Annual Report for the 2020 Port Moller Test Fishery

	Daily Catch Index by Station												
Date	S2	S4	S6	S8	S10	S12	S14	S16	S18	S20	S22	S24	S26
10-Jun													
11-Jun													
12-Jun	2	0	0	0	60	3	0	0					
13-Jun			0	0	60	11	4	13	0				
14-Jun		0	2	0	0	5	23	2					
15-Jun	5	0	0	44	8	5	48						
16-Jun													
17-Jun		10		23	13								
18-Jun													
19-Jun				19	2	16	0	19	0				
20-Jun	0	0	2	51	63	34	4	35	4				
21-Jun													
22-Jun				18	98	17							
23-Jun	2	6	23	37	87	25	19	19	14	1			
24-Jun		2	8	31	108	47	2	37	75	41	23	0	
25-Jun	0	12	2	34	70	110	33	18	4	3	88		
26-Jun													
27-Jun													
28-Jun													
29-Jun						73	22	73	43				
30-Jun			14	90	84	30	23	156	94	84			
1-Jul			19	96	76	40	68						
2-Jul				265	81	36	65	71	184	70	168		
3-Jul		10	133	198	6	30	41	91	147	336	0	0	
4-Jul	0	16	393	82	62	43	25	87	151	219	0		
5-Jul	8	23	44	138	291	80	5	156	110	317			
6-Jul													
7-Jul				45	113	66		3	169	23			
8-Jul	3	22	52	187	80	97	0						
9-Jul	10	167	205	44	250	77	81						
10-Jul		0	23	27	117	14	21						
11-Jul				32	3	23		32	19	94			
12-Jul			32	7	108	13	37	18	120				
13-Jul	0	9	57	37									

BBSRI

November 2020

Annual Report for the 2020 Port Moller Test Fishery

Prepared by

Scott W. Raborn[1] and Michael R. Link[2]

Prepared for

Bristol Bay Science and Research Institute
P.O. Box 1464
Dillingham, AK 99576
www.bbsri.org

Bristol Bay Fisheries Collaborative
www.bbsri.org/bbfc

and

Bristol Bay Regional Seafood Development Association
3705 Arctic Blvd, #1188
Anchorage, AK 99835
www.bbrsda.com

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[1] LGL Ecological Research Associates, Inc., 4103 South Texas Ave., Suite 211, Bryan, TX 77802
[2] Bristol Bay Science and Research Institute, P.O. Box 1464, Dillingham, AK 99576

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Executive Summary

In 2020, the Port Moller Test Fishery (PMTF) operated from June 12 to July 13 using two research vessels —primarily the R/V *Ocean Cat* and, to a lesser extent the F/V *Americanus*. A total of 4,980 Sockeye were caught in 207 sets distributed across Stations 2-24. No fishing occurred on nine days of the planned sampling period, mostly due to unprecedented bad weather, and to a lesser extent logistical issues. Nevertheless, Port Moller proved useful in foretelling the run was late as test indices continued to build through July 5.

As in 2018 and 2019, the pattern in catches was bimodal across the fishing transect with half the run migrating beyond Station 12 and half the run from Station 2-12. The 2020 run totaled 58.2 million in catch and escapement; run timing was estimated to be 4 days late, peaking in the inshore districts on July 7. The magnitude and lateness of the 2020 run was similar to those from recent years (2015-2019).

Missed fishing opportunity during June 26-28 (close to when Port Moller usually peaks) hindered our ability to make near-term forecasts of catch and escapement inseason. However, based on Port Moller we were able to reliably predict the inshore return at several points in the season when these forecasts were accurate and had value to industry and fishery managers. First, we predicted the run was late on July 2 (when 90% of the run was yet to arrive inshore) and that it was likely to reach the preseason forecast. On July 7 (63% of the run remaining) we combined the lateness information gained from Port Moller with the cumulative catch and escapement to date and forecasted the run was five days late and over 50 million; this forecast was revised on July 9 (49% remaining) to 4-6 days late and closer to 60 million.

We fished a deeper net in 2020 than has been used at PMTF in the past. The PMTF standard net has always been 60 meshes deep. From 2011 to 2019 the net consisted of four alternating 50-fathom shackles of 5⅛" (13.0 cm) and 4½" (11.4 cm) multi-strand mesh, hung at a 2:1 ratio. Based on research during 2019, there was evidence that a greater portion of the run was passing underneath the 60-mesh net during particular weather conditions (e.g., calm seas, low wind, and greater water visibility). As such, we fished a deeper net in 2020—100-5⅛" meshes and 111-4½" meshes. All other net specifications remained the same. The fishing depth swept increased from ~6 m for the 60-mesh net to ~11 m for the deeper net used in 2020. Having kept track of fish caught in the top 50 and the bottom 50 meshes from each set, we were able to adjust station catch indices to be more comparable with the historical 60-mesh deep net. The yearend average adjustment was 0.76; in other words, each daily station index in comparable historical terms would have been about 76% of what we observed from the 100-mesh net in 2020. This adjustment corresponded to 30% of fish coming from the bottom 50 meshes of the new net, which produced an estimate of 24% coming from the bottom 40 meshes (i.e., 76% from the top 60 meshes).

Recommendations for project scope in 2021:

- Continue to sample stations across the entire fishing transect (Stations 2-24) as time and effort allow.
- Continue to sample at least through July 13 and preferably July 15 unless the run is obviously early.
- Continue fishing the deeper multistrand net for the station indices.
    - Fishing a deeper multistrand net will intercept a more consistent portion of the run when conditions promote fish passage at greater vertical depth.
    - We prefer to stick with multistrand versus monofilament for two reasons. Firstly, selectivity for the mesh sizes used in the multistrand net translates to the gear that fishermen use inshore. That is, comparing catches from the two meshes at Port Moller can inform fishermen about which mesh sizes they might use inshore. Secondly, the multistrand net holds up better to picking fish in that few meshes break when fish are removed.
- The two reasons for staying with a multistrand net aside, if a monofilament net is capable of catching fish more consistently under varied fishing conditions, then it may be prudent to use monofilament. As opportunity allows, we should be prepared to continue to test the efficacy of the monofilament net during 2021.
- For every set, continue to record the number of fish caught in the top and bottom portions of the net, which may help with determining the mechanisms affecting depth of fish migration and enhance our ability to compare 100-mesh results to historical 60-mesh results.
- Consider changing from fixed stations to a randomize sampling around the historical stations by adjusting to a day-to-day randomized starting point for the systematic sampling of the transect.
    - The bimodal pattern of station indices along the transect the last three seasons coupled with the patchiness observed from the odd stations sampled in 2019 and 2020, suggest that the selection of stations to fish may need to be more random than the current fixed locations used across days.
    - While stations should remain evenly spaced across the transect on a given day (i.e., systematic, and 10 nm apart) to maximize coverage of the entire migration, we recommend randomizing the location of Station 2.
        - For instance, the most inner station would still be called Station 2, but fishing may occur along the transect anywhere from Station 1 (30 nm

Port Moller) to Station 3 (40 nm). A random number between 0 and 10 could be drawn for each day preseason to establish the starting points for each day of the season. From that day's location, Stations 4, 6, 8, etc. would be spaced evenly 10 nm apart.

  - This adjustment to the station selection scheme can only reduce bias from temporally consistent patterns in salmon distribution without increasing noise in the Daily Abundance Index.
  - We recognize the need to review and solicit input for any such change in station selection with users of the PMTF data prior to the 2021 season.

- Adjust the sample weighting scheme for the generation of stock composition estimates.
  - We have observed stock composition to change more along the transect on a single day than across adjacent days.
  - When stations are disproportionately (i.e., unequally) sampled across days, the current sample selection scheme does not representatively select fish to analyze introducing unnecessary bias in the stock composition estimates.
  - The alternative weighting scheme we propose is based on using the average index for a given station across days, which will be more representative of catches pooled across multiple days.

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Introduction

The Port Moller Test Fishery (PMTF) has been conducted since 1967 with drift gillnets set at fixed 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 approximately one week prior to their arrival in the various terminal commercial fishing districts of Bristol Bay. The PMTF typically operates from around June 10 through July 10 each year (the end date was extended by a week in 2019 and 2020) and offers a preliminary test of preseason sockeye salmon forecasts and an indication of the current season's run timing.

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 the preseason forecasts. In addition, this information is used by fishermen when deciding which districts to fish, and helps processors anticipate where among Bristol Bay fishing districts to assign their tendering capacity. Though the data from the PMTF is not the primary basis of decision making upon which the individual district fisheries are prosecuted, managers use it for an indication of overall and stock-specific run strength (comprised of inshore commercial catch and escapement, or "C+E").

This annual report describes the project's objectives, how the test fishery works, the results from 2020 including insights that affect the performance of the test fishery, and recommendations for the study design in the following season. The annual report stems from our ongoing goal of adaptive management of the research protocols for the Port Moller Test Fishery to improve the utility of the project. In the report, we "show our work" for our technical peers, the 2,000+ individuals in the fishing industry who fund the project and use the data for their business decisions, and our future selves as we continue to learn. As such, the report attempts to provide information for readers from a range of backgrounds. It has been the vigilance of documenting the project on an annual basis that has led to several significant improvements in the design and execution of the project and, ultimately, to better information for fishery managers and those in the salmon industry.

Primary Information from PMTF

Information from the test fishery is combined with other information gathered inshore (C+E) to provide five descriptors of the sockeye salmon run each year: (1) magnitude, (2) timing, (3) entry pattern, (4) stock composition, and (5) age composition.

Run magnitude (abundance), 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 C+E 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., pertaining to just the next several days) or "yearend" (pertaining to remainder of the season's run). Proximate forecasts represent those fish thought to be between the PMTF and the commercial fishing districts (i.e., prior to being accounted for in the catch or the escapement). Proximate forecasts are based on the estimated travel time (TT) for Sockeye to travel between Port Moller and the districts and the estimated return-per-index (RPI; the number of fish inshore that each catch index point at the PMTF represents). RPI is estimated by comparing PMTF daily indexes to subsequent catch and escapement lagged by the TT parameter.

The data informing us about these five descriptors vary with respect to when they become available and their reliability. The chronological order of when they become available is as follows: (1) age composition, (2) stock composition, (3) proximate run magnitude, (4) entry pattern, and (5) run timing. Yearend run magnitude only becomes available once the peak of the run has occurred at PMTF.

Initial age and stock compositions are typically released by ADF&G around June 21 (i.e., after the 5th or 6th PMTF sampling trip) and provide the first proximate forecasts of these two descriptors.

The point at which proximate run magnitude estimates can be made varies by district. Districts differ as to when their C+E become quasi-reliable for use in proximate forecasts of run magnitude. The Egegik and Nushagak-Wood Districts have the earliest run timing and begin to exhibit a more reliable relationship between PMTF catch indices 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. 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. This phenomenon applies to other districts as well.

Run timing and yearend forecasts of magnitude are not available until catches at the PMTF have peaked and begun to decline. Knowing the peak day at Port Moller allows estimation of the earliness/lateness at the test fishery, which can then be used to estimate the run timing for C+E. Once the peak has occurred at Port Moller, sometimes the tail of the test fishing seasonal distribution can be projected and then used to forecast the remaining inshore run. Yearend forecasts are affected by any changes in the vulnerability of the run to capture at PMTF. Changes in the RPI and/or TT parameters after about June 30 can make accurate forecasting yearend run magnitude difficult.

Objectives

The 2020 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, including in 2020:
    a. A deeper net than has been used in the past.
    b. Sample some stations between the traditional stations to assess patchiness of the run along the test fishing transect.

Methods

Study Area and Project Timing

Stations Fished

The PMTF samples at stations located along a transect from Port Moller to Cape Newenham, Bristol Bay, Alaska (Figure 1). Stations are 5 nm apart, with Station 1 being 30 nm offshore from Port Moller and Station 12 being 85 nm 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 pilot study (Raborn and Link 2018). The results from this study motivated full-season funding of a second vessel, R/V *Ocean Cat* (a 93 ft [28.3 m] steel vessel), during 2019 and allowed sampling out to Station 24 regularly and even once at Station 26. Two vessels were also used during 2020. The typical research vessel by ADF&G, R/V *Pandalus*, was out of commission in 2020; thus, the *Ocean Cat* accomplished most of the sampling. A second vessel, the F/V *Americanus* (a 45 ft [14.5 m] fiberglass vessel), was quickly recruited in mid-June to assist sampling most of the full transect, but its arrival at almost the middle of season and inclement weather limited this lighter vessel (and the *Ocean Cat* for that matter) from covering as many stations as we had hoped.

During day one of a routine 2-day trip prior to June 20, the crew from the R/V *Ocean Cat* sampled outbound from Port Moller beginning anywhere from Station 2 to 8 and fished even numbered stations out to an outer station (Station 14, 16, or 18) where they would anchor for

the night. The next day sampling would continue from the outer station back towards Station 2 before returning to Port Moller to drop off tissue and scale samples. Beginning on June 20, the F/V *Americanus* attempted to sample Stations 2-10 outbound on the first day, while the crew from the *Ocean Cat* typically sampled Stations ~24-12 inbound and anchored after meeting the *Americanus* to pass off samples. Departures from this routine occurred on some days due to inclement weather or logistical setbacks. On four separate days, some odd numbered stations were sampled by both vessels in addition to the even stations to assess patchiness across the transect.

Dates Fished

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 been from June 10 or 11 to July 10 or 11. Late runs and large catch indices at Port Moller through July 10 in recent years, motivated us to extend the end date to July 17 in 2019 and July 13 in 2020.

Net Description

The PMTF standard net used from 2011 to 2019 consisting of four alternating 50-fathom shackles of 5⅛" (13.0 cm) and 4½" (11.4 cm) multi-strand mesh, 60 meshes deep, hung at a 2:1 ratio. Further information regarding net descriptions prior to 2011 and historical setup can be found in Nemeth et al. (2016). Based on our research from 2019, there was evidence that a greater portion of the run was passing underneath this net during particular weather conditions (e.g., calm seas, low wind, and greater water visibility). As such, we fished a deeper net in 2020—100-5⅛" meshes and 111-4½" meshes. All other net specifications remained the same. The fishing depth swept increased from ~6 m for the 60-mesh net to ~11 m for the deeper net used in 2020.

Fish Sampling Protocol

Fish Capture

During standardized test fishing at each station, a single net was deployed. Drift gillnet sets lasted for an average of 26 min (range=16-59 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. 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 (see Appendix F in Link et al. 2019). Typically, it took 5-6 min to deploy the full length of the net. After setting the net, the vessel moved away 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.

Data Recorded

Environmental variables measured included sea surface temperature (SST), Secchi depth (an index of water visibility), and wind velocity and direction. In addition, profiles of water temperature and salinity were recorded down a depth of 15 m. Times were recorded when the trailing buoy was deployed, when the net was fully set, when retrieval began, and when the net was fully in.

Station Indexes

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:

$$MFT = SI - FO + \frac{(FO-SO)+(FI-SI)}{2} \quad (1)$$

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). During 2020, the number of fish from each set was recorded as hitting the top 50% or bottom 50% of the net; those fish hitting the middle of the net whose designation was not certain were alternately assigned to top/bottom bins.

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 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 (Dann et al. 2013). Stock composition estimates from PMTF samples are usually made available three to four days after sample collection. Appendix B provides the 2020 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. 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 the first winter during incubation. Age estimations were made by ADF&G personnel in King Salmon using acetate impressions of scales

under 10x magnification using a microfiche reader. The 2020 age composition estimates reported by ADF&G for PMTF, inshore districts, and escapement projects are included in Appendix C.

The Daily Abundance Index

The Daily Abundance index was developed from each day's station indexes. Two methods of calculating the daily abundance index have been used. See Raborn et al. (2011) for a description of the "Traditional Index". Briefly, the Traditional Index used the sum of CPUE's from Stations 2-8 giving double weight to Station 8 to account for fish missed beyond that station. Beginning in 2011, the PMTF has used the "Replacement Index" (hereafter referred to as just "Daily Abundance Index" or "Daily Index"), which was simply the *average* index from Stations 2-10. With extensive coverage of the area offshore of the traditional stations in 2019 and 2020, we also provide Daily Indices based on averages from two different groups of stations. First, the Daily Abundance Indices in the daily catch updates include the average from Stations 2-10 to provide continuity among annual reports since 2011. Second, we reported the average index across *all* stations, including the outer stations, as including these additional stations seemed to better describe the dynamics of the inshore run in 2019 and 2020.

To account for stations not fished, missing station-date specific values had to be interpolated. Some hyper-technical methodology is required here as a simple linear interpolation for missed values from observed indices for adjacent days and stations does not fully utilize the information contained in the entire 2-dimensional dataset (i.e., time and space). Instead, we fit the observed index pattern across days and stations with a generalized additive model. Julian date and station number were covariates fit with the gam function in the R Package "mgcv" with default settings for thin plate regression splines. The observed raw catch of sockeye represented the response and was assumed to come from a negative binomial distribution. Log(MFT) was added to the model as an offset to provide output in terms of predicted indices, which were used as the interpolated values.

Estimated Effect of a Deeper Net on the Daily Abundance Index Compared to the Past

As mentioned above the net fished during 2020 was about 60-70% deeper than the nets fished in previous years (~11 m versus ~6 m). However, it was not feasible for the deck crew to delineate whether a fish was caught in the top 60 meshes or bottom 40 meshes. The crew was, however, able to mostly distinguish fish from the top half versus bottom half of the net. Using these top/bottom catch data, an adjustment was applied to station indexes to render them more comparable to those that would have occurred from a 60-mesh net:

$$60\ Mesh\ Adj. = \frac{(0.2 \times Bottom\ catch + Top\ catch)}{(Total\ catch)} \quad (2)$$

where the 0.2 scalar comes from the fact that a 60-mesh net would have had 10 additional meshes to catch fish than the from the top 50 mesh in the 100-mesh net (i.e., 10/50=0.2).

Adjusted catch indices were used to compare 2020 to previous years (see Figure 1 starting in Catch Update #13 [Appendix A]).

Run Timing

Defining run timing relative to past seasons is becoming a moving target in recent years with a series of later runs being observed 2015 to present. For now, we do not attempt to adjust the baseline period on what constitutes the average. Instead, we define early/late as the number of days before/after July 4 that 50% of C+E has been accounted for inshore.

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[3].

Forecasting run magnitude with PMTF is more complicated[4]. As with any test fishery, assumptions must be made about the proportion of the run that is exposed to the test fishery day-to-day, and/or year-to-year, and the proportion of this exposed run encountering the test net that is caught. Typically, an assumption is made that these proportions are generally constant across a season and among years. Neither assumption seems to have been the case with the historical PMTF project.

Historical forecasting method applied to Port Moller data used the historical relationship between cumulative indexes to date and resulting total runs from previous years' runs (see Appendices E and F in Raborn et al. 2011 for the evolution of forecast methods). The usefulness of such forecasts was marginal at best and occasionally led to wildly inaccurate forecasts of abundance and patterns of run arrival to the districts. This inaccuracy had several causes. Notable among them was interannual variation in run timing, which is not known in the current year until beyond the middle of the run. Even more problematic was the annual variability of the run's exposure to the PMTF, which appears to have been significant given half the run could have passed beyond the outer most station fished (mostly Station 10, but sometimes Station 12) during some years. At least, this was the case during 2019 and 2020 (and likely 2018 based on limited sampling).

At the end of the 2011 PMTF project, we began developing a model to forecast the yearend total run magnitude based on current-year PMTF indices only. Called the "daily projection model", it was based on only on information collected in the current season.

[3] Note that inseason estimates of district-specific stock composition from PMTF assume all later district catches to be local origin. Postseason estimates of actual stock-specific abundance provided by ADF&G (e.g., Appendix E) are based on stock-specific harvests in the different districts. Differences will arise between in- and postseason stock composition estimates to the extent any stocks are caught in non-natal districts.

[4] We also provide forecasts that are independent of PMTF in our daily updates and interpretations. Specifically, we compare historical C+E to date with annual run sizes and overlay current year's C+E as a form of PMTF-independent forecast.

Estimates of travel time (TT) between PMTF and inshore districts was estimated by fitting the daily PMTF indices to subsequent and appropriate C+E by simultaneously estimating the run-per-index (RPI) parameter. However, forecasting the total run for the year before early July proved to be unfeasible due to uncertainty in the tail of the Port Moller daily catch distribution.

During 2019, we reported proximate forecasts of the inshore run magnitude for all stocks aggregated with the range in days determined by the TT parameter. In other years, we also provided district-specific proximate forecasts were made by parsing the daily Port Moller index across districts based on the stock composition estimates and estimating their respective RPI and TT parameters separately. District-specific forecasts can be hindered in some years by coarse temporal resolution in the stock composition estimates. Sparse coverage of the station-day sampling matrix for 2020 hindered our ability to produce quantitative proximate forecasts, even for the Bay as an aggregate. Instead, we relied on strong PMTF catches through early July as an indicator of late run timing and coupled this information with year-to-date C+E to qualitatively forecast yearend total run strength.

Inseason Reporting of PMTF Information

Information from the PMTF was distributed regularly throughout the inseason using several methods. As has been the case for many years, the "daily catch updates" that summarized catches and indexes by station and the Daily Index were emailed to a distribution list usually on the same day that test fishing occurred (late fishing days can push some updates to early morning of the following day). Interpretations of these catches were provided in the body of these emails on some days as meaningful information changed or new insights were possible. Subscribers to the email distribution list are maintained from year-to-year and it is free to sign up via an email request to the authors of this report. Finally, BBSRI distributed ADF&G's genetic stock composition and age composition updates as they became available throughout the season. All project information sent by email, including the daily catch updates, interpretations, and age- and stock-composition estimates were also posted on the homepage of BBSRI's website (www.bbsri.org).

New to 2020, and in an effort to provide greater access to PMTF information those in the fleet who often cannot receive email when on the fishing grounds, we set up a texting service for recipients to receive an abbreviated summary of station indexes, stock composition estimates, and any important operational updates (e.g., weather or mechanical delays). The texting service was provided free; a subscription required users to text "PMTF" to a 1-800 number.

Results and Discussion

Inseason Reporting of PMTF Information

All inseason update types were numbered in sequence through the season and are provided in Appendices A–C. The email distribution list ended the season with 879 email addresses, up about 16% over 2019 (Table 2). The SMS texted version of the PMTF updates went to 644 phone numbers, which was 575 unique subscribers. Some people received these on both cell phone and satellite communications devices. About 27,000 PMTF text messages were delivered across all subscribers in the 2020 season. We received positive feedback by making the updates available via SMS texts (and recommend that this continue). The dates and times of dissemination of the PMTF updates are given in Table 3. We were successful in getting daily catch updates out quickly and in all but one, they were sent on the day of fishing, even when fishing ended very late in the day.

Timing of Stock Composition Estimates

The timeliness of the stock composition estimates is an important metric for the PMTF program, and this is affected by coordination between vessels and several logistical steps from moving tissues from the transect to a lab in Anchorage. Link et al. (2019) elaborate on factors affecting the timing of stock composition estimates and developed a table that summarized the timing of each stock composition estimate over a 10-year period. Table 4 updates their table showing the timing of each set of estimates from 2010 through 2020. Stock composition estimates were released to the distribution list and posted online in 2020 in an average of 2 days from the end of the sample collection period used to develop each set of estimates. This is our shortest ever lag, and about a day sooner than what it was a decade ago (Table 4; Figure 2). Improved performance over recent years has been due to a combination of increased effort (and expense) on shipping samples quickly, improved flight service to Port Moller, and faster laboratory processing.

To further compare the timing of stock composition estimates in 2020 to the previous ten seasons, we examined the cumulative numbers of stock composition estimates by date within each season (Table 5). In 2020, the first stock composition estimate was released on June 22, which was about 1-2 days later than previous years due to low catches early on and missed stations during June 10, 11, and 16-18. Three stock composition estimates had been released by June 27 compared with an average of 3.3. Missed days during June 26-28 and on July 6 reduced the number of estimates typically released later in the season (2020 total releases=8 versus an average of about nine).

2020 Run Characterization and Performance of the PMTF

Table 6 summarizes our inseason interpretations of the run based on PMTF and is essentially a report card on the veracity of our interpretations. The summary is an integral part

of reporting results for quantifiable metrics that feed into our adaptive management of project's study design.

Run Magnitude and Timing

The 2020 run was similar in magnitude and timing to the previous four years coming in at 58.2 million and being about 4 days late. The seasonal pattern in this year's run was similar to 2017 with a slow front tail followed by a dramatic increase in C+E (Figure 3).

The 2019 season had two boats (R/V *Pandalus* and R/V *Ocean Cat*) that encountered good weather conditions and had few logistical setbacks allowing for the greatest coverage of stations in the history of PMTF. In contrast, 2020 proved to have some of the worst fishing conditions and, combined with a few logistical setbacks limited our ability to obtain the spatial and temporal coverage seen in the 2019 program (Table 7). Nevertheless, the data collected indicated that Port Moller catches peaked around July 4-5, although we cannot say what indices would have been June 26-28 due to missed fishing. A spike in catches during these days would have corresponded to the observed increase in C+E during July 5-8 indicating a 9-day travel time. The second spike in C+E on July 11 would then line up with the July 4-5 peak at Port Moller, albeit the travel time would then have reduced to 6-7 days.

Even without missing stations and whole days, lining up the daily catch pattern with that of C+E is challenging if travel time is changing during the season. For instance, in some years fish could be stalling outside the districts before suddenly beginning a continued progression upstream. This occurrence could cause the travel time inseason to suddenly reduce by 50%. A lack of openers early in the season would magnify this phenomenon.

For this reason, we were leery in 2020 of making proximate daily projections during the season. Instead, we binned years by run magnitude and plotted their run timing against cumulative C+E to date (see Figure 2 starting in Catch Update #26 [Appendix A]). Lateness of the run was surmised from sustained Port Moller catches through July 5, which then helped to rule out the 20, 30, and 40 million bins. Thus, on July 7 with 63% of C+E left to arrive, we predicted the run to be 5 days late and over 50 million. On July 9 (49% of C+E left), we predicted 4-6 days late and a run magnitude edging towards 60 million, which was close to the mark—the yearend run was 4 days late and 58.2 million.

Age and Stock Composition

The latest set of estimates for C+E were released by ADF&G on July 20 and only cover C+E through about mid-July (samples from the last 30% of run remain unreported). Nevertheless, these estimates show C+E at that point to be comprised of 34% age 1.2, 3% age 2.2, 61% age 1.3, and 1% age 2.3. Age composition from Port Moller compared reasonably well—26%, 4%, 68%, and 2%, respectively.

Our ability to assess the accuracy of seasonal trends in stock composition estimates from Port Moller was limited for 2020. First, estimates were somewhat patchy this season

(Figure 4). Second, travel times between Port Moller and the districts were difficult to estimate. Assuming the travel time for fish going to all districts was six days, the stock composition estimates from PMTF line up reasonably well with subsequent district C+E for some days, but not others. The Naknek-Kvichak Port Moller estimate seemed too high for June 22, offset by a low Nushagak-Wood estimate. Samples on June 22 only came from Stations 8-12 and were combined with the full transect on June 23 to render stock composition estimates for these dates. Thus, the middle of the transect was weighted heavier for this set of estimates. The Naknek-Kvichak estimate seemed too low and Nushagak-Wood estimate too high for June 29 and 30; samples for these dates were skewed more towards the outside stations. Under the "Future Work" section below, we offer a new weighting scheme for samples that may help to alleviate potential bias caused by disproportionate weighting of the inner and outer transect across days.

Large genetic sample sizes collected across the entire transect on July 3 and 4 offered an opportunity to assess the spatio-temporal pattern in stock composition at Port Moller with greater resolution than had previously been possible. With an extra effort by ADF&G's Gene lab, stock composition estimates for inner (2-12) and outer (14-22) stations were produced for both days (Table 8). Several patterns were clear. First, changes in stock composition between adjacent days were less pronounced than changes between the inner and outer transect on a given day. Second, Nushagak District and Naknek Kvichak District stocks are more prevalent along the outer transect, while Egegik and Ugashik stocks are more so along the inner transect. These results corroborate our findings from last year, whereby inner and outer stations were compared but with less temporal resolution (see Stock Composition Update #2 in Appendix B from 2020 for a summary).

Effect of Fishing a Deeper Net

Adjusted catch indices were used to compare 2020 to previous years (see Figure 1 starting in Catch Update #13 [Appendix A]). The average adjustment was 0.76 corresponding to 30% of fish coming from the bottom 50 meshes of the net and an estimated 24% coming from the bottom 40 meshes; thus, we estimated 76% would come from a 60-mesh deep net. Similarly, Helton (1991) found 75-80% of catches to come from the top 60 meshes of a 120-mesh net.

As mentioned in Catch Updates #20 and 23, the ultimate result from fishing a 100-mesh versus 60-mesh net was that the risk of missing deeper fish was reduced. Reasons why fish may pass deeper at times at PMTF was tested and reviewed by Helton (1991). He found several factors that might affect vertical distribution during the 1989 season. Greater catches were observed in the top 4 meters of the net as compared to bottom 4-12 meters. Stations 2 and 8 exhibited shallower catches, and Stations 4 and 6 had the deepest catches. Sockeye salmon were caught deeper as the season progressed and were deeper during ebb tides. Helton (1991) linked seasonal effects to changing vertical thermal structures as the thermocline developed in

strength over the course of the summer. Sockeye tend to be deeper in areas of strong thermal stratification and shallower in areas of weaker stratification (Quinn and Terhart 1987; Quinn et al. 1989). Tidal stage may influence the frequency of deeper excursions if ebb tides stimulate Sockeye searching for olfactory cues (Helton 1991; Westerberg 1982) or there exists some energetic benefit from swimming deeper. The effects of time of day, sea state, wind speed, cloud cover, water clarity and SST on depth of capture were not found to be statistically significant. Finally, Helton (1991) postulated that increased passage rate may cause a greater portion of fish to swim deeper either due fish to spreading out more vertically throughout the water column or due to initial fish caught in the top portion of the net to saturate or spook subsequent fish causing them to pass deeper and deeper as the net filled.

Regardless of the various potential mechanisms affecting the depth of fish passage, the deeper net used in 2020 had a vertical sweep of ~11 m versus ~6 m for the net used in prior years. Therefore, changes in CPUE due to fluctuating depth of passage for any of the above reasons would be reduced as the portion of the run being intercepted would be more consistent. While this portion was more consistent, the magnitude of CPUE was likely higher from the deeper net for some sets than what would have been ordinarily observed (e.g., if deeper fish were missed in previous years). This effect is desirable if the magnitude of catch indices, which defines the daily index pattern, is to better represent the daily distribution of C+E.

One criticism of switching to a deeper net is that current year catch indices may be less comparable to historical results. We have argued that comparison of Port Moller indices across years to determine run magnitude will be a failing endeavor until the portion of the run intercepted by the test fishery is stabilized within season and across years. For the last three years, we have discovered that at least half the run passed the fishing transect beyond Station 12. The extent to which phenomenon was happening in previous years will never be known as outer stations have never been sampled prior to 2018 (Table 1), but it appears that it fluctuates from year to year. For instance, the Daily Index pattern seemed to track C+E well during 2011 and 2013, which were smaller-early runs that were probably more distributed inshore (Figure 3). The pattern at Port Moller bears little resemblance to that for C+E in 2012 and 2014. This project is funded on an annual basis to accurately characterize the run timing, abundance, and stock composition of the current year; to do that, we must strive to eliminate egregious errors in PMTF results observed in the past.

Additional Research – Effects of Patchiness by Sampling Odd Numbered Stations

Trade-offs between the range (distance from shore) and the spatial resolution among stations have existed since the inception of the PMTF. The distances are great relative to the amount of time available. Early in the history of the program, even-numbered stations were fished on the outbound trip and odd-numbered on the return trip. At some point, this was standardized to fish even-numbered stations daily. On occasion, we have seen patterns that

strongly suggest the bands of fish passing PMTF may be patchy in a consistent manner for several days.

On three days during the 2019 season, we had the crews sample odd numbered stations to see how these indexes compared to the adjacent stations typically sampled. While this endeavor was more or less an initial spot check, it did prove informative in showing how patchy or banded the run can be on a given day across the transect (Link et al. 2019). We repeated this exercise on four days during the 2020 season. While catches from stations could be interpolated reasonably well from adjacent catches for some station-day combinations, other days revealed that modes could be missed if only even or odd stations had been fished (Figure 5). For instance, different average catch indices would be inferred when using odd versus even stations for outer and inner stations on July 5, and modes would have been incorrectly interpolated for Stations 5 and 20. If modes shift randomly enough across any 10 mile stretch (the distance between odd stations) from day to day, then the systematic sampling scheme used currently should be unbiased. However, if distinct water masses form causing thermal structures and current patterns to remain constant for several days, then the run may become braided in a consistent manner.

SSTs were more consistent along the inner transect for June and July in 2020 than the outer stations. Changes in SST occurred between Stations 12 and 16 (possibly indicating separate water masses for inner and outer stations), which corresponded to the consistent lull between modes throughout the season (Figure 6). If the environment can stabilize at sub-10-mile spatial scales, the current nonrandom selection of stations could bias the Daily Abundance Index pattern.

Future Work and Recommendations

Consistent with the adaptive management approach to this project, we continue to examine our assumptions and search for ways of improving the test fishery on an annual basis. Below is the latest in this series of efforts to improve the test fishery performance. All our research to date suggests that most of the remaining forecast error comes from missing fish at the test fishery. We have shown that this can occur mostly from not sampling outer stations and from ending the test fishery too early. Testing a deeper monofilament net in 2019 and using a deeper net during 2020 has shown that we may under some conditions missed varying proportions of the run passing beneath the 60-mesh net historically used. The odd stations sampled during 2019 and 2020 suggest that a strict nonrandom systematic sampling design may not be optimum for reducing bias in catch indices if the run becomes consistently braided for several days at a time. Most of our recommendations for 2021 revolve around these findings.

Using One or Two Vessels to Cover Stations 2-24

The primary advantage from having two vessels has been that the entire transect

(Stations 2-24) was more likely to be sampled on a given day. The discovery of a large second mode of fish migrating past Port Moller further offshore in 2018, 2019, and 2020 calls into question the comparison of PMTF results across years and hinders our ability to explain forecast error even within years. The degree to which errors in the past occurred because fish were missed beyond the transect, because travel times changed inseason, and/or because environmental conditions changed catchability cannot be discerned. Only by sampling the entire transect can other reasons for forecast accuracy be examined.

Another advantage of having a two-vessel program is that entire days missed are much more unlikely than with a single-vessel program. The second vessel can at least partially sample the entire transect making interpolated values for missed stations on those days more accurate. Late notice of the R/V *Pandalus*'s inability to operate during 2020 forced us to scramble to fill in with the F/V *Americanus*, which helped fish stations and run samples ashore. Unfortunately, 2020 imposed the some of the least favorable weather conditions in the history of the program, which hindered the *Americanus's* contribution to fishing stations.

Whether two vessels are essential to test fish over an adequate portion of the fish migration is something we continue to examine. As noted above, two vessels provide valuable redundancy, but at a financial cost. If a vessel must come ashore to deliver samples every other day as is currently needed to get genetics and scale (age) samples ashore, a sustainable, day-in-day out effort will provide about 6-7 stations per day on average; which is not adequate. If the vessel does not need to come ashore (in all but a gale warning), 9-10 stations might be possible on a consistent basis (weather and sea state permitting). This is significant—bringing samples ashore cuts 30-50% of the daily station coverage of one vessel. More importantly, if the vessel did not need to come ashore, we could potentially eliminate the cost associated with a second vessel. For example, at 9 stations per day transect coverage could alternate between Stations 2-18 and Stations 4-20 from day to day. We are working with the ADF&G Gene Lab to explore the financial and logistical feasibility of conducting the genetic lab work at sea. An added benefit of this would be to speed the availability of stock composition estimates by 1-2 days. Without this capacity, adequate spatial coverage from one vessel seems elusive. This conclusion will be revisited as we learn more.

Extend the Test Fishery to at Least July 13 and Preferably July 15

Sustained late-season catches at Port Moller from 2014 to present made it difficult to determine the magnitude of the remaining tail of the run. Missing fishing days and not sampling the full transect at the end of the run when catches remain high is much more problematic than missing catches at the beginning of the season. Budgets limiting, it is better to start the test fishery a bit later than June 10 than it is to drop the late season fishing. Even in 2013, the earliest run on record, missing June 10–12 would not have hindered our ability to determine the peak day of passage or our ability to make forecasts inseason. For late years, data from June 10–12 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 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 limiting their value. Thus, we recommend for 2021 that the test fishery be set up to sample the entire transect through July 15 and at least through July 13 even if this comes at the expense of missing the first few days.

Continue Fishing the Deeper Multistrand Net

Fishing a deeper multistrand net will intercept a more consistent portion of the run when conditions promote passage at greater vertical depth. We prefer to stick with multistrand versus monofilament for two reasons. Firstly, selectivity for the mesh sizes used in the multistrand net translate to what fishermen use inshore. That is, comparing catches between the two meshes at Port Moller can inform fishermen about which mesh sizes to use inshore. Secondly, the multistrand net holds up better to picking fish in that fewer meshes break when fish are removed. For every set we should continue to record the number of fish caught in the top and bottom portions of the net, which may help with determining the mechanisms at play.

Adjust to a Day-to-Day Randomized Systematic Selection of Stations to Fish

The bimodal pattern along the transect observed in 2018, 2019, and 2020 along with the patchiness observed from the odd stations sampled in 2019 and 2020 suggest that the selection of stations sampled may need to be more random. While stations should remain evenly spaced (i.e., systematic) across the transect on a given day to maximize coverage of the entire migration, we recommend randomizing the starting point. For instance, the most inner station will still be called Station 2 but may occur along the transect anywhere from 30 (Station 1) to 40 (Station 3) nm from Port Moller (a random number between 0 and 10 could be drawn for each day preseason). From there, Stations 4, 6, 8, etc. would be spaced evenly 10 nm apart. This approach is recommended for transect sampling of marine mammals, which can form into nonrandom clusters (e.g., Thomas et al. 2007). This adjustment to the station selection scheme should help reduce bias from temporally consistent systematic patterns in salmon distribution without increasing noise in the Daily Abundance Index.

Adjust Sample Weighting Scheme for the Generation of Stock Composition Estimates

Since the beginning of stock composition estimation at Port Moller, catches from multiple days (usually two) have been combined to form stock composition estimates; occasionally, compositions for a single day have occurred, but not often. To form these estimates, genetic samples have been drawn from station catches in proportion to relative station indices (i.e., CPUEs) to create a target sample size of n=190. For example: across a two-day set of samples, if Station 6's CPUE or index on Day 1 represented 30% of the total index points for all stations from both days, then 57 fish (0.3*190=57) from Day 1-Station 6 would comprise part of the n=190.

The current sample selection scheme is unbiased when the same stations are fished on both days. However, there are times when only part of the transect is covered for one day, but the full transect is covered for the other. Such was the case for the last stock composition estimate of 2020 covering July 7, 8, and 9. Given the more pronounced stock composition gradient observed across the transect versus among adjacent days (see Table 8; and also, the commentary in Stock Composition Update #2 in Appendix B), not accounting for disproportionately weighting inner versus outer stations could result in biased estimates. The current sample selection scheme described above may fall short of choosing genetic samples so as to minimize potential bias. Thus, we offered an alternative weighting scheme that is based on using the average CPUE for a given station across days. The steps are as follows:

1. Average CPUE across dates by station;
2. Integrate these averages to 1 across stations for the 1st apportionment;
3. Multiply each station apportionment by 190;
4. Integrate CPUEs to 1 across dates by station for the 2nd apportionment;
5. Multiply each station's *n* from Step 3 by the station-date apportionment from Step 4 to get station-date specific sample selections.

Sample selection in this manner is more representative of the indices averaged across the three days (Figure 7). We recommend using this alternative scheme going forward.

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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, 1987-2020.

			Station													Stations
Year	Start	End	2	4	6	8	10	12	14	16	18	20	22	24	26	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							194
2018	10-Jun	11-Jul	13	25	27	27	27	28	28	26	11	8	5	2		227
2019	10-Jun	17-Jul	28	32	31	32	33	31	28	24	21	21	17	10	1	308
2020	12-Jun	13-Jul	10	15	18	24	24	24	20	17	15	10	6	2		185
Average, 1987-2016																109
Average, 2017-2020																229

Does not include odd stations fished in 2018-2020 or paired sets made at various stations in some years.

