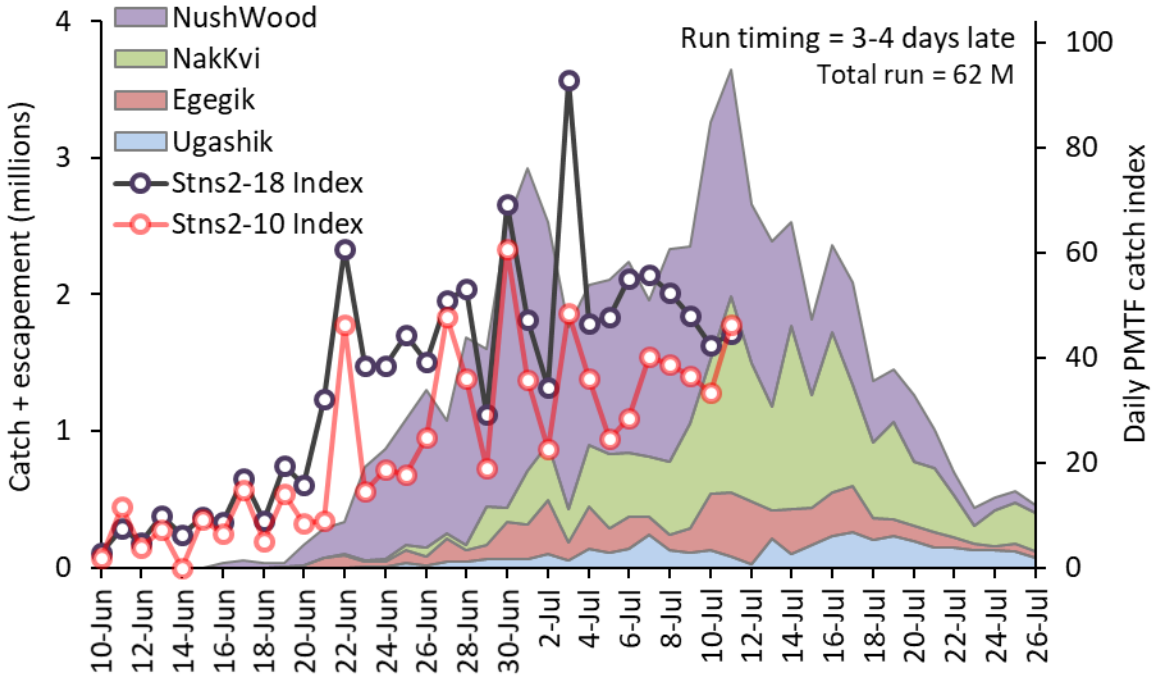
Annual Report for the 2018 Port Moller Test Fishery



Prepared for

Bristol Bay Science and Research Institute
P.O. Box 1464
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and

Bristol Bay Fisheries Collaborative
www.bbsri.org/bbfc

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Annual Report for the 2018 Port Moller Test Fishery

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EXECUTIVE SUMMARY

In 2018, the PMTF operated from June 10 to July 11 and caught 3,104 sockeye salmon. For the first time in the history of the project a second vessel, the F/V *Icelander*, fished outer stations (as far out as Station 24 on some days) during June 15-22. This narrow glimpse of the portion of fish migrating offshore of stations fished historically provided key information and motivation for sampling further offshore in 2018 with the R/V *Pandalus* from June 23 onward. The greater test fishing coverage across stations provided fishery managers and industry with a clearer and more accurate picture of the developing run. Industry responded by better positioning its assets in the path of arriving fish, thus providing a larger harvest than would have occurred without a second-vessel effort.

Using a second vessel in 2018 to sample the entirety of the test fishing transect even for a few days confirmed that a second mode of fish were migrating offshore. This information was unknowable based on historical data and could not have been modeled if only Stations 2-10 or even Stations 2-12 had been fished, which would likely have happened based the standard decision rule for adaptive sampling. Not even fishing out to Station 14 would have produced the peak catch on multiple days.

The discovery of a large second mode of fish migrating past Port Moller further offshore calls into question the comparison of PMTF results across years. The bimodal nature of the catch indices across the fishing transect observed in 2018 demonstrated that if the test fishery continues to rely solely on adaptive sampling and modeling the outer “tail” with a single vessel, then a biased depiction of run development may result. Some of the tails in past years were likely the beginning of modes beyond the stations fished.

The 2018 run was the largest inshore run on record coming in at 62.3 million (similar but likely larger than the 1980 run), and run timing was estimated to be 3-4 days late. The magnitude and lateness of the 2018 run was similar to those from recent years (2015-2017), although the stock composition differed substantially. This year, an unprecedented 33.5 million fish returned to the Nushagak District.

The run forecasts by district released on July 7 (Interpretation #4) proved to be more or less accurate. The run was projected to build inshore through July 12 and begin tapering on July 13-14; the run turned out to reach its crescendo on July 11 before declining on July 12. Again, using catches from the outer stations increased accuracy of the inshore pattern predicted from Port Moller. Likewise, the seasonal trend in stock composition estimates from Port Moller aligned reasonably well with those based on catch and escapement lagged backwards to the test fishery.

Recommendations for 2019:

- Augment spatial and temporal test fishing coverage with a second vessel and crew.
    - A single vessel cannot logistically sample the span of stations required to sufficiently intercept the run. The bimodal pattern exhibited across the transect in 2018 prevents the modeling of catches at outer stations, nor can modeling provide stock composition estimates from fish traveling beyond the traditionally fished stations. For these reasons, two vessels are required to adequately sample the entirety of the test fishing transect if we are to improve the inseason forecast accuracy of run magnitude, composition, and timing.
    - Sustained late-season catches at Port Moller from 2014 through 2018 have made it difficult to determine the annual date of peak passage and project the magnitude of the remaining tail. This missed temporal coverage has also made it difficult to characterize the late-season performance of PMTF as the stock composition of the run changes from earlier in the season. Thus, we recommend that the test fishery be set up to operate through July 15 in 2019, should the run mimic recent seasons. Extending test fishing beyond the first week of July with a single vessel that begins the project on June 10 has been difficult due to a several factors.
    - One option to consider that would both extend the spatial coverage across the transect and fish later into the run would be to stagger the start dates of the two boats: one could begin fishing on June 10 and operate for ~3 weeks and a second vessel could begin approximately June 20 and operate through ~July 15. Such an arrangement would provide greater spatial coverage over the peak of the run at PMTF compared to what was achieved in 2018, more equally distribute effort between the two crews, and make it feasible to secure a second charter vessel at this time of the year.
- Continue to compare monofilament net to multi-strand net. Fishing shorter sets sometimes hinders our ability to obtain enough fish for stock composition estimates. Using monofilament instead of multi-strand webbing might make the net more difficult for fish to see (especially on light-weather days) and perhaps increase catchability at the PMTF. If catchability is affected by weather and sea state, a monofilament could also reduce the intra-season variability in catchability. In 2018, too few samples were collected from a monofilament net fished at the same time and place as the standard multi-strand net for a robust comparison of catches. In 2019, additional paired samples could be collected from a second vessel to provide more definitive evidence as to whether a monofilament net could substantially increase catchability.

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INTRODUCTION

The Port Moller Test Fishery (PMTF) has been conducted since 1967 with drift gillnets set at stations offshore from Port Moller, Alaska (Figure 1; Randall 1977; Eggers and Fried 1984). Historically, the primary goal has been to predict run strength of sockeye salmon (*Oncorhynchus nerka*) traveling past Port Moller returning to natal streams in Bristol Bay approximately one week prior to their arrival in the various terminal commercial fishing districts. The PMTF now typically operates from around June 10 through July 10 each year and offers a preliminary test of preseason sockeye salmon forecasts. Results from the PMTF give Bristol Bay processors, fishermen, and the Alaska Department of Fish and Game (ADF&G) time to respond to suspected departures from these forecasts (Helton 1991). In addition, this information is used by fishermen when deciding which districts to fish. Though the data from the PMTF is not the primary decision support upon which the fishery is prosecuted, managers use it for an indication of overall and stock-specific run strength (comprised of catch + escapement or C+E).

The five pertinent descriptors of the run are as follows: (1) magnitude, (2) timing, (3) entry pattern, (4) stock composition, and (5) age composition. Run magnitude, stock, and age compositions are self-explanatory. Run timing is defined as how many days early or late the average day of return is compared to the historical average. Entry pattern refers to the shape of the distribution of the daily inshore run (defined as the harvest plus escapement in Bristol Bay fishing districts) over time. The spatial resolution of these descriptors can be district-specific or aggregated to represent the bay wide run. Furthermore, forecasts of these descriptors can be proximate (i.e., over the next several days, the range of which is determined by the travel time estimate) or for the remainder of the season (i.e., yearend). Yearend district-specific forecasts are the most useful to stakeholders.

The data informing us about these descriptors vary with respect to the timing and their reliability in season. In chronological order they are as follows: (1) age composition, (2) stock composition, and (3) catch indices. Initial age and stock compositions are typically released by ADF&G after the 6th sampling trip at the PMTF (around June 21) and provide the first proximate forecasts of these descriptors. Districts differ as to when their catch indices become quasi-reliable for proximate forecasting of run magnitude. The Egegik and Nushagak-Wood Districts have the earliest run timing and begin to exhibit a more reliable relationship between PMTF catches and the inshore run around June 25 during early years, but sometimes as late as July 2 during late years. The Naknek-Kvichak District follows a few days later, and the Ugashik District later still. However, the Ugashik District is especially difficult given the long travel time between the fishing district and the escapement enumeration site (6-10 days). If few openers occur at the beginning of the season to produce district catches, then relating PMTF indices to eventual Ugashik C+E requires waiting on fish to show in the escapement. Yearend forecasts for all these descriptors, as well as run timing are not available until catches at the PMTF have

peaked and then declined. The decline is necessary to know when the peak has occurred, after which the tail of the run can often be projected to forecast the remaining inshore run. However, changes in the district-specific estimates of return-per-index (RPI; i.e., the number of fish inshore that each index point at the PMTF represents) after about June 30 often obfuscate yearend forecasts.

This report describes the project's objectives, how the test fishery works, the results from 2018, and recommendations for the 2019 project. In the Appendices, we also compile major results and daily updates provided to processors, fishermen, managers, and the public during the 2018 season. Daily catch updates in 2018 summarized the year-to-date catches by station, mean body length, water temperature, and fishing conditions; catch interpretations were released periodically providing context for the catches and forecast models regarding fishing conditions at fishing districts (Appendix A). Also appended are reports that were issued periodically by ADF&G throughout the season summarizing stock (Appendix B) and age compositions (Appendix C) of the Port Moller catches, and daily run summaries of inshore catch and escapement to each fishing district (Appendix D).

Finally, two of the recommendations from the report on the 2017 test fishery (Raborn et al. 2018) were partially implemented and tested during 2018. First, we hypothesized that an unknown portion of the run was passing beyond the stations typically fished. Therefore, during the 2018 season a second vessel, the F/V *Icelander*, was used to sample Stations 14-24 from June 15 to June 22. Second, we hypothesized that using monofilament (instead of the standard multi-strand material) might make the net more difficult for fish to see and most likely increase catchability at the PMTF. If so, increased catches might alleviate the difficulties in achieving adequate sample sizes for genetic stock composition estimates. Thus, we used the *Icelander* to make paired sets with the standard multifilament and monofilament nets as time allowed. The results of these tests are presented as a first approximation of the utility of these recommendations.

OBJECTIVES

The 2018 Port Moller test fishing project was managed by the Bristol Bay Science and Research Institute (BBSRI) in collaboration with ADF&G to achieve three main objectives:

1. Collect and report a variety of data useful for forecasting various descriptors of the run.
2. Inform stakeholder decisions by analyzing and interpreting these data to provide information in a timely manner.
3. Continue adaptive management of the PMTF by testing changes to gear and sampling protocols that could improve forecast accuracy without disrupting the standard data stream that stakeholders expect and rely upon.

METHODS

Study Area and Project Timing

The PMTF samples at stations located along a transect from Port Moller to Cape Newenham, Bristol Bay, Alaska (Figure 1). Stations are 5 miles apart, with Station 1 being 30 miles offshore from Port Moller and Station 12 being 85 miles offshore. Since 1987, only even numbered stations have been fished during both the outbound and inbound trips. Through 2015, typically 5 stations were fished (Stations 2-10; Table 1). In 2016, Station 12 was added to the daily schedule. In 2017, seven stations were fished: Stations 2, 4, 6, 8, 10, 12, and 14 (35–95 miles from Port Moller). For the first time in the history of the project, Stations 16-24 were sampled in 2018 by a second vessel.

During a routine trip, the crew would sample outbound from Port Moller beginning at Station 2 and fish even numbered stations out to the outer station (Station 10, 12, or 14) where they would anchor for the night. The next day sampling would continue from the outer station back to Station 2 before returning to Port Moller. However, the catch results from fishing the outer stations with the second vessel proved that the distribution along the fishing transect in 2018 was distributed further offshore. As such, Station 2 was dropped on most days for the second half of the season, and stations were fished as far out as time and energy would allow.

Most Bristol Bay sockeye salmon reach the fishing districts between the end of June and the middle of July, with the peak in the fishery typically occurring on or around July 5. Sockeye salmon travel time from Port Moller to the Bristol Bay fishery usually takes about one week, so the standard PMTF has generally begun on June 10 or 11 and has ended on July 10 or 11. During 2018, the second vessel augmented the standard program by sampling outer stations from June 15 to June 22.

Net Descriptions

Standard Multi-Strand Net

The PMTF net used in 2018 was the same net that has been used since 2011, consisting of four alternating 50-fathom shackles of 5⅛ in (13.0 cm) mesh and 4½ in (11.4 cm) multi-strand mesh, 60 meshes deep, hung at a 2:1 ratio. The multiple mesh panels minimize fish size selectivity of the net across the four major age groups of Bristol Bay sockeye salmon (ages 1.2, 2.2, 1.3, and 2.3). Selectivity between panels and mesh sizes has been examined in past PMTF reports and expanded further in Raborn and Link (in prep.). Further information regarding net descriptions and historical setup can be found in Nemeth et al. (2016). Only catches from the standard net were used to generate catch indices upon which forecasts were based.

Monofilament Experimental Net

A 100-mesh deep net made of four alternating 50-fathom shackles of 5 in (12.7 cm) and 4½ in monofilament mesh hung at a 2:1 ratio was tested alongside the standard net described above from the second vessel. This effort was undertaken to assess whether a deeper, less conspicuous net would increase catch rates. If so, then variability in catch rates due to varying water visibility may be reduced, and genetic sample sizes increased if switching to such gear proved feasible in the future.

Fish Sampling Protocol

Throughout the entire test fishing season (June 10-July 11), the R/V *Pandalus*, a 72 ft (22 m) research vessel owned by ADF&G, was used to sample the standard inner stations and some outer stations as time allowed. A second vessel, the F/V *Icelander* (a 100-foot tender) was used to fish outer stations from June 15 to June 22. Catch indices used for forecasting were based on gear and sampling protocols consistent between the two vessels (i.e., only data from multi-strand sets fished in a similar manner were used to compute station-specific daily indices that were reported and used in forecasting).

Fish Capture

At each station, a single net was deployed. Drift gillnet sets lasted for approximately 23 min (range=17-37 min), and deployment was perpendicular to the migratory path of the salmon on the north-south axis (Helton 1991). Sets have been shorter in recent years than those prior to 2015 to reduce the possibility of net saturation from affecting the index (Nemeth et al. 2016). The extra time saved each day from switching to single, shorter sets allowed for the addition of extra stations to be sampled in recent years. Typically, it took 5-6 min to deploy the full length of the net. After setting the net, the vessel moved as far away as possible from the net while maintaining visual contact. To standardize effort among years, skippers, and vessels, no attempt was made to hook or run the net to increase catch.

Time was recorded when the trailing buoy was deployed, when the net was fully set, when retrieval began, and when the net was fully in. Catches were converted to catch-per-unit-effort (CPUE; fish per 200 fathom hours) to adjust for small differences in fishing times among sets (larger catches take longer to pick and cause the net to fish longer). Mean fishing time (*MFT*) in minutes for each set was:

$$MFT = SI - FO + \frac{(FO - SO) + (FI - SI)}{2}$$

Where, *SO*=time of day the gillnet first entered water, *FO*=time the gillnet was fully deployed, *SI*=time the gillnet retrieval began, and FI=time the gillnet retrieval was completed. CPUE was calculated as number of fish caught divided by *MFT* and multiplied by 60 to provide fish per 200 fathom-hours. Fish were identified to species and enumerated. Sockeye salmon

were sexed based on external morphology, measured for length (mid eye fork length—MEFL), and sampled for age and genetic analysis (described below). Further information regarding net deployment protocols are in the 2015 PMTF report (Nemeth et al. 2016).

Age and Stock Composition Estimates

Fish were sampled for stock composition analysis and age on the test fishery vessels' decks immediately following each fishing event at each station. For stock composition analysis, tissue samples were collected from sockeye salmon by clipping the axillary process of the pelvic fin. Tissues were placed into grid squares on individually-barcoded preservation sheets and desiccated. Samples were offloaded at the end of each sampling trip for shipment to Anchorage. Genetic analyses were conducted at ADF&G's Gene Conservation Laboratory (GCL) using established TaqMan chemistry and statistical methods. Stock composition estimates from PMTF samples are usually made available three to four days after sample collection. Appendix B provides the 2018 stock composition estimates reported by ADF&G.

For age composition analysis, scales were removed from all sockeye salmon captured, whenever possible. Scales were aged according to European notation (Koo 1962). Thus, numerals preceding the decimal refer to the number of freshwater annuli and numerals following the decimal refer to the number of marine annuli. Total age from time of egg deposition is the sum of these two numbers plus one to account for incubation time. Age estimations were made by ADF&G personnel in King Salmon using acetate impressions of scales under low (10x) magnification using a microfiche reader. The 2018 age composition estimates reported by ADF&G for PMTF, inshore districts, and escapement projects are included in Appendix C.

The Daily Abundance Index

In 2018, missing station-date specific values were interpolated using a generalized nonlinear model with Julian date and station number as covariates fit with approximate thin-plate smoothing splines using the Type=RSMOOTH option within the GLIMMIX Procedure of the statistical software SAS 9.4 (SAS Institute, Inc. 2012).

Historically, two methods of calculating the daily abundance were used. Beginning in 2011, the PMTF has used the Replacement Index (hereafter referred to as just "index"). The daily abundance index used in 2018 was the average CPUE (catch per 1 hour from 200 fathoms of gear) from the entire net across stations on a given day. The daily indices reported in the catch updates included the average from Stations 2-10 to provide continuity among annual reports since 2011; however, outer stations were also included to formulate an index as these additional stations seemed to better describe the dynamics of the 2018 run. As such, the average CPUE from Stations 2-18 was used as the index for the forecast model.

Forecasting Based on the PMTF

Forecasts of age and stock composition, as well as run timing for the inshore run, were simply assumed to be equal to estimates observed at the PMTF through the most recent date. Forecasting run magnitude was more complicated. At the end of the 2011 PMTF project, we began developing a model to forecast the total run magnitude based on inseason catches only. A daily projection model was based on an approach that differs from the historical forecasting method applied to Port Moller data in that it only uses information collected in the current season and not the historical relationship between cumulative indexes and resulting total runs from previous years. This model estimated the run abundance for the aggregate run by applying parameters for travel time (the number of days it takes for fish to travel from Port Moller to inshore; TT) and the RPI. In the Discussion, we review likely reasons for why both methods have yielded substantial forecast error in previous years.

Inseason Reporting of PMTF Information

Inseason, four types of information were distributed regularly using the BBSRI web site (www.bbsri.org) and an email list of 652 addresses (a 32% increase from 2017; Table 2). Each evening catch summaries were sent out. Interpretations of these catches were then distributed in the coming days, depending on how quickly meaningful new information developed. Finally, BBSRI staff distributed ADF&G's genetic stock composition and age composition updates as they became available throughout the season. All four of these update types were numbered in sequence through the season (Appendices A–C).

RESULTS AND DISCUSSION

In 2018, the PMTF operated from June 10 to July 11 and caught 3,104 sockeye salmon. Daily catch updates were sent out by email each evening summarizing the day's catches and environmental conditions (Table 3); interpretive reports were sent out as meaningful information changed, or new insights were possible (Table 4). Age composition and genetic-based stock composition estimates were forwarded to the distribution email list soon after receipt from ADF&G. New to 2018 was that briefer summaries of the daily indices and the stock composition estimates were also provided entirely within the body of the email message. This was done in response to requests from fishermen whose limited cellular coverage often precluded them from downloading the email attachments. Below we first discuss the utility of having a second vessel and then characterize the performance of the PMTF in 2018.

Utility from Using a Second Vessel

The second vessel, F/V *Icelander*, used during the 2018 PMTF was funded at the last minute and barely came to fruition (see email dated June 22, 2018 at the bottom of Appendix A), yet provided key information during its involvement and motivation for sampling further

offshore after its departure mid-season. This additional information and altered sampling strategy by the *Pandalus* afforded a more accurate preview of the developing C+E inseason. Table 5 shows the station-date specific index values provided in the daily PMTF catch updates with those covered by the *Icelander* and some noteworthy coverage by the Pandalus after June 22. Key results from the second boat effort can be placed into two categories: (1) those obtained when the *Icelander* was fishing, and (2) those obtained by the *Pandalus* subsequently because of the *Icelander* results.

First, the *Icelander* sets provided a clear and early identification of the large offshore component to the run (Figure 2). Given the large pre-season forecast to the Nushagak District, this result was comforting. Although the Nushagak District dominated both inshore and offshore stations, we learned that fish from other districts were migrating offshore of the stations historically fished as well (e.g., Egegik and the Naknek-Kvichak; Figure 3). While small compared to the Nushagak District on these dates, the relative fractions of these districts migrating offshore was substantial. What is still unknown is whether these fractions change as a typical season progresses.

Second, the *Icelander* established a clear need to push the fishing effort by the *Pandalus* further offshore (Figure 2). Fishing beyond Stations 10 or 12 has been very difficult to do in the past because any changes in protocol were based on an unwritten decision rule defined by the catch pattern across Stations 6, 8 and 10. That is, if catch indices increase substantially from inner to outer stations then Station 12 would be fished (though sometimes not until the next day). The qualifier, “substantially”, has always been subjective. Based on this rule, neither of the key results above would have been obtained had we simply adhered to this adaptive sampling strategy in 2018 with a single boat. Perhaps on June 22 Station 12 would have fished due to the index increasing from 25 at Station 8 to 85 at Station 10; but then the decline to an index of 34 at Station 12 would have triggered a return to the inner station only protocol. All of the large indices (and genetic samples) would have been missed at least through July 2. Maybe Station 12 would have been fished on July 3, July 6, and July 11, but maybe not.

Table 1 shows the frequency at which stations have been fished from 1987 to 2018. Following the departure of the *Icelander*, the *Pandalus* made 15 sets at Station 14 (only spot checked here and there during two years prior to 2017), and another 15 sets combined at Stations 16 and 18 (never fished before 2018). In short, adding the *Icelander* to the 2018 test fishery made it possible to discover a second mode of migrating salmon of a magnitude and trajectory that few suspected. This information was unknowable based on historical data and could not have been modeled if only Stations 2-10 or even Stations 2-12 had been fished (Table 5). Not even fishing out to Station 14 would have produced the peak daily index on multiple days in 2018. The bimodal nature of the catch indices across the fishing transect in 2018 demonstrated that if the test fishery continues to rely solely on adaptive sampling and modeling the outer “tail”, then a biased depiction of run development may result. As we have asserted previously (Raborn et al. 2017), some of the tails at PMTF in past years were likely the

beginning offshore modes.

This occurrence may explain the difficulty in relating catch magnitude and composition at the PMTF to the inshore C+E in years past. For instance, in 2018 a daily catch index produced only from Stations 2-10 depicts a more variable passage rate, does not track the inshore catch and escapement as well, and causes greater daily forecast error rates than an index based on Stations 2-18 (Figure 4). The 2-18 index further shows run timing past Port Moller to be about three days later than the 2-10 index. While not perfect, the catch trends at Port Moller would likely have tracked the run even better had all stations (2-24) been fished for the entirety of the season.

The addition of a second vessel allowed some more time and energy for research that could potentially improve the test fishery in the longer term. Our primary motive for the second-vessel effort was to estimate the magnitude of the run migrating beyond the stations typically fished, and so that endeavor took precedence. As time allowed, we also used the *Icelander* to make paired sets with the standard multifilament and monofilament nets. With 20 paired sets, the results of this test are presented as a first approximation of whether switching to a monofilament net could increase catch rates (Figure 5). Initial findings were that catch rates were similar between the two nets with a few exceptions. For one of the paired sets where catch from the monofilament net was substantially greater, the crew noted the entire catch in the monofilament set came from the bottom third of net (i.e., below the depth fished by the multi-strand net). Therefore, the large difference on that set may be attributed to a net-depth effect rather than a net-material effect.

The ultimate goal of the PMTF is to improve the prosecution of the fishery by conserving weak stocks and harvesting abundance stocks. The second-vessel effort combined with redistributed fishing effort subsequently from the *Pandalus* positively influenced the prosecution of the fishery in 2018. Based on discussions with fishery managers, fishermen, and fleet managers the large offshore indices combined with a large Nushagak fraction in June and into early July “held” more of the fleet in the Nushagak District to target its record return. Less fishing power would have been present in this district had the PMTF only provided indices (and erroneous stock composition estimates) from the inner, traditional stations. In addition, the detection of high passage on the last day of PMTF (albeit it only a single-day sample), provided impetus to industry to prepare for a late and significant tail. These outcomes likely resulted in greater harvest than would have occurred had only a single vessel operated in 2018.

2018 Run Characterization and Performance of the PMTF

The discovery of a large second mode of fish migrating past Port Moller further offshore calls into question the comparison of PMTF results across years. As such, we will only compare C+E across years and focus how well Port Moller tracked the run in 2018. The 2018 run was the largest on record coming in at 62.3 million, and run timing was estimated to be 3-4 days late. The magnitude and lateness of the 2018 run was similar to those from recent years (2015-

2017), although the stock composition differed substantially (Figure 6). This year, an unprecedented 33.5 million fish returned to the Nushagak District.

The run forecasts by district released on July 7 (Interpretation #4; Appendix A) proved to be more or less accurate. The run was projected to build inshore through July 12 and begin tapering on July 13-14; the run turned out to reach its crescendo on July 11 before declining on July 12. Again, using catches from the outer stations increased accuracy of the inshore pattern predicted from Port Moller (Figure 4). Likewise, the seasonal trend in stock composition estimates from Port Moller aligned reasonably well with those based on C+E lagged backwards to the test fishery with estimated TT parameters (Figure 7). Remaining disparities between observations and model predictions could have resulted from mis-interpolation of missing values for outer stations subsequent to the *Icelander's* departure causing mis-estimation of RPI parameters, inseason changes in TT parameters, and random noise in the relationship.

The value of this test fishery is greatest when the run deviates substantially from the historical average run timing. The past four years have been prime examples of its utility as district C+E was much lower than expected early on given the magnitude of the preseason forecast. Because of the late and large runs in 2015-2017, many stakeholders suspected the same pattern may occur in 2018 and were looking at Port Moller as an indicator as to if or when C+E would increase. The sudden increase in the daily index on June 22, which was sustained albeit with occasional dips and spikes through July 7, provided evidence that the run was not early and on still track to at least reach the preseason forecast. Like last year, the relatively high index on the final day of test fishing, July 11, left everyone wondering if the strength of the run's tail would be of similar magnitude to recent years and when the run would start to decline.

FUTURE WORK AND RECOMMENDATIONS

Intercept More of the Run at the PMTF—Fish Farther Offshore and Later into the Run

The addition of Stations 16-24 in 2018 has shown the extent to which fish can be missed beyond the outer stations fished during a typical year by a single boat. While the *Pandalus* was able to fish out to Station 16 and occasionally Station 18, this effort is not sustainable by a single boat throughout the entirety of a season, especially during rougher weather and heavy fish days. Furthermore, fishing the outer stations came at the expense of skipping Station 2 and sometimes Station 4. The bimodal pattern exhibited across the transect prevents the modeling of catches at outer stations. For these reasons, two vessels will be required to adequately sample the entirety of the test fishing transect if we are to improve the inseason forecast accuracy of run magnitude, composition, and timing.

Sustained late-season catches at Port Moller from 2014 to present made it difficult to determine the date of peak passage and project the magnitude of the remaining tail. Missing

fishing days at the end of the run when catches remain high is much more problematic than missing catches at the beginning of the season. Even in 2013, the earliest run on record, missing June 10–11 would not have hindered our ability to determine the peak day of passage. For late years, data from June 10–11 matter even less. The increased value of late-season data also applies to stock composition estimates. Stock composition estimates from the last week of sampling are far more valuable than the first set of estimates, which represent few fish and usually pool samples from June 10–15 (to have enough samples) thereby obscuring the results. Thus, we recommend that at the outset the test fishery be set up to operate through July 15 in 2019 in the event PMTF catches remain high through July 10.

Extending test fishing beyond the first week of July with a single vessel that begins the project on June 10 has been difficult due to a several factors. One option to consider that would both extend the spatial coverage across the transect and fish later into the run would be to stagger the start dates of the two boats: one could begin fishing on June 10 and operate for ~3 weeks and a second vessel could begin approximately June 20 and operate through ~July 15. Such an arrangement would provide greater spatial coverage over the peak of the run at PMTF compared to what was achieved in 2018, more equally distribute effort between the two crews, and make it feasible to secure a second charter vessel at this time of the year.

Continue Exploring the Utility of Switching to a Monofilament Net

Fishing shorter sets sometimes hinders our ability to obtain enough fish for stock composition estimates; although additional catches from a second vessel would help to alleviate this problem. Using monofilament instead of multi-strand webbing might make the net more difficult for fish to see (especially on light-weather days) and perhaps increase catchability at PMTF. In 2018, too few samples were collected from a monofilament net fished at the same time and place as the standard multi-strand net for a robust comparison of catches. In 2019, additional paired samples could be collected from a second vessel to provide more definitive evidence as to whether a monofilament net could substantially increase catch rates.

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Logistics Support and Scale Aging, ADF&G
Erica Aus and Bob Murphy, Port Moller, sample and data shipping.
Katie Sechrist, Jack Erickson, Greg Buck, King Salmon, logistics, shipping.
Cathy Tilley and Diana Merlino, King Salmon, scale aging, age comp summaries.
Keggie Tubbs, Jace Bures, BBSRI, Administration and Logistics.

Stock Composition Estimates, Gene Conservation Laboratory, ADF&G
Tyler Dann (Lead), Heather Hoyt, Andy Barclay, Zach Pechacek, Nick Ellickson, Paul Kuriscak, Zac Grauvogel, Erica Chenoweth, Marie Filteau, Judy Berger, and Eric Lardizabal.

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Fishermen	**Shippers**
Bristol Bay Regional Seafood Dev. Association (Driftnetters)	Alaska Marine Lines (AML)
Kvichak Setnetters Assoc.	American President Lines (APL)
Individual setnetters	DeltaWestern
	Northern Air Cargo
	Penair
Processors	
Alaska General Seafoods	**Boroughs/Villages**
Big Creek Fisheries	Lake and Peninsula Borough
Copper River Seafoods	Bristol Bay Borough
E&E Seafoods	City of Egegik
Ekuk Fisheries	Levelock Village Council
Icicle Seafoods	Curyung Village Council
Leader Creek Fisheries	Ugashik Traditional Village
North Pacific Seafoods	
Ocean Beauty Seafoods	**Native Corporation**
Peter Pan Seafoods	Bristol Bay Native Corporation
Silver Bay Seafoods	
Trident Seafoods	

The second-vessel effort (F/V *Icelander*) was funded by the Bristol Bay Regional Seafood Development Association (BBRSDA), BBSRI, Icicle Seafoods, Silver Bay Seafoods, and Leader Creek Fisheries.

ADF&G financially supported 100% of the genetic analysis that provided stock composition estimates from Port Moller, as well as their logistics and management support to PMTF.

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TABLES

Table 1. Start and end dates for the PMTF by year, the number of days each station was fished, and the total station-days fished by year.

			Station													Stations
Year	Start	End	2	4	6	8	10	12	14	15	16	18	20	22	24	Sampled
1987	11-Jun	3-Jul	15	12	10	7										44
1988	11-Jun	5-Jul	19	19	17	16										71
1989	11-Jun	7-Jul	18	19	18	16										71
1990	11-Jun	5-Jul	18	19	19	16										72
1991	11-Jun	9-Jul	26	27	27	25	2									107
1992	11-Jun	9-Jul	20	23	23	19										85
1993	11-Jun	10-Jul	25	24	24	22										95
1994	11-Jun	9-Jul	26	26	26	26										104
1995	12-Jun	9-Jul	24	28	28	24										104
1996	12-Jun	8-Jul	26	26	26	26										104
1997	11-Jun	8-Jul	28	28	28	28										112
1998	12-Jun	9-Jul	26	27	27	26										106
1999	11-Jun	8-Jul	28	28	28	28	24	7								143
2000	10-Jun	8-Jul	20	23	28	28	28	10	3							140
2001	10-Jun	5-Jul	25	25	24	23	20									117
2002	10-Jun	9-Jul	30	30	30	30	30									150
2003	9-Jun	30-Jun	14	17	17	17	16									81
2004	10-Jun	9-Jul	18	27	29	29	27	12	1							143
2005	9-Jun	7-Jul	18	20	20	22	16	7								103
2006	10-Jun	9-Jul	18	26	24	24	25	6								123
2007	11-Jun	10-Jul	18	26	25	22	22	1								114
2008	10-Jun	8-Jul	11	19	25	24	20	5								104
2009	10-Jun	5-Jul	15	24	24	24	24	9								120
2010	10-Jun	7-Jul	25	26	25	25	23									124
2011	10-Jun	7-Jul	19	23	23	19	17									101
2012	10-Jun	8-Jul	24	24	25	26	26	2								127
2013	10-Jun	6-Jul	18	20	21	21	18									98
2014	10-Jun	10-Jul	26	26	27	27	25									131
2015	10-Jun	10-Jul	24	25	25	25	24									123
2016	12-Jun	12-Jul	26	27	27	27	24	24								155
2017	10-Jun	11-Jul	29	29	30	30	29	28	19	1						195
2018	10-Jun	11-Jul	13	25	27	27	27	28	28		26	11	8	5	2	227
Mean	11-Jun	8-Jul	22	24	24	23	15	4								115
Min	9-Jun	30-Jun	11	12	10	7	0	0	0	0	0	0	0	0	0	44
Max	12-Jun	12-Jul	30	30	30	30	30	28	28	1	26	11	8	5	2	227

Table 2. Summary of the numbers of recipients in the Port Moller Test Fishery email distribution list by known and unknown affiliation for 2017-2018.

	2017	2018	% change, 2017-18
Government			
ADF&G Research and Others	36	41	14%
ADF&G Fishery Managers	8	7	-13%
Other State Government	3	2	-33%
Local Government	1	6	500%
Federal Government	2	3	50%
Subtotal	50	59	18%
Industry			
Fishermen	69	223	223%
Processing	162	182	12%
Buyers	13	20	54%
Shippers	5	11	120%
Other Industry	17	27	59%
Subtotal	266	463	74%
Other			
Non-ADF&G Scientists	28	35	25%
Non-Governmental Org.	6	3	-50%
Media	12	8	-33%
Subtotal	46	46	0%
Known Affiliation	362	568	57%
Unknown affiliation*	132	84	-36%
Grand Total	494	652	32%

** A significant portion of unknowns are likely fishermen.*

Table 3. Sampling dates and time of corresponding updates for four main types of inseason information from the Port Moller Test Fishery in 2018. Updates were sent by email to the distribution list (Table 1) and posted on BBSRI's website (www.bbsri.org). All BBSRI catch updates were sent on the day of sampling.

