) salmon occurred in 50-92% of the hauls by month and habitat, while juvenile Chinook salmon (*O. tshawytscha*) occurred in about 20% of the hauls. Abundance of juvenile salmon was high in 2014; peak CPUE occurred in July in strait and coastal habitats. Coded-wire tags were recovered from 35 coho salmon and 5 Chinook salmon, that primarily originated from hatchery and wild stocks in SEAK sampled in the strait habitat; an additional 6 adipose-clipped individuals without tags (presumably originating from the Pacific Northwest) were recovered mainly in coastal habitat, where a non-Alaskan juvenile coho and Chinook were recovered (both Oregon origin). Of the juvenile salmon examined for otolith marks, Alaska enhanced stocks comprised 64% of the juvenile chum and 32% of the juvenile sockeye salmon. Of the 147 potential predators of juvenile salmon, predation on juvenile salmon was observed in 2 of 11 fish species examined. The long term seasonal time series of SECM juvenile salmon stock assessment and biophysical data is used in conjunction with basin-scale ecosystem metrics to annually forecast pink salmon harvest in SEAK. Long term seasonal monitoring of key stocks of juvenile salmon and associated ecologically-related species, including fish predators and prey, permits researchers to understand how growth, abundance, and interactions affect year-class strength of salmon during climate change in marine ecosystems.

INTRODUCTION

The Southeast Coastal Monitoring (SECM) project, an ecosystem study in the northern region of southeastern Alaska (SEAK), was initiated in 1997 to annually study the early marine ecology of Pacific salmon (*Oncorhynchus* spp.) and associated epipelagic ichthyofauna and to better understand effects of climate change on salmon production. Salmon are a keystone species in SEAK whose role in marine ecosystems remains poorly understood. Fluctuations in the survival of this important living marine resource have broad ecological and socio-economic implications for coastal localities throughout the Pacific Rim.

Relationships between climate shifts and production have impacted year-class strength of Pacific salmon throughout their distribution (Beamish et al. 2010a, b). In particular, climate variables such as temperature have been associated with freshwater production (Bryant 2009; Taylor 2008) and ocean production and survival of both wild and hatchery salmon (Wertheimer et al. 2001; Beauchamp et al. 2007). Biophysical attributes of climate may influence trophic linkages and lead to variable growth and survival of salmon (Francis et al. 1998; Brodeur et al. 2007; Coyle et al. 2011). However, research is lacking on the links between salmon production and climate variability, intra- and interspecific competition and carrying capacity, and biological interactions among stock groups (Beamish et al. 2010a). In addition, past research has not provided adequate time series data to explain these links (Pearcy 1997; Beamish et al. 2008). Increases in salmon production throughout the Pacific Rim in recent decades has elevated the need to understand the consequences of population changes and potential interactions on the growth, distribution, migratory rates, timing, and survival of all salmon species and stock groups (Rand et al. 2012). Furthermore, region-scale spatial effects that are important to salmon production (Pyper et al. 2005) may be linked to local dynamics in complex marine ecosystems like SEAK (Weingartner et al. 2008).

A goal of the SECM project is to identify mechanisms linking salmon production to climate change using a time series of synoptic data related to ocean conditions and salmon, including stock-specific life history characteristics. The SECM project obtains stock information from coded-wire tags (CWT; Jefferts et al. 1963) or otolith thermal marks (Hagen and Munk 1994; Courtney et al. 2000) from all five Pacific salmon species: pink (*O. gorbuscha*), chum (*O. keta*), sockeye (*O. nerka*), coho (*O. kisutch*), and Chinook (*O. tshawytscha*). Portions of wild and hatchery salmon stocks are tagged or marked prior to ocean entry by enhancement facilities or state and federal agencies in SEAK, Canada, and the Pacific Northwest states. Catches of these marked fish by the SECM project in the northern, southern, and coastal regions of SEAK have provided information on habitat use, migration rates, and timing (e.g., Orsi et al. 2004, 2007, 2008); in addition, interceptions in the regional common property fisheries have documented substantial contributions of enhanced fish to commercial harvests (White 2011). Therefore, examining trends in early marine ecology and potential interactions of these marked stock groups provides an opportunity to link increasing wild and hatchery salmon production to climate change (Ruggerone and Nielsen 2009; Rand et al. 2012 and papers in Special Volume).

Examining the extent of interactions between salmon stock groups and co-occurring species in marine ecosystems is also important with regard to carrying capacity, and should examine both “bottom-up” and “top-down” production controls (Miller et al. 2013). For example, increased hatchery production of juvenile chum salmon coincided with declines of some wild chum salmon stocks, suggesting the potential for negative stock interactions in the marine environment (Seeb et al. 2004; Reese et al. 2009). In SEAK, however, SECM and other studies have indicated that growth is not food limited and that stocks interact extensively with little negative impact (Bailey et al. 1975; Orsi et al. 2004; Sturdevant et al. 2004, 2012a). Zooplankton prey fields are more likely to be cropped by the more abundant planktivorous forage fish, including walleye pollock (*Gadus chalcogrammus*) and Pacific herring (*Clupea pallasi*) (Orsi et al. 2004; Sigler and Csepp 2007), than by juvenile salmon. Seasonal and interannual changes in abundance of planktivorous jellyfish, another potential competitor with juvenile salmon, have been reported by SECM (Orsi et al. 2009). Therefore, monitoring abundance of jellyfish may be an important indicator of potential "bottom-up" trophic interactions (Purcell and Sturdevant 2001), particularly during periods of environmental change (Brodeur et al. 2008; Cieciel et al. 2009). Companion studies in Icy Strait also indicated that food quantity can be more important than food quality for growth and survival of juvenile salmon (Weitkamp and Sturdevant 2008). As a result, monitoring the composition, abundance, and timing of zooplankton taxa with different life history strategies may permit the detection of climate-related changes in the seasonality and interannual abundance of prey fields (Coyle and Paul 1990; Park et al. 2004; Coyle et al. 2011; Sturdevant et al. 2013a; Fergusson et al. 2014). In contrast, "top-down" predation events can also affect salmon year-class strength (Sturdevant et al. 2009, 2012b, 2013b). Highly abundant smaller juvenile salmon species, such as wild pink salmon, may be a predation buffer for less abundant, larger species, such as juvenile coho salmon (LaCroix et al. 2009; Weitkamp et al. 2011). These findings also stress the need to examine the entire epipelagic community in the context of trophic interactions (Cooney et al. 2001; Sturdevant et al. 2012b) and to compare ecological processes, community structure, and life history strategies among salmon production areas (Brodeur et al. 2007; Orsi et al. 2007, 2013a).

In 2014, SECM sampling was conducted in the northern region of SEAK for the 18th consecutive year to continue annual ecosystem and climate monitoring, to document juvenile salmon abundance in relation to biophysical parameters, and to support models to forecast adult pink salmon returns. This document summarizes data on juvenile salmon, ecologically-related species, and associated biophysical parameters collected by the SECM project in 2014. Subsets of the long term time series are examined in several recent documents (e.g., Fergusson et al. 2014, 2015; Orsi et al. 2014, 2015).

METHODS

Sampling was conducted in the northern region of SEAK monthly from May to August 2014 (Table 1). Spatially, sampling stations extended 250 km from inshore waters of the Alexander Archipelago along Chatham and Icy Straits to coastal waters 65 km offshore from Icy Point into the Gulf of Alaska (GOA), over the continental shelf break (Figure 1). At each station, the physical environment, zooplankton, and fish were sampled during daylight hours. Oceanographic sampling was conducted in May, while both oceanographic and trawl sampling were conducted June through August. The 12 m NOAA vessel R/V *Sashin* was used for sampling in May. The chartered fishing vessel, FV *Northwest Explorer* (*NWE*), a 52 m stern trawler with twin engines producing 1,800 HP, was used for sampling June through August.

Sampling stations (Table 1; Figure 1) were chosen to: 1) continue historical time series of biophysical data, 2) sample primary seaward migration corridors used by juvenile salmon, and 3) accommodate vessel logistics. Historical data existed for the inshore station and the four Icy Strait stations (e.g., Bruce et al. 1977; Jaenicke and Celewycz 1994; Orsi et al. 1997). The four Upper Chatham Strait stations were selected to intercept juvenile salmon entering Icy Strait from both the north and the south. Hatchery and wild salmon captured in Icy Strait have included stocks released from throughout SEAK (Orsi et al. 2013b). To meet vessel sampling constraints, stations in strait habitat were approximately 3 or 6 km offshore, whereas stations in coastal habitat were approximately 7, 23, 40, and 65 km offshore (Figure 1). Sampling operations in the different localities were also constrained to bottom depths > 75 m, sea wave height < 2.5 m, and winds < 12.5 m/sec. Bottom depth at ABM was too shallow to permit trawling (Table 1).

Oceanographic sampling

The oceanographic data collected at each station consisted of one conductivity-temperature-depth profiler (CTD) cast, one Secchi depth, one surface water sample, one light reading, and one plankton tow. The CTD data were collected with a Sea-Bird[1] SBE 19 plus Seacat profiler deployed to 200 m or within 10 m of the bottom. A CTD cast was typically taken for each haul unless hauls occurred less than two hours apart at the same station. The CTD profiles were used to determine the 3-m sea surface temperature (SST, °C) and salinity (PSU), the average 20-m integrated water column temperature and salinity, and the mixed layer depth (MLD, m). The 20-m water column depth bracketed typical seasonal pycnoclines, MLD, and the stratum fished by the surface trawl. The MLD established the active mixing layer and was defined as the depth where temperature was ⩾ 0.2 °C colder than the water at 5 m (Kara et al. 2000). Secchi depths (m) were estimated as the disappearance depth of the white CTD top during deployment. Surface water samples for chlorophyll (µg/L) concentrations were taken once at each station per month. Ambient light levels (W/m^2) were measured with a Li-Cor Model LI-250A light meter.

Zooplankton was sampled monthly with a double oblique bongo haul made at stations along the Icy Strait and Icy Point transects and at ABM (≤ 200 m or within 20 m of bottom) using a 60-cm diameter tandem frame with 333- and 505-µm meshes. A VEMCO ML-08-TDR time-depth recorder was attached to the bongo frame to record the maximum sampling depth of each haul. General Oceanics Model 2031 flow meters were placed inside the bongo nets for calculation of water volumes filtered.

Zooplankton samples were immediately preserved in a 5% formalin-seawater solution. In the laboratory, displacement volumes (DV, ml), standing stock (DV/m^3), and density (number/m^3) were determined for various samples. Standing stock was calculated using DV and filtered water volumes. Detailed zooplankton species composition from the 333-µm samples was determined microscopically from subsamples obtained using a Folsom splitter. Densities were then estimated using the subsample counts, split fractions, and water volumes filtered. Percent total composition was summarized across species by major taxa, including small calanoid copepods (≤ 2.5 mm total length, TL), large calanoid copepods (> 2.5 mm TL), euphausiids (principally larval and juvenile stages), oikopleurans (Larvacea), decapod larvae, amphipods, chaetognaths, pteropods, and combined minor taxa.

Fish sampling

Fish sampling was accomplished with a Nordic 264 rope trawl modified to fish the surface water directly astern of the trawl vessel. The trawl was 184 m long and had a mouth opening of approximately 24 m wide by 30 m deep, with actual fishing dimensions of 18 m wide by 24 m deep (Sturdevant et al. 2012b). A pair of 3-m foam-filled Lite trawl doors, each weighing 544 kg (91 kg submerged), were used to spread the trawl open. Trawl mesh sizes from

---

[1]Reference to trade names does not imply endorsement by the Auke Bay Laboratories, National Marine Fisheries Service, NOAA Fisheries.

the jib lines aft to the cod end were 162.6 cm, 81.3 cm, 40.6 cm, 20.3 cm, 12.7 cm, and 10.1 cm over the 129.6-m meshed length of the rope trawl. A 6.1-m long, 0.8-cm knotless liner mesh was sewn into the cod end. The trawl also contained a small mesh panel of 10.2-cm mesh sewn along the jib lines on the top panel between the head rope and the 162.6-cm mesh to reduce loss of small fish. Two 50-kg chain-link weights were added to the corners of the foot rope as the trawl was deployed to maximize fishing depth. To keep the trawl head rope fishing at the surface, two clusters of three A-4 Polyform buoys (inflated to 0.75 m diameter and encased in knotted mesh bags) were clipped on the opposing corner wingtips of the head rope and one A-3 Polyform float (inflated to 0.5 m diameter) was clipped into a mesh kite pocket in the center of the head rope with a third-wire unit to monitor the net spread. Two acoustic pingers (10 kHz, 132 dB) were attached to the corners of the head rope to deter porpoise interactions. The trawl was fished with approximately 150 m of 1.6-cm wire main warp attached to each door, a 9.1 m length of 1.6-cm TS-II Dyneema line trailing off the top and bottom of each trawl door (back strap). Each back strap was connected with a "G" hook and flat link to an 80-m parallel rigging system constructed of 1.6-cm TS-II Dyneema bridles. A marine mammal exclusion device (Dotson et al. 2010) was used inside the trawl when the coastal Icy Point transect was trawled.

For each haul, the trawl was fished across a station for 20 min at approximately 1.5 m/sec (3 knots) to cover 1.9 km (1.0 nautical mile) with the exception of the offshore stations which were fished for 30 min at approximately 1.5m/sec. Station coordinates were targeted as the midpoint of the trawl haul, and current, swell, and wind conditions usually dictated the setting direction. Twenty-eight hauls were scheduled in the strait habitat to meet sampling requirements for the forecasting model and to ensure that sufficient samples of marked juvenile salmon were obtained for interannual comparisons.

After each trawl haul, the fish were separated from the jellyfish, identified, enumerated, measured, labeled, bagged, and frozen. Jellyfish were identified to species when possible, counted, and total volume (including fragments) was measured to the nearest 0.1 liter (L) as a proxy for biomass. After the catch was sorted, all fish and squid were typically measured to the nearest mm fork length (FL) or mantle length. In instances of very large catches, all fish were counted, a subsample of each species (≤ 100) was processed, and excess fish were discarded. All Chinook and coho salmon were examined for missing adipose fins that could indicate the presence of implanted CWTs. Additionally, in the laboratory, all juvenile Chinook and coho salmon were screened with a magnetic detector and any CWTs detected were excised from the snouts. All tags were decoded and verified to determine the stock of origin.

Potential predators of juvenile salmon from each haul were identified, measured (FL, mm), weighed (g), and stomach contents were examined onboard the vessel. Stomachs were excised, weighed (0.1 g), and visually classified by percent fullness (0, 10, 25, 50, 75, 100, and distended). Stomach content weight was determined by subtracting the empty stomach weight from the full stomach weight. Feeding intensity was reported as percentage of fish with food in their guts. General prey composition was determined by visually estimating the contribution of major taxa to the nearest 10% of total volume, and the wet-weight contribution to the diets was calculated by multiplying the % by the total content weight (%W). Overall diets of each species were summarized by %W of major prey taxa. Whenever possible, fish prey was identified to species and FLs were measured.

Juvenile salmon catch data were adjusted using calibration coefficients between vessels to allow comparisons with the long term data collected using the NOAA ship *John N. Cobb* (1997-2007). No direct calibration of the *NWE* with a previously-used vessel was possible. The *NWE* was assumed to be comparable to the similarly-sized and -powered chartered vessel FV

Chellissa that was calibrated to the RV *Medeia*, which was previously calibrated to the NOAA ship *John N. Cobb* (Wertheimer et al. 2010). These paired comparisons permitted the computation of species-specific calibration factors which were applied to the Ln (CPUE+1) for each trawl haul of the *NWE* to convert the data into “Cobb units” directly comparable to the previous 17 years of the SECM time series.

In the laboratory, frozen individual juvenile salmon were weighed (0.1 g) and otoliths were removed from the chum and sockeye salmon. Mean lengths, weights, Fulton condition factor ($g/mm^3 \cdot 10^5$; Cone 1989), and residuals from a length-weight linear regression (condition residuals, CR) were computed for each species by locality or habitat and sampling month. To determine stock of origin, sagittal otoliths were extracted from the crania and preserved in 95% ethyl alcohol, then later mounted on slides, ground down to the primordia, and examined for potential thermal marks (Secor et al. 1992). Stock composition and growth trajectories of thermally marked fish were determined for each month and habitat. An index of seasonal condition was obtained via calorimetry, using a 1425 Parr micro-bomb calorimeter. Whole body energy content (cal/g wet weight) was determined from ten fish of each species captured in July (Fergusson et al. 2010, 2013).

RESULTS AND DISCUSSION

In 2014, 13 stations were sampled from Auke Bay to Icy Strait monthly from May to August, and four additional stations were sampled from Icy Point to 65 km offshore in the Gulf of Alaska monthly from June to August (Figure 1). In total, data were collected from 97 rope trawl hauls, 91 CTD casts, 32 tandem bongo net samples, 48 surface water samples, 10 Secchi readings, and 85 ambient light measures during 23 days at-sea (Table 2, Appendix 1).

Oceanography

Overall, station mean SST values ranged from 8.2 to 15.0 ºC from May to August (Table 3; Appendix 1). Seasonal SST patterns were similar among habitats, with a peak in July. Monthly mean SSTs were lowest in the inshore and strait habitats and highest in the coastal habitat, differing by as much as ~3 ºC among localities.

Surface salinities ranged from 17.7 to 31.9 PSU from May to August (Table 3; Appendix 1). Salinities were lowest in inshore habitat and highest in coastal habitat. Seasonal PSU values trended downward from May to August in inshore and strait habitats, whereas minimal seasonal variation occurred in coastal PSU values.

Water clarity depths ranged from 1.5 to 5 and were only measured in May (Appendix 1). The MLD ranged from 6 to 37 m. Seasonal MLD patterns were fairly consistent in inshore and strait habitats, whereas seasonal MLD patterns showed a strong deepening from June to July and August in coastal habitat. Thus, trawl sampling depths (~ 20 m) usually spanned a range of habitat conditions that varied with depth and location, including the active surface layer and the stable waters below the MLD. Ambient light measurements ranged from 1 to 979 W/m^2.

Chlorophyll concentrations ranged from 0.4 to 11.7 µg/L, while phaeopigment concentrations ranged from 0.2 to 2.3 µg/L (Table 4). Generally, chlorophyll was highest in all habitats in July.

Zooplankton standing stock from bongo net hauls ranged from 0.1 to 0.9 ml/m^3 for 333-µm mesh from May to August (Table 5). Mean standing stock was highest in strait habitat and lowest in inshore and coastal habitats. Seasonal patterns varied between habitats. Seasonal total density of zooplankton prey fields (333-µm mesh) at stations in Icy Strait ranged from 494 to 2,419 organisms/m^3). Mean density was lowest in August and station variability was highest in May.

Catch composition

Jellyfish catches included five species (*Aequorea* sp., *Aurelia labiata*, *Chrysaora melanaster*, *Cyanea capillata*, and *Staurophora* sp.) and an "other" category (Table 6). Total biomass (volume) of jellyfish ranged from 0 to 44 L per haul from June to August. Jellyfish biomass and species composition varied by month and habitat. In coastal habitat, the dominant species were *Chrysaora melanaster* and *Aequorea* sp. In strait habitat, small numbers of all five species were present in all months, however, high numbers of *Cyanea capillata* (~40 L) were caught in August.