Table 2. Summary of the numbers of recipients in the Port Moller Test Fishery email distribution list by known and unknown affiliation for 2017-2020.

	2017	2018	2019	**2020**	% change, 2019-2020
Government					
ADF&G Research and Others	36	41	37	**41**	11%
ADF&G Fishery Managers	8	7	7	**9**	29%
Other State Government	3	2	2	**3**	50%
Local Government	1	6	8	**7**	-13%
Federal Government	2	3	3	**2**	-33%
Subtotal	50	59	57	**62**	9%
Industry					
Fishermen	69	223	393	**465**	18%
Processing	162	182	183	**192**	5%
Buyers	13	20	25	**33**	32%
Shippers	5	11	12	**14**	17%
Other Industry	17	27	33	**34**	3%
Subtotal	266	463	646	**738**	14%
Other					
Non-ADF&G Scientists	28	35	45	**47**	4%
Non-Governmental Org.	6	3	3	**3**	0%
Media	12	8	3	**7**	133%
Subtotal	46	46	51	**57**	12%
Known Affiliation	362	568	754	**857**	14%
Unknown affiliation*	132	84	5	**22**	-
Grand Total	494	652	759	**879**	16%
Net increase, year-over-year		158	107	**120**	

Table 3. Sampling dates and times of corresponding updates for four main types of inseason information from the Port Moller Test Fishery in 2020. Updates were sent by email to the distribution list (Table 1) and posted on BBSRI's website (www.bbsri.org). Interpretations/commentary on the run were reported in the body of the catch update emails.

Sampling	Catch		BBSRI	ADF&G Inseason Reports	
Date	Update #	Time (date) Catch Update emailed	Interpretation/Commentary	Stock Composition	Age Comp.
10-Jun					
11-Jun					
12-Jun	1	10:51 PM			
13-Jun	2	9:48 PM	Commentary		
14-Jun	3	10:39 PM			
15-Jun	4	8:41 PM			
16-Jun					
17-Jun					
18-Jun					
19-Jun	8	11:44 PM			
20-Jun	9	8:46 PM			
21-Jun					
22-Jun	11	6:22 PM (updated 6/23 6:13 AM)		#1, 5:19 PM June 19-20	
23-Jun	12	8:14 PM			
24-Jun	13	9:39 PM			
25-Jun	14	7:52 PM	Commentary	#2, 5:03 PM June 22-23	
26-Jun	15	7:33 PM (No fishing-Mech. Day)			
27-Jun	16	7:29 PM (No fishing-Wx. day)		#3, 2:05 PM June 24-25	
28-Jun	17	6:28 PM (No fishing-Wx. Day)			
29-Jun	18	9:48 PM			
30-Jun	19	1:43 AM (7/2)			
1-Jul	20	7:38 AM (7/2)	Commentary		
2-Jul	21	11:53 PM	Interpretation	#4, 5:01 PM June 29-30	
3-Jul	22	9:14 PM			
4-Jul	23	11:48 PM	Commentary	#5, 8:02 PM July 2-3	
5-Jul	24	8:02 PM			
6-Jul	25	6:33 PM (No fishing-Wx. Day)			#4
7-Jul	26	12:08 AM (7/7)	Interpretation	#6, 3:03 PM July 4 #7, 8:18 PM July 5	
8-Jul	27	9:11 PM		#8, Inner/Outer Stns July 2-3	
9-Jul	28	9:16 PM	Commentary/Interpretation		
10-Jul	29	8:53 PM			
11-Jul	30	1:28 AM (7/12)		#9, 3:26 PM July 7-9	
12-Jul	31	8:13 PM			
13-Jul	32	5:41 PM			

Table 4. Distribution of stock composition estimates within and among seasons, 2010-2020. Boxed areas denote sample dates; date within the box is date results were published, and the number in parentheses is the number of days after the last day of a given sample until the estimates were published.

Sample Dates	2010	2011	2012	2013 Early run	2014 Early run	2015 Late run	2016 Late run	2017 Late run	2018 Late run	2019 Late run	2020 Late run	Sample Dates
10-Jun												10-Jun
11-Jun												11-Jun
12-Jun		#1 June 19 (3)										12-Jun
13-Jun												13-Jun
14-Jun	#1 June 21 (3)		#1 June 21 (4)	#1 June 21 (4)	#1 June 18 (3)	#1 June 20 (3)		#1 June 20 (3)	#1 June 20 (2)			14-Jun
15-Jun										#1 June 20 (2)		15-Jun
16-Jun												16-Jun
17-Jun		#2 June 22 (3)										17-Jun
18-Jun			#2 June 24 (4)	#2 June 22 (3)		#2 June 22 (3)			#2 June 24 (4)			18-Jun
19-Jun	#2 June 23 (3)										#1 June 22 (2)	19-Jun
20-Jun		#3 June 24 (3)		#3 June 24 (3)	#2 June 24 (3)	#3 June 25 (4)	#1 June 25 (3)		#3 June 25 (3)	#2 June 25 (3)		20-Jun
21-Jun	#3 June 25 (3)		#3 June 24 (3)									21-Jun
22-Jun		#4 June 26 (3)	#4 June 26 (3)	#4 June 26 (3)	#3 June 26 (3)	#4 June 25 (2)	#2 June 28 (5)	#2 June 28 (3)			#2 June 25 (2)	22-Jun
23-Jun	#4 June 27 (3)								#4 June 27 (2)	#3 June 27 (3)		23-Jun
24-Jun		#5 June 28 (3)			#4 June 28 (3)	#5 June 27 (3)					#3 June 27 (2)	24-Jun
25-Jun				#5 June 28 (2)			#3 June 29 (3)			#4 June 29 (3)		25-Jun
26-Jun	#5 June 30 (4)		#5 June 30 (3)			#6 June 29 (3)		#3 June 29 (2)	#5 June 30 (3)			26-Jun
27-Jun				#6 July 2 (4)			#4 June 30 (2)			#5 July 1 (3)		27-Jun
28-Jun	#6 July 2 (3)		#6 July 2 (3)		#5 July 1 (2)	#7 July 2 (3)		#4 July 1 (2)	#6 July 2 (3)			28-Jun
29-Jun							#5 July 2 (2)			#6 July 3 (3)	#4 July 2 (2)	29-Jun
30-Jun	#7 July 4 (3)	#6 July 4 (3)	#7 July 4 (3)		#6 July 3 (2)	#8 July 3 (2)		#5 July 3 (2)	#7 July 3 (2)			30-Jun
1-Jul							#6 July 6 (4)			#7 July 4 (2)		1-Jul
2-Jul	#8 July 6 (3)	#7 July 7 (3)	#8 July 6 (3)		#7 July 6 (3)	#9 July 7 (3)		#6 July 5 (2)	#8 July 6 (3)		#5 July 4 (1)	2-Jul
3-Jul							#7 July 6 (2)					3-Jul
4-Jul	#9 July 8 (3)			#7 July 10 (3)	#8 July 9 (4)			#7 July 7 (2)	#9 July 7 (2)	#8 July 8 (2)	#6 July 7 (3)	4-Jul
5-Jul		#8 July 9 (2)					#8 July 6 (1)				#7 July 7 (2)	5-Jul
6-Jul	#10 July 10 (3)								#10 July 8 (1)			6-Jul
7-Jul						#10 July 10 (2)	#9 July 11 (3)	#8 July 10 (2)		#9 July 11 (3)	#9 July 11 (2)	7-Jul
8-Jul												8-Jul
9-Jul							#10 July 12 (3)					9-Jul
10-Jul										#10 July 14 (3)		10-Jul
11-Jul												11-Jul
Estimates	10	8	8	7	8	10	10	8	10	10	8	
Number of days from collection to estimates published												
Min	3	2	3	2	2	2	1	2	1	2	1	
Max	4	3	4	4	4	4	5	3	4	3	3	
Median	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.5	3.0	2.0	
Avg	3.1	2.9	3.3	3.1	2.9	2.8	2.8	2.3	2.5	2.7	2.0	

Table 5. Cumulative number of stock composition estimates from PMTF by date, 2010-2020.

Date	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	**2020**	2009-2019		
Run timing		early	avg	early	early	late	late	late	late	late	**late**	Min	Max	Average
17-Jun														
18-Jun					1									
19-Jun		1			1									
20-Jun		1			1	1		1	1	1		1	1	1.0
21-Jun	1	1	1	1	1	1		1	1	1		1	1	1.0
22-Jun	1	2	1	2	1	2		1	1	1	**1**	1	2	1.3
23-Jun	2	2	1	2	1	2		1	1	1	**1**	1	2	1.4
24-Jun	2	3	3	3	2	2		1	2	1	**1**	1	3	2.1
25-Jun	3	3	3	3	2	4	1	1	3	2	**2**	1	4	2.5
26-Jun	3	4	4	4	3	4	1	1	3	2	**2**	1	4	2.9
27-Jun	4	4	4	4	3	5	1	1	4	3	**3**	1	5	3.3
28-Jun	4	5	4	5	4	5	2	2	4	3	**3**	2	5	3.8
29-Jun	4	5	4	5	4	6	3	3	4	4	**3**	3	6	4.2
30-Jun	5	5	5	5	4	6	4	3	5	4	**3**	3	6	4.6
1-Jul	5	5	5	5	5	6	4	4	5	5	**3**	4	6	4.9
2-Jul	6	5	6	6	5	7	5	4	6	5	**4**	4	7	5.5
3-Jul	6	5	6	6	6	8	5	5	7	6	**4**	5	8	6.0
4-Jul	7	6	7	6	6	8	5	5	7	7	**5**	5	8	6.4
5-Jul	7	6	7	6	6	8	5	6	7	7	**5**	5	8	6.5
6-Jul	8	6	8	6	7	8	8	6	8	7	**5**	6	8	7.2
7-Jul	8	7		6	7	9	8	7	9	7	**7**	6	9	7.6
8-Jul	9	7		6	7	9	8	7	10	8	**7**	6	10	7.9
9-Jul	9	8		6	8	9	8	7		8	**7**	6	9	7.9
10-Jul	10			7		10	8	8		8	**7**	7	10	8.5
11-Jul							9			9	**8**			
12-Jul							10			9				
13-Jul										9				
14-Jul										10				
# estimates	10	8	8	7	8	10	10	8	10	10	8	7	10	8.9

Table 6. Substantive comments and predictions in the daily updates of the 2020 Port Moller Test Fishery.

Update #	Date sent	% of C+E remaining	Summary of commentary, analyses, and predictions	Did the prediction(s) come true?
2	13-Jun		Clarified the difference between a catch index versus the raw catch and why indices are used in analyses to make sets more comparable	N/A
Stock Comp. #2	25-Jun		Provided an explanation for how stocks have historically been separated across the fishing transect.	N/A
20	2-Jul	90%	(1) Noted that the run was still buildiing at Port Moller, which is beyond the typical peak date of around June 29. (2) Explained how the deeper net used during 2020 (100 meshes) catches more fish than the historical 60-mesh net. We estimated that about 30% of the fish were being caught in the bottom 40 meshes.	(1) No real predictions were made. (2) For the entire season, we estimated about 24% were being caught in the bottom 40 meshes.
21	2-Jul	90%	Suggested that increased test catches meant the run was late and likely to reach the preseason forecast.	The run was 4 days late and exceeded the preseason forecast by 25%.
23	4-Jul	N/A	(1) Further explained how intercepting more fish with the deeper net could improve Port Moller's correlation with C+E. (2) Presented results from fishing odd numbered stations and showed how sometimes modes are missed (e.g., Station 9).	N/A
26	7-Jul	63%	Made note that C+E increased dramatically on July 5-6, and that Port Moller catches sustained an increase through July 5. Binned years by run magnitude and plotted their run timing against cumulative C+E to date. Interpreted the most likely scenario to be 5 days late and over 50 million.	The run was 4 days late and over 50 million.
Stock Comp. #8	9-Jul	N/A	Presented results from stock composition estimates for inner (Stns 2-12) verus outer (Stns 14-22) stations on both July 3 and 4. Results demonstrated composition changes more across the transect on a given day than it does between adjacent days. Showed trends in stock composition accross the transect.	N/A
28	9-Jul	49%	Continued the prediction that the run was 4-6 days late and was edging towards 60 million.	The run was 4 days late and reached 58.2 million.

Table 7. Catch indices from the 2020 Port Moller Test Fishery, with those provided by the F/V *Americanus* highlighted in red cells.

	Daily Catch Index by Station												
Date	S2	S4	S6	S8	S10	S12	S14	S16	S18	S20	S22	S24	S26
10-Jun													
11-Jun													
12-Jun	2	0	0	0	60	3	0	0					
13-Jun			0	0	60	11	4	13	0				
14-Jun		0	2	0	0	5	23	2					
15-Jun	5	0	0	44	8	5	48						
16-Jun													
17-Jun		10		23	13								
18-Jun													
19-Jun				19	2	16	0	19	0				
20-Jun	0	0	2	51	63	34	4	35	4				
21-Jun													
22-Jun				18	98	17							
23-Jun	2	6	23	37	87	25	19	19	14	1			
24-Jun		2	8	31	108	47	2	37	75	41	23	0	
25-Jun	0	12	2	34	70	110	33	18	4	3	88		
26-Jun													
27-Jun													
28-Jun													
29-Jun						73	22	73	43				
30-Jun			14	90	84	30	23	156	94	84			
1-Jul			19	96	76	40	68						
2-Jul				265	81	36	65	71	184	70	168		
3-Jul		10	133	198	6	30	41	91	147	336	0	0	
4-Jul	0	16	393	82	62	43	25	87	151	219	0		
5-Jul	8	23	44	138	291	80	5	156	110	317			
6-Jul													
7-Jul				45	113	66		3	169	23			
8-Jul	3	22	52	187	80	97	0						
9-Jul	10	167	205	44	250	77	81						
10-Jul		0	23	27	117	14	21						
11-Jul				32	3	23		32	19	94			
12-Jul			32	7	108	13	37	18	120				
13-Jul	0	9	57	37									

Table 8. Comparison of stock compositions at Port Moller between inside/outside stations and between consecutive days (July 3 and 4, 2020).

Stock	July 3 (Stns 2-12)	July 3 (Stns 14-22)	July 4 (Stns 2-12)	July 4 (Stns 14-22)	Mean daily change (July 3 minus July 4)	Mean transect change (Outer minus inner)
Kuskokwim	0%	4%	0%	2%	1%	2%
Togiak	0%	1%	0%	5%	-2%	3%
Igushik	0%	3%	0%	2%	0%	3%
Wood	10%	11%	3%	8%	5%	3%
Nushagak	1%	2%	1%	13%	-5%	7%
Nushagak District total	11%	16%	4%	23%	0%	12%
Kvichak	11%	28%	16%	29%	-3%	15%
Alagnak	5%	13%	5%	2%	5%	2%
Naknek	21%	25%	17%	17%	6%	2%
Nak-Kvi District total	37%	66%	38%	48%	9%	19%
Egegik	38%	12%	33%	22%	2%	-19%
Ugashik	13%	1%	21%	0%	-4%	-16%
North Pen.	1%	0%	3%	1%	-1%	-1%

Figures

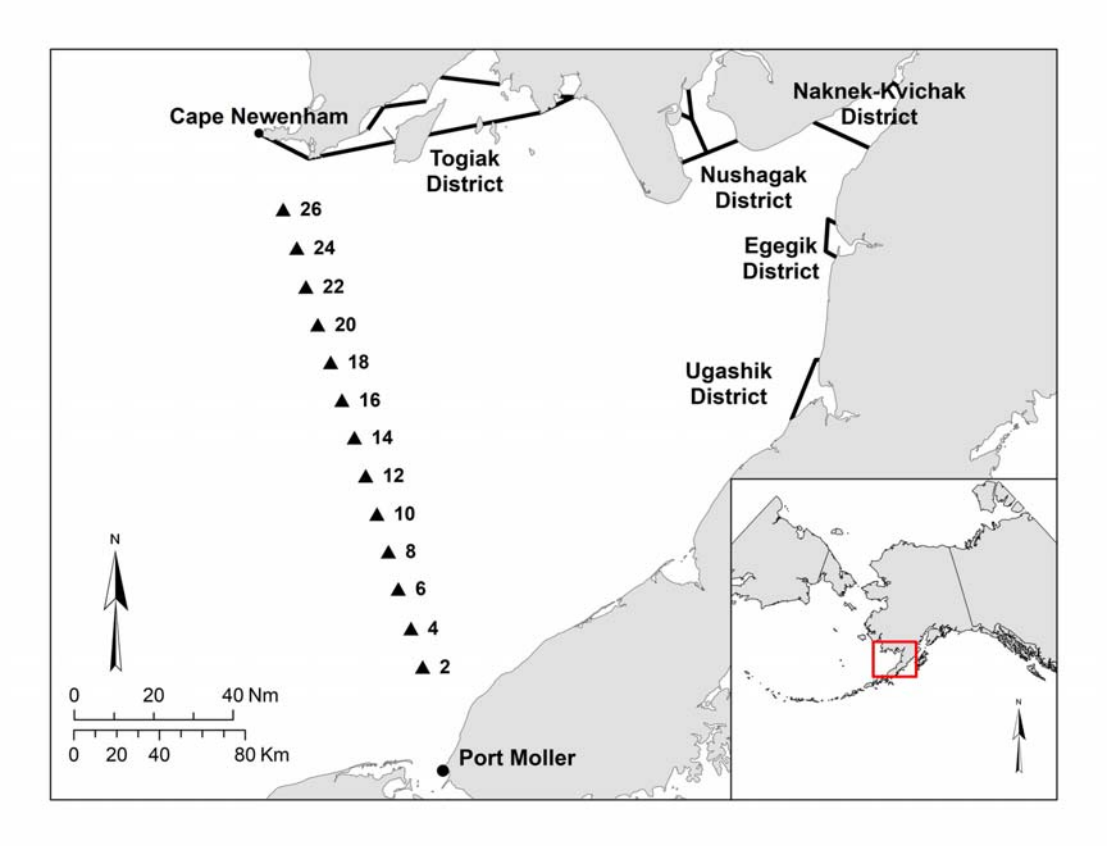

Figure 1. Map of the study area, showing the stations of the 2020 Port Moller Test Fishery and the locations of Bristol Bay fishing districts. Sockeye salmon passing the test fishery stations take approximately six to nine days to reach the Bristol Bay fishing districts in typical years.

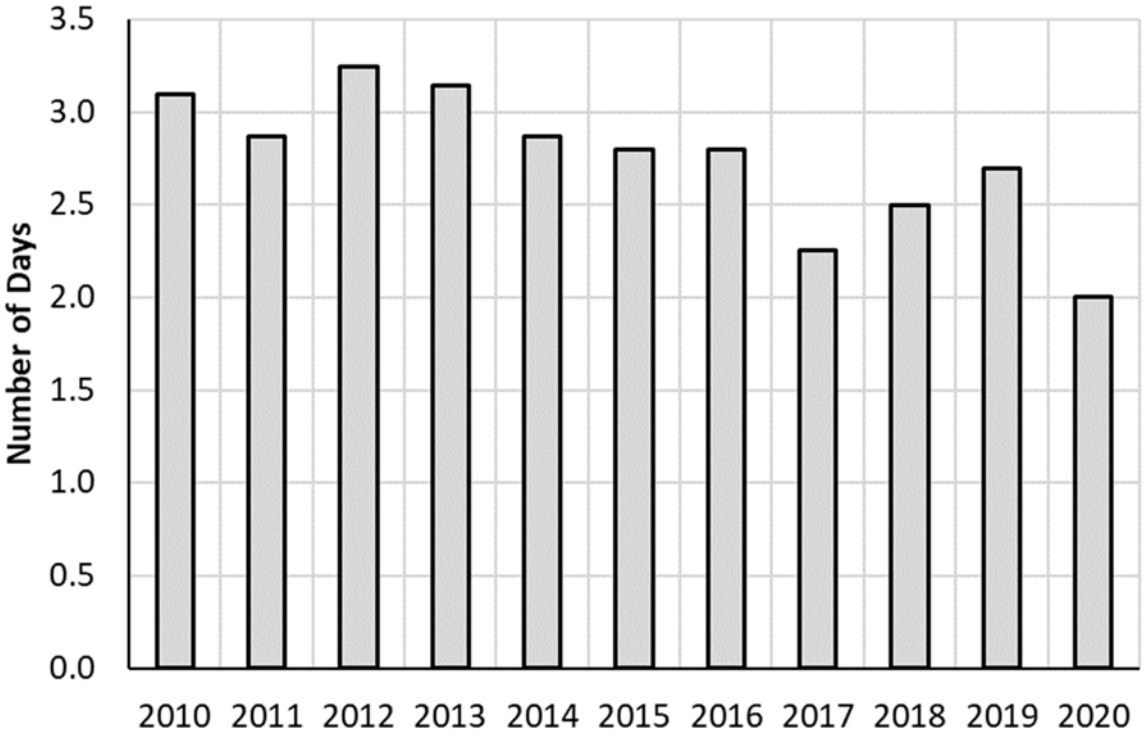

Figure 2. The mean number of days between the final date included in the inseason stock composition estimates and the release of those composition estimates from PMTF, 2010-2020.

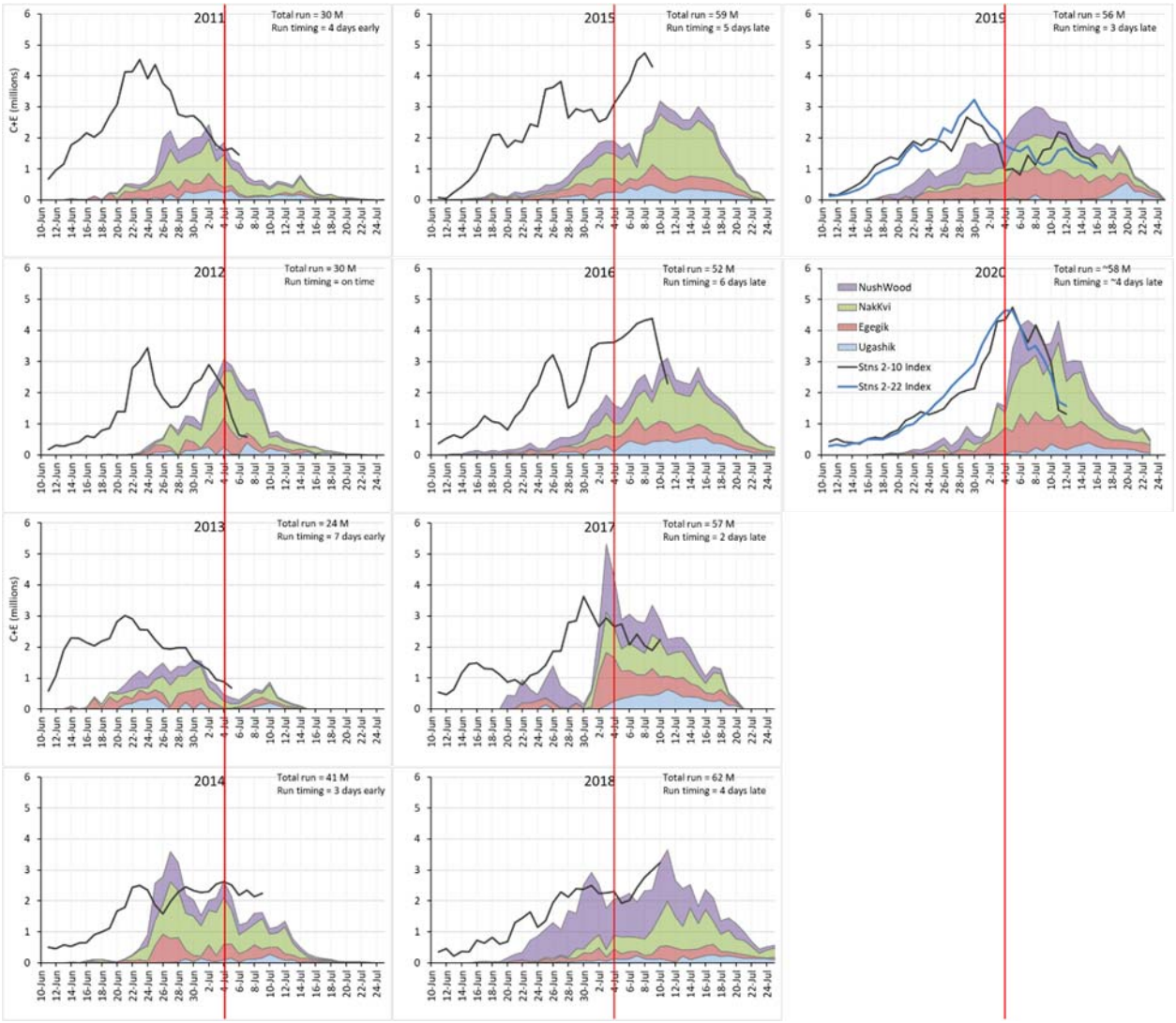

Figure 3. Catch + escapement by fishing district and date for the years 2011-2020. Black lines represent the Daily Port Moller Index for Stations 2-10, while blue lines for 2019 and 2020 show the Index based on Stations 2-22 (scale not shown, but all graphs are scaled the same). Red vertical lines help to align July 4 across graphs (run timing refers to days before or after this date when 50% of the C+E had occurred).

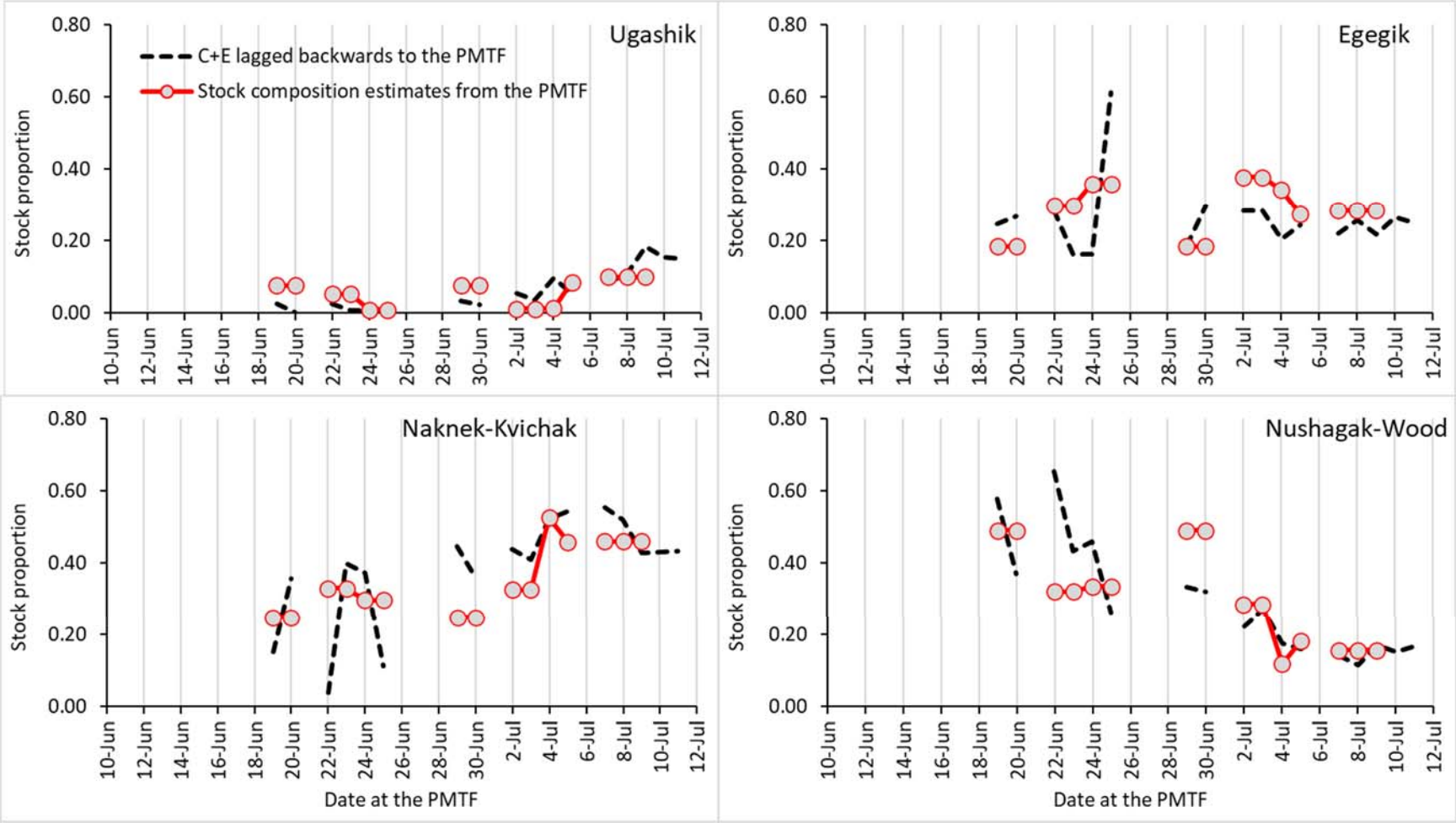

Figure 4. Stock composition by district based on catches from the PMTF compared to catch + escapement (C+E), 2020. Proportions for C+E were estimated from district runs lagged backwards to the PMTF using estimated travel time (TT) parameters. Dates are relative to the test fishery.

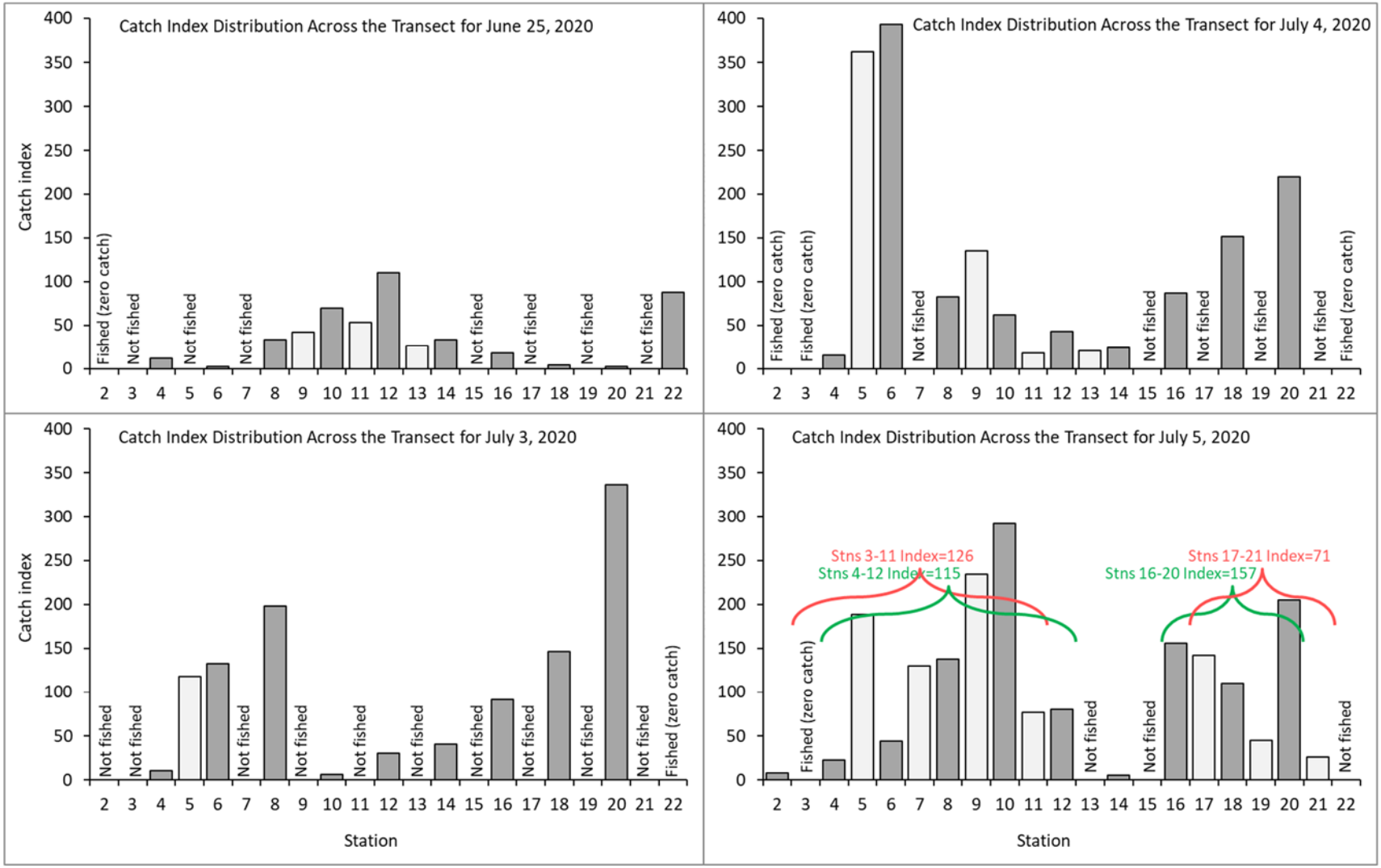

Figure 5. PMTF catch indices (CPUE) by station for dates when odd numbered stations were fished, 2020.

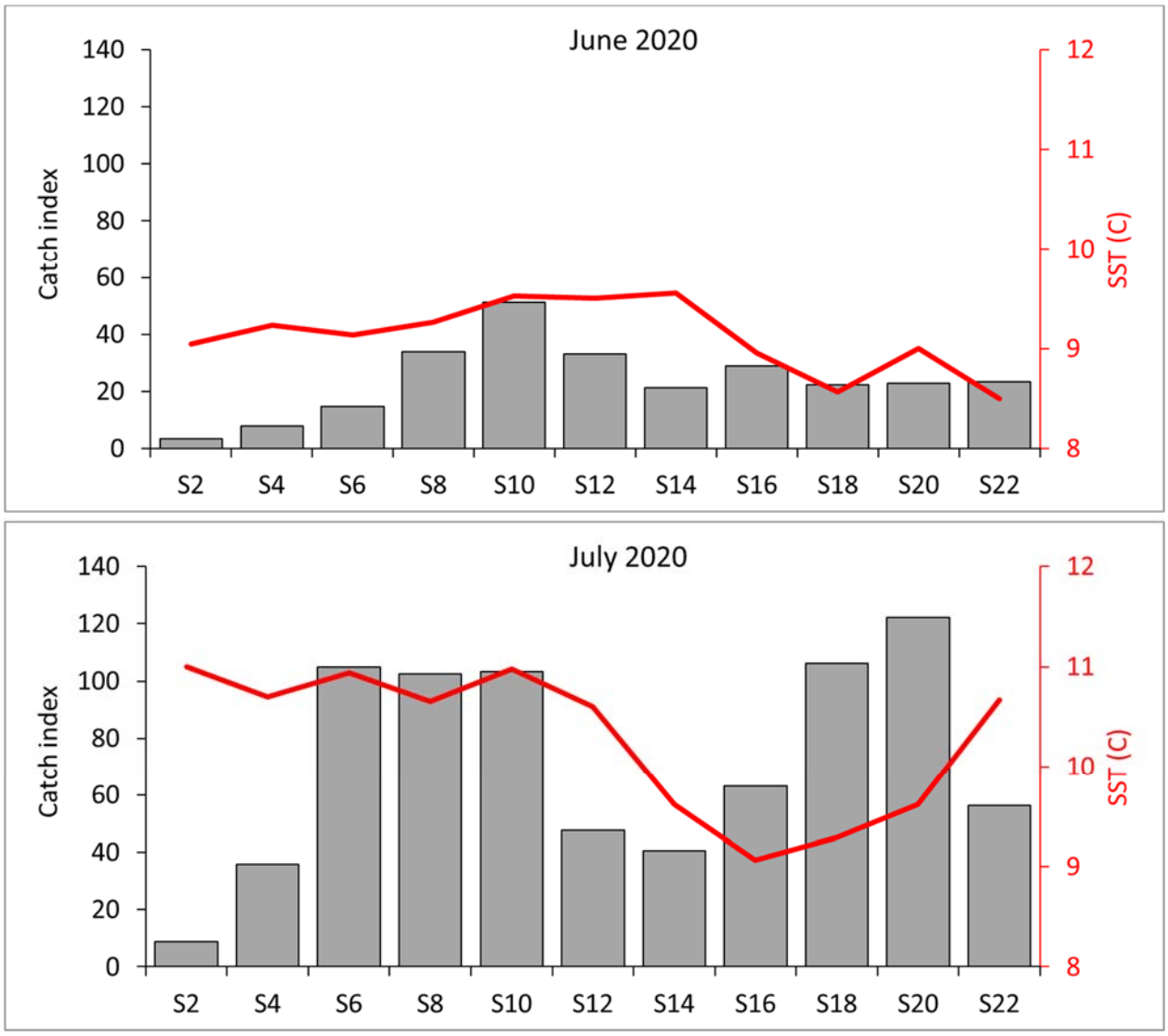

Figure 6. Mean CPUE (Catch Index) and sea surface temperature (SST) across the test fishing transect for June and July 2020.

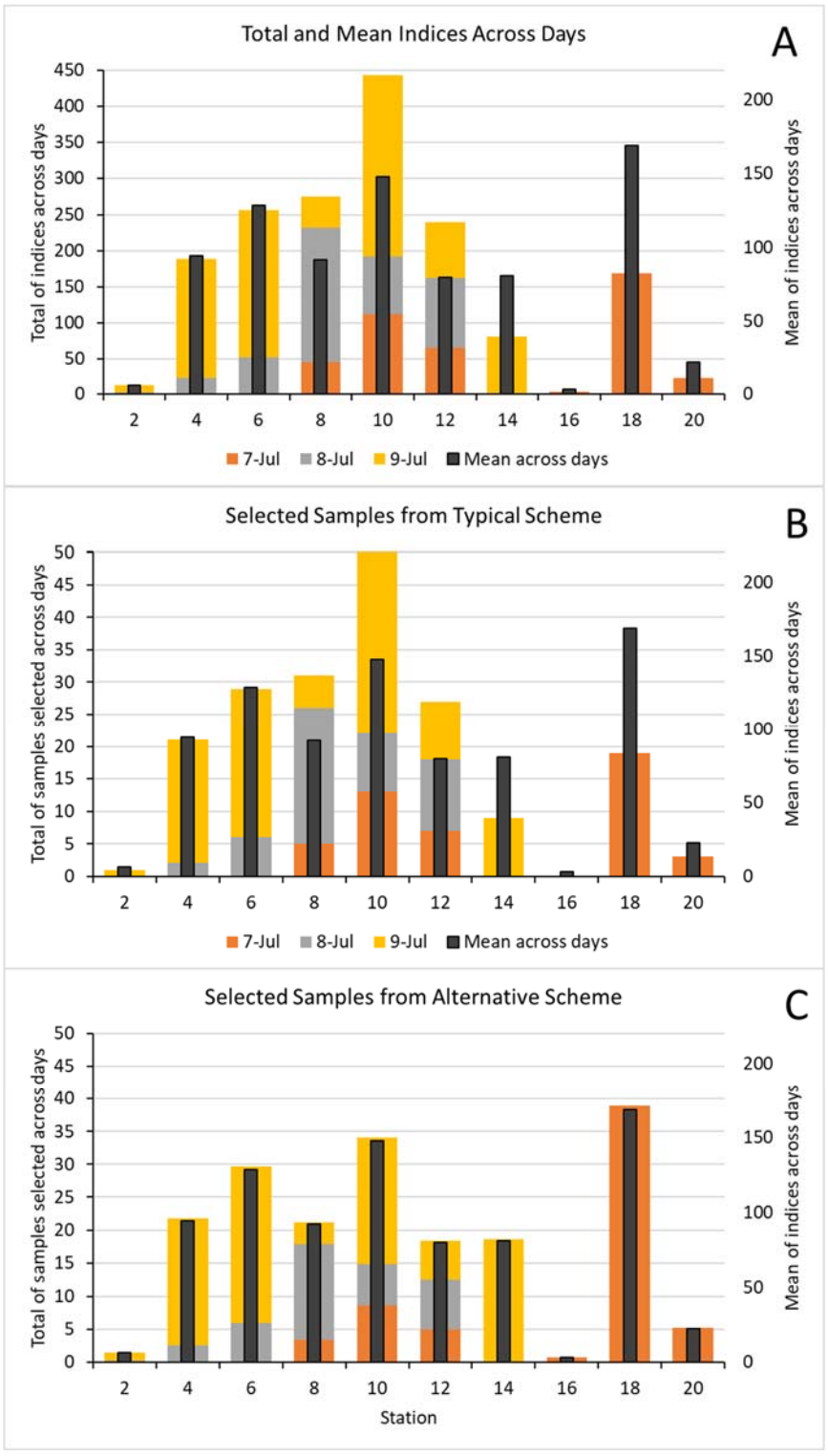

Figure 7. Total versus mean catch indices by station for July 7-9, 2020 (A); genetic samples selected under the selection scheme typically used (B); genetic samples selected under the selection scheme typically used (C).