Sampling Date	Catch Update #	Time that BBSRI Catch Update emailed, then posted on web	BBSRI Interpretation	ADF&G Inseason Reports	
				Stock Composition	Age Composition
10-Jun	1	8:21PM			
11-Jun	2	6:10PM			
12-Jun	3	8:16PM	#1: June 12, 8:14PM		
13-Jun	4	5:46PM			
14-Jun	5	7:47PM			
15-Jun	6	4:53PM (Wx out)			
16-Jun	7	8:48PM			
17-Jun	8	7:51PM	#2: June 17, 8:12PM		
18-Jun	9	7:22PM			
19-Jun	10	8:53PM			
20-Jun	11	9:42PM		#1: June 12-17; 12:10PM	#1; 12:10PM
21-Jun	12	9:15PM			
22-Jun	13	5:59PM	Icelander Update: June 22		#2: 6:07PM
23-Jun	14	7:03PM			
24-Jun	15	6:06PM		#3; June 18-21; 2:26PM	#3: 2:35PM
25-Jun	16	4:14PM		#3: June 21-22; 6:59PM	
26-Jun	17	8:36PM			#4: 1:05PM
27-Jun	18	4:55PM		#4: June 23-25; 12:46PM	
28-Jun	19	9:02PM			#5: 11:44AM
29-Jun	20	7:28PM			
30-Jun	21	7:32PM		#5: June 26-27; 4:58PM	
1-Jul	22	5:53PM			
2-Jul	23	8:30PM		#6: June 28-29; 2:54PM	#6: 2:57PM
3-Jul	24	5:36PM	#3: July 3, 9:33PM	#7: June 30-July 1; 3:26PM	
4-Jul	25	8:42PM			
5-Jul	26	4:16PM			
6-Jul	27	11:17PM		#8: July 2-3; 4:27PM	
7-Jul	28	4:47PM	#4: July 7, 4:46PM	#9: July 4-5; 4:17PM	#7: 8:08AM
8-Jul	29	2:35PM (Wx out)		#10: July 6-7; 4:32PM	
9-Jul	30	12:35PM (Wx/plan for 7/11)			#8: 9:09AM
11-Jul	31	10:15PM			posted web thru final
Earliest		4:14PM			
Latest		11:17PM			

Table 4. Substantive comments and predictions in the daily interpretations of the 2018 Port Moller Test Fishery.

Interpretation #	Date sent	Summary of analyses and predictions	Did the prediction(s) come true?
1	12-Jun	Compared the cumulative index in 2018 to 2011-2017.	N/A
2	17-Jun	Interpreted evidence to date as the run being either on time and smaller than expected or later than the past few years if it was to reach the pre-season forecast. Reviewed hypothesis for how fish moving beyond the end of the transect could be biasing our estimation of the return-per-index.	The run was about 3-4 days late and 22% larger than the pre-season forecast. Subsequent catch patterns across the transect revealed a substantial number of fish moving offshore; 67% were estimated to have passed beyond Station 10.
3	3-Jul	(1) Interpreted the run as being late and large similar to recent years, and likely to at least reach the pre-season forecast. (2) Suggested that the Wood River stock would be much larger than expected and likely make up for the weaker than expected showing of Egegik (3) Used stock composition estimates to parse catches into district-specific indices and estimated travel time to be 8-9 days.	(1) Yes. The run was about 3-4 days late and 22% larger than the pre-season forecast. (2) Yes. The Wood was much larger than expected and more than made up for Egegik. (3) Yearend travel time was estimated at 7.5 days.
4	7-Jul	(1) Forecasted district-specific C+E through July 13 and the aggreagate run through July 14. (2) Projected the run to build through July 12 and begin tapering on July 13-14. (3) Predicted the run to be no less than 50-55 million.	(1) District-specific forecasts were mostly accurate. (2) Almost. The run continued to build through July 11 before tapering on July 12. (3) The final inshore run was 62 million.

Table 5. Catch indices from the 2018 Port Moller Test Fishery, with those provided by the second vessel (F/V Icelander; hatched cells), and noteworthy aspects of subsequent coverage by the R/V Pandalus.

	Daily Catch Index by Station, PMTF 2018											
Date	S2	S4	S6	S8	S10	S12	S14	S16	S18	S20	S22	S24
10-Jun	0	0	0	0	9	14	0	0				
11-Jun	0	0	8	48	3	8	0	0				
12-Jun	0	0	0	5	14	5	7	8				
13-Jun	0	5	0	31	0	40	5	3				
14-Jun	0	0	0	0	0	13	8	27				
15-Jun							20	0	5	0		
16-Jun	3	27	0	0	3	20	12	14	0	0	0	
17-Jun	0	31	16	16	10	72	6	0	0	0		
18-Jun	0	10	7	9	0	24	10	14	7	5		
19-Jun		4	17	41	7	0	31	37	38	68	16	0
20-Jun	0	0	9	33	0	18	0	34	47	10	3	
21-Jun	0	0	13	11	22	43	60	107	33	13	3	0
22-Jun	0	11	110	25	85	34	62	79	139	26	9	
23-Jun		6	11	26	29	40	137	48				
24-Jun		3	15	35	38	30	55	91	76			
25-Jun		*15*	52	17	3	21	130	98				
26-Jun		9	111	0	3	16	75					
27-Jun		11	199	3	23	54	19					
28-Jun		3	166	3	6	70	87	63				
29-Jun	9	3	46	17	20	16	60	9				
30-Jun		0	103	132	65	78	65	125	51			
1-Jul		3	89	68	17	52	48	57				
2-Jul		9	31	55	15	43	29	34				
3-Jul		6	34	70	129	319	150	35				
4-Jul		0	63	70	44	44	17	104				
5-Jul		13	78	20	9	41	94	46				
6-Jul			21	22	76	125	51	44	132			
7-Jul	8	24										
8-Jul												
9-Jul												
10-Jul												
11-Jul			50	55	110	40	34	76	20			
Mean Stn Index	2	7	46	30	27	47	45	44	46	15	6	0

Hatched area shows indexes from Icelander

Only ever done in 2017 (15 station sets)

Unprecedented coverage by core boat (17 station sets).

FIGURES

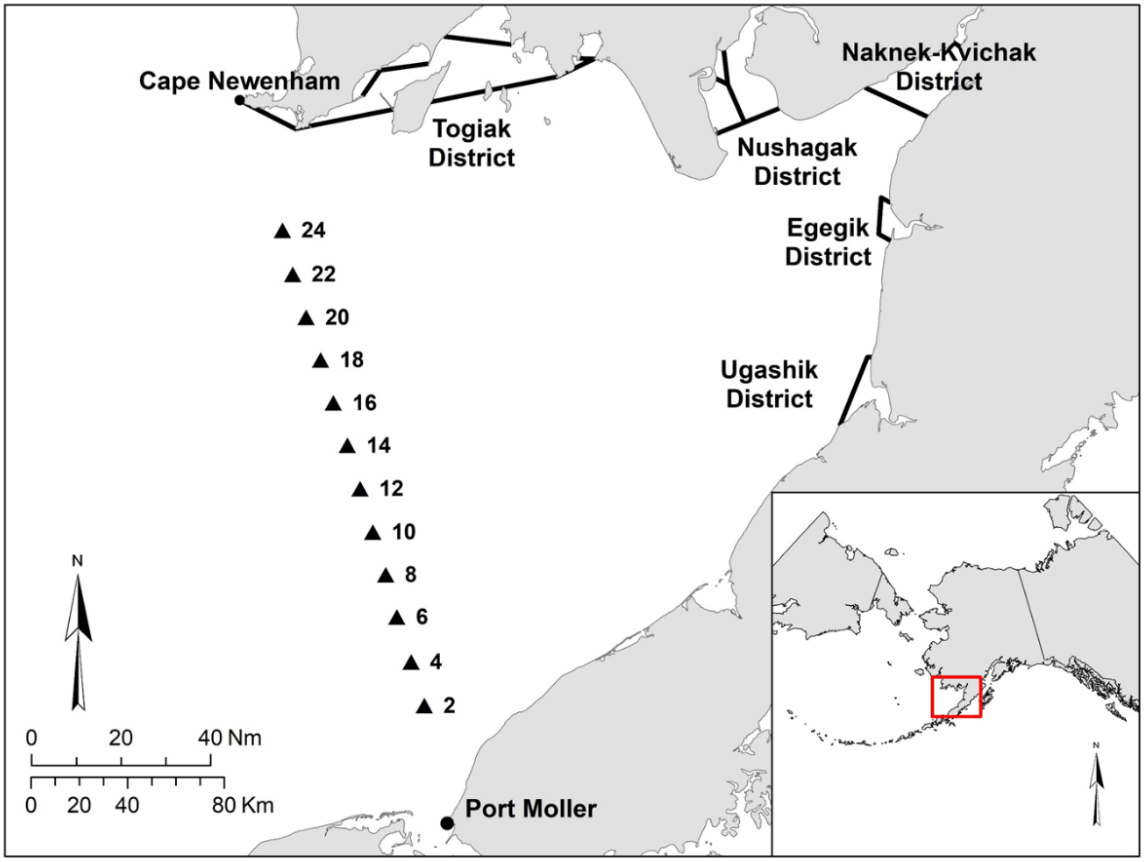


Figure 1. Map of the study area, showing the stations of the 2018 Port Moller Test Fishery and the locations of Bristol Bay fishing districts. Sockeye salmon passing the test fishery stations take approximately six to nine days to reach the Bristol Bay fishing districts in typical years.

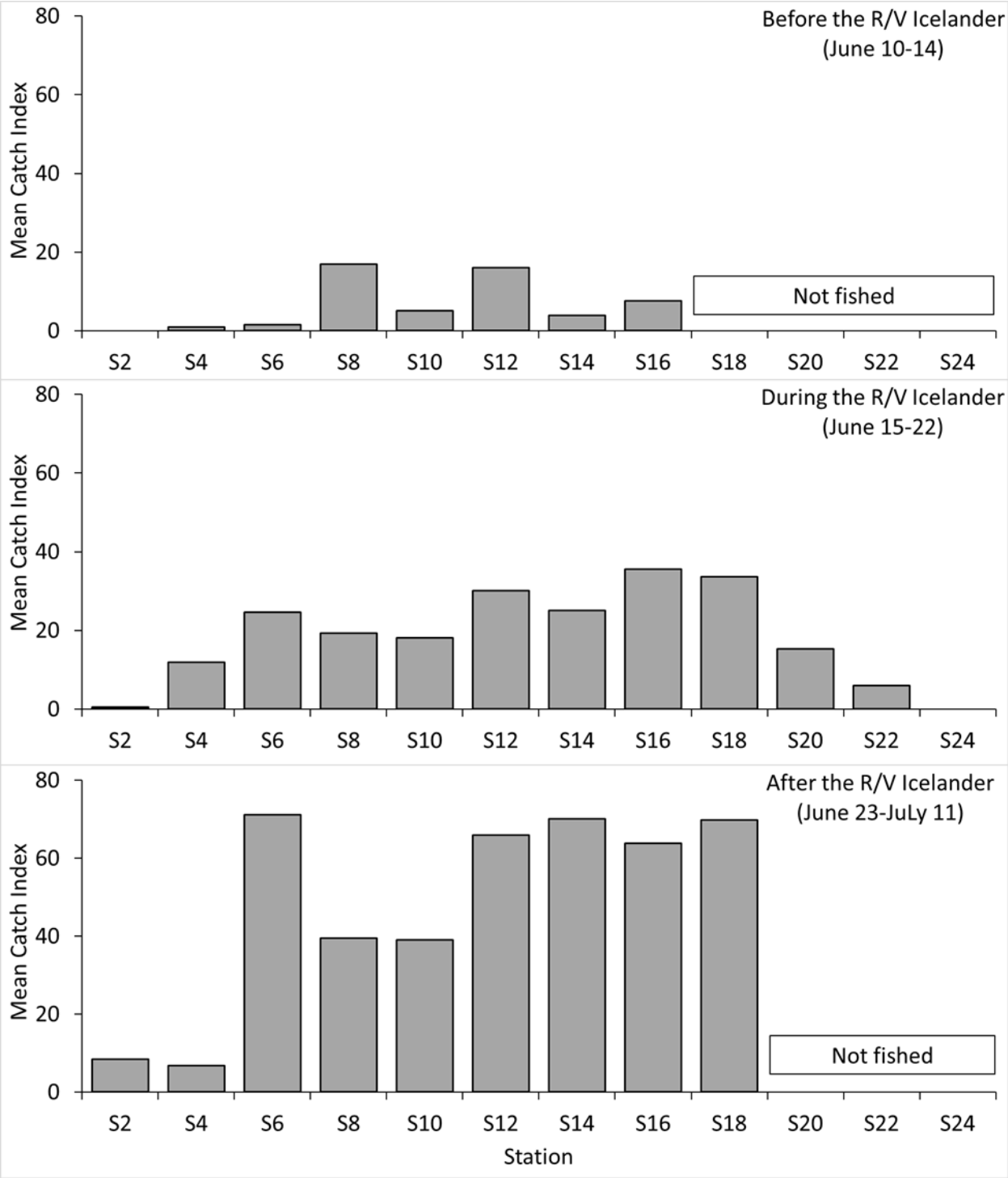


Figure 2. Average catch indices for periods before, during, and after the RF/V Icelander augmented sampling during the 2018 PMTF.

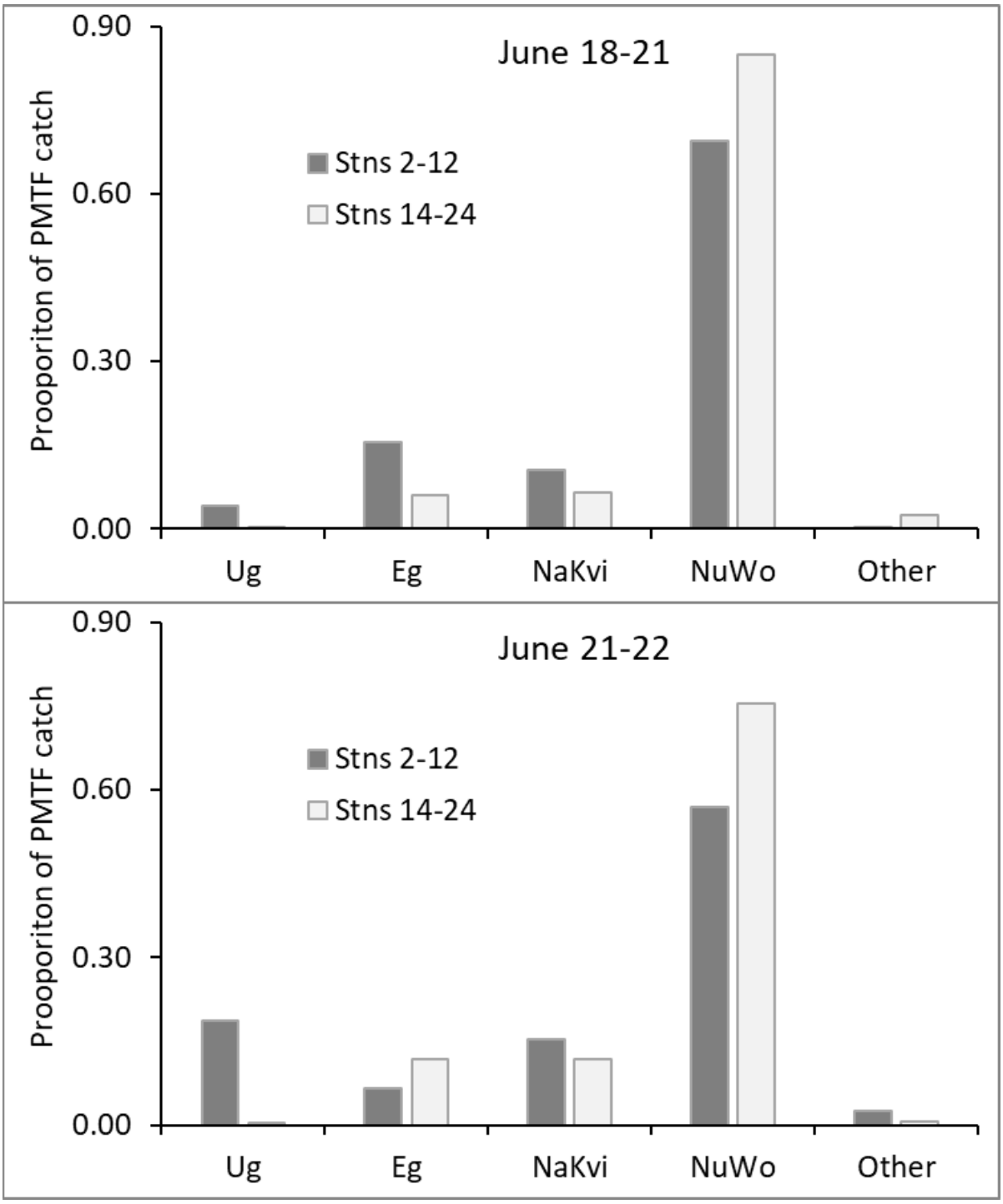


Figure 3. Stock compositions for inside stations (2-12) and outside stations (14-24) during the 2018 PMTF during dates when the F/V Icelander was available to augment the standard sampling program.

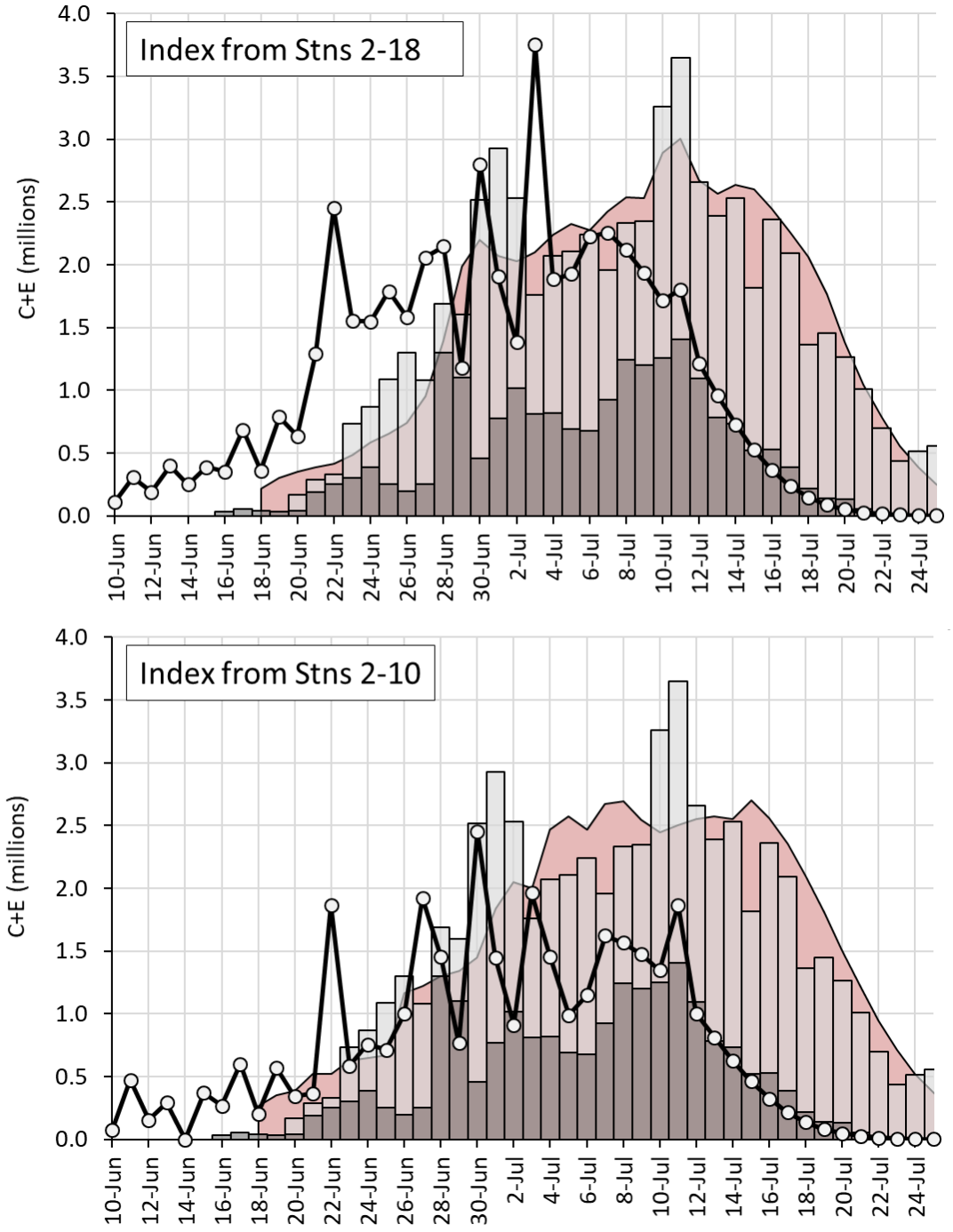


Figure 4. Forecasted (salmon colored area curve) and observed inshore catch (light bars) + escapement (dark bars) for 2018 based on mean PMTF daily catch indices Stations 2-18 (top graph) and Stations 2-10 (bottom graph). The scale for the Daily Port Moller Index is not shown but scaled the same for each graph. Travel time between Port Moller and the inshore districts was estimated to be about 7.5 and 6.9 days for the top and bottom graphs, respectively.

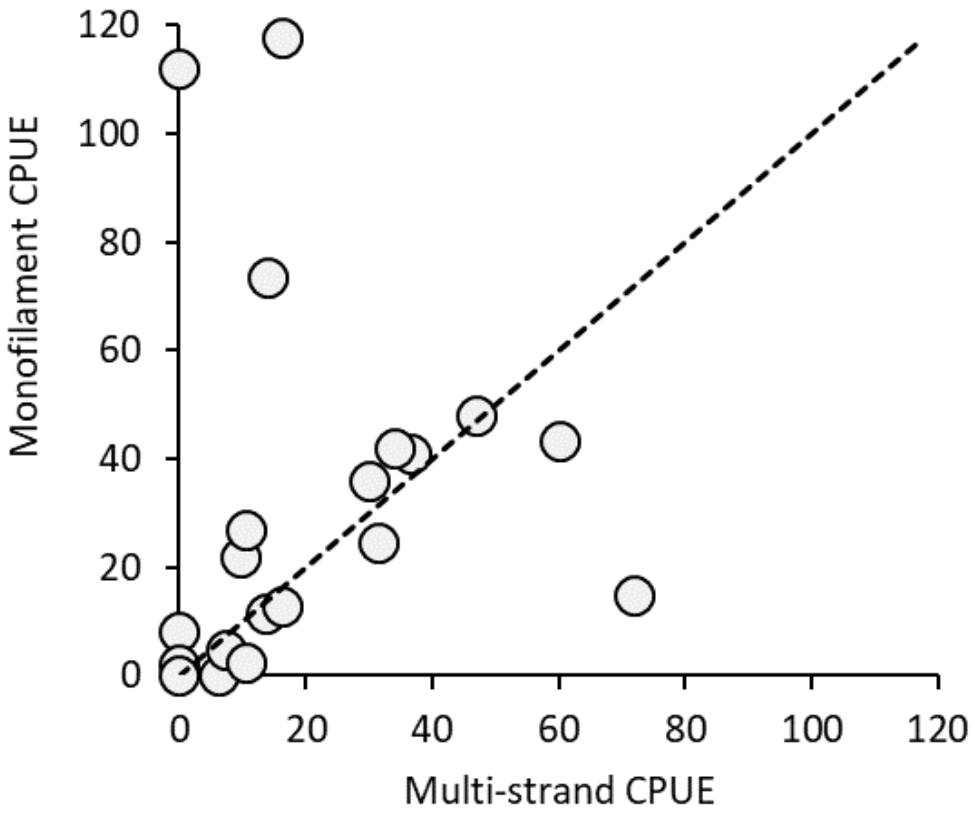


Figure 5. Catch-per-unit-effort (CPUE) from paired sets made at the same station with monofilament and multi-strand gillnets during 2018 (n=18 from the F/V *Icelander*; n=2 from the R/V *Pandalus*. Circles are observed values; the dashed line represents equality between the two sets.

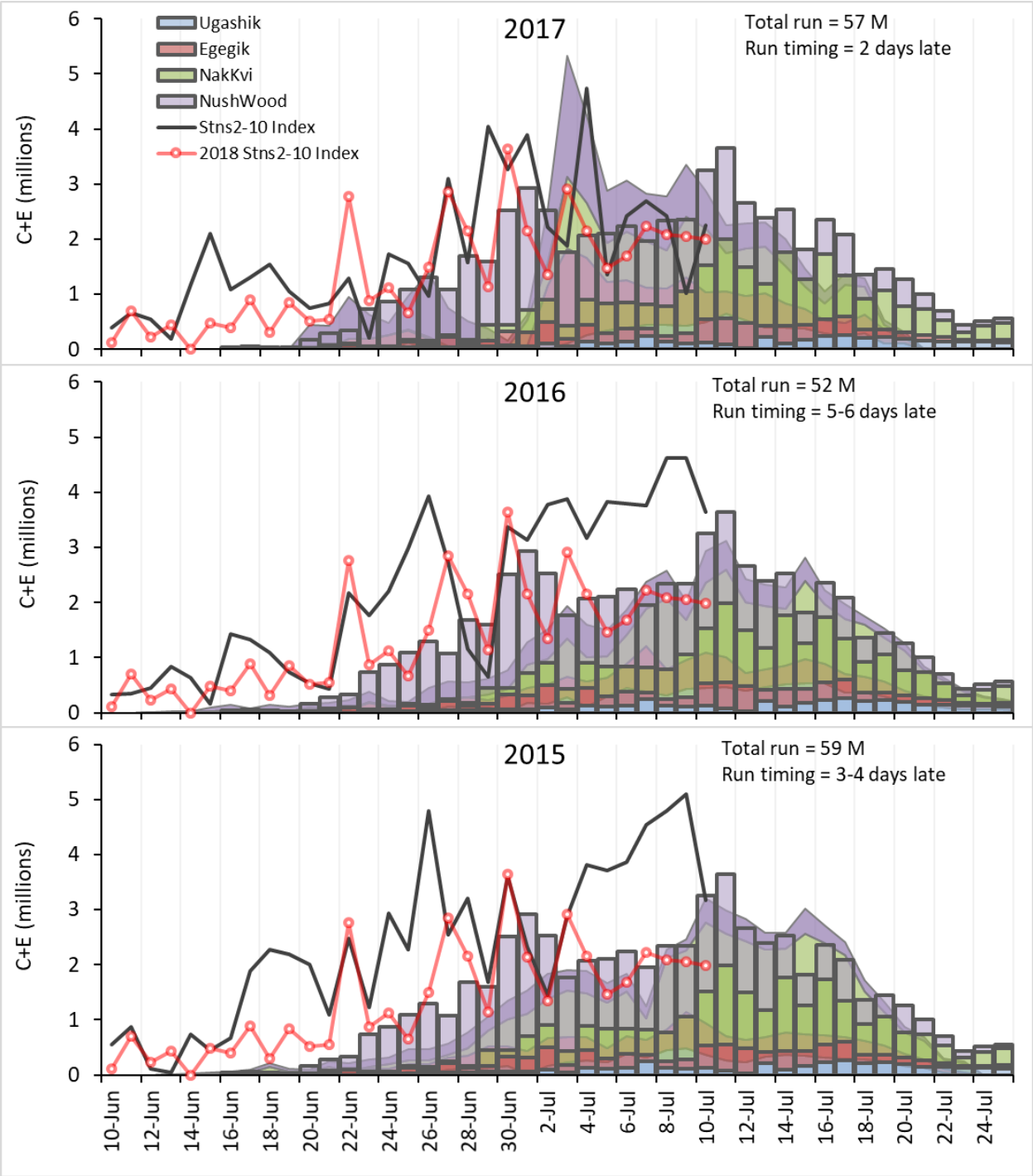


Figure 6. The PMTF daily index and inshore C+E for 2015-2018. Stacked area curves reflect C+E for historical years parsed by district; stacked columns show C+E for 2018. Black lines are indices for each respective year, and the red line is the 2018 index; all indices are based on catches from Stations 2-10 (index units are not shown, but all graphs are scaled the same). The 2018 run was 62.3 M and 3-4 days late.

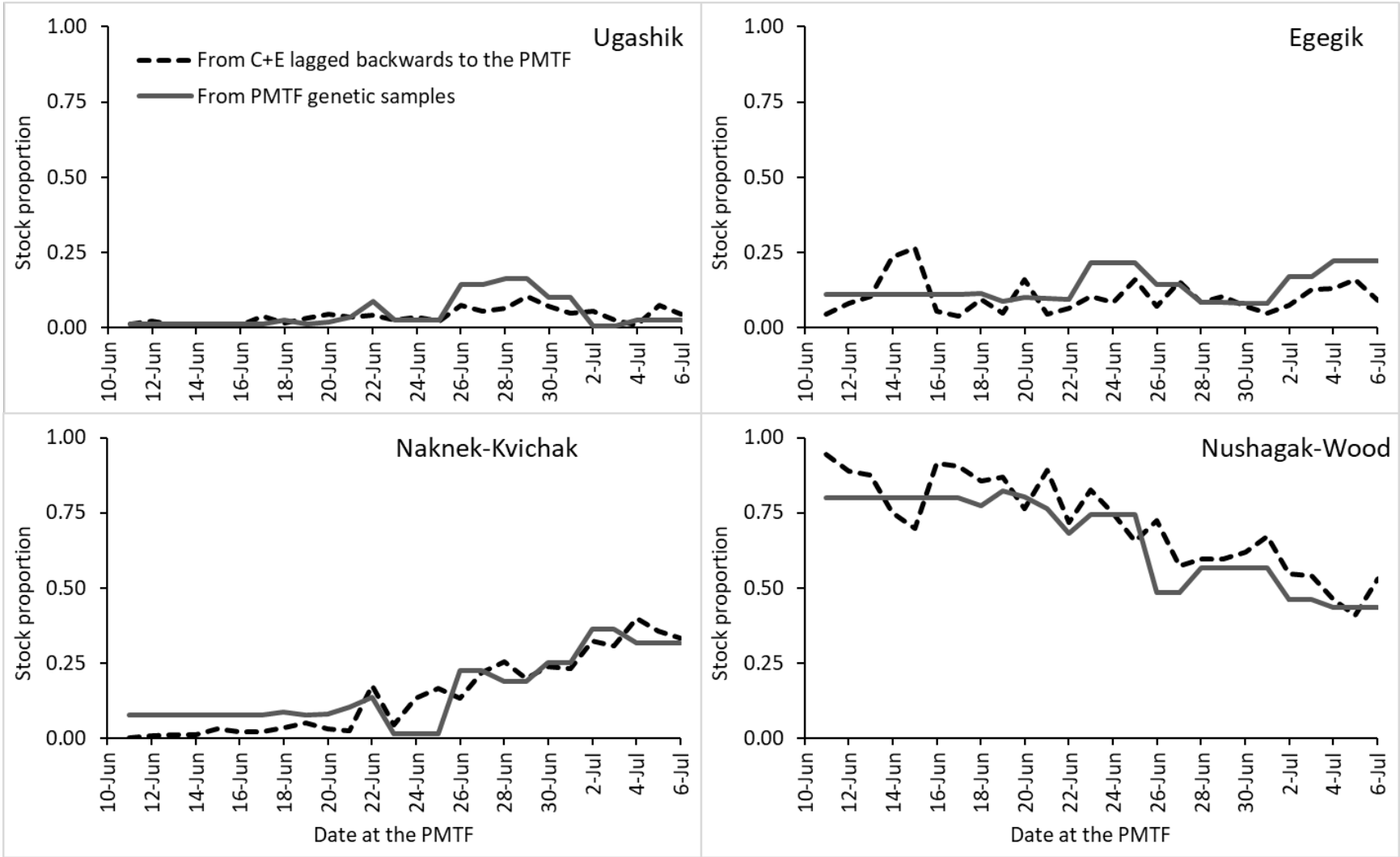


Figure 7. Stock composition by district based on catches from the PMTF compared to Catch + escapement (C+E). Proportions for C+E were estimated from district runs lagged backwards to the PMTF using estimated travel time (TT) parameters. Dates are relative to the test fishery.

APPENDICES

Appendix A

BBSRI's final daily catch update, selected updates that were not redundant with the final catch update, and four inseason interpretations for the Port Moller Test Fishery in 2018.

Port Moller Test Fishery: Daily Catch Update #31, 11 July 2018 (*final catch update of 2018*).