In total, 79,524 fish and squid, representing 29 taxa, were captured in 97 rope trawl hauls in strait and coastal habitats (Table 7). Juvenile salmon comprised approximately 13% of the total fish catch and occurred more frequently in strait habitat than in coastal habitat. In general, adult salmon were most abundant in June and July, whereas immature Chinook salmon were most abundant in June. In the strait habitat, juvenile pink, chum, sockeye, and coho salmon occurred in 88-92% of the trawls, while juvenile Chinook salmon occurred in 22% of the hauls (Table 8). In contrast, in the coastal habitat, juvenile pink, chum, sockeye, and coho salmon occurred in 50-75% of the trawls, while juvenile Chinook salmon occurred in 17% of the hauls. In the strait habitat, juvenile chum, and sockeye salmon catches peaked in June, while juvenile pink salmon peaked in July, juvenile Chinook salmon peaked in August, and juvenile coho salmon were high all months. In the coastal habitat, juvenile coho and Chinook catches peaked in June, whereas, juvenile pink, chum, and sockeye salmon peaked in July. Non-salmonids were not very abundant in catches in either strait or coastal habitats, with the exception of a huge Pacific herring haul in excess of 43,000 fish (June), and a walleye pollock haul of about 7,000 fish in July (Table 7).

Length, weight, and condition of juvenile salmon differed among species and months (Tables 10–14). Most species increased monthly in both length and weight, indicating growth despite the influx of additional stocks with varied times of saltwater entry. From June to August, mean FLs of juvenile salmon increased from approximately 102 to 179 mm for pink; 104 to 193 mm for chum; 126-175 mm for sockeye; 182 to 243 mm for coho; and 226-219 mm for Chinook salmon. Mean weights of juvenile salmon increased monthly from 10 to 62 g for pink; 11 to 78 g for chum; 21 to 62 g for sockeye; 73 to 178 g for coho; and 155 to 144 for Chinook salmon. Juvenile coho and Chinook salmon were consistently larger than the other three species, and coho captured in coastal habitat were generally larger than those captured in strait habitat. Mean conditions of juvenile salmon were fairly consistent in both strait and coastal habitats. In the strait and coastal habitat, the CRs for all species of juvenile salmon were near average with no apparent trends.

All juvenile coho (n = 1,183) and juvenile and immature Chinook (n = 73) salmon were scanned (either visually onboard the vessel or electronically in the laboratory) for the presence of CWTs. Stock-specific information was obtained from 40 CWT recoveries from a total of 46 salmon lacking the adipose fin and one with the adipose fin intact. For coho salmon, a total of 35 CWTs were recovered from juveniles. For Chinook salmon, a total of 5 CWTs were recovered from 4 juveniles and 1 immature (Table 15). All but one of the 35 CWT coho salmon originated from hatchery and wild stocks in the northern region of SEAK: the one exception was one that originated from Clackamas River, Oregon. Of the five CWT Chinook salmon recovered, four originated from SEAK: Little Port Walter (2 hatchery, age 1.0), and Taku River (wild, age 1.0), Chilkat River (wild, age 1.1), whereas one was from the Umatilla River, OR. In the coastal habitat along the Icy Point transect, where the two non-Alaska stocks were revered, there were six adipose-clipped juvenile salmon were not tagged, but adipose fin clipped (three coho and three Chinook) that had presumably originated from Pacific Northwest (PNW) hatcheries. These facilities are mandated to adipose-clip but not necessarily tag all fish released, a practice not used in Alaska. Migration rates of the 39 CWT juvenile salmon ranged from 0.8 to 23.9 km/day and averaged 4.3 km/day, the one immature Chinook salmon had a migration rate of 0.3 km/day.

Stock-specific information was also obtained from recoveries of otolith-marked hatchery chum and sockeye salmon, using the same individuals that were subsampled for weight and condition. Releases of these species from SEAK enhancement facilities are commonly mass-marked and not tagged. These facilities include: Douglas Island Pink and Chum Hatchery (DIPAC), Northern Southeast Regional Aquaculture Association (NSRAA), Southern Southeast Regional Aquaculture Association (SSRAA), Armstrong Keta Incorporated (AKI), and Kake Non-profit Fisheries Corporation (KNFC). A total of 2,346 juvenile salmon were examined for thermal marks: 1,441 chum salmon and 1,228 sockeye (Tables 16-17).

For juvenile chum salmon, stock-specific information was derived from a subsample of 1,441 fish, representing 29% of the 5,008 caught (Tables 7 and 16). Of all chum salmon otoliths examined, 928 (64%) were marked by hatcheries in SEAK and 513 (36%) were not marked. Of the marked fish, 543 (58%) were from DIPAC, 217 (23%) were from NSRAA, 145 (16%) were from SSRAA, 18 (2%) were from AKI, and 5 (1%) were from KNFC. Hatchery chum salmon catch composition shifted monthly through Icy Strait, with northern stocks such as DIPAC peaking in June, central stocks such as NSRAA peaking in July, and southern stocks such as SSRAA peaking in August (Table 16). Moreover, catches of SSRAA fish in 2014 were some of the highest ever seen in the SECM time series.

For juvenile sockeye salmon, stock-specific information was derived from the otoliths of a subsample of 1,228 fish, representing 40% of the 3,100 caught (Tables 7 and 12). Of all the sockeye salmon otoliths examined, 396 (32%) were marked and 832 (68%) were not marked. Of the marked fish, 344 (28%) were from Speel Arm, SEAK, 37 (3%) were from Tatsamenie Lake British Columbia, 4 (<1%) were from Sweetheart Lake, 4 (<1%) were from King Salmon Lake, 3 (<1%) were from Tahltan Lake/Stikine River, British Columbia, and 4 (<1%) were from Tuya Lake/Stikine River, British Columbia. The three stocks that migrated through the Stikine River drainage to marine waters in central SEAK were sampled in Icy Strait in July, suggesting a protracted northward migration, whereas Speel Arm stocks peaked in June.

Stomachs of 147 potential predators of juvenile salmon were examined onboard from a suite of 11 fish species (Tables-18 19). Juvenile salmon were consumed by two predator species: adult coho (n = 10 of 51) and sockeye salmon (n = 1 of 7; Table 19).

Summary

This document summarizes SECM data collected on juvenile salmon, ecologically-related species, and associated biophysical parameters collected from May to August in 2014 in the northern region of SEAK. These data continue to be used in conjunction with basin-scale data to develop forecast models and predictive tools for adult pink salmon harvest in SEAK (e.g., Orsi et al. 2012; Wertheimer et al. 2013, 2014, 2015) and to explore year-class strength relationships for other species such as Chinook salmon and sablefish (*Anoplopoma fimbria*;

Martinson et al. 2013; Orsi et al. 2013a, Yasumiishi et al. 2015). Subsets of the 18-year long term time series are also examined in recent ecosystem documents (Fergusson et al. 2014, 2015; Orsi et al. 2014, 2015; Yasumiishi et al. 2014). Comparing annual effects of biophysical parameters to long term mean values permits climate-related changes in marine conditions to be detected. Long term monitoring of key stocks of juvenile salmon, on seasonal and interannual time scales, will permit researchers to understand how growth, abundance, and ecological interactions affect year-class strength of salmon in SEAK and to better understand their role in North Pacific marine ecosystems.

ACKNOWLEDGMENTS

We thank the chartered fishing vessel FV *Northwest Explorer* crew for their superb cooperation and performance (Adam, Agada, Craig, Edgar, Luke, Manny, Ray, and Juan). We also thank Brad Weinlaeder for skippering the R/V *Sashin*. We are also grateful for survey participation and laboratory support from Sarah Ballard (NOAA contractor), Ryan Bare (NOAA contractor), Cadie Buckley (NOAA volunteer), Malika Burnett (ADF&G), Matt Callahan (NOAA contractor), Kris Cieciel, Auri Clark (NOAA contractor), Hannah Findley (NOAA contractor), Tayler Jarvis (NOAA contractor), Jamal Moss, Wes Strasburger, Jared Weems (NOAA contractor), and Alex Wertheimer, (NOAA contractor). We appreciate the assistance of David King and Jim Smart of the NMFS Alaska Fisheries Science Center, Seattle, for their excellent support on trawl gear. Partial funding for these surveys was provided by the Northern Fund of the Pacific Salmon Commission (project NF-2014-I-1).

LITERATURE CITED

Bailey, J. E., B. L. Wing, and C. R. Mattson. 1975. Zooplankton abundance and feeding habits of fry of pink salmon, *Oncorhynchus gorbuscha*, and chum salmon, *Oncorhynchus keta*, in Traitors Cove, Alaska, with speculations on the carrying capacity of the area. Fish. Bull. U.S. 73(4):846-861.

Beamish, R., R. M. Sweeting, K. L. Lange, and C. M. Neville. 2008. Changes in the population ecology of hatchery and wild coho salmon in the Strait of Georgia. Trans. Amer. Fish. Soc. 137(2): 503-520.

Beamish, R. J., B.E. Riddell, K. L. Lange, E. Farley Jr., S. Kang, T. Nagasawa, V. Radchenko, O. Temnykh, and S. Urawa. 2010a. The effects of climate on Pacific salmon - A summary of published literature. North Pac. Anadr. Fish Comm. Spec. Pub. 2:1-11.

Beamish , R. J., K. L. Lange, B. E. Riddell, and S. Urawa. 2010b. Climate impacts on Pacific salmon: bibliography. North Pac. Anadr. Fish Comm. Spec. Pub. 2, 172 pgs. Vancouver, B.C.

Beauchamp, D. A., A. D. Cross, J. L. Armstrong, K. W. Meyers, J. H. Moss, J. L. Boldt, and L. J. Haldorson. 2007. Bioenergetics responses by Pacific salmon to climate and ecosystem variation. North Pac. Anadr. Fish Comm. Bull. 4:257-269.

Brodeur, R. D., E. A. Daly, R. A. Schabetsberger, and K. L. Mier. 2007. Interannual and interdecadal variability in juvenile coho salmon (*Oncorhynchus kisutch*) diets in relation to environmental changes in the northern California Current. Fish. Oceanog.16:395-408.

Brodeur, R. D., M. B. Decker, L. Ciannelli, J. E. Purcell, N. A. Bond, P. J. Stabeno, E. Acuna, and G. L. Hunt, Jr. 2008. Rise and fall of jellyfish in the eastern Bering Sea in relation to climate regime shifts. Prog. Oceanogr. 77: 103–111.

Bruce, H. E., D. R. McLain, and B. L. Wing. 1977. Annual physical and chemical oceanographic cycles of Auke Bay, southeastern Alaska. NOAA Tech. Rep. NMFS SSRF-712, 11 pages.

Bryant, M. D. 2009. Global climate change and potential effects on Pacific salmonids in freshwater ecosystems of southeast Alaska. Climatic Change 95:169–193.

Cieciel, K., E.V. Farley, Jr., and L.B. Eisner 2009. Jellyfish and juvenile salmon associations with oceanographic characteristics during warm and cool years in the eastern Bering Sea. North Pac. Anadr. Fish Comm. Bull. 5: 209–224.

Cone, R. S. 1989. The need to reconsider the use of condition indices in fishery science. Trans. Amer. Fish. Soc. 118:510-514.

Cooney, R. T., J. R. Allen, M. A. Bishop, D. L. Eslinger, T. Kline, B. L. Norcross, C. P. McRoy, J. Milton, J. Olsen, V. Patrick, A. J. Paul, D. Salmon, D. Scheel, G. L. Thomas, S. L. Vaughan, and T. M. Willette. 2001. Ecosystem controls of juvenile pink salmon (*Oncorhynchus gorbuscha*) and Pacific herring (*Clupea pallasi*) populations in Prince William Sound, Alaska. Fish. Oceanog. 10(Suppl. 1):1-13.

Courtney, D. L., D. G. Mortensen, J. A. Orsi, and K. M. Munk. 2000. Origin of juvenile Pacific salmon recovered from coastal southeastern Alaska identified by otolith thermal marks and coded wire tags. Fish. Res. 46:267-278.

Coyle, K. O., and A. J. Paul. 1990. Abundance and biomass of meroplankton during the spring bloom in an Alaska Bay. Ophelia 32(3):199-210.

Coyle, K. O., L. B. Eisner, F. J. Mueter, A. I. Pinchuk, M. A. Janout, K. D. Cieciel, E. V. Farley, and A. G. Andrews. 2011. Climate change in the southeastern Bering Sea: impacts on pollock stocks and implications for the oscillating control hypothesis. Fish. Oceanog. 20:139-156.

Dotson, R. C., D. A. Griffith, D. L. King, and R. L. Emmett. 2010. Evaluation of a marine mammal excluder device (mmed) for a Nordic 264 midwater rope trawl. NOAA Tech. Memo. NOAA-TM-NMFS-SWFSC-455

Fergusson, E. A., M. V. Sturdevant, and J. A. Orsi. 2010. Effects of starvation on energy density of juvenile chum salmon (*Oncorhynchus keta*) captured in marine waters of Southeastern Alaska. Fish. Bull. U.S. 108:218-225.

Fergusson, E. A., M. V. Sturdevant, and J. A. Orsi. 2013. Trophic relationships among juvenile salmon during a 16-year time series of climate variability in Southeast Alaska. North Pac. Anadr. Fish Comm. Tech. Rep. 9. (Available at http://www.npafc.org).

Fergusson, E., J. Orsi, and M. Sturdevant. 2014. Long-term Zooplankton and Temperature Trends in Icy Strait, Southeast Alaska. p. 125-131 In Zador et al. Ecosystem Considerations 2014. National Marine Fisheries Service, NOAA. 263 p. http://www.afsc.noaa.gov/REFM/Docs/2014/ecosystem.pdf.

Fergusson E., and J. Orsi 2015 [In prep]. – Long-term Zooplankton and Temperature Trends in Icy Strait, Southeast Alaska –Ecosystems Considerations Report, submitted Aug 2015.

Francis, R., Hare, S., Hollowed, A., and Wooster, W. 1998. Effects of interdecadal climate variability on the oceanic ecosystems of the NE Pacific. Fish. Oceanog. 7(1):1-21.

Hagen, P., and K. Munk. 1994. Stock separation by thermally induced otolith microstructure marks. Pages 149-156 *In*: Proceedings of the 16th Northeast Pacific Pink and Chum Salmon Workshop. Alaska Sea Grant College Program AK-SG-94-02, University of Alaska, Fairbanks.

Jaenicke, H. W., and A. C. Celewycz. 1994. Marine distribution and size of juvenile Pacific salmon in Southeast Alaska and northern British Columbia. Fish. Bull. U.S. 92:79-90.

Jefferts, K. B., P. K. Bergman, and H. F. Fiscus. 1963. A coded wire identification system for macro-organisms. Nature (Lond.) 198:460-462.

Kara, A. B., P. A. Rochford, and H. E. Hurlburt. 2000. An optimal definition for the ocean mixed layer depth. J. Geophys. Res. 105:16,803–16,821.

LaCroix, J. J., A. C. Wertheimer, J. A. Orsi, M. V. Sturdevant, E. A. Fergusson, and N. A. Bond. 2009. A top-down survival mechanism during early marine residency explains coho salmon year-class strength in Southeast Alaska. Deep Sea Research II 56:2560-2569.

Martinson, E., J. Orsi, M. Sturdevant, and E. Fergusson. 2013. Southeast Coastal Monitoring Survey indices and the recruitment of Gulf of Alaska sablefish. Pages 148-151 in S. Zador, editor. NOAA Ecosystems Considerations Report for 2013, Stock Assessment and Fishery Evaluation (SAFE) Report. North Pacific Fishery Management Council (Available at http://access.afsc.noaa.gov/reem/ecoweb/).

Miller, J. A., D. Teel, A. Baptista, and C. Morgan. 2013. Disentangling bottom-up and top-down effects on survival during early ocean residence in a population of Chinook salmon (*Oncorhynchus tshawytscha*). Can. J. Fish. Aquat. Sci. 70:617–629.

Orsi, J. A., J. M. Murphy, and A. L. J. Brase. 1997. Survey of juvenile salmon in the marine waters of southeastern Alaska, May–August 1997. (NPAFC Doc. 277) Auke Bay Lab., Alaska Fish. Sci. Cen., Nat. Mar. Fish. Serv., NOAA, 11305 Glacier Highway, Juneau, AK 99801-8626, USA, 27 pp. (Available at http://www.npafc.org).

Orsi, J. A., A. C. Wertheimer, M. V. Sturdevant, E. A. Fergusson, D. G. Mortensen, and B. L. Wing. 2004. Juvenile chum salmon consumption of zooplankton in marine waters of southeastern Alaska: a bioenergetics approach to implications of hatchery stock interactions. Rev. Fish Biol. Fish. 14:335-359.

Orsi, J. A., J. A. Harding, S. S. Pool, R. D. Brodeur, L. J. Haldorson, J. M. Murphy, J. H. Moss, E. V. Farley, Jr., R. M. Sweeting, J. F. T. Morris, M. Trudel, R. J. Beamish, R.L. Emmett, and E. A. Fergusson. 2007. Epipelagic fish assemblages associated with juvenile Pacific salmon in neritic waters of the California Current and the Alaska Current. Am. Fish. Soc. Symp. 57:105–155.

Orsi, J. A., A. C. Wertheimer, E.A. Fergusson, and M. V. Sturdevant. 2008. Interactions of hatchery chum salmon with juvenile chum and pink salmon in the marine waters of southeastern Alaska. Pages 20-24 *In*: K. Neely, O. Johnson, J. Hard, L Weitkamp, and K. Adicks (Rapporteurs). Proceedings of the 23rd Northeast Pacific Pink and Chum Salmon Workshop, February 19-21, 2008, Bellingham, Washington, 95 pgs.

Orsi J. A., A. Wertheimer, M. V. Sturdevant, E. A. Fergusson, B. L. Wing. 2009. Insights from a 12-year biophysical time series of juvenile Pacific salmon in southeast Alaska: the Southeast Alaska Coastal Monitoring Project (SECM). Alaska Fisheries Science Center's Quarterly Report Feature, July August September 2009, 8 pages. (Available at http://www.afsc.noaa.gov/Quarterly/jas2009/JAS09featurelead.htm).

Orsi, J. A., E. A. Fergusson, and M. V. Sturdevant. 2012. Recent harvest trends of pink and chum salmon in Southeast Alaska: Can marine ecosystem indicators be used as predictive tools for management? North Pac. Anadr. Fish Comm. Tech. Rep. 8:130-134. (Available at http://www.npafc.org).

Orsi, J. A., M. V. Sturdevant, E. A. Fergusson, W. R. Heard, and E. V. Farley, Jr. 2013a. Chinook salmon marine migration and production mechanisms in Alaska. North Pac. Anadr. Fish Comm. Tech. Rep. 9. (Available at http://www.npafc.org).

Orsi, J. A., E. A. Fergusson, M. V. Sturdevant, W. R. Heard, and E. V. Farley, Jr. 2013b. Annual survey of juvenile salmon, ecologically-related species, and biophysical factors in the marine waters of southeastern Alaska, May–August 2012. NPAFC Doc.1485, 92 pp. Auke Bay Lab., Alaska Fish. Sci. Cent., Natl. Mar. Fish., NOAA, NMFS, 17109 Point Lena Loop Road, Juneau, 99801, USA. (Available at http://www.npafc.org).