Appendices

Appendix A

Catch updates and inseason interpretations for the Port Moller Test Fishery in 2020.

Each day's catch update contained a cover email plus the catch update table (if there was fishing), and sometimes relevant supporting tables and figures. For this appendix, the catch update tables sent through the season have been removed to reduce the size and duplication within the appendix.

Order of pages in this appendix:

1. BBSRI's final daily catch update table sent on July 13, 2020.
2. Catch update cover emails that contained additional information, and tables and figures that were not redundant with the final catch update.

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Monday, July 13, 2020 5:42 PM
Cc: Michael Link
Subject: PMTF Update #32, July 13
Attachments: Catch Update #32 July 13.pdf; PortMollerTF_RawData - July 13 2020.pdf

Attached are today's (7/13) catch update and raw data files. This will be the last catch update for the season; although, we will follow up with acknowledgements and possibly another assessment of the run in a few days.

Note: The *Ocean Cat* made second sets yesterday (7/12) at Stations 12 and 10 before midnight. Although these sets were separated from earlier sets at these stations by several hours, we folded them into the 7/12 index. Today's sets included Stations 2-8.

PMTF Stock Composition Status: There will be no more stock composition estimates for the 2020 season.

Summary of today's catch indices as follows:

Station	Index
Stn2	0
Stn4	9
Stn6	57
Stn8	37
Stn10	Not fished

All for now,

Scott and Michael

2 4 6 8 10 12 14 16 18 20 22 24 26

Port Moller Test Fishery: Catch Update #32, 13 July 2020.

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

	Daily Catch Index by Station (Est. catch from the 200 fathom net if it had fished for 1 hr)													Mean Daily Catch Index		Raw catches		Mean Length (mm)	
														Best for comparison w/ prev years	Best for assessing entry pattern this year				
Date	S2	S4	S6	S8	S10	S12	S14	S16	S18	S20	S22	S24	S26	(Stns 2-10)	(Stns 2-22)	4½" mesh	5⅛" mesh	4½" mesh	5⅛" mesh
10-Jun	3	4	7	11	14	13	8	4	2	1	1			8	6				
11-Jun	3	4	7	11	15	14	9	4	2	1	1			8	7				
12-Jun	2	0	0	0	60	3	0	0	3	2	1			12	6	27	0	491	
13-Jun	3	4	0	0	60	11	4	13	0	2	1			13	9	15	18	478	495
14-Jun	3	0	2	0	0	5	23	2	3	2	1			1	4	8	5	515	510
15-Jun	5	0	0	44	8	5	48	7	4	2	2			11	11	15	30	487	512
16-Jun	3	5	9	16	22	22	15	8	5	3	2			11	10				
17-Jun	3	10	10	23	13	24	17	10	6	4	3			12	11	12	6	466	508
18-Jun	3	6	12	21	28	26	18	11	7	5	4			14	13				
19-Jun	3	7	13	19	2	16	0	19	0	7	5			9	8	16	9	491	496
20-Jun	0	0	2	51	63	34	4	35	4	9	7			23	19	106	36	496	512
21-Jun	3	7	17	32	42	36	24	16	13	11	9			20	19				
22-Jun	3	7	19	18	98	17	27	19	16	14	12			29	23	15	42	505	523
23-Jun	2	6	23	37	87	25	19	19	14	1	16			31	23	96	68	495	522
24-Jun	3	2	8	31	108	47	2	37	75	41	23	0		31	34	87	123	503	527
25-Jun	0	12	2	34	70	110	33	18	4	3	88			24	34	123	64	502	522
26-Jun	4	11	31	59	72	60	46	41	44	45	38			35	41				
27-Jun	5	14	36	65	75	62	51	51	58	61	49			39	48				
28-Jun	6	17	43	72	76	63	55	60	74	80	62			43	55				
29-Jun	8	22	52	80	78	73	22	73	43	101	76			48	57	44	49	512	529
30-Jun	9	27	14	90	84	30	23	156	94	84	89			45	64	126	160	513	525
1-Jul	11	34	19	96	76	40	68	81	119	135	99			47	71	70	57	509	527
2-Jul	13	40	92	265	81	36	65	71	184	70	168			98	99	278	133	512	528
3-Jul	14	10	133	198	6	30	41	91	147	336	0	0		72	92	259	190	512	523
4-Jul	0	16	393	82	62	43	25	87	151	219	0			111	98	293	306	532	542
5-Jul	8	23	44	138	291	80	5	156	110	205	86			101	104	218	206	525	549
6-Jul	15	51	134	175	122	73	60	76	103	106	74			99	90				
7-Jul	14	48	127	45	113	66	58	3	169	23	63			69	66	69	80	511	525
8-Jul	3	22	52	187	80	97	0	65	82	79	54			69	65	76	95	510	535
9-Jul	10	167	205	44	250	77	81	58	72	68	47			135	98	173	161	508	525
10-Jul	10	0	23	27	117	14	21	51	63	59	41			35	39	32	30	516	529
11-Jul	9	25	54	32	3	23	38	32	19	94	37			24	33	25	44	498	129
12-Jul	8	20	32	7	108	13	37	18	120	44	32			35	40	129	28	510	451
13-Jul	0	9	57	37	33	28	28	33	40	38	28			27	30	6	25	487	527
14-Jul																			
15-Jul																			
16-Jul																			
17-Jul																			
Mean Stn Index	6	19	49	60	71	39	29	42	54	57	36	0			Total =	2318 (54%)	1965 (46%)	512	520

Red index values were estimated with a statistical model built upon the observed pattern across catch indices to date; thus, these values are subject to change as the season progresses.

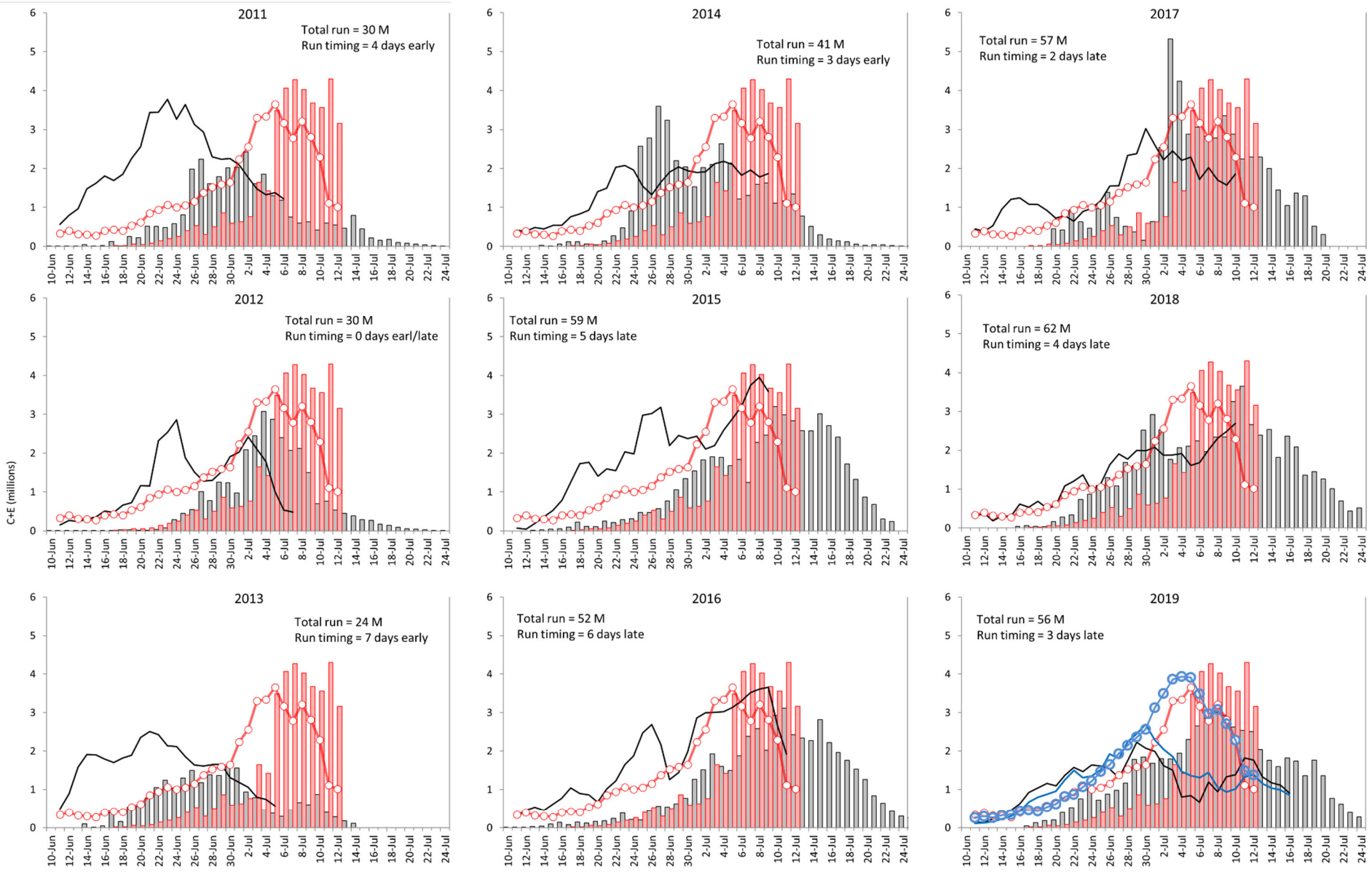

Figure 1. Port Moller daily index and inshore catch + escapement (C+E) for 2011-2020. Gray bars reflect observed C+E for historical years scaled to the left vertical axis; red bars reflect observed C+E for 2020. Black lines are the respective Daily Port Moller Catch Indices for each historical year; the red line is the Daily Catch Index for 2020 based on Stations 2-10 (units for the daily indices are not shown, but all graphs are scaled the same). For the 2019 graph (bottom right), the blue lines are the Daily Catch Indices based on Stations 2-22. All daily catch indices for the current year, red and blue, have been adjusted for fishing a deeper net. Furthermore, all Port Moller Indices represent a 3-day moving average. Run timing for C+E was estimated by comparing each year's date when 50% of the run reached inshore to this average date (July 4) for year's 1987-2019.

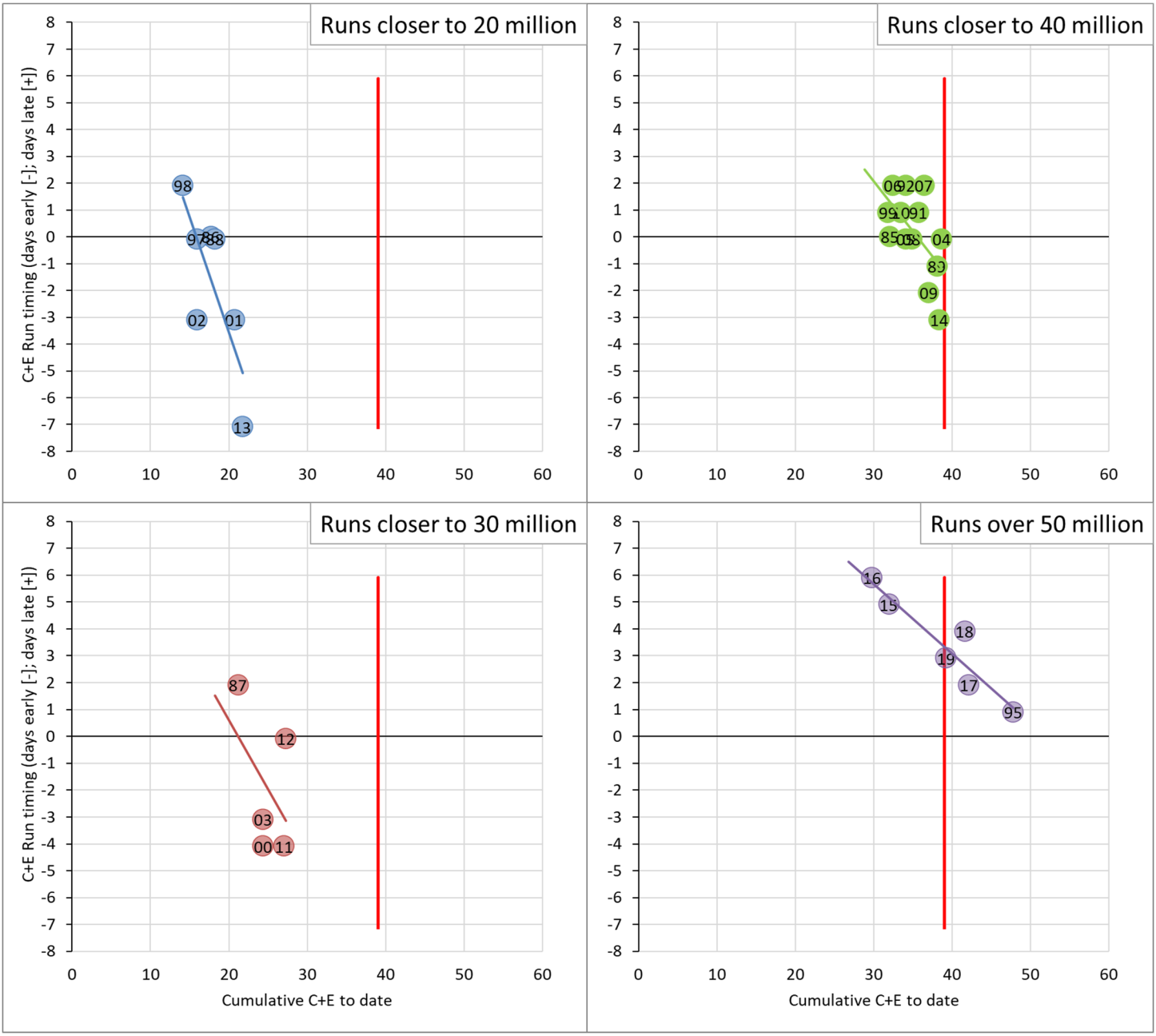

Figure 2. Observed run timing versus cumulative catch + escapement through July 13 in each year from the historical dataset (1985-2019). The red line indicates C+E for 2020 (run timing for this year is not known, but somewhere on this line); each dot indicates what cumulative C+E was through this date, 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. Run timing was estimated by comparing each year's date when 50% of the run reached inshore to this average date (July 4) for year's 1985-2019.

Michael Link

From: Michael Link
Sent: Friday, May 22, 2020 2:16 PM
To: Michael Link
Cc: Dr. Scott Raborn
Subject: Preseason PMTF update, 2020
Attachments: PMTF boat coverage 2020.jpg

All,

We are busy gearing up for another two-vessel effort for the 2020 Port Moller Test Fishery (PMTF).

Our plan is to have the Pandalus fishing on the 10th or 11th of June, and the Ocean Cat fishing by the 12th or 13th June. The Pandalus will have to wrap up by about July 10th but we have the Ocean Cat under contract to go for about another week, should the run be very late, or for other reasons that make it worthwhile to extend test fishing beyond July 10 or 11.

Fishing Protocol Modified – net depth from 60 to 100 mesh

We will fish the same two mesh sizes (4.5 and 5.125") and use identical fishing protocols as in the past, except that the vessels are equipped with deeper 100-mesh nets instead of the 60 mesh nets used in the past. Recall the challenges we had last year when a warm water lens formed and lots of fish were running deep and just below our traditional net, and that we caught them with a 100-mesh net.

The fish are typically caught in the top 2-3 meters of the net, so for most conditions, the index will be comparable to what we would have got with a shallower net. We will carefully examine this assumption throughout the season by monitoring where in the net fish are caught. Should any significant catch occur below the 60 mesh depth in the deeper net we will flag it to the readership. We and others are expecting this change will simply provide a better index of the rate of fish passage and provide enough samples to analyze for genetics, rather than bias the index high at times that the fish are deep.

Receive Text Messages with daily results

We hope to have the capability to send brief summaries of the daily station indexes by text message (to those who are interested and sign up). Many in the fleet have trouble downloading messages to email when out fishing and have asked if we could just text something. I will send a dedicated email about how to sign up for texting service prior to the start of the 2020 test fishing.

All for now and have a good long weekend.

Michael

Attached: a map of the stations and expected coverage in 2020.

Michael Link

From: Michael Link
Sent: Tuesday, June 09, 2020 10:23 AM
To: Michael Link
Subject: PMTF, vessel and test fishing status, June 9 update

All,

If all goes well, the **R/V Ocean Cat** should be in Port Moller about early afternoon on June 11th, and offshore and ready to fish a full set of stations on **June 12th**. The OC departed Seward on the weekend with all three of our PMTF technicians aboard, and everyone on board testing negative for COVID. Two of the BBSRI technicians will move to Pandalus when it arrives.

The **R/V Pandalus** has encountered a longer-than-expected annual maintenance in dry dock, and this will delay its start date. If all goes well in Cordova the next couple days, it would be fishing at Port Moller on **June 16 or 17**, possibly later, and not earlier.

Recall the original schedule to start fishing was June 10 (Pandalus) and June 12 (OC).

The OC should be able to get some solid coverage of stations until the Pandalus arrives.

Thank you to the Kvichak Setnetter's Association and the Ekuk Village Council, who recently contributed to the Bristol Bay Fisheries Collaborative (www.bbsri.org/bbfc) to help make all this and more possible. Also thanks to DC and CB, individual drift and setnet fishermen who again provided another $100 each toward the cause.

Michael

Michael Link

From: Michael Link
Sent: Friday, June 12, 2020 9:48 PM
To: Michael Link
Cc: 'Dr. Scott Raborn (raborn@lgl.com)'
Subject: PMTF Update #1, 2020

Hello All,

A big effort on the first day that was both a shake-down cruise and a I think a record 8-station day for one vessel.

Scott and I will begin sending the usual catch update table along with the raw data in the next few days. For today, we will just provide the catch indices by station here. All 27 fish caught today were in the 4.5 inch mesh, and the average size across all stations was 491 mm.

Station	Index
Stn2	2
Stn4	0
Stn6	0
Stn8	0
Stn10	60
Stn12	3
Stn14	0
Stn16	0

The Ocean Cat will spend tonight at station 16 and will fish south tomorrow to attempt a similar station coverage (in reverse).

To the drifters on the list
Note that the *Ocean Cat* effort was funded by BBSRI and the Bristol Bay Regional Seafood Development Association (BBRSDA).

Given that we do not have the Pandalus for the next two or more weeks, there would be essentially no PMTF this season if it weren't for you and your organization. Thank you.

The Pandalus and the overall PMTF science effort is funded by the Bristol Bay Fisheries Collaborative (www.bbsri.org), which gets support from the BBRSDA, all processors, villages, native corporation, shippers, etc.

Michael and Scott

Michael Link

From: Michael Link
Sent: Saturday, June 13, 2020 10:50 PM
To: Michael Link
Subject: PMTF Catch Update #2, June 13, 2020
Attachments: Catch Update #2 June 13 2020.pdf; PortMollerTF_CatchUpdate#38 - July 17 2019.pdf; catch versus index.pdf

Hello All,

The catch update table is attached to this email. Also attached is the final catch update from 2019 to provide those new to the distribution a sense of what it will look like once we have more data.

Today's catch indices were as follows:

Station	Index
Stn2	-
Stn4	-
Stn6	0
Stn8	0
Stn10	60
Stn12	11
Stn14	4
Stn16	13
Stn18	0

Note: we will begin reporting the Daily Catch Index (i.e., the average across all stations on a given day) when we have enough observations (data points) across all stations to allow for interpolation of unfished stations.

Interesting we had an index of 60 at station 10 again today (JL).

Surface water temperature was an average of 8 degrees C across the stations fished (6-9 degrees).

Index versus Catch
Last night's update confused some people; we had quite a few questions and some funny responses to it; thank you. The confusion stemmed from an index of 60 at station 10 and then I (Michael) said "all 27 fish caught were in the 4.5" mesh". It was not an error. The index is often confusing.

The index is not the raw catch, but is a computed value that represents the catch rate, expressed in fish per hour. The PMTF sets are shorter than one hour so a set's catch does not equal the index.

I (Michael) put together a somewhat verbose explanation tonight (attached) to hopefully demonstrate the index is not something mysterious, everyone indexes all the time.

For times when email is difficult or impossible, note that you can sign up to receive a brief text message summarizing the daily indexes by station similar to that above. To sign up, text the four letters:
pmtf
to the following number:
833-612-1053

Carefully spell those letters in that order. There is no “s” in pmtf

All for now,

Michael (and Scott)

From: Michael Link
To: Michael Link
Subject: PMTF Catch Update #3, June 14
Date: Sunday, June 14, 2020 10:45:42 PM
Attachments: Catch Update #3 June 14 2020.pdf

With the attachment.

All, here is tonight's catch update. The Ocean Cat crew were able to fish stations 4-16 (7 stations) and will start at S16 and work south tomorrow. Should we run into enough fish tomorrow we will try to come ashore to ship samples. Otherwise they will stay offshore of Port Moller to continue test fishing.

Another good, very full day of work. Light catches and pretty much all offshore of the historically fished stations. Calm, with less than a meter sea state. Visibility into the water was high (a secchi disk reading topped out at 12 meters in today's readings, up from ~8-9 yesterday). A thermocline (a sharp boundary between two layers of different temperature of water) is at about 11-12 meters with 8 degree water on top and 3 degrees below. No reason to think fish are below this net with these conditions.

The new second boat is running along the South Peninsula now, having left last night from lower Cook Inlet after an impressive 2-day mobilization. Some weather is coming that may complicate its arrival and our fishing at PMTF. As we always do, we will keep you posted, and will standardize this update soon.
Michael

From: Scott Raborn
Cc: Michael Link
Subject: PMTF Catch Update #4, June 15
Date: Monday, June 15, 2020 8:44:48 PM
Attachments: Catch Update #4 June 15 2020.pdf
PortMollerTF_RawData - June 15 2020.pdf

Attached is tonight's catch update along with the raw data file that includes observed catch, mean fishing times, and various environmental variables by station and date.

The Ocean Cat was able to fish Stations 2-14 today despite mechanical setbacks. They are headed into Port Moller to do some maintenance work and to drop off samples (including scale samples, which can provide some age information). We expect to be back out on the transect in the morning. However, the weather forecast is not looking great (25 kts; 3-5 ft seas, and similar but larger seas on Wednesday). At this point, they intend to try some fishing tomorrow to determine if it can be fished. The weather is forecasted to lie down by Thursday.

PMTF Stock Composition Status: These four days (June 12-15) of light catches produced 118 fish, so not enough to run a stock composition estimate (190 needed). We will have to wait for another trip to increase our sample size. The release date for the first stock composition estimate could be around June 20 or 21 if weather allows fishing 6 or 7 stations per day during the next two days; bad weather would delay an estimate by several days.

Summary of today's catch indices as follows:

Station	Index
Stn2	5
Stn4	0
Stn6	0
Stn8	44
Stn10	8
Stn12	5
Stn14	48
Stn16	Not fished

All for now,

Scott and Michael

Michael Link

From: Michael Link
Sent: Tuesday, June 16, 2020 5:00 PM
To: Michael Link
Cc: 'Dr. Scott Raborn (raborn@lgl.com)'
Subject: Port Moller Update #5, 6/16 (No Fishing)

All,

Short version: No fishing today, will fish tomorrow if the weather permits.

Longer version
The Ocean Cat is in port today doing some repairs. Thankfully, this coincided with unfishable weather conditions today.

6/17 – Attempt to fish
The weather does not look good tomorrow. We expect the back-up vessel soon, and need to plan now on how to get the boats into a synchronous schedule, and make a stock comp estimate possible.

We are hatching plans to attempt to get enough fishing done tomorrow to secure a representative group of fish that could make our year-to-date total samples break the 190 mark, which is needed before any stock comp estimates can be considered. In the past, we have often pooled the catch across an multi-day period for the first set of estimates, as this would be. However, the 190 fish is not the only consideration as to whether the samples are run, but is the first and biggest one.

Should tomorrow be unfishable, we might try a similar strategy the following day (Thursday).

Michael

Michael Link

From: Michael Link
Sent: Wednesday, June 17, 2020 8:49 PM
To: Michael Link
Cc: 'Dr. Scott Raborn (raborn@lgl.com)'
Subject: PMTF update #6, June 17, 2020
Attachments: Catch Update #6 June 17 2020.pdf

All,

Fishing conditions were not good today. The crew gave a heck of an effort, and managed to successfully set at three stations. Sure, they have some new welding projects to do tonight/tomorrow.

Wind and sea state is forecasted to worsen a little tomorrow (from the 9-10' this evening) and then begin to improve Friday morning.

Summary of today's catch indices:

Station	Index
Stn4	10
Stn8	23
Stn10	13

I need to hold off on shipping the raw data as I have asked the crew to first clarify some ancillary data. Good evening.

Michael

Michael Link

From: Michael Link
Sent: Thursday, June 18, 2020 7:18 PM
To: Michael Link
Cc: 'Dr. Scott Raborn (raborn@lgl.com)'
Subject: PMTF update #7, June 18 (no fishing)

All,

The sea/wind conditions on the PMTF transect were worse today than yesterday, so we could not fish. Tomorrow begins to look fishable and we hope to sample a good number of stations.

Details
The Ocean Cat arrived back in Port Moller about 4am this morning from yesterday's trip.

Various forecasts suggest that by tomorrow mid-morning the transect should become fishable. The Ocean Cat is going to leave Port Moller in the next couple hours and run north into this mess. It should arrive at Station 20 or thereabouts about 13-14 hours after it departs. From there they will begin to fish southbound if conditions are fishable.

The backup vessel to the Pandalus, the F/V Americanus, left False Pass this morning and will hopefully arrive in Port Moller this evening. If it has not developed any ailments, it will head north tomorrow morning to fish outbound from Station 2 and the two vessels will meet mid-transect.

If all these moving parts work, and if conditions improve, we could sample a very full set of stations tomorrow, June 19. I get it, that's a lot of "ifs".

Stock Composition
The timing of the first stock composition estimates of 2020 will depend on a whole bunch things, including how successful and productive fishing is tomorrow. We can provide more information about any possibilities in tomorrow evening's update.

Weather setbacks
For those relatively new to this list, note we usually have some weather-caused non-fishing days every season. Last year (2019) was a record of sorts in this regard as we had very little unfishable conditions. Fortunately, these last few days are about the best to forgo, compared to the days ahead. The longer range forecast looks encouraging.

Soon these updates will be all data. Thanks for sticking with us.

Michael

From: Scott Raborn
Cc: Michael Link
Subject: PMTF update #9, June 20
Date: Saturday, June 20, 2020 8:46:14 PM
Attachments: Catch Update #9 June 20 2020.pdf
PortMollerTF_RawData - June 20 2020.pdf

Attached are tonight's catch update along with the raw data file.

Both boats put in a noble effort today, fighting big seas and high winds all day. The *Ocean Cat* encountered swells in the 12-15 feet range during key Stations 8-12. Although problematic, Stations 2-18 were fished. All fish were caught in the top few meters of the net, and the net was reaching below a previous thermocline of 3.5C compared to 8C surface waters.

The last two nights have been very rough offshore. None of the *Ocean Cat* crew slept last night at Station 18, and it was a rough night the day before trying to break out of the previous weather system in the middle of the night. Fortunately, the *Ocean Cat* will bring samples ashore, so hopefully they can manage to get a bit of time in calmer waters after midnight tonight.

The forecast tomorrow does not look good, but we'll see what it looks like at 5am before deciding what might be possible and making any decisions about what to do.

PMTF Stock Composition Status: We were able to catch 167 fish during these past two days; these samples will be on their way to Anchorage tomorrow (Sunday) assuming no hang ups with transit.

Summary of today's catch indices as follows:

Station	Index
Stn2	0
Stn4	0
Stn6	2
Stn8	51
Stn10	63
Stn12	34
Stn14	4
Stn16	35
Stn18	4
Stn20	Not fished

We will wait for one more day of fishing before providing summary indices.

All for now,

Scott and Michael

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Friday, June 19, 2020 11:45 PM
Cc: Michael Link
Subject: PMTF update #8, June 19
Attachments: Catch Update #8 June 19 2020.pdf; PortMollerTF_RawData - June 19 2020.pdf

Attached is tonight's catch update along with the raw data file.

On its second attempt, the Ocean was successful in pushing through a 20 nmi band of bad seas between Port Moller and about station 5 or so by mid-morning. The conditions north of this band were fishable and they were able to fish Stations 8-18 today in an attempt to capture the majority of fish migrating across the transect. They will overnight at the outer stations and fish southbound tomorrow. The F/V *Americanus* arrived last night, and is now fully equipped and ready to head out early in the morning. The weather is forecast to deteriorate again tomorrow. Hopefully, the two boats can fish and thread their way through weather to meet somewhere along the transect.

PMTF Stock Composition Status: Bad weather, the absence of a second vessel, and modest indices have gotten this season off to a slow start. We have yet to achieve a sample size of 190 fish (the minimum to provide an informative stock composition estimate). Should today's and tomorrow's catches together produce enough fish, those samples will be in Port Moller on Sunday evening, June 21. As tomorrow unfolds, we will begin exploring shipping opportunities.

Summary of today's catch indices as follows:

Station	Index
Stn2	Not fished
Stn4	Not fished
Stn6	Not fished
Stn8	19
Stn10	2
Stn12	16
Stn14	0
Stn16	19
Stn18	0
Stn20	Not fished

We usually provide a Daily Catch Index in these updates. However, sparse fishing to date make interpolating missed station-date combinations difficult. The Daily and Cumulative Catch Indices will be provided once the entire transect has been sampled for a couple of days so that interpolations will be more representative of what was missed.

All for now,

Scott and Michael

Michael Link

From: Michael Link
Sent: Sunday, June 21, 2020 6:32 PM
To: 'Dr. Scott Raborn (raborn@lgl.com)'
Cc: Michael Link
Subject: PMTF Update #10, Father's Day 2020 (June 21)

All,

Today's conditions were again unfishable due to winds and seas.
The crews spent the day repairing gear and getting ready for an early start tomorrow.

Conditions the next few days look very good, relatively speaking. To get the vessels onto a synchronous schedule, the F/V *Americanus* will go out to mid-transect and fish south, spending the night at S2. The OC will start to fish mid-transect and work north; then fish back toward the Americanus on Tuesday.

Yesterday's conditions on the transect were the worst fished since I (Michael) have been paying close attention to the project beginning in 1998. The barometric pressure gradient over the south end of the transect late last night was really something; the OC steamed through 17-20' seas to get through it.

Stock Composition Estimates, 6/19-20
If no hiccups are encountered, ADF&G's Gene Conservation Laboratory could have the results out to all of us by **late Monday** (tomorrow).

The tissue and scale samples from fishing 6/19-20 arrived in Port Moller at 415am this morning, were on a Lake Clark Air plane by 1230pm, and arrived in Anchorage in the last hour – a record <24 hours since the last fish in this sample came out of the water at Station 8. We'll take victories in all forms these days.

Happy Father's Day.

Michael and Scott

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Tuesday, June 23, 2020 6:30 AM
Subject: PMTF update #11, June 22—Catches Added
Attachments: Catch Update #11 June 22.pdf

Here are the catches from three sets made yesterday by the *Ocean Cat* (June 22):

Station	Index
Stn2	Not fished
Stn4	Not fished
Stn6	Not fished
Stn8	18
Stn10	98
Stn12	17
Stn14	Not fished

We should be able to provide summary catch indices tonight in PMTF update #12 after today's results come in.

All for now,

Scott and Michael

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Tuesday, June 23, 2020 8:15 PM
Cc: Michael Link
Subject: PMTF Update #12, June 23
Attachments: Catch Update #12 June 23.pdf; PortMollerTF_RawData - June 23 2020.pdf

Attached are tonight's catch update and the raw data files. Both vessels will spend the night offshore. Tomorrow, the *Americanus* will fish south toward Port Moller carrying all the samples from yesterday and today, and the *Ocean Cat* will fish north.

PMTF Stock Composition Status: The test vessels were able to set at Stations 2-20 today. Together they captured 164 fish, which could provide a stock composition estimate from 6/23 alone, although yesterday's fish (57) could be folded into this genetics run (all to be determined). The *Americanus* will have these samples in Port Moller tomorrow (Wed, 6/24). We should have these to Anchorage by late tomorrow afternoon, and a stock composition estimate could be available late Thursday (6/25). If we cannot catch tomorrow's flight, there is another flight into Port Moller planned for Thursday, in which case estimates would be available by late Friday (6/26).

Summary of today's catch indices as follows:

Station	Index
Stn2	2
Stn4	6
Stn6	23
Stn8	37
Stn10	87
Stn12	25
Stn14	19
Stn16	19
Stn18	14
Stn20	1

Daily Index (Stations 2-10) = ***Will be provided in the morning***
Cumulative Daily Index (Stations 2-10) = ***Will be provided in the morning***

Note: these summary indices will be more uncertain than usual given 51% of the station indices across Stations 2-10 from June 10 to June 23 will have to be interpolated from a statistical model. We will provide historical graphs of Port Moller indices and catch + escapement in the morning as well.

All for now,

Scott and Michael

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Wednesday, June 24, 2020 9:40 PM
Cc: Michael Link
Subject: PMTF Update #13, June 24
Attachments: Catch Update #13 June 24.pdf; PortMollerTF_RawData - June 24 2020.pdf; CumulativeCatchIndexTable.pdf

Attached are tonight's catch update and the raw data files. Historical graphs of catch plus escapement overlaid with Port Moller catch indices are provided on page 2 of the Catch Update. Also attached in a separate file is the Cumulative Catch Index table.

Both boats were able to fish Stations 4-22 today, and the *Ocean Cat* is planning on fishing Station 24 before the day's end (we will report this station's catch tomorrow).

PMTF Stock Composition Status: The *Americanus* made it into Port Moller today with genetic samples from 6/23 (n=164) and 6/22 (n=57), so there will be enough for a stock composition estimate across these two days. These samples arrived at the Gene Lab this evening; thus, the 2nd stock composition estimate should be released Thursday (6/25).

Summary of today's catch indices as follows:

Station	Index
Stn2	Not fished
Stn4	2
Stn6	8
Stn8	31
Stn10	108
Stn12	47
Stn14	2
Stn16	37
Stn18	75
Stn20	41
Stn22	23
Stn24	To be fished and will be reported tomorrow

Daily Index (Stations 2-10) = 30
Cumulative Daily Index (Stations 2-10) = 213

All for now,

Scott and Michael

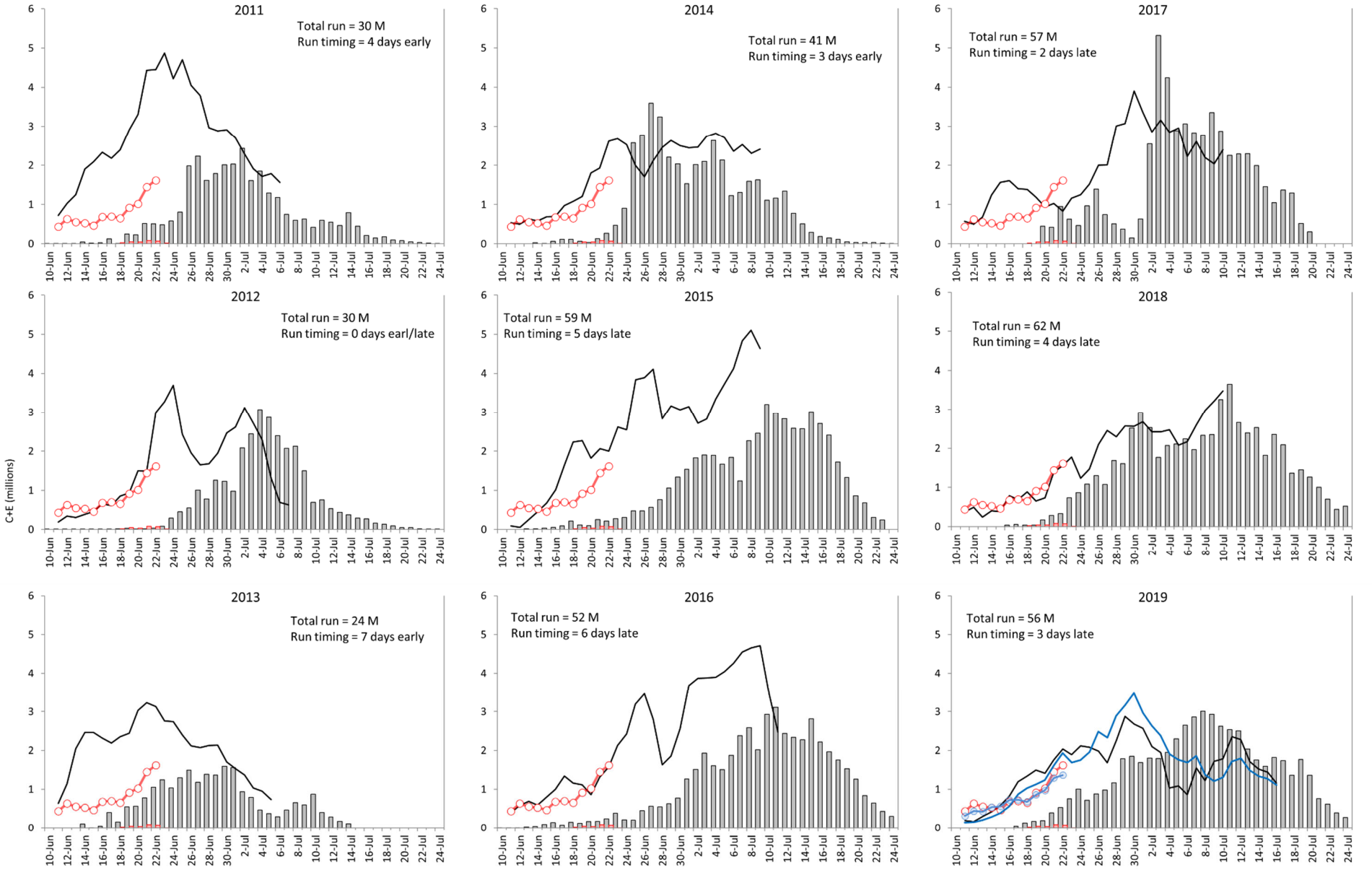

Figure 1. Port Moller daily index and inshore catch + escapement (C+E) for 2011-2020. Gray bars reflect observed C+E for historical years scaled to the left vertical axis; red bars reflect observed C+E for 2020. Black lines are the respective Daily Port Moller Catch Indices for each historical year; the red line is the Daily Catch Index for 2020 based on Stations 2-10 (units for the daily indices are not shown, but all graphs are scaled the same). For the 2019 graph (bottom right), the **blue lines** are the Daily Catch Indices based on Stations 2-20. All Port Moller Indices represent a 3-day moving average. Run timing for C+E was estimated by comparing each year's date when 50% of the run reached inshore to this average date for year's 1985-2019.

The Cumulative Daily Catch Index (Stns 2-10) for the Port Moller test fishery 2011-2020. Run timing (based on years 2011-2019).