All updates sent by email are also posted online at www.bbsri.org

Raw Catches and Mean Fishing Times

Raw sockeye catch by station and mesh size (*FT* = mean fishing time in minutes; green values were from two sets combined)

Date	Stn 2			Stn 4			Stn 6			Stn 8			Stn 10			Stn 12			Stn 14			Stn 16			Stn 18			Stn 20			Stn 22			Stn 24			Stn 26			Totals	
	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	FT	5⅛	4½	5⅛
10-Jun	0	25	0	0	24	0	0	24	0	0	22	0	3	25	1	3	26	3	0	23	0	0	24	0																6	4
11-Jun	0	23	0	0	22	0	3	23	0	0	25	20	0	23	1	2	23	1	0	23	0	0	24	0																5	22
12-Jun	0	22	0	0	23	0	0	22	0	2	22	0	3	22	2	1	23	1	3	27	0	1	22	2																10	5
13-Jun	0	21	0	0	24	2	0	21	0	12	23	0	0	22	0	12	24	4	1	24	1	1	23	0																26	7
14-Jun	0	22	0	0	21	0	0	23	0	0	22	0	0	21	0	3	23	2	1	22	2	0	22	10																4	14
15-Jun																			5	30	5	0	24	0	0	24	2	0	24	0										5	7
16-Jun	1	21	0	7	22	3	0	21	0	0	21	0	0	40	2	12	48	4	3	26	2	6	26	0	0	24	0	0	26	0	0	28	0							29	11
17-Jun	0	21	0	15	42	7	3	48	10	11	44	1	2	23	2	14	20	10	0	19	2	0	25	0	0	19	0	0	20	0										45	32
18-Jun	0	22	0	2	44	5	4	42	1	5	41	1	0	19	0	11	45	7	2	31	3	5	22	0	3	25	0	2	23	0										34	17
19-Jun				0	31	2	7	42	5	15	44	15	4	43	1	0	21	0	6	29	9	8	18	3	4	19	8	7	22	18	4	26	3	0	23	0				55	64
20-Jun	0	20	0	0	20	0	3	46	4	12	45	13	0	24	0	8	43	5	0	24	0	5	23	8	23	37	6	0	23	4	1	22	0							52	40
21-Jun	0	22	0	0	21	0	4	43	5	1	44	7	7	44	9	15	39	13	17	29	12	25	23	16	7	22	5	2	23	3	0	23	1	0	24	0				78	71
22-Jun	0	20	0	3	21	1	23	25	23	4	22	5	25	22	6	17	39	5	31	51	22	19	25	14	29	22	22	4	23	6	2	21	1							157	105
23-Jun				0	21	2	3	22	1	8	21	1	6	21	4	4	21	10	32	25	25	13	24	6																66	49
24-Jun				1	21	0	3	24	3	11	22	2	5	22	9	9	22	2	9	23	12	12	23	23	15	23	14													65	65
25-Jun							10	23	10	2	21	4	0	19	1	1	23	7	26	25	28	16	22	20																55	70
26-Jun				1	21	2	7	26	41	0	21	0	0	23	1	1	22	5	21	24	9																			30	58
27-Jun				3	21	1	56	29	40	0	21	1	2	21	6	7	20	11	2	22	5																			70	64
28-Jun				0	21	1	29	25	40	0	20	1	1	21	1	23	24	5	17	22	15	13	24	12																83	75
29-Jun	0	21	3	0	20	1	7	22	10	5	21	1	1	21	6	3	22	3	12	23	11	3	21	0																31	35
30-Jun				0	21	0	29	25	14	22	25	33	20	22	4	18	23	12	13	22	11	31	25	21	12	21	6													145	101
1-Jul				1	20	0	28	23	6	17	24	10	5	21	1	9	22	10	9	24	10	15	22	6																84	43
2-Jul				2	21	1	9	21	2	14	23	7	4	20	1	8	24	9	3	21	7	8	21	4																48	31
3-Jul				1	20	1	5	21	7	13	24	15	24	26	32	83	32	87	31	26	34	5	22	8																162	184
4-Jul				0	21	0	11	24	14	17	23	10	9	22	7	10	23	7	5	21	1	30	22	8																82	47
5-Jul				4	23	1	16	24	15	3	21	4	1	21	2	5	22	10	20	25	19	9	22	8																58	59
6-Jul							3	20	4	3	22	5	16	23	13	33	23	15	12	21	6	13	23	4	29	25	26													109	73
7-Jul	2	22	1	5	25	5																																		7	6
8-Jul	---------- July 8-10, No Fishing due to Weather ----------																																								
11-Jul							14	23	5	13	22	7	26	24	18	5	21	9	5	21	7	9	22	19	5	21	2													77	67
Totals	3		4	45		35	277		260	190		163	164		130	317		257	286		258	247		192	127		91	15		31	7		5	0		0	0		0	1678	1426
Mean Length	549		517	511		517	514		533	509		528	518		544	509		531	512		528	507		532	507		527	503		532	510		533							511	531

Catch Indices and Environmental Variables

Daily Catch Index by Station
(catch from the 200 fathom net if it had fished for 1 hr)

Date	S2	S4	S6	S8	S10	S12	S14	S16	S18	S20	S22	S24	S26	For comparison w/ prev years: Mean Daily Catch Index (Stns 2-10)	Mean Daily Catch Index (Stns 2-24)*	Cumulative Catch Index (Stns 2-10)	SST (°C)	Seas (m)	Secchi depth (m)	Wind (knots)	Cloud (%)
10-Jun	0	0	0	0	9	14	0	0						2	2	2	7.6	0.5	8.0	W4	66
11-Jun	0	0	8	48	3	8	0	0						12	6	14	7.3	1.0	8.7	NW6	16
12-Jun	0	0	0	5	14	5	7	8						4	4	17	8.2	0.6	8.5	S4	91
13-Jun	0	5	0	31	0	40	5	3						7	8	25	8.5	0.3	9.3	SW3	25
14-Jun	0	0	0	0	0	13	8	27						0	5	25	9.2	0.3	10.0	NE4	88
15-Jun	1	5	11	11	11	15	20	0	5	0				8	7	33					
16-Jun	3	27	0	0	3	20	12	14	0	0	0			7	7	39	8.5	1.2	7.3	SE12	88
17-Jun	0	31	16	16	10	72	6	0	0	0				15	13	54	7.6	1.4	7.1	S15	100
18-Jun	0	10	7	9	0	24	10	14	7	5				5	7	59	7.7	0.3	7.3	SW8	100
19-Jun	2	4	17	41	7	0	31	37	38	68	16	0		14	22	73	7.7	1.3	6.2	SSW13	78
20-Jun	0	0	9	33	0	18	0	34	47	10	3			8	13	82	8.3	0.6	8.0	SW11	69
21-Jun	0	0	13	11	22	43	60	107	33	13	3	0		9	25	91	8.7	0.8	7.3	SSW10	100
22-Jun	0	11	110	25	85	34	62	79	139	26	9			46	48	137	8.4	1.2	8.3	SW14	85
23-Jun	2	6	11	26	29	40	137	48						15	31	152	9.1	0.5	7.8	Var7	98
24-Jun	2	3	15	35	38	30	55	91	76					19	32	170	9.8	0.4	8.5	S6	79
25-Jun	2	15	52	17	3	21	130	98						18	36	188	9.3	1.4	6.9	E23	83
26-Jun	2	9	111	0	3	16	75							25	32	213	8.9	1.3	6.4	S13	100
27-Jun	2	11	199	3	23	54	19							48	41	261	8.7	1.2	7.0	SE10	96
28-Jun	2	3	166	3	6	70	87	63						36	43	297	9.2	0.5	7.9	SW7	100
29-Jun	9	3	46	17	20	16	60	9						19	25	316	9.5	0.4	8.3	S7	41
30-Jun	2	0	103	132	65	78	65	125	51					61	57	376	9.7	0.9	8.3	W14	68
1-Jul	3	3	89	68	17	52	48	57						36	39	412	10.1	0.4	9.7	W6	61
2-Jul	3	9	31	55	15	43	29	34						23	29	435	10.9	0.9	8.9	NE14	100
3-Jul	3	6	34	70	129	319	150	35						48	74	483	10.5	0.6	9.4	SE10	82
4-Jul	3	0	63	70	44	44	17	104						36	40	519	10.6	0.9	8.4	SW14	93
5-Jul	3	13	78	20	9	41	94	46						24	41	544	10.8	0.6	8.4	W12	100
6-Jul	3	19	21	22	76	125	51	44	132					28	46	572	11.5	0.7	9.4	W8	55
7-Jul	8	24	43	52	59									37	49	609					
8-Jul	3	17	41	52	61									35	49	644					
9-Jul	2	15	38	52	63									34	48	678					
10-Jul	2	14	35	51	64									33	47	711					
11-Jul	2	12	50	55	110	40	34	76	20					46	36	756	9.2	2.1	N/A	W17	99
Mean Stn Index	2	9	44	32	31	46	45	44	46	15	6	0									

Red index values were estimated with a statistical model built upon the observed pattern across catch indices to date.
*Interpolated values for the outer stations are not shown, but were used when constructing the Stn2-24 Index

Acknowledgments, Port Moller Test Fishery, 2018

July 11, 2018

A small army of people helped to execute the 2018 Port Moller Test Fishery and deliver timely information to industry and fishery managers. The crew aboard R/V *Pandalus* made 209 sets since June 10 (7% more than the all-time record set last year) and steamed about 4,000 miles while accomplishing the greatest spatial coverage done in the project's 50-year history. The F/V *Icelander* and its crew fished never-before-sampled stations during June 15-22, quantifying a large component of the run traveling beyond the traditional stations. The *Pandalus* was later able to capitalize on the *Icelander* results and probed farther offshore than we might have done based on historical information.

R/V *Pandalus* Crew, ADF&G

The ADF&G research vessel the *Pandalus*, is based out of Homer, Alaska. **Ted Jewel** (Skipper), **Dave Knight** (First Officer), and **Charlie Schollenbergh** (Second Officer) worked tirelessly and safely through what was a grind of a project. Ted worked closely day-to-day and often set-to-set with the project manager to capture the spatial distribution of this year's unique run. Twelve-hour work days on this project were the short days, and many days approached 20 hours over the 31 consecutive days.

F/V *Icelander* Crew

Josh Cozby, owner and skipper, crewed by **Johnny Bowman, Cody Burgoyne,** and **Roby Smith**.

Fisheries Technicians, Bristol Bay Science and Research Institute (BBSRI)

BBSRI technicians **Grace Allan, Guy Nelson,** and **Clint Sejkora** (*Pandalus*) and **Jeff Regnart** *(Icelander)* worked very long days picking and sampling over 3,000 fish, mending and fixing nets, troubleshooting computer malfunctions and hydraulic systems, and relaying data in a timely manner. This year was Grace's first season on the PMTF where she was the lead technician; Grace did an excellent job and with her fresh look at the process, helped improve the project.

Shore Support from Peter Pan Seafoods, Port Moller

Gary Johnson, his dock crew, and **George Sudar** at Peter Pan generously provided quality shore support to the *Pandalus* and its crew, amidst a major plant construction project. Without Peter Pan's support this project would not be possible.

Logistics Support and Scale Aging, ADF&G

Erica Aus and Bob Murphy at Port Moller were responsible for various logistics, sample and data shipping. Erica did a remarkable job in her first season in this position; she has an uncanny ability for finding airplanes to get our samples to Anchorage that would make Radar O'Reilly jealous.
Katie Sechrist and Jack Erickson, King Salmon, logistics, technical support, shipping.
Diana Merlino and Cathy Tilley, King Salmon, scale aging, age comp summaries.
Keggie Tubbs, BBSRI, Dillingham, administration, HR, shipping, flight logistics.

Stock Composition Estimates, Gene Conservation Laboratory, ADF&G

Tyler Dann (Lead), Heather Hoyt, Andy Barclay, Zach Pechacek, Nick Ellickson, Paul Kuriscak, Zac Grauvogel, Erica Chenoweth, Marie Filteau, Judy Berger, and Eric Lardizabal. ADF&G's Gene Lab is home to a group of great professionals. Despite the vagaries of shipping samples off the

Peninsula and arrival of samples at all hours they were able to achieve the fastest turnaround times since the inception of doing in-season stock comp estimates.

Program Management, Data Analysis, Logistics, BBSRI: Michael Link, Scott Raborn, Jace Bures

Funding

Funding for the core 2018 Port Moller project, including for the *Pandalus* charter, was provided by stakeholders via the Bristol Bay Fisheries Collaborative (BBFC; www.bbsri.org/bbfc). ADF&G financially supported 100% of the genetic analysis that provided stock composition estimates from Port Moller, as well as logistics and management support to PMTF. The following contributed funding to support BBFC in 2018.

Bristol Bay Regional Seafood Development Association (BBRSDA)
Bristol Bay Native Corporation (BBNC)
Bristol Bay Borough
Lake and Peninsula Borough
Ugashik Traditional Village Council
Levelock Village Council
Curyung Tribal Council
Kvichak Setnetters Association
Alaska Marine Lines (AML)
American President Lines (APL)
Alaska General Seafoods (AGS)
Big Creek Fisheries
Copper River Seafoods
E&E Seafoods
Ekuk Fisheries
Icicle Seafoods
Leader Creek Fisheries
North Pacific Seafoods
Ocean Beauty Seafoods
Peter Pan Seafoods
Silver Bay Seafoods
Trident Seafoods
Delta Western Petroleum
Northern Air Cargo

Projects supported by the Bristol Bay Fisheries Collaborative, 2018

- Port Moller Test Fishery
- Inriver test fisheries on Egegik, Ugashik, and Kvichak rivers
- Catch sampling in all districts
- A portion of the Alagnak River tower
- Nushagak R. Sonar (~1/3 of cost in June thru mid-July and all costs for mid-July through mid-Aug)
- Assistant management biologist
- Post-season aerial surveys Naknek and Kvichak watersheds

BBSRI has matched funding from these organizations. Together, we raised $762,000 to support projects listed in the box above. BBFC funding also eliminated the need for a dedicated cost-recovery fishery by ADF&G, which has been done in the past to help fund some of these assessment projects.

The entire second-boat effort done by the F/V *Icelander* was funded separately from BBFC; funding was provided by BBSRI, the Bristol Bay Regional Seafood Development Association, Icicle Seafoods, Leader Creek Fisheries, and Silver Bay Seafoods. **Warner Lew** (Icicle) was instrumental in making the second-boat effort a reality.

Michael Link

From: Michael Link
Sent: Tuesday, July 10, 2018 12:35 PM
To: 'Dr. Scott Raborn (raborn@lgl.com)'
Cc: Michael Link
Subject: PMTF, penultimate catch update, July 10

All,

The 10th of July is the typical end date of the annual Port Moller Test Fishery. The test boat is still holed up today in Port Moller today due to high winds and seas.

The weather is forecast to improve somewhat by morning and the window to get out of there will be narrow. If conditions have improved, the Pandalus will head straightaway to Nome to begin setting up for another project (i.e., depart 7/11).

Ted (skipper) has graciously agreed to fish as many stations as they can on their way north if the seas are not too sloppy to fish. They would then drop off the project gear and our technicians in Nome on Saturday.

Although it is entirely possible we obtain equivocal results tomorrow, hopefully this effort will provide some indication as to whether or not there is any sort of a tail to the 2018 run. It is unlikely that there would be enough fish caught to run a stock composition estimate, but we'll see.

In the event they can fish tomorrow, our last catch update of 2018 will be sent out *late* tomorrow evening.

Michael

Michael Link

From: Dr. Scott Raborn <raborn@lgl.com>
Sent: Tuesday, July 03, 2018 2:16 PM
Cc: Michael Link
Subject: Port Moller Mid-day Update - July 3, 2018

Stock composition estimates for June 30-July 1 should be released later this afternoon. For now, catches so far today at Port Moller have been… interesting. As follows:

Station	Index
Stn4	not fished yet
Stn6	not fished yet
Stn8	70
Stn10	129
Stn12	**319**
Stn14	150
Stn16	35

I'll send the full catch update when all stations are in.

Scott

From: Dr. Scott Raborn
Cc: Michael Link
Subject: PortMollerTF_CatchUpdate#15 - June 24, 2018
Date: Sunday, June 24, 2018 6:09:18 PM
Attachments: PortMollerTF_CatchUpdate#15 - June 24 2018.pdf

With the Icelander bringing samples back from Stations 4-20 on June 22, the Pandalus was able to spend the night at Station 4 yesterday rather than going into Port to deliver samples. Hence, they were able to reach all the way to Station 18 today. The skipper and crew will continue to try and intercept as much of the run as possible within the limits of time and energy. Catch summary as follows:

Station	Index
Stn2	not fished
Stn4	3
Stn6	15
Stn8	35
Stn10	38
Stn12	30
Stn14	55
Stn16	91
Stn18	76

Average Daily Index (Stns2-10) = 18
Cumulative Daily Index (Stns2-10) = 165

Upcoming Stock Composition Estimates

The next stock composition estimates will be from the last two days that the two vessels fished together (June 21-22). Similar to the ones released today, they will be stratified by inner and outer stations. If all goes well in the lab, those results will be released late tomorrow (June 25) and will represent the largest two-day index total of the season. This composition estimate will include the large indexes at Station 6 and Station 18 on June 22. Following the June 21-22 estimates, we expect to pool the samples from fishing June 23 (yesterday) through June 25 for the next stock composition estimates.

All for now,

Scott

Michael Link

From: Michael Link
Sent: Friday, June 15, 2018 4:53 PM
To: Michael Link
Cc: 'Dr. Scott Raborn (raborn@lgl.com)'
Subject: PMTF Update ~#6, June 15, 2018

All,

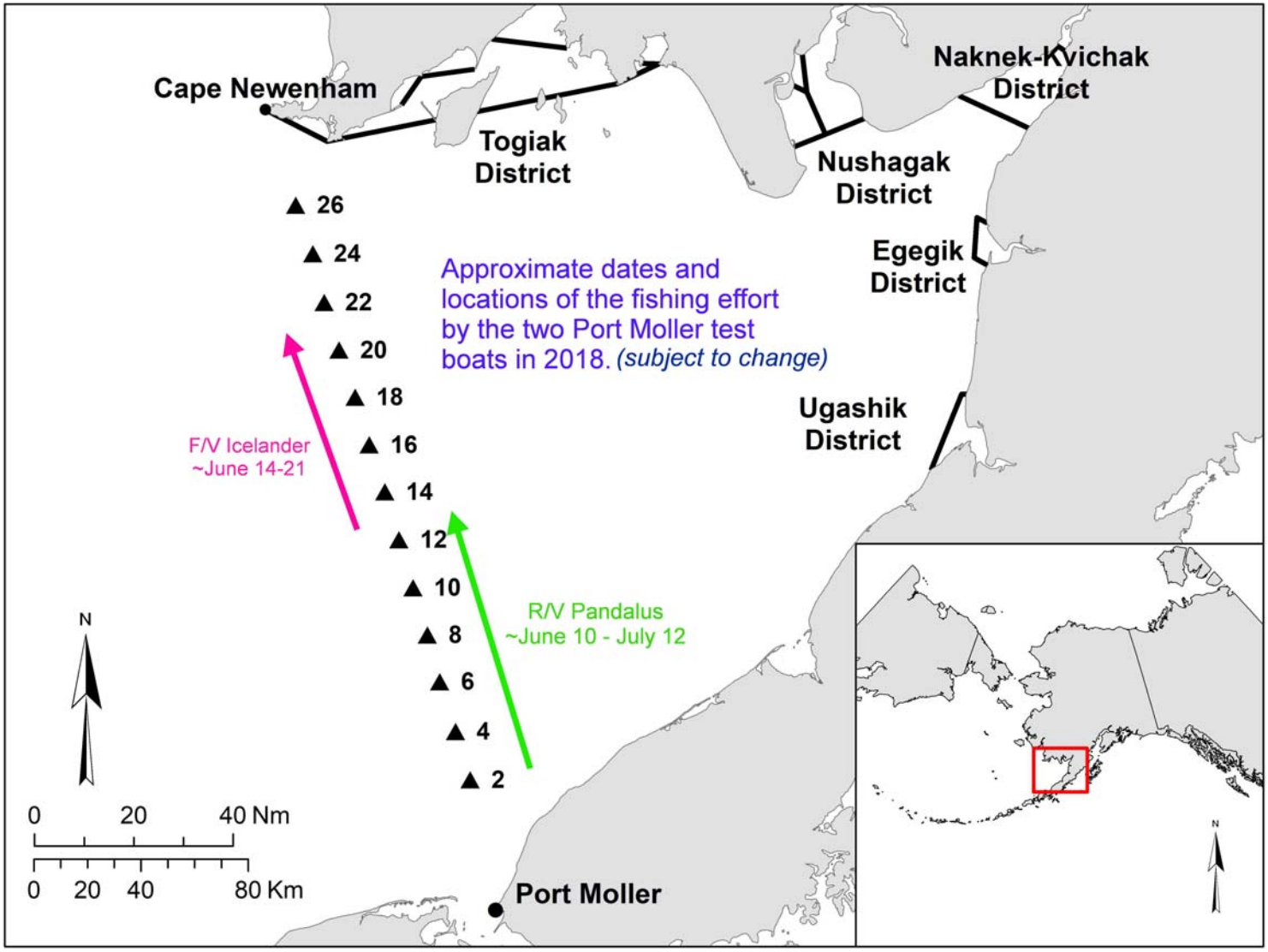
No catches to report. The long-anticipated weather finally arrived late yesterday (14th) after the Pandalus had completed the day's test fishing.

The Pandalus came in late last night to get in the lee of the North Pen where it spent today. They currently anticipate getting back at fishing in the morning (16th).

The Icelander arrived to the area late last night and spent some time today near station 12 riding out the weather to be able to get at the outer stations tomorrow. If the seas and wind subside late today, the Icelander might attempt a few sets this evening but otherwise be ready to start in the morning. If they do manage to make any sets, we will report that information with tomorrow's results from both vessels.

Michael

Figure showing anticipated sampling coverage by vessel, this was included with the Catch Update #1, June 10, 2018



PMTF Interpretation #1 for catches through June 12, 2018

Catch Summary to Date

The first three days of test fishing affords little information for characterizing the run. Still, stakeholders wish to know how this year's catches are stacking up against previous seasons (see Table 1). Catches are patchy as expected for this early in the season and, like last year, seem to be distributed further offshore. The *R/V Pandalus* will continue to fish as far out as time (catches and seas) will allow until the *F/V Icelander* augments sampling efforts at the outer end of the transect beginning on the 15th or 16th of June. We hope to get seven days of fishing across the entire transect with the two vessels and plan on using these results for, among other things, to inform decisions regarding where the *Pandalus* fishes during the days following the *Icelander's* departure. The second vessel should also provide insight into the stock composition of fish migrating beyond the farthest stations that the *Pandalus* can reach.

Other sockeye fisheries in the state have been reporting small fish in the catch. The catch sample at Port Moller is too low to conclude that fish are small for their respective ages; however, fish size is something we will be following in days to come.

Table 1. The Cumulative Daily Catch Index for the Port Moller test fishery 2011-2018. Average run timing based on years 1987-2017.

Date	2011	2012	2013	2014	2015	2016	2017	**2018**	Avg	Min	Max
10-Jun	9	0	7	12	9	5	6	**4**	7	0	12
11-Jun	22	5	14	19	24	11	18	**15**	16	5	24
12-Jun	34	9	29	25	26	18	27	**19**	24	9	34
13-Jun	57	16	60	35	26	32	30		37	16	60
14-Jun	80	20	110	49	39	43	49		56	20	110
15-Jun	123	24	140	52	46	46	84		74	24	140
16-Jun	160	34	171	67	57	70	102		94	34	171
17-Jun	209	47	213	86	89	92	124		123	47	213
18-Jun	245	52	242	108	127	110	150		148	52	245
19-Jun	286	74	280	131	163	122	167		175	74	286
20-Jun	350	90	327	151	197	131	179		204	90	350
21-Jun	405	122	379	196	215	138	193		235	122	405
22-Jun	498	143	422	221	256	174	215		276	143	498
23-Jun	557	221	464	273	277	204	218		316	204	557
24-Jun	631	259	504	320	326	241	247		361	241	631
25-Jun	694	298	550	339	363	290	273		401	273	694
26-Jun	775	325	570	366	443	356	289		446	289	775
27-Jun	817	348	596	406	486	402	341		485	341	817
28-Jun	877	375	640	444	539	421	367		523	367	877
29-Jun	932	403	667	490	567	432	434		561	403	932
30-Jun	971	438	691	532	627	488	489		605	438	971
1-Jul	1,025	489	712	564	666	540	554		650	489	1,025
2-Jul	1,061	525	730	604	690	603	591		686	525	1,061
3-Jul	1,081	574	749	647	738	668	622		726	574	1,081
4-Jul	1,116	598	757	691	802	720	701		769	598	1,116
5-Jul	1,140	614	774	735	863	784	723		805	614	1,140
6-Jul	1,157	627	783	773	928	847	764		840	627	1,157
7-Jul	1,179	630		801	1,004	910	808		889	630	1,179
8-Jul		643		853	1,083	987	849		883	643	1,083
9-Jul				880	1,168	1,064	866		995	866	1,168
10-Jul				912	1,221	1,125	903		1,040	903	1,221
Total run (millions)	30.3	30.0	24.2	41.1	59.1	51.7	56.5				
ADF&G preseason forecast (millions)	38.5	32.3	25.1	26.6	52.0	46.6	41.5	**49.8**			
CE Run timing (days early [-]; days late [+])	-3.4	-0.3	-6.1	-1.9	3.5	5.4	2.0				
PMTF Run timing (days)	-2.7	-0.2	-4.9	1.3	2.8	4.6	3.0				

PMTF Interpretation #2 for catches through June 17, 2018

Like the past three years, catches have been sparse so far this season (Table 1). The Cumulative Catch Index (Figure 1) sometimes helps to put the current year's information into an historical perspective. As always, we urge caution when interpreting catch magnitudes at Port Moller in this fashion. First, an early/small run can appear similar to a late/large run.

Second, the general rule for fishing beyond Station 10 prior to 2016 was an observed compelling increase in catches at Station 10 compared to Stations 6 and 8. Based on this rule, we would not have fished beyond Station 10 in the current year if we were not already doing so. So far, catch indices from Stations 12-16 have averaged twice as high as those from Stations 2-10. This finding makes comparisons with previous years when stations beyond Station 10 were not consistently fished difficult (see Table 2 for frequency of days fished at each station by year). We simply cannot reliably model the portion of the run missed off the end of the transect in each of those years. Did catches really taper off from the middle to outer stations in some years or did they just appear to do so as in the current year?

We suspect that much of the 2014-2017 runs were missed off the end of the transect and to some extent in 2012 as well. This year's PMTF results seem to be tracking 2012 (Figure 1), which produced a total run of 30 million. So far, the evidence weighs against the run being early and at the pre-season forecast; it appears to be either later than the past few years and at forecast or on time and smaller than forecasted. This interpretation is far from a conclusion and is offered as a mere suspicion based on the information to date.

Table 1. Station catch indices for the 2018 Port Moller Test Fishery (taken from the bottom left of the Daily Catch Update). Darker shading is proportional to the size of the catch. Each index represents the total number of fish caught from both 4½ inch and 5⅛ inch meshes standardized to a 60-minute set; i.e., what you would expect to catch had all nets fished for exactly one hour (sometimes termed catch-per-unit-effort or CPUE). Red values were interpolated/estimated.

	Daily Catch Index by Station (catch from the 200 fathom net if it had fished for 1 hr)												
Date	S2	S4	S6	S8	S10	S12	S14	S16	S18	S20	S22	S24	S26
10-Jun	0	0	0	0	9	14	0	0					
11-Jun	0	0	8	48	3	8	0	0					
12-Jun	0	0	0	5	14	5	7	8					
13-Jun	0	5	0	31	0	40	5	3					
14-Jun	0	0	0	0	0	13	8	27					
15-Jun	1	14	0	0	2	17	20	0	4	0			
16-Jun	3	27	0	0	3	20	12	14	0	0	0		
17-Jun	0	31	16	16	10	72	6	0	0	0			

Table 2. Start and end dates for the PMTF by year, the number of days each station was fished, and the total station-days fished by year.

Year	Start date	End date	Stn2	Stn4	Stn6	Stn8	Stn10	Stn12	Stn14	Stn15	Stations Sampled
1987	11-Jun	3-Jul	15	12	10	7					44
1988	11-Jun	5-Jul	19	19	17	16					71
1989	11-Jun	7-Jul	18	19	18	16					71
1990	11-Jun	5-Jul	18	19	19	16					72
1991	11-Jun	9-Jul	26	27	27	25	2				107
1992	11-Jun	9-Jul	20	23	23	19					85
1993	11-Jun	10-Jul	25	24	24	22					95
1994	11-Jun	9-Jul	26	26	26	26					104
1995	12-Jun	9-Jul	24	28	28	24	4				108
1996	12-Jun	8-Jul	26	26	26	26					104
1997	11-Jun	8-Jul	28	28	28	28					112
1998	12-Jun	9-Jul	26	27	27	26					106
1999	11-Jun	8-Jul	28	28	28	28	24	7			143
2000	10-Jun	8-Jul	20	23	28	28	28	10	3		140
2001	10-Jun	5-Jul	25	25	24	23	20				117
2002	10-Jun	9-Jul	30	30	30	30	30				150
2003	9-Jun	30-Jun	14	17	17	17	16				81
2004	10-Jun	9-Jul	18	27	29	29	27	12	1		143
2005	9-Jun	7-Jul	18	20	20	22	16	7			103
2006	10-Jun	9-Jul	18	26	24	24	25	6			123
2007	11-Jun	10-Jul	18	26	25	22	22	1			114
2008	10-Jun	8-Jul	11	19	25	24	20	5			104
2009	10-Jun	5-Jul	15	24	24	24	24	9			120
2010	10-Jun	7-Jul	25	26	25	25	23				124
2011	10-Jun	7-Jul	19	23	23	19	17				101
2012	10-Jun	8-Jul	24	24	25	26	26	2			127
2013	10-Jun	6-Jul	18	20	21	21	18				98
2014	10-Jun	10-Jul	26	26	27	27	25				131
2015	10-Jun	10-Jul	24	25	25	25	24				123
2016	12-Jun	12-Jul	26	27	27	27	24	24			155
2017	10-Jun	11-Jul	29	29	30	30	29	28	19	1	195
Mean	11-Jun	8-Jul	22	24	24	23	21	10	8	1	
Min	9-Jun	30-Jun	11	12	10	7	2	1	1	1	44
Max	12-Jun	12-Jul	30	30	30	30	30	28	19	1	195

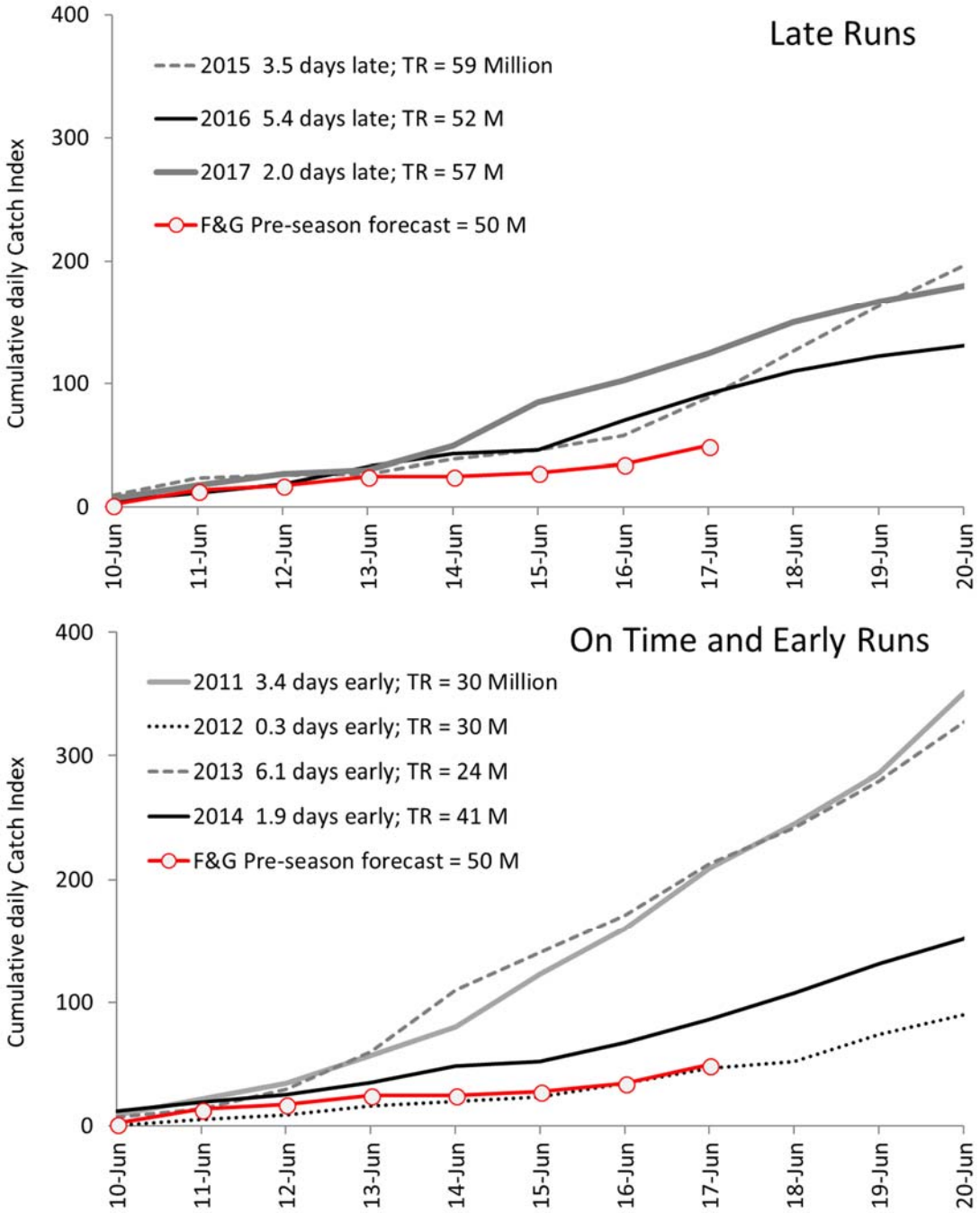


Figure 1. The Cumulative Daily Catch Index for the Port Moller test fishery 2011-2018. Run timing (based on years 1987-2017) and total run magnitude are indicated for years 2011-2017. The ADF&G forecast is given for 2018. All indices were based on average daily CPUEs from Stations 2-10.

PMTF Interpretation #3 for catches through July 3, 2018

Following a 2-day decline in catches at Port Moller, today produced stronger indices causing an uptick in the Daily Catch Index. The highest catch index of the year, 312, was recorded at Station 12. Regardless of the difficulties in interpreting the offshore distribution observed this year, this result indicates that many more fish are yet to come. Strong PMTF catch indices through the end of the test fishery have been a common occurrence in recent years, especially in 2014-2016 (Figure 1). Runs for the past three years have been late and large; the test fishery and the catch plus escapement (C+E) to date suggests the same is true for this year. How late and how large remains to be seen, but the run coming in at or above the pre-season forecast seems likely.

Given the pre-season Egegik forecast of >9 million, this district has demonstrated a weaker than expected showing in the Port Moller stock composition estimates to date. In addition, the lack of age 2.2 fish in the PMTF age composition suggest this component is missing. However, C+E in the Nushagak-Wood District is twice what it was last year by this date. Yesterday, 1.1 M fish were recorded in the Wood River escapement in spite of the fact that 760+ boats (255 of them Dboats) were reported in the Nushagak-Wood District on June 30 (we are assuming a 2-day lag between the counting tower and the district). This number of boats is an unprecedented amount of fishing power for this district. The Wood River run seems enormous, and a larger than forecasted Nushagak-Wood District run may make up for a weaker than expected Egegik run.

The PMTF Daily Catch Index parsed by district (Figure 2) indicates that a large number of fish are still bound for the Nushagak-Wood District, with the most likely travel time from PMTF being 8-9 days. Thus, strong C+E is expected for this district through about July 10 based on PMTF indices to date, and beyond if the indices hold up at Port Moller over the coming days. Furthermore, recent stock composition estimates and today's increase in the Daily Catch Index suggest the number of fish bound for the Naknek-Kvichak District is probably building (Figure 2).

Figure 1 (below). The Port Moller Daily Index and inshore catch + escapement (C+E) for 2011-2018. Stacked area curves reflect observed C+E for historical years parsed by district; stacked translucent columns show observed C+E for 2018 (both scaled to the left vertical axis). Black lines are the Daily Port Moller Indices for each respective year, and the red line with white markers is the Daily Index for 2018; all indices are based on catches from Stations 2-10 (units for the daily catch indices are not shown, but all graphs are scaled the same).