Orsi, J., E. Fergusson, M. Sturdevant, and A. Wertheimer. 2014. Using Ecosystem Indicators from the Southeast Alaska Coastal Monitoring (SECM) Project to Forecast Pink Salmon Harvest and develop a Chinook Salmon Abundance Index for Southeast Alaska. in S. Zador, editor. NOAA Ecosystems Considerations Report for 2014, Stock Assessment and Fishery Evaluation (SAFE) Report. North Pacific Fishery Management Council. (Available at http://access.afsc.noaa.gov/reem/ecoweb/).

Orsi, J. A., E. A. Fergusson, and A. C. Wertheimer. 2015 [in prep]. Forecasting pink salmon harvest in Southeast Alaska using ecosystem indicators from the Southeast Alaska Coastal Monitoring (SECM) Project – Ecosystems Considerations Report, Submitted August 2015.

Orsi, J. A., E. A. Fergusson, and A. C. Wertheimer. 2015 [prep]. Chinook salmon first year production indicators from ocean monitoring in Southeast Alaska – Ecosystems Considerations Report, Submitted August 2015.

Park, W., M. Sturdevant, J. Orsi, A. Wertheimer, E. Fergusson, W. Heard, and T. Shirley. 2004. Interannual abundance patterns of copepods during an ENSO event in Icy Strait, southeastern Alaska. ICES J. Mar. Sci. 61(4):464-477.

Pearcy, W. G. 1997. What have we learned in the last decade? What are research priorities? Pages 271–277 *In*: R. L. Emmett and M. H. Schiewe (eds.), Estuarine and ocean survival of northeastern Pacific salmon: Proceedings of the workshop. NOAA Tech. Memo. NMFS-NWFSC-29.

Purcell, J. E., and M. V. Sturdevant. 2001. Prey selection and dietary overlap among zooplanktivorous jellyfish and juvenile fishes in Prince William Sound, Alaska. Mar. Ecol. Prog. Ser. 210:67-83.

Pyper, B. J., F. J. Mueter, and R. M. Peterman. 2005. Across species comparisons of spatial scales of environmental effects on survival rates of Northeast Pacific salmon. Trans. Am. Fish. Soc. 134:86–104.

Rand, P. S., B. A. Berejikian, A. Bidlack, D. Bottom, J. Gardner, M. Kaeriyama, R. Lincoln, M. Nagata, T. N. Pearsons, M. Schmidt, W. W. Smoker, L. A. Weitkamp, and L. A. Zhivotovsky. 2012. Ecological interactions between wild and hatchery salmonids and key recommendations for research and management actions in selected regions of the North Pacific. Environ. Biol. Fish 94:343-358.

Reese, C., N. Hillgruber, M. Sturdevant, A. Wertheimer, W. Smoker, and R. Focht. 2009. Spatial and temporal distribution and the potential for estuarine interactions between wild and hatchery chum salmon (*Oncorhynchus keta*) in Taku Inlet, Alaska. Fish. Bull. U.S. 107:433-450.

Ruggerone, G. T., and J. L. Nielsen. 2009. A review of growth and survival of salmon at sea in response to competition and climate change. Am. Fish. Soc. Symp. 70:241–265.

Seeb, L. C., P. A, Crane, C. M. Kondzela, R. L. Wilmot, S. Urawa, N. V. Varnavskaya, and J. E. Seeb. 2004. Migration of Pacific Rim Chum Salmon on the High Seas: Insights from Genetic Data. Env. Biol. Fish 69(1-4):21-36.

Secor, D. H., J. M. Dean, and E. H. Laban. 1992. Otolith removal and preparation for microstructure examination. Can. Spec. Publ. Fish. Aquat. Sci. 117:19-57.

Sigler, M. F., and D. J. Csepp. 2007. Seasonal abundance of two important forage species in the North Pacific Ocean, Pacific herring and walleye pollock. Fish. Res. 83:319-331.

Sturdevant, M. V., E. A. Fergusson, J. A. Orsi, and A. C. Wertheimer. 2004. Diel feeding and gastric evacuation of juvenile pink and chum salmon in Icy Strait, southeastern Alaska, May-September 2001. North Pac. Anadr. Fish Comm. Tech. Rep. 5:107-109. (Available at http://www.npafc.org).

Sturdevant, M. V., M. F. Sigler, and J. A. Orsi. 2009. Sablefish predation on juvenile salmon in the coastal marine waters of Southeast Alaska in 1999. Trans. Am. Fish. Soc. 138:675-691.

Sturdevant, M., E. Fergusson, N. Hillgruber, C. Reese, J. Orsi, R. Focht, A. Wertheimer, And W. Smoker. 2012a. Lack of trophic competition among wild and hatchery juvenile chum salmon during early marine residence in Taku Inlet, Southeast Alaska. Environ. Biol. Fishes 94:101-116.

Sturdevant, M.V., J.A. Orsi, and E.A. Fergusson. 2012b. Diets and trophic linkages of epipelagic fish predators in coastal Southeast Alaska during a period of warm and cold climate years, 1997-2011. Mar. Coastal Fish. 4(1):526-545.

Sturdevant, M., E. Fergusson, and J. Orsi. 2013a. Long-term zooplankton trends in Icy Strait, Southeast Alaska. Pages 111-115 in S. Zador, editor. Ecosystem Considerations 2013, Stock Assessment and Fishery Evaluation (SAFE) Report. North Pacific Fishery Management Council, 605 W. 4th Ave. Suite 306, Anchorage, AK 99501. (Available at http://access.afsc.noaa.gov/reem/ecoweb/).

Sturdevant, M. V., R. Brenner, E. Fergusson, J. Orsi, and B. Heard. 2013b. Does predation by returning adult pink salmon regulate pink salmon or herring abundance? North Pac. Anadr. Fish Comm.Tech. Rep. 9. (Available at http://www.npafc.org).

Taylor, S. G. 2008. Climate warming causes phenological shift in pink salmon, *Oncorhynchus gorbuscha*, behavior at Auke Creek, Alaska. Global Change Biology 14:229-235.

Weingartner, T., L. Eisner, G. L. Eckert, and S. Danielson. 2008. Southeast Alaska: oceanographic habitats and linkages. J. Biogeog. Spec. Vol. 36:387-400.

Weitkamp, L. A., and M. V. Sturdevant. 2008. Food habits and marine survival of juvenile Chinook and coho salmon from marine waters of Southeast Alaska. Fish. Oceanogr. 17(5):380–395.

Weitkamp, L. A., J. A. Orsi, K. W. Myers, and R. C. Francis. 2011. Contrasting early marine ecology of Chinook salmon and coho salmon in Southeast Alaska: insight into factors affecting marine survival. Mar. Coastal Fish. 3(1):233-249.

Wertheimer, A. C., W. W. Smoker, T. L. Joyce, and W. R. Heard. 2001. Comment: A review of the hatchery programs for pink salmon in Prince William Sound and Kodiak Island, Alaska. Trans. Amer. Fish. Soc. 130:712-720.

Wertheimer, A. C., J. A. Orsi, E. A. Fergusson, and M. V. Sturdevant. 2010. Calibration of juvenile salmon catches using paired comparisons between two research vessels fishing Nordic 264 surface trawls in Southeast Alaska, July 2009. (NPAFC Doc. 1277) Auke Bay Lab., Alaska Fish. Sci. Cen., Nat. Mar. Fish. Serv., NOAA, 17109 Point Lena Loop Road, Juneau, 99801, USA. 19 pages. (Available at http://www.npafc.org).

Wertheimer, A. C., J. A. Orsi, E. A. Fergusson, and M. V. Sturdevant. 2013. Forecasting pink salmon harvest in Southeast Alaska from juvenile salmon abundance and associated biophysical parameters: 2012 returns and 2013 forecast. NPAFC Doc. 1486, 23 pages. (Available at http://www.npafc.org).

Wertheimer, A. C., J. A. Orsi, E. A. Fergusson, and M. V. Sturdevant. 2014. Forecasting pink salmon harvest in southeast Alaska from juvenile salmon abundance and associated biophysical parameters: 2013 returns and 2014 forecast. NPAFC Doc. 1555. 24 pp. Auke Bay Lab., Alaska Fisheries Science Center, NOAA, NMFS. (Available at http://www.npafc.org)

Wertheimer, A. C., J. A. Orsi, and E. A. Fergusson. 2015 [in prep]. Forecasting pink salmon harvest in southeast Alaska from juvenile salmon abundance and associated biophysical parameters: 2014 returns and 2015 forecast. NPAFC Doc. Auke Bay Lab., Alaska Fisheries Science Center, NOAA, NMFS. (Available at http://www.npafc.org).

White, B. 2011. Alaska salmon fisheries enhancement program 2010 annual report. Alaska Department of Fish and Game, Fishery Management Report No. 11-04, Anchorage, 53 pages. (Available at http://www.adfg.alaska.gov/FedAidPDFs/FMR11-04.pdf).

Yasumiishi, E., K. Shotwell, D. Hanselman, J. Orsi, and E. Fergusson. 2014. Southeast Coastal Monitoring Survey Indices and the Recruitment of Gulf of Alaska Sablefish. in S. Zador, editor. NOAA Ecosystems Considerations Report for 2014, Stock Assessment and Fishery Evaluation (SAFE) Report. North Pacific Fishery Management Council. (Available at http://access.afsc.noaa.gov/reem/ecoweb/).

Yasumiishi, E. M., S. K.Shotwell, D. H. Hanselman, J. A. Orsi, and E. A. Fergusson. 2015. Using Salmon Survey and Commercial Fishery Data to Index Nearshore Rearing Conditions and Recruitment of Alaskan Sablefish, Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science, 7:1, 316-324.

Table 1.—Localities and coordinates of thirteen stations sampled by the Southeast Coastal Monitoring (SECM) project in the marine waters of the northern region of southeastern Alaska, May–August 2014. Transect and station positions are shown in Figure 1.

Station	Latitude N	Longitude W	Distance: Offshore (km)	Distance: Between adjacent station (km)	Bottom depth (m)
		Auke Bay Monitor			
ABM	58°22.00'	134°40.00'	1.5	—	60
		Upper Chatham Strait transect			
UCA	58°04.57'	135°00.08'	3.2	3.2	400
UCB	58°06.22'	135°00.91'	6.4	3.2	100
UCC	58°07.95'	135°01.69'	6.4	3.2	100
UCD	58°09.64'	135°02.52'	3.2	3.2	200
		Icy Strait transect			
ISA	58°13.25'	135°31.76'	3.2	3.2	128
ISB	58°14.22'	135°29.26'	6.4	3.2	200
ISC	58°15.28'	135°26.65'	6.4	3.2	200
ISD	58°16.38'	135°23.98'	3.2	3.2	234
		Icy Point transect			
IPA	58°20.12'	137°07.16'	6.9	16.8	160
IPB	58°12.71'	137°16.96'	23.4	16.8	130
IPC	58°05.28'	137°26.75'	40.2	16.8	150
IPD	57°53.50'	137°42.60'	65.0	24.8	1,300

Table 2.—Numbers and types of samples collected in inshore, strait, and coastal habitats by month in the marine waters of the northern region of southeastern Alaska, May–August 2014.

			Data collection type[1]			
Dates (days)	Vessel	Habitat	Rope trawl	CTD cast	Oblique bongo	Chlorophyll & nutrients
23-24 May	R/V *Sashin*	Inshore	0	1	1	1
(2 days)		Strait	0	8	4	8
		Coastal	0	0	0	0
27 June-	F/V *Northwest*	Inshore	0	1	1	1
03 July	*Explorer*	Strait	29	18	4	8
(7 days)		Coastal	4	4	4	4
27 July-	F/V *Northwest*	Inshore	0	1	1	1
02 August	*Explorer*	Strait	28	4	4	8
(7 days)		Coastal	4	21	4	4
29 August-	F/V *Northwest*	Inshore	0	1	1	1
04 September	*Explorer*	Strait	28	28	4	8
(7 days)		Coastal	4	4	4	4
Total			**97**	**91**	**32**	**48**

[1]Rope trawl = 20-min hauls with Nordic 264 surface trawl 18 m wide by 24 m deep; CTD casts = to 200 m or within 10 m of the bottom; oblique bongo = 60-cm diameter frame, 505- and 333-µm meshes, towed double obliquely down to and up from a depth of 200 m or within 20 m of the bottom; chlorophyll and nutrients are from surface seawater samples.

Table 3.—Mean surface (3-m) temperature (ºC) and salinity (PSU) data collected monthly at stations in the marine waters of the northern region of southeastern Alaska, May–August 2014. *n* = number of station visits. Station code acronyms are listed in Table 1.

Month	*n*	Temp (ºC)	Salinity (PSU)	*n*	Temp (ºC)	Salinity (PSU)	*n*	Temp (ºC)	Salinity (PSU)	*n*	Temp (ºC)	Salinity (PSU)
Auke Bay Monitor												
	ABM											
May	1	9.2	25.6									
June	1	12.9	19.1									
July	1	13.1	18.7									
August	1	11.6	17.7									
Upper Chatham Strait transect												
	UCA			UCB			UCC			UCD		
May	1	9.0	30.8	1	10.3	30.4	1	9.7	30.1	1	8.9	30.1
June	1	11.3	26.2	1	10.9	26.7	2	11.8	24.5	1	12.3	23.8
July	2	11.9	26.4	2	12.3	26.3	2	13.1	22.3	2	13.1	22.0
August	3	11.7	24.5	3	11.3	26.9	3	11.3	25.3	3	11.5	24.1
Icy Strait transect												
	ISA			ISB			ISC			ISD		
May	1	9.2	30.6	1	9.3	30.6	1	9.3	30.6	1	8.2	30.9
June	2	9.6	29.4	3	10.9	27.5	4	11.5	25.6	4	11.9	25.4
July	3	10.6	28.4	3	11.4	27.0	3	12.4	24.4	4	12.9	23.3
August	4	9.7	28.9	4	10.6	27.4	4	11.9	25.0	4	12.2	24.0

Table 3.—cont.

Month	*n*	Temp (°C)	Salinity (PSU)	*n*	Temp (°C)	Salinity (PSU)	*n*	Temp (°C)	Salinity (PSU)	*n*	Temp (°C)	Salinity (PSU)
						Icy Point transect						
	IPA			IPB			IPC			IPD		
May	—	—	—	—	—	—	—	—	—	—	—	—
June	1	12.6	31.8	1	13.0	31.5	1	12.6	31.9	1	12.1	31.8
July	1	14.0	31.5	1	13.5	31.4	1	14.0	31.6	1	13.7	31.6
August	1	13.9	29.3	1	14.5	30.9	1	14.4	30.9	1	15.0	31.6

Table 4.—Chlorophyll and phaeopigment (µg/L) concentrations from 200-ml surface water samples collected monthly at stations in the marine waters of the northern region of southeastern Alaska, May–August 2014. Station code acronyms are listed in Table 1.

Month	Chloro (µg/L)	Phaeo (µg/L)	Chloro (µg/L)	Phaeo (µg/L)	Chloro (µg/L)	Phaeo (µg/L)	Chloro (µg/L)	Phaeo (µg/L)
				Auke Bay Monitor				
	ABM							
May	0.61	0.27						
June	1.76	1.51						
July	2.90	0.71						
August	1.42	0.32						
				Upper Chatham Strait transect				
	UCA		UCB		UCC		UCD	
May	1.33	0.48	1.57	0.84	1.61	0.69	2.24	0.79
June	3.32	0.78	2.81	0.67	9.77	2.22	6.10	1.93
July	3.06	0.97	2.42	0.77	4.74	1.50	1.95	0.45
August	4.28	1.46	3.90	1.36	2.91	0.87	2.23	0.75
				Icy Strait transect				
	ISA		ISB		ISC		ISD	
May	1.94	1.77	1.93	1.55	1.19	1.14	1.75	1.36
June	1.02	0.18	1.01	0.23	0.98	0.23	1.43	0.20
July	11.74	2.25	9.11	2.17	7.30	1.95	4.81	1.32
August	1.55	0.70	2.35	0.89	3.73	1.46	3.31	1.24
				Icy Point transect				
	IPA		IPB		IPC		IPD	
May	—	—	—	—	—	—	—	—
June	1.78	0.59	1.53	0.58	1.00	0.32	0.40	0.15
July	1.41	0.65	2.00	0.75	1.23	0.56	1.32	0.57
August	1.06	0.56	1.09	0.68	1.14	0.53	1.00	0.79

Table 5.—Zooplankton displacement volumes (DV, ml), standing stock (DV/m^3), and total density (number/m^3) from double oblique bongo (0.6 m diameter, 333-μm mesh) hauls collected monthly at stations in the marine waters of the northern region of southeastern Alaska, May–August 2014. Standing stock (ml/m^3) is computed using flowmeter readings to determine water volume filtered. A 1 ml zooplankton volume approximates 1 g biomass. Dash indicates no data. Station code acronyms are listed in Table 1.

Month	Depth (m)	DV	DV/m^3	Total density	Depth (m)	DV	DV/m^3	Total density	Depth (m)	DV	DV/m^3	Total density	Depth (m)	DV	DV/m^3	Total density
Auke Bay Monitor (ABM)																
	333-μm mesh															
May	30	20	0.2	—												
June	31	25	0.3	—												
July	35	10	0.1	—												
August	29	25	0.4	—												
Icy Strait																
	ISA				ISB				ISC				ISD			
May	80	135	0.8	2,419.4	169	145	0.6	1,189.0	197	190	0.8	1,264.0	181	145	0.6	1,169.6
June	87	105	0.8	1,904.9	170	160	0.9	1,798.8	206	105	0.5	815.9	212	70	0.3	749.3
July	94	55	0.5	1,824.8	150	105	0.5	725.8	200	135	0.5	808.1	200	80	0.3	493.8
August	81	45	0.4	953.5	158	95	0.5	—	198	120	0.4	—	185.8	115	0.4	497.2
Icy Point																
	IPA				IPB				IPC				IPD			
May	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
June	138	50	0.3	—	98.7	35	0.2	—	106	20	0.1	—	202	45	0.2	—
July	140	90	0.5	—	98	15	0.1	—	100	10	0.1	—	202	70	0.4	—
August	138	50	0.2	—	97	25	0.1	—	103	15	0.1	—	202	30	0.1	—

Table 6.—Mean volume (L) of jellyfish captured in rope trawl hauls monthly at stations in the marine waters of the northern region of southeastern Alaska, June-August 2014.