Date	2011	2012	2013	2014	2015	2016	2017	2018	2019	**2020**	Avg	Min	Max
10-Jun	8	0	7	12	2	5	6	2	7	**3**	5	0	12
11-Jun	21	5	14	19	3	11	18	14	8	**8**	13	3	21
12-Jun	34	9	29	25	4	18	27	17	9	**20**	19	4	34
13-Jun	56	16	60	35	5	32	30	25	14	**33**	30	5	60
14-Jun	79	20	109	49	15	43	49	25	22	**33**	46	15	109
15-Jun	122	27	144	52	25	46	84	36	28	**45**	63	25	144
16-Jun	153	37	174	67	36	70	102	43	42	**54**	80	36	174
17-Jun	188	50	216	81	63	89	124	61	60	**65**	104	50	216
18-Jun	224	55	246	98	102	108	150	68	84	**77**	126	55	246
19-Jun	264	77	283	117	140	124	167	84	104	**85**	151	77	283
20-Jun	323	93	330	137	168	141	179	92	129	**108**	177	92	330
21-Jun	377	125	387	182	186	148	193	102	149	**125**	206	102	387
22-Jun	470	146	434	207	236	184	215	148	186	**152**	247	146	470
23-Jun	530	233	476	259	261	214	218	164	224	**183**	287	164	530
24-Jun	604	277	515	306	308	247	247	185	237	**213**	325	185	604
25-Jun	667	318	561	325	355	297	273	206	284		365	206	667
26-Jun	749	346	587	352	440	363	289	233	321		409	233	749
27-Jun	792	368	613	386	490	408	340	282	329		445	282	792
28-Jun	843	395	658	424	546	428	366	320	363		482	320	843
29-Jun	886	424	686	467	572	438	429	339	426		518	339	886
30-Jun	926	459	713	508	637	494	483	402	463		565	402	926
1-Jul	978	510	737	540	688	547	548	439	487		608	439	978
2-Jul	1,012	545	757	581	718	610	585	464	545		646	464	1,012
3-Jul	1,032	604	776	623	763	674	616	514	561		685	514	1,032
4-Jul	1,067	636	784	667	820	727	695	552	578		725	552	1,067
5-Jul	1,092	652	802	712	874	791	718	579	593		757	579	1,092
6-Jul	1,115	665	810	749	937	862	754	611	611		791	611	1,115
7-Jul	1,140	668		777	1,012	925	798	653	618		824	618	1,140
8-Jul		681		829	1,099	1,002	839	700	665		831	665	1,099
9-Jul				856	1,174	1,079	856	749	668		897	668	1,174
10-Jul				889	1,227	1,144	893	802	698		942	698	1,227
Total run (millions)	30	30	24	41	59	52	57	62	57		46	24	62
ADF&G preseason forecast (millions)	39	32	25	27	52	47	42	50	39	**49**	39	25	52
CE Run timing (days early [-]; days late [+])	-4	0	-7	-3	5	6	2	4	3		0	-7	6
PMTF Run timing (days)	-2	0	-4	0	1	2	1	1	1		0	-4	2

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Thursday, June 25, 2020 7:53 PM
Cc: Michael Link
Subject: PMTF Update #14, June 25
Attachments: Catch Update #14 June 25.pdf; PortMollerTF_RawData - June 25 2020.pdf

Attached are tonight's catch update and the raw data files. Note: we had the boats fish odd numbered stations to assess how wide the band of fish at Station 10 might be. These catches are not included in the attached catch update, but we did include them in the body of this email (see below).

PMTF Stock Composition Status: The *Americanus* will fish towards Port Moller tomorrow (June 26) with genetic samples from 6/24 (n=210) and 6/25 (n=187). Our plan is to deliver these samples to the Gene Lab no later than Saturday (June 27).

Summary of today's catch indices as follows:

Station	Index
Stn2	0
Stn4	12
Stn6	2
Stn8	34
Stn9	42
Stn10	70
Stn11	54
Stn12	110
Stn13	27
Stn14	33
Stn16	18
Stn18	4
Stn20	3
Stn22	88

Daily Index (Stations 2-10) = 24
Cumulative Daily Index (Stations 2-10) = 237

All for now,

Scott and Michael

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Friday, June 26, 2020 7:33 PM
Cc: Michael Link
Subject: PMTF Update #15, June 26

Hi Everyone,

No stations were fished today. The *Ocean Cat* came back to Port Moller for mechanical reasons last night, which have now been addressed. The *Ocean Cat* will attempt to steam to ~Stn8 and start there in the morning, fishing as many stations as possible. The weather may be marginal tomorrow for the *Americanus*, which is a smaller vessel.

PMTF Stock Composition Status: Genetic samples from 6/24 (n=210) and 6/25 (n=187) made it to the Gene Lab tonight. If all goes well, we could have the 3rd stock composition estimate tomorrow afternoon (6/26) from our two biggest catch days of the year.

All for now,

Scott and Michael

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Saturday, June 27, 2020 7:29 PM
Cc: Michael Link
Subject: PMTF Update #16, June 27

Hi Everyone,

No stations were fished today. The *Ocean Cat* returned from Station 8 to Port Moller overnight for a medical. Vessel personnel between the two boats have been adjusted, and we are ready to fish at the first opportunity when weather permits. We are currently pinned down near Port Moller, with measured winds of >30 kts on the back deck. The forecast for tomorrow has good parts and bad parts. The good part is that conditions near Port Moller improve overnight and into the morning; the bad part is that offshore conditions deteriorate after noon (after all, it is 2020). We will attempt as many stations tomorrow as possible.

PMTF Stock Composition Status: No samples have been collected since the ones for which results were released earlier today (6/24-25). Therefore, the earliest samples would come ashore Monday or Tuesday, and be analyzed mid-week.

All for now,

Scott and Michael

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Sunday, June 28, 2020 6:29 PM
Cc: Michael Link
Subject: PMTF Update #17, June 28

Hi Everyone,

No stations were fished today. The *Ocean Cat* remained in Port Moller due to a domino effect initiated by a medical reason yesterday, which was compounded by bad weather inshore today preventing placement of the *Ocean Cat* on fishable stations. We will continue fishing ASAP and are quite aware of the urgency to collect informative data.

PMTF Stock Composition Status: No samples have been collected in recent days.

All for now,

Scott and Michael

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Monday, June 29, 2020 9:50 PM
Cc: Michael Link
Subject: PMTF Update #18, June 29
Attachments: Catch Update #18 June 29.pdf; PortMollerTF_RawData - June 29 2020.pdf

Hi Everyone,

Attached are tonight's catch update and the raw data files. The *Ocean Cat* was able to get in a few sets today in spite of the weather inshore. We will refrain from interpolating missed stations during recent days until more data are collected.

PMTF Stock Composition Status: The earliest that samples from today and the next two days could reach Port Moller is July 1.

Summary of today's catch indices are as follows:

Station	Index
Stn10	Not fished
Stn12	73
Stn14	22
Stn16	73
Stn18	Will be reported tomorrow

Daily Index (Stations 2-10) = ***Will be updated when more data become available.***
Cumulative Daily Index (Stations 2-10) = ***Will be updated when more data become available.***

All for now,

Scott and Michael

All for now,

Scott and Michael

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Wednesday, July 01, 2020 1:45 AM
Cc: Michael Link
Subject: PMTF Update #19, June 30
Attachments: Catch Update #19 June 30.pdf; PortMollerTF_RawData - June 30 2020.pdf

Hi Everyone,

Attached are tonight's catch update and the raw data files. The *Ocean Cat* was able to make eight sets today, producing the greatest catch indices thus far this season. The average peak at Port Moller is 6/29, and we will never know what the passage rate was for 6/26-28. However, increased catches today signal the run is probably still building. High catch indices over the next several days will indicate the run is late and likely to reach the preseason forecast.

PMTF Stock Composition Status: We are working to get genetic samples to Port Moller by morning and shipped to Anchorage in the afternoon (7/1). If successful, stock composition estimates from test fishing on 6/29-30 might be available on Thursday (7/2).

Summary of today's catch indices are as follows:

Station	Index
Stn 4	Not fished
Stn 6	14
Stn 8	90
Stn10	84
Stn12	30
Stn14	23
Stn16	156
Stn18	94
Stn20	84

Daily Index (Stations 2-10) = 46
Cumulative Daily Index (Stations 2-10) = 65

All for now,

Scott and Michael

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Thursday, July 02, 2020 7:38 AM
Cc: Michael Link
Subject: PMTF Update #20, July 1
Attachments: Catch Update #20 July 1.pdf; PortMollerTF_RawData - July 1 2020.pdf

Hi Everyone,

Attached are yesterday's catch update and the raw data files. The *Ocean Cat* was able to get samples from fishing on 6/29-30 to Port Moller early Wednesday morning (7/1) and get back out to fish five stations (Stations 6-14), which produced a bit higher indices than the previous day. The plan today (7/2) is to attempt to fish all the PMTF stations out to Station 22.

Note: interpolations for indexes from outer stations missed in recent days may change substantially as more data points are gathered; for now, these approximations are the best we can do. Our best guess is that the run continues to build at Port Moller, but data from today and tomorrow will be critical to verifying this suspicion.

The Deeper Port Moller Test Net for 2020

We have finally collected enough data this season to assess how the deeper 100-mesh net has affected magnitude of the catch indices. In short, catch indices are higher this year because we are catching fish that would have ordinarily been missed with the shallower 60-mesh net. The magnitude of this increase varies of course across sets due in part to the fishing conditions, and on average we estimate about **30% of the fish are being caught in the deepest 40 meshes**. This estimate is difficult to gage in the field, and the crew has just been recording whether fish are in the top or bottom half of the net. We then adjust these proportions from 50 meshes to estimate what would have been below 60 meshes.

If the bottom 40 meshes of the 100-mesh net is catching 30% of the fish, it translates to catch indices being about 1.4 times greater from the new deeper net that fishes 1.7 times deeper. The difference in these multipliers demonstrates the surface orientation of migrating Sockeye. We realize the challenge this change in net configuration poses to making comparisons with historical catch indices. Our rationale for making this change is simple—the historical comparisons didn't work anyway. More on this topic in the next day or so.

For the 2019 comparison in Figure 1 of the catch update, we have adjusted the Stations 2-22 Daily Index to an approximation of what it might have been had we fished the historical 60-mesh net in 2020. More reporting adjustments are likely in the coming days. Of course, all data from 2020 are from the same net so no adjustments are needed for intra-season comparisons of indices among days and stations or when correlating to catch + escapement (C+E).

PMTF Stock Composition Status: Genetic samples from 6/29-30 made it to Anchorage yesterday afternoon (7/1), which means we could have a stock composition estimate released today (7/2).

Summary of catch indices for 7/1 are as follows:

Station	Index
Stn 4	Not fished
Stn 6	19
Stn 8	96
Stn10	76

Stn12 40
Stn14 68
Stn16 Not fished

Daily Index (Stations 2-10) = 49
Cumulative Daily Index (Stations 2-10) = 454

All for now,

Scott and Michael

P.S. A reminder, you can receive a brief summary of the daily indexes by text. To subscribe, text the four letters “pmtf” to 833-612-1053.

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Thursday, July 02, 2020 11:54 PM
Cc: Michael Link
Subject: PMTF Update #21, July 2
Attachments: Catch Update #21 July 2.pdf; PortMollerTF_RawData - July 2 2020.pdf

Hi Everyone,

Attached are today's (7/2) catch update and the raw data files.

The *Ocean Cat* was able to sample Stations 8-22 today producing the highest indices of the season. Today's increase in catch indices suggest the run is still building at Port Moller, which means it is several days late. How late cannot be determined at this time, but it seems late enough that, considered together with cumulative catch and escapement to date, reaching the pre-season forecast is likely. Sustained high catch indices from the test fishery over the next few days would suggest a much larger and later run; but of course, we cannot forecast the test fishing data we will use to forecast the run. Two or three more days of catch indices from most of the transect will go a long way towards pinning down run timing and magnitude for 2020.

The plan for tomorrow (7/3) is to attempt fishing Stations 4-24; we may be short a station on either end, but most of the transect should be covered.

PMTF Stock Composition Status: Genetic samples from 7/1-2 should arrive in Port Moller tomorrow and, depending on weather, will make it to the gene lab in the afternoon or the next day (7/4).

Summary of catch indices for 7/1 are as follows:

Station	Index
Stn 6	Not fished
Stn 8	265
Stn10	81
Stn12	36
Stn14	65
Stn16	71
Stn18	184
Stn20	70
Stn22	168
Stn24	Not fished

Daily Index (Stations 2-10) = 105
Cumulative Daily Index (Stations 2-10) = 566

All for now,

Scott and Michael

P.S. A reminder, you can receive a brief summary of the daily indexes by text. To subscribe, text the four letters "pmtf" to 833-612-1053.

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Friday, July 03, 2020 9:15 PM
Cc: Michael Link
Subject: PMTF Update #22, July 3
Attachments: Catch Update #22 July 3.pdf; PortMollerTF_RawData - July 3 2020.pdf

Hi Everyone,

Attached are today's (7/3) catch update and the raw data files.

The crews were able to sample Stations 4-24 today producing the highest station index of the season (Station 20=336). The Daily Index (Stations 2-22) was comparable to yesterday. The zero catch at Station 22 today is puzzling; nevertheless, it is clear that large bands of fish are still moving past the transect.

The plan for tomorrow (7/4) is for the *Ocean Cat* to begin at Station 22 and cover as many stations as possible.

PMTF Stock Composition Status: Genetic samples from 7/1-2 and from Stations 4 and 6 today (7/3) arrived in Anchorage this evening. We plan on using Stations 8-22 from 7/2 and Stations 4 and 6 from today (7/4). This sampling scheme creates a more complete coverage of the transect. We reasoned that change in stock composition was greater across the transect than it was across adjacent days and using the inshore dominated coverage of station samples on 7/1 instead would create more bias.

Summary of catch indices for 7/3 are as follows:

Station	Index
Stn4	10
Stn 6	133
Stn 8	198
Stn10	6
Stn12	30
Stn14	41
Stn16	91
Stn18	147
Stn20	336
Stn22	0
Stn24	0

Daily Index (Stations 2-10) = 78
Cumulative Daily Index (Stations 2-10) = 652

All for now,

Scott and Michael

P.S. A reminder, you can receive a brief summary of the daily indexes by text. To subscribe, text the four letters "pmtf" to 833-612-1053.

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Saturday, July 04, 2020 11:48 PM
Cc: Michael Link
Subject: PMTF Update #23, July 4
Attachments: Catch Update #23 July 4.pdf; PortMollerTF_RawData - July 4 2020.pdf

Hi Everyone,

Attached are today's (7/4) catch update and the raw data files. Catch indices remained strong today as we had hoped for a few days ago, which means reaching the preseason forecast even more probable.

Today, 31% of the fish were caught in the bottom 50 meshes of the 100-mesh net. Had we used the shallower 60-mesh net from previous years, catch indices would have been roughly 75% of what was observed in the new 100-mesh net. This approximation does not take into account how salmon orient when approaching the bottom edge of a gillnet and assumes they hit the net at the depth they were originally swimming. So yes, the deeper net we are using this year has inflated the catch indices, but this has no effect on how well the 2020 indices forecast the run's pattern and timing. Actually, that's not true as intercepting more of the run, whether vertically or horizontally, can only improve forecast accuracy. The only drawback from changing the net is that historical catch indices are less comparable. Given we were missing more than half of the migration beyond Stations 10 and 12 in some of the previous years (as shown by last year's data), this seems inconsequential.

The crews sampled as many stations today as time and energy would allow. This effort resulted in an unprecedented coverage of the Port Moller transect—16 stations were fished! Now that the entire transect can be covered, we used extra sets to assess how banded the distribution might be on any given day; hence, the sampling of odd numbered stations. Motivation for this extra sampling comes from the stark changes in catch indices observed between adjacent even numbered stations on some days. The results from today showed that the mode at Station 6 extended at least to Station 5, and that sometimes modes are missed in between even numbered stations (e.g., Station 9 today; see Figure 2 in the Catch Update). The catches from odd stations will not be used for daily index calculation or stock composition estimates, and we will continue to prioritize coverage of the transect range. However, we will continue to make sets at odd numbered stations when time allows.

PMTF Stock Composition Status: The remaining genetic samples from 7/3 (Stations 8-20) and all of 7/4 samples will arrive in Port Moller tomorrow night.

Summary of catch indices for 7/4 are as follows:

Station	Index
Stn2	0
Stn3	0
Stn4	16
Stn5	362
Stn6	393
Stn7	Not fished
Stn8	82
Stn9	135
Stn10	62
Stn11	18
Stn12	43

Stn13 21
Stn14 25
Stn15 Not fished
Stn16 87
Stn17 Not fished
Stn18 151
Stn19 Not fished
Stn20 219
Stn21 Not fished
Stn22 0

Daily Index (Stations 2-10) = 111
Cumulative Daily Index (Stations 2-10) = 763

All for now,

Scott and Michael

P.S. A reminder, you can receive a brief summary of the daily indexes by text. To subscribe, text the four letters “pmtf” to 833-612-1053.

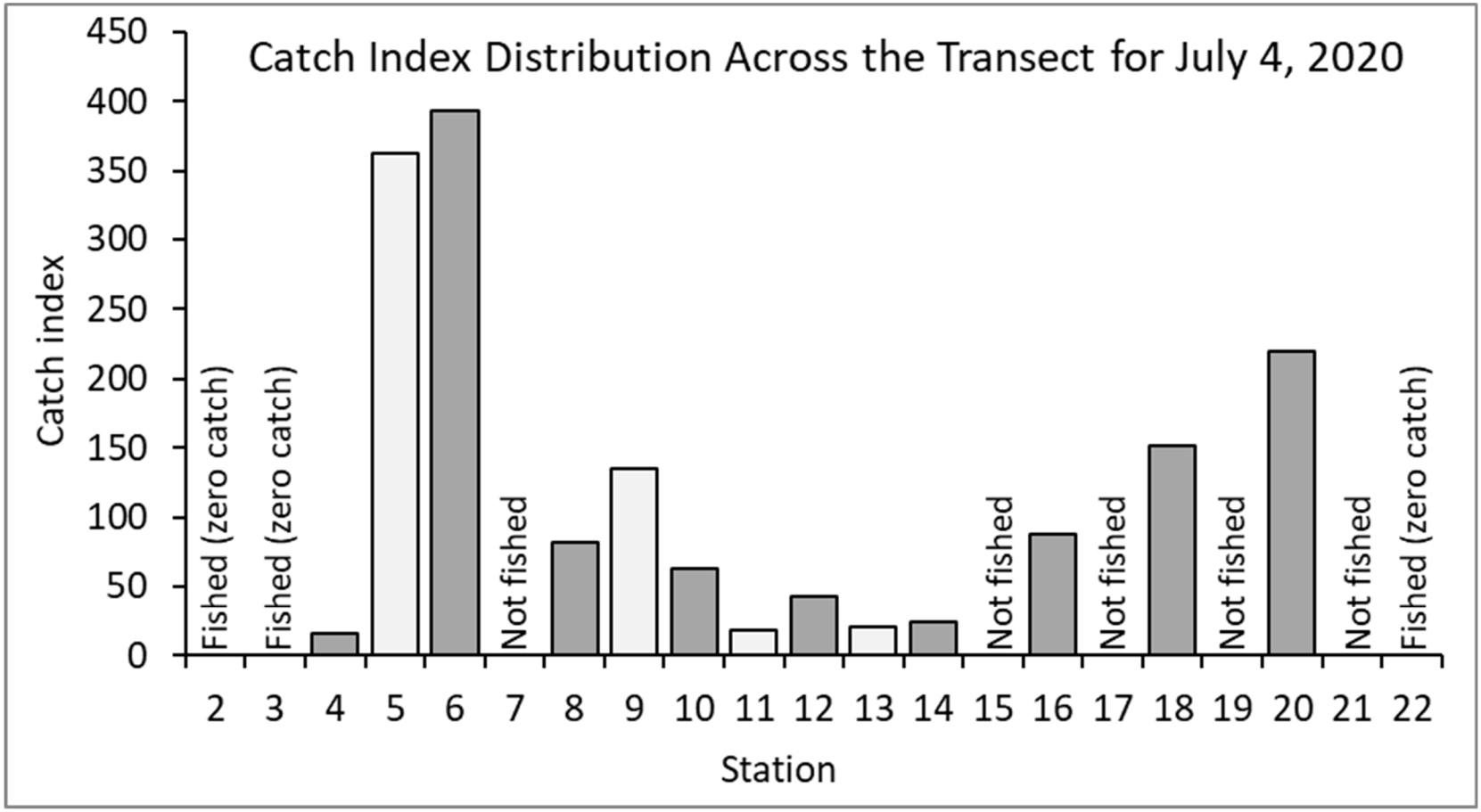

Figure 2. Catch indices by station across the PMTF transect for July 4, 2020. Odd numbered stations were fished as time and energy allowed.

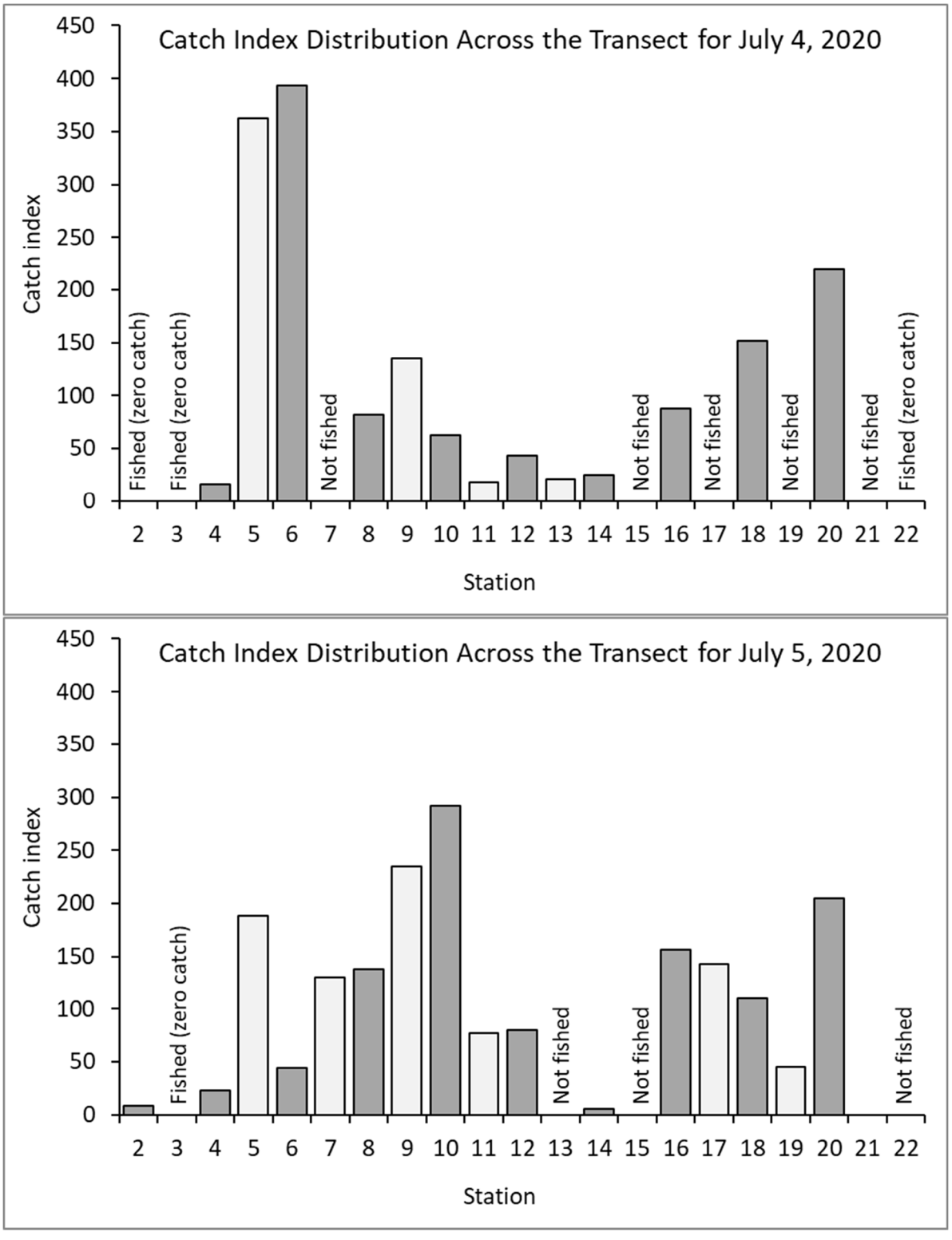

Figure 2. Catch indices by station across the PMTF transect for July 4 and 5, 2020. Odd numbered stations were fished as time and energy allowed.

This figure intially omited Station 17 results from July 5 when sent out on July 5. Updated here to incl. S17

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Sunday, July 05, 2020 8:03 PM
Cc: Michael Link
Subject: PMTF Update #24, July 5
Attachments: Catch Update #24 July 5.pdf; PortMollerTF_RawData - July 5 2020.pdf

Hi Everyone,

Attached are today's (7/5) catch update and the raw data files. Today's Daily Catch Index was the highest observed so far this year, but being similar to the previous three days is showing signs of leveling off. Even if the passage rate at the transect peaked today, the run would be at least six days late at Port Moller.

Notice how the distribution of catch indices across the transect shifted in a single day (see Figure 2 in the Catch Update). These results highlight the importance of covering the entire transect and how relatively large catch indices can be missed in between every other station.

The *Ocean Cat* is headed Northeast of Station 21 to get out of tomorrow's northwesterly by anchoring near Cape Newenham/Hagemeister Island. The *Americanus* is getting into Port Moller about now. Tomorrow does not look good for fishing.

PMTF Stock Composition Status: The remaining genetic samples from 7/3 (Stations 8-20) and all of 7/4 samples will arrive in Port Moller tonight. We plan to ship them to Anchorage tomorrow; if it works, estimates will be available Tuesday (7/7).

Summary of catch indices for today are as follows:

Station	Index
Stn2	8
Stn3	0
Stn4	23
Stn5	189
Stn6	44
Stn7	130
Stn8	138
Stn9	235
Stn10	291
Stn11	77
Stn12	80
Stn13	Not fished
Stn14	5
Stn15	Not fished
Stn16	156
Stn17	Not fished
Stn18	110
Stn19	45
Stn20	205
Stn21	26
Stn22	Not fished

Daily Index (Stations 2-10) = 101
Cumulative Daily Index (Stations 2-10) = 872

All for now,

Scott and Michael

P.S. A reminder, you can receive a brief summary of the daily indexes by text. To subscribe, text the four letters “pmtf” to 833-612-1053.

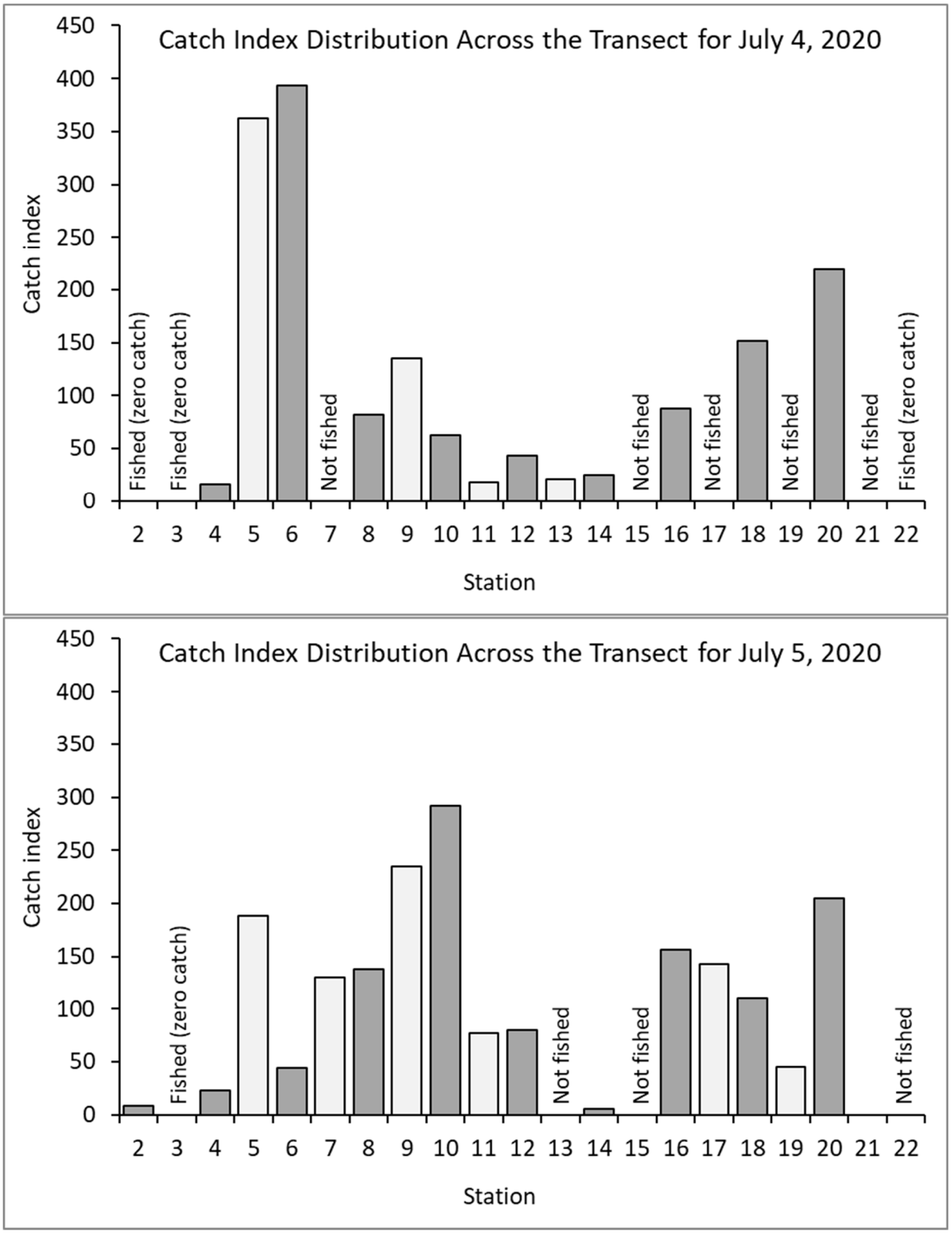

Figure 2. Catch indices by station across the PMTF transect for July 4 and 5, 2020. Odd numbered stations were fished as time and energy allowed.

This figure intially omited Station 17 results from July 5 when sent out on July 5. Updated here to incl. S17

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Monday, July 06, 2020 6:24 PM
Cc: Michael Link
Subject: PMTF Update #25, July 6
Attachments: BB_Age Comp Report_7-6_#4.pdf

No fishing today (7/6) due to bad weather, but the forecast looks promising for tomorrow. Attached are the most recent age composition estimates released by ADF&G.

PMTF Stock Composition Status: Stock composition estimates from 7/3-4 should be out tomorrow (7/7).

All for now,

Scott and Michael

P.S. A reminder, you can receive a brief summary of the daily indexes by text. To subscribe, text the four letters "pmtf" to 833-612-1053.

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Wednesday, July 08, 2020 12:09 AM
Cc: Michael Link
Subject: PMTF Update #26, July 7
Attachments: Catch Update #26 July 7.pdf; PortMollerTF_RawData - July 7 2020.pdf

Hi Everyone,

Attached are today's (7/7) catch update and the raw data files.

The weather was still not ideal for fishing today. The *Americanus* attempted to reach Station 2, but turned back due to unfishable conditions. The *Ocean Cat* was able to make a few sets despite working in 7-9' seas left over from the big winds yesterday. Starting at Station 20, we opted to skip Station 14 in order to reach Station 8. Given how the migration has been prone to shift across stations from one day to the next, and that yesterday was missed, we do not by how much or even if the Daily Catch Index has declined. The weather looks questionable for the next couple of days, but we will make attempts if possible.

The catch + escapement increased dramatically on 7/5 and 7/6 (Figure 2 in the catch update file). Given an 8-9 day travel time, these fish would have passed the fishing transect during 6/26-28 when we were unable to test fish. Forecasting C+E based on Port Moller has been hindered this year due to missed dates. Good coverage of the transect from 6/30 to 7/5 has at least told us that many more fish are left to come. We will have to wait for C+E to be reported ~July 10-11 before we know what those high Daily Catch Indices starting on July 2 equate to.

With Figure 3 in the catch update file, we have binned years by run magnitude and plotted their run timing against cumulative C+E to date. Comparing this year's cumulative C+E within each of these bins gives us some indication of where the run is most likely to land with respect to timing and magnitude. Port Moller indicates the run is at least three days late and likely later, which rules out runs <35 million that are early or on time. Runs closer to 40 million have never been more than two days late, although anything is possible. The more likely scenario is that the run is at least 5 days late and over 50 million (bottom right graph).

PMTF Stock Composition Status: Separate stock compositions for 7/4 and 7/5 were released earlier today. Stock compositions for the inner (Stations 2-12) and outer (Stations 14-22) transect on both 7/3 and 7/4 should be released tomorrow. These results will go a long way towards gauging changes in stock composition along the transect and between adjacent days.

Summary of catch indices for today are as follows:

Station	Index
Stn6	Not fished
Stn8	45
Stn10	113
Stn12	66
Stn14	Not fished
Stn16	3
Stn18	169
Stn20	23
Stn22	Not fished

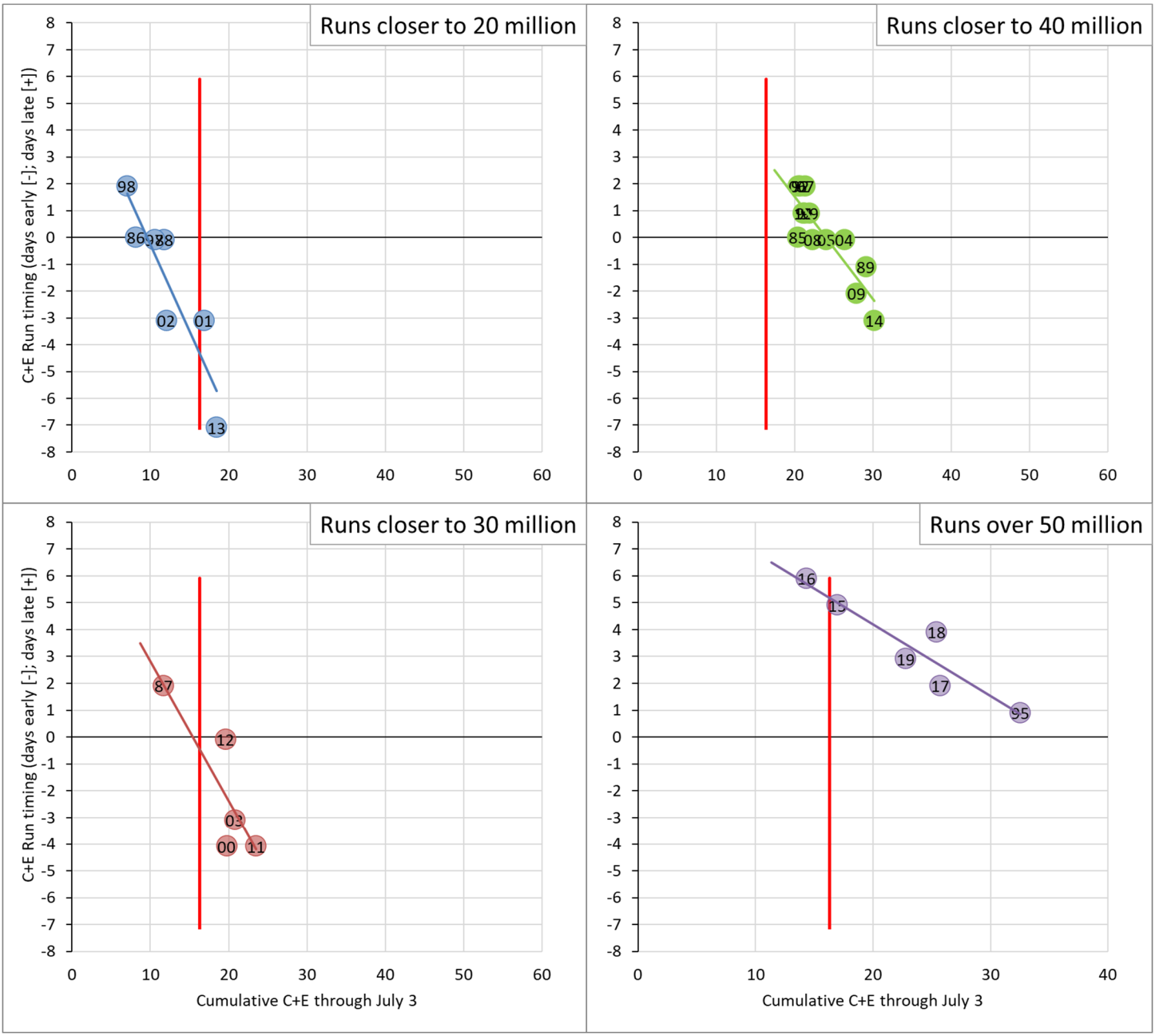

Figure 2. Observed run timing versus cumulative catch + escapement through July 6 in each year from the historical dataset (1987-2019). The red line indicates C+E for 2020 (run timing for this year is not known, but somewhere on this line); each dot indicates what cumulative C+E was through this date, 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. Run timing was estimated by comparing each year's date when 50% of the run reached inshore to this average date (July 4) for year's 1987-2019.

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Wednesday, July 08, 2020 9:11 PM
Cc: Michael Link
Subject: PMTF Update #27, July 8
Attachments: Catch Update #27 July 8.pdf; PortMollerTF_RawData - July 8 2020.pdf

Attached are today's (7/8) catch update and the raw data files. The *Ocean Cat* is planning on starting at Station 18 tomorrow working their way inshore.

Missed stations notwithstanding, it appears the passage rate peaked at Port Moller on July 4th or 5th making it about 5-6 days late at the test fishery. The most likely scenario for the run still remains the bottom right graph (>50M and 5-6 days late) in Figure 2 of the Catch Update.

PMTF Stock Composition Status: The die has been cast, and we probably won't see any more stock composition estimates for this year. However, we will be sending the inner/outer station results for 7/3 and 7/4 shortly. Many thanks to ADF&G's gene lab for running these estimates in the middle of a busy season!

Summary of today's catch indices as follows:

Station	Index
Stn2	3
Stn4	22
Stn6	52
Stn8	187
Stn10	80
Stn12	97
Stn14	0
Stn16	Not fished

Daily Index (Stations 2-10) = 69
Cumulative Daily Index (Stations 2-10) = 1,132

All for now,

Scott and Michael

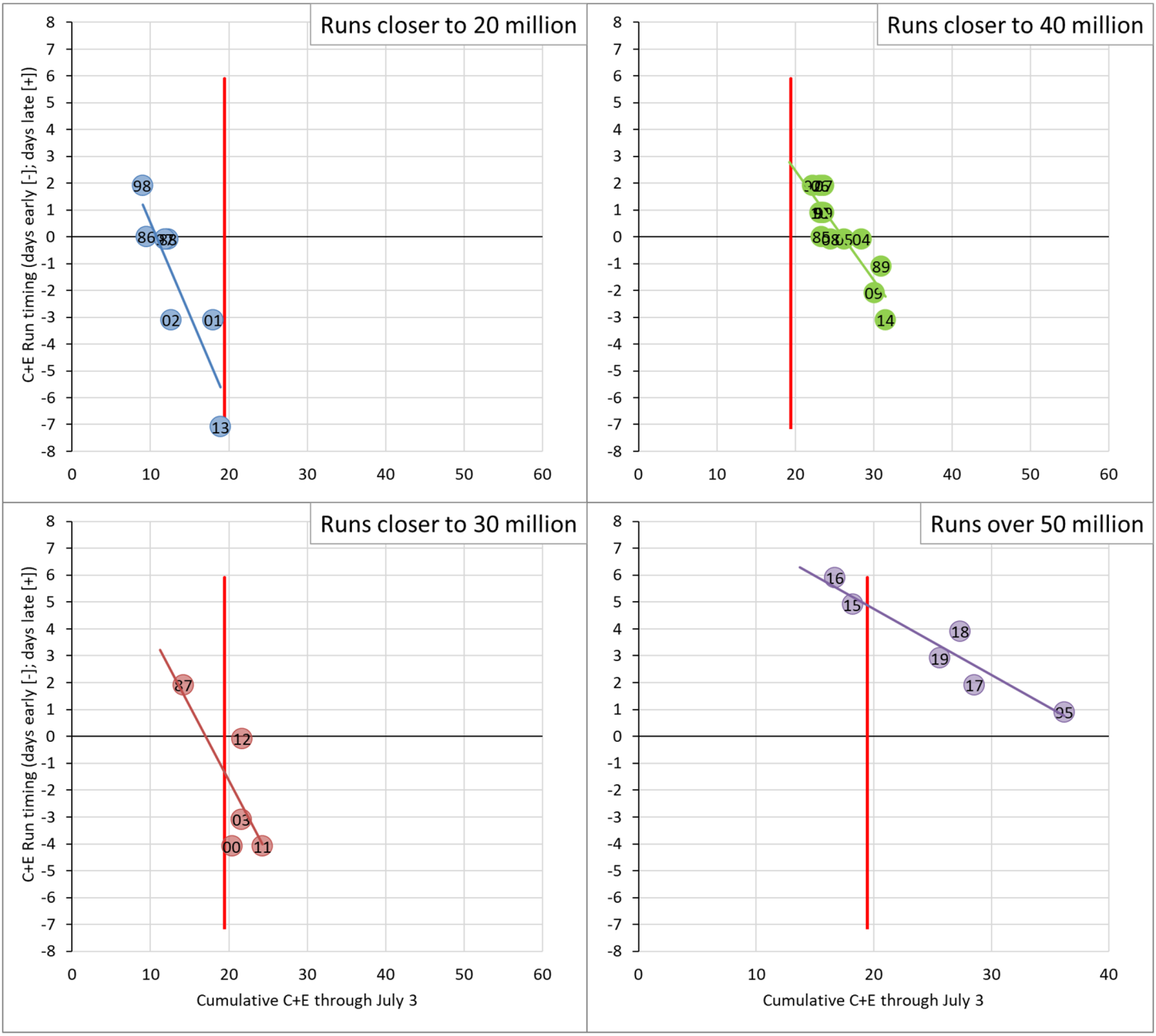

Figure 2. Observed run timing versus cumulative catch + escapement through July 6 in each year from the historical dataset (1987-2019). The red line indicates C+E for 2020 (run timing for this year is not known, but somewhere on this line); each dot indicates what cumulative C+E was through this date, 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. Run timing was estimated by comparing each year's date when 50% of the run reached inshore to this average date (July 4) for year's 1987-2019.