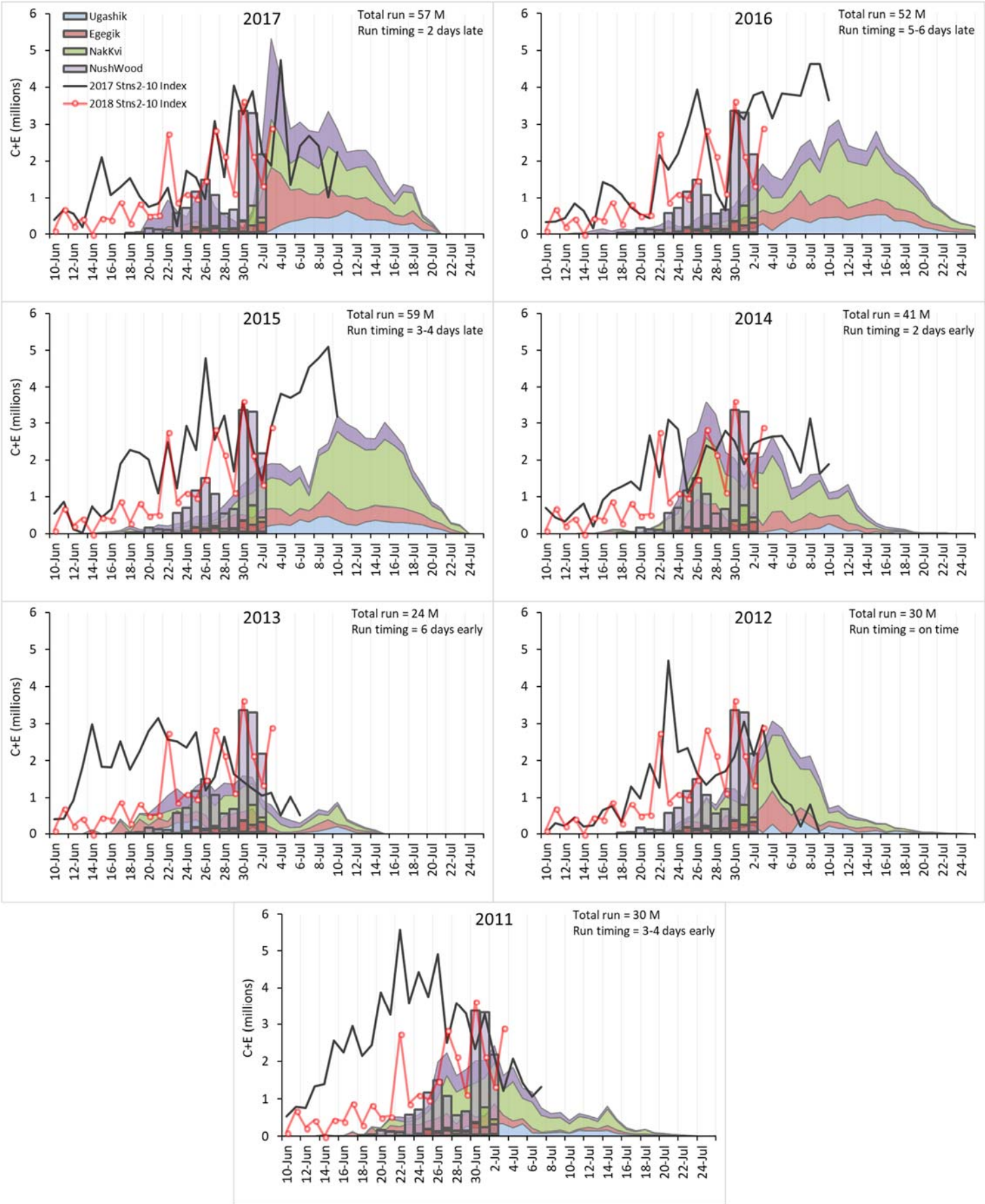
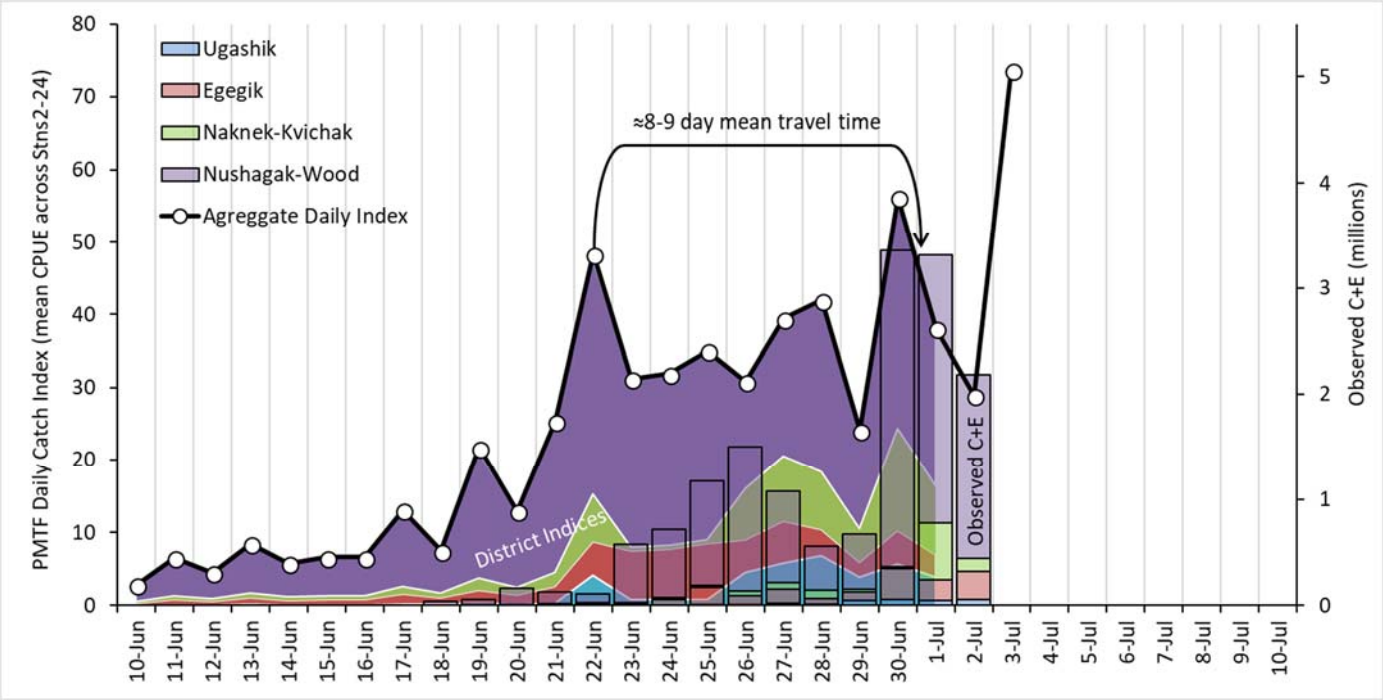

Ugashik
Egegik
NakKvi
NushWood
2017 Stns2-10 Index
2018 Stns2-10 Index
C+E (millions)
2017
Total run = 57 M
Run timing = 2 days late
2016
Total run = 52 M
Run timing = 5-6 days late
2015
Total run = 59 M
Run timing = 3-4 days late
2014
Total run = 41 M
Run timing = 2 days early
2013
Total run = 24 M
Run timing = 6 days early
2012
Total run = 30 M
Run timing = on time
2011
Total run = 30 M
Run timing = 3-4 days early

Figure 2. The Port Moller Daily Catch Index (averaged from Stations 2-24) parsed by district based on genetic stock composition estimates (colored stacked area curves scaled to the left vertical axis). The aggregate Daily Index (black line with white markers) is given to reflect the recent two days of PMTF catches for which stock composition estimates are not yet available. Observed C+E (colored stacked translucent columns) is also parsed by district and scaled to the right vertical axis. Colors are the same for both times series of data (stacked curves and the columns). The most likely travel time between the test fishery and the inshore districts (heavily influenced or weighted by the Nushagak-Wood District) is 8-9 days as indicated.



PMTF Interpretation #4 for catches through July 7, 2018

Catch and escapement (C+E) has increased in the last two days keeping this year's run magnitude on par with the last three years (Figure 1).

In Figure 2, we have generated district-specific Port Moller catch indices based on genetic stock composition estimates (black line with open circles) and used these to project what C+E might look like in the coming days (salmon- colored shaded area). Overlaid on these two data series are the observed C+E to each district so far this year. Recent stock composition estimates for July 2-3 from Port Moller indicate that the Egegik and Naknek-Kvichak Districts continue to build at the test fishery, while the Nushagak-Wood District remains steady (and strong). The July 4-5 stock comp estimates combined with a drop off in the overall index show these three districts ticking downward and Ugashik building at Port Moller for these two days.

These stock-specific projections of C+E added together indicate the run should build inshore through about July 12 before tapering on July 13-14. We expect the daily C+E will bounce around these daily projections, but if on average it is correct, then the total run would be 47 million by July 14. We will need to know what the remainder of the test fishing indices look like to see how big the tail may be beyond July 14 (we only predict the C+E that is between Port Moller and the inshore districts).

Comparing past runs' C+E through July 6 to this year's shows the run is either on time and 35-45 million (unlikely) or 2 days late and >45 million (Figure 3). Catches at Port Moller indicate the run is at least one day late and likely later, which would put the average day of return inshore no sooner than July 6. Through yesterday (July 6), inshore C+E was 24 million and doubling this value would give a forecasted total run of 48 million. This forecast is mostly a minimum estimate; even if Port Moller drops off suddenly in the next three days the run is likely no less than 50-55 million.

Figure 1 (below). The Port Moller Daily Index and inshore catch + escapement (C+E) for 2011-2018. Stacked area curves reflect observed C+E for historical years parsed by district; stacked translucent columns show observed C+E for 2018 (both scaled to the left vertical axis). Black lines are the Daily Port Moller Indices for each respective year, and the red line with white markers is the Daily Index for 2018; all indices are based on catches from Stations 2-10 (units for the daily catch indices are not shown, but all graphs are scaled the same).

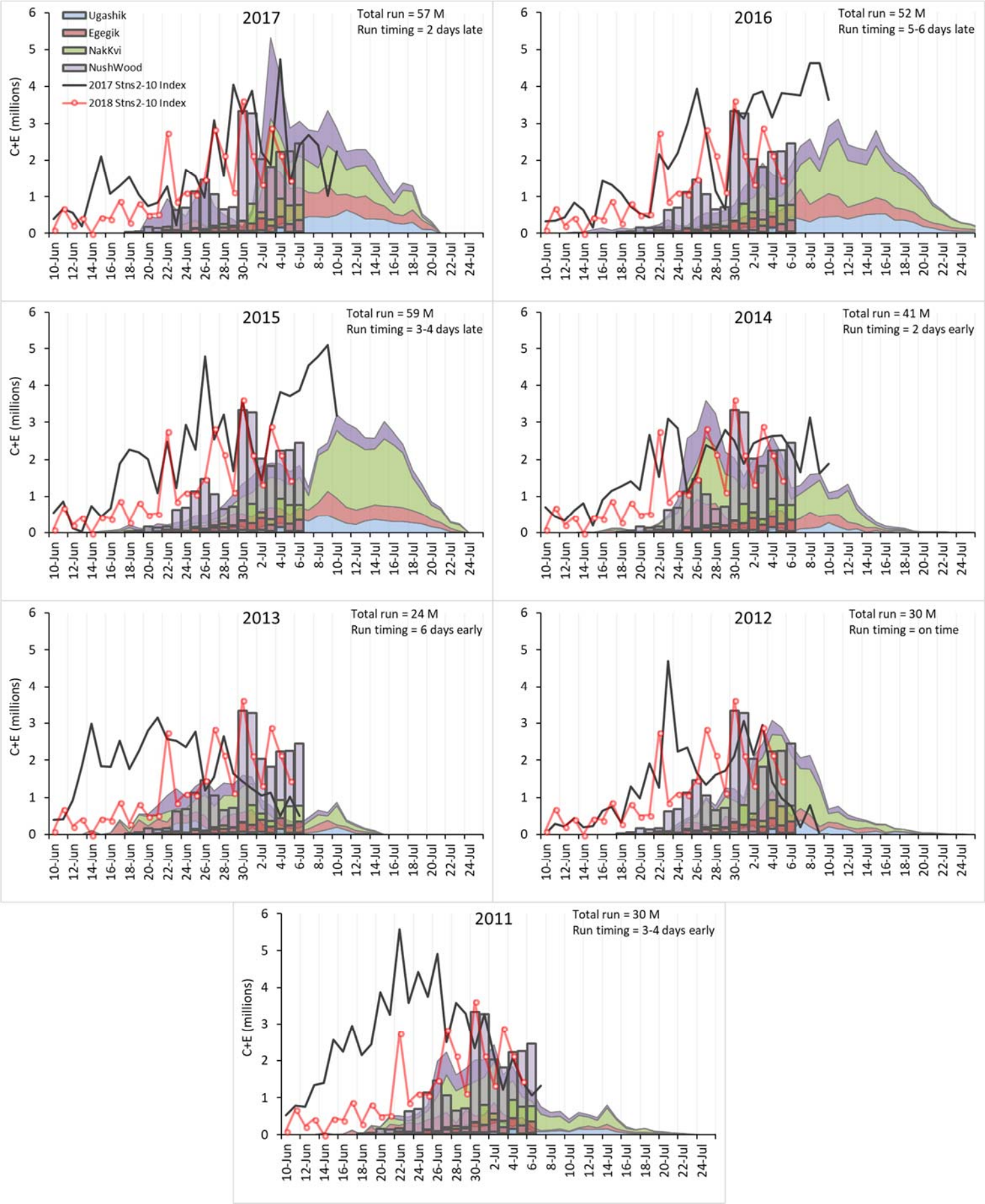

2017
Total run = 57 M
Run timing = 2 days late
Ugashik
Egegik
NakKvi
NushWood
2017 Stns2-10 Index
2018 Stns2-10 Index
2016
Total run = 52 M
Run timing = 5-6 days late
2015
Total run = 59 M
Run timing = 3-4 days late
2014
Total run = 41 M
Run timing = 2 days early
2013
Total run = 24 M
Run timing = 6 days early
2012
Total run = 30 M
Run timing = on time
2011
Total run = 30 M
Run timing = 3-4 days early
C+E (millions)

Figure 2. Forecasted (salmon colored area curve) and observed inshore catch + escapement (C+E) for 2018. Note: "observed" escapement for recent days was approximated as it has to be lagged backwards from the enumeration sites for each district. The scale for the Daily Port Moller Index is not shown, but all district graphs are scaled the same (total run graphs are scaled the same as each other). Travel time between Port Moller and the inshore districts was estimated to be about 8.9 days for Ugashik, 8.5 for Egegik, 8.6 for Naknek-Kvichak, and 8.4 for Nushagak-Wood.

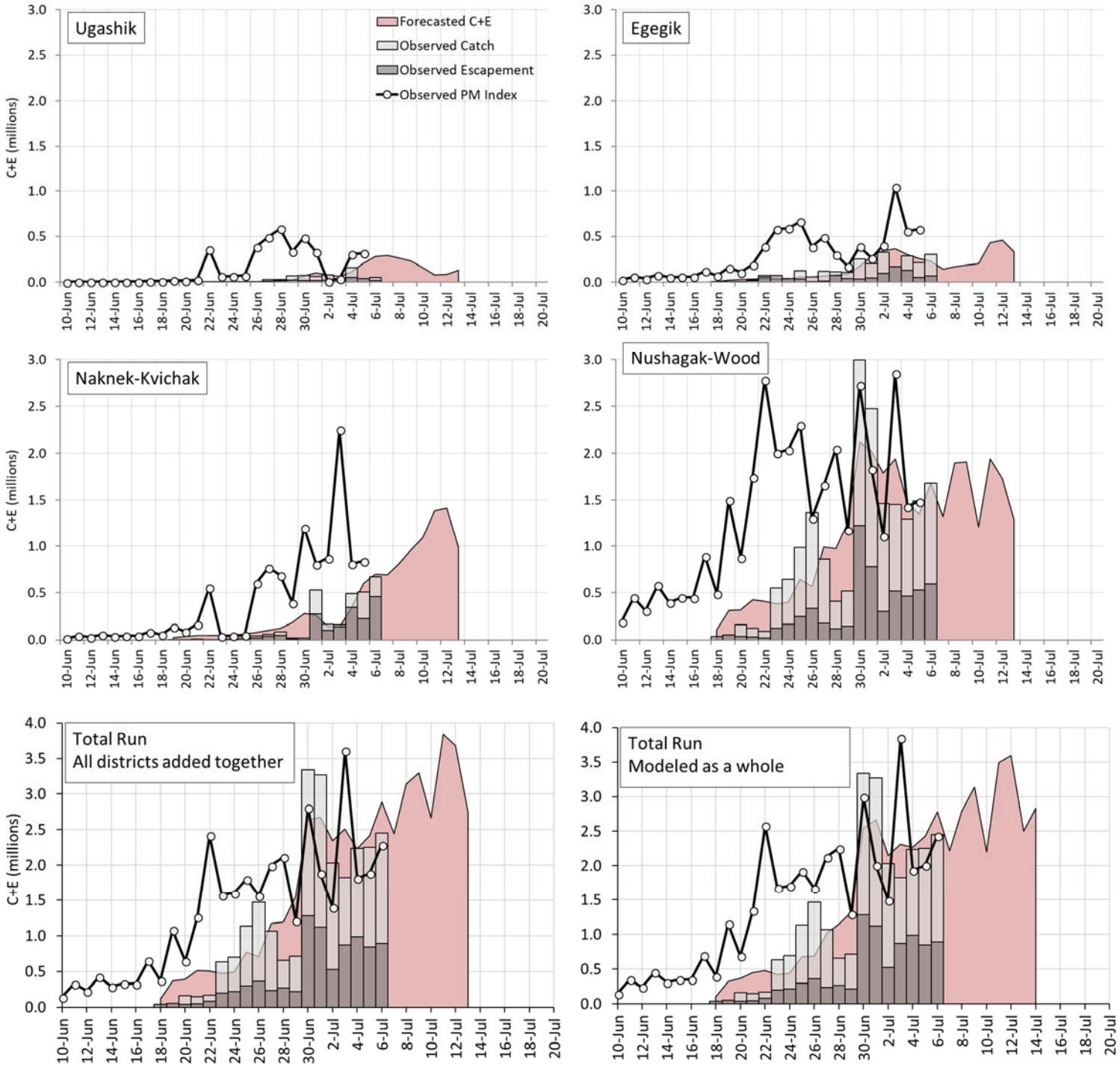
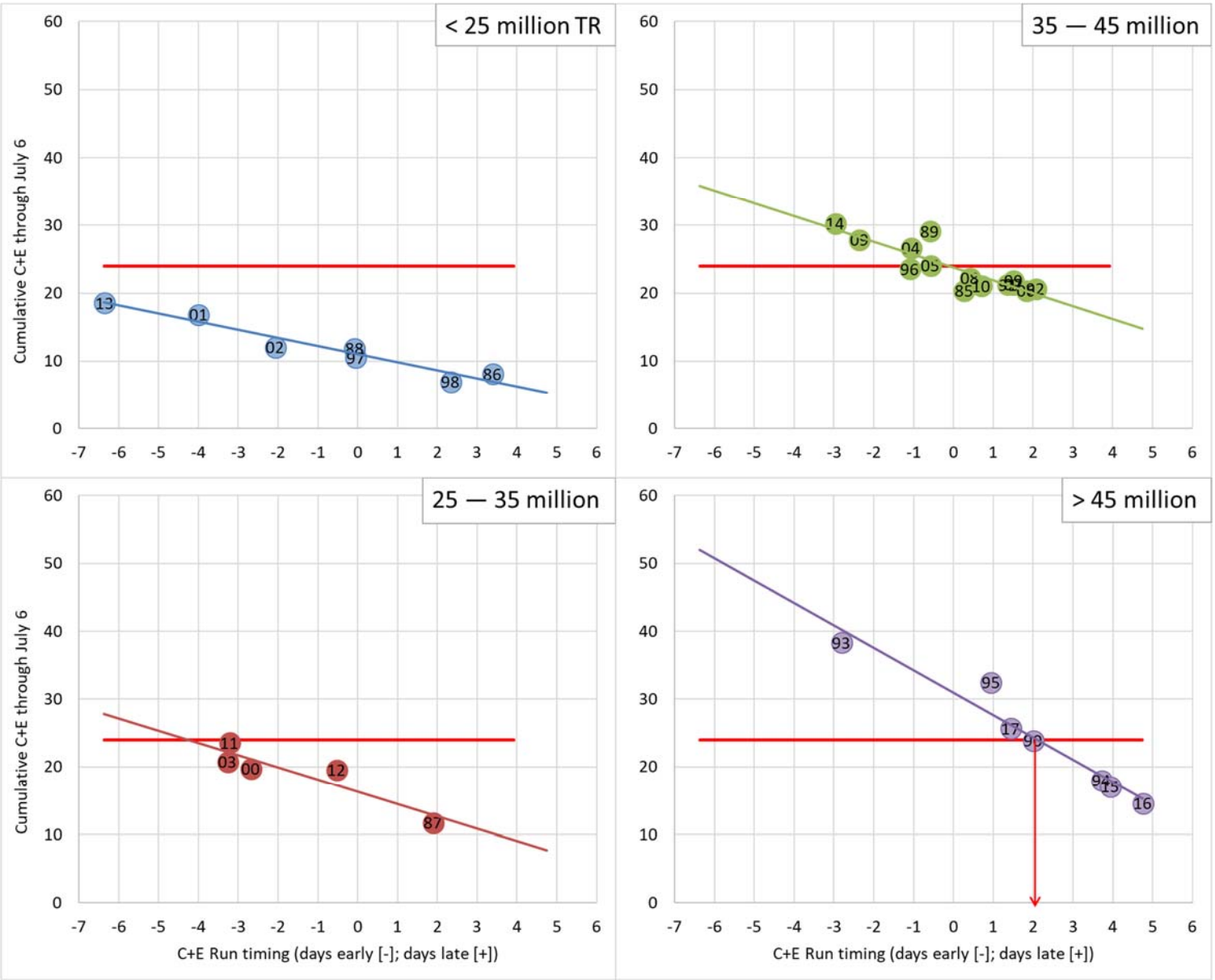


Figure 3. Observed cumulative catch + escapement through July 6 versus run timing in each year from the historical dataset 1985-2017). The red line indicates C+E for 2018 (run timing for this year is not known, but somewhere on this line); each dot indicates what cumulative C+E was through this date, as well as its eventual run timing in previous years, which are binned into four graphs based on final run magnitude. For each bin of years, the trend line is shown.



Email Update
Subject: Icelander, last day, 6/22
Sent 4:57pm, June 22, 2018

All,

The last day of test fishing by the F/V Icelander will wrap up today, 22 June. It will meet up with the Pandalus between Station 12 and 10 shortly, pick up samples from the Pandalus, and travel overnight to Dillingham. There it will begin tendering in the Nushagak for Icicle Seafoods. Given the data stream provided, keeping the Icelander fishing for the remainder of the test fishery would have been highly informative. However, we are very lucky to have had a second test fishing vessel for as long as we did.

We have received many questions about the second-boat effort this year: why was it done? how did it come together? who is doing it? why those dates? etc. I forecast more questions tonight and have hastily composed this email to begin to address as many as I can.

Although long planned by us, the 2018 project came together late, and kind of out of the blue for many. Through describing this effort, I want to acknowledge some of the key people who are responsible for its success.

Motivation Behind the Second-boat Effort

We have known for a long time that a portion of the Bristol Bay sockeye run moves by Port Moller beyond the range of a single vessel based out of Port Moller. The portion missed by the PMTF sampling without a doubt varies among years and within years and contributes to large errors in PMTF-based forecasts. Hence, forecasts of abundance from the PMTF have had a checkered past, to put it lightly.

The fundamental requirement of a test fishery to be useful for forecasting is that the fraction of the run it catches per hour of fishing is proportional to the abundance of fish passing the stations. This fraction must be either consistent across and/or within years or made consistent with extraneous factors (environmental and/or biological) available as inputs for statistical modeling.

In addition, for stock composition estimates to be accurate (unbiased), all stocks should have an equal likelihood of capture. Systematic errors in stock comp estimates over time can be used to create correction factors (i.e., adjust some stocks up or down based on previous years' outcomes). However, with interannual variation in the fraction of the run exposed to the test fishery, not knowing inseason what that fraction is, makes accurate stock comp estimates a challenge.

The utility of PMTF to provide useful forecasts of abundance and stock composition inseason will be hamstrung until we can sample the entire run or be able to accurately predict the fraction of run and what stocks are being missed in real time. The second-boat effort is the start of an attempt to empirically measure the distribution of fish across its full breadth and determine whether we can predict it in the future, or, whether it cannot be predicted given the vagaries of fish distribution and uneven stock composition across the transect.

Proposed Work

Last fall, we developed a conceptual proposal for a second-boat effort for 2018 to extend the range of stations fished. The proposal was for a 25-30 day effort to overlap the core program that is done from the research vessel Pandalus. The initial support from funders was considerable, but their financial

support was contingent on broad-base of support among stakeholders. ADF&G provided a strong letter of support regarding the value of the project, but, given the current fiscal crisis, they were unable to provide funding. Unfortunately, we failed to achieve a broad base of support, so the contingent offers fell away. No doubt, stakeholder support of the Bristol Bay Fisheries Collaborative (www.bbsri.org), has some benefactors justifiably wary of spending yet more money on helping to manage the Bay fishery.

In April, Warner Lew (Icicle) called to brainstorm how we might muster some sort of a second-boat effort in 2018. The brainstorming worked and with his help, we secured commitment from a Bay tender, the F/V Icelander, to leave home early and fish for 6-7 days at PMTF beginning June 14-15, and prior to when it goes under contract with Icicle. We would have much preferred a week beginning 20 June, but that was not an option because of the need for tenders inshore. With the cost savings from not having to cover transiting (the boat was already traveling by Port Moller), we put together a renewed and less costly proposal than the full-season version and put it before the RSDA and BBSRI boards, and a handful of processors. The two boards financially supported the second-boat effort, along with three processors (Silver Bay, Icicle, Leader Creek).

The Icelander and Crew

The Icelander is a 100-foot tender owned by Josh Cozby (attached photo). We had to outfit him with an old net reel when he came through Homer en route to Port Moller from Juneau. Although Josh never came out and said it, I suspect at one point, when he and his deck were covered in hydraulic oil, he may have had second thoughts about agreeing to do this. Fortunately, with his crew's perseverance, they outfitted the boat and left Homer on the evening of June 11th with the BBSRI technician, former ADF&G Director of Commercial Fisheries, Jeff Regnart.

Station Coverage

With light catches, the R/V Pandalus was able to start the season fishing Stations 2-16 from 10-14 June. Upon the Icelander's arrival the two boats would split effort around station 12, with the Icelander to cover as far beyond station 14 as there were fish. The farthest offshore the PMTF had ever fished in its 50-year history was Station 15 (once, last year). They arrived early on the 15 June in the midst of the first big storm of the 2018 PMTF season. Given the short time window that we had the boat available, I began having doubts about whether this was going to have been worth all the trouble. Those doubts we allayed somewhat when Jeff responded to my texted question about what the conditions were like at Station 16 that morning. He said something along the lines of "It's blowing 35-40, seas are 8-10 feet, but I think we should be able to get in a couple sets when the eye of the storm passes over". They made 4 valuable equipment-shake-down sets late that evening, which allowed them to begin solid coverage of stations 14 to as far out as station 24 over the next 7 days.

Nets onboard

Both vessels were outfitted this year with a 100-mesh deep monofilament net to compare its effectiveness with our standard 60-mesh deep multifilament net used to develop all indexes you see in the catch update. Paired sets of the two net types were to be done on an opportunistic basis without compromising coverage of any stations by the standard net used to create the index. The Icelander was able to make many paired sets and no standard sets were missed. Stay tuned for those interesting results.

Biological Sampling

During the 8 days the Icelander fished, over half of the index came from stations beyond Station 12 and provided valuable insight into the shifting distribution of fish through time and space during this

relatively short window of the 2018 run. In addition to improved indication of the run strength in 2018 and more representative stock composition estimates, the results will be useful in the future seasons; if nothing more than to temper projections based on sampling Stations 2-10 or 2-12.

Jeff Regnart was chosen to lead the field research because he had a suite of skills and experience essential to the success of the Icelander's effort: experience gillnetting (and fast fish picking) to train the crew, familiarity with current PMTF protocols done by the Pandalus (spent time on it in 2017), an understanding of the importance and nuances of the second-vessel research, and patience. Although his data collection skills were a little rusty at the outset, by about Day 3 he was on track and in the last few days, he was sending me station-specific 3-ocean composition of the catch based on the very stark and obvious (to him) bimodal length distributions. Nonetheless, please hold off a few weeks from asking his former colleagues in the Gene and Scale laboratories about his data collection abilities; i.e., until those deficiencies can be put in perspective with his overall contribution. Josh, Jeff, and the vessel crew deserve a ton of credit for creating the right half of that Index-by-Station table that you see in the daily catch update!

The Rest of the 2018 Season

Based on today's test fishing results you will see shortly, we will no doubt be asked why (on earth) have you pulled the boat now? The answer: the funding has run out and the vessel is going under contract to tender. Don't tell my board, but we may even be overleveraged a little dollar-wise to get this 8th day of fishing in. The station coverage from here forward will be shifted offshore somewhat, but the limits to the Pandalus's range are fairly hard. There are not enough hours in the day for it to fish 2-18 or even 4-18. Dropping a station that the vessel is traveling past anyway saves only 30-40 minutes; traveling to outer stations beyond where he would otherwise stop requires 1.5-2 hours on the day of fishing and on the return day. Finally, there are limits to how much we can subsample the inner stations to extend range given the uneven distribution of stocks and the sometimes-shifting bimodal distribution.

It's been a very useful effort and hopefully helps some with fishing, managing, and processing the 2018 run. I sincerely apologize that the Icelander's effort is coming to an end. Thank you ADF&G area staff, Warner Lew, Josh Cozby and crew, Jeff Regnart, John Woodruff, John Lowrance, Dave Miller, the BBSRI Board, and the RSDA board (therefore, all drifters) for making this happen.

In haste,

Michael


ICELANDER

Appendix B

ADF&G inseason stock composition estimates for the Port Moller Test Fishery, 2018.

Text in italics has been added to some of these inseason ADF&G reports for this report by Raborn and Link to show the stations fished for the different stock composition estimates when it was not denoted in the original report, as stations fished varied somewhat among samples.

Fish from Stations 2-18

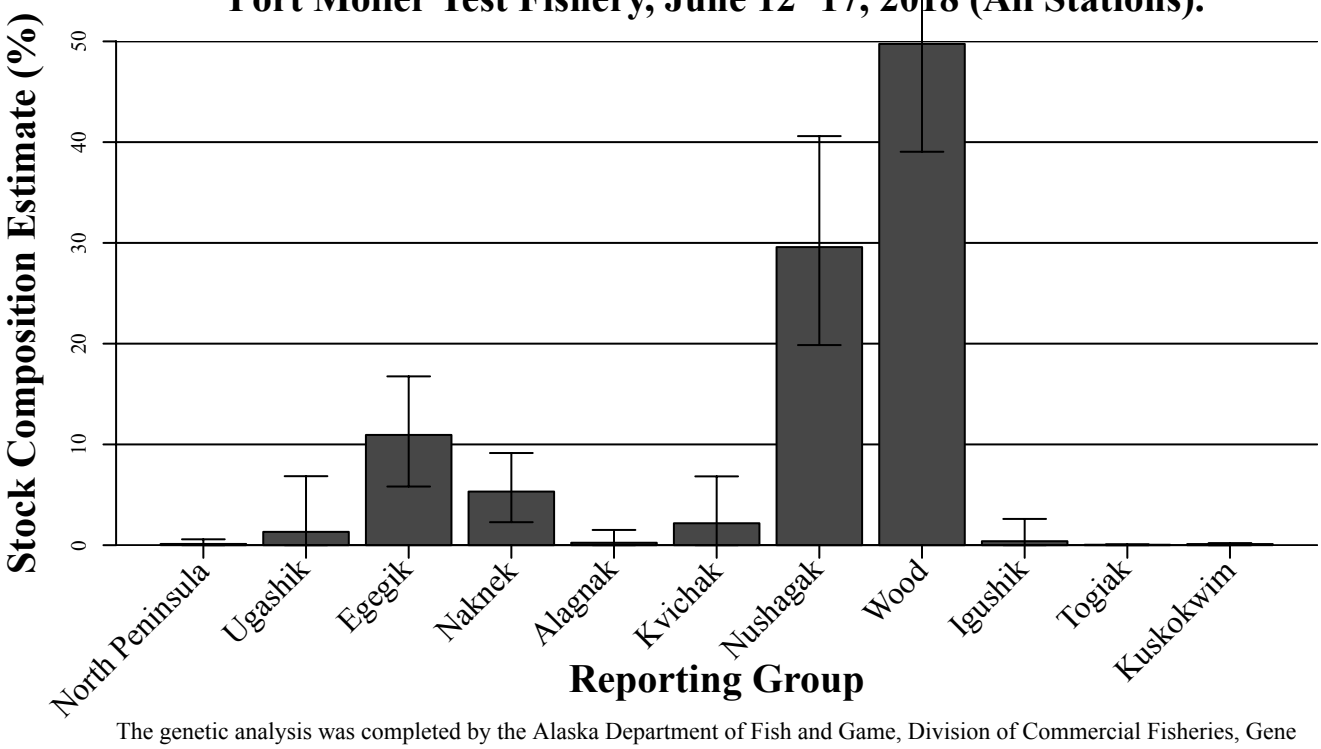
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
June 12−17, 2018 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 12−17, 2018. A total of 212 fish were sampled and 190 were analyzed (186 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.1%	0.0%	0.6%
Ugashik	1.3%	0.0%	6.8%
Egegik	10.9%	5.8%	16.8%
Naknek	5.3%	2.3%	9.1%
Alagnak	0.2%	0.0%	1.5%
Kvichak	2.2%	0.0%	6.8%
Nushagak	29.6%	19.9%	40.6%
Wood	49.7%	39.0%	59.8%
Igushik	0.4%	0.0%	2.6%
Togiak	0.0%	0.0%	0.1%
Kuskokwim	0.1%	0.0%	0.2%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 12−17, 2018 (All Stations).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

Reported as of: June 20, 2018
12:00 PM

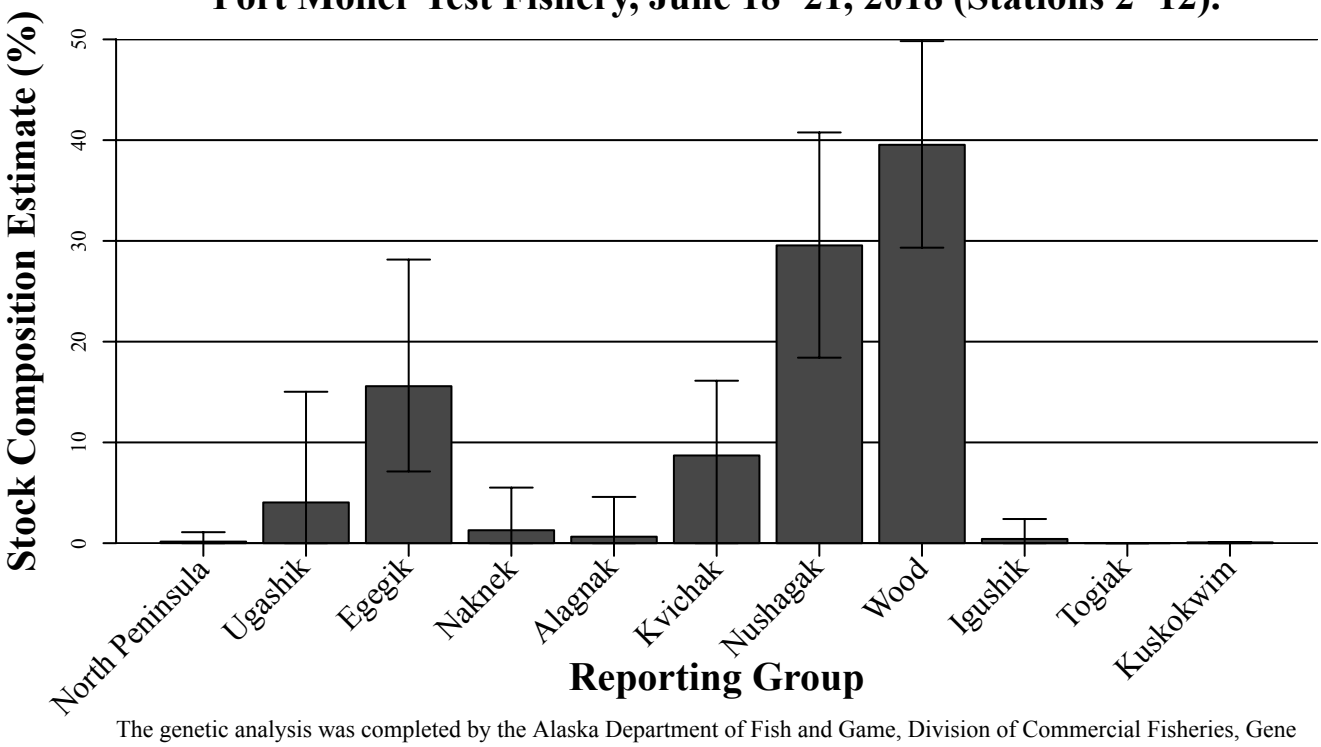
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary June 18−21, 2018 − Stations 2−12