	Icy Strait				Upper Chatham Strait				Icy Point			
Aequorea sp.												
	ISA	ISB	ISC	ISD	UCA	UCB	UCC	UCD	IPA	IPB	IPC	IPD
June	0.4	0.6	0.2	0.3	0.7	0.2	1.7	0.3	2.7	8.3	8.1	2.6
July	3.6	6.3	6.7	2.2	4.3	5.4	7.1	7.7	0.0	0.0	9.2	0.0
August	2.0	1.8	3.5	1.7	0.9	0.6	3.0	2.4	20.5	38.0	10.0	12.0
Aurelia labiata												
	ISA	ISB	ISC	ISD	UCA	UCB	UCC	UCD	IPA	IPB	IPC	IPD
June	0.1	0.2	1.4	1.0	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0
July	4.7	6.4	6.5	5.1	3.5	4.0	9.3	2.7	0.0	0.0	0.3	0.0
August	0.3	3.2	2.0	2.7	3.3	2.1	1.6	4.0	9.5	1.5	0.0	0.0
Chrysaora melanaster												
	ISA	ISB	ISC	ISD	UCA	UCB	UCC	UCD	IPA	IPB	IPC	IPD
June	0.0	0.2	0.2	0.0	0.3	0.2	0.1	0.3	16.3	10.0	3.0	0.4
July	0.2	0.1	0.2	0.4	0.0	0.4	0.1	1.9	0.0	0.0	1.3	0.0
August	0.0	0.1	0.3	0.1	0.4	0.0	0.5	0.4	32.5	0.0	0.6	0.0
Cyanea capillata												
	ISA	ISB	ISC	ISD	UCA	UCB	UCC	UCD	IPA	IPB	IPC	IPD
June	4.7	6.1	3.2	1.5	4.5	2.0	2.6	8.0	3.0	5.3	0.8	1.4
July	1.0	2.7	4.2	5.8	2.1	6.3	5.5	3.9	0.0	0.0	17.1	0.0
August	5.0	12.0	17.5	12.2	44.1	29.2	41.0	33.2	5.2	6.0	3.5	0.4

Table 6.—cont.

	Icy Strait				Upper Chatham Strait				Icy Point			
	Staurophora sp.											
	ISA	ISB	ISC	ISD	UCA	UCB	UCC	UCD	IPA	IPB	IPC	IPD
June	0.1	0.1	0.2	0.1	0.0	0.5	0.1	0.1	0.0	0.1	0.0	0.0
July	0.0	0.1	0.1	0.2	0.2	0.1	0.1	0.5	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Other[1]											
	ISA	ISB	ISC	ISD	UCA	UCB	UCC	UCD	IPA	IPB	IPC	IPD
June	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2
July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
August	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

[1] Other: Ctenophores, *Phacellophora* sp., and unknown species

Table 7.—Salmonid and non-salmonid catches from rope trawl hauls in strait (n = 85) and coastal (n = 12) marine habitats of the northern region of southeastern Alaska, June–August 2014. Dash indicates no samples. See Table 2 for sampling effort by month and habitat. Catches were not adjusted for standard 20-min trawl durations or vessel calibrations; see Appendix 2 and Table 10.

		Strait			Coastal		
Common Name	Scientific name	June	July	August	June	July	August
		Salmonids					
Pink salmon[1]	*Oncorhynchus gorbuscha*	5,205	9,431	2,872	—	482	27
Chum salmon[1]	*O. keta*	2,967	1,479	316	2	227	17
Sockeye salmon[1]	*O. nerka*	2,020	828	180	8	61	3
Coho salmon[1]	*O. kisutch*	518	518	117	26	12	2
Coho salmon[3]	*O. kisutch*	1	11	36	2	1	—
Chinook salmon[1]	*O. tshawytscha*	4	8	31	4	—	—
Chinook salmon[2]	*O. tshawytscha*	6	2	8	10	—	—
Chum salmon[3]	*O. keta*	9	11	1	—	—	—
Pink salmon[3]	*O. gorbuscha*	7	11	—	—	1	—
Sockeye salmon[3]	*O. nerka*	5	—	—	1	—	—
Chinook salmon[3]	*O. tshawytscha*	—	2	2	—	—	—
Dolly Varden	*Salvelinus malma*	1	—	—	—	—	—
Salmonid subtotals		10,743	12,301	3,563	53	784	49
		Non-salmonids					
Pacific herring	*Clupea pallasi*	43,202	15	8	—	—	—
Walleye pollock[3]	*Gadus chalcogrammus*	1,304	7018	5	1	—	—
Crested sculpin	*Blepsias bilobus*	27	79	25	—	1	2
Surf smelt	*Hypomesus pretiosus*	—	—	—	—	—	97
Capelin	*Mallotus villosus*	—	63	—	—	—	—
Sablefish	*Anoplopoma fimbria*	—	—	—	—	5	47

Table 7.—cont.

Common Name	Scientific name	Strait June	Strait July	Strait August	Coastal June	Coastal July	Coastal August
Walleye pollock[4]	*Gadus chalcogrammus*	35	—	—	2	3	—
Spiny Lumpsucker	*Eumicrotremus orbis*	8	11	11	—	—	—
Prowfish	*Zaprora silenus*	1	1	7	4	3	1
Unknown larvae		—	—	—	4	—	—
Pacific sandfish	*Trichodon trichodon*	1	5	—	1	—	—
Squid	Gonatidae	—	—	—	7	—	—
Smooth Lumpsucker	*Aptocyclus ventricosus*	4	1	—	—	—	—
Soft sculpin	*Gilbertidia sigalutes*	1	3	—	—	—	—
Lingcod	*Ophiodon elongatus*	—	—	—	3	—	—
Wolf-eel	*Anarrhichthys ocellatus*	—	2	1	—	—	—
Pomfret	*Brama japonica*	—	—	—	—	3	—
Pacific cod	*Gadus macrocephalus*	—	—	—	2	—	—
Spiny dogfish	*Squalus acanthias*	—	—	—	2	—	—
3-spine stickleback	*Gasterosteus aculeatus*	—	—	1	—	—	—
Black rockfish	*Sebastes melanops*	—	—	—	1	—	—
Starry flounder	*Platichthys stellatus*	1	—	—	—	—	—
Big mouth sculpin	*Hemitripterus bolini*	1	—	—	—	—	—
Pacific halibut	*Hippoglossus stenolepis*	—	1	—	—	—	—
Non-salmonid subtotals		44,585	7,199	58	27	15	147

[1]Juvenile
[2]Immature
[3]Adult
[4]Larvae or young-of-the-year

Table 8.—Frequency of occurrence of monthly salmonid and non-salmonid catches from rope trawl hauls in strait (n = 85) and coastal (n = 12) marine habitats of the northern region of southeastern Alaska, June–August 2014. The percent frequency of occurrence is shown in parentheses. Dash indicates no samples. See Table 2 for sampling effort by month and habitat.

		Strait				Coastal			
Common name	Scientific name	June	July	August	(%)	June	July	August	(%)
Salmonids									
Pink salmon[1]	*Oncorhynchus gorbuscha*	23	27	27	(91)	—	4	2	(50)
Chum salmon[1]	*O. keta*	24	27	26	(91)	1	4	3	(67)
Sockeye salmon[1]	*O. nerka*	25	28	25	(92)	3	4	2	(75)
Coho salmon[1]	*O. kisutch*	22	28	25	(88)	3	4	1	(67)
Coho salmon[3]	*O. kisutch*	1	9	15	(29)	1	1	—	(17)
Chinook salmon[1]	*O. tshawytscha*	3	6	10	(22)	2	—	—	(17)
Chinook salmon[2]	*O. tshawytscha*	6	2	6	(16)	3	—	—	(25)
Chum salmon[3]	*O. keta*	5	7	1	(15)	—	—	—	(0)
Pink salmon[3]	*O. gorbuscha*	4	8	—	(14)	—	1	—	(8)
Sockeye salmon[3]	*O. nerka*	2	—	—	(2)	1	—	—	(8)
Chinook salmon[3]	*O. tshawytscha*	—	2	2	(5)	—	—	—	(0)
Dolly Varden	*Salvelinus malma*	1	—	—	(1)	—	—	—	(0)
Non-salmonids									
Pacific herring	*Clupea pallasi*	3	10	8	(25)	—	—	—	(0)
Walleye pollock[3]	*Gadus chalcogrammus*	17	9	3	(34)	1	—	—	(8)
Crested sculpin	*Blepsias bilobus*	15	23	15	(62)	—	1	2	(25)
Surf smelt	*Hypomesus pretiosus*	—	—	—	(0)	—	—	1	(8)
Capelin	*Mallotus villosus*	—	4	—	(5)	—	—	—	(0)
Sablefish	*Anoplopoma fimbria*	—	—	—	(0)	—	1	2	(25)
Walleye pollock[4]	*Gadus chalcogrammus*	7	—	—	(8)	1	2	—	(25)

Table 8.—cont.

Common name	Scientific name	Strait				Coastal			
		June	July	August	(%)	June	July	August	(%)
Spiny Lumpsucker	*Eumicrotremus orbis*	7	5	7	(22)	—	—	—	(0)
Prowfish	*Zaprora silenus*	1	1	6	(9)	3	2	1	(50)
Unknown larvae		4	—	—	(5)	2	—	—	(17)
Pacific sandfish	*Trichodon trichodon*	1	4	—	(6)	1	—	—	(8)
Squid	Gonatidae	—	—	—	(0)	3	—	—	(25)
Smooth Lumpsucker	*Aptocyclus ventricosus*	4	1	—	(6)	—	—	—	(0)
Soft sculpin	*Gilbertidia sigalutes*	1	3	—	(5)	—	—	—	(0)
Lingcod	*Ophiodon elongatus*	—	—	—	(0)	1	—	—	(8)
Wolf-eel	*Anarrhichthys ocellatus*	—	2	1	(4)	—	—	—	(0)
Pomfret	*Brama japonica*	—	—	—	(0)	—	1	—	(8)
Pacific cod	*Gadus macrocephalus*	—	—	—	(0)	1	—	—	(8)
Spiny dogfish	*Squalus acanthias*	—	—	—	(0)	1	—	—	(8)
3-spine stickleback	*Gasterosteus aculeatus*	—	—	1	(1)	—	—	—	(0)
Black rockfish	*Sebastes melanops*	—	—	—	(0)	1	—	—	(8)
Starry flounder	*Platichthys stellatus*	1	—	—	(1)	—	—	—	(0)
Big mouth sculpin	*Hemitripterus bolini*	1	—	—	(1)	—	—	—	(0)
Pacific halibut	*Hippoglossus stenolepis*	—	1	—	(1)	—	—	—	(0)

[1]Juvenile
[2]Immature
[3]Adult
[4]Larvae or young-of-the-year (YOY)

Table 9.—Juvenile salmon catch conversions for the FV *Northwest Explorer* (*NWE*) from rope trawl hauls in strait habitat of the marine waters of the northern region of southeastern Alaska, June-August 2014: mean catch-per-unit-effort (CPUE); mean Ln(CPUE+1); calibration factors; mean calibrated Ln(CPUE+1); and back-calculated mean nominal CPUE. Calibration factors were developed from paired comparisons between commercial and research vessels, and were used to standardize catches to the NOAA ship *John N. Cobb* ("Cobb units"; Wertheimer et al. 2010).

		NWE		Calibration	"Cobb units"	
Species	Month	CPUE	Ln(CPUE+1)	Factor	Ln(CPUE+1)	CPUE
Pink	June	243.5	3.64	0.659	2.40	27.0
	July	393.1	5.18		3.40	43.2
	August	102.6	4.04		2.66	18.2
Chum	June	137.1	3.61	0.705	2.54	25.4
	July	59.7	3.40		2.40	14.8
	August	11.1	2.22		1.56	4.5
Sockeye	June	89.9	3.29	0.848	2.69	39.5
	July	32.9	3.11		2.64	18.0
	August	6.6	1.69		1.42	4.3
Coho	June	18.3	2.24	0.803	1.80	8.9
	July	18.0	2.74		2.20	9.4
	August	4.2	1.38		1.11	2.6

Table 10.—Length (mm, fork), weight (g), Fulton's condition [$(g/mm^3)\cdot(10^5)$], and condition residuals (CR) from length-weight regression analysis of juvenile pink salmon captured in the marine waters of the northern region of southeastern Alaska by rope trawl, June–August 2014. Dashes indicate no samples.

		June				July				August			
Locality	Factor	*n*	range	mean	se	*n*	range	mean	se	*n*	range	mean	se
Upper Chatham Strait	Length	465	80-144	102	1	709	83-195	126	1	670	105-298	183	1
	Weight	332	4.2-26.4	9.5	0.2	400	5.0-49.1	22.2	0.5	397	19.5-285.3	67.2	1.6
	Condition	332	0.7-1.2	0.8	0.0	400	0.7-1.2	0.9	0.0	397	0.8-1.3	1.0	0.0
	CR	332	-0.22-0.31	-0.05	0.00	400	-0.25-0.27	0.02	0.00	397	-0.20-0.30	0.00	0.00
Icy Strait	Length	549	63-135	102	0	862	76-186	127	1	663	108-282	175	1
	Weight	395	2.0-22.4	9.4	0.2	481	5.4-58.4	21.1	0.4	392	11.4-232.5	57.8	1.4
	Condition	395	0.7-1.0	0.8	0.0	481	0.7-1.2	0.9	0.0	392	0.8-1.2	1.0	0.0
	CR	395	-0.23-0.19	-0.04	0.00	481	-7.09-0.28	-0.01	0.01	392	-3.60-0.23	0.00	0.01
Icy Point	Length	—	—	—	—	262	79-234	131	1	27	135-192	162	3
	Weight	—	—	—	—	187	4.4-144.1	22.7	1.1	27	21.8-70.6	40.8	2.3
	Condition	—	—	—	—	187	0.8-1.2	0.9	0.0	27	0.9-1.1	0.9	0.0
	CR	—	—	—	—	187	-0.17-0.19	-0.01	0.01	27	-0.11-0.13	-0.01	0.01
Total	Length	1,014	63-144	102	0	1,833	76-234	127	0	1,360	105-298	179	1
	Weight	727	2.0-26.4	9.5	0.1	1,068	4.4-144.1	21.8	0.3	816	11.4-285.3	61.8	1.0
	Condition	727	0.7-1.2	0.8	0.0	1,068	0.7-1.2	0.9	0.0	816	0.8-1.3	1.0	0.0
	CR	727	-0.23-0.31	-0.05	0.00	1,068	-7.09-0.28	0.00	0.01	816	-3.60-0.30	0.00	0.00

Table 11.—Length (mm, fork), weight (g), Fulton's condition [(g/mm^3)·(10^5)], and condition residuals (CR) from length-weight regression analysis of juvenile chum salmon captured in the marine waters of the northern region of southeastern Alaska by rope trawl, June–August 2014.

		June				July				August			
Locality	Factor	*n*	range	mean	se	*n*	range	mean	se	*n*	range	mean	se
Upper Chatham Strait	Length	389	77-143	105	1	441	68-199	124	1	154	119-244	197	2
	Weight	303	4.0-26.9	11.1	0.2	358	6.1-71.7	21.8	0.6	154	15.8-159.9	82.3	2.1
	Condition	303	0.4-1.3	0.9	0.0	358	0.8-15.5	1.0	0.0	154	0.9-1.2	1.0	0.0
	CR	303	-0.82-0.35	-0.03	0.01	358	-0.16-2.85	0.05	0.01	154	-0.09-0.15	0.02	0.00
Icy Strait	Length	557	68-154	104	0	470	87-185	131	1	160	113-250	188	2
	Weight	430	3.0-32.2	10.8	0.2	388	6.2-61.1	24.6	0.5	160	17.3-174.4	72.6	2.1
	Condition	430	0.8-1.2	0.9	0.0	388	0.8-2.2	1.0	0.0	160	0.9-1.2	1.0	0.0
	CR	430	-0.24-0.24	-0.07	0.00	388	-0.17-0.82	0.02	0.00	160	-0.13-0.23	0.03	0.00
Icy Point	Length	2	101-114	107.5	6.5	159	106-233	142	1	17	158-220	201	4
	Weight	2	8.6-13.1	10.9	2.3	109	10.6-139.2	29.5	1.5	17	36.6-122.3	85.6	4.7
	Condition	2	0.8-0.9	0.9	0.0	109	0.8-1.1	1.0	0.0	17	0.9-1.2	1.0	0.0
	CR	2	-0.12--0.07	-0.09	0.02	109	-0.14-0.15	0.00	0.01	17	-0.06-0.15	0.02	0.01
Total	Length	948	68-154	104	0	1070	68-233	130	1	331	113-250	193	1
	Weight	735	3.0-32.2	10.9	0.1	855	6.1-139.2	24.0	0.4	331	15.8-174.4	77.8	1.4
	Condition	735	0.4-1.3	0.9	0.0	855	0.8-15.5	1.0	0.0	331	0.9-1.2	1.0	0.0
	CR	735	-0.82-0.35	-0.05	0.00	855	-0.17-2.85	0.03	0.00	331	-0.13-0.23	0.03	0.00

Table 12.—Length (mm, fork), weight (g), Fulton's condition [$(g/mm^3)\cdot(10^5)$], and condition residuals (CR) from length-weight regression analysis of juvenile sockeye salmon captured in the marine habitat of the northern region of southeastern Alaska by rope trawl, June–August 2014.

		June				July				August			
Locality	Factor	*n*	range	mean	se	*n*	range	mean	se	*n*	range	mean	se
Upper Chatham Strait	Length	394	81-217	129	1	355	70-210	143	2	56	110-255	172	4
	Weight	319	5.9-76.9	22.3	0.6	303	4.1-100.8	36.9	1.2	56	10.9-192.1	60.0	4.7
	Condition	319	0.8-1.2	1.0	0.0	303	0.8-1.2	1.1	0.0	56	0.8-1.2	1.0	0.0
	CR	319	-0.2-0.19	-0.03	0.00	303	-0.18-0.2	0.04	0.00	56	-0.18-0.1	0.00	0.01
Icy Strait	Length	502	79-191	123	1	447	62-225	151	1	124	102-256	176	2
	Weight	406	4.2-75.8	19.9	0.5	357	2.4-122.6	41.1	1.0	124	8.7-197.5	62.6	2.5
	Condition	406	0.6-1.2	0.9	0.0	357	0.8-1.2	1.1	0.0	124	0.8-1.2	1.1	0.0
	CR	406	-0.43-0.24	-0.05	0.00	357	-0.26-0.16	0.04	0.00	124	-0.17-0.16	0.03	0.01
Icy Point	Length	8	105-234	176.3	13.4	61	117-210	165	3	3	167-200	178	11
	Weight	8	11.3-139.0	64.0	13.7	53	13.6-100.7	50.2	3.5	3	42.5-73.1	53.0	10.1
	Condition	8	1.0-1.1	1.0	0.0	53	0.8-1.2	1.0	0.0	3	0.9-0.9	0.9	0.0
	CR	8	-0.08-0.07	-0.01	0.02	53	-0.15-0.13	-0.01	0.01	3	-0.15--0.1	-0.13	0.01
Total	Length	904	79-234	126	1	863	62-225	149	1	183	102-256	175	2
	Weight	733	4.2-139.0	21.4	0.4	713	2.4-122.6	40.0	0.8	183	8.7-197.5	61.6	2.2
	Condition	733	0.6-1.2	1.0	0.0	713	0.8-1.2	1.1	0.0	183	0.8-1.2	1.1	0.0
	CR	733	-0.43-0.24	-0.04	0.00	713	-0.26-0.2	0.03	0.00	183	-0.18-0.16	0.02	0.00

Table 13.—Length (mm, fork), weight (g), Fulton's condition [$(g/mm^3)\cdot(10^5)$], and condition residuals (CR) from length-weight regression analysis of juvenile coho salmon captured in the marine habitat of the northern region of southeastern Alaska by rope trawl, June–August 2014.