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Thursday, July 09, 2020 9:16 PM
Cc: Michael Link
Subject: PMTF Update #28, July 9
Attachments: Catch Update #28 July 9.pdf; PortMollerTF_RawData - July 9 2020.pdf

Attached are today's (7/9) catch update and the raw data files. The wind kicked up a bit this morning at the outer stations, thus the crew started at Station 14 and worked towards Port Moller. The weather forecast looks good for the next few days, and the *Ocean Cat* will fish as many stations as possible.

Catch indices for the inside stations picked up considerably today, which caused the estimated Daily Catch Index (103 based on Stations 2-11) to be comparable to the presumed peak (105) on July 5. Even if we replace the interpolated values for Stations 16-22 with zeroes, the average for today is still up from the previous two days. High late season indices from Port Moller have a history of misrepresenting the run's tail. We would like to think that the reasons for this bias have been fixed, and that an index, of say 60, now represents what it did in late June. Covering more of the transect and fishing a deeper net throughout the season should have improved matters. As always, we will have to wait to see what manifests inshore to know what these late magnitude changes in indices truly mean. What we can say is that there are plenty of fish left to arrive. Catch + escapement may stall in the coming days, but should remain strong for another ~week.

Apologies for getting the date designations wrong in Figure 2 of the Catch Update; nevertheless, the data were correctly plotted and our interpretation stands—the run is 4-6 days late and greater than 50 million. Sustained Port Moller indices are edging this forecast towards 60 million or at least the high 50s assuming the run-per-index (RPI) has not inexplicably declined.

PMTF Stock Composition Status: The die has not been cast, and there will be one more stock composition estimate for this season. Samples from July 7-9 will arrive in Port Moller tonight. A stock composition estimate for these dates will be released as soon as possible.

Summary of today's catch indices as follows:

Station	Index
Stn2	10
Stn4	167
Stn6	205
Stn8	44
Stn10	250
Stn12	77
Stn14	81
Stn16	Not fished

Daily Index (Stations 2-10) = 69
Cumulative Daily Index (Stations 2-10) = 1,276

All for now,

Scott and Michael

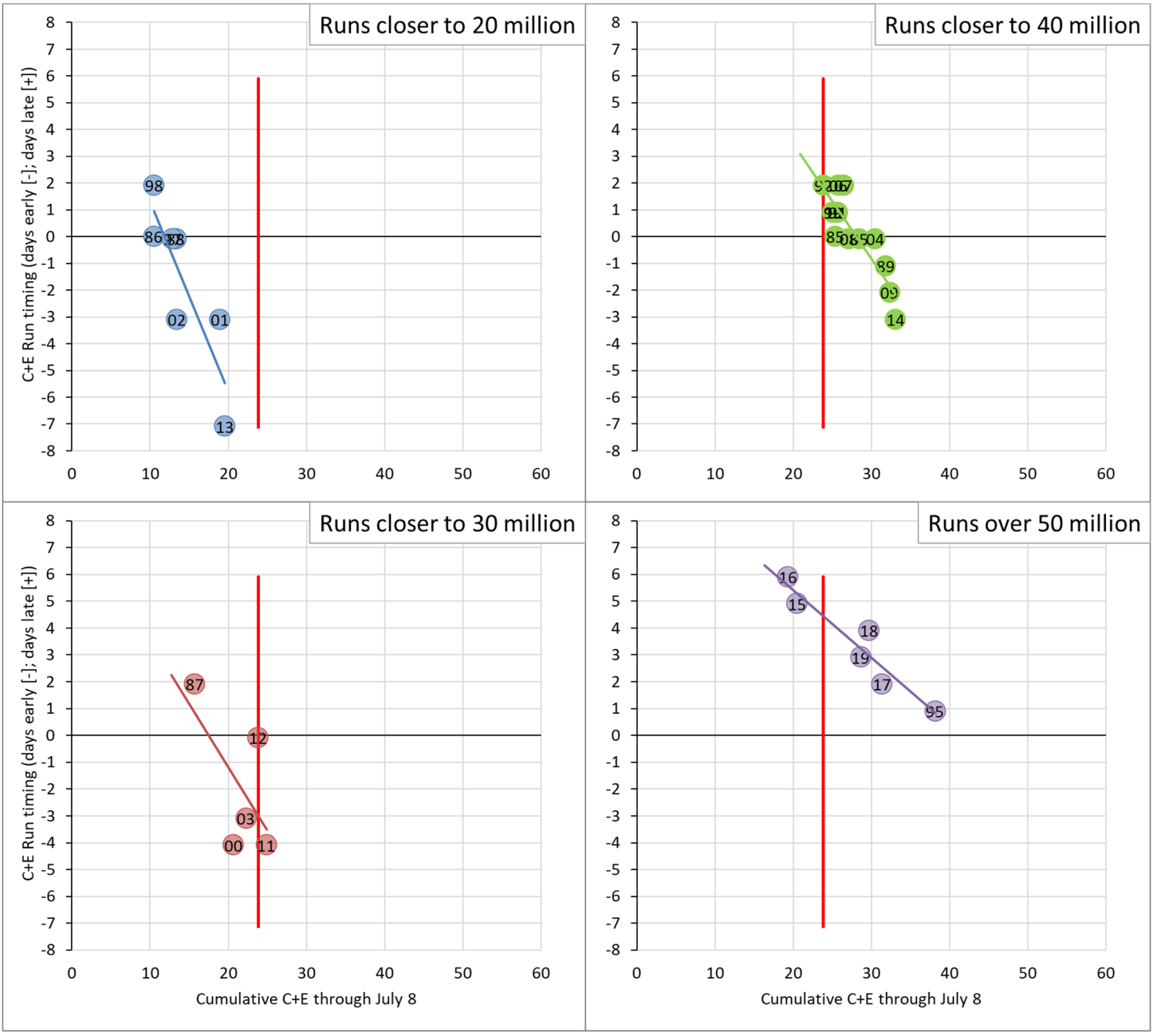

Figure 2. Observed run timing versus cumulative catch + escapement through July 8 in each year from the historical dataset (1985-2019). The red line indicates C+E for 2020 (run timing for this year is not known, but somewhere on this line); each dot indicates what cumulative C+E was through this date, 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. Run timing was estimated by comparing each year's date when 50% of the run reached inshore to this average date (July 4) for year's 1985-2019.

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Friday, July 10, 2020 8:54 PM
Cc: Michael Link
Subject: PMTF Update #29, July 10
Attachments: Catch Update #29 July 10.pdf; PortMollerTF_RawData - July 10 2020.pdf

Attached are today's (7/10) catch update and the raw data files. The crew was able to fish Stations 4-14 today after dropping off genetic samples late last night. The plan for tomorrow is to cover the outer stations.

PMTF Stock Composition Status: Samples from July 7-9 arrived in Anchorage today. A stock composition estimate for these dates could be released tomorrow (7/11).

Summary of today's catch indices as follows:

Station	Index
Stn2	Not fished
Stn4	0
Stn6	23
Stn8	27
Stn10	117
Stn12	14
Stn14	21
Stn16	Not fished

Daily Index (Stations 2-10) = ***Will be provided when more data become available***

Cumulative Daily Index (Stations 2-10) = ***Will be provided when more data become available***

All for now,

Scott and Michael

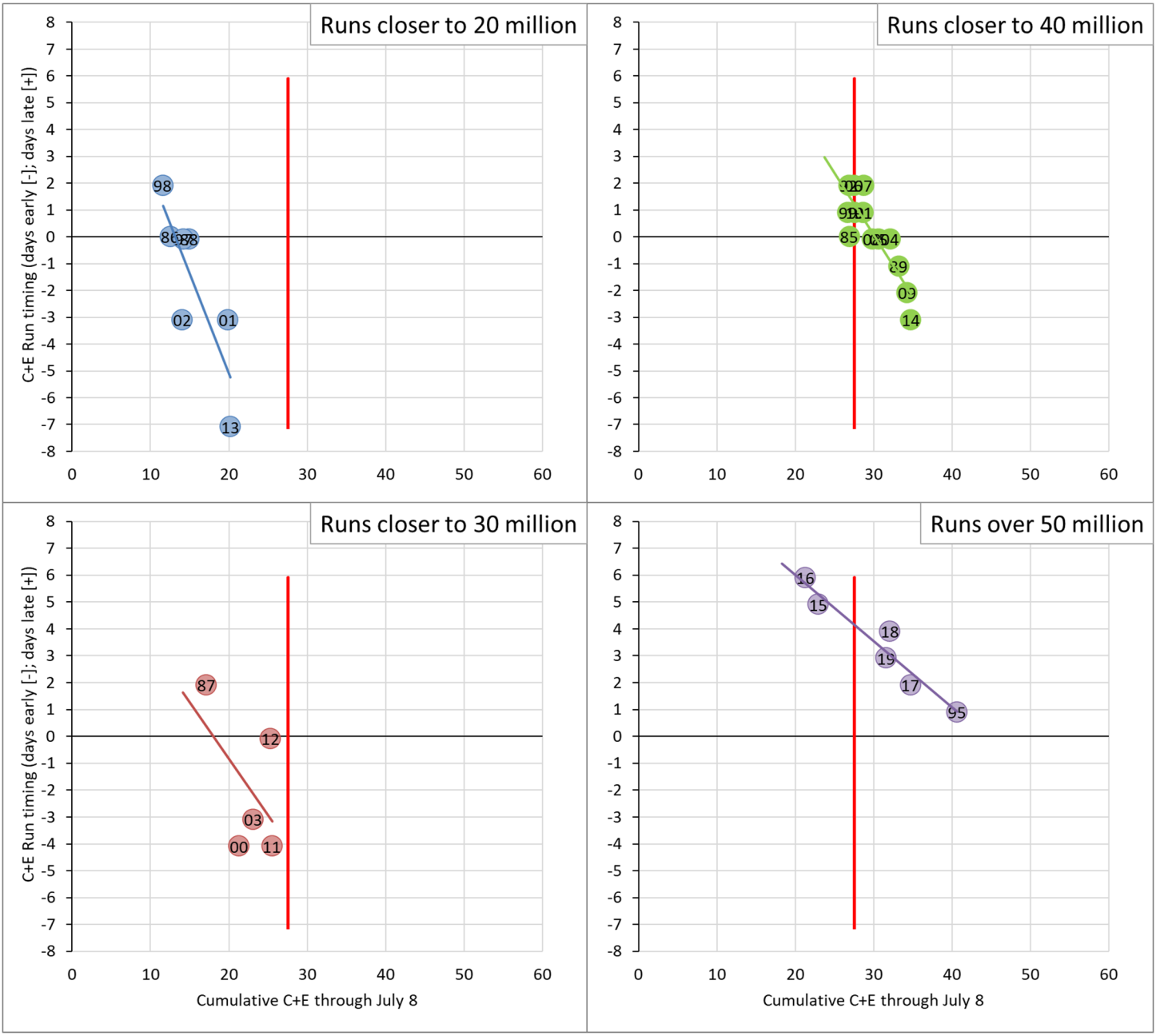

Figure 2. Observed run timing versus cumulative catch + escapement through July 8 in each year from the historical dataset (1985-2019). The red line indicates C+E for 2020 (run timing for this year is not known, but somewhere on this line); each dot indicates what cumulative C+E was through this date, 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. Run timing was estimated by comparing each year's date when 50% of the run reached inshore to this average date (July 4) for year's 1985-2019.

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Sunday, July 12, 2020 1:29 AM
Cc: Michael Link
Subject: PMTF Update #30, July 11
Attachments: Catch Update #30 July 11.pdf; PortMollerTF_RawData - July 11 2020.pdf

Attached are yesterday's (7/11) catch update and raw data files. The crew was able to cover most of the stations yesterday, and will try to do the same today (7/12) starting at Station 6 working outwards. Today or tomorrow (7/13) may be the last day of test fishing for the 2020 season (the program typically ends around July 9 or 10).

PMTF Stock Composition Status: There will be no more stock composition estimates for the 2020 season.

Summary of today's catch indices as follows:

Station	Index
Stn6	Not fished
Stn8	32
Stn10	3
Stn12	23
Stn14	Not fished
Stn16	32
Stn18	19
Stn20	94
Stn21	0
Stn22	Not fished

Daily Index (Stations 2-10) =

Cumulative Daily Index (Stations 2-10) = 1,318 ***for July 10***

All for now,

Scott and Michael

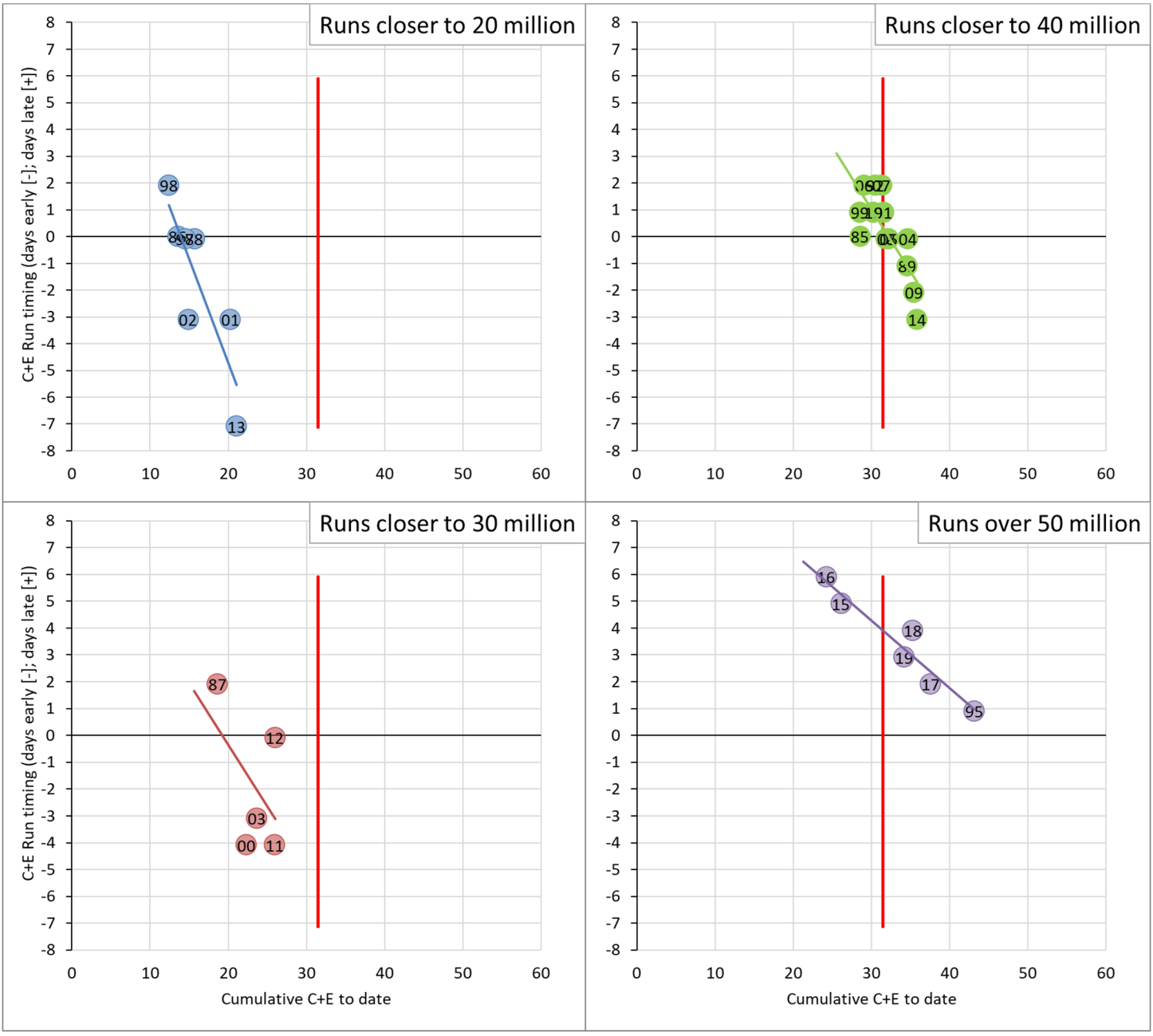

Figure 2. Observed run timing versus cumulative catch + escapement through July 11 in each year from the historical dataset (1985-2019). The red line indicates C+E for 2020 (run timing for this year is not known, but somewhere on this line); each dot indicates what cumulative C+E was through this date, 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. Run timing was estimated by comparing each year's date when 50% of the run reached inshore to this average date (July 4) for year's 1985-2019.

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Sunday, July 12, 2020 8:14 PM
Cc: Michael Link
Subject: PMTF Update #31, July 12
Attachments: Catch Update #31 July 12.pdf; PortMollerTF_RawData - July 12 2020.pdf

Attached are today's (7/12) catch update and raw data files. The crew will start at Station 12 tomorrow (7/13) and work their way in to complete the 2020 PMTF.

PMTF Stock Composition Status: There will be no more stock composition estimates for the 2020 season.

Summary of today's catch indices as follows:

Station	Index
Stn4	Not fished
Stn6	32
Stn8	7
Stn10	17
Stn12	25
Stn14	37
Stn16	18
Stn18	120
Stn20	Not fished

All for now,

Scott and Michael

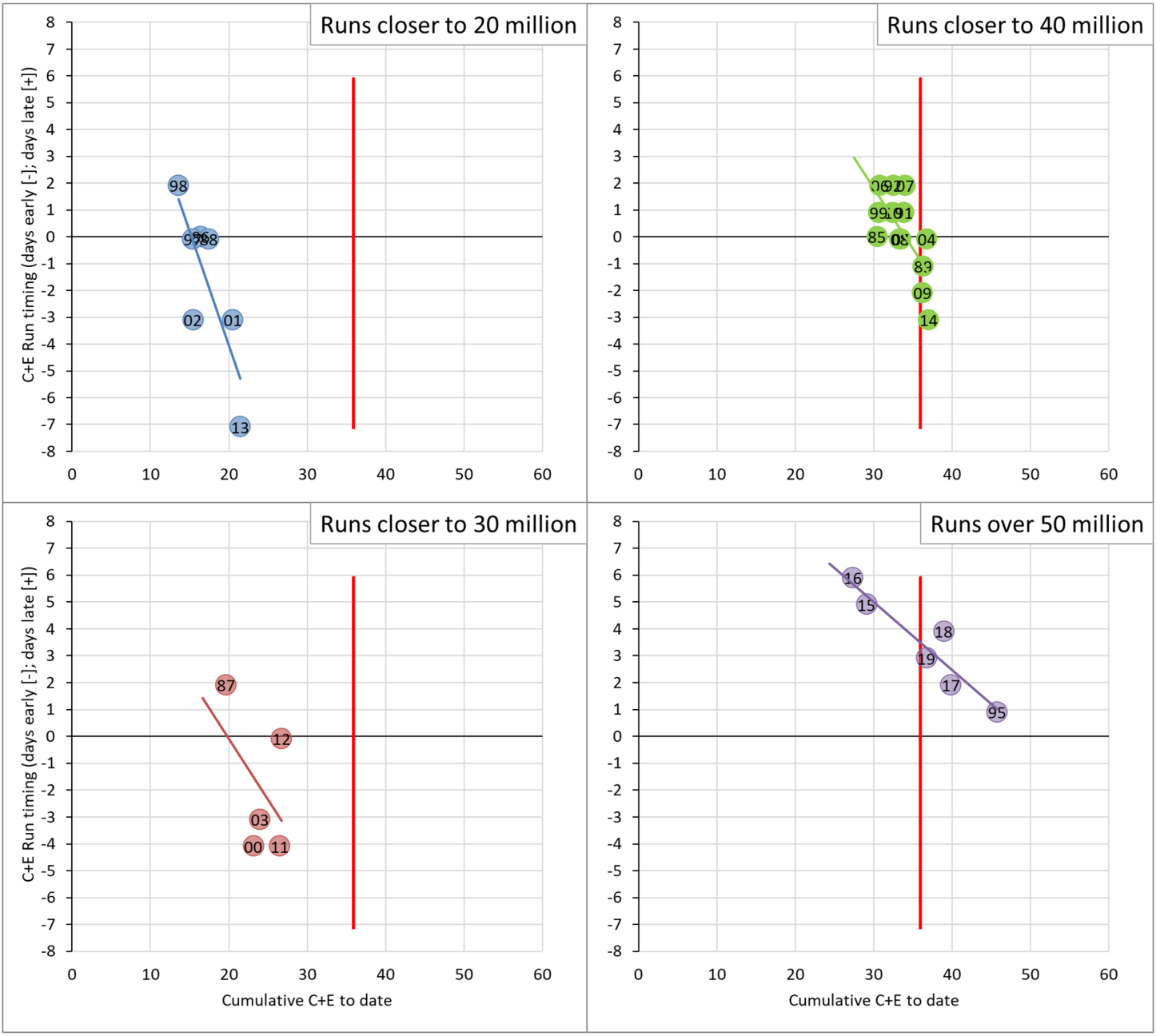

Figure 2. Observed run timing versus cumulative catch + escapement through July 12 in each year from the historical dataset (1985-2019). The red line indicates C+E for 2020 (run timing for this year is not known, but somewhere on this line); each dot indicates what cumulative C+E was through this date, 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. Run timing was estimated by comparing each year's date when 50% of the run reached inshore to this average date (July 4) for year's 1985-2019.

Appendix B

ADF&G inseason stock composition estimates for the Port Moller Test Fishery, 2020.

Estimates by Sample Dates

Stock Comp #1: June 19-20

Stock Comp #2: June 22-23

Stock Comp #3: June 24-25

Stock Comp #4: June 29-30

Stock Comp #5: July 2-3

Stock Comp #6: July 4

Stock Comp #7: July 5

Stock Comp #8: Inside/Outside Stns, July 3-4

Stock Comp #9: July 7-9

Five pages of historical results were included in each of the ADF&G stock comp updates; we have included those just with the Stock Comp #9 here and omitted from the other updates as they did not change across the season.

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Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Monday, June 22, 2020 5:20 PM
Cc: Michael Link
Subject: Port Moller Stock Comp. Est. #1—samples from June 19-20, 2020
Attachments: PM genetics inseason 6.19-20.2020.pdf

Hi Everyone,

Attached is the 1st stock composition estimate from Port Moller released by ADF&G.

Stock Composition (19-20 June; Stns2-18):
[248 Catch Index points across these dates and stations]

Stock	%
Kuskokwim	0.2%
Togiak	0.1%
Igushik	6.7%
Wood	21.6%
Nushagak	17.6%
Kvichak	6.9%
Alagnak	0.9%
Naknek	15.5%
Egegik	17.2%
Ugashik	7.2%
North Pen.	6.1%

All for now,

Scott and Michael

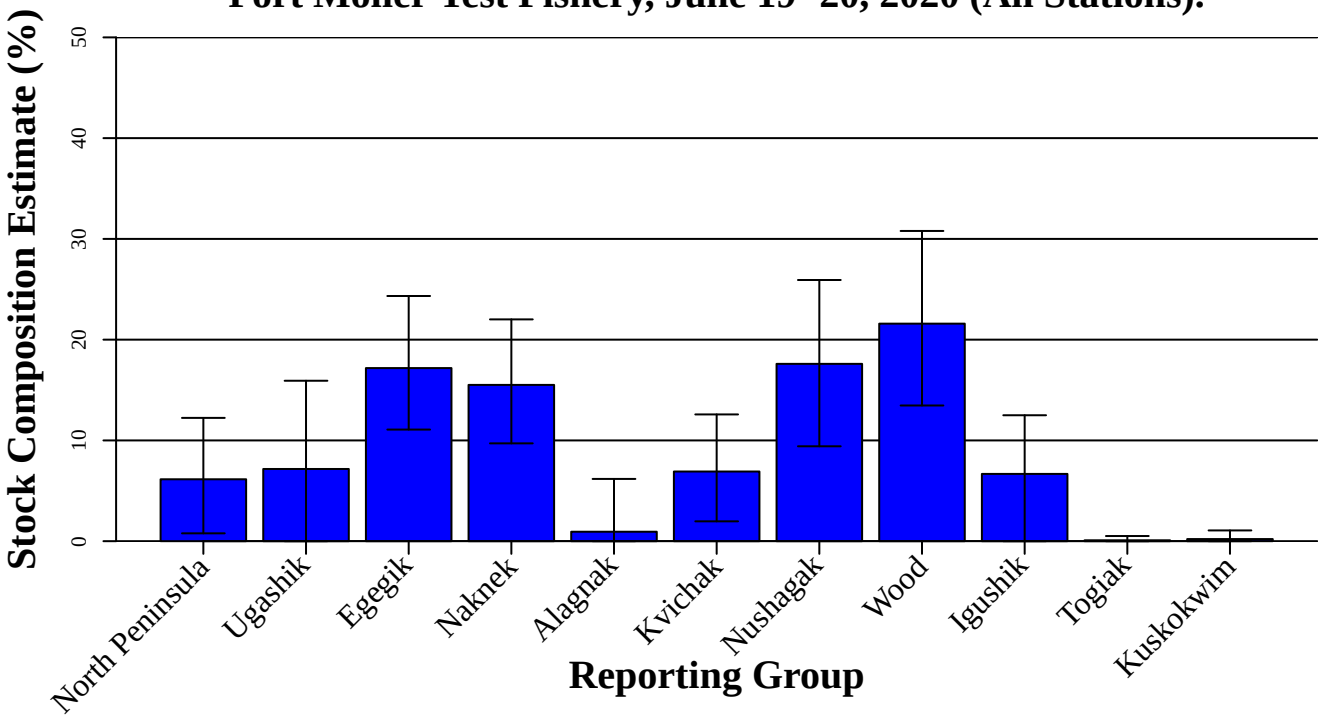
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
June 19−20, 2020 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 19−20, 2020. A total of 167 fish were sampled and 167 were analyzed (164 had adequate data to include in the analysis).

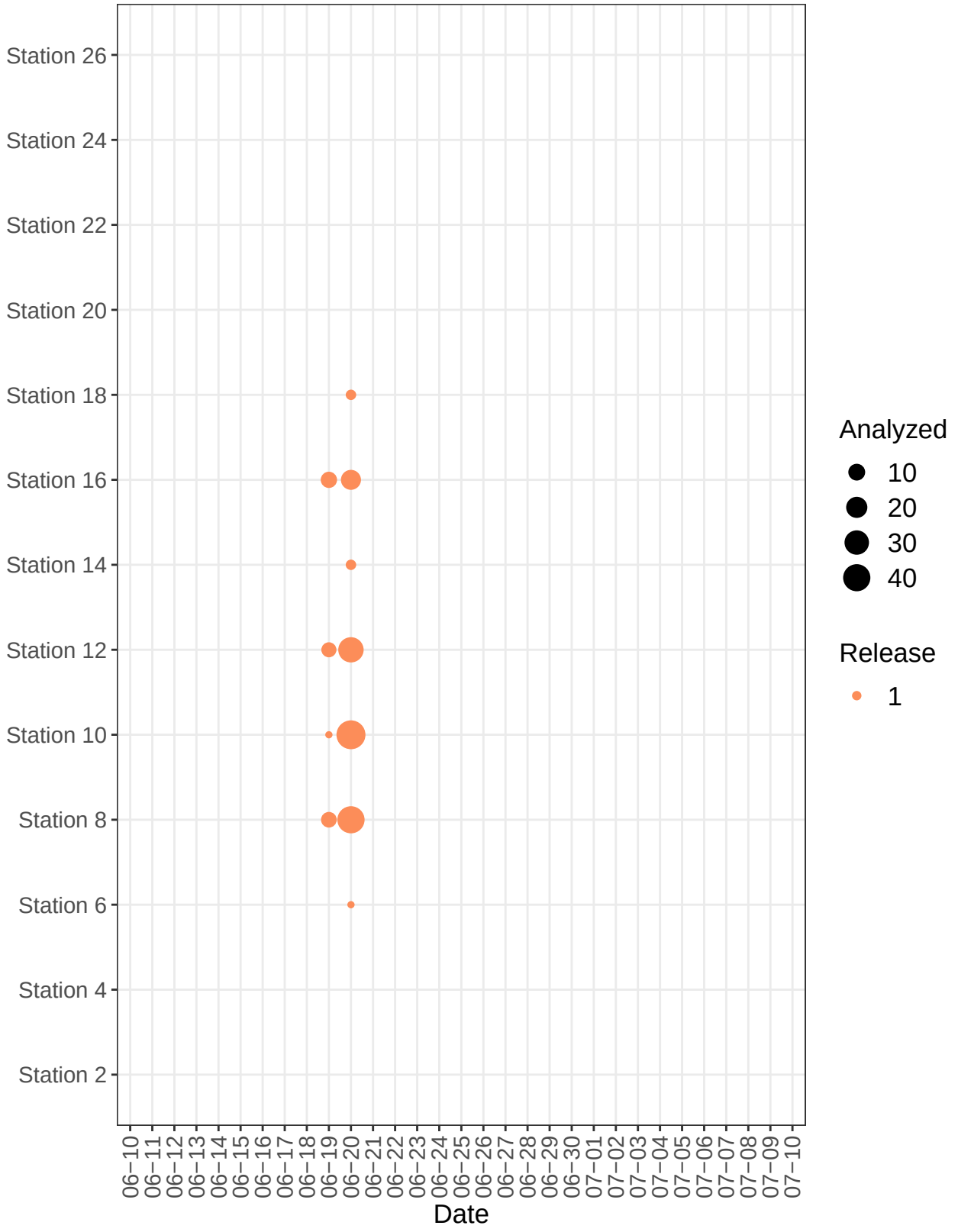
Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	6.1%	0.8%	12.2%
Ugashik	7.2%	0.0%	15.9%
Egegik	17.2%	11.1%	24.3%
Naknek	15.5%	9.7%	22.0%
Alagnak	0.9%	0.0%	6.2%
Kvichak	6.9%	2.0%	12.6%
Nushagak	17.6%	9.4%	25.9%
Wood	21.6%	13.5%	30.8%
Igushik	6.7%	0.0%	12.5%
Togiak	0.1%	0.0%	0.5%
Kuskokwim	0.2%	0.0%	1.1%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 19−20, 2020 (All Stations).



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

Number of Genetic Samples Analyzed by Date, Station, and Estimate Release Number
Port Moller Test Fishery 2020



Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Thursday, June 25, 2020 5:04 PM
Cc: Michael Link
Subject: Port Moller Stock Comp. Est. #2—samples from June 22-23, 2020
Attachments: PM genetics inseason 6.22-23.2020.pdf; HowStationCatchesRelateToInshoreDistricts.pdf

Everyone,

Attached is the 2nd stock composition estimate from Port Moller released by ADF&G.

We have received numerous questions regarding how specific station catches relate to inshore districts. Most users wish to know where fish passing through Station 10 are headed. Therefore, we have also attached a brief overview to facilitate understanding of this dynamic.

Stock Composition (22-23 June; Stns2-20):
[367 Catch Index points across these dates and stations]

Stock	%
Kuskokwim	0.3
Togiak	0.1
Igushik	0.6
Wood	24.9
Nushagak	5.5
Kvichak	9.1
Alagnak	0.3
Naknek	22.5
Egegik	28.7
Ugashik	5.1
North Pen.	3.0

A snippet from the Catch Update Table, below, illustrates where on the transect samples used to generate this stock composition were drawn from (Box around 6/22-23). Of note, outer Stations 14-20 were missing from June 22, and both dates missed Station 22, which yielded a relatively high catch index today (June 25).

	Daily Catch Index by Station (Est. 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
21-Jun													
22-Jun				18	98	17							
23-Jun	2	6	23	37	87	25	19	19	14	1			
24-Jun		2	8	31	108	47	2	37	75	41	23	0	
25-Jun	0	12	2	34			33	18	4	3	88		

All for now,

Scott and Michael

How Station Catches Relate to Inshore Fishing Districts

Every year, many people want to know how station-specific catches at Port Moller correlate to the inshore districts. We generally get questions like, "Which district or districts are fish at Station 10 headed for?". This is a simple and logical question, and utility of the test fishery would be greatly enhanced if there were a clear answer. Unfortunately, this is not the case as station-specific stock composition estimates are currently unavailable at the current level of sampling and funding. To establish station-specific estimates would require sampling stations multiple times per day with a 5-6 vessel effort and analyzing many more fish in the genetics lab. In a sense, it is a "million-dollar question" (a conservative cost projection at the least). However, we can provide a qualitative answer to this question given the current budget and logistical constraints.

All stocks are likely present at all stations, but there is a limit to the associations that can be made by station or narrow group of stations. A map of station locations is provided below (Figure 1), and a comparison of 2019 stock compositions across inner and outer stations for early, middle, and late periods, as well as for the center 75% of the season at Port Moller is given in Figure 2. Generalizations are that Egegik and Ugashik stocks are more likely to pass through the inner stations (Stations 2-12) than they are the outer stations (Stations 14-24). Nushagak District and Naknek-Kvichak stocks are more likely to pass through the outer stations.

Again, there are limits on this understanding and to the methods available. We must group station samples to obtain genetics results, and historical results prior to 2019 are largely limited to Stations 2-10 or 2-12. Therefore, the relative historical passage rate through Stations 14-18 by each stock is impossible to ascertain. We fished the far outers stations only last year (2019) and found significant numbers of Egegik fish; yet, this stock dominated the inner stations. Last year was a large Egegik run, so a given stock's abundance relative to other stocks determines how much they might dominate a station or group of stations by day and by year. What we can say for sure is that sampling the entire transect last year improved overall accuracy of stock composition forecasts from Port Moller samples.

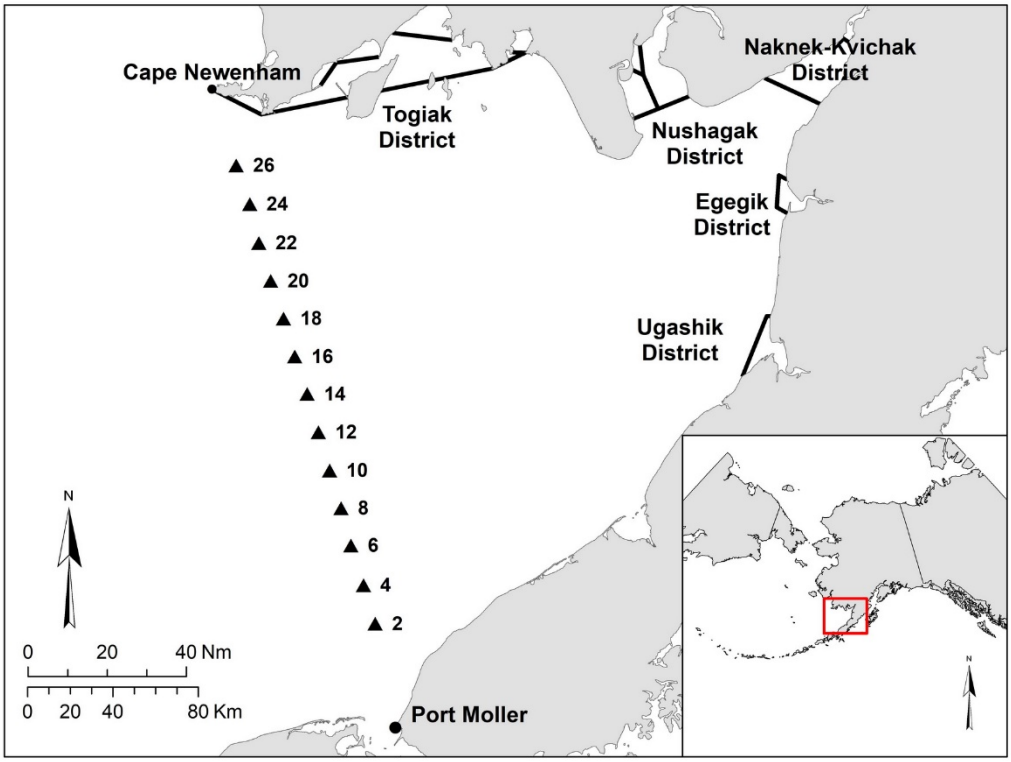


Figure 1. Map of the study area, showing the stations of the 2019 Port Moller Test Fishery and the locations of Bristol Bay fishing districts. Sockeye salmon passing the test fishery stations take approximately six to nine days to reach the Bristol Bay fishing districts in typical years.

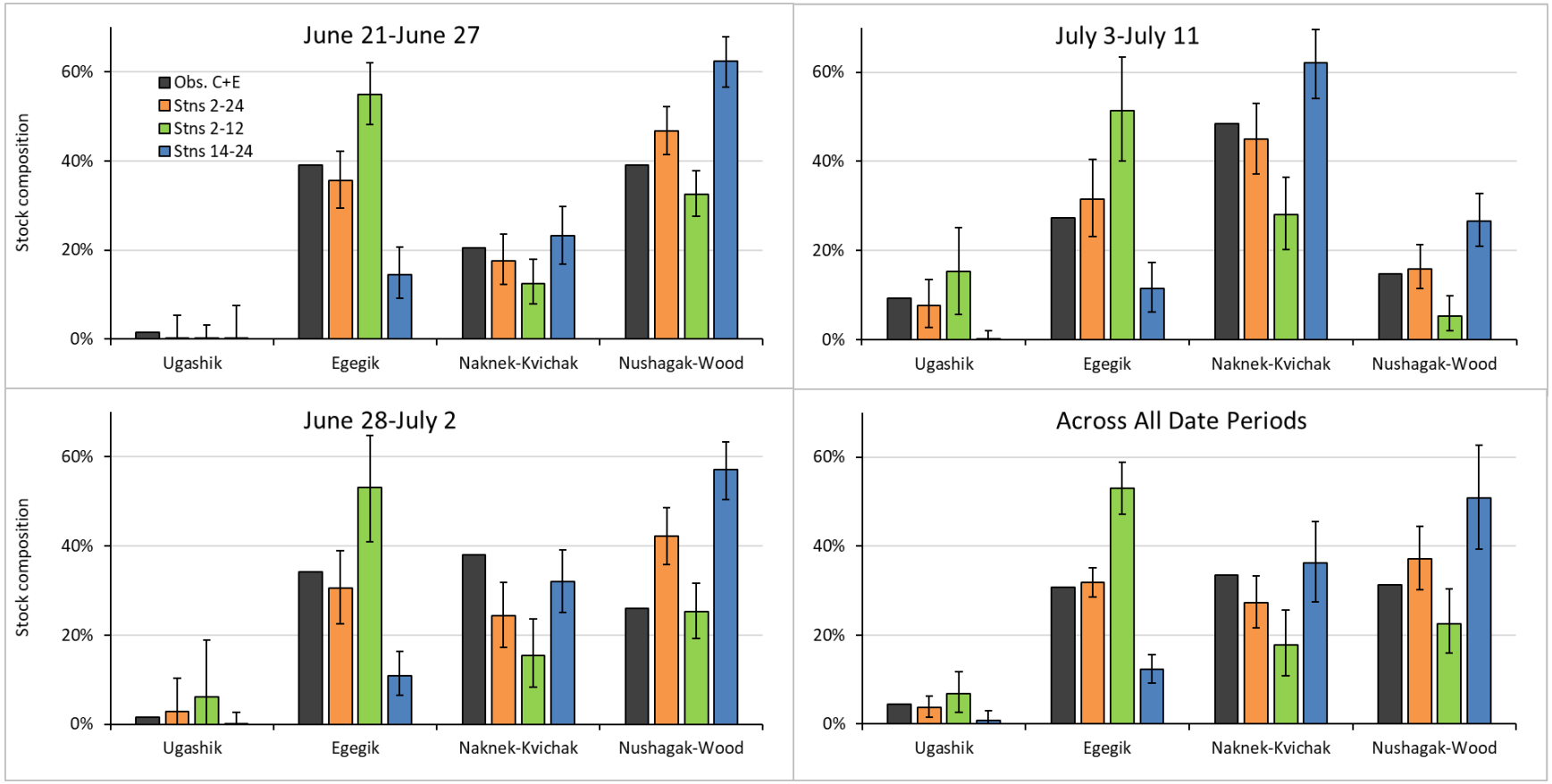


Figure 2. Postseason stock composition estimates from 2019 PMTF samples parsed by inner and outer station groupings, as well as the entire transect compared to catch + Escapement (C+E) lagged backwards to the test fishery by respective travel times. Early, middle and late periods (top and left panels) were chosen to reflect dates when the entire transect was sampled by two vessels (75% of season catch indices). Error bars represent 90% confidence intervals.