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 18−21, 2018. A total of 191 fish were sampled and 190 were analyzed (187 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.2%	0.0%	1.1%
Ugashik	4.0%	0.0%	15.0%
Egegik	15.6%	7.1%	28.1%
Naknek	1.3%	0.0%	5.5%
Alagnak	0.6%	0.0%	4.6%
Kvichak	8.7%	0.0%	16.1%
Nushagak	29.5%	18.4%	40.8%
Wood	39.5%	29.3%	49.8%
Igushik	0.4%	0.0%	2.4%
Togiak	0.0%	0.0%	0.0%
Kuskokwim	0.1%	0.0%	0.1%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 18−21, 2018 (Stations 2−12).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

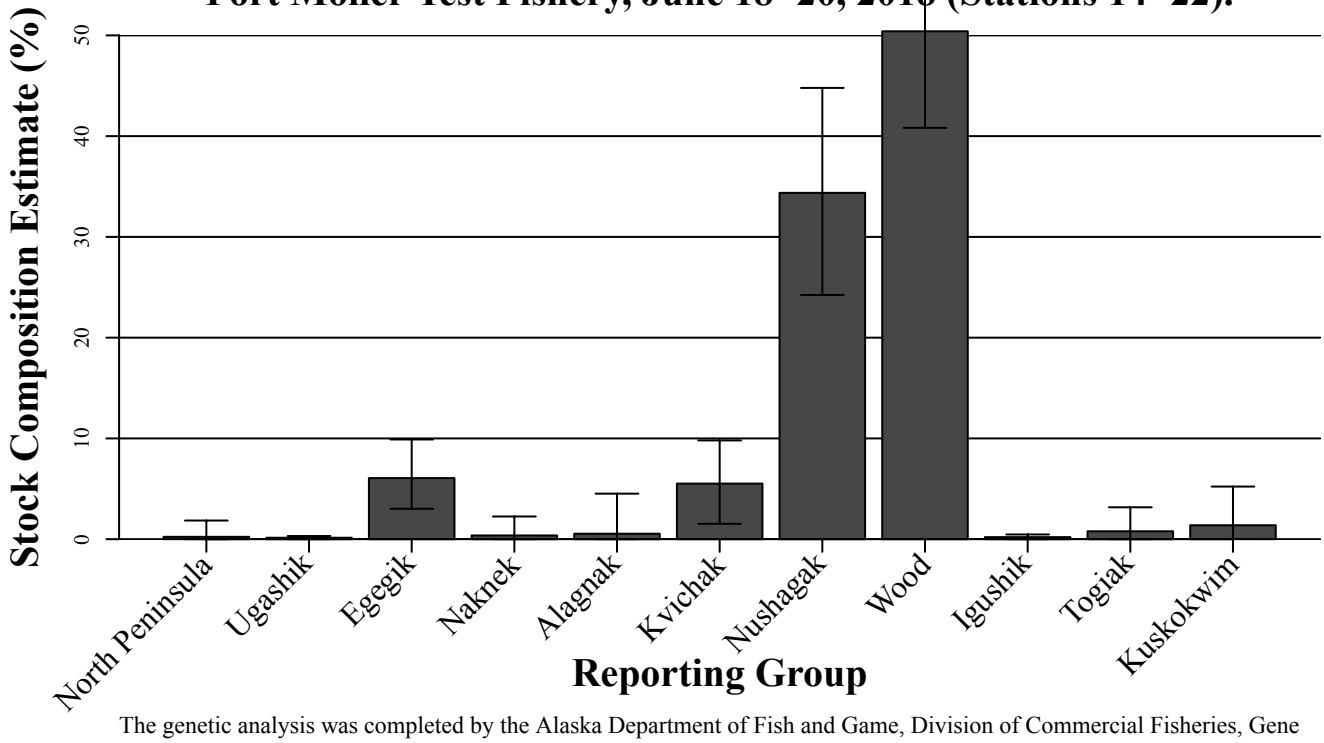
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary June 18−20, 2018 − Stations 14−22

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 18−20, 2018. A total of 319 fish were sampled and 190 were analyzed (188 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.2%	0.0%	1.9%
Ugashik	0.1%	0.0%	0.3%
Egegik	6.1%	3.0%	9.9%
Naknek	0.4%	0.0%	2.3%
Alagnak	0.5%	0.0%	4.5%
Kvichak	5.5%	1.5%	9.8%
Nushagak	34.4%	24.2%	44.8%
Wood	50.4%	40.8%	59.9%
Igushik	0.2%	0.0%	0.5%
Togiak	0.8%	0.0%	3.2%
Kuskokwim	1.4%	0.0%	5.2%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 18−20, 2018 (Stations 14−22).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

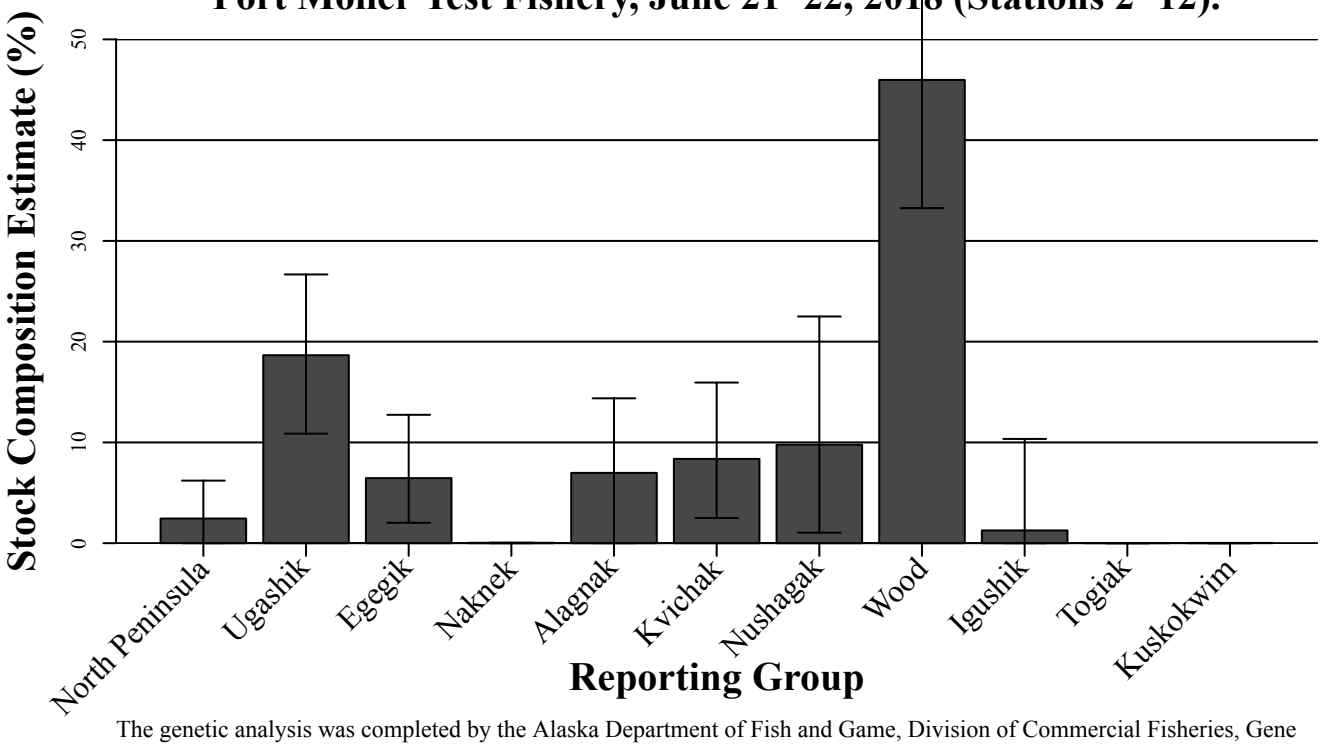
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary June 21−22, 2018 − Stations 2−12

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 21−22, 2018. A total of 188 fish were sampled and 173 were analyzed (165 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	2.4%	0.0%	6.2%
Ugashik	18.7%	10.9%	26.7%
Egegik	6.5%	2.0%	12.7%
Naknek	0.0%	0.0%	0.0%
Alagnak	7.0%	0.0%	14.4%
Kvichak	8.4%	2.5%	15.9%
Nushagak	9.8%	1.0%	22.5%
Wood	46.0%	33.3%	57.2%
Igushik	1.3%	0.0%	10.3%
Togiak	0.0%	0.0%	0.0%
Kuskokwim	0.0%	0.0%	0.0%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 21−22, 2018 (Stations 2−12).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

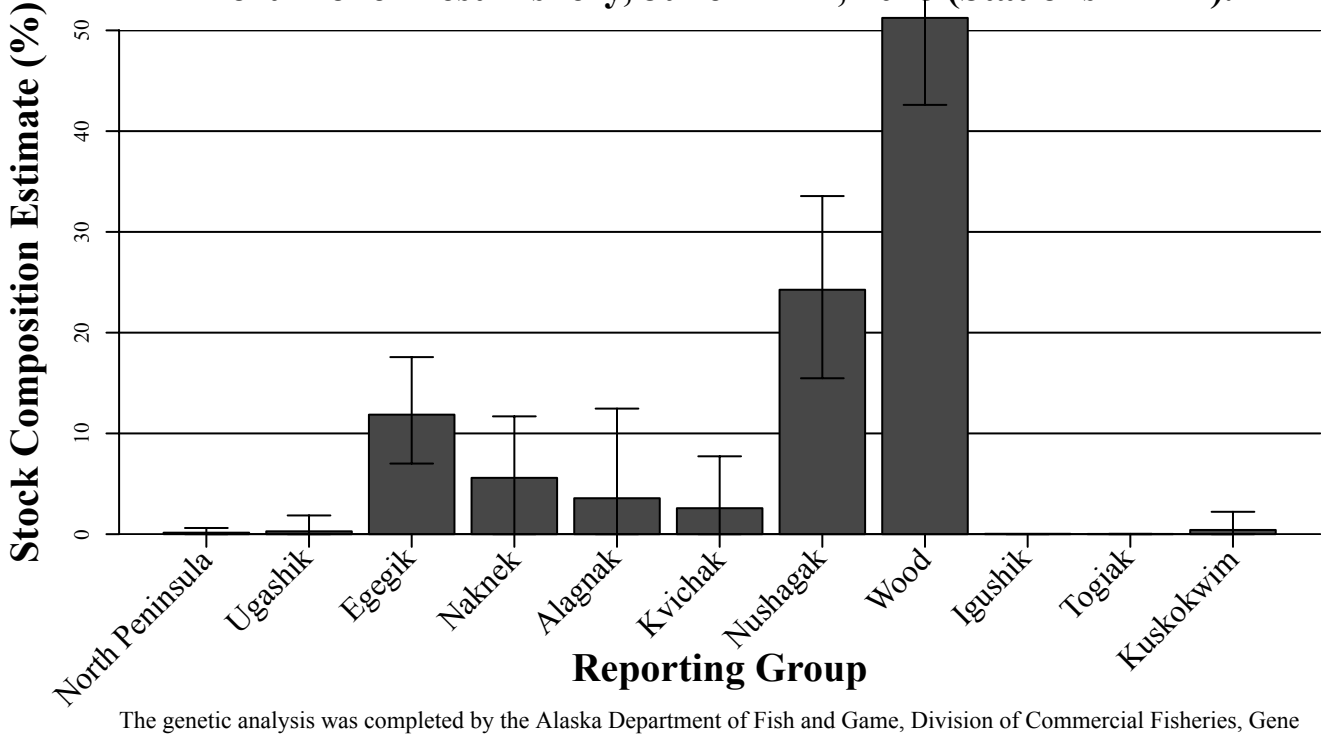
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary June 21−22, 2018 − Stations 14−22

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 21−22, 2018. A total of 265 fish were sampled and 190 were analyzed (182 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.1%	0.0%	0.6%
Ugashik	0.3%	0.0%	1.9%
Egegik	11.9%	7.0%	17.6%
Naknek	5.6%	0.0%	11.7%
Alagnak	3.6%	0.0%	12.5%
Kvichak	2.6%	0.0%	7.7%
Nushagak	24.3%	15.5%	33.6%
Wood	51.2%	42.6%	59.8%
Igushik	0.0%	0.0%	0.0%
Togiak	0.0%	0.0%	0.0%
Kuskokwim	0.4%	0.0%	2.2%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 21−22, 2018 (Stations 14−22).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

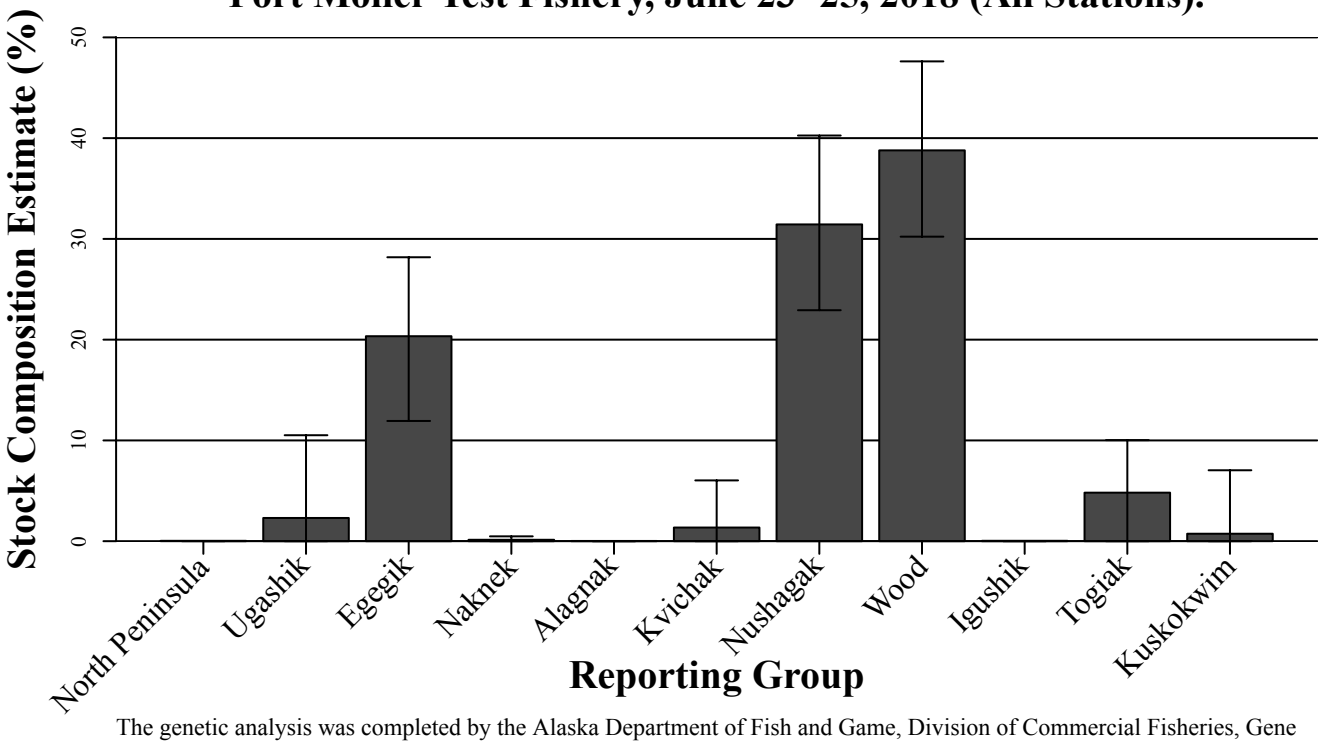
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
June 23−25, 2018 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 23−25, 2018. A total of 370 fish were sampled and 190 were analyzed (187 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.0%	0.0%	0.0%
Ugashik	2.3%	0.0%	10.5%
Egegik	20.3%	11.9%	28.2%
Naknek	0.1%	0.0%	0.5%
Alagnak	0.0%	0.0%	0.0%
Kvichak	1.4%	0.0%	6.0%
Nushagak	31.4%	22.9%	40.3%
Wood	38.8%	30.2%	47.6%
Igushik	0.0%	0.0%	0.0%
Togiak	4.8%	0.0%	10.0%
Kuskokwim	0.7%	0.0%	7.0%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 23−25, 2018 (All Stations).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

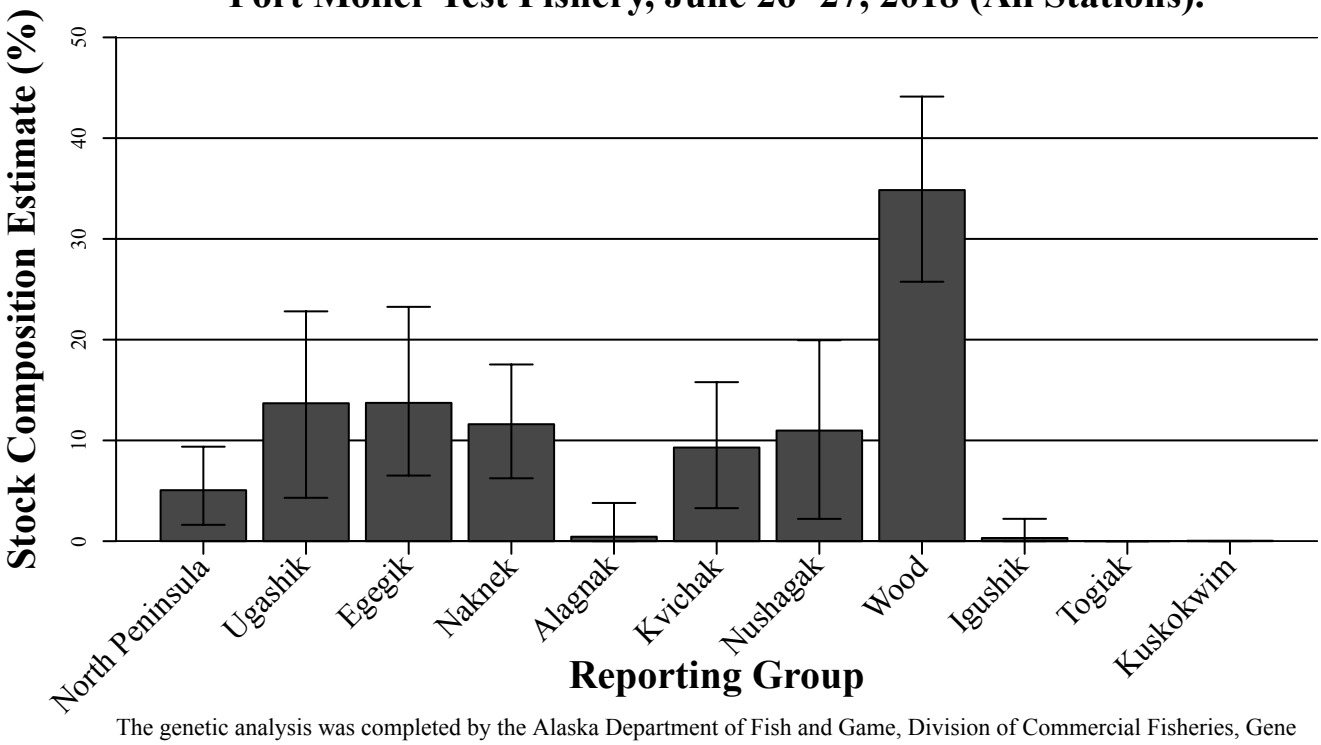
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
June 26−27, 2018 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 26−27, 2018. A total of 221 fish were sampled and 190 were analyzed (186 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	5.1%	1.6%	9.4%
Ugashik	13.7%	4.3%	22.8%
Egegik	13.7%	6.5%	23.3%
Naknek	11.6%	6.2%	17.5%
Alagnak	0.4%	0.0%	3.8%
Kvichak	9.3%	3.3%	15.8%
Nushagak	11.0%	2.2%	19.9%
Wood	34.8%	25.7%	44.1%
Igushik	0.3%	0.0%	2.2%
Togiak	0.0%	0.0%	0.0%
Kuskokwim	0.0%	0.0%	0.0%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 26−27, 2018 (All Stations).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

Reported as of: June 30, 2018
4:00 PM

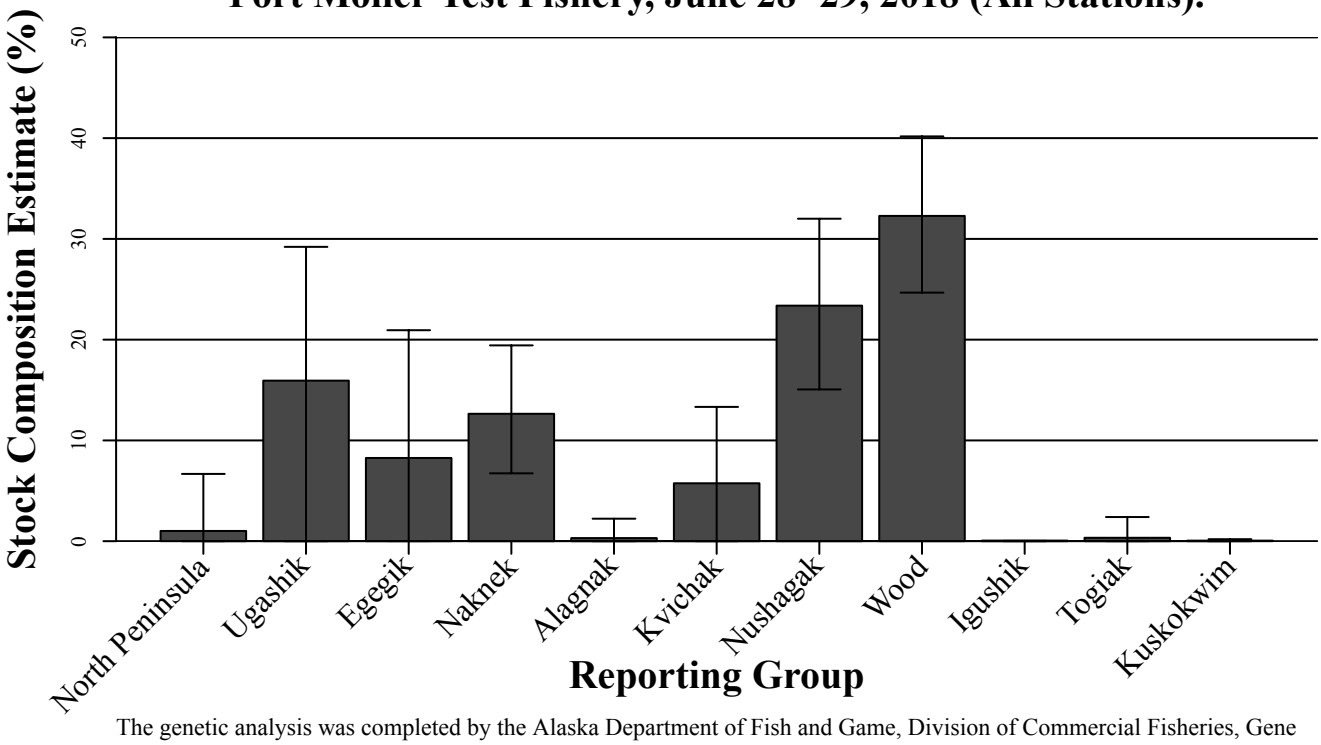
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary June 28−29, 2018 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 28−29, 2018. A total of 224 fish were sampled and 190 were analyzed (186 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	1.0%	0.0%	6.7%
Ugashik	15.9%	0.0%	29.2%
Egegik	8.3%	0.0%	20.9%
Naknek	12.6%	6.7%	19.4%
Alagnak	0.3%	0.0%	2.2%
Kvichak	5.7%	0.0%	13.3%
Nushagak	23.4%	15.1%	32.0%
Wood	32.3%	24.7%	40.2%
Igushik	0.1%	0.0%	0.0%
Togiak	0.3%	0.0%	2.4%
Kuskokwim	0.1%	0.0%	0.2%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 28−29, 2018 (All Stations).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

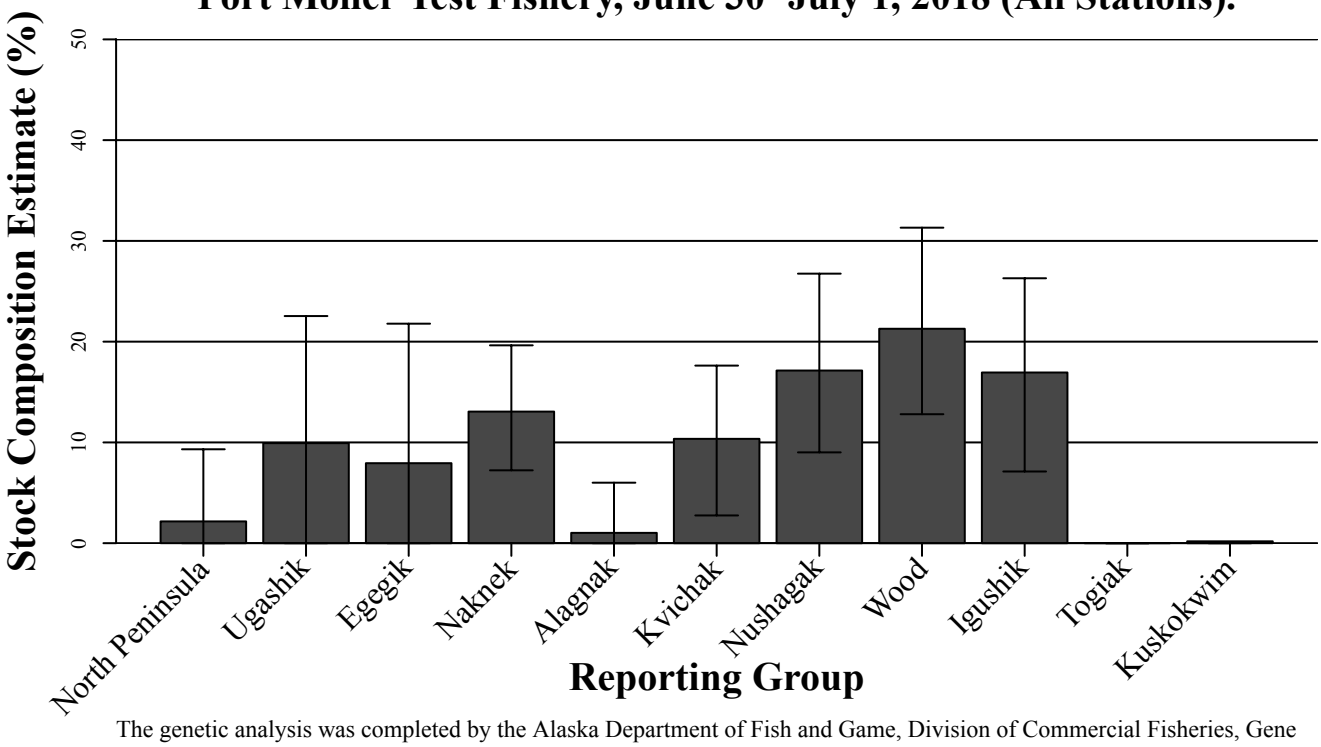
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary June 30−July 1, 2018 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 30−July 1, 2018. A total of 372 fish were sampled and 190 were analyzed (188 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	2.2%	0.0%	9.3%
Ugashik	9.9%	0.0%	22.5%
Egegik	7.9%	0.0%	21.8%
Naknek	13.1%	7.2%	19.6%
Alagnak	1.0%	0.0%	6.0%
Kvichak	10.4%	2.8%	17.6%
Nushagak	17.1%	9.0%	26.8%
Wood	21.3%	12.8%	31.3%
Igushik	16.9%	7.1%	26.3%
Togiak	0.0%	0.0%	0.0%
Kuskokwim	0.2%	0.0%	0.1%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 30−July 1, 2018 (All Stations).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

Fish from Stations 4-16

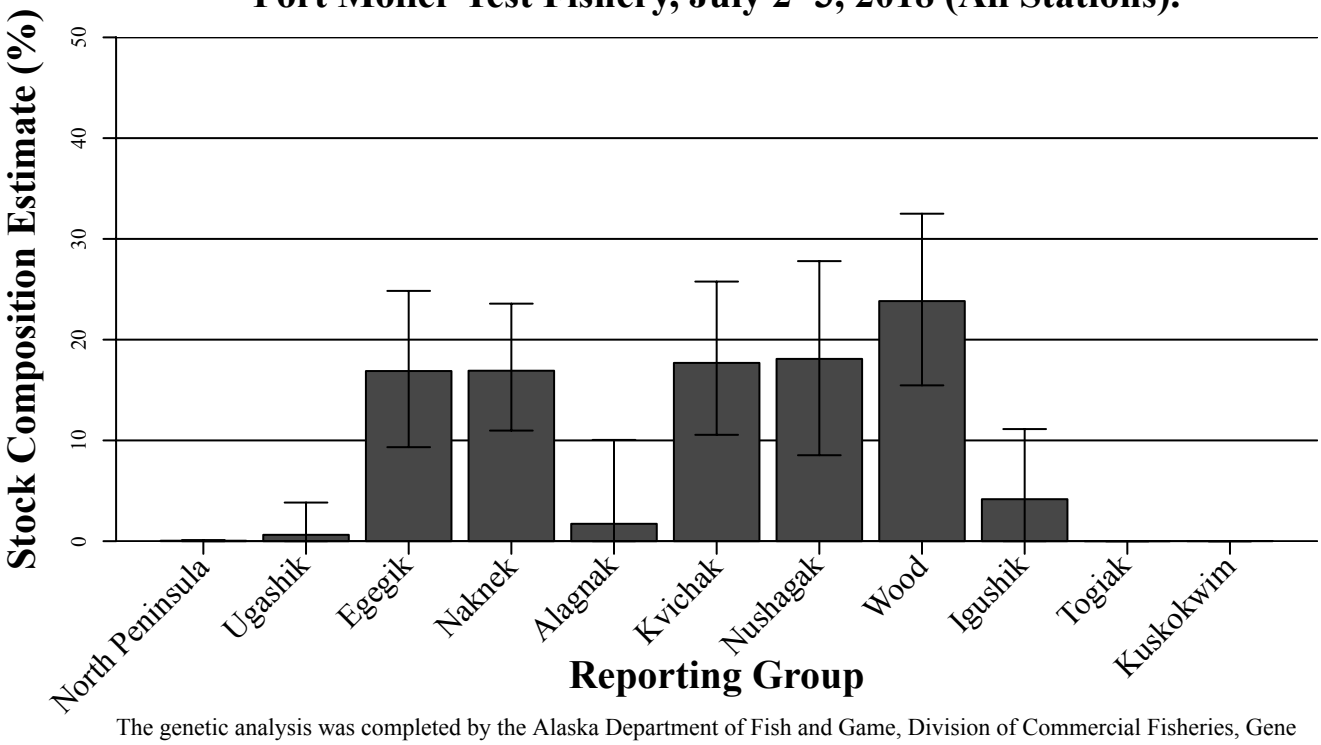
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 2−3, 2018 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for July 2−3, 2018. A total of 426 fish were sampled and 190 were analyzed (184 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.0%	0.0%	0.1%
Ugashik	0.6%	0.0%	3.8%
Egegik	16.9%	9.3%	24.8%
Naknek	16.9%	11.0%	23.6%
Alagnak	1.7%	0.0%	10.0%
Kvichak	17.7%	10.6%	25.8%
Nushagak	18.1%	8.5%	27.8%
Wood	23.8%	15.5%	32.5%
Igushik	4.2%	0.0%	11.1%
Togiak	0.0%	0.0%	0.0%
Kuskokwim	0.0%	0.0%	0.0%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 2−3, 2018 (All Stations).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

Reported as of: July 6, 2018
4:15 PM

Fish from Stations 4-16

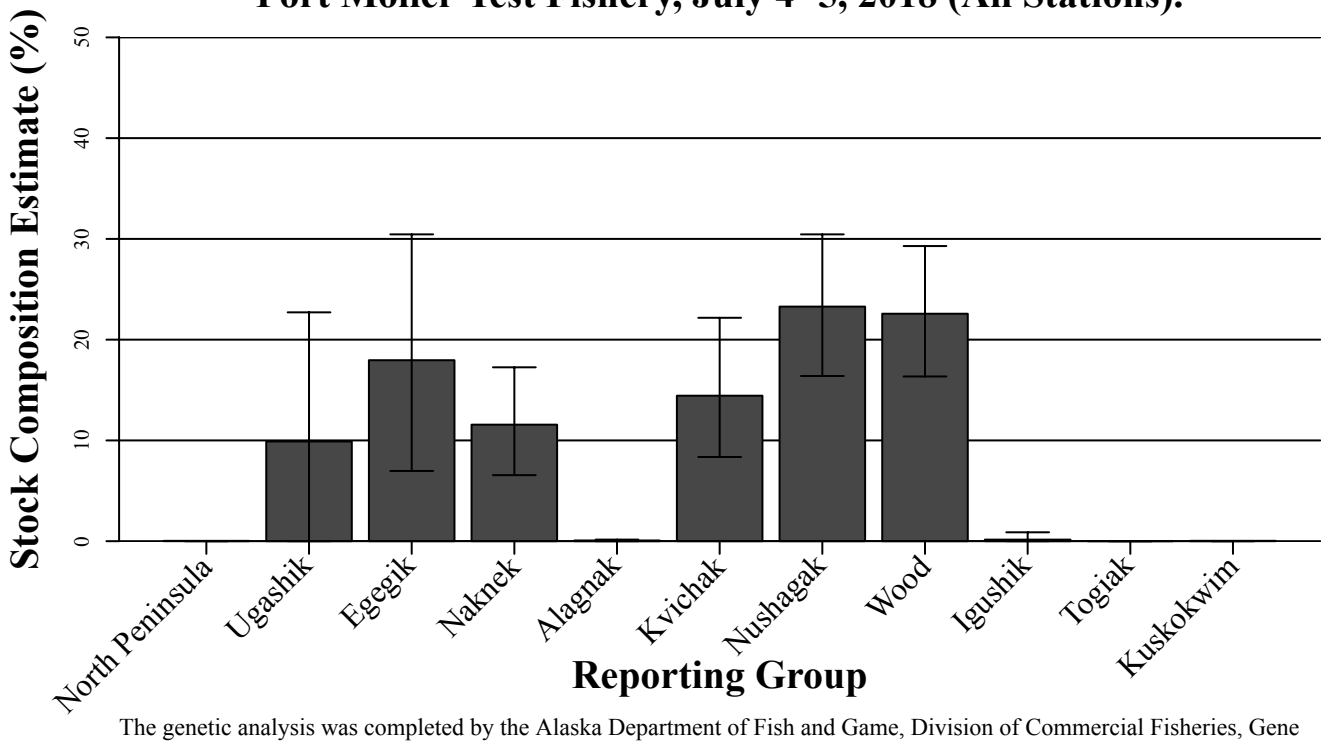
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 4−5, 2018 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for July 4−5, 2018. A total of 246 fish were sampled and 190 were analyzed (190 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.0%	0.0%	0.0%
Ugashik	9.9%	0.0%	22.7%
Egegik	18.0%	7.0%	30.4%
Naknek	11.6%	6.6%	17.3%
Alagnak	0.1%	0.0%	0.2%
Kvichak	14.4%	8.4%	22.2%
Nushagak	23.3%	16.4%	30.5%
Wood	22.6%	16.3%	29.3%
Igushik	0.2%	0.0%	0.9%
Togiak	0.0%	0.0%	0.0%
Kuskokwim	0.0%	0.0%	0.0%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 4−5, 2018 (All Stations).