		June				July				August			
Locality	Factor	*n*	range	mean	se	*n*	range	mean	se	*n*	range	mean	se
Upper Chatham Strait	Length	335	125-240	181	1	259	146-282	208	2	52	205-306	243	4
	Weight	287	22.0-181.2	70.6	1.6	259	36.2-271.3	107.9	2.6	52	100.6-354.8	174.4	8.6
	Condition	287	0.9-2.0	1.1	0.0	259	0.9-1.3	1.1	0.0	52	1.0-1.3	1.2	0.0
	CR	287	-0.30-0.60	-0.02	0.00	259	-0.24-0.17	-0.01	0.00	52	-0.15-0.12	-0.01	0.01
Icy Strait	Length	158	130-247	178	2	239	145-275	209	2	65	169-317	242	3
	Weight	158	21.5-160.0	65.1	1.9	239	30.3-245.5	107.4	2.7	65	56.9-453.4	177.8	7.8
	Condition	158	0.9-1.3	1.1	0.0	239	0.7-1.3	1.1	0.0	65	1.1-1.4	1.2	0.0
	CR	158	-0.30-0.19	-0.02	0.00	239	-0.50-0.14	-0.03	0.00	65	-0.14-0.18	0.02	0.01
Icy Point	Length	26	157-263	223.2	5.5	12	224-330	261	9	2	244-289	267	23
	Weight	26	41.7-238.1	141.2	10.7	12	135.6-436.9	230.0	24.7	2	188.1-315.4	251.8	63.7
	Condition	26	1.1-1.4	1.2	0.0	12	1.1-1.3	1.2	0.0	2	1.3-1.3	1.3	0.0
	CR	26	-0.06-0.16	0.02	0.01	12	-0.07-0.09	0.04	0.02	2	0.08-0.09	0.08	0.01
Total	Length	519	125-263	182	1	510	145-330	210	1	119	169-317	243	2
	Weight	471	21.5-238.1	72.7	1.5	510	30.3-436.9	110.5	2.1	119	56.9-453.4	177.6	5.8
	Condition	471	0.9-2.0	1.1	0.0	510	0.7-1.3	1.1	0.0	119	1.0-1.4	1.2	0.0
	CR	471	-0.30-0.60	-0.02	0.00	510	-0.50-0.17	-0.02	0.00	119	-0.15-0.18	0.01	0.01

Table 14.—Length (mm, fork), weight (g), Fulton's condition [$(g/mm^3)\cdot(10^5)$], and condition residuals (CR) from length-weight regression analysis of juvenile Chinook salmon captured in the marine habitat of the northern region of southeastern Alaska by rope trawl, June–August 2014. Dash indicates no samples.

		June				July				August			
Locality	Factor	*n*	range	mean	se	*n*	range	mean	se	*n*	range	mean	se
Upper Chatham Strait	Length	4	174-281	231	23	2	194-321	258	64	5	200-269	220	12
	Weight	4	68.5-303.7	169.3	49.1	2	94.1-419.1	256.6	162.5	4	102.7-282.4	159.6	41.4
	Condition	4	1.1-1.4	1.3	0.1	2	1.3-1.3	1.3	0.0	4	1.3-1.5	1.4	0.0
	CR	4	-0.23-0.07	-0.03	0.07	2	-0.12-0.03	-0.04	0.07	4	0.03-0.12	0.06	0.02
Icy Strait	Length	—	—	—	—	6	140-274	205	20	27	180-273	219	4
	Weight	—	—	—	—	6	32.4-280.1	127.1	39.8	27	75.2-269.0	141.2	7.9
	Condition	—	—	—	—	6	1.1-1.4	1.2	0.1	27	1.2-1.5	1.3	0.0
	CR	—	—	—	—	6	-0.20-0.07	-0.02	0.04	27	-0.11-0.14	0.02	0.01
Icy Point	Length	4	197-245	220	11	—	—	—	—	—	—	—	—
	Weight	4	92.6-200.3	141.2	23.8	—	—	—	—	—	—	—	—
	Condition	4	1.2-1.4	1.3	0.0	—	—	—	—	—	—	—	—
	CR	4	-0.03-0.03	0.00	0.01	—	—	—	—	—	—	—	—
Total	Length	8	174-281	226	12	8	140-321	218	21	32	180-273	219	4
	Weight	8	68.5-303.7	155.3	25.8	8	32.4-419.1	159.5	47.4	31	75.2-282.4	143.5	8.4
	Condition	8	1.1-1.4	1.3	0.0	8	1.1-1.4	1.2	0.0	31	1.2-1.5	1.3	0.0
	CR	8	-0.23-0.07	-0.02	0.03	8	-0.20-0.07	-0.03	0.03	31	-0.11-0.14	0.03	0.01

Table 15.—Release and recovery information decoded from coded-wire tags (CWT) recovered from coho and Chinook salmon lacking an adipose fin. Fish were captured in the marine waters of the northern region of southeastern Alaska by rope trawl, June–August 2014. Station code acronyms and coordinates are shown in Table 1.

		Release information						Recovery information							
Species	CWT Code	Brood year	Agency[1]	Locality	Date	FL (mm)	W (g)	Locality	Station code	2014 Date	FL (mm)	W (g)	Age	Days[2] since release	Distance traveled (km)
							June								
Chinook	042690	2011	ADFG	Chilkat R., AK (Wild)	5 /14/2013	70	3.7	Chatham Str.	UCC	7/1	377		1.1	413	120
Chinook	090719	2012	ODFW	Umatilla River, OR	4 /9 /2014		34.4	Icy Point	IPC	6/29	230	157.1	1.0	81	1600
Chinook	No tag							Icy Point	IPC	6/29	208	114.9			
Chinook	No tag							Icy Point	IPC	6/29	245	200.3			
Chinook	No tag							Icy Point	IPD	6/29	375	700.0			
Coho	043364	2012	ADFG	Auke Creek, AK (Wild)	6 /14/2014			Chatham Str.	UCB	7/2	205	106.8	1.0	18	60
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Icy Strait	ISC	6/30	173	54.3	1.0	12	115
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Chatham Str.	UCC	7/1	172	59.8	1.0	13	70
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Chatham Str.	UCC	7/2	175	58.7	1.0	14	70
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Chatham Str.	UCC	7/2	164	41.3	1.0	14	70
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Chatham Str.	UCC	7/2	162	46.7	1.0	14	70
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Chatham Str.	UCD	7/1	160	45.0	1.0	13	90
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Chatham Str.	UCD	7/1	164	48.8	1.0	13	90
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Chatham Str.	UCD	7/2	165	45.8	1.0	14	90
Coho	043487	2012	DIPAC	Gastineau Channel, AK	6 /18/2014		27.5	Icy Strait	ISD	6/28	150	34.9	1.0	10	87
Coho	043487	2012	DIPAC	Gastineau Channel, AK	6 /18/2014		27.5	Chatham Str.	UCC	7/2	159	48.7	1.0	14	70
Coho	090622	2012	ODFW	Clackamas R., OR	4 /23/2014		33.1	Icy Point	IPC	6/29	247	186.1	1.0	67	1600
Coho	No tag							Icy Point	IPC	6/29	259	238.1			
Coho	No tag							Icy Point	IPC	6/29	240	190.8			
Coho	No tag							Icy Point	IPD	6/29	176	60.9			
							July								
Chinook	030722	2012	NMFS	Little Port Walter, AK	5 /15/2014	125	24.4	Icy Strait	ISA	7/29	246	212.8	1.0	75	225
Chinook	031673	2012	NMFS	Little Port Walter, AK	5 /15/2014	133	31.1	Chatham Str.	UCC	7/31	194	94.1	1.0	77	200
Coho	042094	2012	ADFG	Berners R., AK (Wild)	6 /2 /2014	100		Icy Strait	ISB	7/29	200	99.8	1.0	57	90

Table 16.—cont.

		Release information						Recovery information							
Species	CWT Code	Brood year	Agency[1]	Locality	Date	FL (mm)	W (g)	Locality	Station code	2014 Date	FL (mm)	W (g)	Age	Days[2] since release	Distance traveled (km)
Coho	042094	2012	ADFG	Berners R., AK (Wild)	6 /2 /2014	100		Chatham Str.	UCB	8/1	222	119.4	1.0	60	80
Coho	043281	2012	NSRAA	Kasnyku Bay, AK	5 /27/2014		24.9	Icy Strait	ISB	7/29	240	176.8	1.0	63	135
Coho	043281	2012	NSRAA	Kasnyku Bay, AK	5 /27/2014		24.9	Chatham Str.	UCB	8/1	242	153.3	1.0	66	100
Coho	043364	2012	ADFG	Auke Creek, AK (Wild)	6 /14/2014			Icy Strait	ISD	7/27	223	130.0	1.0	43	65
Coho	043369	2012	ADFG	Berners R., AK (Wild)	6 /9 /2014	100		Icy Strait	ISA	7/29	220	121.4	1.0	50	95
Coho	043369	2012	ADFG	Berners R., AK (Wild)	6 /9 /2014	100		Icy Strait	ISD	7/27	190	77.5	1.0	48	90
Coho	043369	2012	ADFG	Berners R., AK (Wild)	6 /9 /2014	100		Icy Strait	ISD	7/29	178	61.3	1.0	50	90
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Icy Strait	ISB	7/29	215	125.6	1.0	41	115
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Icy Strait	ISC	7/30	185	74.1	1.0	42	115
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Chatham Str.	UCA	8/1	236	147.7	1.0	44	97
Coho	043486	2012	DIPAC	Sheep Creek, AK	6 /18/2014		31.9	Chatham Str.	UCA	8/1	236	150.3	1.0	44	97
Coho	043486	2012	DIPAC	Thane net pens, AK	6 /18/2014		31.9	Chatham Str.	UCC	8/1	211		1.0	44	70
Coho	043487	2012	DIPAC	Gastineau Channel, AK	6 /18/2014		27.5	Icy Strait	ISB	7/30	241	100.3	1.0	42	90
Coho	043487	2012	DIPAC	Gastineau Channel, AK	6 /18/2014		27.5	Chatham Str.	UCA	8/1	201	89.7	1.0	44	76
Coho	043487	2012	DIPAC	Gastineau Channel, AK	6 /18/2014		27.5	Chatham Str.	UCA	8/1	211	103.9	1.0	44	76
Coho	043584	2012	ADFG	Cowee Creek, AK	5 /15/2014	80	4.8	Chatham Str.	UCC	7/31	172	54.7	1.0	77	80
Coho	No tag							Icy Point	IPC	7/28	269	255.7			
Coho	No tag							Chatham Str.	UCD	7/31	186	72.2			
August															
Chinook	041026	2012	ADFG	Taku River, AK (Wild)	5 /10/2014	77	5.0	Icy Strait	ISD	8/29	222	131.4	1.0	111	215
Coho	042779	2012	ADFG	Berners R., AK (Wild)	6 /9 /2014	100		Icy Strait	ISA	8/31	234	141.3	1.0	83	95
Coho	043487	2012	DIPAC	Gastineau Channel, AK	6 /18/2014		27.5	Chatham Str.	UCC	9/1	244	151.3	1.0	75	70
Coho	043585	2012	ADFG	Cowee Creek, AK	5 /2 /2014	106	11.2	Icy Strait	ISC	8/30	250	189.5	1.0	114	90

[1] ADFG = Alaska Department of Fish and Game; AKI = Armstrong Keta Inc.; DIPAC = Douglas Island Pink and Chum Inc.; KNFC = Kake Non-profit Fisheries Corporation; NMFS = National Marine Fisheries Service; NSRAA = Northern Southeast Regional Aquaculture Association; ODFW = Oregon Department of Fish and Wildlife; SSRAA = Southern Southeast Regional Aquaculture Association.

[2] Days since release may include freshwater residency, such as for salmon fry marked and released in fall that over-wintered in freshwater and smolted the subsequent year.

Table 16.—Stock-specific information on 1,441 juvenile chum salmon released from regional enhancement facility sites and captured in the marine waters of the northern region of southeastern Alaska by rope trawl, June-August 2014. Length (mm, fork), weight (g), Fulton's condition [$(g/mm^3) \cdot (10^5)$], and condition residuals (CR) from length-weight regression analysis are reported for each stock group. Dash indicates no samples. L/L = late large fish releases. See Table 15 for agency acronyms.

		June				July				August			
Locality	Factor	n	range	mean	se	n	range	mean	se	n	range	mean	se
						DIPAC							
Upper Chatham Strait	Length	219	79-130	105	1	30	100-182	135	4	2	155-176	166	11
	Weight	219	4.0-20.0	11.0	0.2	30	9.0-61.5	26.7	2.2	2	35.7-55.7	45.7	10.0
	Condition	219	0.7-1.3	0.9	0.0	30	0.9-1.1	1.0	0.0	2	1.0-1.0	1.0	0.0
	CR	219	-0.24-0.35	-0.03	0.01	30	-0.06-0.16	0.05	0.01	2	-0.02-0.03	0.00	0.02
Icy Strait	Length	213	76-126	105	1	48	100-163	134	2	5	157-187	170	5
	Weight	213	3.4-20.5	10.3	0.2	48	9.3-40.6	24.3	1.3	5	36.1-69.7	50.9	5.4
	Condition	213	0.8-1.2	0.9	0.0	48	0.8-1.1	1.0	0.0	5	0.9-1.1	1.0	0.0
	CR	213	-0.21-0.25	-0.07	0.00	48	-0.14-0.21	0.01	0.01	5	-0.05-0.06	0.02	0.02
Icy Point	Length	2	101-114	108	7	24	125-150	138	1	—	—	—	—
	Weight	2	8.6-13.1	10.9	2.3	24	18.7-35.3	26.0	0.8	—	—	—	—
	Condition	2	0.8-0.9	0.9	0.0	24	0.9-1.1	1.0	0.0	—	—	—	—
	CR	2	-0.11--0.07	-0.09	0.02	24	-0.09-0.15	0.01	0.01	—	—	—	—
Total	Length	434	76-130	105	0	102	100-182	135	2	7	155-187	169	4
	Weight	434	3.4-20.5	10.6	0.1	102	9.0-61.5	25.4	0.9	7	35.7-69.7	49.4	4.4
	Condition	434	0.7-1.3	0.9	0.0	102	0.8-1.1	1.0	0.0	7	0.9-1.1	1.0	0.0
	CR	434	-0.24-0.35	-0.05	0.00	102	-0.14-0.21	0.02	0.01	7	-0.05-0.06	0.02	0.01

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
							NSRAA						
							Bear Cove						
Icy	Length	—	—	—	—	4	137-147	141.0	2.3	—	—	—	—
Point	Weight	—	—	—	—	4	25.3-33.7	28.7	1.9	—	—	—	—
(Total)	Condition	—	—	—	—	4	1.0-1.1	1.1	0.1	—	—	—	—
	CR	—	—	—	—	4	0.02-0.09	0.05	0.02	—	—	—	—
							Bear Cove L/L						
Icy	Length	—	—	—	—	2	123-130	126.5	3.5	—	—	—	—
Point	Weight	—	—	—	—	2	17.5-20.5	19.0	1.5	—	—	—	—
(Total)	Condition	—	—	—	—	2	1.0-1.0	1.0	0.1	—	—	—	—
	CR	—	—	—	—	2	-0.03--0.02	-0.03	0.01	—	—	—	—
							Deep Inlet						
Icy	Length	—	—	—	—	10	125-146	135.7	1.9	—	—	—	—
Point	Weight	—	—	—	—	10	16.9-34.4	25.9	1.5	—	—	—	—
(Total)	Condition	—	—	—	—	10	0.9-1.2	1.1	0.1	—	—	—	—
	CR	—	—	—	—	10	-0.11-0.16	0.06	0.03	—	—	—	—
							Deep Inlet L/L						
Icy	Length	—	—	—	—	3	131-138	134.7	2.1	—	—	—	—
Point	Weight	—	—	—	—	3	19.8-24.4	22.5	1.4	—	—	—	—
(Total)	Condition	—	—	—	—	3	0.9-1.0	1.0	0.1	—	—	—	—
	CR	—	—	—	—	3	-0.09--0.03	-0.06	0.02	—	—	—	—

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
							Kasnyku Bay						
Upper	Length	2	99-112	106	7	16	96-150	123	3	—	—	—	—
Chatham	Weight	2	7.5-13.1	10.3	2.8	16	9.1-36.3	19.7	1.7	—	—	—	—
Strait	Condition	2	0.8-0.9	0.9	0.1	16	0.9-1.1	1.0	0.0	—	—	—	—
	CR	2	-0.19--0.01	-0.10	0.09	16	-0.04-0.16	0.06	0.01	—	—	—	—
Icy	Length	1		121		20	105-159	131	3	2	124-143	134	10
Strait	Weight	1		16.3		20	9.7-40.4	22.9	1.8	2	19.2-30.9	25.1	5.9
	Condition	1		0.9		20	0.8-1.1	1.0	0.0	2	1-1.1	1.0	0.0
	CR	1		-0.04		20	-0.11-0.11	0.02	0.01	2	0.05-0.08	0.07	0.02
Icy	Length	—	—	—	—	1		140		—	—	—	—
Point	Weight	—	—	—	—	1		25.5		—	—	—	—
	Condition	—	—	—	—	1		0.9		—	—	—	—
	CR	—	—	—	—	1		-0.04		—	—	—	—
Total	Length	3	99-121	111	6	37	96-159	128	2	2	124-143	134	10
	Weight	3	7.5-16.3	12.3	2.6	37	9.1-40.4	21.6	1.2	2	19.2-30.9	25.1	5.9
	Condition	3	0.8-0.9	0.9	0.1	37	0.8-1.1	1.0	0.0	2	1.0-1.1	1.0	0.0
	CR	3	-0.19--0.01	-0.08	0.05	37	-0.11-0.16	0.03	0.01	2	0.05-0.08	0.07	0.02
							Kasnyku Bay L/L						
Upper	Length	—	—	—	—	11	92-154	119	5	1		140	
Chatham	Weight	—	—	—	—	11	8.7-33.1	17.9	2.1	1		25.2	
Strait	Condition	—	—	—	—	11	0.9-1.1	1.0	0.0	1		0.9	
	CR	—	—	—	—	11	-0.08-0.19	0.06	0.02	1		-0.05	