Take from:

Link, M.R., S.W. Raborn, and T.H. Dann. 2019. Annual Report for the 2019 Port Moller Test Fishery. Report prepared for the Bristol Bay Science and Research Institute, the Bristol Bay Fisheries Collaborative, and the Bristol Bay Regional Seafood Development Association. 38 pp. + 128 pp. appendices. Available at https://www.bbsri.org/port-moller-test-fishery

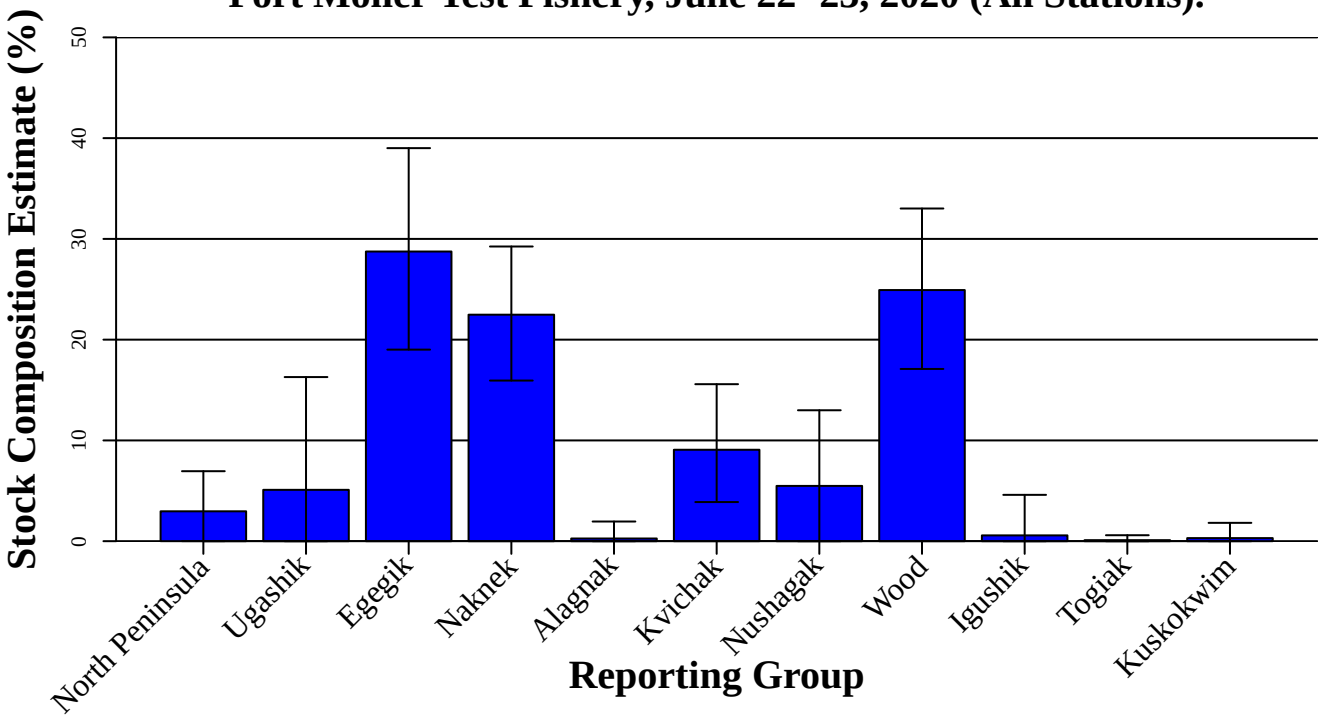
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
June 22−23, 2020 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 22−23, 2020. A total of 221 fish were sampled and 190 were analyzed (182 had adequate data to include in the analysis).

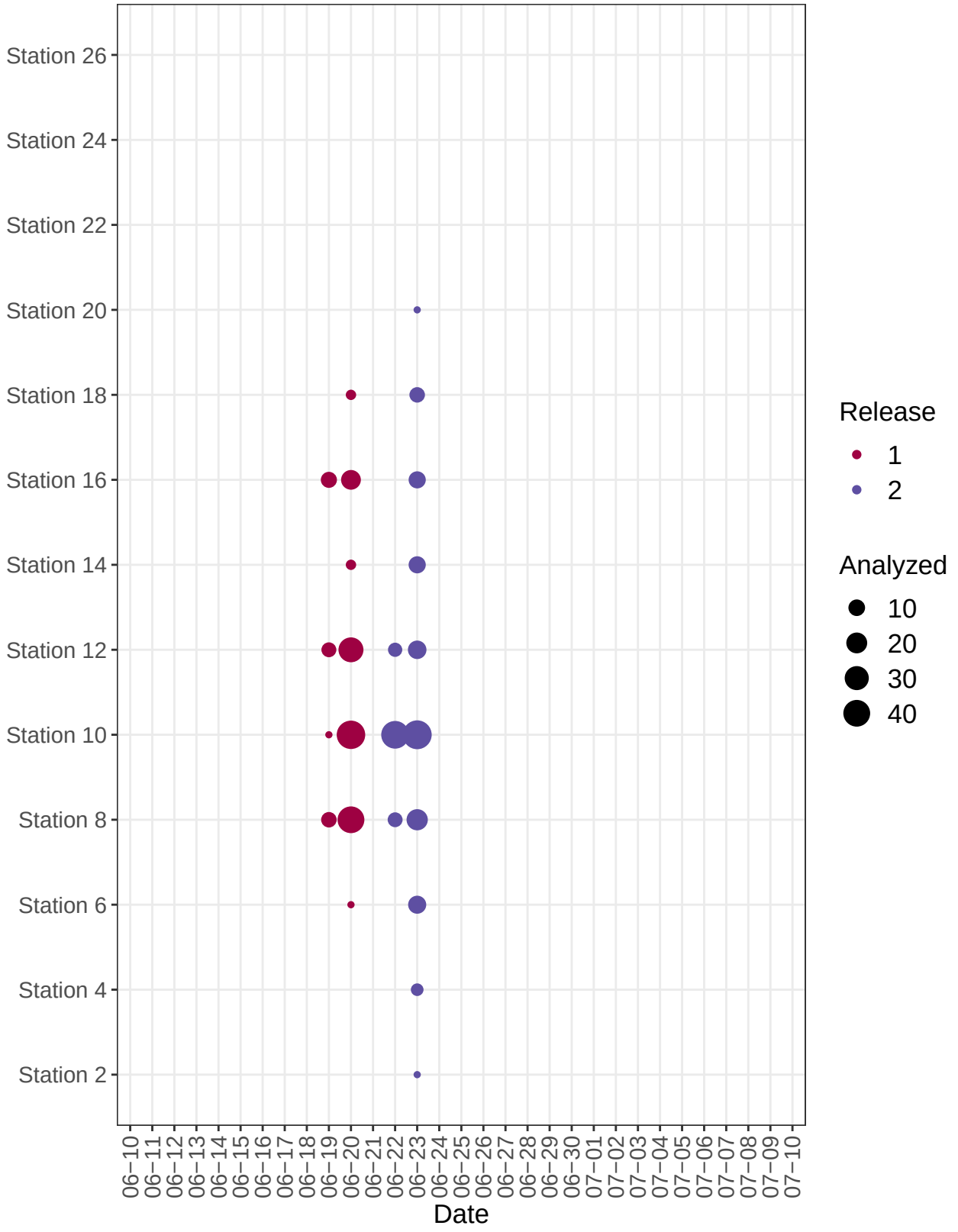
Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	3.0%	0.0%	6.9%
Ugashik	5.1%	0.0%	16.3%
Egegik	28.7%	19.0%	39.0%
Naknek	22.5%	15.9%	29.2%
Alagnak	0.3%	0.0%	2.0%
Kvichak	9.1%	3.9%	15.6%
Nushagak	5.5%	0.0%	13.0%
Wood	24.9%	17.1%	33.0%
Igushik	0.6%	0.0%	4.6%
Togiak	0.1%	0.0%	0.6%
Kuskokwim	0.3%	0.0%	1.8%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 22−23, 2020 (All Stations).



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

Number of Genetic Samples Analyzed by Date, Station, and Estimate Release Number
Port Moller Test Fishery 2020



Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Saturday, June 27, 2020 2:06 PM
Cc: Michael Link
Subject: Port Moller Stock Comp. Est. #3—samples from June 24-25, 2020
Attachments: PM genetics inseason 6.24-25.2020.pdf

Everyone,

Attached is the 3rd stock composition estimate from Port Moller released by ADF&G.

Stock Composition (24-25 June; Stations 4-22):
[750 Catch Index points across these dates and stations]

Stock	%
Kuskokwim	2.5
Togiak	0.3
Igushik	2.0
Wood	18.7
Nushagak	11.5
Kvichak	6.4
Alagnak	0.3
Naknek	21.9
Egegik	34.5
Ugashik	0.9
North Pen.	1.1

A snippet from the Catch Update Table, below, illustrates how this stock composition relates to catch indices from these dates and stations (green box around 6/24-25).

	Daily Catch Index by Station (Est. 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
22-Jun				18	98	17							
23-Jun	2	6	23	37	87	25	19	19	14	1			
24-Jun		2	8	31	108	47	2	37	75	41	23	0	
25-Jun	0	12	2	34	70	110	33	18	4	3	88		
26-Jun													

All for now,

Scott and Michael

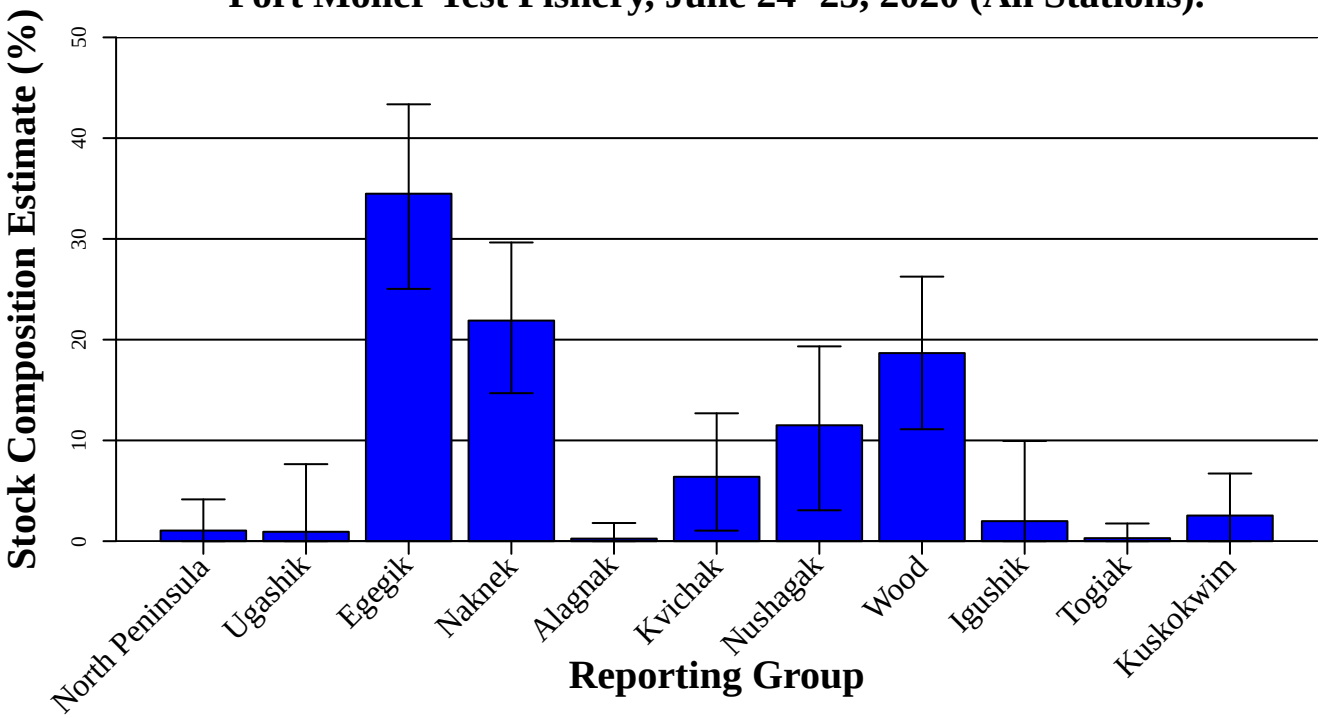
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
June 24−25, 2020 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 24−25, 2020. A total of 397 fish were sampled and 190 were analyzed (183 had adequate data to include in the analysis).

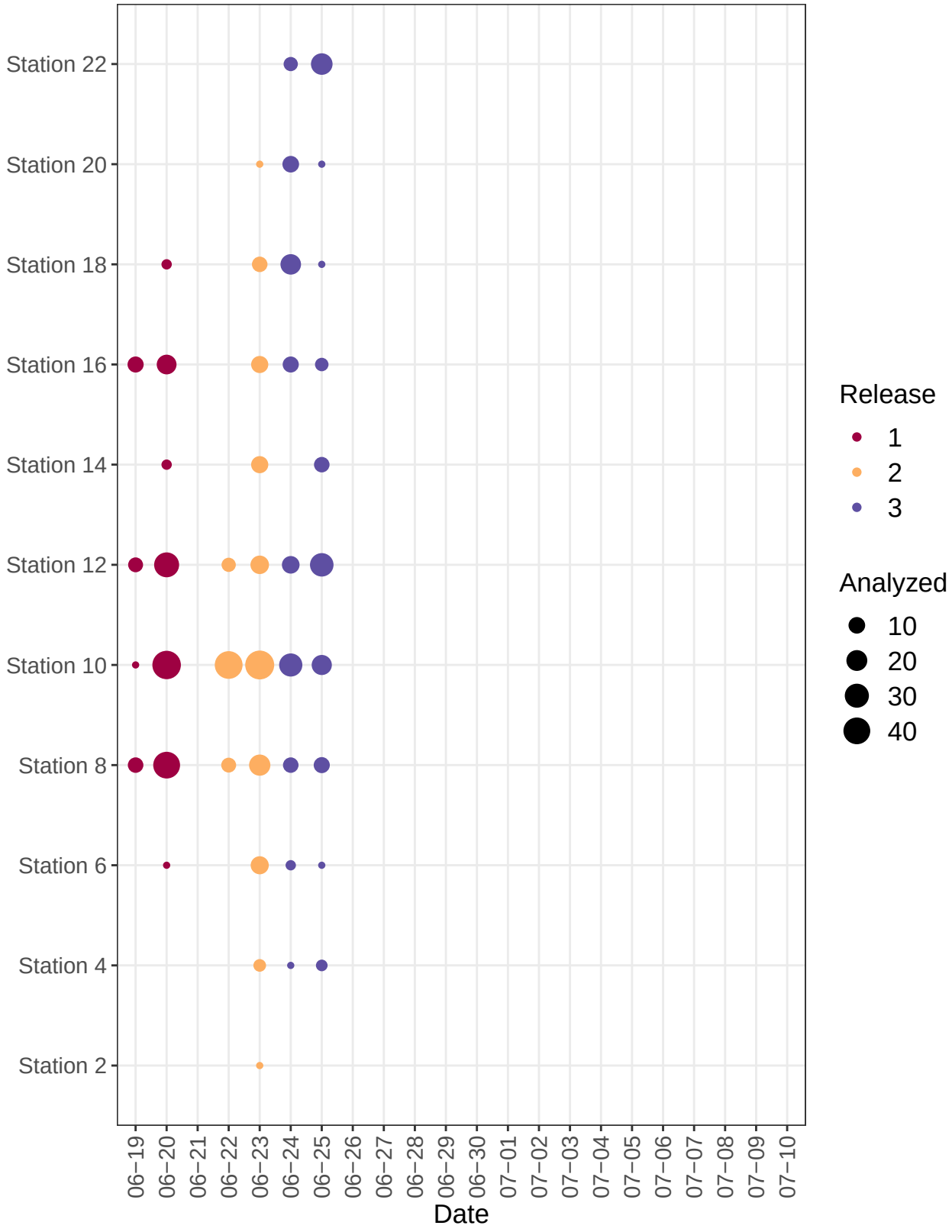
Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	1.1%	0.0%	4.1%
Ugashik	0.9%	0.0%	7.6%
Egegik	34.5%	25.0%	43.4%
Naknek	21.9%	14.7%	29.6%
Alagnak	0.3%	0.0%	1.8%
Kvichak	6.4%	1.0%	12.7%
Nushagak	11.5%	3.1%	19.3%
Wood	18.7%	11.1%	26.3%
Igushik	2.0%	0.0%	9.9%
Togiak	0.3%	0.0%	1.8%
Kuskokwim	2.5%	0.0%	6.7%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 24−25, 2020 (All Stations).



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

Number of Genetic Samples Analyzed by Date, Station, and Estimate Release Number
Port Moller Test Fishery 2020



Michael Link

From: Michael Link
Sent: Thursday, July 02, 2020 5:02 PM
To: Michael Link
Cc: 'Dr. Scott Raborn (raborn@lgl.com)'
Subject: PMTF Stock Comp. Estimates #4—samples from June 29-30, 2020
Attachments: PM genetics inseason 6.29-30.2020.pdf

Everyone,

Attached are the 4th set of stock composition estimates from ADF&G for the 2020 Port Moller Test Fishery.

Stock Composition (29-30 June; Stns 6-20):
[787 Catch Index points across these dates and stations]

Stock	%
Kuskokwim	0.5
Togiak	0.1
Igushik	0.5
Wood	15.4
Nushagak	8.7
Kvichak	23.8
Alagnak	4.7
Naknek	10.1
Egegik	32.4
Ugashik	2.1
North Pen.	1.7

A snippet from the Catch Update Table, below, illustrates where on the transect samples used to generate this stock composition were drawn from (Box around 6/29-30 indexes). Also shown in the table are the indexes from yesterday's test fishing and almost half way through today's effort (7/2).

	Daily Catch Index by Station (Est. 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
28-Jun												
29-Jun						73	22	73	43			
30-Jun			14	90	84	30	23	156	94	84		
1-Jul			19	96	76	40	68					
2-Jul							65	71	184	70	168	

All for now,

Michael and Scott

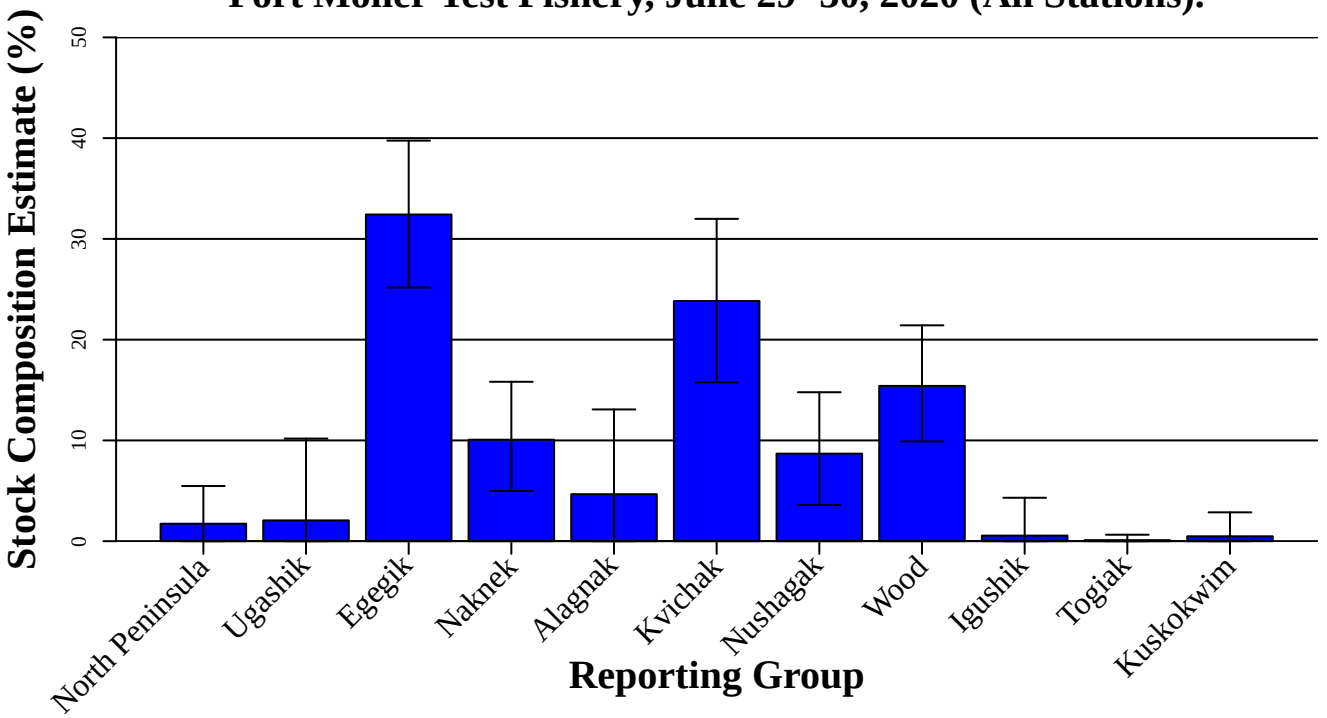
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
June 29−30, 2020 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for June 29−30, 2020. A total of 379 fish were sampled and 190 were analyzed (182 had adequate data to include in the analysis).

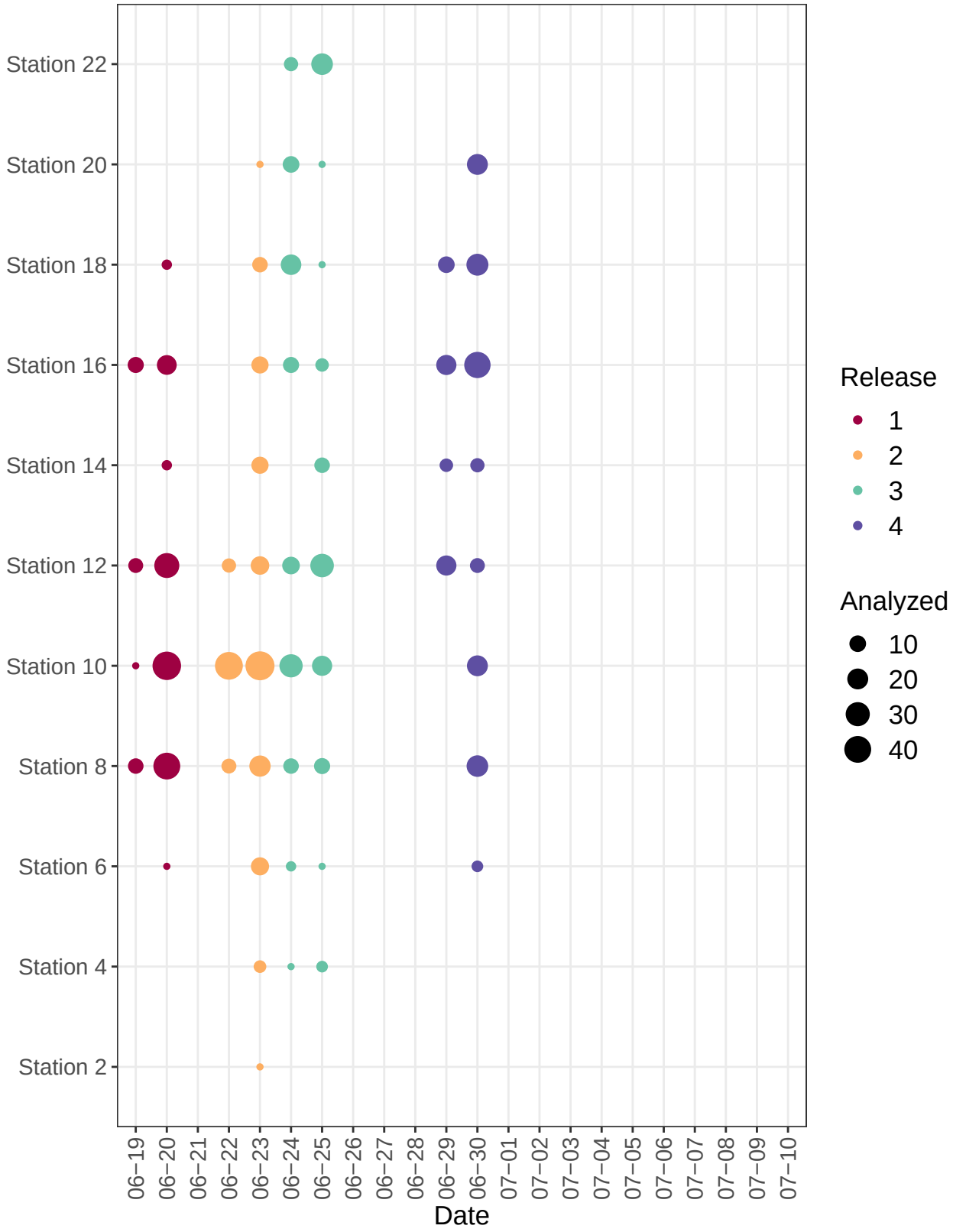
Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	1.7%	0.0%	5.5%
Ugashik	2.1%	0.0%	10.2%
Egegik	32.4%	25.2%	39.8%
Naknek	10.1%	5.0%	15.8%
Alagnak	4.7%	0.0%	13.1%
Kvichak	23.8%	15.8%	32.0%
Nushagak	8.7%	3.6%	14.8%
Wood	15.4%	9.9%	21.4%
Igushik	0.5%	0.0%	4.3%
Togiak	0.1%	0.0%	0.6%
Kuskokwim	0.5%	0.0%	2.9%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, June 29−30, 2020 (All Stations).



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

Number of Genetic Samples Analyzed by Date, Station, and Estimate Release Number
Port Moller Test Fishery 2020



Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Saturday, July 04, 2020 8:02 PM
Cc: Michael Link
Subject: PMTF Stock Comp. Estimate #5—samples from July 2-3, 2020
Attachments: PM genetics inseason 7.2-3.2020.pdf

Everyone,

Attached is the 5th stock composition estimate from ADF&G for the 2020 Port Moller Test Fishery.

Stock Composition (Stns 8-22 from July 2 and Stns 4-6 from July 3):
[1,084 catch index points across these dates and stations]

Stock	%
Kuskokwim	0.6
Togiak	0.3
Igushik	0.3
Wood	13.6
Nushagak	14.1
Kvichak	15.3
Alagnak	2.2
Naknek	14.4
Egegik	36.9
Ugashik	1.2
North Pen.	1.1

A snippet from the Catch Update Table, below, illustrates where on the transect (outlined in red) samples used to generate this stock composition were drawn. Again, had we used data from July 1-2 instead the stock composition estimate would have been more likely to be biased towards eastside stocks.

	Daily Catch Index by Station (Est. 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
1-Jul			19	96	76	40	68					
2-Jul				265	81	36	65	71	184	70	168	
3-Jul		10	133	198	6	30	41	91	147	336	0	0

All for now,

Michael and Scott

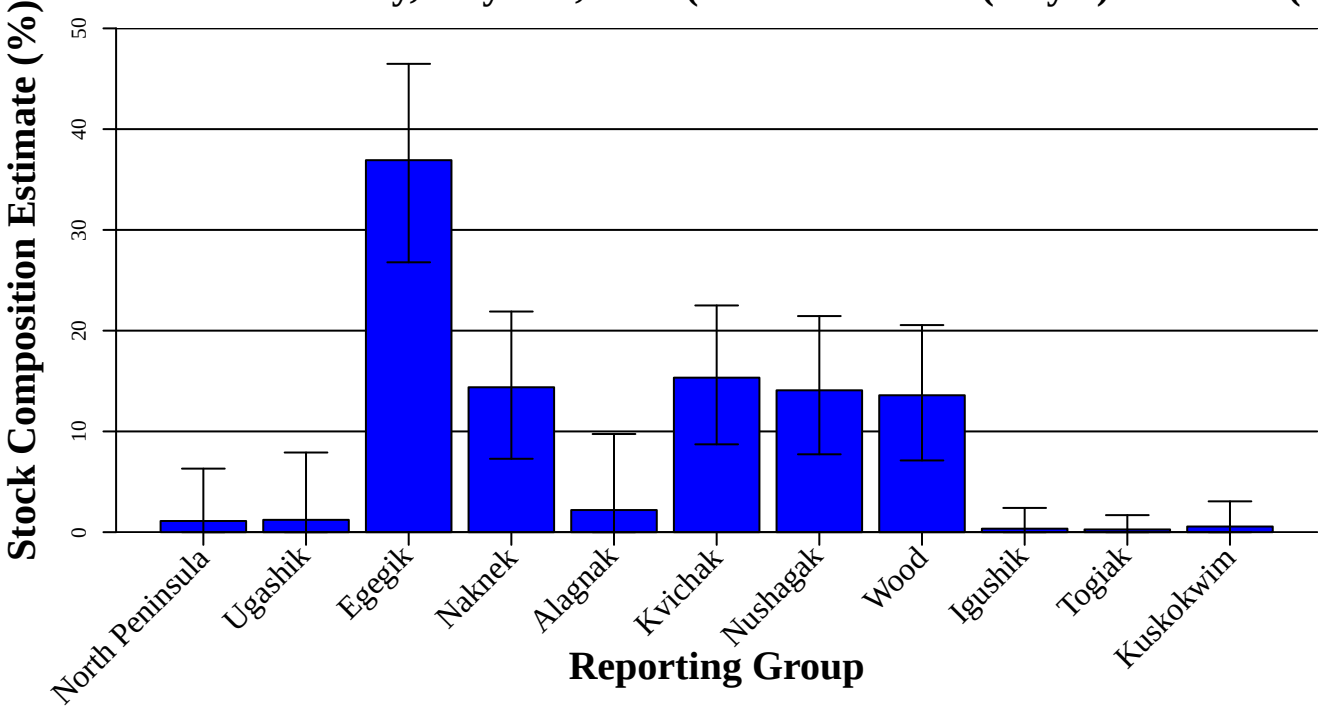
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 2−3, 2020 − Stations 4 and 6 (July 3) and 8−22 (July 2)

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for July 2−3, 2020. A total of 469 fish were sampled and 190 were analyzed (172 had adequate data to include in the analysis).

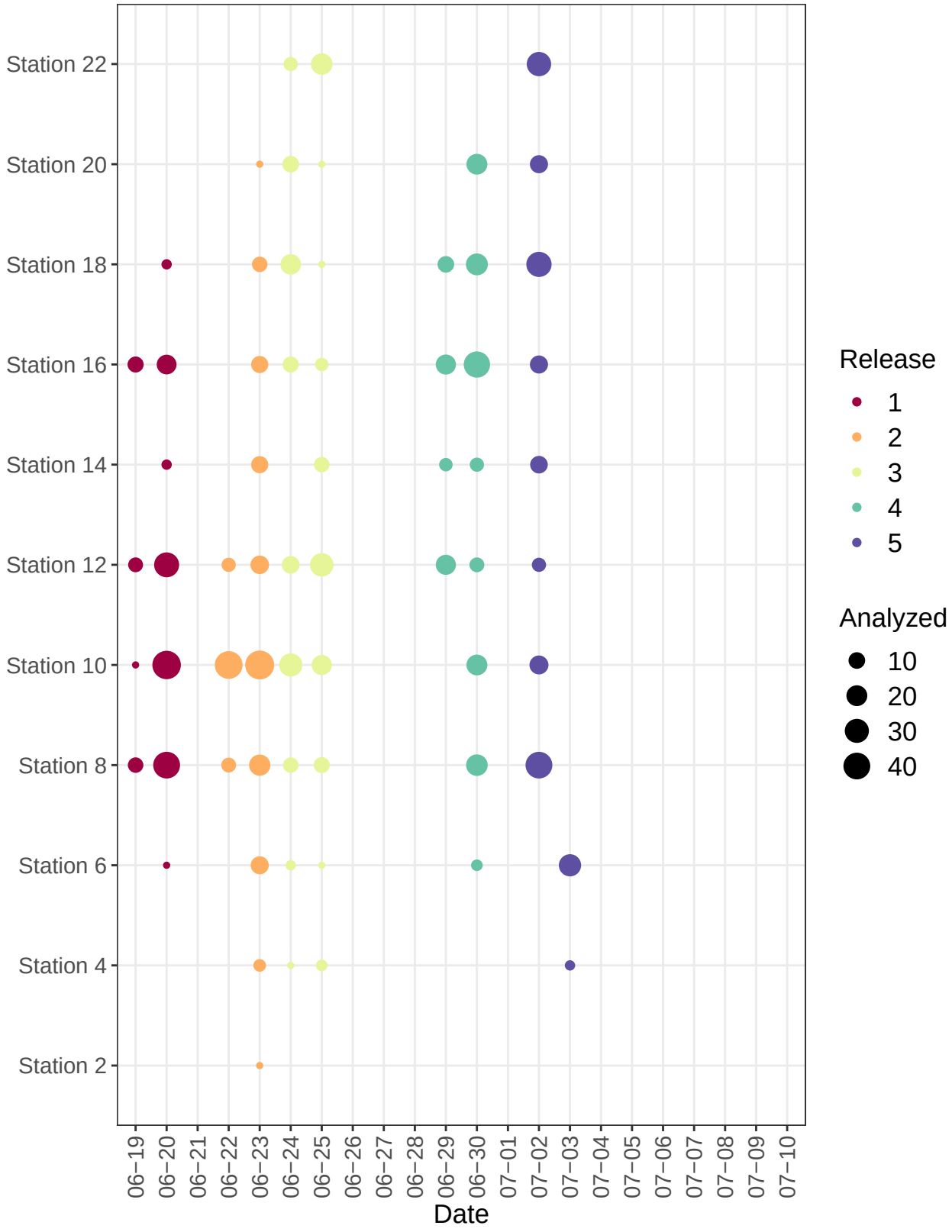
Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	1.1%	0.0%	6.3%
Ugashik	1.2%	0.0%	7.9%
Egegik	36.9%	26.8%	46.5%
Naknek	14.4%	7.3%	21.9%
Alagnak	2.2%	0.0%	9.7%
Kvichak	15.3%	8.7%	22.5%
Nushagak	14.1%	7.7%	21.4%
Wood	13.6%	7.1%	20.6%
Igushik	0.3%	0.0%	2.4%
Togiak	0.3%	0.0%	1.7%
Kuskokwim	0.6%	0.0%	3.1%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 2−3, 2020 (Stations 4 and 6 (July 3) and 8−22 (July 2)).



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

Number of Genetic Samples Analyzed by Date, Station, and Estimate Release Number
Port Moller Test Fishery 2020



Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Tuesday, July 07, 2020 3:04 PM
Cc: Michael Link
Subject: PMTF Stock Comp. Estimate #6—samples from July 4, 2020
Attachments: PM genetics inseason 7.4.2020.pdf

Everyone,

Attached is the 6th stock composition estimate from ADF&G for the 2020 Port Moller Test Fishery.

Stock Composition (Stations 2-22 from July 4):
[1,079 catch index points across these dates and stations]

Stock	%
Kuskokwim	0.3
Togiak	4.4
Igushik	0.6
Wood	4.7
Nushagak	5.9
Kvichak	23.2
Alagnak	8.1
Naknek	18.5
Egegik	32.4
Ugashik	1.3
North Pen.	0.6

A snippet from the Catch Update Table, below, illustrates where on the transect (outlined in red) samples used to generate this stock composition were drawn.

	Daily Catch Index by Station (Est. 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
1-Jul			19	96	76	40	68					
2-Jul				265	81	36	65	71	184	70	168	
3-Jul		10	133	198	6	30	41	91	147	336	0	0
4-Jul	0	16	393	82	62	43	25	87	151	219	0	
5-Jul	8	23	44	138	291	80	5	156	110	205		

All for now,

Michael and Scott

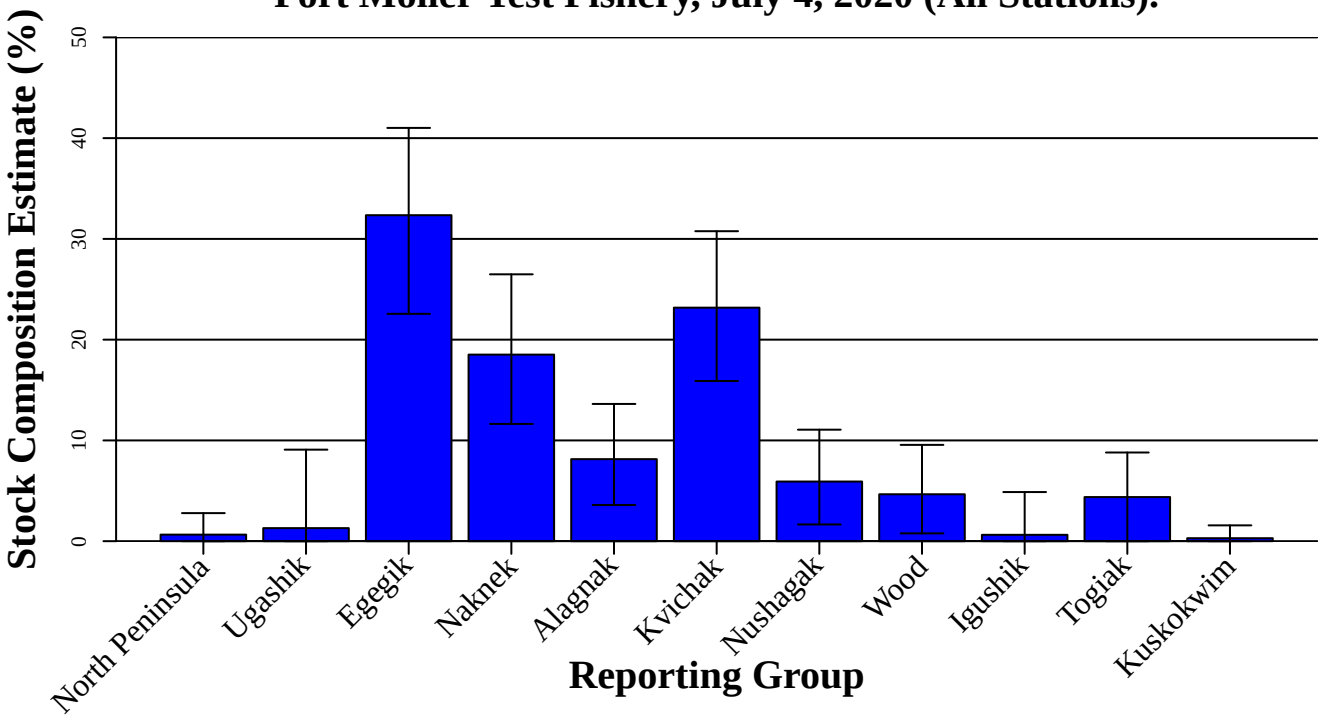
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 4, 2020 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for July 4, 2020. A total of 375 fish were sampled and 190 were analyzed (170 had adequate data to include in the analysis).