The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

Reported as of: July 7, 2018
4:00 PM

Fish from Stations 2-18

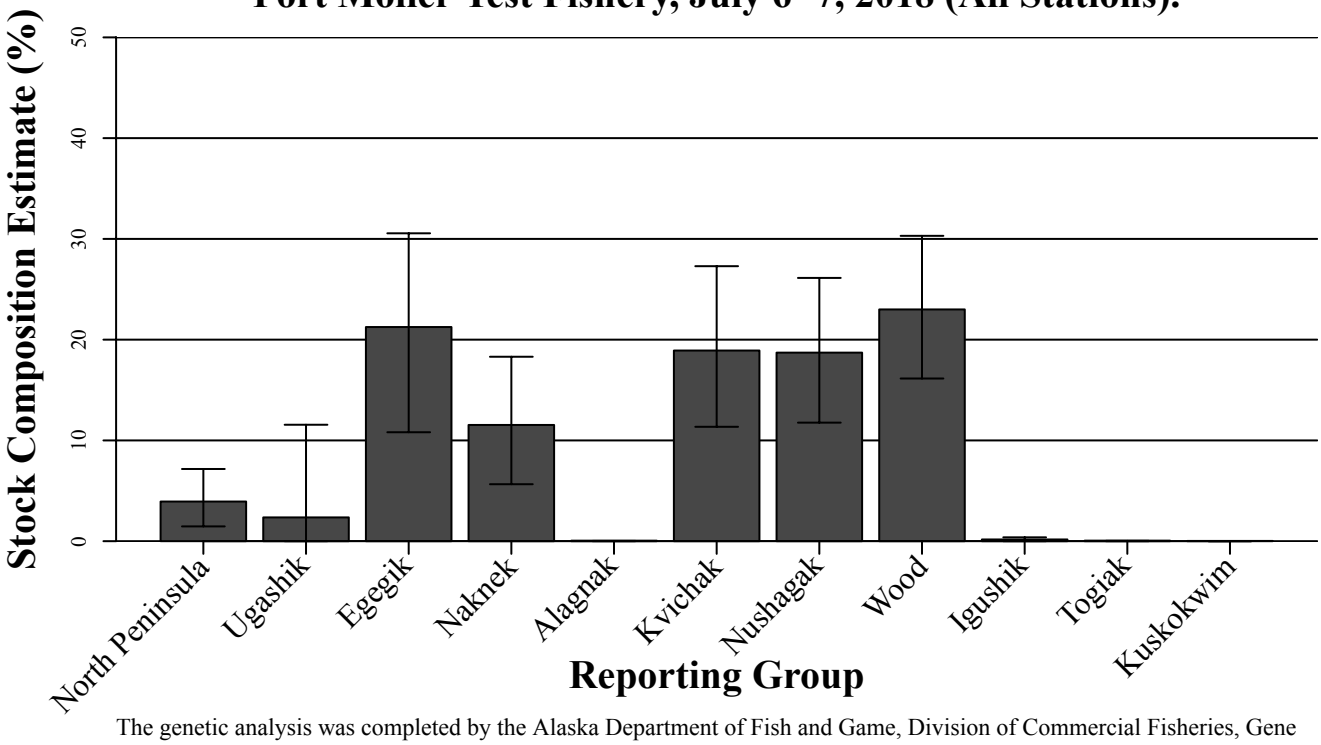
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 6−7, 2018 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for July 6−7, 2018. A total of 195 fish were sampled and 190 were analyzed (188 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	3.9%	1.5%	7.2%
Ugashik	2.4%	0.0%	11.6%
Egegik	21.3%	10.8%	30.6%
Naknek	11.5%	5.7%	18.3%
Alagnak	0.1%	0.0%	0.0%
Kvichak	18.9%	11.4%	27.3%
Nushagak	18.7%	11.8%	26.1%
Wood	23.0%	16.1%	30.3%
Igushik	0.2%	0.0%	0.4%
Togiak	0.1%	0.0%	0.0%
Kuskokwim	0.0%	0.0%	0.0%

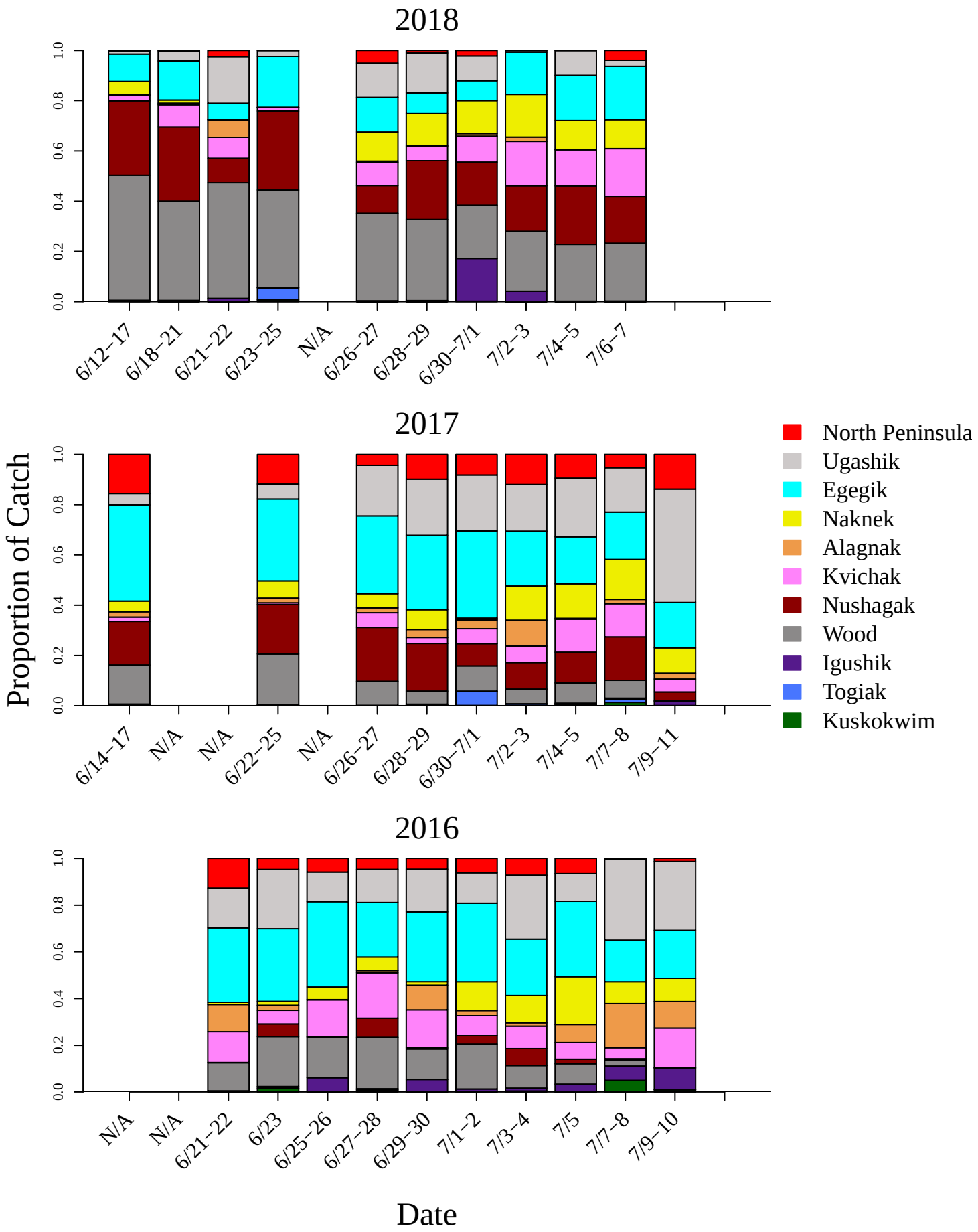
Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 6−7, 2018 (All Stations).



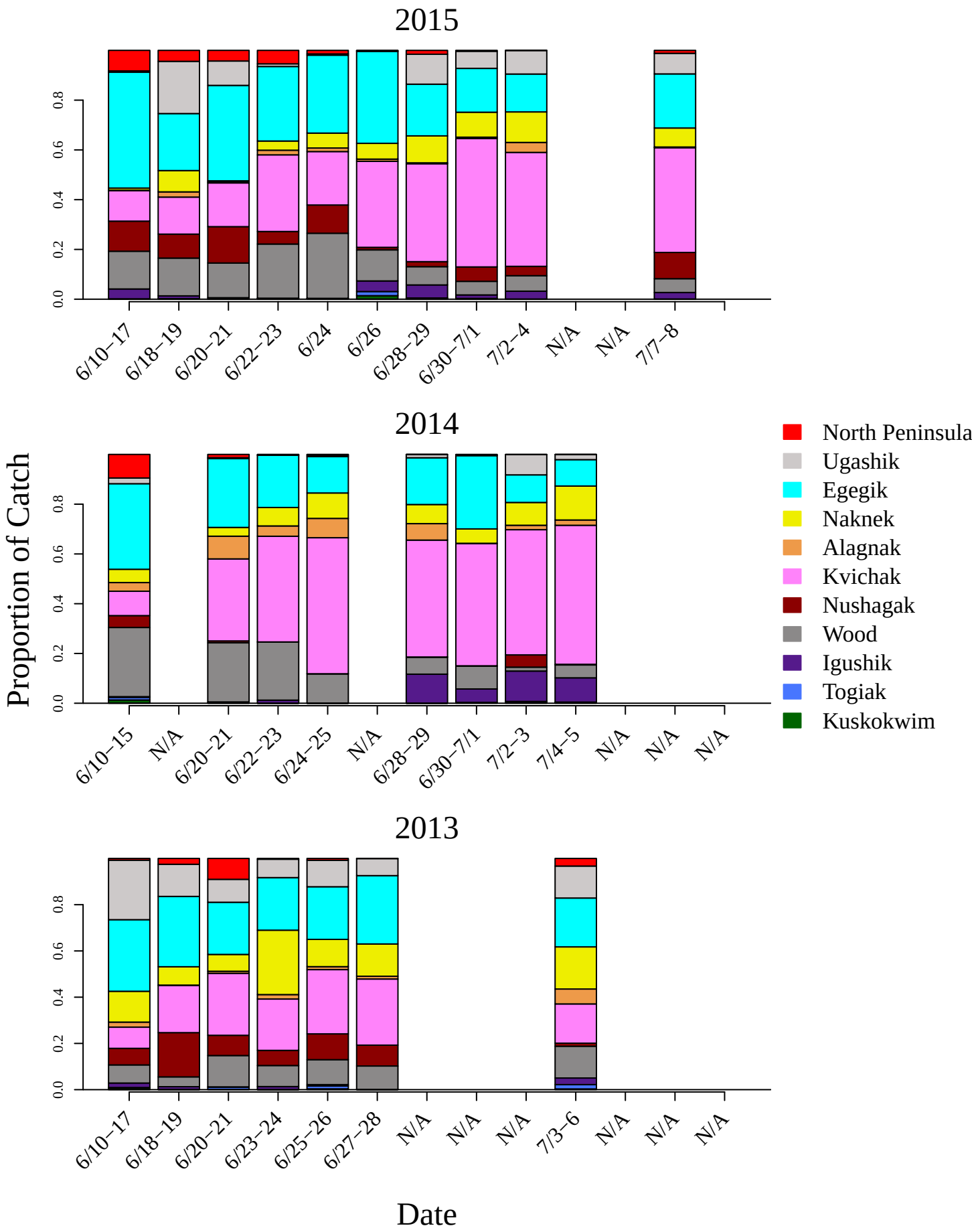
The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

Reported as of: July 8, 2018
4:30 PM

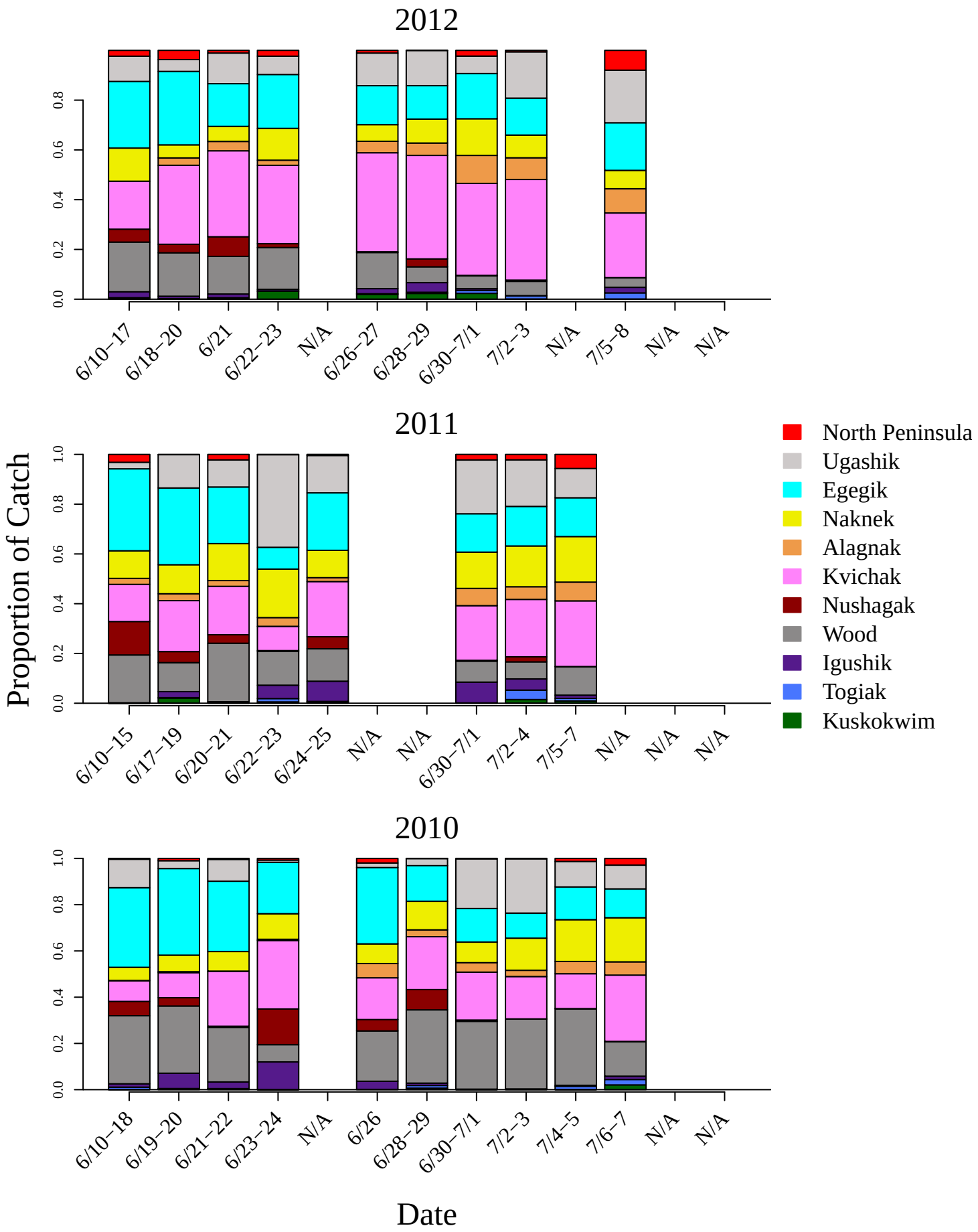
Historical Comparison of Stock Composition Estimates



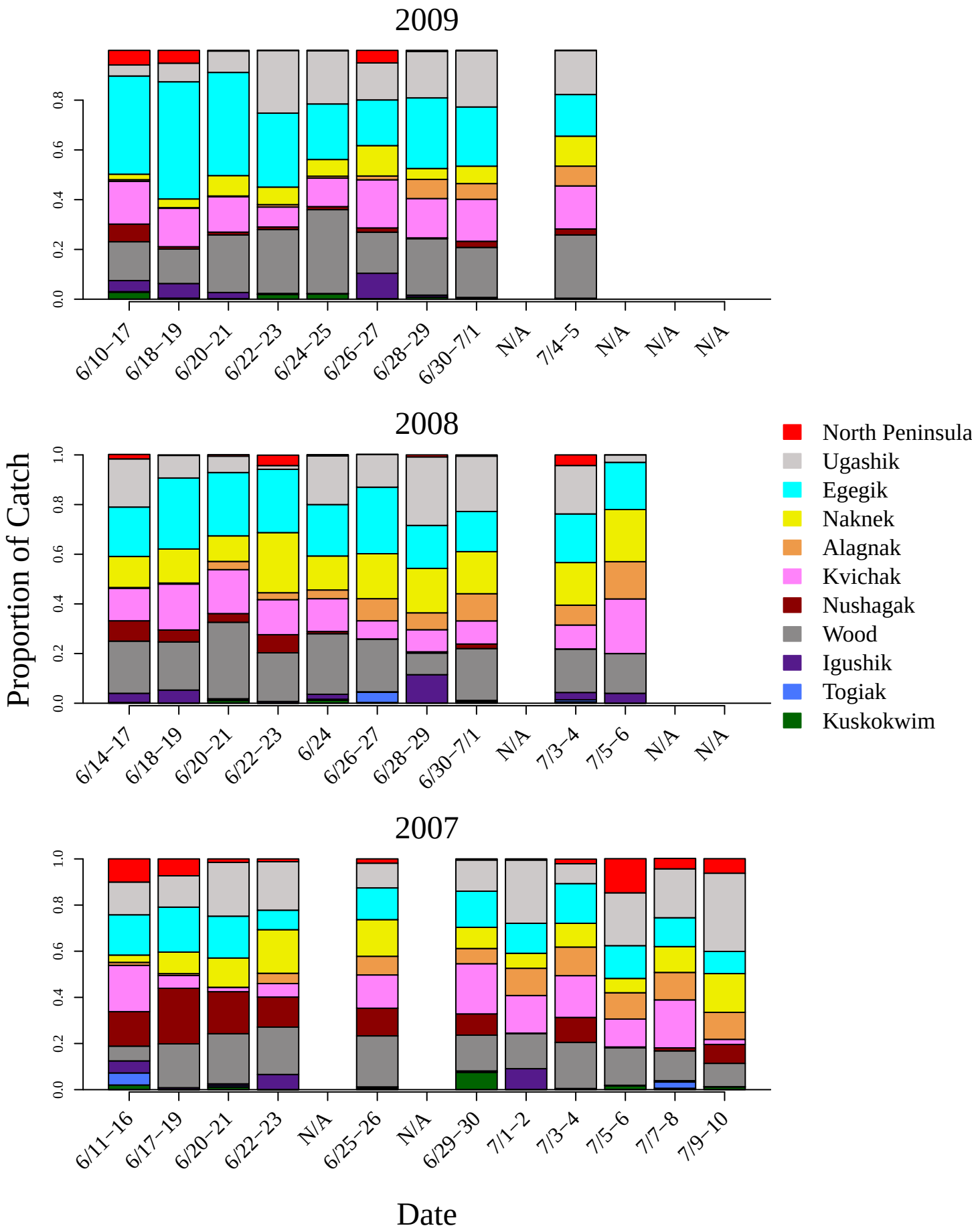
Historical Comparison of Stock Composition Estimates



Historical Comparison of Stock Composition Estimates



Historical Comparison of Stock Composition Estimates



Appendix C

ADF&G inseason age composition estimates for the Port Moller Test Fishery, inshore districts, and escapement projects, 2018.

Bristol Bay Salmon Fishery

Age Composition Summary - Sockeye Salmon

						Age							
		Period Start	Period End	Samples	Index	11	21	12	22	03	13	23	14
Egegik District	*Egegik District Harvest*	6/4/2018	6/25/2018	405	123,552	0.5%	0.2%	32.1%	5.2%		32.1%	29.6%	
		6/26/2018	6/28/2018	403	193,673	0.5%		30.0%	4.5%		43.7%	21.1%	0.2%
		6/29/2018	6/30/2018	422	287,628			20.6%	3.3%		53.1%	23.0%	
		7/1/2018	7/2/2018	381	383,733			24.4%	5.0%		49.3%	21.3%	
		7/3/2018	7/5/2018	236	319,609			20.3%	2.5%		56.8%	20.3%	
		7/6/2018	7/7/2018	429	336,775			21.2%	4.7%		56.9%	17.0%	0.2%
		7/14/2018	7/15/2018	436	563,309	0.5%		32.6%	9.9%		45.0%	11.7%	
		7/16/2018	7/17/2018	429	616,288			27.0%	8.2%		45.9%	17.9%	0.2%
		7/18/2018	8/24/2018	173	873,591			31.2%	11.6%		40.5%	16.2%	0.6%
	Egegik District Harvest Total					*0.2%*	*0.0%*	*26.6%*	*5.9%*		*47.0%*	*19.9%*	*0.1%*
	Egegik River Escapement	6/17/2018	7/3/2018	667	437,886	21.7%	5.8%	46.8%	8.4%		10.2%	7.0%	
		7/4/2018	7/6/2018	442	396,162	9.3%	2.9%	48.6%	8.8%		16.5%	12.7%	
		7/7/2018	7/22/2018	465	774,306	19.4%	4.5%	46.5%	6.5%		14.4%	8.4%	
	Egegik River Escapement Total					*17.5%*	*4.6%*	*47.2%*	*7.9%*		*13.2%*	*9.0%*	
	Egegik River Special Harvest	7/8/2018	7/9/2018	446	113,329			23.3%	2.5%		60.1%	14.1%	
		7/10/2018	7/11/2018	435	505,206	0.2%	0.2%	28.0%	7.6%		38.6%	25.1%	
		7/12/2018	7/13/2018	424	424,489			29.7%	3.8%		46.7%	19.8%	
	Egegik River Special Harvest Total					*0.1%*	*0.1%*	*27.0%*	*4.6%*		*48.6%*	*19.6%*	
Naknek-Kvichak District	*Alagnak River Escapement*	6/29/2018	7/11/2018	324	378,456	0.6%		61.4%			37.7%	0.3%	
		7/12/2018	7/15/2018	308	605,526			58.1%			40.9%	0.3%	0.6%
		7/16/2018	7/25/2018	352	597,444			65.1%			34.7%	0.3%	
	Alagnak River Escapement Total					*0.2%*		*61.7%*			*37.6%*	*0.3%*	*0.2%*
	Kvichak River Escapement	6/21/2018	7/9/2018	580	750,648		0.2%	79.0%	0.3%		20.0%	0.5%	
		7/10/2018	7/14/2018	450	1,626,606		0.2%	56.4%	0.7%		40.7%	2.0%	
		7/15/2018	7/25/2018	522	2,021,454	0.2%		72.2%	0.2%		26.2%	1.1%	
	Kvichak River Escapement Total					*0.1%*	*0.1%*	*70.2%*	*0.4%*		*28.1%*	*1.2%*	
	Kvichak Section Harvest - Set	6/18/2018	7/5/2018	280	214,079			53.2%			42.9%	3.2%	0.4%
		7/6/2018	7/15/2018	438	140,697			44.7%	1.6%		51.8%	1.4%	0.5%
		7/16/2018	8/10/2018	200	297,803			50.5%	1.0%		44.5%	3.5%	0.5%
	Kvichak Section Harvest - Set Total							*48.6%*	*1.0%*		*47.5%*	*2.4%*	*0.4%*
	Naknek River Escapement	6/20/2018	7/6/2018	519	869,478	2.1%	0.2%	65.7%	3.1%		25.8%	2.9%	0.2%
		7/7/2018	7/12/2018	373	657,288	0.8%		52.3%	7.0%		35.7%	4.3%	
		7/13/2018	7/22/2018	427	694,386	1.4%		49.6%	2.3%		41.5%	5.2%	
	Naknek River Escapement Total					*1.5%*	*0.1%*	*56.7%*	*3.9%*		*33.7%*	*4.0%*	*0.1%*
	Naknek River Special Harvest	7/7/2018	7/9/2018	816	316,901	0.1%	0.1%	27.1%	2.5%		62.3%	7.6%	0.4%
		7/10/2018	7/11/2018	607	779,512			19.1%	1.6%		71.0%	7.7%	0.2%
		7/12/2018	7/14/2018	654	457,735			17.7%	3.7%		73.2%	5.4%	
	Naknek River Special Harvest Total					*0.0%*	*0.0%*	*21.8%*	*2.6%*		*68.3%*	*6.9%*	*0.2%*
	Naknek Section Set	6/18/2018	7/3/2018	279	125,571			51.3%	1.1%		43.4%	4.3%	
		7/4/2018	7/14/2018	429	292,252	0.7%		45.9%	6.3%		37.8%	9.1%	
		7/15/2018	8/17/2018	224	377,781			62.5%	5.4%		29.9%	2.2%	
	Naknek Section Set Total					*0.3%*		*51.5%*	*4.5%*		*37.6%*	*6.0%*	
	Naknek-Kvichak District Harvest	6/18/2018	6/27/2018	364	32,268			33.5%	1.6%		59.1%	5.2%	0.5%
		6/28/2018	7/1/2018	411	156,495			39.2%	1.9%		54.5%	3.9%	0.5%
		7/2/2018	7/3/2018	366	16,046			48.1%	2.2%		44.3%	4.4%	1.1%

						Age							
		Period Start	Period End	Samples	Index	11	21	12	22	03	13	23	14
Naknek-Kvichak District	*Naknek-Kvichak District Harvest*	7/4/2018	7/5/2018	618	255,514			31.7%	1.9%		58.1%	8.1%	0.2%
		7/6/2018	7/7/2018	391	268,745			25.1%	0.8%		68.8%	4.9%	0.5%
		7/8/2018	7/15/2018	445	902,635			46.5%	2.5%		42.9%	7.6%	0.4%
		7/16/2018	7/17/2018	450	1,091,494			35.8%	4.0%		52.2%	8.0%	
		7/18/2018	7/19/2018	374	982,541			33.2%	1.1%		59.9%	5.6%	0.3%
		7/20/2018	7/21/2018	440	728,535			44.5%	1.1%		50.0%	3.4%	0.9%
		7/22/2018	7/23/2018	413	378,489			52.1%	1.2%		44.8%	1.9%	
		7/24/2018	8/17/2018	184	1,183,446			64.7%			35.3%		
	Naknek-Kvichak District Harvest Total							*39.8%*	*1.8%*		*52.7%*	*5.3%*	*0.4%*
Nushagak District	*Igushik River Escapement*	6/23/2018	7/4/2018	406	142,554			27.6%			71.2%		1.2%
		7/5/2018	7/11/2018	327	142,410			43.1%	0.3%		56.3%		0.3%
		7/12/2018	7/25/2018	285	485,808			64.2%			35.8%		
	Igushik River Escapement Total							*42.8%*	*0.1%*		*56.5%*		*0.6%*
	Igushik Section Harvest - Set	6/11/2018	8/11/2018	248	644,558			22.2%			77.8%		
	Igushik Section Harvest - Set Total							*22.2%*			*77.8%*		
	Nushagak District Harvest	6/11/2018	6/21/2018	383	186,975	0.3%		47.8%			51.7%		0.3%
		6/22/2018	6/23/2018	820	468,996			47.7%	0.7%		48.7%	2.4%	0.4%
		6/24/2018	6/25/2018	636	909,884			50.6%	0.3%		48.6%	0.3%	0.2%
		6/26/2018	6/26/2018	209	905,412			63.2%	0.5%		35.9%	0.5%	
		6/27/2018	6/28/2018	986	787,977			59.1%	0.7%		39.5%	0.5%	0.2%
		6/29/2018	6/29/2018	435	319,104			58.6%	0.9%		39.5%	0.7%	0.2%
		6/30/2018	6/30/2018	202	1,481,116			37.1%			62.9%		
		7/1/2018	7/2/2018	206	2,421,878			41.7%	0.5%		56.3%	1.5%	
		7/3/2018	7/4/2018	415	1,388,322			56.9%		0.2%	42.4%	0.5%	
		7/5/2018	7/6/2018	262	1,730,608			49.2%	0.8%		49.2%	0.4%	0.4%
		7/7/2018	7/8/2018	345	1,396,805			49.0%			50.4%		0.6%
		7/9/2018	7/9/2018	207	712,125			58.5%	0.5%		40.1%	1.0%	
		7/10/2018	7/10/2018	428	1,173,331			51.2%	0.2%		48.1%	0.5%	
		7/11/2018	7/11/2018	589	1,101,993			56.7%	0.7%		41.1%	1.0%	0.5%
		7/12/2018	7/12/2018	58	713,453			65.5%			34.5%		
		7/13/2018	7/13/2018	145	836,870			64.8%	0.7%		33.8%		0.7%
		7/14/2018	7/15/2018	433	693,206			69.7%	1.2%		28.9%		0.2%
		7/16/2018	7/18/2018	381	1,130,208	0.5%		69.8%	0.3%		28.6%	0.3%	0.5%
		7/19/2018	7/20/2018	384	573,760		0.3%	68.2%			31.0%		0.5%
		7/21/2018	9/12/2018	408	485,694			63.5%	0.5%		35.0%		1.0%
	Nushagak District Harvest Total					*0.0%*	*0.0%*	*56.2%*	*0.5%*	*0.0%*	*42.4%*	*0.6%*	*0.3%*
	Nushagak River Escapement	6/7/2018	7/1/2018	502	192,508	0.6%		30.5%	1.2%		64.9%	2.0%	0.8%
		7/2/2018	7/11/2018	578	543,004			27.0%	0.2%		70.9%	0.9%	1.0%
		7/12/2018	8/17/2018	602	511,948	0.3%		25.1%	0.2%		72.8%		1.7%
	Nushagak River Escapement Total					*0.3%*		*27.3%*	*0.5%*		*69.8%*	*0.9%*	*1.2%*
	Nushagak Section Harvest - Set	6/19/2018	6/21/2018	346	37,746			68.5%	0.3%		30.6%	0.3%	0.3%
		6/22/2018	6/25/2018	624	318,719	0.3%		86.7%	0.2%		12.7%		0.2%
		6/26/2018	7/1/2018	428	620,690			82.0%	0.5%		17.5%		
		7/2/2018	7/6/2018	415	505,200			79.0%	1.0%		19.5%	0.5%	
		7/7/2018	7/17/2018	411	1,259,491		0.2%	69.1%	1.5%		28.0%	0.5%	0.7%
		7/18/2018	9/12/2018	353	429,136		0.3%	77.3%			22.1%		0.3%
	Nushagak Section Harvest - Set Total					*0.1%*	*0.1%*	*78.2%*	*0.5%*		*20.7%*	*0.2%*	*0.2%*
	Wood River Escapement	6/18/2018	7/2/2018	543	2,438,592			94.1%	0.2%		5.7%		
		7/3/2018	7/11/2018	483	3,113,124			99.4%			0.6%		
		7/12/2018	7/21/2018	521	1,955,538			93.5%			6.5%		
	Wood River Escapement Total							*95.5%*	*0.1%*		*4.4%*		
	Wood River SHA Harvest	6/30/2018	7/25/2018	344	824,297			78.5%	0.6%		20.9%		

						Age							
		Period Start	Period End	Samples	Index	11	21	12	22	03	13	23	14
Nushagak District	*Wood River SHA Harvest Total*							*78.5%*	*0.6%*		*20.9%*		
Port Moller	*Port Moller Test Fishery*	6/10/2018	6/11/2018	22	14			63.6%			31.8%	4.5%	
		6/12/2018	6/13/2018	44	11			56.8%	2.3%		31.8%	9.1%	
		6/14/2018	6/15/2018	14	8			42.9%			57.1%		
		6/16/2018	6/17/2018	143	22			55.9%	1.4%		38.5%	4.2%	
		6/18/2018	6/19/2018	272	19			54.0%	1.1%		42.6%	2.2%	
		6/20/2018	6/21/2018	274	26	0.4%		49.3%			46.4%	3.6%	0.4%
		6/22/2018	6/23/2018	326	61		0.3%	46.9%	1.2%		48.5%	3.1%	
		6/24/2018	6/25/2018	218	37			35.3%	0.9%		58.3%	5.0%	0.5%
		6/26/2018	6/27/2018	203	73			53.2%	2.0%		39.9%	4.9%	
		6/28/2018	6/29/2018	202	55			55.4%	2.5%		37.6%	4.5%	
		6/30/2018	7/1/2018	335	97			54.6%	2.1%		39.4%	3.9%	
		7/2/2018	7/3/2018	385	71			47.3%	0.3%		46.8%	5.7%	
		7/4/2018	7/5/2018	219	60			36.5%	1.4%		58.0%	4.1%	
		7/6/2018	7/7/2018	176	65			52.3%	4.0%		40.9%	2.3%	0.6%
		7/11/2018	7/11/2018	133	46			48.1%	3.0%		42.1%	6.0%	0.8%
	Port Moller Test Fishery Total					*0.0%*	*0.0%*	*49.2%*	*1.4%*		*45.0%*	*4.1%*	*0.1%*
Togiak District	*Togiak River Escapement*	7/4/2018	7/18/2018	349	115,650	0.3%		63.9%	0.3%		34.7%	0.9%	
		7/19/2018	7/26/2018	247	146,088			55.9%			42.9%	1.2%	
		7/27/2018	8/7/2018	211	250,032			48.8%	0.5%		50.2%	0.5%	
	Togiak River Escapement Total					*0.1%*		*57.5%*	*0.2%*		*41.3%*	*0.9%*	
	Togiak River Section Set Mix Harvest	6/18/2018	6/30/2018	150	2,427			18.7%			80.7%	0.7%	
		7/1/2018	7/7/2018	416	49,280			20.2%	0.5%		77.9%	0.5%	1.0%
		7/8/2018	7/14/2018	406	106,157			38.2%	1.0%	0.2%	58.6%	1.0%	1.0%
		7/15/2018	7/21/2018	406	177,316			37.2%			62.6%	0.2%	
		7/22/2018	7/28/2018	339	166,776			33.0%	0.6%		64.6%	1.8%	
		7/29/2018	8/4/2018	292	213,239			36.6%	0.3%		61.3%	0.7%	1.0%
		8/5/2018	9/6/2018	157	143,725			34.4%			63.7%		1.9%
	Togiak River Section Set Mix Harvest Total							*31.9%*	*0.4%*	*0.0%*	*66.3%*	*0.7%*	*0.6%*
Ugashik District	*Ugashik District Harvest*	6/1/2018	6/27/2018	267	22,539			37.8%	0.7%		57.3%	4.1%	
		6/28/2018	6/29/2018	425	59,288			33.6%	0.5%		63.1%	2.8%	
		6/30/2018	7/1/2018	443	99,651			47.0%	2.7%		45.8%	4.3%	0.2%
		7/2/2018	7/4/2018	432	182,204			48.6%	1.2%		48.4%	1.6%	
		7/5/2018	7/13/2018	394	246,107			50.8%	1.0%		46.2%	1.8%	0.3%
		7/14/2018	7/15/2018	402	254,186			59.7%	1.5%		35.8%	2.7%	0.2%
		7/16/2018	7/17/2018	433	482,915			61.2%	1.4%		35.1%	2.1%	
		7/18/2018	8/6/2018	255	1,521,034			67.8%	2.0%		29.4%	0.4%	0.4%
	Ugashik District Harvest Total							*50.5%*	*1.4%*		*45.4%*	*2.5%*	*0.1%*
	Ugashik River Escapement	6/27/2018	7/15/2018	379	636,450	1.3%		63.9%	0.8%		32.7%	1.3%	
		7/16/2018	7/27/2018	286	531,342	1.0%		63.6%	1.4%		32.5%	1.4%	
	Ugashik River Escapement Total					*1.2%*		*63.8%*	*1.1%*		*32.6%*	*1.4%*	
Sockeye Salmon Total						**0.8%**	**0.2%**	**49.1%**	**1.8%**	**0.0%**	**43.5%**	**4.3%**	**0.3%**

Rows 1 - 139 (All Rows)

Appendix D

ADF&G daily run summaries for Bristol Bay in 2018.