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
Icy Strait	Length	1		87		7	95-159	128	7	2	152-156	154	2
	Weight	1		5.4		7	9.7-36.2	21.2	3.1	2	37.2-43.5	40.4	3.1
	Condition	1		0.8		7	0.9-1.1	1.0	0.0	2	1.1-1.1	1.1	0.0
	CR	1		-0.12		7	-0.09-0.2	0.02	0.04	2	0.08-0.16	0.12	0.04
Icy Point	Length	—	—	—	—	—	—	—	—	—	—	—	—
	Weight	—	—	—	—	—	—	—	—	—	—	—	—
	Condition	—	—	—	—	—	—	—	—	—	—	—	—
	CR	—	—	—	—	—	—	—	—	—	—	—	—
Total	Length	1		87		18	92-159	123	4	3	140-156	149	5
	Weight	1		5.4		18	8.7-36.2	19.2	1.7	3	25.2-43.5	35.3	5.4
	Condition	1		0.8		18	0.9-1.1	1.0	0.0	3	0.9-1.1	1.0	0.1
	CR	1		-0.12		18	-0.09-0.2	0.04	0.02	3	-0.05-0.16	0.06	0.06
Takatz Bay													
Upper Chatham Strait	Length	—	—	—	—	11	102-135	121	4	—	—	—	—
	Weight	—	—	—	—	11	10.6-23.4	17.6	1.5	—	—	—	—
	Condition	—	—	—	—	11	0.9-1.1	1.0	0.0	—	—	—	—
	CR	—	—	—	—	11	-0.08-0.17	0.02	0.02	—	—	—	—
Icy Strait	Length	6	94-118	109	4	29	114-154	132	2	1		166	
	Weight	6	8.3-14	11.4	0.9	29	13.6-34.4	22.2	1.1	1		45.3	
	Condition	6	0.8-1	0.9	0.0	29	0.8-1.1	0.9	0.0	1		1.0	
	CR	6	-0.16-0.07	-0.08	0.04	29	-0.13-0.12	-0.03	0.01	1		0.00	

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
Icy Point	Length	—	—	—	—	10	127-155	141	3	—	—	—	—
	Weight	—	—	—	—	10	19.2-34.2	26.8	1.8	—	—	—	—
	Condition	—	—	—	—	10	0.9-1	1.0	0.0	—	—	—	—
	CR	—	—	—	—	10	-0.10-0.06	-0.02	0.01	—	—	—	—
Total	Length	6	94-118	109	4	50	102-155	131	2	1		166	
	Weight	6	8.3-14.0	11.4	0.9	50	10.6-34.4	22.1	0.9	1		45.3	
	Condition	6	0.8-1.0	0.9	0.0	50	0.8-1.1	0.9	0.0	1		1.0	
	CR	6	-0.16-0.07	-0.08	0.04	50	-0.13-0.17	-0.02	0.01	1		0.00	
Takatz Bay L/L													
Upper Chatham Strait	Length	4	100-116	108	4	6	96-159	122	11	1		136	
	Weight	4	9.5-15.2	12.1	1.3	6	8.3-40.4	21.1	6.0	1		24.8	
	Condition	4	0.9-1.0	0.9	0.0	6	0.9-1.2	1.0	0.0	1		1.0	
	CR	4	-0.02-0.03	0.01	0.01	6	-0.04-0.18	0.05	0.03	1		0.02	
Icy Strait	Length	5	94-120	107	5	23	105-165	135	4	2	160-167	164	4
	Weight	5	7.1-15.8	10.6	1.7	23	10.6-40.5	24.2	1.9	2	42.8-46.5	44.7	1.8
	Condition	5	0.8-0.9	0.8	0.0	23	0.9-1.1	0.9	0.0	2	1.0-1.0	1.0	0.0
	CR	5	-0.22--0.02	-0.14	0.04	23	-0.13-0.12	-0.02	0.01	2	0.01-0.06	0.04	0.03
Icy Point	Length	—	—	—	—	8	126-161	144	5	—	—	—	—
	Weight	—	—	—	—	8	17-40.8	28.8	3.0	—	—	—	—
	Condition	—	—	—	—	8	0.8-1.0	0.9	0.0	—	—	—	—
	CR	—	—	—	—	8	-0.13-0.07	-0.03	0.03	—	—	—	—
Total	Length	9	94-120	108	3	37	96-165	134	3	3	136-167	154	9
	Weight	9	7.1-15.8	11.2	1.1	37	8.3-40.8	24.7	1.7	3	24.8-46.5	38.0	6.7
	Condition	9	0.8-1.0	0.9	0.0	37	0.8-1.2	1.0	0.0	3	1.0-1.0	1.0	0.0
	CR	9	-0.22-0.03	-0.07	0.03	37	-0.13-0.18	-0.01	0.01	3	0.01-0.06	0.03	0.02

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
						Southeast Cove							
Upper	Length	—	—	—	—	16	100-140	119	2	—	—	—	—
Chatham	Weight	—	—	—	—	16	9.4-28.2	16.2	1.1	—	—	—	—
Strait	Condition	—	—	—	—	16	0.8-1.0	0.9	0.0	—	—	—	—
	CR	—	—	—	—	16	-0.14-0.06	-0.02	0.01	—	—	—	—
Icy	Length	—	—	—	—	9	94-137	125	5	1		169	
Strait	Weight	—	—	—	—	9	6.7-22.5	17.9	1.6	1		47.5	
	Condition	—	—	—	—	9	0.8-1	0.9	0.0	1		1.0	
	CR	—	—	—	—	9	-0.15-0	-0.08	0.02	1		-0.01	
Icy	Length	—	—	—	—	2	124-136	130	6	—	—	—	—
Point	Weight	—	—	—	—	2	17.7-23	20.4	2.6	—	—	—	—
	Condition	—	—	—	—	2	0.9-0.9	0.9	0.0	—	—	—	—
	CR	—	—	—	—	2	-0.05--0.03	-0.04	0.01	—	—	—	—
Total	Length	—	—	—	—	27	94-140	122	2	1		169	
	Weight	—	—	—	—	27	6.7-28.2	17.1	0.9	1		47.5	
	Condition	—	—	—	—	27	0.8-1.0	0.9	0.0	1		1.0	
	CR	—	—	—	—	27	-0.15-0.06	-0.04	0.01	1		-0.01	
						KNFC							
						Gunnuk Creek							
Upper	Length	—	—	—	—	2	129-153	141	12	—	—	—	—
Chatham	Weight	—	—	—	—	2	19-33.7	26.4	7.4	—	—	—	—
Strait	Condition	—	—	—	—	2	0.9-0.9	0.9	0.0	—	—	—	—
	CR	—	—	—	—	2	-0.08--0.04	-0.06	0.02	—	—	—	—

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
Icy Strait	Length	—	—	—	—	1		136		2	129-201	165	36
	Weight	—	—	—	—	1		26.9		2	19.5-88.4	54.0	34.5
	Condition	—	—	—	—	1		1.1		2	0.9-1.1	1.0	0.1
	CR	—	—	—	—	1		0.10		2	-0.06-0.08	0.01	0.07
Icy Point	Length	—	—	—	—	—	—	—	—	—	—	—	—
	Weight	—	—	—	—	—	—	—	—	—	—	—	—
	Condition	—	—	—	—	—	—	—	—	—	—	—	—
	CR	—	—	—	—	—	—	—	—	—	—	—	—
Total	Length	—	—	—	—	3	129-153	139	7	2	129-201	165	36
	Weight	—	—	—	—	3	19.0-33.7	26.5	4.2	2	19.5-88.4	54.0	34.5
	Condition	—	—	—	—	3	0.9-1.1	1.0	0.1	2	0.9-1.1	1.0	0.1
	CR	—	—	—	—	3	-0.08-0.10	-0.01	0.06	2	-0.06-0.08	0.01	0.07
AKI													
Port Armstrong													
Upper Chatham Strait	Length	—	—	—	—	3	160-164	161.7	1.2	—	—	—	—
	Weight	—	—	—	—	3	40.7-41.9	41.5	0.4	—	—	—	—
	Condition	—	—	—	—	3	0.9-1.0	1.0	0.0	—	—	—	—
	CR	—	—	—	—	3	-0.07-0.04	0.00	0.03	—	—	—	—
Icy Strait (Total)	Length	5	126-140	130.4	2.5	2	150-170	160	10	—	—	—	—
	Weight	5	17.3-23.3	19.9	1.1	2	34.2-47.6	40.9	6.7	—	—	—	—
	Condition	5	0.8-1.0	0.9	0.0	2	1.0-1.0	1.0	0.0	—	—	—	—
	CR	5	-0.13-0.00	-0.07	0.02	2	-0.02-0.04	0.01	0.03	—	—	—	—

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
Icy Point	Length	—	—	—	—	8	116-161	145.0	5.1	—	—	—	—
	Weight	—	—	—	—	8	16.0-38.8	30.1	2.6	—	—	—	—
	Condition	—	—	—	—	8	0.9-1.1	1.0	0.0	—	—	—	—
	CR	—	—	—	—	8	-0.08-0.12	0.0	0.0	—	—	—	—
Total	Length	5	126-140	130.4	2.5	13	116-170	151.2	4.0	—	—	—	—
	Weight	5	17.3-23.3	19.9	1.1	13	16.0-47.6	34.4	2.3	—	—	—	—
	Condition	5	0.8-1.0	0.9	0.0	13	0.9-1.1	1.0	0.0	—	—	—	—
	CR	5	-0.13-0.00	-0.07	0.02	13	-0.08-0.12	0.00	0.02	—	—	—	—
SSRAA													
Anita Bay													
Upper Chatham Strait	Length	—	—	—	—	4	144-179	161	7	3	182-211	197	8
	Weight	—	—	—	—	4	29.7-61.3	44.6	6.6	3	63.3-96.7	79.8	9.6
	Condition	—	—	—	—	4	1.0-1.1	1.0	0.0	3	1.0-1.1	1.0	0.0
	CR	—	—	—	—	4	0.02-0.08	0.06	0.01	3	0.02-0.05	0.03	0.01
Icy Strait	Length	—	—	—	—	1		158		14	174-215	194	3
	Weight	—	—	—	—	1		39.4		14	56.6-94.1	77.7	2.8
	Condition	—	—	—	—	1		1.0		14	0.9-1.2	1.1	0.0
	CR	—	—	—	—	1		0.02		14	-0.07-0.16	0.05	0.00
Icy Point	Length	—	—	—	—	2	136-149	143	7	—	—	—	—
	Weight	—	—	—	—	2	22.8-30.9	26.9	4.0	—	—	—	—
	Condition	—	—	—	—	2	0.9-0.9	0.9	0.0	—	—	—	—
	CR	—	—	—	—	2	-0.06--0.04	-0.05	0.00	—	—	—	—

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
Total	Length	—	—	—	—	7	136-179	155	5	17	174-215	195	3
	Weight	—	—	—	—	7	22.8-61.3	38.8	4.8	17	56.6-96.7	78.0	2.7
	Condition	—	—	—	—	7	0.9-1.1	1.0	0.0	17	0.9-1.2	1.1	0.0
	CR	—	—	—	—	7	-0.06-0.08	0.02	0.02	17	-0.07-0.16	0.05	0.01
Burnett Lake													
Upper Chatham Strait	Length	—	—	—	—	—	—	—	—	4	181-205	193.8	5.1
	Weight	—	—	—	—	—	—	—	—	4	59.2-85.7	76.3	6.0
	Condition	—	—	—	—	—	—	—	—	4	1.0-1.1	1.0	0.0
	CR	—	—	—	—	—	—	—	—	4	-0.05-0.1	0.04	0.04
Icy Strait	Length	—	—	—	—	—	—	—	—	4	190-202	193.5	2.8
	Weight	—	—	—	—	—	—	—	—	4	66.8-83.5	72.4	3.8
	Condition	—	—	—	—	—	—	—	—	4	1.0-1.0	1.0	0.0
	CR	—	—	—	—	—	—	—	—	4	-0.04-0.02	-0.01	0.00
Icy Point	Length	—	—	—	—	—	—	—	—	—	—	—	—
	Weight	—	—	—	—	—	—	—	—	—	—	—	—
	Condition	—	—	—	—	—	—	—	—	—	—	—	—
	CR	—	—	—	—	—	—	—	—	—	—	—	—
Total	Length	—	—	—	—	—	—	—	—	8	181-205	193.6	2.7
	Weight	—	—	—	—	—	—	—	—	8	59.2-85.7	74.4	3.3
	Condition	—	—	—	—	—	—	—	—	8	1.0-1.1	1.0	0.0
	CR	—	—	—	—	—	—	—	—	8	-0.05-0.10	0.01	0.02

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
						Kendrick Bay							
Upper Chatham Strait	Length	—	—	—	—	—	—	—	—	23	165-221	201.8	2.5
	Weight	—	—	—	—	—	—	—	—	23	46.1-111.5	85.7	3.2
	Condition	—	—	—	—	—	—	—	—	23	0.9-1.1	1.0	0.0
	CR	—	—	—	—	—	—	—	—	23	-0.06-0.07	0.02	0.01
Icy Strait	Length	—	—	—	—	—	—	—	—	13	167-214	190.2	4.2
	Weight	—	—	—	—	—	—	—	—	13	48.8-103.9	72.7	4.8
	Condition	—	—	—	—	—	—	—	—	13	0.9-1.2	1.0	0.0
	CR	—	—	—	—	—	—	—	—	13	-0.07-0.13	0.04	0.00
Icy Point	Length	—	—	—	—	—	—	—	—	1		202.0	
	Weight	—	—	—	—	—	—	—	—	1		97.2	
	Condition	—	—	—	—	—	—	—	—	1		1.2	
	CR	—	—	—	—	—	—	—	—	1		0.16	
Total	Length	—	—	—	—	—	—	—	—	37	165-221	197.7	2.3
	Weight	—	—	—	—	—	—	—	—	37	46.1-111.5	81.5	2.8
	Condition	—	—	—	—	—	—	—	—	37	0.9-1.2	1.0	0.0
	CR	—	—	—	—	—	—	—	—	37	-0.07-0.16	0.03	0.00
						Nakat Bay							
Upper Chatham Strait	Length	—	—	—	—	—	—	—	—	5	190-210	196	4
	Weight	—	—	—	—	—	—	—	—	5	71.9-103.5	80.8	5.8
	Condition	—	—	—	—	—	—	—	—	5	1.0-1.1	1.1	0.0
	CR	—	—	—	—	—	—	—	—	5	-0.03-0.10	0.05	0.02

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
Icy Strait	Length	—	—	—	—	—	—	—	—	4	181-220	195.8	8.7
	Weight	—	—	—	—	—	—	—	—	4	67.3-109.4	80.1	10.0
	Condition	—	—	—	—	—	—	—	—	4	1.0-1.1	1.1	0.0
	CR	—	—	—	—	—	—	—	—	4	0.00-0.14	0.05	0.03
Icy Point	Length	—	—	—	—	—	—	—	—	1		200.0	
	Weight	—	—	—	—	—	—	—	—	1		78.2	
	Condition	—	—	—	—	—	—	—	—	1		1.0	
	CR	—	—	—	—	—	—	—	—	1		0.0	
Total	Length	—	—	—	—	—	—	—	—	10	181-220	196.5	3.6
	Weight	—	—	—	—	—	—	—	—	10	67.3-109.4	80.2	4.6
	Condition	—	—	—	—	—	—	—	—	10	1.0-1.1	1.0	0.0
	CR	—	—	—	—	—	—	—	—	10	-0.03-0.14	0.04	0.02
Neets Bay (summer)													
Upper Chatham Strait	Length	—	—	—	—	—	—	—	—	31	176-223	198.8	2.3
	Weight	—	—	—	—	—	—	—	—	31	55.4-115.3	81.1	3.0
	Condition	—	—	—	—	—	—	—	—	31	0.9-1.1	1.0	0.0
	CR	—	—	—	—	—	—	—	—	31	-0.09-0.1	0.01	0.01
Icy Strait	Length	—	—	—	—	2	178-185	181.5	3.5	26	163-225	198.0	2.6
	Weight	—	—	—	—	2	57.6-61.1	59.4	1.8	26	43.9-118.1	82.3	3.4
	Condition	—	—	—	—	2	1.0-1.0	1.0	0.0	26	1-1.2	1.0	0.0
	CR	—	—	—	—	2	-0.03-0.03	0.00	0.03	26	-0.05-0.18	0.04	0.01
Icy Point	Length	—	—	—	—	3	156-169	161.7	3.8	2	192-220	206.0	14.0
	Weight	—	—	—	—	3	41.0-43.2	42.0	0.6	2	68.6-109.5	89.1	20.5
	Condition	—	—	—	—	3	0.9-1.1	1.0	0.1	2	1.0-1.0	1.0	0.0
	CR	—	—	—	—	3	-0.10-0.10	0.00	0.00	2	0.00-0.00	0.00	0.00

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
Total	Length	—	—	—	—	5	156-185	169.6	5.4	59	163-225	198.7	1.7
	Weight	—	—	—	—	5	41-61.1	49.0	4.3	59	43.9-118.1	81.9	2.2
	Condition	—	—	—	—	5	0.9-1.1	1.0	0.0	59	0.9-1.2	1.0	0.0
	CR	—	—	—	—	5	-0.1-0.1	0.01	0.03	59	-0.09-0.18	0.02	0.01
						Neets Bay (fall)							
Upper Chatham Strait	Length	—	—	—	—	—	—	—	—	1		188	
	Weight	—	—	—	—	—	—	—	—	1		76.3	
	Condition	—	—	—	—	—	—	—	—	1		1.1	
	CR	—	—	—	—	—	—	—	—	1		0.14	
Icy Strait	Length	—	—	—	—	—	—	—	—	1		194.0	
	Weight	—	—	—	—	—	—	—	—	1		85.5	
	Condition	—	—	—	—	—	—	—	—	1		1.2	
	CR	—	—	—	—	—	—	—	—	1		0.15	
Icy Point	Length	—	—	—	—	—	—	—	—	—	—	—	—
	Weight	—	—	—	—	—	—	—	—	—	—	—	—
	Condition	—	—	—	—	—	—	—	—	—	—	—	—
	CR	—	—	—	—	—	—	—	—	—	—	—	—
Total	Length	—	—	—	—	—	—	—	—	2	188-194	191.0	3.0
	Weight	—	—	—	—	—	—	—	—	2	76.3-85.5	80.9	4.6
	Condition	—	—	—	—	—	—	—	—	2	1.1-1.2	1.2	0.0
	CR	—	—	—	—	—	—	—	—	2	0.14-0.15	0.15	0.01

Table 16.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
						Unmarked stocks							
Upper	Length	34	77-138	106	3	104	87-199	129	2	80	119-244	198	3
Chatham	Weight	34	4.1-26.9	11.8	0.9	104	6.8-71.7	23.6	1.1	80	15.8-159.9	85.0	3.4
Strait	Condition	34	0.8-1.1	0.9	0.0	104	0.8-1.2	1.0	0.0	80	0.9-1.2	1.0	0.0
	CR	34	-0.2-0.17	-0.01	0.02	104	-0.16-0.22	0.06	0.01	80	-0.07-0.15	0.03	0.01
Icy	Length	46	68-142	104	2	124	104-177	140	1	82	113-250	188	3
Strait	Weight	46	3-22	10.2	0.6	124	10.8-56.5	28.3	0.8	82	17.3-174.4	73.7	3.4
	Condition	46	0.8-1	0.9	0.0	124	0.9-1.2	1.0	0.0	82	0.9-1.2	1.0	0.0
	CR	46	-0.23-0.08	-0.08	0.01	124	-0.13-0.18	0.03	0.01	82	-0.12-0.24	0.04	0.01
Icy	Length	—	—	—	—	30	106-233	147	5	13	158-219	200	5
Point	Weight	—	—	—	—	30	10.6-139.2	35.6	5.2	13	36.6-122.3	84.8	5.7
	Condition	—	—	—	—	30	0.9-1.1	1.0	0.0	13	0.9-1.2	1.0	0.0
	CR	—	—	—	—	30	-0.12-0.14	0.01	0.01	13	-0.06-0.14	0.03	0.00
Total	Length	80	68-142	105	2	258	87-233	136	1	175	113-250	193	2
	Weight	80	3-26.9	10.9	0.5	258	6.8-139.2	27.2	0.9	175	15.8-174.4	79.7	2.3
	Condition	80	0.8-1.1	0.9	0.0	258	0.8-1.2	1.0	0.0	175	0.9-1.2	1.0	0.0
	CR	80	-0.23-0.17	-0.05	0.01	258	-0.16-0.22	0.04	0.00	175	-0.12-0.24	0.04	0.00

Table 17.—Stock-specific information on 1,228 juvenile sockeye salmon released from regional enhancement facility sites and captured in the marine waters of the northern region of southeastern Alaska by rope trawl, June-August 2014. Length (mm, fork), weight (g), Fulton's condition [$(g/mm^3) \cdot (10^5)$], and condition residuals (CR) from length-weight regression analysis are reported for each stock group. Dash indicates no samples. See Table 15 for agency acronyms.