June 20 through August 2, 2018

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/20/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**44**	**0**	**0**	**0**	**44**
	Ugashik River			0	0	0	
	Egegik	**7,000**	**13,667**	**1,782**	**5,904**	**0**	**19,571**
	Egegik River			1,782	5,904	0	
	Naknek-Kvichak	**42**	**266**	**42**	**42**	**0**	**308**
	Alagnak River			0	0	0	
	Kvichak River			0	0	0	
	Naknek River			42	42	0	
Bristol Bay West	**Nushagak**	**125,000**	**141,815**	**36,377**	**120,305**	**0**	**262,120**
	Igushik River			0	0	0	
	Nushagak River			11,885	45,998	0	
	Wood River			24,492	74,307	0	
	Togiak	**200**	**364**	**0**	**0**	**0**	**364**
	Togiak River			0	0	0	
Bristol Bay Totals:		**132,242**	**156,156**	**38,201**	**126,251**	**0**	**282,407**

Sockeye per Drift Delivery for: June 20

	Sockeye per Delivery
Ugashik	
Egegik	63
Naknek-Kvichak	
Nushagak	312
Togiak	23

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/17/2018	15	49
6/18/2018	5	55
6/19/2018	17	68
6/20/2018	12	77

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/21/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Egegik**	**0**	**13,799**	**384**	**6,288**	**1,500**	**21,587**
	Egegik River			384	6,288	1,500	
	Naknek-Kvichak	**200**	**466**	**24**	**66**	**0**	**532**
	Alagnak River			0	0	0	
	Kvichak River			0	0	0	
	Naknek River			24	66	0	
Bristol Bay West	**Nushagak**	**90,000**	**234,196**	**53,860**	**174,165**	**0**	**408,361**
	Igushik River			0	0	0	
	Nushagak River			18,526	64,524	0	
	Wood River			35,334	109,641	0	
	Togiak	**0**	**226**	**0**	**0**	**0**	**226**
	Togiak River			0	0	0	
Bristol Bay Totals:		**90,200**	**248,687**	**54,268**	**180,519**	**1,500**	**430,706**

Sockeye per Drift Delivery for: June 21

	Sockeye per Delivery
Egegik	
Naknek-Kvichak	56
Nushagak	172
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/18/2018	5	55
6/19/2018	17	68
6/20/2018	8	77
6/21/2018	9	86

Registrations as of: June 22 09:00 AM- and - June 24 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	250	251	199	201	51	50
Naknek-Kvichak	39	39	36	36	3	3
Nushagak	834	854	614	632	220	222
Togiak	14	15	14	15		
Ugashik	6	10	6	9		1
Grand Total	**1,143**	**1,169**	**869**	**893**	**274**	**276**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/22/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Egegik**	**16,000**	**29,799**	**2,736**	**9,024**	**2,000**	**40,823**
	Egegik River			2,736	9,024	2,000	
	Naknek-Kvichak	**0**	**488**	**276**	**342**	**0**	**830**
	Alagnak River			0	0	0	
	Kvichak River			6	6	0	
	Naknek River			270	336	0	
Bristol Bay West	**Nushagak**	**67,000**	**301,432**	**37,322**	**211,486**	**0**	**512,918**
	Igushik River			0	0	0	
	Nushagak River			11,744	76,222	0	
	Wood River			25,578	135,264	0	
	Togiak	**0**	**226**	**0**	**0**	**0**	**226**
	Togiak River			0	0	0	
Bristol Bay Totals:		**83,000**	**331,945**	**40,334**	**220,852**	**2,000**	**554,797**

Sockeye per Drift Delivery for: June 22

	Sockeye per Delivery
Egegik	59
Naknek-Kvichak	
Nushagak	105
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/19/2018	17	68
6/20/2018	8	77
6/21/2018	9	86
6/22/2018	46	132

Registrations as of: June 23 09:00 AM- and - June 25 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	255	260	205	209	50	51
Naknek-Kvichak	41	41	38	38	3	3
Nushagak	883	904	656	669	227	235
Togiak	19	19	19	19		
Ugashik	20	24	16	19	4	5
Grand Total	**1,218**	**1,248**	**934**	**954**	**284**	**294**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/23/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Egegik**	**0**	**29,472**	**17,622**	**26,646**	**40,000**	**96,118**
	Egegik River			17,622	26,646	40,000	
	Naknek-Kvichak	**0**	**507**	**2,028**	**2,370**	**0**	**2,877**
	Alagnak River			0	0	0	
	Kvichak River			36	42	0	
	Naknek River			1,992	2,328	0	
Bristol Bay West	**Nushagak**	**430,000**	**731,856**	**29,933**	**241,419**	**0**	**973,275**
	Igushik River			2,022	2,022	0	
	Nushagak River			6,623	82,845	0	
	Wood River			21,288	156,552	0	
	Togiak	**0**	**226**	**0**	**0**	**0**	**226**
	Togiak River			0	0	0	
Bristol Bay Totals:		**430,000**	**762,061**	**49,583**	**270,435**	**40,000**	**1,072,496**

Sockeye per Drift Delivery for: June 23

	Sockeye per Delivery
Egegik	
Naknek-Kvichak	
Nushagak	760
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/20/2018	8	77
6/21/2018	9	86
6/22/2018	46	132
6/23/2018	14	146

Registrations as of: June 24 09:00 AM- and - June 26 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	257	261	208	212	49	49
Naknek-Kvichak	43	43	39	39	4	4
Nushagak	961	973	710	718	251	255
Togiak	22	22	22	22		
Ugashik	23	25	19	20	4	5
Grand Total	**1,306**	**1,324**	**998**	**1,011**	**308**	**313**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/24/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**3,696**	**0**	**0**	**0**	**3,696**
	Ugashik River			0	0	0	
	Egegik	**0**	**29,472**	**59,634**	**86,280**	**65,000**	**180,752**
	Egegik River			59,634	86,280	65,000	
	Naknek-Kvichak	**0**	**507**	**3,642**	**6,012**	**0**	**6,519**
	Alagnak River			0	0	0	
	Kvichak River			24	66	0	
	Naknek River			3,618	5,946	0	
Bristol Bay West	**Nushagak**	**475,000**	**1,207,132**	**21,853**	**263,272**	**0**	**1,470,404**
	Igushik River			2,910	4,932	0	
	Nushagak River			3,523	86,368	0	
	Wood River			15,420	171,972	0	
	Togiak	**0**	**226**	**0**	**0**	**0**	**226**
	Togiak River			0	0	0	
Bristol Bay Totals:		**475,000**	**1,241,033**	**85,129**	**355,564**	**65,000**	**1,661,597**

Sockeye per Drift Delivery for: June 24

	Sockeye per Delivery
Ugashik	
Egegik	
Naknek-Kvichak	
Nushagak	450
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/21/2018	9	86
6/22/2018	46	132
6/23/2018	14	146
6/24/2018	18	165

Registrations as of: June 25 09:00 AM- and - June 27 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	300	307	246	252	54	55
Naknek-Kvichak	44	55	40	49	4	6
Nushagak	987	1,006	729	745	258	261
Togiak	22	22	22	22		
Ugashik	21	21	17	17	4	4
Grand Total	**1,374**	**1,411**	**1,054**	**1,085**	**320**	**326**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/25/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**2,000**	**5,696**	**0**	**0**	**0**	**5,696**
	Ugashik River			0	0	0	
	Egegik	**94,000**	**123,472**	**72,444**	**158,724**	**60,000**	**342,196**
	Egegik River			72,444	158,724	60,000	
	Naknek-Kvichak	**0**	**507**	**10,752**	**16,764**	**0**	**17,271**
	Alagnak River			0	0	0	
	Kvichak River			24	90	0	
	Naknek River			10,728	16,674	0	
Bristol Bay West	**Nushagak**	**740,000**	**1,947,328**	**123,287**	**386,559**	**0**	**2,333,887**
	Igushik River			1,734	6,666	0	
	Nushagak River			13,385	99,753	0	
	Wood River			108,168	280,140	0	
	Togiak	**500**	**726**	**0**	**0**	**0**	**726**
	Togiak River			0	0	0	
Bristol Bay Totals:		**836,500**	**2,077,729**	**206,483**	**562,047**	**60,000**	**2,699,776**

Sockeye per Drift Delivery for: June 25

	Sockeye per Delivery
Ugashik	
Egegik	122
Naknek-Kvichak	
Nushagak	449
Togiak	17

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/22/2018	46	132
6/23/2018	14	146
6/24/2018	18	165
6/25/2018	16	180

Registrations as of: June 26 09:00 AM- and - June 28 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	332	339	270	278	62	61
Naknek-Kvichak	84	104	77	92	7	12
Nushagak	1,032	1,042	766	774	266	268
Togiak	27	27	27	27		
Ugashik	21	23	17	19	4	4
Grand Total	**1,496**	**1,535**	**1,157**	**1,190**	**339**	**345**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/26/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**5,938**	**0**	**0**	**10,000**	**15,938**
	Ugashik River			0	0	10,000	
	Egegik	**52,000**	**175,552**	**39,246**	**197,970**	**60,000**	**433,522**
	Egegik River			39,246	197,970	60,000	
	Naknek-Kvichak	**22,000**	**22,507**	**16,482**	**33,246**	**0**	**55,753**
	Alagnak River			0	0	0	
	Kvichak River			0	90	0	
	Naknek River			16,482	33,156	0	
Bristol Bay West	**Nushagak**	**1,032,000**	**2,981,608**	**166,269**	**552,828**	**0**	**3,534,436**
	Igushik River			1,014	7,680	0	
	Nushagak River			12,873	112,626	0	
	Wood River			152,382	432,522	0	
	Togiak	**500**	**1,206**	**0**	**0**	**0**	**1,206**
	Togiak River			0	0	0	
Bristol Bay Totals:		**1,106,500**	**3,186,811**	**221,997**	**784,044**	**70,000**	**4,040,855**

Sockeye per Drift Delivery for: June 26

	Sockeye per Delivery
Ugashik	
Egegik	240
Naknek-Kvichak	231
Nushagak	1,015
Togiak	22

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/23/2018	14	146
6/24/2018	18	165
6/25/2018	16	180
6/26/2018	25	213

Registrations as of: June 27 09:00 AM- and - June 29 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	334	338	273	277	61	61
Naknek-Kvichak	105	117	93	102	12	15
Nushagak	1,058	1,064	786	792	272	272
Togiak	27	27	27	27		
Ugashik	26	31	21	24	5	7
Grand Total	**1,550**	**1,577**	**1,200**	**1,222**	**350**	**355**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/27/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**17,000**	**22,938**	**462**	**462**	**10,000**	**33,400**
	Ugashik River			462	462	10,000	
	Egegik	**103,000**	**277,733**	**32,862**	**230,832**	**40,000**	**548,565**
	Egegik River			32,862	230,832	40,000	
	Naknek-Kvichak	**24,000**	**46,464**	**20,406**	**54,366**	**0**	**100,830**
	Alagnak River			0	0	0	
	Kvichak River			0	90	0	
	Naknek River			20,406	54,276	0	
Bristol Bay West	**Nushagak**	**684,000**	**3,665,892**	**246,920**	**802,748**	**0**	**4,468,640**
	Igushik River			1,902	9,582	0	
	Nushagak River			14,510	130,136	0	
	Wood River			230,508	663,030	0	
	Togiak	**750**	**1,976**	**0**	**0**	**0**	**1,976**
	Togiak River			0	0	0	
Bristol Bay Totals:		**828,750**	**4,015,003**	**300,650**	**1,088,408**	**50,000**	**5,153,411**

Sockeye per Drift Delivery for: June 27

	Sockeye per Delivery
Ugashik	716
Egegik	383
Naknek-Kvichak	245
Nushagak	643
Togiak	27

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/24/2018	18	165
6/25/2018	16	180
6/26/2018	25	213
6/27/2018	48	259

Registrations as of: June 28 09:00 AM- and - June 30 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	330	349	271	282	59	67
Naknek-Kvichak	120	132	106	117	14	15
Nushagak	1,049	1,059	783	792	266	267
Togiak	27	27	27	27		
Ugashik	33	53	26	42	7	11
Grand Total	**1,559**	**1,620**	**1,213**	**1,260**	**346**	**360**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/28/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**15,000**	**37,539**	**756**	**1,218**	**10,000**	**48,757**
	Ugashik River			756	1,218	10,000	
	Egegik	**40,000**	**318,080**	**6,330**	**237,162**	**25,000**	**580,242**
	Egegik River			6,330	237,162	25,000	
	Naknek-Kvichak	**40,000**	**91,340**	**35,844**	**90,210**	**0**	**181,550**
	Alagnak River			0	0	0	
	Kvichak River			162	252	0	
	Naknek River			35,682	89,958	0	
Bristol Bay West	**Nushagak**	**292,000**	**3,958,495**	**333,225**	**1,135,973**	**0**	**5,094,468**
	Igushik River			2,640	12,222	0	
	Nushagak River			18,735	148,871	0	
	Wood River			311,850	974,880	0	
	Togiak	**0**	**1,976**	**0**	**0**	**0**	**1,976**
	Togiak River			0	0	0	
Bristol Bay Totals:		**387,000**	**4,407,430**	**376,155**	**1,464,563**	**35,000**	**5,906,993**

Sockeye per Drift Delivery for: June 28

	Sockeye per Delivery
Ugashik	508
Egegik	124
Naknek-Kvichak	122
Nushagak	195
Togiak	29

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/25/2018	16	180
6/26/2018	25	213
6/27/2018	48	259
6/28/2018	36	295

Registrations as of: June 29 09:00 AM- and - July 01 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	336	374	277	303	59	71
Naknek-Kvichak	137	148	122	133	15	15
Nushagak	1,028	1,034	767	772	261	262
Togiak	27	27	27	27		
Ugashik	39	64	30	51	9	13
Grand Total	**1,567**	**1,647**	**1,223**	**1,286**	**344**	**361**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/29/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**44,000**	**81,716**	**1,362**	**2,580**	**10,000**	**94,296**
	Ugashik River			1,362	2,580	10,000	
	Egegik	**70,000**	**387,225**	**12,876**	**250,038**	**50,000**	**687,263**
	Egegik River			12,876	250,038	50,000	
	Naknek-Kvichak	**11,000**	**102,127**	**43,986**	**134,196**	**0**	**236,323**
	Alagnak River			456	456	0	
	Kvichak River			1,218	1,470	0	
	Naknek River			42,312	132,270	0	
Bristol Bay West	**Nushagak**	**374,000**	**4,332,746**	**177,885**	**1,313,858**	**0**	**5,646,604**
	Igushik River			14,370	26,592	0	
	Nushagak River			16,635	165,506	0	
	Wood River			146,880	1,121,760	0	
	Togiak	**0**	**2,105**	**0**	**0**	**0**	**2,105**
	Togiak River			0	0	0	
Bristol Bay Totals:		**499,000**	**4,905,919**	**236,109**	**1,700,672**	**60,000**	**6,666,591**

Sockeye per Drift Delivery for: June 29

	Sockeye per Delivery
Ugashik	1,038
Egegik	208
Naknek-Kvichak	49
Nushagak	300
Togiak	166

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/26/2018	25	213
6/27/2018	48	259
6/28/2018	36	295
6/29/2018	19	314

Registrations as of: June 30 09:00 AM- and - July 02 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	359	380	292	308	67	72
Naknek-Kvichak	147	166	131	149	16	17
Nushagak	1,023	1,024	763	764	259	259
Togiak	28	28	28	28		
Ugashik	54	70	43	55	11	15
Grand Total	**1,611**	**1,668**	**1,257**	**1,304**	**353**	**363**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 06/30/2018

Note: As published. Nushagak Daily Catch for 6/30 was later revised to 1,558,906

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**55,000**	**136,827**	**486**	**3,066**	**20,000**	**159,893**
	Ugashik River			486	3,066	20,000	
	Egegik	**218,000**	**604,899**	**71,646**	**321,684**	**50,000**	**976,583**
	Egegik River			71,646	321,684	50,000	
	Naknek-Kvichak	**13,000**	**116,708**	**9,912**	**144,108**	**0**	**260,816**
	Alagnak River			192	648	0	
	Kvichak River			738	2,208	0	
	Naknek River			8,982	141,252	0	
Bristol Bay West	**Nushagak**	**1,772,000**	**6,105,530**	**119,117**	**1,432,975**	**0**	**7,538,505**
	Igushik River			25,524	52,116	0	
	Nushagak River			17,933	183,439	0	
	Wood River			75,660	1,197,420	0	
	Togiak	**0**	**2,377**	**0**	**0**	**0**	**2,377**
	Togiak River			0	0	0	
Bristol Bay Totals:		**2,058,000**	**6,966,341**	**201,161**	**1,901,833**	**70,000**	**8,938,174**

Sockeye per Drift Delivery for: June 30

	Sockeye per Delivery
Ugashik	1,004
Egegik	620
Naknek-Kvichak	19
Nushagak	1,367
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/27/2018	48	259
6/28/2018	36	295
6/29/2018	19	314
6/30/2018	61	375

Registrations as of: July 01 09:00 AM- and - July 03 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	380	395	309	319	71	76
Naknek-Kvichak	153	166	138	150	15	16
Nushagak	1,016	1,016	760	760	255	255
Togiak	28	28	28	28		
Ugashik	64	77	51	60	13	17
Grand Total	**1,641**	**1,682**	**1,286**	**1,317**	**354**	**364**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/01/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**44,000**	**181,060**	**2,286**	**5,352**	**10,000**	**196,412**
	Ugashik River			2,286	5,352	10,000	
	Egegik	**157,000**	**761,853**	**38,178**	**359,862**	**25,000**	**1,146,715**
	Egegik River			38,178	359,862	25,000	
	Naknek-Kvichak	**258,000**	**374,974**	**4,944**	**149,052**	**0**	**524,026**
	Alagnak River			780	1,428	0	
	Kvichak River			1,284	3,492	0	
	Naknek River			2,880	144,132	0	
Bristol Bay West	**Nushagak**	**1,693,000**	**7,586,470**	**143,961**	**1,576,936**	**0**	**9,163,406**
	Igushik River			24,522	76,638	0	
	Nushagak River			9,069	192,508	0	
	Wood River			110,370	1,307,790	0	
	Togiak	**0**	**2,427**	**0**	**0**	**0**	**2,427**
	Togiak River			0	0	0	
	Bristol Bay Totals:	**2,152,000**	**8,906,784**	**189,369**	**2,091,202**	**35,000**	**11,032,986**

Sockeye per Drift Delivery for: July 1

	Sockeye per Delivery
Ugashik	558
Egegik	496
Naknek-Kvichak	1,030
Nushagak	1,080
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/28/2018	36	295
6/29/2018	19	314
6/30/2018	61	375
7/1/2018	39	413

Registrations as of: July 02 09:00 AM- and - July 04 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	370	387	302	313	68	74
Naknek-Kvichak	173	186	155	167	18	19
Nushagak	994	978	742	732	251	245
Togiak	28	28	28	28		
Ugashik	72	100	56	78	16	22
Grand Total	**1,637**	**1,679**	**1,283**	**1,318**	**353**	**360**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/02/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**56,000**	**237,478**	**2,988**	**8,340**	**50,000**	**295,818**
	Ugashik River			2,988	8,340	50,000	
	Egegik	**227,000**	**988,784**	**32,580**	**392,442**	**25,000**	**1,406,226**
	Egegik River			32,580	392,442	25,000	
	Naknek-Kvichak	**66,000**	**440,004**	**274,362**	**423,414**	**100,000**	**963,418**
	Alagnak River			1,506	2,934	0	
	Kvichak River			1,944	5,436	100,000	
	Naknek River			270,912	415,044	0	
Bristol Bay West	**Nushagak**	**1,160,000**	**8,751,460**	**1,223,598**	**2,800,534**	**0**	**11,551,994**
	Igushik River			22,404	99,042	0	
	Nushagak River			70,392	262,900	0	
	Wood River			1,130,802	2,438,592	0	
	Togiak	**8,000**	**10,427**	**0**	**0**	**0**	**10,427**
	Togiak River			0	0	0	
Bristol Bay Totals:		**1,517,000**	**10,428,153**	**1,533,528**	**3,624,730**	**175,000**	**14,227,883**

Sockeye per Drift Delivery for: July 2

	Sockeye per Delivery
Ugashik	737
Egegik	634
Naknek-Kvichak	116
Nushagak	751
Togiak	108

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/29/2018	19	314
6/30/2018	61	375
7/1/2018	39	413
7/2/2018	26	439

Registrations as of: July 03 09:00 AM- and - July 05 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	381	391	308	315	73	76
Naknek-Kvichak	180	218	162	195	18	23
Nushagak	948	942	707	702	240	239
Togiak	30	30	30	30		
Ugashik	80	120	62	92	18	28
Grand Total	**1,619**	**1,701**	**1,269**	**1,334**	**349**	**366**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/03/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**231,867**	**9,762**	**18,102**	**50,000**	**299,969**
	Ugashik River			9,762	18,102	50,000	
	Egegik	**0**	**988,586**	**45,444**	**437,886**	**20,000**	**1,446,472**
	Egegik River			45,444	437,886	20,000	
	Naknek-Kvichak	**19,000**	**459,391**	**98,970**	**522,372**	**200,000**	**1,181,763**
	Alagnak River			10,092	13,026	0	
	Kvichak River			13,848	19,284	200,000	
	Naknek River			75,030	490,062	0	
Bristol Bay West	**Nushagak**	**934,000**	**9,686,310**	**778,491**	**3,579,025**	**0**	**13,265,335**
	Igushik River			21,426	120,468	0	
	Nushagak River			120,591	383,491	0	
	Wood River			636,474	3,075,066	0	
	Togiak	**10,000**	**20,430**	**0**	**0**	**0**	**20,430**
	Togiak River			0	0	0	
Bristol Bay Totals:		**963,000**	**11,386,584**	**932,667**	**4,557,385**	**270,000**	**16,213,969**

Sockeye per Drift Delivery for: July 3

	Sockeye per Delivery
Ugashik	
Egegik	
Naknek-Kvichak	31
Nushagak	617
Togiak	62

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/30/2018	61	375
7/1/2018	39	413
7/2/2018	26	439
7/3/2018	49	482

Registrations as of: July 04 09:00 AM- and - July 06 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	364	355	297	291	67	64
Naknek-Kvichak	193	260	174	229	19	32
Nushagak	919	920	682	682	236	237
Togiak	34	34	34	34		
Ugashik	101	126	79	98	22	28
Grand Total	**1,611**	**1,695**	**1,266**	**1,334**	**344**	**361**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/04/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**110,000**	**341,867**	**16,740**	**34,842**	**70,000**	**446,709**
	Ugashik River			16,740	34,842	70,000	
	Egegik	**157,000**	**1,145,586**	**96,756**	**534,642**	**80,000**	**1,760,228**
	Egegik River			96,756	534,642	80,000	
	Naknek-Kvichak	**147,000**	**606,439**	**141,054**	**663,426**	**75,000**	**1,344,865**
	Alagnak River			51,816	64,842	0	
	Kvichak River			73,500	92,784	75,000	
	Naknek River			15,738	505,800	0	
Bristol Bay West	**Nushagak**	**835,000**	**10,421,369**	**302,073**	**3,881,098**	**0**	**14,302,467**
	Igushik River			22,086	142,554	0	
	Nushagak River			32,055	415,546	0	
	Wood River			247,932	3,322,998	0	
	Togiak	**12,000**	**32,492**	**420**	**420**	**0**	**32,912**
	Togiak River			420	420	0	
	Bristol Bay Totals:	**1,261,000**	**12,547,753**	**557,043**	**5,114,428**	**225,000**	**17,887,181**

Sockeye per Drift Delivery for: July 4

	Sockeye per Delivery
Ugashik	1,169
Egegik	361
Naknek-Kvichak	607
Nushagak	649
Togiak	100

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/1/2018	39	413
7/2/2018	26	439
7/3/2018	49	482
7/4/2018	36	518

Registrations as of: July 05 09:00 AM- and - July 07 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	317	317	260	261	57	56
Naknek-Kvichak	224	308	200	265	24	44
Nushagak	906	915	674	678	231	236
Togiak	36	36	36	36		
Ugashik	121	137	93	105	28	32
Grand Total	**1,604**	**1,713**	**1,263**	**1,345**	**340**	**368**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/05/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**363,682**	**25,134**	**59,976**	**100,000**	**523,658**
	Ugashik River			25,134	59,976	100,000	
	Egegik	**163,000**	**1,308,226**	**168,582**	**703,224**	**120,000**	**2,131,450**
	Egegik River			168,582	703,224	120,000	
	Naknek-Kvichak	**285,000**	**891,726**	**343,146**	**1,006,572**	**150,000**	**2,048,298**
	Alagnak River			10,890	75,732	0	
	Kvichak River			75,330	168,114	150,000	
	Naknek River			256,926	762,726	0	
Bristol Bay West	**Nushagak**	**962,000**	**11,383,866**	**519,732**	**4,400,830**	**0**	**15,784,696**
	Igushik River			18,438	160,992	0	
	Nushagak River			52,002	467,548	0	
	Wood River			449,292	3,772,290	0	
	Togiak	**5,700**	**37,753**	**402**	**816**	**0**	**38,569**
	Togiak River			402	816	0	
	Bristol Bay Totals:	**1,415,700**	**13,985,253**	**1,056,996**	**6,171,418**	**370,000**	**20,526,671**

Sockeye per Drift Delivery for: July 5

	Sockeye per Delivery
Ugashik	
Egegik	524
Naknek-Kvichak	595
Nushagak	709
Togiak	61

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/2/2018	26	439
7/3/2018	49	482
7/4/2018	36	518
7/5/2018	25	542

Registrations as of: July 06 09:00 AM- and - July 08 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	315	314	259	258	56	56
Naknek-Kvichak	264	322	232	277	33	46
Nushagak	897	911	663	674	233	236
Togiak	36	36	36	36		
Ugashik	128	140	99	108	29	32
Grand Total	**1,640**	**1,723**	**1,289**	**1,353**	**351**	**370**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/06/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**36,000**	**399,682**	**17,556**	**77,532**	**20,000**	**497,214**
	Ugashik River			17,556	77,532	20,000	
	Egegik	**233,000**	**1,541,195**	**130,824**	**834,048**	**120,000**	**2,495,243**
	Egegik River			130,824	834,048	120,000	
	Naknek-Kvichak	**210,000**	**1,101,545**	**225,636**	**1,232,208**	**500,000**	**2,833,753**
	Alagnak River			25,086	100,818	0	
	Kvichak River			93,846	261,960	500,000	
	Naknek River			106,704	869,430	0	
Bristol Bay West	**Nushagak**	**1,084,000**	**12,468,421**	**462,539**	**4,863,369**	**0**	**17,331,790**
	Igushik River			18,486	179,478	0	
	Nushagak River			51,053	518,601	0	
	Wood River			393,000	4,165,290	0	
	Togiak	**8,200**	**45,985**	**1,812**	**2,628**	**0**	**48,613**
	Togiak River			1,812	2,628	0	
Bristol Bay Totals:		**1,571,200**	**15,556,828**	**838,367**	**7,009,785**	**640,000**	**23,206,613**

Sockeye per Drift Delivery for: July 6

	Sockeye per Delivery
Ugashik	228
Egegik	389
Naknek-Kvichak	391
Nushagak	743
Togiak	118

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/3/2018	49	482
7/4/2018	36	518
7/5/2018	25	542
7/6/2018	28	571

Registrations as of: July 07 09:00 AM- and - July 09 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	307	307	250	250	57	57
Naknek-Kvichak	298	319	257	277	42	43
Nushagak	904	922	666	682	237	239
Togiak	37	37	37	37		
Ugashik	135	140	103	108	32	32
Grand Total	**1,681**	**1,725**	**1,313**	**1,354**	**368**	**371**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/07/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**11,000**	**410,638**	**15,426**	**92,958**	**30,000**	**533,596**
	Ugashik River			15,426	92,958	30,000	
	Egegik	**108,000**	**1,645,828**	**155,694**	**989,742**	**30,000**	**2,665,570**
	Egegik River			155,694	989,742	30,000	
	Naknek-Kvichak	**114,000**	**1,215,967**	**302,964**	**1,535,220**	**300,000**	**3,051,187**
	Alagnak River			91,980	192,798	0	
	Kvichak River			160,428	422,388	300,000	
	Naknek River			50,556	920,034	0	
Bristol Bay West	**Nushagak**	**800,000**	**13,268,543**	**399,269**	**5,262,638**	**0**	**18,531,181**
	Igushik River			16,344	195,822	0	
	Nushagak River			40,487	559,088	0	
	Wood River			342,438	4,507,728	0	
	Togiak	**5,600**	**51,662**	**6,666**	**9,294**	**0**	**60,956**
	Togiak River			6,666	9,294	0	
Bristol Bay Totals:		**1,038,600**	**16,592,638**	**880,019**	**7,889,852**	**360,000**	**24,842,490**

Sockeye per Drift Delivery for: July 7

	Sockeye per Delivery
Ugashik	126
Egegik	230
Naknek-Kvichak	331
Nushagak	779
Togiak	125

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/4/2018	36	518
7/5/2018	25	542
7/6/2018	28	571

Registrations as of: July 08 09:00 AM- and - July 10 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	283	284	232	233	51	51
Naknek-Kvichak	310	323	268	280	43	44
Nushagak	906	947	668	701	237	245
Togiak	37	37	37	37		
Ugashik	132	137	101	105	31	32
Grand Total	**1,668**	**1,728**	**1,306**	**1,356**	**362**	**372**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/08/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**411,011**	**12,258**	**105,216**	**50,000**	**566,227**
	Ugashik River			12,258	105,216	50,000	
	Egegik	**59,000**	**1,703,970**	**16,410**	**1,006,152**	**18,000**	**2,728,122**
	Egegik River			16,410	1,006,152	18,000	
	Naknek-Kvichak	**156,000**	**1,372,130**	**259,332**	**1,794,552**	**200,000**	**3,366,682**
	Alagnak River			43,236	236,034	0	
	Kvichak River			190,836	613,224	200,000	
	Naknek River			25,260	945,294	0	
Bristol Bay West	**Nushagak**	**880,000**	**14,148,954**	**336,201**	**5,605,991**	**0**	**19,754,945**
	Igushik River			17,034	212,856	0	
	Nushagak River			46,617	605,705	0	
	Wood River			272,550	4,787,430	0	
	Togiak	**0**	**51,707**	**6,624**	**15,918**	**0**	**67,625**
	Togiak River			6,624	15,918	0	
Bristol Bay Totals:		**1,095,000**	**17,687,772**	**630,825**	**8,527,829**	**268,000**	**26,483,601**

Sockeye per Drift Delivery for: July 8

	Sockeye per Delivery
Ugashik	
Egegik	178
Naknek-Kvichak	329
Nushagak	1,023
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/5/2018	25	542
7/6/2018	28	571

Registrations as of: July 09 09:00 AM- and - July 11 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	277	273	227	226	50	47
Naknek-Kvichak	316	327	274	284	43	44
Nushagak	919	950	679	703	239	245
Togiak	37	38	37	38		
Ugashik	127	130	98	100	29	30
Grand Total	**1,676**	**1,718**	**1,315**	**1,351**	**361**	**366**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/09/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**411,011**	**14,898**	**120,114**	**85,000**	**616,125**
	Ugashik River			14,898	120,114	85,000	
	Egegik	**120,000**	**1,824,173**	**7,824**	**1,013,976**	**10,000**	**2,848,149**
	Egegik River			7,824	1,013,976	10,000	
	Naknek-Kvichak	**165,000**	**1,532,179**	**259,326**	**2,053,878**	**300,000**	**3,886,057**
	Alagnak River			24,822	260,856	0	
	Kvichak River			137,424	750,648	300,000	
	Naknek River			97,080	1,042,374	0	
Bristol Bay West	**Nushagak**	**866,000**	**15,042,108**	**308,194**	**5,914,185**	**0**	**20,956,293**
	Igushik River			19,212	232,068	0	
	Nushagak River			45,298	651,003	0	
	Wood River			243,684	5,031,114	0	
	Togiak	**8,000**	**59,707**	**5,142**	**21,060**	**0**	**80,767**
	Togiak River			5,142	21,060	0	
Bristol Bay Totals:		**1,159,000**	**18,869,178**	**595,384**	**9,123,213**	**395,000**	**28,387,391**

Sockeye per Drift Delivery for: July 9

	Sockeye per Delivery
Ugashik	
Egegik	245
Naknek-Kvichak	390
Nushagak	846
Togiak	169

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/6/2018	28	571

Registrations as of: July 10 09:00 AM- and - July 12 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	252	262	210	217	42	45
Naknek-Kvichak	321	327	278	284	44	44
Nushagak	944	980	698	725	244	253
Togiak	38	38	38	38		
Ugashik	124	124	94	94	30	30
Grand Total	**1,679**	**1,731**	**1,318**	**1,358**	**360**	**372**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/10/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**411,011**	**44,580**	**164,694**	**87,000**	**662,705**
	Ugashik River			44,580	164,694	87,000	
	Egegik	**300,000**	**2,124,187**	**22,290**	**1,036,266**	**50,000**	**3,210,453**
	Egegik River			22,290	1,036,266	50,000	
	Naknek-Kvichak	**283,000**	**1,816,031**	**328,998**	**2,382,876**	**250,000**	**4,448,907**
	Alagnak River			59,364	320,220	0	
	Kvichak River			123,498	874,146	250,000	
	Naknek River			146,136	1,188,510	0	
Bristol Bay West	**Nushagak**	**1,420,000**	**16,462,595**	**313,818**	**6,228,003**	**0**	**22,690,598**
	Igushik River			30,054	262,122	0	
	Nushagak River			47,202	698,205	0	
	Wood River			236,562	5,267,676	0	
	Togiak	**15,800**	**75,511**	**4,824**	**25,884**	**0**	**101,395**
	Togiak River			4,824	25,884	0	
Bristol Bay Totals:		**2,018,800**	**20,889,335**	**714,510**	**9,837,723**	**387,000**	**31,114,058**

Sockeye per Drift Delivery for: July 10

	Sockeye per Delivery
Ugashik	
Egegik	579
Naknek-Kvichak	677
Nushagak	945
Togiak	180

Test Fishery Port Moller
No recent results found. Potentially weathered out.

Registrations as of: July 11 09:00 AM- and - July 13 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	257	260	213	215	44	45
Naknek-Kvichak	326	327	283	284	44	44
Nushagak	950	984	703	729	245	253
Togiak	38	38	38	38		
Ugashik	122	122	92	92	30	30
Grand Total	**1,693**	**1,731**	**1,329**	**1,358**	**363**	**372**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/11/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**411,011**	**52,704**	**217,398**	**80,000**	**708,409**
	Ugashik River			52,704	217,398	80,000	
	Egegik	**350,000**	**2,471,681**	**52,656**	**1,088,922**	**55,000**	**3,615,603**
	Egegik River			52,656	1,088,922	55,000	
	Naknek-Kvichak	**532,000**	**2,312,477**	**381,198**	**2,764,074**	**450,000**	**5,526,551**
	Alagnak River			58,236	378,456	0	
	Kvichak River			203,694	1,077,840	450,000	
	Naknek River			119,268	1,307,778	0	
Bristol Bay West	**Nushagak**	**1,360,000**	**17,821,492**	**343,589**	**6,572,192**	**0**	**24,393,684**
	Igushik River			22,242	284,964	0	
	Nushagak River			37,307	735,512	0	
	Wood River			284,040	5,551,716	0	
	Togiak	**16,000**	**91,985**	**2,424**	**28,308**	**0**	**120,293**
	Togiak River			2,424	28,308	0	
Bristol Bay Totals:		**2,258,000**	**23,108,646**	**832,571**	**10,670,894**	**585,000**	**34,364,540**

Sockeye per Drift Delivery for: July 11

	Sockeye per Delivery
Ugashik	
Egegik	681
Naknek-Kvichak	924
Nushagak	955
Togiak	328

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/8/2018	35	644
7/9/2018	34	678
7/10/2018	33	711
7/11/2018	46	756

Registrations as of: July 12 09:00 AM- and - July 14 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	260	262	215	216	45	46
Naknek-Kvichak	326	332	283	287	44	46
Nushagak	973	978	721	726	250	250
Togiak	38	38	38	38		
Ugashik	119	119	90	90	29	29
Grand Total	**1,716**	**1,729**	**1,347**	**1,357**	**368**	**371**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/13/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**200,000**	**611,011**	**110,502**	**352,158**	**250,000**	**1,213,169**
	Ugashik River			110,502	352,158	250,000	
	Egegik	**168,000**	**3,015,776**	**111,690**	**1,257,876**	**0**	**4,273,652**
	Egegik River			111,690	1,257,876	0	
	Naknek-Kvichak	**230,000**	**2,769,242**	**701,448**	**4,067,034**	**500,000**	**7,336,276**
	Alagnak River			184,182	668,136	0	
	Kvichak River			461,784	1,816,650	500,000	
	Naknek River			55,482	1,582,248	0	
Bristol Bay West	**Nushagak**	**1,010,000**	**19,801,069**	**428,835**	**7,676,611**	**0**	**27,477,680**
	Igushik River			31,266	343,368	0	
	Nushagak River			73,029	876,439	0	
	Wood River			324,540	6,456,804	0	
	Togiak	**18,000**	**136,823**	**4,386**	**36,786**	**0**	**173,609**
	Togiak River			4,386	36,786	0	
Bristol Bay Totals:		**1,626,000**	**26,333,921**	**1,356,861**	**13,390,465**	**750,000**	**40,474,386**

Sockeye per Drift Delivery for: July 13

	Sockeye per Delivery
Ugashik	1,473
Egegik	676
Naknek-Kvichak	446
Nushagak	900
Togiak	338

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/10/2018	33	711
7/11/2018	46	756

Registrations as of: July 14 09:00 AM- and - July 16 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	258	269	212	218	46	51
Naknek-Kvichak	330	412	286	343	45	70
Nushagak	866	820	654	625	211	194
Togiak	38	38	38	38		
Ugashik	121	146	90	106	30	39
Grand Total	**1,613**	**1,685**	**1,280**	**1,330**	**332**	**354**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/14/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**94,000**	**703,789**	**116,010**	**468,168**	**150,000**	**1,321,957**
	Ugashik River			116,010	468,168	150,000	
	Egegik	**309,000**	**3,324,425**	**121,974**	**1,379,850**	**0**	**4,704,275**
	Egegik River			121,974	1,379,850	0	
	Naknek-Kvichak	**800,000**	**3,570,278**	**903,462**	**4,974,090**	**600,000**	**9,144,368**
	Alagnak River			194,610	862,746	0	
	Kvichak River			557,010	2,377,254	600,000	
	Naknek River			151,842	1,734,090	0	
Bristol Bay West	**Nushagak**	**592,000**	**20,393,609**	**314,406**	**7,991,017**	**0**	**28,384,626**
	Igushik River			33,558	376,926	0	
	Nushagak River			45,216	921,655	0	
	Wood River			235,632	6,692,436	0	
	Togiak	**21,000**	**157,647**	**10,866**	**47,652**	**0**	**205,299**
	Togiak River			10,866	47,652	0	
Bristol Bay Totals:		**1,816,000**	**28,149,748**	**1,466,718**	**14,860,777**	**750,000**	**43,760,525**

Sockeye per Drift Delivery for: July 14

	Sockeye per Delivery
Ugashik	633
Egegik	704
Naknek-Kvichak	1,110
Nushagak	485
Togiak	387

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/11/2018	46	756

Registrations as of: July 15 09:00 AM- and - July 17 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	258	272	211	220	47	52
Naknek-Kvichak	349	505	299	415	51	91
Nushagak	696	691	523	518	172	172
Togiak	38	38	38	38		
Ugashik	133	220	98	163	34	56
Grand Total	**1,474**	**1,726**	**1,169**	**1,354**	**304**	**371**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/15/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**161,000**	**864,433**	**165,282**	**633,450**	**175,000**	**1,672,883**
	Ugashik River			165,282	633,450	175,000	
	Egegik	**254,000**	**3,578,396**	**83,208**	**1,463,058**	**0**	**5,041,454**
	Egegik River			83,208	1,463,058	0	
	Naknek-Kvichak	**458,000**	**4,024,096**	**786,798**	**5,760,888**	**750,000**	**10,534,984**
	Alagnak River			121,236	983,982	0	
	Kvichak River			471,114	2,848,368	750,000	
	Naknek River			194,448	1,928,538	0	
Bristol Bay West	**Nushagak**	**425,000**	**20,818,225**	**298,903**	**8,289,920**	**0**	**29,108,145**
	Igushik River			42,246	419,172	0	
	Nushagak River			47,563	969,218	0	
	Wood River			209,094	6,901,530	0	
	Togiak	**0**	**157,864**	**10,740**	**58,392**	**0**	**216,256**
	Togiak River			10,740	58,392	0	
Bristol Bay Totals:		**1,298,000**	**29,443,014**	**1,344,931**	**16,205,708**	**925,000**	**46,573,722**

Registrations as of: July 16 09:00 AM- and - July 18 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	316	313	249	247	67	66
Naknek-Kvichak	409	494	341	407	70	89
Nushagak	676	677	512	513	163	163
Togiak	39	39	39	39		
Ugashik	144	208	105	154	38	53
Grand Total	**1,584**	**1,731**	**1,246**	**1,360**	**338**	**371**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/16/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**230,000**	**1,093,975**	**130,000**	**763,450**	**200,000**	**2,057,425**
	Ugashik River			130,000	763,450	200,000	
	Egegik	**294,000**	**3,872,734**	**38,556**	**1,501,614**	**0**	**5,374,348**
	Egegik River			38,556	1,501,614	0	
	Naknek-Kvichak	**770,000**	**4,793,685**	**528,234**	**6,289,122**	**600,000**	**11,682,807**
	Alagnak River			106,692	1,090,674	0	
	Kvichak River			332,442	3,180,810	600,000	
	Naknek River			89,100	2,017,638	0	
Bristol Bay West	**Nushagak**	**536,000**	**21,355,218**	**196,513**	**8,486,433**	**0**	**29,841,651**
	Igushik River			53,772	472,944	0	
	Nushagak River			22,747	991,965	0	
	Wood River			119,994	7,021,524	0	
	Togiak	**22,600**	**180,464**	**12,336**	**70,728**	**0**	**251,192**
	Togiak River			12,336	70,728	0	
Bristol Bay Totals:		**1,852,600**	**31,296,076**	**905,639**	**17,111,347**	**800,000**	**49,207,423**

Sockeye per Drift Delivery for: July 16

	Sockeye per Delivery
Ugashik	1,396
Egegik	1,024
Naknek-Kvichak	1,166
Nushagak	756
Togiak	277

Test Fishery Port Moller
No recent results found. Potentially weathered out.

Registrations as of: July 17 09:00 AM- and - July 19 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	314	310	246	243	68	67
Naknek-Kvichak	484	559	398	453	88	108
Nushagak	629	615	481	470	147	144
Togiak	39	39	39	39		
Ugashik	198	210	147	156	50	53
Grand Total	**1,664**	**1,733**	**1,311**	**1,361**	**353**	**372**

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/17/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**253,000**	**1,346,462**	**108,942**	**875,532**	**75,000**	**2,296,994**
	Ugashik River			108,942	875,532	75,000	
	Egegik	**322,000**	**4,194,806**	**21,066**	**1,522,680**	**0**	**5,717,486**
	Egegik River			21,066	1,522,680	0	
	Naknek-Kvichak	**512,000**	**5,305,564**	**532,620**	**6,821,742**	**0**	**12,127,306**
	Alagnak River			118,626	1,209,300	0	
	Kvichak River			325,656	3,506,466	0	
	Naknek River			88,338	2,105,976	0	
Bristol Bay West	**Nushagak**	**615,000**	**21,980,135**	**200,431**	**8,686,864**	**0**	**30,666,999**
	Igushik River			40,836	513,780	0	
	Nushagak River			19,003	1,010,968	0	
	Wood River			140,592	7,162,116	0	
	Togiak	**37,200**	**217,644**	**21,936**	**92,664**	**0**	**310,308**
	Togiak River			21,936	92,664	0	
Bristol Bay Totals:		**1,739,200**	**33,044,611**	**884,995**	**17,999,482**	**75,000**	**51,119,093**

Sockeye per Drift Delivery for: July 17

	Sockeye per Delivery
Ugashik	1,137
Egegik	952
Naknek-Kvichak	609
Nushagak	884
Togiak	237

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/18/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**198,000**	**1,544,890**	**125,772**	**1,001,304**	**0**	**2,546,194**
	Ugashik River			125,772	1,001,304	0	
	Egegik	**137,000**	**4,332,022**	**14,490**	**1,537,170**	**0**	**5,869,192**
	Egegik River			14,490	1,537,170	0	
	Naknek-Kvichak	**425,000**	**5,730,385**	**367,314**	**7,189,056**	**0**	**12,919,441**
	Alagnak River			67,746	1,277,046	0	
	Kvichak River			251,586	3,758,052	0	
	Naknek River			47,982	2,153,958	0	
Bristol Bay West	**Nushagak**	**385,000**	**22,365,408**	**174,258**	**8,861,122**	**0**	**31,226,530**
	Igushik River			41,070	554,850	0	
	Nushagak River			19,572	1,030,540	0	
	Wood River			113,616	7,275,732	0	
	Togiak	**33,300**	**251,011**	**22,986**	**115,650**	**0**	**366,661**
	Togiak River			22,986	115,650	0	
Bristol Bay Totals:		**1,178,300**	**34,223,716**	**704,820**	**18,704,302**	**0**	**52,928,018**

Sockeye per Drift Delivery for: July 18

	Sockeye per Delivery
Ugashik	1,048
Egegik	554
Naknek-Kvichak	585
Nushagak	645
Togiak	230

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/19/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**230,000**	**1,775,082**	**82,158**	**1,083,462**	**0**	**2,858,544**
	Ugashik River			82,158	1,083,462	0	
	Egegik	**113,000**	**4,444,947**	**17,094**	**1,554,264**	**0**	**5,999,211**
	Egegik River			17,094	1,554,264	0	
	Naknek-Kvichak	**623,000**	**6,353,986**	**409,500**	**7,598,556**	**0**	**13,952,542**
	Alagnak River			103,386	1,380,432	0	
	Kvichak River			285,522	4,043,574	0	
	Naknek River			20,592	2,174,550	0	
Bristol Bay West	**Nushagak**	**348,000**	**22,713,082**	**128,769**	**8,989,891**	**0**	**31,702,973**
	Igushik River			36,072	590,922	0	
	Nushagak River			19,023	1,049,563	0	
	Wood River			73,674	7,349,406	0	
	Togiak	**27,000**	**278,019**	**21,444**	**137,094**	**0**	**415,113**
	Togiak River			21,444	137,094	0	
Bristol Bay Totals:		**1,341,000**	**35,565,116**	**658,965**	**19,363,267**	**0**	**54,928,383**

Sockeye per Drift Delivery for: July 19

	Sockeye per Delivery
Ugashik	1,048
Egegik	584
Naknek-Kvichak	708
Nushagak	801
Togiak	227

Test Fishery Port Moller
No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/20/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**197,000**	**1,972,033**	**25,170**	**1,108,632**	**0**	**3,080,665**
	Ugashik River			25,170	1,108,632	0	
	Egegik	**110,000**	**4,555,105**	**11,862**	**1,566,126**	**0**	**6,121,231**
	Egegik River			11,862	1,566,126	0	
	Naknek-Kvichak	**380,000**	**6,733,930**	**232,884**	**7,831,440**	**0**	**14,565,370**
	Alagnak River			39,942	1,420,374	0	
	Kvichak River			158,796	4,202,370	0	
	Naknek River			34,146	2,208,696	0	
Bristol Bay West	**Nushagak**	**443,000**	**23,156,424**	**98,116**	**9,088,091**	**0**	**32,244,515**
	Igushik River			22,644	613,650	0	
	Nushagak River			13,036	1,062,599	0	
	Wood River			62,436	7,411,842	0	
	Togiak	**29,000**	**306,799**	**19,866**	**156,960**	**0**	**463,759**
	Togiak River			19,866	156,960	0	
Bristol Bay Totals:		**1,159,000**	**36,724,291**	**387,898**	**19,751,249**	**0**	**56,475,540**

Sockeye per Drift Delivery for: July 20

	Sockeye per Delivery
Ugashik	933
Egegik	667
Naknek-Kvichak	486
Nushagak	928
Togiak	265

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/21/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**147,000**	**2,119,252**	**15,414**	**1,124,046**	**0**	**3,243,298**
	Ugashik River			15,414	1,124,046	0	
	Egegik	**113,000**	**4,668,565**	**19,422**	**1,585,548**	**0**	**6,254,113**
	Egegik River			19,422	1,585,548	0	
	Naknek-Kvichak	**421,000**	**7,150,423**	**132,732**	**7,964,172**	**0**	**15,114,595**
	Alagnak River			39,960	1,460,334	0	
	Kvichak River			80,448	4,282,818	0	
	Naknek River			12,324	2,221,020	0	
Bristol Bay West	**Nushagak**	**271,000**	**23,427,404**	**132,913**	**9,221,004**	**0**	**32,648,408**
	Igushik River			25,932	639,582	0	
	Nushagak River			11,569	1,074,168	0	
	Wood River			95,412	7,507,254	0	
	Togiak	**29,000**	**335,611**	**15,360**	**172,320**	**0**	**507,931**
	Togiak River			15,360	172,320	0	
Bristol Bay Totals:		**981,000**	**37,701,255**	**315,841**	**20,067,090**	**0**	**57,768,345**

Sockeye per Drift Delivery for: July 21

	Sockeye per Delivery
Ugashik	855
Egegik	849
Naknek-Kvichak	676
Nushagak	685
Togiak	368

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/22/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**143,000**	**2,262,194**	**8,628**	**1,132,674**	**0**	**3,394,868**
	Ugashik River			8,628	1,132,674	0	
	Egegik	**78,000**	**4,746,522**	**15,000**	**1,600,548**	**0**	**6,347,070**
	Egegik River			15,000	1,600,548	0	
	Naknek-Kvichak	**292,000**	**7,441,670**	**82,056**	**8,046,228**	**0**	**15,487,898**
	Alagnak River			38,202	1,498,536	0	
	Kvichak River			43,854	4,326,672	0	
	Naknek River			0	2,221,020	0	
Bristol Bay West	**Nushagak**	**163,000**	**23,590,687**	**57,169**	**9,278,173**	**0**	**32,868,860**
	Igushik River			29,658	669,240	0	
	Nushagak River			27,511	1,101,679	0	
	Wood River			0	7,507,254	0	
	Togiak	**6,300**	**341,480**	**16,782**	**189,102**	**0**	**530,582**
	Togiak River			16,782	189,102	0	
Bristol Bay Totals:		**682,300**	**38,382,553**	**179,635**	**20,246,725**	**0**	**58,629,278**

Sockeye per Drift Delivery for: July 22

	Sockeye per Delivery
Ugashik	896
Egegik	475
Naknek-Kvichak	432
Nushagak	513
Togiak	299

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/23/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**133,000**	**2,395,481**	**9,150**	**1,141,824**	**0**	**3,537,305**
	Ugashik River			9,150	1,141,824	0	
	Egegik	**38,000**	**4,781,646**	**0**	**1,608,354**	**0**	**6,390,000**
	Egegik River			0	1,608,354	0	
	Naknek-Kvichak	**138,000**	**7,577,164**	**86,508**	**8,132,736**	**0**	**15,709,900**
	Alagnak River			55,080	1,553,616	0	
	Kvichak River			31,428	4,358,100	0	
	Naknek River			0	2,221,020	0	
Bristol Bay West	**Nushagak**	**130,000**	**23,720,716**	**40,422**	**9,318,595**	**0**	**33,039,311**
	Igushik River			25,092	694,332	0	
	Nushagak River			15,330	1,117,009	0	
	Wood River			0	7,507,254	0	
	Togiak	**17,000**	**358,477**	**15,132**	**204,234**	**0**	**562,711**
	Togiak River			15,132	204,234	0	
Bristol Bay Totals:		**456,000**	**38,833,484**	**151,212**	**20,405,743**	**0**	**59,239,227**

Sockeye per Drift Delivery for: July 23

	Sockeye per Delivery
Ugashik	885
Egegik	328
Naknek-Kvichak	333
Nushagak	493
Togiak	233

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/24/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**131,000**	**2,510,006**	**5,274**	**1,147,098**	**0**	**3,657,104**
	Ugashik River			5,274	1,147,098	0	
	Egegik	**29,000**	**4,813,918**	**0**	**1,608,354**	**0**	**6,422,272**
	Egegik River			0	1,608,354	0	
	Naknek-Kvichak	**260,000**	**7,837,387**	**51,102**	**8,183,838**	**0**	**16,021,225**
	Alagnak River			19,980	1,573,596	0	
	Kvichak River			31,122	4,389,222	0	
	Naknek River			0	2,221,020	0	
Bristol Bay West	**Nushagak**	**95,000**	**23,815,961**	**47,248**	**9,365,843**	**0**	**33,181,804**
	Igushik River			33,858	728,190	0	
	Nushagak River			13,390	1,130,399	0	
	Wood River			0	7,507,254	0	
	Togiak	**33,000**	**391,436**	**15,726**	**219,960**	**0**	**611,396**
	Togiak River			15,726	219,960	0	
Bristol Bay Totals:		**548,000**	**39,368,708**	**119,350**	**20,525,093**	**0**	**59,893,801**

Sockeye per Drift Delivery for: July 24

	Sockeye per Delivery
Ugashik	778
Egegik	430
Naknek-Kvichak	783
Nushagak	512
Togiak	283

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/25/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**115,000**	**2,624,722**	**9,042**	**1,156,140**	**0**	**3,780,862**
	Ugashik River			9,042	1,156,140	0	
	Egegik	**57,000**	**4,871,176**	**0**	**1,608,354**	**0**	**6,479,530**
	Egegik River			0	1,608,354	0	
	Naknek-Kvichak	**307,000**	**8,143,677**	**16,486**	**8,200,324**	**0**	**16,344,001**
	Alagnak River			7,000	1,580,596	0	
	Kvichak River			9,486	4,398,708	0	
	Naknek River			0	2,221,020	0	
Bristol Bay West	**Nushagak**	**80,000**	**23,895,568**	**3,549**	**9,369,392**	**0**	**33,264,960**
	Igushik River			0	728,190	0	
	Nushagak River			3,549	1,133,948	0	
	Wood River			0	7,507,254	0	
	Togiak	**30,000**	**421,005**	**19,572**	**239,532**	**0**	**660,537**
	Togiak River			19,572	239,532	0	
Bristol Bay Totals:		**589,000**	**39,956,148**	**48,649**	**20,573,742**	**0**	**60,529,890**

Sockeye per Drift Delivery for: July 25

	Sockeye per Delivery
Ugashik	691
Egegik	761
Naknek-Kvichak	839
Nushagak	570
Togiak	298

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/26/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**72,000**	**2,696,697**	**8,652**	**1,164,792**	**0**	**3,861,489**
	Ugashik River			8,652	1,164,792	0	
	Egegik	**44,000**	**4,894,443**	**0**	**1,608,354**	**0**	**6,502,797**
	Egegik River			0	1,608,354	0	
	Naknek-Kvichak	**283,000**	**8,447,241**	**0**	**8,200,324**	**0**	**16,647,565**
	Alagnak River			0	1,580,596	0	
	Kvichak River			0	4,398,708	0	
	Naknek River			0	2,221,020	0	
Bristol Bay West	**Nushagak**	**58,000**	**23,954,133**	**5,862**	**9,375,254**	**0**	**33,329,387**
	Igushik River			0	728,190	0	
	Nushagak River			5,862	1,139,810	0	
	Wood River			0	7,507,254	0	
	Togiak	**30,000**	**451,345**	**22,206**	**261,738**	**0**	**713,083**
	Togiak River			22,206	261,738	0	
Bristol Bay Totals:		**487,000**	**40,443,859**	**36,720**	**20,610,462**	**0**	**61,054,321**

Sockeye per Drift Delivery for: July 26

	Sockeye per Delivery
Ugashik	564
Egegik	896
Naknek-Kvichak	745
Nushagak	431
Togiak	303

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/29/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**39,000**	**2,813,387**	**0**	**1,164,792**	**0**	**3,978,179**
	Ugashik River			0	1,164,792	0	
	Egegik	**13,000**	**4,986,767**	**0**	**1,608,354**	**0**	**6,595,121**
	Egegik River			0	1,608,354	0	
	Naknek-Kvichak	**88,000**	**8,817,613**	**0**	**8,200,324**	**0**	**17,017,937**
	Alagnak River			0	1,580,596	0	
	Kvichak River			0	4,398,708	0	
	Naknek River			0	2,221,020	0	
Bristol Bay West	**Nushagak**	**0**	**23,969,730**	**18,506**	**9,459,811**	**0**	**33,429,541**
	Igushik River			0	769,272	0	
	Nushagak River			18,506	1,183,285	0	
	Wood River			0	7,507,254	0	
	Togiak	**6,000**	**507,956**	**15,402**	**307,998**	**0**	**815,954**
	Togiak River			15,402	307,998	0	
Bristol Bay Totals:		**146,000**	**41,095,453**	**33,908**	**20,741,279**	**0**	**61,836,732**

Sockeye per Drift Delivery for: July 29

	Sockeye per Delivery
Ugashik	745
Egegik	367
Naknek-Kvichak	482
Nushagak	20
Togiak	250

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 07/30/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**21,000**	**2,834,811**	**0**	**1,164,792**	**0**	**3,999,603**
	Ugashik River			0	1,164,792	0	
	Egegik	**23,000**	**5,010,105**	**0**	**1,608,354**	**0**	**6,618,459**
	Egegik River			0	1,608,354	0	
	Naknek-Kvichak	**55,000**	**8,872,696**	**0**	**8,200,324**	**0**	**17,073,020**
	Alagnak River			0	1,580,596	0	
	Kvichak River			0	4,398,708	0	
	Naknek River			0	2,221,020	0	
Bristol Bay West	**Nushagak**	**0**	**23,970,901**	**12,034**	**9,471,845**	**0**	**33,442,746**
	Igushik River			0	769,272	0	
	Nushagak River			12,034	1,195,319	0	
	Wood River			0	7,507,254	0	
	Togiak	**23,000**	**530,808**	**18,168**	**326,166**	**0**	**856,974**
	Togiak River			18,168	326,166	0	
Bristol Bay Totals:		**122,000**	**41,219,321**	**30,202**	**20,771,481**	**0**	**61,990,802**

Sockeye per Drift Delivery for: July 30

	Sockeye per Delivery
Ugashik	665
Egegik	552
Naknek-Kvichak	498
Nushagak	
Togiak	420

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Alaska Dept. of Fish and Game - Division of Commercial Fisheries

- Bristol Bay Daily Run Summary -

through 08/02/2018

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**2,860,206**	**0**	**1,167,792**	**0**	**4,027,998**
	Ugashik River			0	1,167,792	0	
	Egegik	**0**	**5,051,272**	**0**	**1,608,354**	**0**	**6,659,626**
	Egegik River			0	1,608,354	0	
	Naknek-Kvichak	**25,000**	**8,978,526**	**0**	**8,201,286**	**0**	**17,179,812**
	Alagnak River			0	1,581,426	0	
	Kvichak River			0	4,398,708	0	
	Naknek River			0	2,221,152	0	
Bristol Bay West	**Nushagak**	**13,500**	**24,005,650**	**6,946**	**9,504,136**	**0**	**33,509,786**
	Igushik River			0	769,272	0	
	Nushagak River			6,946	1,227,610	0	
	Wood River			0	7,507,254	0	
	Togiak	**43,000**	**643,682**	**31,122**	**413,124**	**0**	**1,056,806**
	Togiak River			31,122	413,124	0	
Bristol Bay Totals:		**81,500**	**41,539,336**	**38,068**	**20,894,692**	**0**	**62,434,028**

Sockeye per Drift Delivery for: August 2

	Sockeye per Delivery
Ugashik	812
Egegik	372
Naknek-Kvichak	378
Nushagak	74
Togiak	468

Test Fishery Port Moller
No recent results found. Potentially weathered out.

Appendix E

ADF&G season summary of the 2018 Bristol Bay salmon season.

Published by ADF&G September 18, 2018

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE

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2018 BRISTOL BAY SALMON SEASON SUMMARY

The following is an overview of the 2018 Bristol Bay commercial salmon season. All data are preliminary.

The 2018 inshore Bristol Bay sockeye salmon run of 62.3 million fish is the largest on record dating back to 1893 and was 69% above the 36.9 million average run for the latest 20 year time period. It was the fourth consecutive year that inshore sockeye salmon runs exceeded 50 million fish. The 2018 Bristol Bay sockeye salmon run was 21% above the preseason inshore forecast of 51.3 million fish. Runs to all districts, except Egegik, were larger than the preseason forecast. The commercial harvest of 41.3 million sockeye salmon was 10% above the 37.6 million preseason forecast and is the second largest harvest on record. All sockeye salmon escapement goals were met or exceeded, with a total bay-wide escapement of 21.0 million fish. The preliminary harvests for other species are 41,696 Chinook salmon; 1,868,308 chum salmon; 138,466 coho salmon; and 218,998 pink salmon.

EXVESSEL VALUE

The 2018 Bristol Bay preliminary exvessel value of $281million of all salmon species ranks first in the history of the fishery and was 242% above the 20-year average of $116 million. It was 39% higher than the $202 million exvessel value of the 1990 harvest, which ranks second. The 43.5 million harvest of all species was the second largest in the history of the fishery, after the 45.4 million fish harvest in 1995. The sockeye salmon harvest of 41.3 million ranks second after the 44.2 million fish harvest, also in 1995. The weight, harvest, and price (Table 1) were used to estimate exvessel value. Prices are an average of post-season processor final operations reports and do not include future price adjustments for icing, bleeding, or production bonuses.

Table 1.–Average price, weight, harvest, and value of salmon harvest in Bristol Bay, 2018.

Species	Price/lb	Weight (lb)	Number of Fish	Total Weight	Value
Sockeye	$1.26	5.3	41,253,161	218,641,753	$275,488,609
Chinook	$0.80	10.4	41,696	433,638	$346,911
Chum	$0.36	6.4	1,868,308	11,957,171	$4,304,582
Pink	$0.20	3.6	218,998	788,393	$157,679
Coho	$0.80	6.6	138,466	913,876	$731,100
Totals			43,520,629	232,734,831	$281,028,881

ALLOCATION

Bristol Bay fisheries are managed to achieve allocation between drift and set gillnet gear groups in four of five districts (Table 2). Togiak District is excluded from the allocation plan. Strategies used to achieve allocation between gear groups included varying the amount of fishing time and providing separate gear group openings.

Table 2. Allocation of Bristol Bay drift and set gillnet harvest, 2018.

District	Drift Gillnet Percent of Harvest Allocated /Caught	District Set Gillnet Percent of Harvest Allocated /Caught	Section Set Gillnet Percent of Harvest Allocated /Caught
Naknek/Kvichak[a]	84% / 71%	16% / 29%	Naknek: 8% /17% Kvichak: 8% / 12%
Egegik	86% / 81%	14% / 19%	Not applicable
Ugashik	90% / 79%	10% / 21%	Not applicable
Nushagak[b]	74% / 82 %	26% / 18%	Nushagak: 20% 11% Igushik: 6% / 2%

[a] 18% of total harvest occurred in Naknek River Special Harvest Area and is not allocated to gear groups.
[b] Wood River Special Harvest Area harvest was all set net and is included in the 18% listed above.

SPECIES PERFORMANCE

Sockeye Salmon

This year's Bristol Bay sockeye salmon run was 21% above the preseason inshore forecast of 51.3 million fish (Table 3). The 2018 harvest of 41.2 million fish was 69% higher than the recent 20-year average for all districts (Table 4). Sockeye salmon escapement goals were met on Kvichak, Alagnak, Egegik, and Ugashik rivers. All other systems exceeded escapement goal ranges (Table 5). In 2018 new benchmarks were established in the Nushagak and Togiak districts which observed the largest sockeye salmon runs on record for those respective districts. The Nushagak District sockeye salmon harvest of 24.1 million fish was the largest single Bristol Bay district harvest on record. Naknek-Kvichak, Egegik, and Ugashik districts (east side) observed the latest run timing on record and because of the disparity in run timing between the Nushagak and the east side districts the processing sector was able to keep pace with the run. The Bristol Bay sockeye salmon run was dominated by fish with one year of freshwater residence (1.2s and 1.3s). Fish with two years of freshwater residence (2.2s and 2.3s) were below preseason expectations, particularly in the Egegik and Kvichak rivers. Sockeye salmon weights for the

2018 season can be characterized in two ways. Fish that had three years of saltwater residence were closer to long term average weights (5.5 to 6 lbs.), while fish with two years of saltwater residence were smaller than long term average weights (3.5 to 4.5 lbs.).

Table 3.–Difference of Bristol Bay sockeye salmon actual inshore run versus forecast, 2018.

District	Inshore Forecast	Inshore Run	% Difference from Forecast
Naknek-Kvichak	16,640,000	16,807,639	1% Above
Egegik	9,120,000	6,567,483	28% Below
Ugashik	2,870,000	3,939,575	37% Above
Nushagak	21,790,000	33,582,975	54% Above
Togiak	860,000	1,370,177	59% Above
Totals	51,280,000	62,267,849	21% Above

Table 4.–2018 preliminary commercial sockeye salmon harvests and 20-year averages by district.

District	1998–2017 Average Sockeye Harvest	2018 Sockeye Salmon Harvest
Naknek-Kvichak	8,013,177	8,606,353
Egegik	6,745,168	4,959,129
Ugashik	2,830,625	2,771,783
Nushagak	6,424,924	24,057,489
Togiak	557,849	858,407
Totals	24,573,116	41,253,161

Table 5.–Bristol Bay sockeye salmon escapement goals and actual escapements, 2018.

River System	Escapement Goal Range	Escapement
Kvichak River	2,000,000–10,000,000	4,398,708
Naknek River	800,000–2,000,000	2,221,152
Alagnak River	320,000 minimum	1,581,426
Egegik River	800,000–2,000,000	1,608,354
Ugashik River	500,000–1,400,000	1,167,792
Nushagak River	370,000–900,000	1,247,460
Wood River	700,000–1,800,000	7,507,254
Igushik River	150,000–400,000	770,772
Togiak River	120,000–270,000	511,770
Total		21,014,688

Chinook Salmon

Except in the Ugashik District, the 2018 Chinook salmon harvests in Bristol Bay were below average (Table 6). No directed Chinook salmon fishing periods occurred in the Nushagak

District in 2018. Chinook salmon were caught during directed sockeye salmon periods in all commercial districts and a preliminary total of 41,696 fish were harvested, 13% below the 20-year average of 48,161 (Table 6). Chinook salmon escapement into the Nushagak River was 97,239 and within the escapement goal range of 55,000–120,000. The Chinook salmon escapement into the Alagnak River was 998 based on aerial surveys and was below the escapement goal of 2,700.

Table 6.–Chinook salmon preliminary harvest data and 20-year averages by district.

District	1998–2017 Average Chinook Salmon Harvest	2018 Chinook Salmon Harvest
Naknek/Kvichak	1,678	1,330
Egegik	636	335
Ugashik	900	1,073
Nushagak	38,461	35,243
Togiak	6,227	3,715
Totals	48,161	41,696

Chum Salmon

The 2018 preliminary Bristol Bay chum salmon harvest was 1,868,308 fish (Table 7) compared to the latest 20-year average (1998–2017) of 983,118 chum salmon. Nushagak District was the largest producer of chum salmon, where 1,192,060 fish were harvested.

Pink Salmon

Pink salmon return to Bristol Bay in even years. The preliminary harvest in 2018 was 218,998 fish which is 55% percent below the 20-year average (for even yeas only) of 488,383 pink salmon. The majority of pink salmon returning to Bristol Bay are harvested in the Togiak and Nushagak districts.

Coho Salmon

The preliminary coho salmon harvest in 2018 was 138,466 fish (Table 7). Typically, the Nushagak District is the largest coho salmon producer and accounted for 74,317 fish which was above the 20-year average.

Acknowledgements

The department would like to thank the Bristol Bay Fisheries Collaborative (BBFC) for funding assistance in 2018. The BBFC began in 2016 and is an agreement between ADF&G and the Bristol Bay Science and Research Institute (BBSRI) to work together with stakeholders to restore a world class fisheries management system and raise funds to support and maintain it. This agreement is supported by ADF&G, drift and set gillnet fishermen, processors, municipalities, villages, support industries, and other stakeholders. A list of organizations that committed financial support to the BBFC in 2018, as well as additional information about this agreement can be found at https://www.bbsri.org/bbfc.

In 2018, BBFC funding and resources were responsible for the deployment of a second boat in the Port Moller Test Fishery. The use of a second test fishing vessel provided the opportunity to document the migratory path of Bristol Bay sockeye salmon well beyond the historically fished locations.

Table 7.–Preliminary 2018 Bristol Bay salmon harvest and escapement by district and species.

District	Sockeye	Chinook	Chum	Pink	Coho	TOTAL
Naknek-Kvichak Catch	8,606,353	1,330	314,872	16,858	6,503	8,945,916
Escapement-KvichakTwr.	4,398,708	N.A.	N.A.	N.A.	N.A.	4,398,708
Naknek Twr.	2,221,152	N.A.	N.A.	N.A.	N.A.	2,221,152
Alagnak Twr.	1,581,426	998 [a]	N.A.	N.A.	N.A.	1,582,424
Naknek-Kvichak Subtotal	16,807,639	2,328	314,872	16,858	6,503	17,148,200
Egegik Catch	4,959,129	335	110,763	341	14,755	5,085,323
Escapement-Egegik Twr.	1,608,354	N.A.	N.A.	N.A.	N.A.	1,608,354
Egegik Subtotal	6,567,483	335	110,763	341	14,755	6,693,677
Ugashik Catch	2,771,783	1,073	91,376	0	0	2,864,232
Escapement-Ugashik Twr.	1,167,792	N.A.	N.A.	N.A.	N.A.	1,167,792
Ugashik Subtotal	3,939,575	1,073	91,376	0	0	4,032,024
Nushagak Catch	24,057,489	35,243	1,192,060	135,126	74,317	25,494,235
Escapement- Wood Twr.	7,507,254	N.A.	N.A.	N.A.	N.A.	7,507,254
Igushik	770,772	N.A.	N.A.	N.A.	N.A.	770,772
Nushagak	1,247,460	97,239	811,283	N.A.	111,455	2,267,437
Nushagak Subtotal	33,582,975	132,482	2,003,343	135,126	185,772	36,039,698
Togiak Catch	858,407	3,715	159,237	66,673	42,891	1,130,923
Escapement - Togiak Twr.	511,770	N.A.	N.A.	N.A.	N.A.	511,770
Togiak R. & Trib.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Kulukak	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Togiak Subtotal	1,370,177	3,715	159,237	66,673	42,891	1,642,693
Bristol Bay Catch	41,253,161	41,696	1,868,308	218,998	138,466	43,520,629
Bristol Bay Escapement	21,014,688	98,237	811,283	N.A.	111,455	22,035,663
Bristol Bay Total Run	62,267,849	139,933	2,679,591	218,998	249,921	65,556,292

[a] From post season aerial survey.