		June				July				August			
Locality	Factor	n	range	mean	se	n	range	mean	se	n	range	mean	se
DIPAC													
Speel Arm													
Upper Chatham Strait	Length	98	99-144	127	1	58	136-188	166	1	5	181-218	199	6
	Weight	98	9.0-30.3	20.9	0.4	58	27.0-70.2	50.1	1.3	5	60.6-108.2	83.8	7.7
	Condition	98	0.9-1.2	1.0	0.0	58	0.9-1.2	1.1	0.0	5	1.0-1.1	1.1	0.0
	CR	98	-0.14-0.19	0.01	0.01	58	-0.10-0.15	0.05	0.01	5	-0.07-0.05	0.00	0.02
Icy Strait	Length	102	104-149	121	1	65	134-188	165	1	12	180-207	193	2
	Weight	102	9.8-32.2	18.0	0.4	65	26.6-64.8	48.6	1.0	12	62.6-98.6	80.2	3.4
	Condition	102	0.8-1.1	1.0	0.0	65	1.0-1.2	1.1	0.0	12	1.1-1.2	1.1	0.0
	CR	102	-0.16-0.14	-0.01	0.01	65	-0.07-0.15	0.04	0.01	12	0.00-0.13	0.05	0.01
Icy Point	Length	—	—	—	—	4	141-204	163	15	—	—	—	—
	Weight	—	—	—	—	4	28.9-97.9	50.8	16.1	—	—	—	—
	Condition	—	—	—	—	4	1.0-1.2	1.1	0.0	—	—	—	—
	CR	—	—	—	—	4	-0.01-0.09	0.05	0.00	—	—	—	—
Total	Length	200	99-149	124	1	127	134-204	165	1	17	180-218	195	2
	Weight	200	9.0-32.2	19.4	0.3	127	26.6-97.9	49.4	0.9	17	60.6-108.2	81.3	3.2
	Condition	200	0.8-1.2	1.0	0.0	127	0.9-1.2	1.1	0.0	17	1.0-1.2	1.1	0.0
	CR	200	-0.16-0.19	0.00	0.00	127	-0.10-0.15	0.05	0.00	17	-0.07-0.13	0.03	0.01

Table 17.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
						King Salmon Lake							
Upper	Length	3	127-128	127	0	—	—	—	—	—	—	—	—
Chatham	Weight	3	18.4-20.2	19.4	0.5	—	—	—	—	—	—	—	—
Strait	Condition	3	0.9-1.0	0.9	0.0	—	—	—	—	—	—	—	—
	CR	3	-0.11--0.01	-0.06	0.03	—	—	—	—	—	—	—	—
Icy	Length	1		115		—	—	—	—	—	—	—	—
Strait	Weight	1		13.6		—	—	—	—	—	—	—	—
	Condition	1		0.9		—	—	—	—	—	—	—	—
	CR	1		-0.10		—	—	—	—	—	—	—	—
Icy	Length	—	—	—	—	—	—	—	—	—	—	—	—
Point	Weight	—	—	—	—	—	—	—	—	—	—	—	—
	Condition	—	—	—	—	—	—	—	—	—	—	—	—
	CR	—	—	—	—	—	—	—	—	—	—	—	—
Total	Length	4	115-128	124	3	—	—	—	—	—	—	—	—
	Weight	4	13.6-20.2	18.0	1.5	—	—	—	—	—	—	—	—
	Condition	4	0.9-1.0	0.9	0.0	—	—	—	—	—	—	—	—
	CR	4	-0.11--0.01	-0.07	0.02	—	—	—	—	—	—	—	—
						Sweetheart Lake							
Icy	Length	1		126		3	171-176	173	2	—	—	—	—
Strait	Weight	1		19.9		3	52.3-60.0	55.7	2.3	—	—	—	—
(Total)	Condition	1		1.0		3	1.0-1.1	1.1	0.0	—	—	—	—
	CR	1		0.00		3	0.01-0.06	0.04	0.02	—	—	—	—

Table 17.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
							Tahltan Lake						
Upper	Length	—	—	—	—	2	160-161	161	1		—	——	—
Chatham	Weight	—	—	—	—	2	46.8-49.9	48.4	1.6	—	—	——	—
Strait	Condition	—	—	—	—	2	1.1-1.2	1.2	0.0	—	—	——	—
	CR	—	—	—	—	2	0.11-0.15	0.13	0.02	—	—	——	—
Icy	Length	—	—	—	—	1		148		—	—	—	—
Strait	Weight	—	—	—	—	1		34.4		—	—	—	—
	Condition	—	—	—	—	1		1.1		—	—	—	—
	CR	—	—	—	—	1		0.04		—	—	—	—
Icy	Length	—	—	—	—	—	—	—	—	—	—	—	—
Point	Weight	—	—	—	—	—	—	—	—	—	—	—	—
	Condition	—	—	—	—	—	—	—	—	—	—	—	—
	CR	—	—	—	—	—	—	—	—	—	—	—	—
Total	Length	—	—	—	—	3	148-161	156	4	—	—	—	—
	Weight	—	—	—	—	3	34.4-49.9	43.7	4.7	—	—	—	—
	Condition	—	—	—	—	3	1.1-1.2	1.1	0.0	—	—	—	—
	CR	—	—	—	—	3	0.04-0.15	0.10	0.03	—	—	—	—
							Tatsamenie Lake						
Upper	Length	11	112-148	124	3	7	159-180	169	3	—	—	—	—
Chatham	Weight	11	12.5-31.0	19.3	1.7	7	43.0-59.1	50.7	2.1	—	—	—	—
Strait	Condition	11	0.9-1.1	1.0	0.0	7	1.0-1.1	1.1	0.0	—	—	—	—
	CR	11	-0.12-0.14	-0.02	0.02	7	-0.03-0.08	0.02	0.01	—	—	—	—

Table 17.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
Icy Strait	Length	15	100-143	116	3	3	161-167	165	2	1		155	
	Weight	15	8.5-23.9	14.1	1.0	3	48.9-51.3	49.8	0.8	1		41.4	
	Condition	15	0.8-1.0	0.9	0.0	3	1.1-1.2	1.1	0.0	1		1.1	
	CR	15	-0.22--0.01	-0.12	0.02	3	0.02-0.13	0.08	0.03	1		0.08	
Icy Point	Length	—	—	—	—	—	—	—	—	—	—	—	—
	Weight	—	—	—	—	—	—	—	—	—	—	—	—
	Condition	—	—	—	—	—	—	—	—	—	—	—	—
	CR	—	—	—	—	—	—	—	—	—	—	—	—
Total	Length	26	100-148	120	2	10	159-180	167	2	1		155	
	Weight	26	8.5-31.0	16.3	1.0	10	43.0-59.1	50.5	1.5	1		41.4	
	Condition	26	0.8-1.1	0.9	0.0	10	1.0-1.2	1.1	0.0	1		1.1	
	CR	26	-0.22-0.14	-0.07	0.02	10	-0.03-0.13	0.04	0.02	1		0.08	
						Tuya Lake							
Upper Chatham Strait	Length	—	—	—	—	2	144-172	158	14	—	—	—	—
	Weight	—	—	—	—	2	30.3-56.0	43.2	12.9	—	—	—	—
	Condition	—	—	—	—	2	1.0-1.1	1.1	0.0	—	—	—	—
	CR	—	—	—	—	2	0.00-0.06	0.03	0.03	—	—	—	—
Icy Strait	Length	—	—	—	—	2	102-164	133	31	—	—	—	—
	Weight	—	—	—	—	2	10.9-46.3	28.6	17.7	—	—	—	—
	Condition	—	—	—	—	2	1.0-1.1	1.0	0.0	—	—	—	—
	CR	—	—	—	—	2	0.02-0.06	0.04	0.02	—	—	—	—
Icy Point	Length	—	—	—	—	—	—	—	—	—	—	—	—
	Weight	—	—	—	—	—	—	—	—	—	—	—	—
	Condition	—	—	—	—	—	—	—	—	—	—	—	—
	CR	—	—	—	—	—	—	—	—	—	—	—	—

Table 17.—cont.

Locality	Factor	June n	June range	June mean	June se	July n	July range	July mean	July se	August n	August range	August mean	August se
Total	Length	—	—	—	—	4	102-172	146	16	—	—	—	—
	Weight	—	—	—	—	4	10.9-56.0	35.9	9.9	—	—	—	—
	Condition	—	—	—	—	4	1.0-1.1	1.0	0.0	—	—	—	—
	CR	—	—	—	—	4	0.00-0.06	0.03	0.01	—	—	—	—
Unmarked stocks													
Upper Chatham Strait	Length	147	86-193	131	2	188	79-210	136	2	51	110-255	170	5
	Weight	147	5.9-76.9	23.9	1.1	188	4.1-100.8	31.0	1.5	51	10.9-192.1	57.7	5.0
	Condition	147	0.8-1.2	1.0	0.0	188	0.8-1.2	1.0	0.0	51	0.8-1.2	1.0	0.0
	CR	147	-0.20-0.13	-0.05	0.01	188	-0.18-0.20	0.04	0.00	51	-0.18-0.10	0.01	0.01
Icy Strait	Length	124	79-189	128	2	152	72-214	149	3	110	116-256	175	2
	Weight	124	4.2-75.8	21.4	1.0	152	3.6-100.5	39.8	1.8	110	14.5-197.5	61.4	2.7
	Condition	124	0.6-1.2	0.9	0.0	152	0.8-1.2	1.0	0.0	110	0.9-1.2	1.1	0.0
	CR	124	-0.43-0.14	-0.08	0.01	152	-0.26-0.17	0.02	0.00	110	-0.17-0.16	0.03	0.01
Icy Point	Length	8	105-234	176	13	49	117-210	165	4	3	167-200	178	11
	Weight	8	11.3-139.0	64.0	13.7	49	13.6-100.7	50.1	3.6	3	42.5-73.1	53.0	10.1
	Condition	8	1.0-1.1	1.0	0.0	49	0.8-1.2	1.0	0.0	3	0.9-0.9	0.9	0.0
	CR	8	-0.08-0.07	-0.01	0.02	49	-0.15-0.13	-0.02	0.01	3	-0.15--0.10	-0.13	0.01
Total	Length	279	79-234	131	1	389	72-214	145	2	164	110-256	173	2
	Weight	279	4.2-139.0	23.9	0.9	389	3.6-100.8	36.9	1.2	164	10.9-197.5	60.1	2.4
	Condition	279	0.6-1.2	0.9	0.0	389	0.8-1.2	1.0	0.0	164	0.8-1.2	1.1	0.0
	CR	279	-0.43-0.14	-0.06	0.00	389	-0.26-0.20	0.02	0.00	164	-0.18-0.16	0.02	0.00

Table 18.—Number examined, length (mm, fork), wet weight (g), stomach content as percent body weight (%BW), and feeding intensity (0-100% volume fullness) of 147 potential predators of juvenile salmon captured in marine waters of the northern region of southeastern Alaska by rope trawl, June–August 2014. Dash indicates no samples. For scientific names, see Table 8. For additional feeding data, see Table 19.

		June				July				August			
Species	Factor	*n*	range	mean	sd	*n*	range	mean	sd	*n*	range	mean	sd
Pink Salmon[2]	Length	9	446-562	507	12	12	406-549	511	12	—	—	—	—
	Weight	9	1,150-2,200	1,589	110	12	1,200-2,150	1,775	73	—	—	—	—
	%BW	9	0.0-6.5	2.7	0.9	12	0.0-11.0	2.8	1.1	—	—	—	—
	Fullness	9	0-75	38	11	12	0-75	27	10	—	—	—	—
Chinook salmon[1]	Length	16	318-514	370	13	2	392-405	399	7	8	310-520	365	26
	Weight	16	400-1,700	725	88	2	800-850	825	25	8	400-1,750	698	164
	%BW	16	0.0-26.0	6.2	2.1	2	0.0-7.5	3.8	3.8	8	0.0-75.0	16.0	8.7
	Fullness	16	0-100	57	11	2	0-110	55	55	8	0-110	74	17
Chinook salmon[2]	Length	—	—	—	—	3	515-635	577	35	2	520-620	570	50
	Weight	—	—	—	—	3	1,650-3,750	2,350	700	2	1,800-3,350	2,575	775
	%BW	—	—	—	—	3	0.5-10.0	4.3	2.9	2	17.0-85.0	51.0	34.0
	Fullness	—	—	—	—	3	10-50	23	13	2	75-110	93	18
Chum salmon[2]	Length	11	593-766	654	14	11	576-722	622	12	1		700	
	Weight	11	1,400-9,100	4,500	775	11	1,800-4,300	2,673	230	1		4,300	
	%BW	11	10.0-45.0	24.8	2.8	11	0.0-9.0	3.0	1.1	1		0.0	
	Fullness	11	10-75	47	6	11	0-75	22	8	1		0	
Coho salmon[2]	Length	3	456-618	528	48	12	518-708	621	16	36	465-780	651	11
	Weight	3	1,250-2,800	1,850	480	12	320-5,100	2,642	397	36	520-6,200	3,430	202
	%BW	3	0.0-8.5	3.3	2.6	12	0.0-290.0	85.6	27.4	36	0.0-235.0	25.8	9.1
	Fullness	3	0-75	42	22	12	0-110	80	14	36	0-110	39	8

Table 18.—cont.

Species	Factor	June *n*	June range	June mean	June sd	July *n*	July range	July mean	July sd	August *n*	August range	August mean	August sd
Sockeye salmon[2]	Length	6	462-612	530	22	1		681		—	—	—	—
	Weight	6	1,350-2,850	1,983	258	1		3,900		—	—	—	—
	%BW	6	0.0-7.5	2.6	1.4	1		0.0		—	—	—	—
	Fullness	6	0-100	35	17	1		0		—	—	—	—
Dolly varden[2]	Length	1		273		—	—	—	—	—	—	—	—
	Weight	1		200		—	—	—	—	—	—	—	—
	%BW	1		0.0		—	—	—	—	—	—	—	—
	Fullness	1		0		—	—	—	—	—	—	—	—
Black rockfish[2]	Length	1		496		—	—	—	—	—	—	—	—
	Weight	1		1,950		—	—	—	—	—	—	—	—
	%BW	1		11.0		—	—	—	—	—	—	—	—
	Fullness	1		100		—	—	—	—	—	—	—	—
Pacific sandfish[2]	Length	2	213-241	227	14	4	180-257	221	16	—	—	—	—
	Weight	2	100-150	125	25	4	65-350	154	66	—	—	—	—
	%BW	2	1.8-21.5	11.7	0.0	4	0.0-3.0	0.9	0.0	—	—	—	—
	Fullness	2	100-100	100	0	4	0-100	44	26	—	—	—	—
Starry flounder[2]	Length	1		409		—	—	—	—	—	—	—	—
	Weight	1		800		—	—	—	—	—	—	—	—
	%BW	1		0.0		—	—	—	—	—	—	—	—
	Fullness	1		0		—	—	—	—	—	—	—	—
Spiny dogfish[2]	Length	2	610-785	698	88	—	—	—	—	—	—	—	—
	Weight	2	1,400-2,500	1,950	550	—	—	—	—	—	—	—	—
	%BW	2	0.0-0.0	0.0	0.0	—	—	—	—	—	—	—	—
	Fullness	2	0-0	0	0	—	—	—	—	—	—	—	—

Table 18.—cont.

Species	Factor	June *n*	June range	June mean	June sd	July *n*	July range	July mean	July sd	August *n*	August range	August mean	August sd
Pomfret[2]	Length	—	—	—	—	3	360-375	369	5	—	—	—	—
	Weight	—	—	—	—	3	100-950	667	283	—	—	—	—
	%BW	—	—	—	—	3	3.0-7.5	5.8	1.4	—	—	—	—
	Fullness	—	—	—	—	3	100-100	100	0	—	—	—	—

[1] Immature
[2] Adult

Table 19.—Feeding intensity of 147 potential predators of juvenile salmon captured in rope trawl hauls in the marine waters of the northern region of southeastern Alaska, June–August 2013. Fish were captured in both strait and coastal habitats. For scientific names, see Table 8. See also Table 18.

Predator species	Life history stage	Number examined	Number empty	Percent feeding	Number with salmon	Percent feeders with salmon
Pink salmon	Adult	21	9	57	0	0
Chinook salmon	Immature	26	7	73	0	0
Chinook salmon	Adult	5	0	100	0	0
Chum salmon	Adult	23	4	83	0	0
Coho salmon	Adult	51	22	57	10	20
Sockeye salmon	Adult	7	3	57	1	14
Dolly Varden	Immature	1	1	0	0	0
Black rockfish	Adult	1	0	100	0	0
Pacific sandfish	Adult	6	2	67	0	0
Starry flounder	Adult	1	1	0	0	0
Spiny dogfish	Adult	2	2	0	0	0
Pomfret	Adult	3	0	100	0	0

Appendix 1.—Temperature (°C), salinity (PSU), ambient light (W/m^3), Secchi depth (m), and mixed layer depth (MLD, m; see text for definition) by haul number and station sampled in the marine waters of the northern region of southeastern Alaska, May–August 2014. Station code acronyms are listed in Table 1.

Date	Haul #	Station	Temperature (°C)	Salinity (PSU)	Light level (W/m^3)	Secchi (m)	MLD (m)
22 May	18001	ABM	9.2	25.6	660	1.5	6
23 May	18002	ISA	9.2	30.6	620	2.0	9
23 May	18003	ISB	9.3	30.6	624	2.5	9
23 May	18004	ISC	9.3	30.6	623	3.0	8
23 May	18005	ISD	8.2	30.9	504	2.0	6
23 May	18006	UCA	9.0	30.8	344	4.0	6
23 May	18007	UCB	10.3	30.4	133	4.0	8
23 May	18008	UCC	9.7	30.1	488	4.0	8
23 May	18009	UCD	8.9	30.1	297	4.0	19
27 June	18010	ISD	11.6	26.6	11	5.0	7
27 June	18011	ISC	11.6	26.3	366	—	7
27 June	18012	ISB	12.1	25.7	781	—	6
27 June	18013	ISA	—	—	342	—	—
28 June	18014	ISA	11.4	25.5	120	—	6
28 June	18015	ISB	11.2	28.5	275	—	6
28 June	18016	ISC	11.5	24.7	158	—	6
28 June	18017	ISD	12.1	25.0	235	—	9
28 June	18018	ISC	11.0	26.0	129	—	7
28 June	18019	ISD	12.0	25.0	306	—	6
29 June	18020	IPD	12.1	31.8	228	—	9
29 June	18021	IPC	12.6	31.9	286	—	9
29 June	18022	IPB	12.6	31.9	979	—	6
29 June	18023	IPA	12.5	31.8	373	—	6
30 June	18024	ISD	12.2	24.9	54	—	6
30 June	18025	ISC	11.8	25.3	345	—	6
30 June	18026	ISB	10.8	27.5	—	—	6
30 June	18027	ISA	9.2	29.7	179	—	8
30 June	18028	ISB	10.8	27.5	288	—	—
30 June	18029	ISA	9.2	29.7	—	—	—
30 June	18030	ISD	12.2	24.9	54	—	—
01 July	18031	UCA	9.8	28.4	130	—	—
01 July	18032	UCA	9.8	28.4	—	—	—
01 July	18033	UCB	12.0	22.9	—	—	—
01 July	18034	UCB	12.0	22.9	—	—	—
01 July	18035	UCC	10.9	26.5	361	—	—
01 July	18036	UCD	11.5	25.6	298	—	—

Appendix 1.—cont.

Date	Haul #	Station	Temperature (°C)	Salinity (PSU)	Light level (W/m^3)	Secchi (m)	MLD (m)
02 July	18037	UCD	12.2	23.8	—	—	6
02 July	18038	UCD	12.2	23.8	80	—	—
02 July	18039	UCC	11.7	24.6	—	—	6
02 July	18040	UCB	10.9	26.6	—	—	6
02 July	18041	UCC	11.7	24.6	—	—	6
02 July	18042	UCA	11.5	25.9	658	—	6
03 July	18043	ABM	13.0	19.1	—	—	6
27 July	18044	ISD	12.6	25.4	—	—	9
27 July	18045	ISC	12.3	26.8	288	—	—
27 July	18046	ISB	11.9	27.6	875	—	7
27 July	18047	ISA	11.1	28.3	149	—	6
28 July	18048	IPD	13.7	31.6	—	—	13
28 July	18049	IPC	14.0	31.6	—	—	13
28 July	18050	IPB	13.5	31.4	—	—	8
28 July	18051	IPA	14.0	31.5	—	—	20
29 July	18052	ISD	12.8	23.5	114	—	10
29 July	18053	ISC	12.4	24.5	258	—	7
29 July	18054	ISB	10.4	28.1	251	—	6
29 July	18055	ISB	10.4	28.1	—	—	—
29 July	18056	ISA	10.1	28.9	172	—	7
29 July	18057	ISA	10.1	28.9	—	—	—
30 July	18058	ISA	10.5	28.2	120	—	6
30 July	18059	ISB	18.8	25.0	345	—	6
30 July	18060	ISC	12.3	24.7	—	—	6
30 July	18061	ISD	13.4	21.8	522	—	6
30 July	18062	ISC	13.2	22.8	167	—	6
30 July	18063	ISD	12.9	22.2	—	—	6
31 July	18064	UCA	12.3	25.1	31	—	6
31 July	18065	UCB	12.3	26.6	260	—	6
31 July	18066	UCC	12.2	25.6	576	—	6
31 July	18067	UCC	12.2	25.6	—	—	—
31 July	18068	UCD	13.0	21.6	—	—	—
31 July	18069	UCD	13.0	21.6	570	—	6
01 August	18070	UCA	—	—	—	—	—
01 August	18071	UCA	12.1	25.7	110	—	6
01 August	18072	UCB	12.9	25.4	452	—	6
01 August	18073	UCB	—	—	—	—	—
01 August	18074	UCC	13.5	21.2	658	—	7
01 August	18075	UCD	13.1	22.4	440	—	6
02 August	18076	ABM	13.0	18.8	196	—	6

Appendix 1.—cont.

Date	Haul #	Station	Temperature (°C)	Salinity (PSU)	Light level (W/m^3)	Secchi (m)	MLD (m)
29 August	18077	ISD	11.9	26.7	12	—	15
29 August	18078	ISC	11.3	27.7	53	—	7
29 August	18079	ISB	9.6	29.0	151	—	8
29 August	18080	ISA	9.6	29.1	94	—	11
30 August	18081	ISD	11.9	25.5	26	—	14
30 August	18082	ISC	11.9	24.0		—	11
30 August	18083	ISB	10.5	26.7	176	—	7
30 August	18084	ISA	9.6	28.8	259	—	7
30 August	18085	ISB	10.5	28.3	146	—	6
30 August	18086	ISA	10.0	28.7	89	—	6
31 August	18087	ISA	10.1	28.4	25	—	7
31 August	18088	ISB	11.5	24.9	97	—	7
31 August	18089	ISC	12.2	23.4	127	—	8
31 August	18090	ISD	12.4	21.8	86	—	13
31 August	18091	ISC	12.0	24.0	82	—	10
31 August	18092	ISD	12.4	21.8	119	—	10
01 September	18093	IPD	15.0	31.6	25	—	24
01 September	18094	IPC	14.4	30.1	500	—	23
01 September	18095	IPB	14.5	30.9	568	—	37
01 September	18096	IPA	14.0	29.2	439	—	15
01 September	18097	UCD	11.8	24.6	39	—	8
01 September	18098	UCC	11.6	25.2	147	—	9
02 September	18099	UCB	10.7	28.6	515	—	6
02 September	18100	UCA	11.8	24.1	86	—	6
02 September	18101	UCB	11.3	27.5	171	—	7
02 September	18102	UCA	12.4	19.8	39	—	6
03 September	18103	UCA	11.5	26.1	8	—	6
03 September	18104	UCB	11.4	24.9	28	—	7
03 September	18105	UCC	11.2	27.3	29	—	6
03 September	18106	UCD	11.4	26.8	31	—	7
03 September	18107	UCC	10.7	27.7	134	—	7
03 September	18108	UCD	11.0	27.5	51	—	8
04 September	18109	ABM	11.6	19.4	1	—	8

Appendix 2.—Catch and life history stage of salmonids captured in 97 surface rope trawl hauls from the marine waters of the northern region of southeastern Alaska, June–August 2014. Trawl duration (minutes) is indicated for each haul. Station code acronyms are listed in Table 1.

			Trawl	Juvenile salmon					Immature and adult salmon				
Date	Haul #	Station	time	Pink	Chum	Sockeye	Coho	Chinook	Pink	Chum	Sockeye	Coho	Chinook
27 June	18010	ISD	20	222	269	115	8	0	0	0	0	0	0
27 June	18011	ISC	20	2	4	4	0	0	0	0	0	0	0
27 June	18012	ISB	20	55	50	21	0	0	0	0	0	0	0
27 June	18013	ISA	20	11	37	17	0	0	0	0	0	0	0
28 June	18014	ISA	20	0	0	0	0	0	0	0	0	0	0
28 June	18015	ISB	20	0	0	0	0	0	0	0	0	0	0
28 June	18016	ISC	20	1	4	18	17	0	0	0	0	0	0
28 June	18017	ISD	20	415	311	30	18	0	1	0	0	0	0
28 June	18018	ISC	20	1	3	7	28	0	0	0	0	0	0
28 June	18019	ISD	20	137	124	47	48	0	0	0	0	0	0
29 June	18020	IPD	30	0	0	0	3	0	0	2	0	0	3
29 June	18021	IPC	30	0	0	6	22	3	0	0	0	1	1
29 June	18022	IPB	30	0	0	1	1	0	0	0	0	0	0
29 June	18023	IPA	30	0	2	1	0	1	0	0	0	0	6
30 June	18024	ISD	20	8	4	6	1	0	0	0	0	0	0
30 June	18025	ISC	20	602	405	234	19	0	0	0	0	0	0
30 June	18026	ISB	20	194	72	266	7	0	0	0	0	0	1
30 June	18027	ISA	20	0	0	1	0	0	0	0	0	0	0
30 June	18028	ISB	20	1	11	28	1	0	2	0	0	2	0
30 June	18029	ISA	20	0	0	0	0	0	0	0	0	0	1
30 June	18030	ISD	20	2074	957	372	11	0	0	0	0	0	0
01 July	18031	UCA	20	0	3	0	6	1	0	0	0	0	0
01 July	18032	UCA	20	96	35	7	7	0	0	0	0	0	1
01 July	18033	UCB	20	41	8	8	8	0	0	0	0	0	0
01 July	18034	UCB	20	79	62	57	16	1	0	0	1	0	0

Appendix 2.—cont.

Date	Haul #	Station	Trawl time	Juvenile salmon Pink	Juvenile salmon Chum	Juvenile salmon Sockeye	Juvenile salmon Coho	Juvenile salmon Chinook	Immature and adult salmon Pink	Immature and adult salmon Chum	Immature and adult salmon Sockeye	Immature and adult salmon Coho	Immature and adult salmon Chinook
01 July	18035	UCC	20	62	135	56	28	0	0	1	1	0	1
01 July	18036	UCD	20	922	290	475	35	0	0	0	0	0	0
02 July	18037	UCD	20	5	8	2	40	0	0	0	0	0	1
02 July	18038	UCD	20	0	0	3	59	2	0	0	2	0	0
02 July	18039	UCC	20	4	4	40	51	0	1	0	4	3	0
02 July	18040	UCB	20	66	78	84	75	0	3	0	0	0	0
02 July	18041	UCC	20	205	74	110	32	0	0	0	1	0	1
02 July	18042	UCA	20	2	19	12	3	0	0	0	0	0	0
27 July	18044	ISD	20	205	10	6	33	0	1	0	0	0	0
27 July	18045	ISC	20	63	12	6	20	0	0	0	0	0	1
27 July	18046	ISB	20	318	62	87	22	1	0	0	1	0	0
27 July	18047	ISA	20	40	10	3	4	0	0	1	0	0	1
28 July	18048	IPD	30	105	23	2	1	0	0	0	0	0	0
28 July	18049	IPC	30	75	62	32	4	0	1	1	0	0	0
28 July	18050	IPB	30	265	132	26	6	0	0	0	0	0	0
28 July	18051	IPA	30	37	10	1	1	0	0	0	0	0	0
29 July	18052	ISD	20	2149	400	22	25	0	0	0	0	0	0
29 July	18053	ISC	20	92	17	7	37	0	0	0	0	0	0
29 July	18054	ISB	20	370	90	12	21	1	0	1	2	0	0
29 July	18055	ISB	20	49	6	3	6	2	0	0	0	0	0
29 July	18056	ISA	20	117	24	11	17	0	1	2	0	0	1
29 July	18057	ISA	20	203	39	5	2	2	0	0	0	0	0
30 July	18058	ISA	20	0	0	2	5	0	0	0	0	0	0
30 July	18059	ISB	20	106	19	31	13	0	0	0	0	0	0
30 July	18060	ISC	20	64	37	100	12	0	0	0	0	0	0
30 July	18061	ISD	20	1109	97	81	10	0	0	0	0	0	0
30 July	18062	ISC	20	234	12	61	7	0	2	1	1	0	0
30 July	18063	ISD	20	1111	81	35	5	0	0	0	0	0	0

Appendix 2.—cont.

Date	Haul #	Station	Trawl time	Juvenile salmon					Immature and adult salmon				
				Pink	Chum	Sockeye	Coho	Chinook	Pink	Chum	Sockeye	Coho	Chinook
31 July	18064	UCA	20	127	24	22	19	0	1	0	0	0	0
31 July	18065	UCB	20	337	59	25	25	0	0	0	3	0	0
31 July	18066	UCC	20	72	15	40	6	0	0	1	0	0	0
31 July	18067	UCC	20	120	22	20	10	1	1	1	0	0	0
31 July	18068	UCD	20	77	30	11	20	0	0	0	0	0	0
31 July	18069	UCD	20	50	2	7	13	0	0	0	0	0	0
01 August	18070	UCA	20	27	9	7	50	1	0	1	0	0	0
01 August	18071	UCA	20	119	18	21	16	0	1	0	1	0	0
01 August	18072	UCB	20	463	58	60	27	0	1	2	0	0	0
01 August	18073	UCB	20	214	53	43	40	0	0	0	1	0	1
01 August	18074	UCC	20	465	60	40	33	0	0	1	0	0	0
01 August	18075	UCD	20	1130	213	60	20	0	3	0	2	0	0
29 August	18077	ISD	20	42	9	20	11	11	0	0	0	0	3
29 August	18078	ISC	20	31	3	7	17	1	0	0	0	0	0
29 August	18079	ISB	20	154	28	16	9	7	0	0	0	0	1
29 August	18080	ISA	20	7	0	0	1	4	0	0	0	0	0
30 August	18081	ISD	20	30	6	2	2	1	0	0	0	0	0
30 August	18082	ISC	20	209	18	6	4	0	0	1	0	0	0
30 August	18083	ISB	20	126	14	25	6	0	0	2	0	0	0
30 August	18084	ISA	20	0	0	1	0	0	0	0	0	0	0
30 August	18085	ISB	20	101	5	7	1	0	0	2	0	0	0
30 August	18086	ISA	20	1	1	0	0	0	0	0	0	0	0
31 August	18087	ISA	20	9	5	5	8	0	0	4	0	0	0
31 August	18088	ISB	20	281	15	8	2	0	0	4	0	0	0
31 August	18089	ISC	20	198	16	14	2	0	0	4	0	0	1
31 August	18090	ISD	20	73	5	1	1	0	0	0	0	0	0
31 August	18091	ISC	20	564	31	8	1	0	0	1	0	0	0
31 August	18092	ISD	20	93	6	4	0	2	0	0	0	0	0

Appendix 2.—cont.

Date	Haul #	Station	Trawl time	Juvenile salmon					Immature and adult salmon				
				Pink	Chum	Sockeye	Coho	Chinook	Pink	Chum	Sockeye	Coho	Chinook
01 September	18093	IPD	30	0	0	0	0	0	0	0	0	0	0
01 September	18094	IPC	30	0	2	0	0	0	0	0	0	0	0
01 September	18095	IPB	30	1	7	1	0	0	0	0	0	0	0
01 September	18096	IPA	30	26	8	2	2	0	0	0	0	0	0
01 September	18097	UCD	20	101	14	3	6	2	0	1	0	0	1
01 September	18098	UCC	20	94	13	4	6	1	0	2	0	0	0
02 September	18099	UCB	20	123	9	13	6	0	0	1	0	0	0
02 September	18100	UCA	20	77	30	4	2	0	0	1	0	0	0
02 September	18101	UCB	20	54	8	6	6	0	0	0	0	0	0
02 September	18102	UCA	20	40	10	0	3	0	0	0	0	0	1
03 September	18103	UCA	20	27	12	4	6	0	0	1	0	0	0
03 September	18104	UCB	20	143	13	8	7	1	0	0	0	0	1
03 September	18105	UCC	20	127	17	4	1	1	0	2	0	0	1
03 September	18106	UCD	20	68	13	5	3	0	0	4	0	0	0
03 September	18107	UCC	20	51	10	2	2	0	0	0	0	0	1
03 September	18108	UCD	20	48	5	3	4	0	0	6	1	0	0

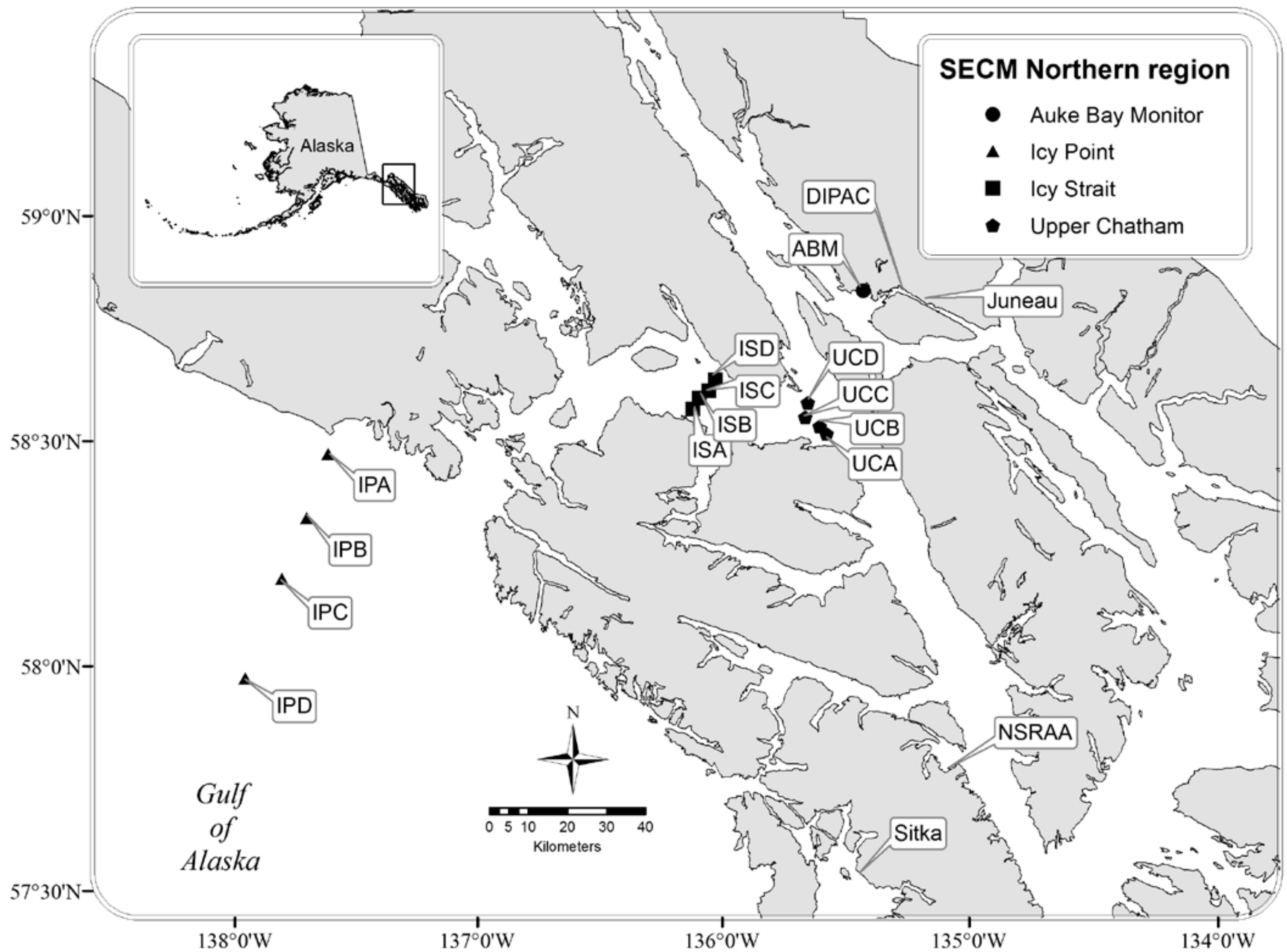

Figure 1.—Stations sampled at inshore, strait, and coastal habitats in the marine waters of the northern region of southeastern Alaska, May–August 2014 by the Southeast Coastal Monitoring (SECM) project. Transect and station coordinates and station code acronyms are shown in Table 1