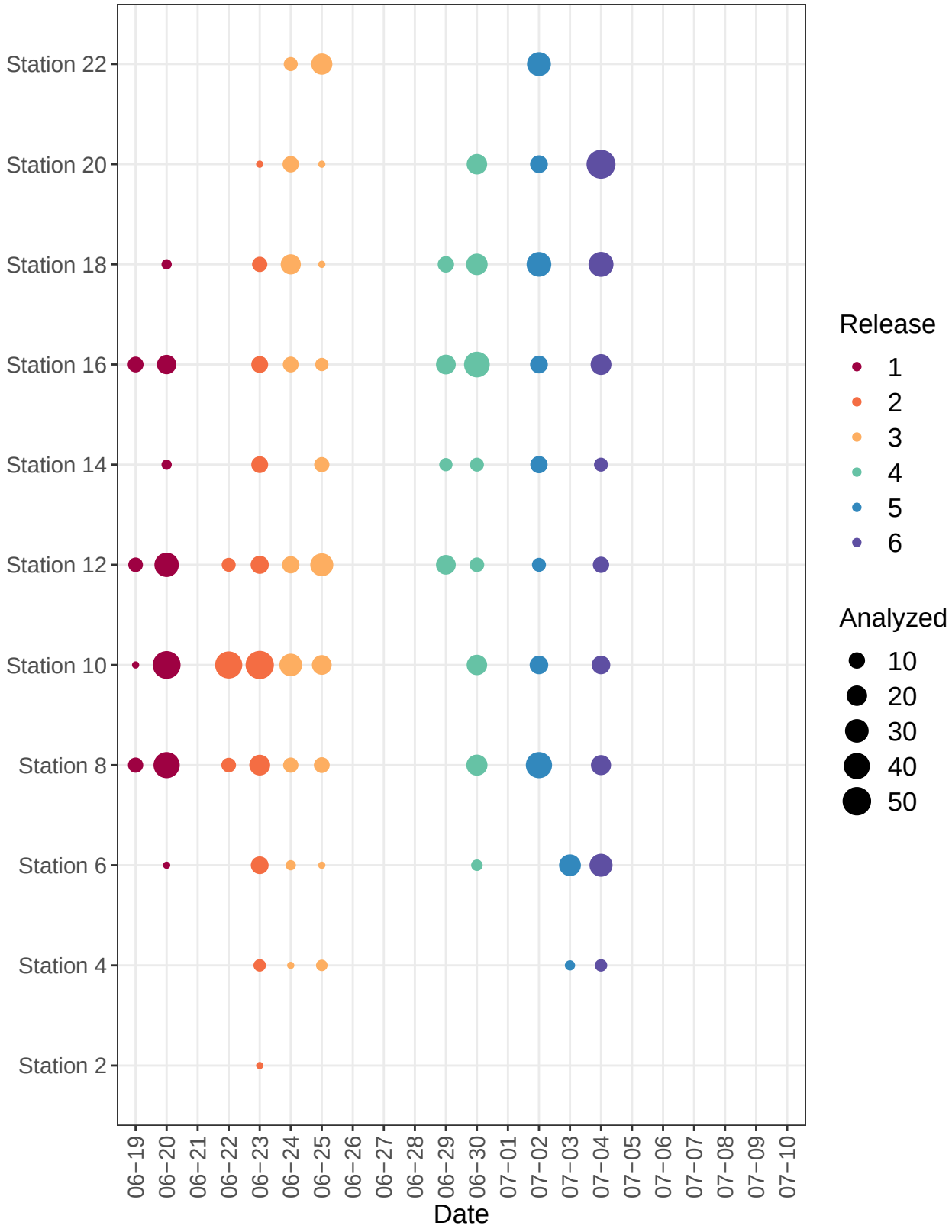
Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.6%	0.0%	2.8%
Ugashik	1.3%	0.0%	9.1%
Egegik	32.4%	22.6%	41.0%
Naknek	18.5%	11.6%	26.5%
Alagnak	8.1%	3.6%	13.6%
Kvichak	23.2%	15.9%	30.8%
Nushagak	5.9%	1.7%	11.1%
Wood	4.7%	0.8%	9.6%
Igushik	0.6%	0.0%	4.9%
Togiak	4.4%	0.0%	8.8%
Kuskokwim	0.3%	0.0%	1.6%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 4, 2020 (All Stations).



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

Number of Genetic Samples Analyzed by Date, Station, and Estimate Release Number
Port Moller Test Fishery 2020



Michael Link

From: Michael Link
Sent: Tuesday, July 07, 2020 8:19 PM
To: Scott Raborn
Cc: Michael Link
Subject: PMTF Stock Comp. Estimate #7—samples from July 5, 2020
Attachments: PM genetics inseason 7.5.2020.pdf

Everyone,

Attached is the 7th stock composition estimate from ADF&G for the 2020 Port Moller Test Fishery.

Stock Composition (Stations 2-20 from July 5):
[1,061 catch index points across these dates and stations]

Stock	%
Kuskokwim	1.4
Togiak	1.2
Igushik	7.1
Wood	7.3
Nushagak	2.8
Kvichak	26.9
Alagnak	1.4
Naknek	15.0
Egegik	25.8
Ugashik	8.1
North Pen.	2.9

A snippet from the Catch Update Table, below, illustrates where on the transect (outlined in red) samples used to generate this stock composition were drawn.

	Daily Catch Index by Station (Est. 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
3-Jul	12	10	133	198	6	30	41	91	147	336	0	0	
4-Jul	0	16	393	82	62	43	25	87	151	219	0		
5-Jul	8	23	44	138	291	80	5	156	110	205	119		

Special Acknowledgments for this Set of Estimates
The July 5th estimates were made possible and available tonight by the help of many. The inner station samples from the Americanus arrived in Port Moller Sunday evening and with the help of ADF&G Port Moller (Patrick Landback) and Lake Clark Air, arrived in Anchorage Monday afternoon. Up North, we faced a bigger challenge. The Ocean Cat finished late Sunday night through Station 21 and then ran ~4 hours from the brewing northwesterly to seek cover near the Osviak River/Hagemeister Island area. Monday morning we recruited a group of capable volunteers get the samples from this remote location to the ADF&G lab in Anchorage. Togiak Fisheries and Bob Dubie arranged to have the tender/FV Scoter and its crew to run out to Osviak River area to get the samples from the Ocean Cat. The samples arrived to Togiak Fisheries around midnight last night. Norm Van Vactor and his copilot/co-owner Russell Nelson left Dillingham at 515am in their own plane to pick up the samples in Twin Hills and deliver them to Ace Air Cargo in Dillingham by 7am, just in time to catch its cargo flight to Anchorage. The Gene Lab (Tyler Dann) picked up the samples from Ace about 10am. The lab work was performed all afternoon and Tyler generated these estimates this

evening. Without opening the “northern route” these samples would not have made it Anchorage for another few days. Thank you all.

All for now,

Michael and Scott

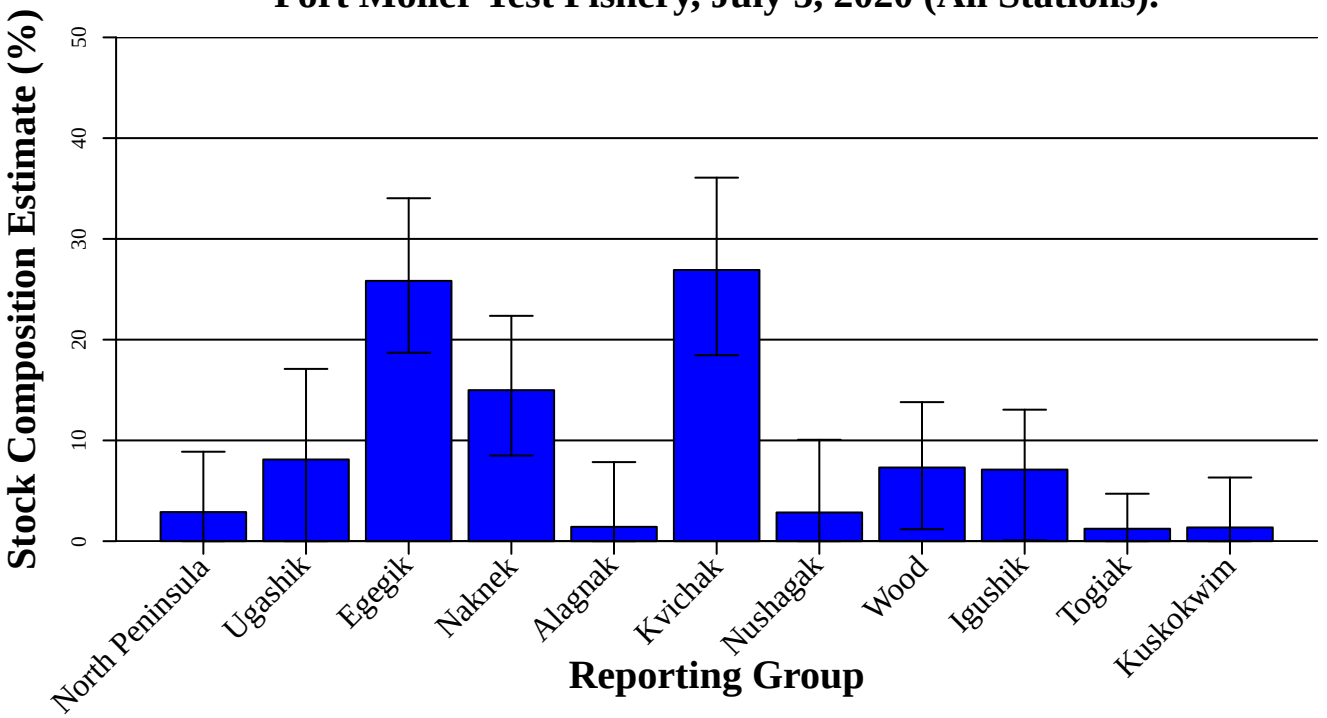
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 5, 2020 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for July 5, 2020. A total of 384 fish were sampled and 190 were analyzed (181 had adequate data to include in the analysis).

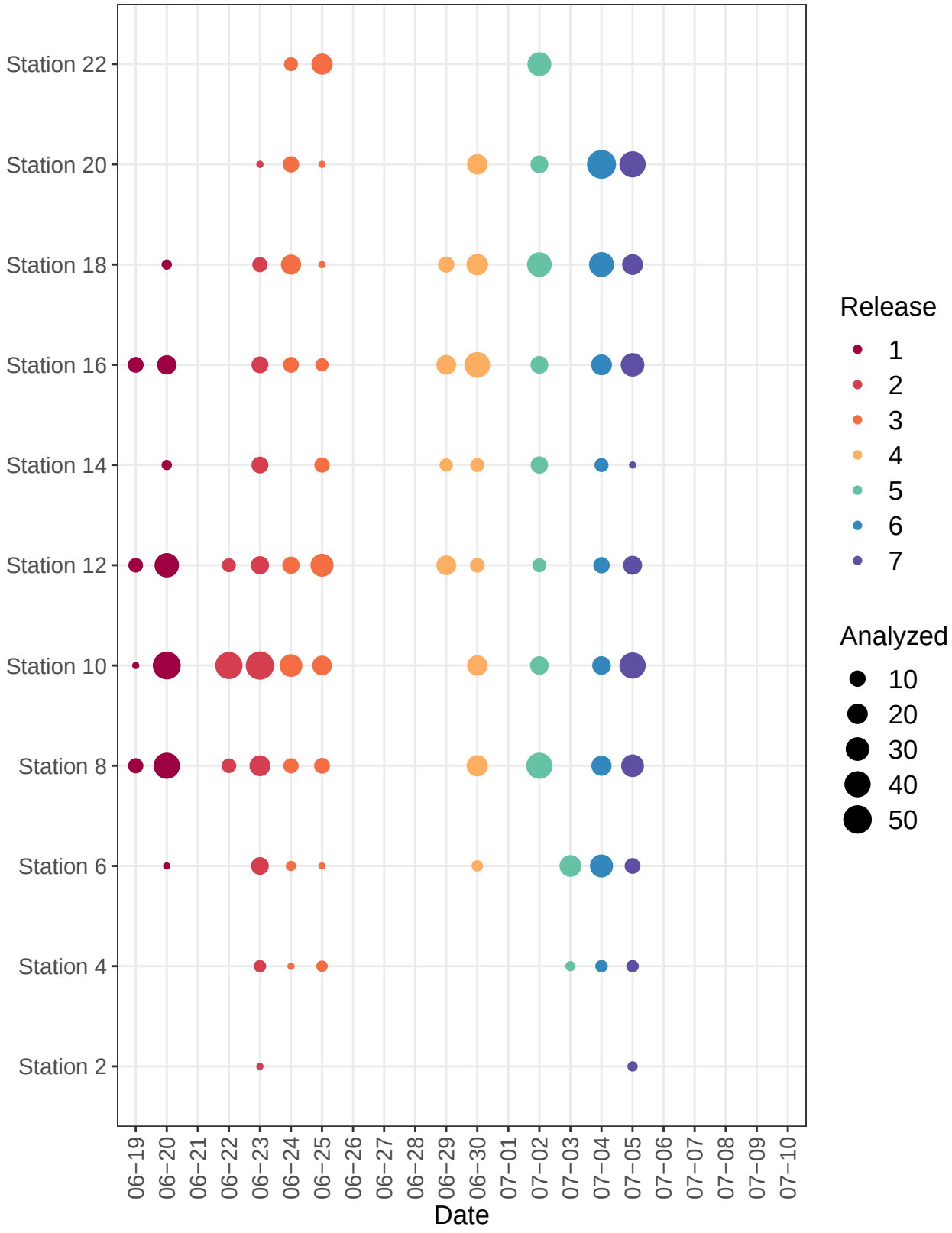
Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	2.9%	0.0%	8.9%
Ugashik	8.1%	0.0%	17.1%
Egegik	25.8%	18.7%	34.0%
Naknek	15.0%	8.5%	22.4%
Alagnak	1.4%	0.0%	7.8%
Kvichak	26.9%	18.5%	36.1%
Nushagak	2.8%	0.0%	10.1%
Wood	7.3%	1.2%	13.8%
Igushik	7.1%	0.1%	13.0%
Togiak	1.2%	0.0%	4.7%
Kuskokwim	1.4%	0.0%	6.3%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 5, 2020 (All Stations).



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

Number of Genetic Samples Analyzed by Date, Station, and Estimate Release Number
Port Moller Test Fishery 2020



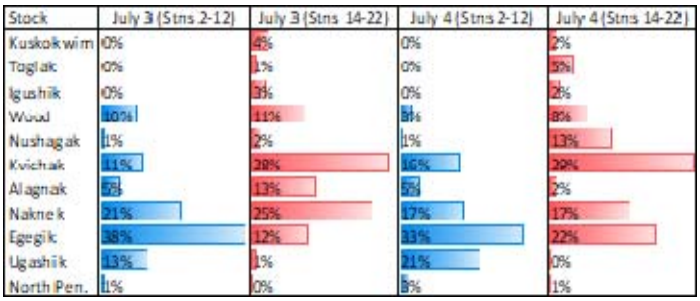
Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Wednesday, July 08, 2020 9:14 PM
Cc: Michael Link
Subject: PMTF Stock Comp. Estimates #8—samples Stns2-12/Stns14-22 from July 3 and 4, 2020
Attachments: PM genetics inseason 7.3-4.2020 by station.pdf

Attached is the 8th release of stock composition estimates from ADF&G for the 2020 Port Moller Test Fishery. The table below summarizes these results.

MANY of you wish to know where fish caught at given stations will end up. As we have said, this is a logical and most pertinent question. However, we cannot provide station-specific stock composition estimates. The results published tonight represent the greatest time-space resolution in stock composition estimates provided in the history of the PMTF! Findings of note are as follows:

(1) Changes in stock composition between adjacent days are less pronounced than inner (Stns 2-12) versus outer (Stns 14-22) transect differences on a given day.
(2) Nushagak District stocks have a greater relative abundance in the outer transect versus the inner transect.
(3) The Kvichak Stock is more prevalent across the outer transect.
(4) The Naknek Stock seems more evenly distributed across the entire transect.
(5) Egegik and Ugashik Stocks are more prevalent across the inner transect.
(6) Most all major stocks are present to some degree across the entire transect.



All for now,

Scott and Michael

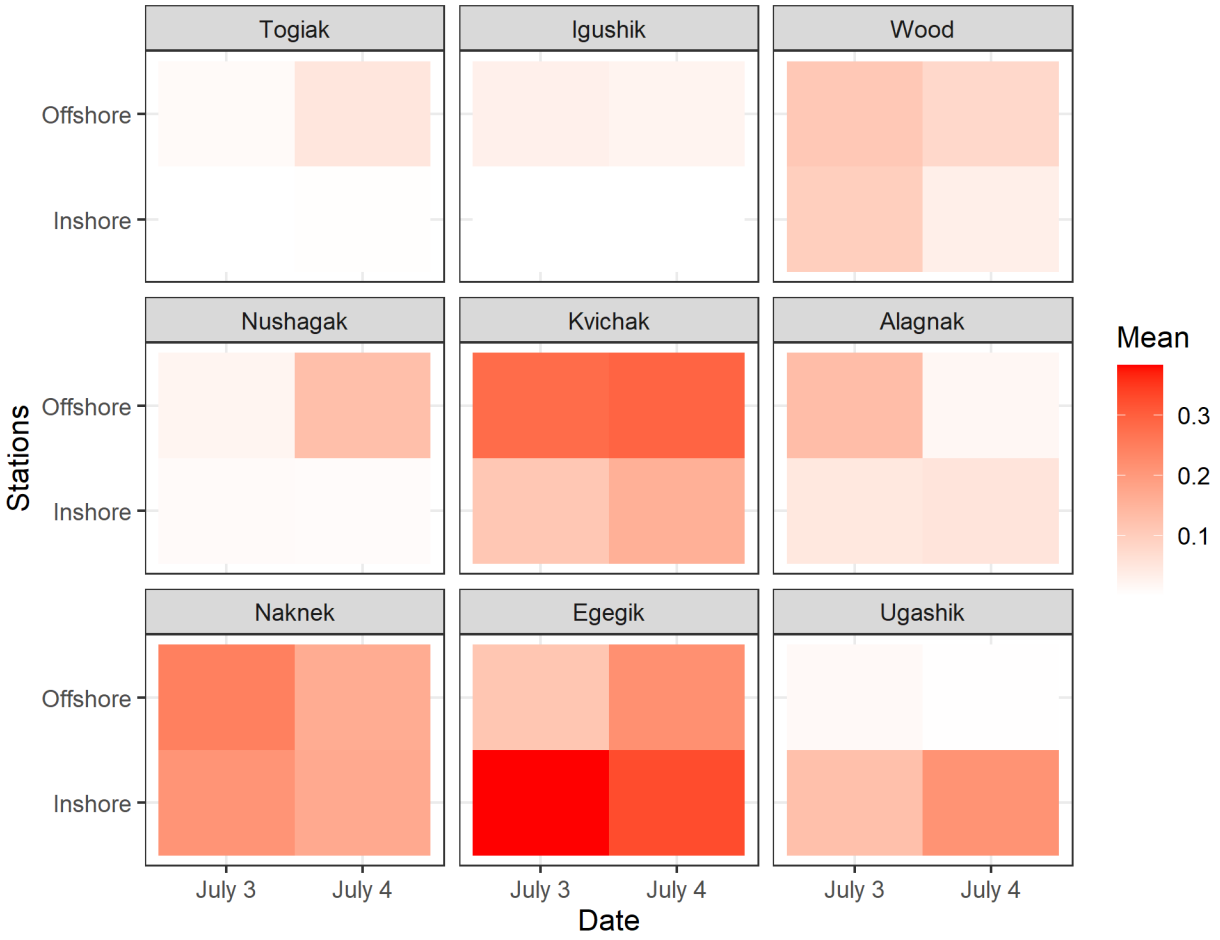
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary

July 3 and 4, 2020 − Stations 2−12 and 14−22

This report summarizes genetic stock compositions for sockeye salmon captured at inshore (Stations 2-12) and offshore (Stations 14-22) stations of the Port Moller Test Fishery on July 3 and 4, 2020. We analyzed samples by stations to characterize the distribution of stocks across the test fishery transect. We genotyped all available samples to achieve adequate sample sizes.

The figures below summarize stock composition estimates for Bristol Bay groups while following pages provide details for each station group.

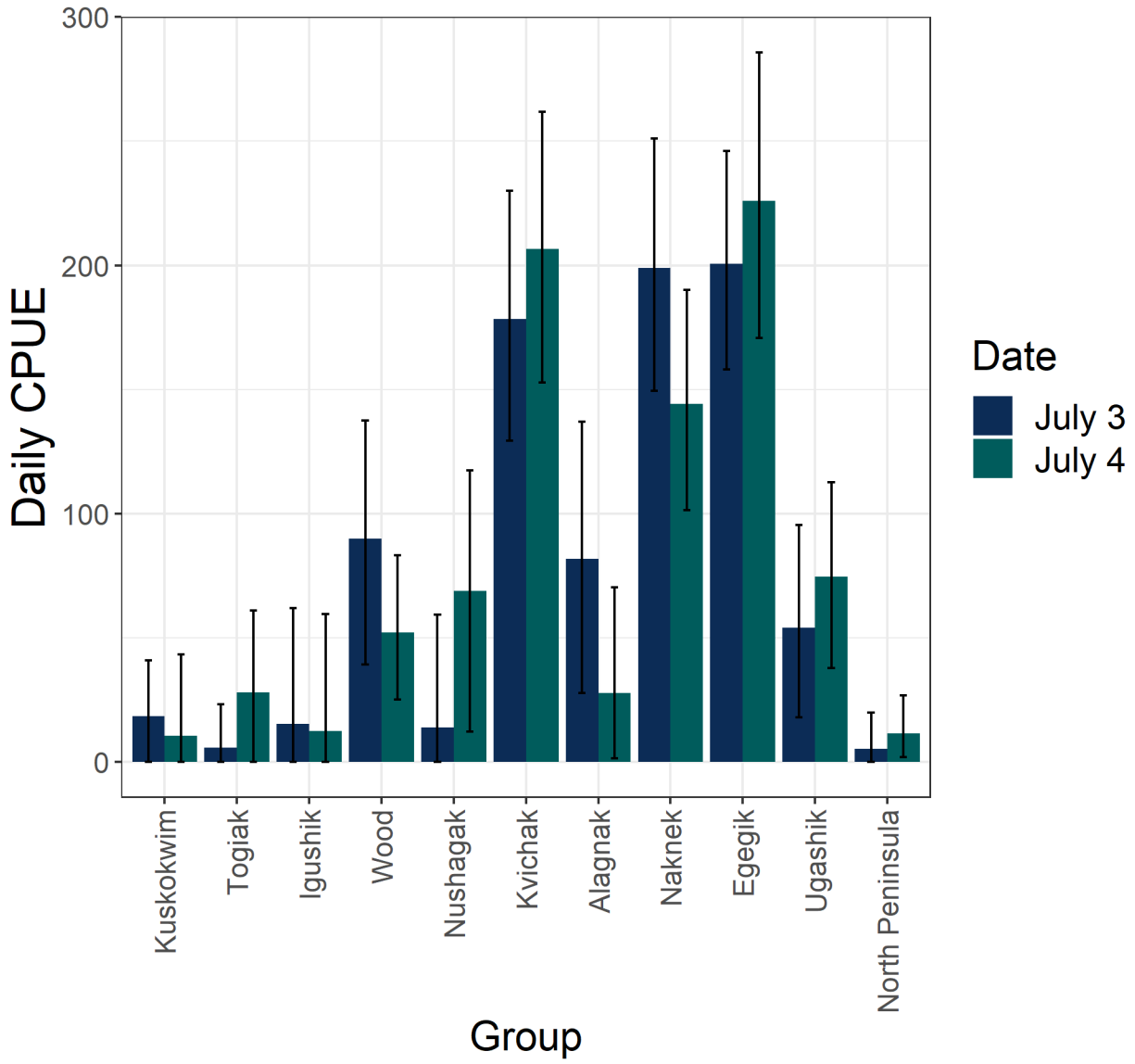


The figure above depicts mean stock composition estimate (%) for the 9 major stocks within Bristol Bay for each mixture. Dates are along the horizontal axis while stations are along the vertical axis. The darker the red the higher the estimate, with completely red equal to 40% and white equal to 0%. See following pages for details.

Table 1. Summary of the numbers of samples collected and genotyped and included in final analyses as well as the catch per unit of effort (CPUE; # of fish caught per hour of fishing) for each mixture.

	Samples		
Mixture	Collected and Genotyped	Included in Analysis	CPUE represented
July 3 Inshore	176	136	378
July 3 Offshore	212	193	485
July 4 Inshore	180	164	321
July 4 Offshore	195	176	485

By weighting each stock's estimate by the CPUE represented by each mixture we can estimate each stock's relative abundance on each day.



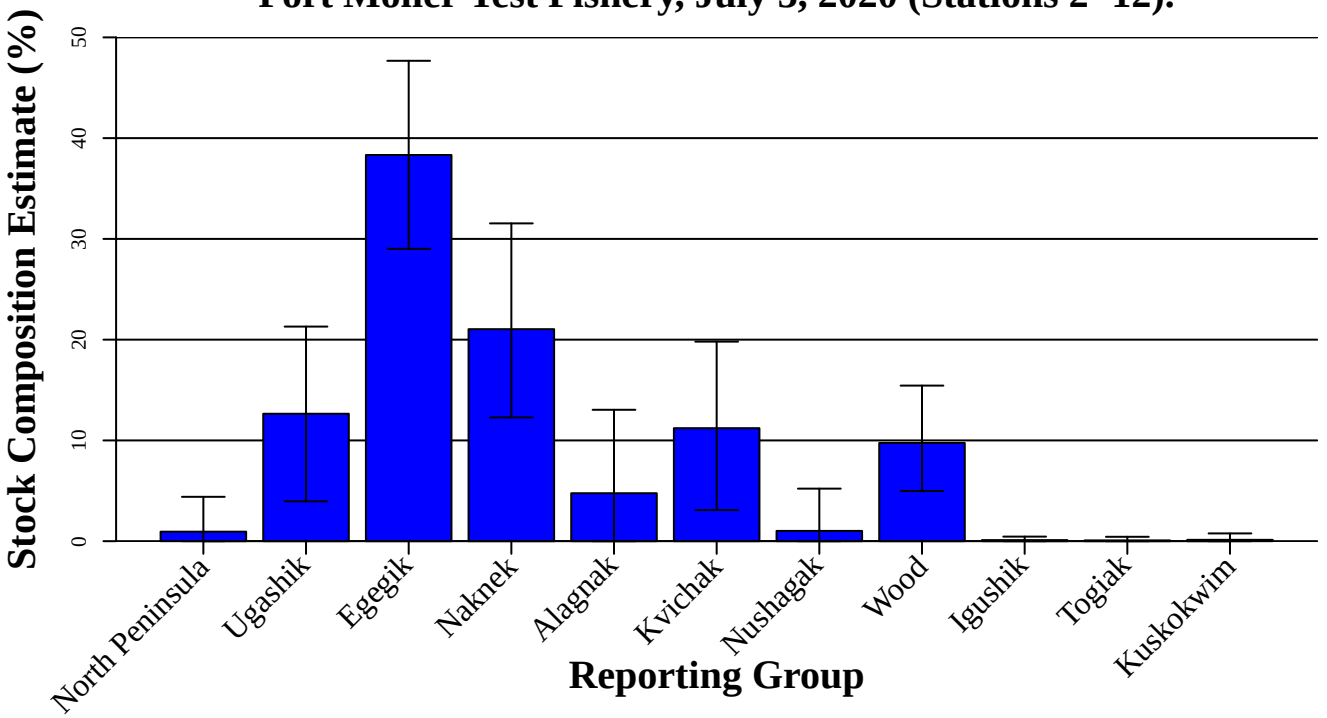
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 3, 2020 − Stations 2−12

Genetic stock composition estimates for sockeye salmon from stations 2−12 of the Port Moller Test Fishery for July 3, 2020. A total of 176 fish were sampled and analyzed (136 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.9%	0.0%	4.4%
Ugashik	12.6%	4.0%	21.3%
Egegik	38.3%	29.0%	47.7%
Naknek	21.0%	12.3%	31.5%
Alagnak	4.8%	0.0%	13.0%
Kvichak	11.2%	3.1%	19.8%
Nushagak	1.0%	0.0%	5.2%
Wood	9.7%	5.0%	15.4%
Igushik	0.1%	0.0%	0.5%
Togiak	0.1%	0.0%	0.4%
Kuskokwim	0.1%	0.0%	0.8%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 3, 2020 (Stations 2−12).



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

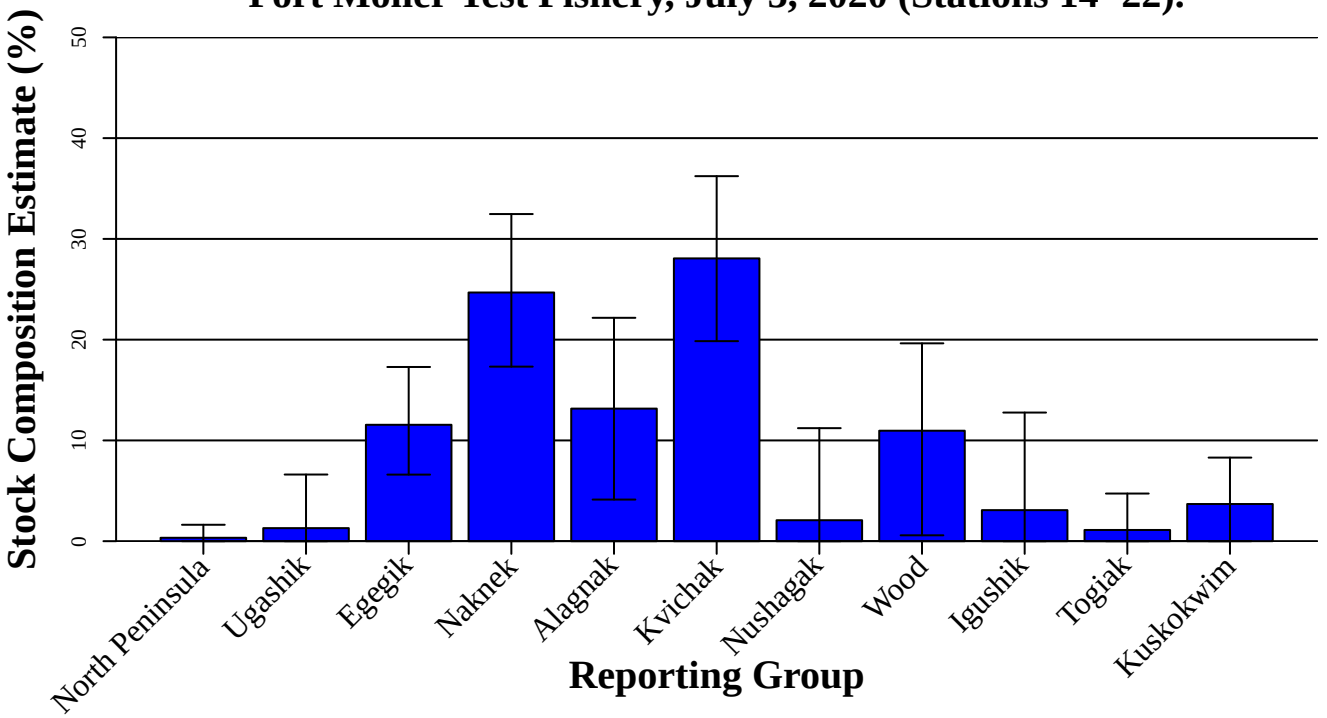
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 3, 2020 − Stations 14−22

Genetic stock composition estimates for sockeye salmon from stations 14−22 of the Port Moller Test Fishery for July 3, 2020. A total of 212 fish were sampled and analyzed (193 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.3%	0.0%	1.6%
Ugashik	1.3%	0.0%	6.6%
Egegik	11.5%	6.6%	17.3%
Naknek	24.7%	17.3%	32.5%
Alagnak	13.2%	4.1%	22.2%
Kvichak	28.1%	19.9%	36.2%
Nushagak	2.1%	0.0%	11.2%
Wood	11.0%	0.6%	19.6%
Igushik	3.1%	0.0%	12.8%
Togiak	1.1%	0.0%	4.7%
Kuskokwim	3.7%	0.0%	8.3%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 3, 2020 (Stations 14−22).



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

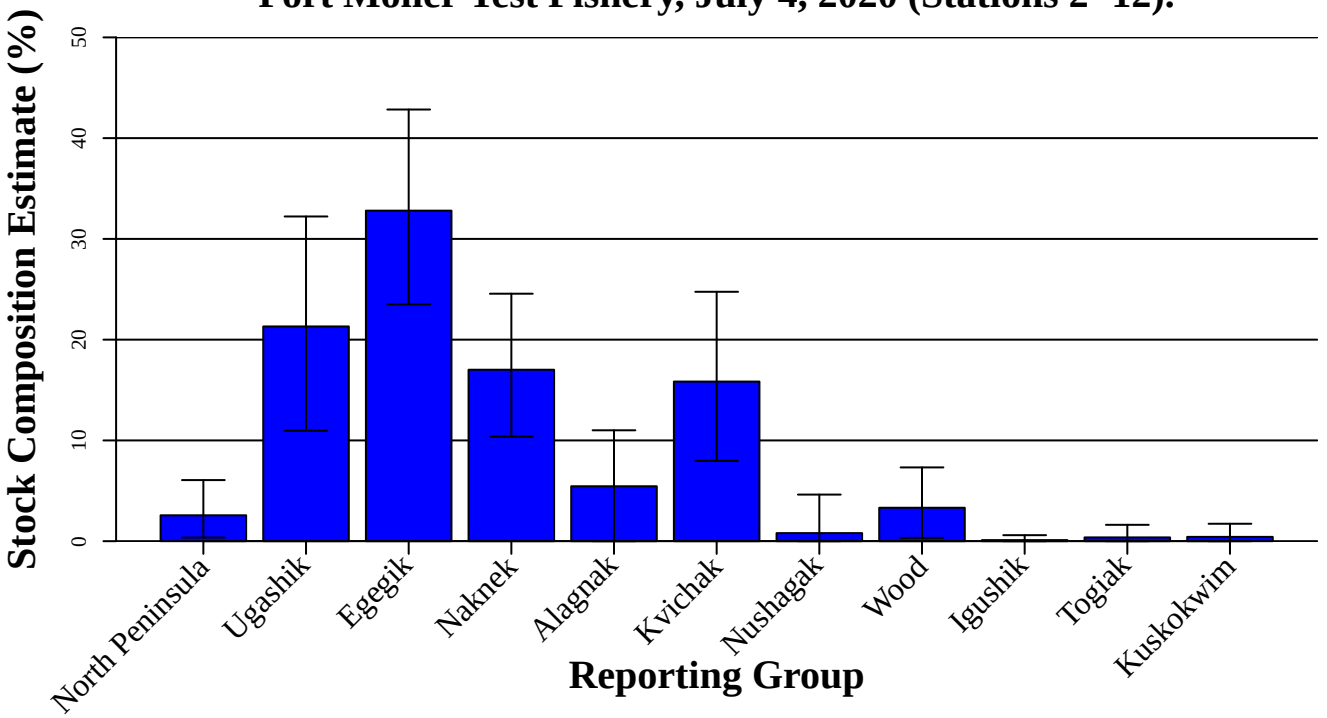
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 4, 2020 − Stations 2−12

Genetic stock composition estimates for sockeye salmon from stations 2−12 of the Port Moller Test Fishery for July 4, 2020. A total of 180 fish were sampled and analyzed (164 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	2.6%	0.4%	6.1%
Ugashik	21.3%	11.0%	32.2%
Egegik	32.8%	23.5%	42.8%
Naknek	17.0%	10.4%	24.6%
Alagnak	5.4%	0.0%	11.0%
Kvichak	15.8%	8.0%	24.8%
Nushagak	0.8%	0.0%	4.6%
Wood	3.3%	0.3%	7.3%
Igushik	0.1%	0.0%	0.6%
Togiak	0.4%	0.0%	1.6%
Kuskokwim	0.4%	0.0%	1.7%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 4, 2020 (Stations 2−12).



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

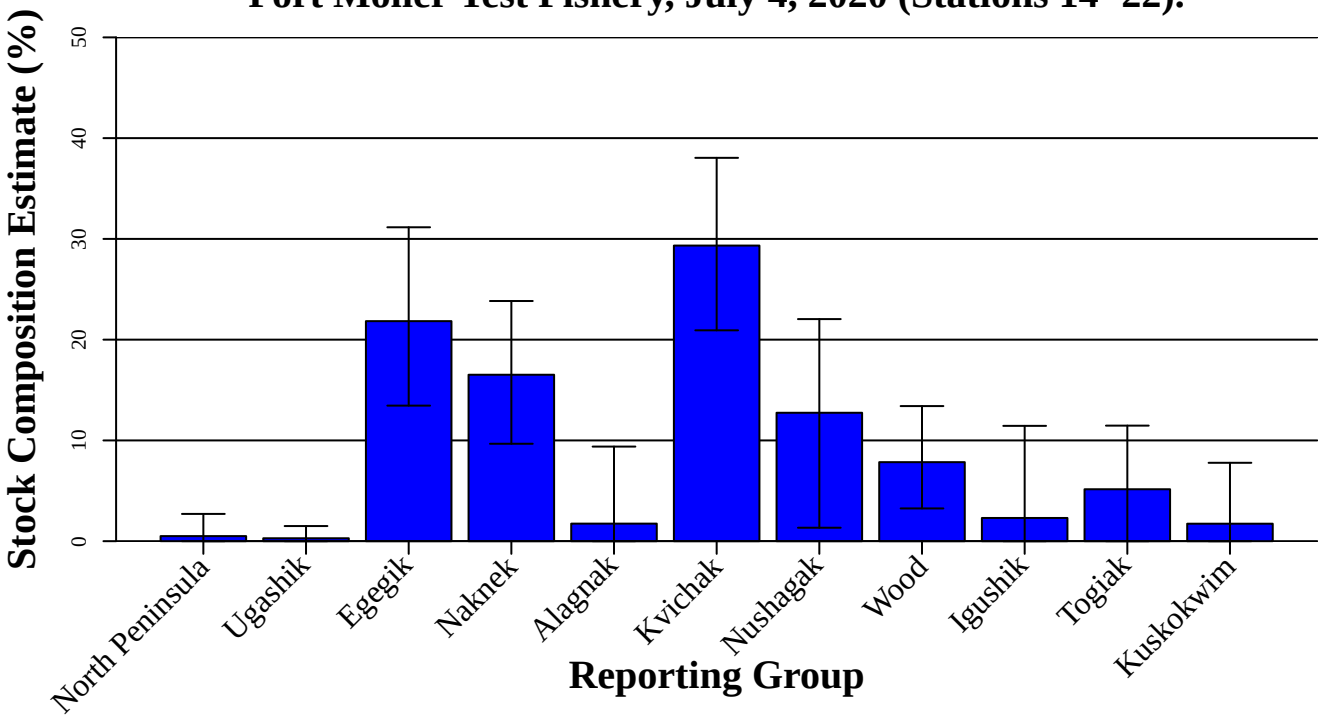
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 4, 2020 − Stations 14−22

Genetic stock composition estimates for sockeye salmon from stations 14−22 of the Port Moller Test Fishery for July 4, 2020. A total of 195 fish were sampled and analyzed (176 had adequate data to include in the analysis).

Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	0.5%	0.0%	2.7%
Ugashik	0.3%	0.0%	1.5%
Egegik	21.8%	13.5%	31.2%
Naknek	16.5%	9.7%	23.8%
Alagnak	1.7%	0.0%	9.4%
Kvichak	29.3%	20.9%	38.0%
Nushagak	12.7%	1.3%	22.0%
Wood	7.8%	3.3%	13.4%
Igushik	2.3%	0.0%	11.4%
Togiak	5.2%	0.0%	11.5%
Kuskokwim	1.7%	0.0%	7.8%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 4, 2020 (Stations 14−22).



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

Michael Link

From: Scott Raborn <raborn@lgl.com>
Sent: Saturday, July 11, 2020 3:26 PM
Cc: Michael Link
Subject: PMTF Stock Comp. Final Estimate—samples from July 7-9, 2020
Attachments: PM genetics inseason 7.7-9.2020.pdf

Everyone,

Attached is the final stock composition estimate from ADF&G for the 2020 Port Moller Test Fishery.

Stock Composition (Stations 2-20 from July 7-9):
[1,665 catch index points across these dates and stations]

Stock	%
Kuskokwim	0.2
Togiak	0.1
Igushik	1.8
Wood	4.8
Nushagak	8.8
Kvichak	19.4
Alagnak	13.8
Naknek	12.1
Egegik	27.9
Ugashik	9.9
North Pen.	1.1

A snippet from the Catch Update Table, below, illustrates where on the transect (outlined in red) samples used to generate this stock composition were drawn.

	Daily Catch Index by Station (Est. 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
7-Jul				45	113	66		3	169	23		
8 Jul	3	22	52	187	80	97	0					
9-Jul	10	167	205	44	250	77	81					
10-Jul		0	23	27	117	14	21					

All for now,

Scott and Michael

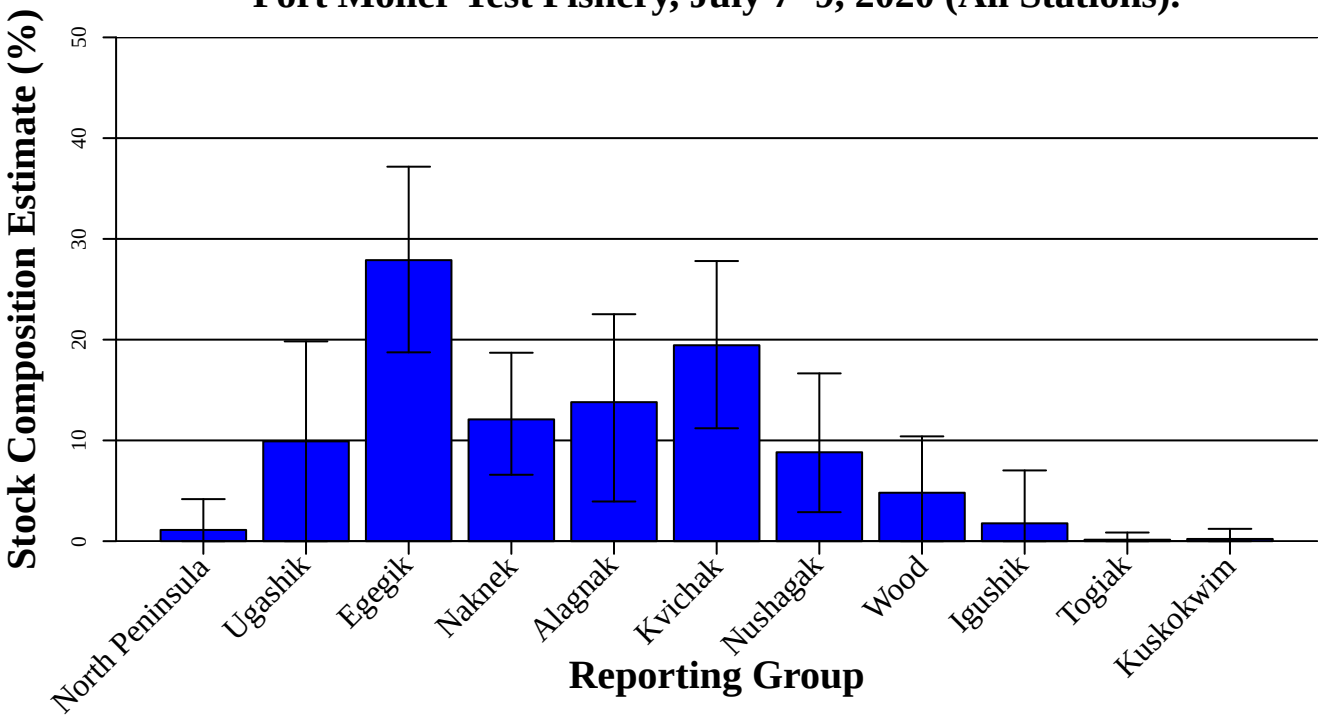
Bristol Bay Sockeye Salmon Fishery

Port Moller Sockeye Salmon Stock Composition Summary
July 7−9, 2020 − All Stations

Genetic stock composition estimates for sockeye salmon from the Port Moller Test Fishery for July 7−9, 2020. A total of 654 fish were sampled and 190 were analyzed (188 had adequate data to include in the analysis).

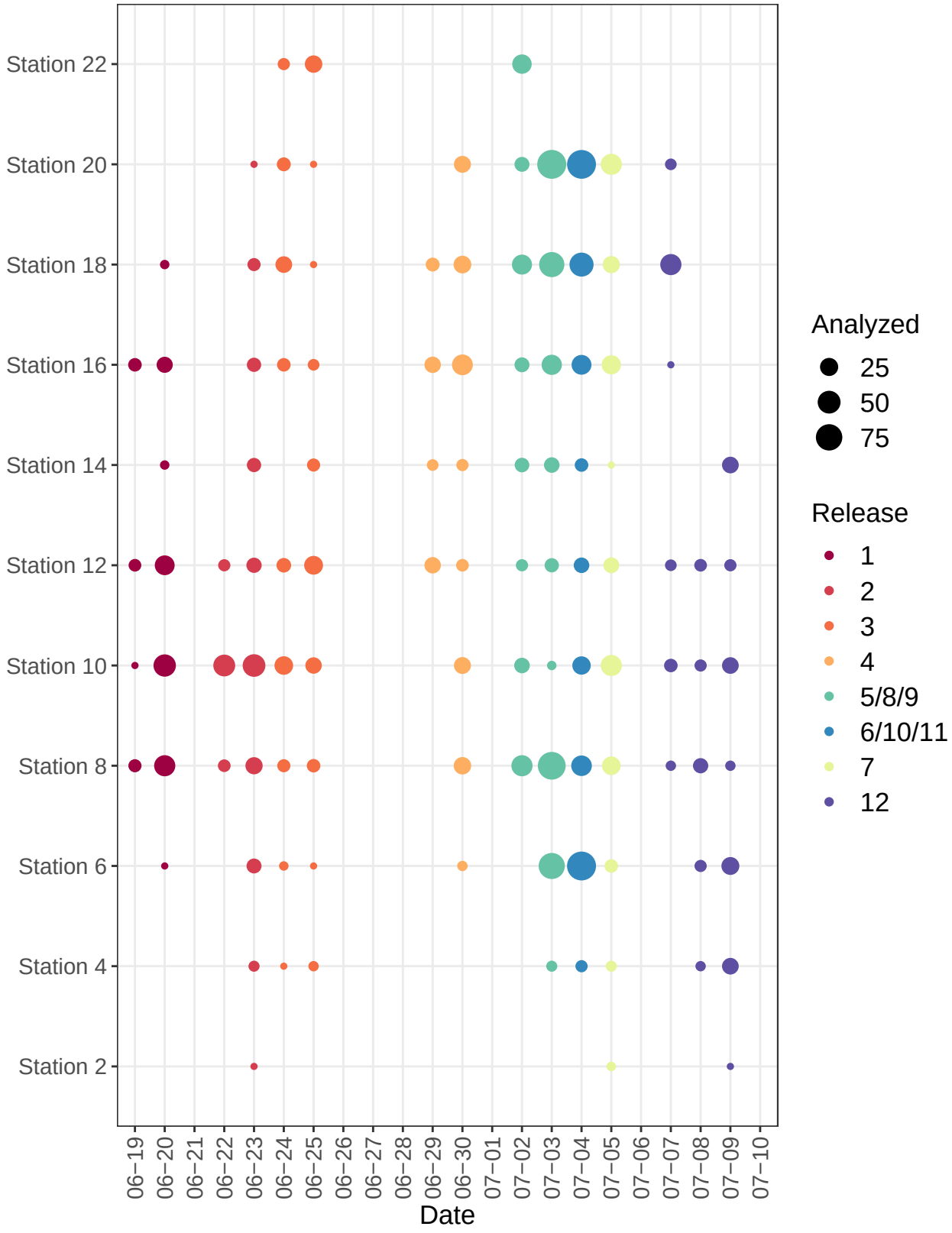
Reporting Group	Stock Composition Estimate	90% Confidence Intervals Lower	Upper
North Peninsula	1.1%	0.0%	4.2%
Ugashik	9.9%	0.0%	19.8%
Egegik	27.9%	18.7%	37.2%
Naknek	12.1%	6.6%	18.7%
Alagnak	13.8%	3.9%	22.5%
Kvichak	19.4%	11.2%	27.8%
Nushagak	8.8%	2.9%	16.7%
Wood	4.8%	0.0%	10.4%
Igushik	1.8%	0.0%	7.0%
Togiak	0.1%	0.0%	0.9%
Kuskokwim	0.2%	0.0%	1.2%

Genetic Stock Composition Estimates for Sockeye Salmon Captured in the Port Moller Test Fishery, July 7−9, 2020 (All Stations).

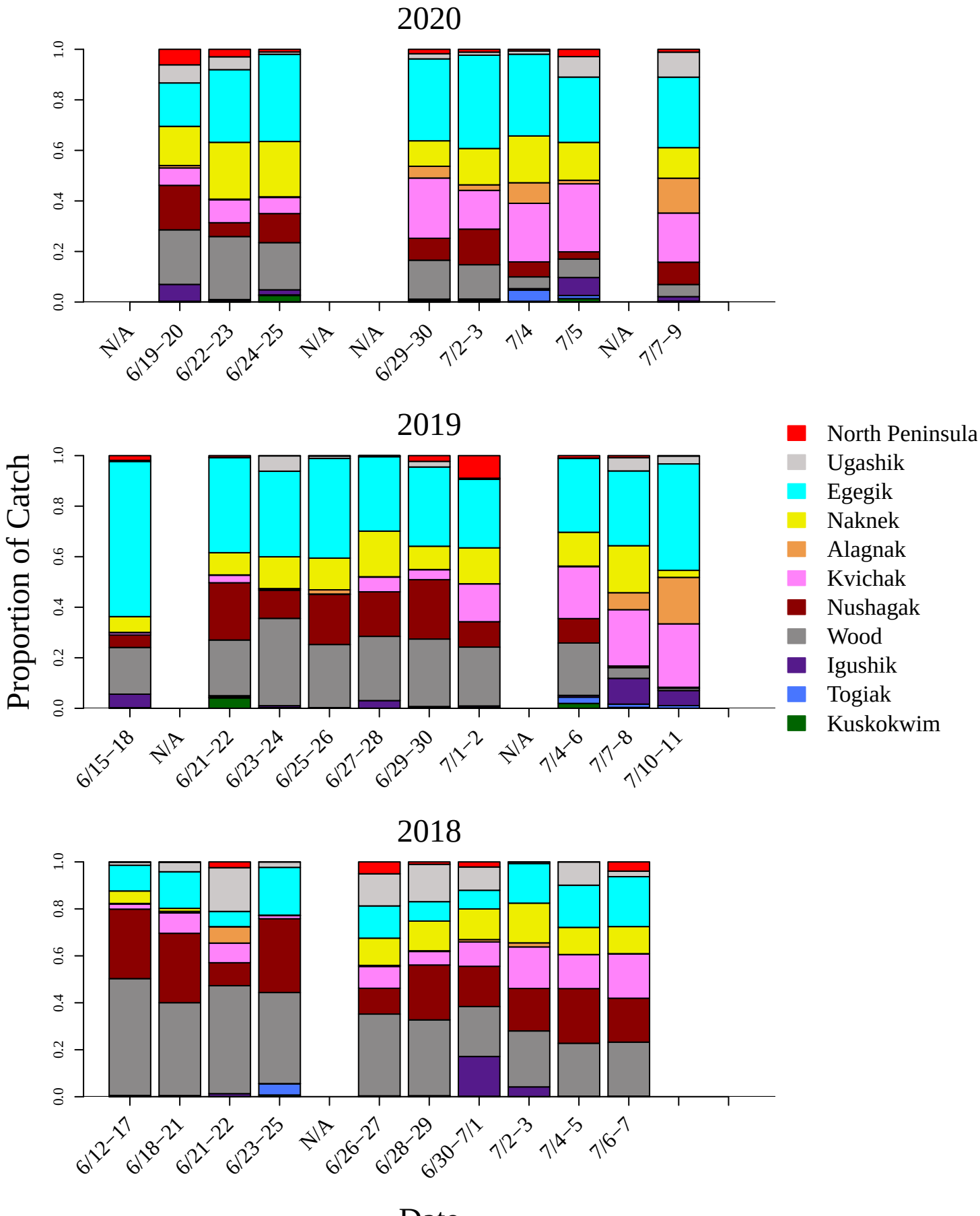


The genetic analysis was completed by the Alaska Department of Fish and Game, Division of Commercial Fisheries, Gene Conservation Laboratory.

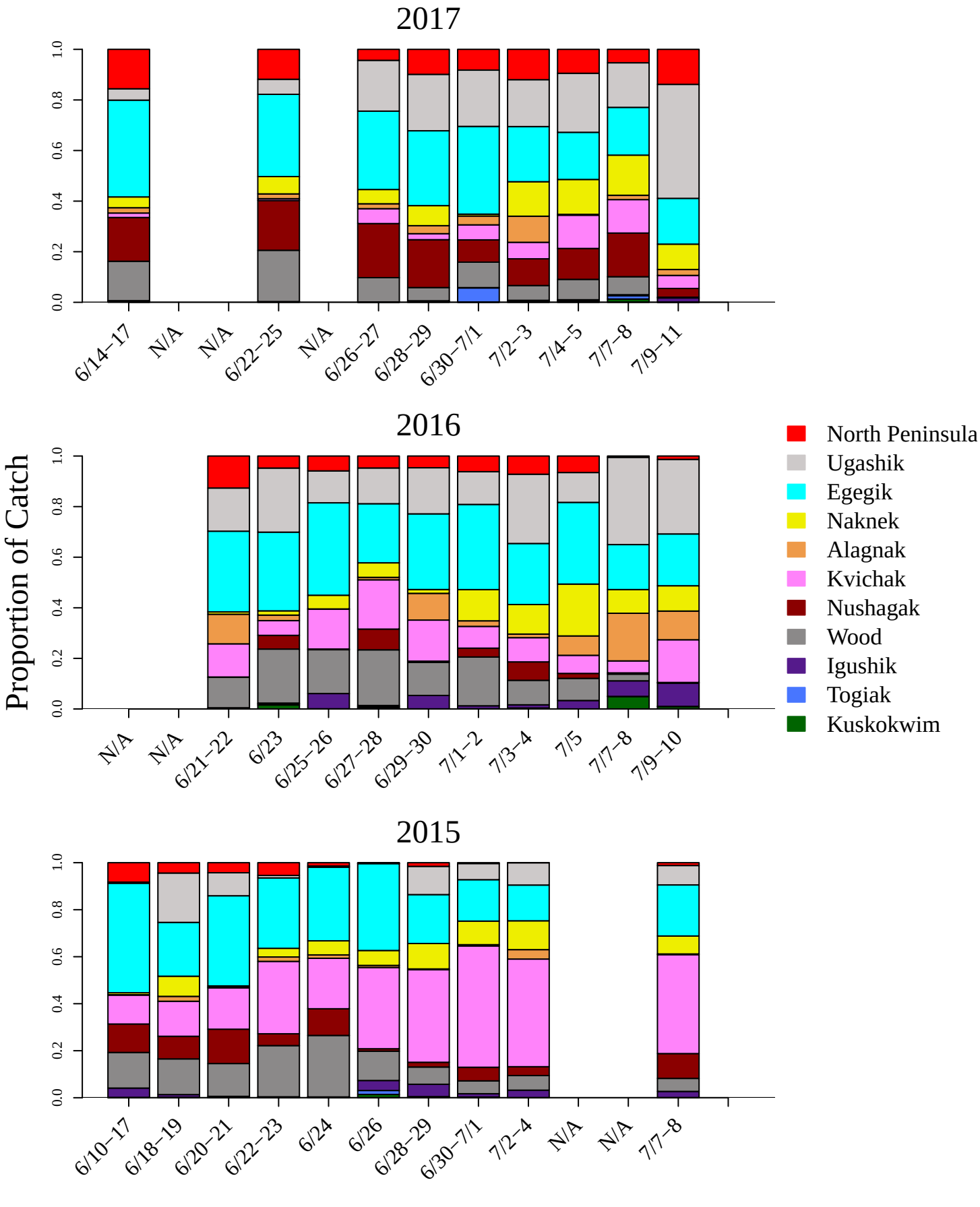
Number of Genetic Samples Analyzed by Date, Station, and Estimate Release Number
Port Moller Test Fishery 2020



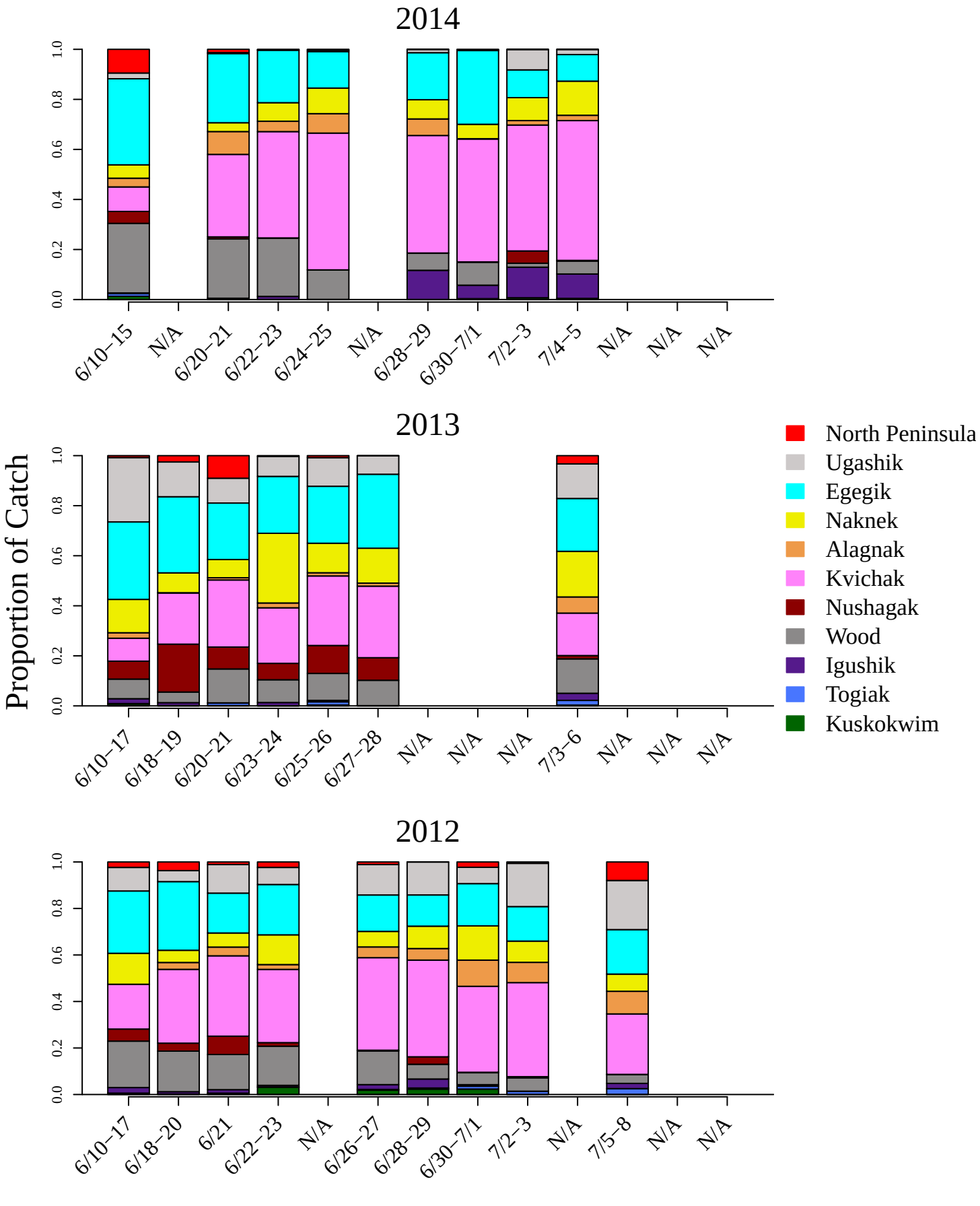
Historical Comparison of Stock Composition Estimates



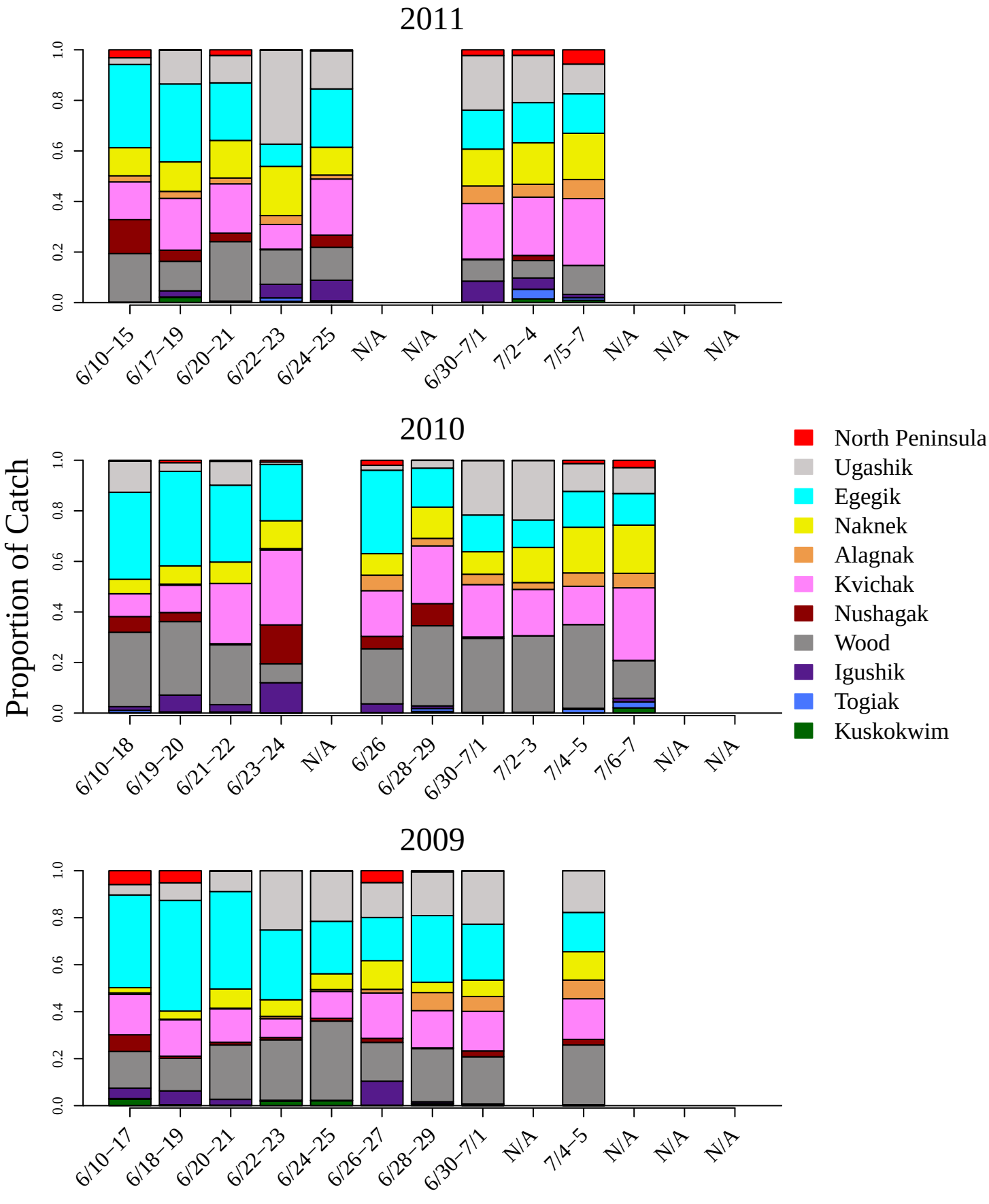
Historical Comparison of Stock Composition Estimates



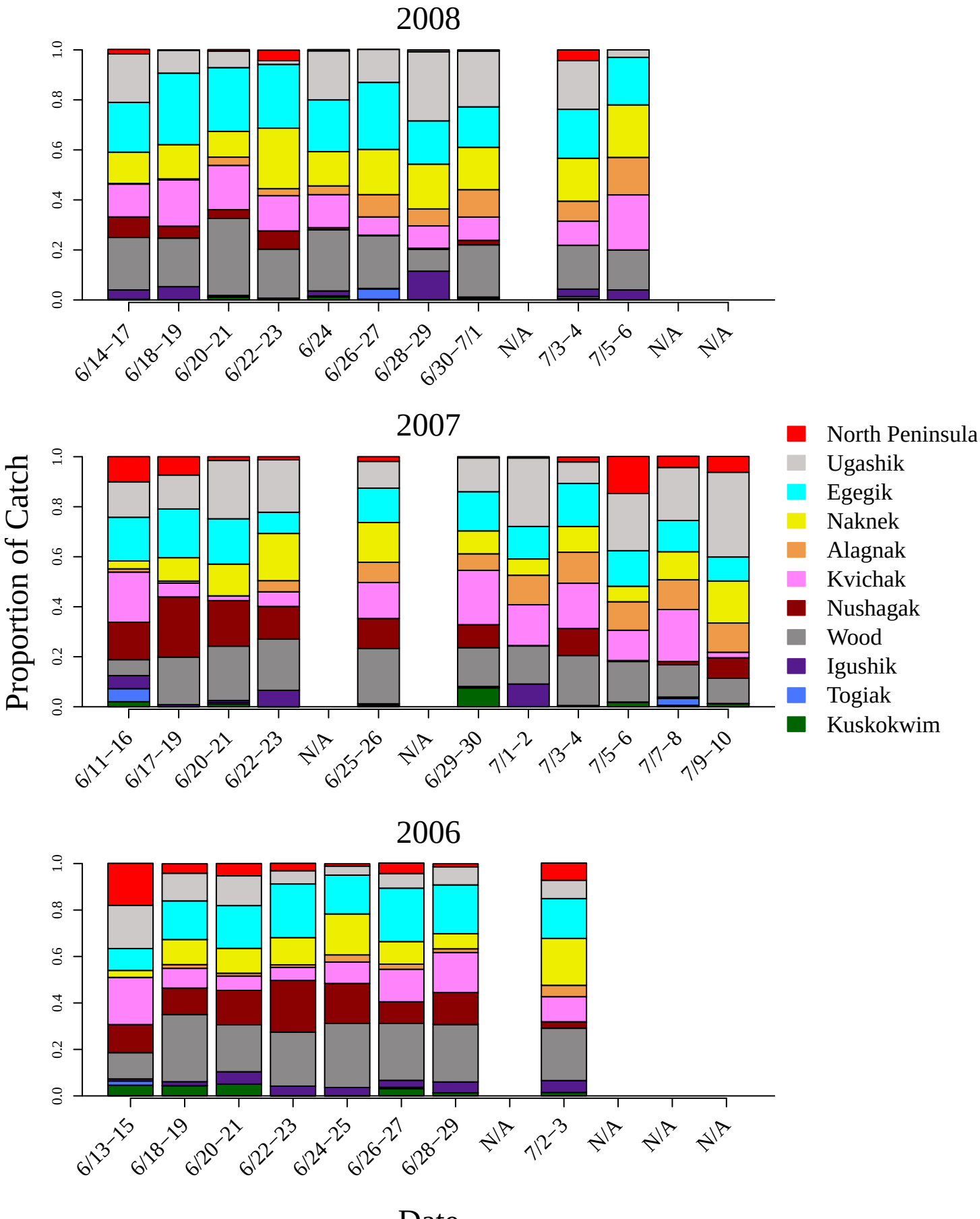
Historical Comparison of Stock Composition Estimates



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, published July 26, 2020.

Bristol Bay Salmon Fishery

Age Composition Summary - Sockeye Salmon

Date run: 7/26/2020

						Age						
		Period Start	Period End	Samples	Index	11	21	12	22	13	23	14
Egegik District	*Egegik District Harvest*	6/22/2020	6/24/2020	412	82,167		0.24%	13.35%	4.85%	80.58%	0.97%	
		6/25/2020	6/26/2020	422	203,861		0.24%	12.09%	5.92%	79.62%	2.13%	
		6/27/2020	6/28/2020	210	125,615		0.48%	14.29%	1.43%	81.90%	1.90%	
		6/29/2020	6/30/2020	437	85,195		0.23%	12.13%	7.78%	78.72%	1.14%	
		7/1/2020	7/2/2020	411	708,619		0.24%	8.27%	2.68%	86.37%	2.43%	
		7/3/2020	7/4/2020	393	1,273,246			10.94%	1.78%	83.97%	3.31%	
		7/8/2020	7/9/2020	386	1,660,734			13.47%	6.48%	78.76%	1.30%	
		7/10/2020	7/11/2020	424	1,530,816			16.98%	8.02%	72.88%	1.89%	
		7/12/2020	7/13/2020	429	1,215,463			17.25%	9.79%	71.10%	1.86%	
		7/14/2020	7/15/2020	361	1,104,777			6.09%	11.08%	82.55%	0.28%	
		7/16/2020	7/17/2020	369	779,248		0.27%	15.72%	10.57%	72.90%	0.54%	
		7/18/2020	7/19/2020	139	527,442			14.39%	15.83%	69.06%	0.72%	
		7/20/2020	7/22/2020	221	788,291	0.45%		20.81%	16.29%	61.09%	1.36%	
	Egegik District Harvest Total					*0.02%*	*0.13%*	*13.22%*	*7.33%*	*77.70%*	*1.58%*	
	Egegik River Escapement	6/24/2020	6/28/2020	185	127,038	14.59%	18.92%	23.78%	4.86%	37.30%	0.54%	
		7/1/2020	7/3/2020	305	196,344	4.26%	11.48%	22.62%	9.51%	52.13%		
		7/6/2020	7/10/2020	563	1,060,440	4.26%	6.04%	18.29%	11.01%	59.86%	0.53%	
		7/13/2020	7/16/2020	298	382,548	12.08%	5.70%	39.60%	16.11%	26.17%	0.34%	
	Egegik River Escapement Total					*7.40%*	*8.96%*	*24.72%*	*10.95%*	*47.59%*	*0.37%*	
Naknek-Kvichak District	*Alagnak River Escapement*	7/1/2020	7/8/2020	235	362,064			47.23%	2.98%	49.79%		
		7/9/2020	7/10/2020	538	452,064			45.35%		54.65%		
		7/13/2020	7/15/2020	400	596,454	0.25%		50.75%		49.00%		
		7/19/2020	7/19/2020	86	44,250	1.16%		70.93%	1.16%	26.74%		
	Alagnak River Escapement Total					*0.16%*		*49.17%*	*0.64%*	*50.04%*		
	Kvichak River Escapement	7/3/2020	7/6/2020	235	161,574			33.62%	0.85%	65.53%		
		7/7/2020	7/8/2020	329	370,602	0.30%		39.82%	0.61%	59.27%		
		7/10/2020	7/11/2020	294	919,944			32.65%	1.02%	66.33%		
		7/12/2020	7/14/2020	351	1,634,826			38.18%	0.85%	60.68%		0.28%
	Kvichak River Escapement Total					*0.08%*		*36.39%*	*0.83%*	*62.61%*		*0.08%*
	Kvichak Section Harvest - Set	7/7/2020	7/7/2020	222	74,130			21.62%	0.45%	77.48%	0.45%	
		7/22/2020	7/22/2020	148	13,733			36.49%	1.35%	62.16%		
	Kvichak Section Harvest - Set Total							*27.57%*	*0.81%*	*71.35%*	*0.27%*	
	Naknek River Escapement	6/26/2020	6/30/2020	264	226,242	1.14%		47.35%	4.55%	46.97%		
		7/4/2020	7/7/2020	497	1,114,044	1.01%		40.64%	2.41%	54.93%	1.01%	
		7/8/2020	7/9/2020	340	1,088,124	0.59%		31.47%	2.35%	65.00%	0.59%	
		7/11/2020	7/13/2020	409	797,742	1.96%		36.43%	4.65%	55.75%	1.22%	
		7/15/2020	7/15/2020	104	263,298	1.92%		26.92%	7.69%	62.50%	0.96%	
	Naknek River Escapement Total					*1.24%*		*37.86%*	*3.66%*	*56.44%*	*0.81%*	
	Naknek Section Set	6/30/2020	6/30/2020	207	86,981	0.48%		35.27%	5.31%	58.94%		
		7/5/2020	7/6/2020	327	335,314			17.43%		82.26%	0.31%	
		7/11/2020	7/11/2020	216	124,897			18.52%	1.39%	79.17%	0.93%	
	Naknek Section Set Total					*0.13%*		*22.67%*	*1.87%*	*74.93%*	*0.40%*	
	Naknek-Kvichak District Harvest	6/25/2020	6/27/2020	340	158,393	0.29%		28.82%	2.06%	67.65%	1.18%	
		6/28/2020	6/29/2020	372	167,255			11.56%	1.08%	86.29%	1.08%	
		6/30/2020	7/1/2020	206	70,793			11.17%	0.97%	86.41%	1.46%	
		7/2/2020	7/4/2020	462	928,810			12.77%	1.08%	84.20%	1.95%	
		7/6/2020	7/8/2020	397	2,374,873			12.09%	3.02%	83.63%	1.26%	
		7/9/2020	7/11/2020	704	2,153,454			15.48%	1.99%	81.53%	0.99%	
		7/12/2020	7/13/2020	359	1,108,574			18.66%	1.67%	79.67%		

						Age						
		Period Start	Period End	Samples	Index	11	21	12	22	13	23	14
Naknek-Kvichak District	*Naknek-Kvichak District Harvest*	7/14/2020	7/15/2020	552	1,183,104			18.66%	1.45%	79.53%	0.18%	0.18%
		7/16/2020	7/17/2020	290	947,818			12.07%	0.69%	86.55%	0.69%	
		7/18/2020	7/19/2020	219	618,482			14.61%	1.83%	83.11%	0.46%	
		7/20/2020	7/20/2020	121	230,532	0.83%		23.97%	4.96%	70.25%		
	Naknek-Kvichak District Harvest Total					*0.05%*		*16.06%*	*1.74%*	*81.23%*	*0.90%*	*0.02%*
Nushagak District	*Igushik River Escapement*	6/24/2020	6/24/2020	79	2,268			20.25%		79.75%		
		6/29/2020	7/1/2020	83	14,772			40.96%	1.20%	57.83%		
		7/3/2020	7/5/2020	138	10,548	0.72%		45.65%		53.62%		
		7/10/2020	7/12/2020	151	61,938			35.76%	1.32%	62.91%		
		7/14/2020	7/14/2020	168	26,340			41.07%		58.93%		
	Igushik River Escapement Total					*0.16%*		*38.13%*	*0.48%*	*61.23%*		
	Nushagak District Harvest	6/28/2020	6/29/2020	444	384,637			49.32%	0.45%	49.77%	0.23%	0.23%
		6/30/2020	6/30/2020	433	133,681			47.34%		52.66%		
		7/2/2020	7/3/2020	407	85,177			31.70%	0.74%	67.32%		0.25%
		7/4/2020	7/4/2020	667	141,082	0.15%		65.22%		34.63%		
		7/5/2020	7/5/2020	422	770,307			52.84%		46.21%	0.47%	0.47%
		7/6/2020	7/7/2020	381	1,264,996	0.52%		79.79%		19.42%	0.26%	
		7/10/2020	7/11/2020	889	567,479	0.22%		68.84%	0.79%	29.58%	0.34%	0.22%
		7/12/2020	7/14/2020	1,086	530,974	0.09%		52.12%	0.28%	47.24%	0.18%	0.09%
		7/16/2020	7/17/2020	877	281,079	0.11%		46.86%	0.23%	52.11%	0.57%	0.11%
		7/18/2020	7/20/2020	428	198,103			39.95%		59.58%	0.23%	0.23%
	Nushagak District Harvest Total					*0.12%*		*54.28%*	*0.28%*	*44.93%*	*0.25%*	*0.15%*
	Nushagak River Escapement	6/9/2020	6/19/2020	86	39,486	1.16%		72.09%		26.74%		
		6/20/2020	6/26/2020	174	201,624			52.87%		44.25%	1.72%	1.15%
		6/27/2020	7/2/2020	213	198,026			60.56%		38.97%	0.47%	
		7/3/2020	7/7/2020	94	143,516	1.06%		63.83%	2.13%	32.98%		
		7/8/2020	7/11/2020	309	424,404	0.32%		50.49%	0.32%	48.87%		
		7/12/2020	7/14/2020	153	133,633	0.65%		66.01%	0.65%	31.37%		1.31%
		7/15/2020	7/17/2020	80	47,302			75.00%		23.75%		1.25%
	Nushagak River Escapement Total					*0.36%*		*59.51%*	*0.36%*	*38.95%*	*0.36%*	*0.45%*
	Nushagak Section Harvest - Set	6/26/2020	6/27/2020	427	70,465			62.06%	0.47%	37.00%	0.47%	
		7/2/2020	7/4/2020	214	51,740	0.47%		61.68%	0.93%	36.45%		0.47%
	Nushagak Section Harvest - Set Total					*0.16%*		*61.93%*	*0.62%*	*36.82%*	*0.31%*	*0.16%*
	Wood River Escapement	6/18/2020	6/25/2020	67	161,652	1.49%		77.61%		20.90%		
		6/27/2020	6/30/2020	132	165,090	0.76%		83.33%		15.91%		
		7/1/2020	7/4/2020	120	170,670			81.67%	1.67%	15.83%	0.83%	
		7/7/2020	7/9/2020	170	644,658			80.59%	1.18%	18.24%		
		7/10/2020	7/12/2020	203	444,774			82.27%	0.99%	16.75%		
	Wood River Escapement Total					*0.29%*		*81.50%*	*0.87%*	*17.20%*	*0.14%*	
	Wood River SHA Harvest	7/12/2020	7/14/2020	217	104,666			70.51%	1.84%	27.19%		0.46%
	Wood River SHA Harvest Total							*70.51%*	*1.84%*	*27.19%*		*0.46%*
Port Moller	*Port Moller Test Fishery*	6/12/2020	6/17/2020	114	58			33.33%	2.63%	61.40%	2.63%	
		6/19/2020	6/19/2020	18	8			38.89%	5.56%	55.56%		
		6/20/2020	6/20/2020	132	23			53.03%	1.52%	44.70%	0.76%	
		6/22/2020	6/22/2020	55	27			30.91%		67.27%	1.82%	
		6/23/2020	6/23/2020	152	31			34.87%	4.61%	58.55%	1.97%	
		6/24/2020	6/24/2020	194	30			26.80%	3.61%	67.01%	2.58%	
		6/25/2020	6/25/2020	178	24			30.90%	2.25%	65.73%	1.12%	
		6/29/2020	6/29/2020	84	36			21.43%	2.38%	75.00%	1.19%	
		6/30/2020	6/30/2020	264	46			26.89%	3.03%	68.94%	1.14%	
		7/1/2020	7/1/2020	120	49			25.83%	1.67%	70.83%	1.67%	
		7/2/2020	7/2/2020	353	105			24.08%	3.40%	70.25%	1.98%	0.28%
		7/3/2020	7/3/2020	358	78	0.28%		23.18%	5.87%	68.72%	1.96%	

						Age						
		Period Start	Period End	Samples	Index	11	21	12	22	13	23	14
Port Moller	*Port Moller Test Fishery*	7/4/2020	7/4/2020	327	111			25.08%	2.75%	70.64%	1.53%	
		7/5/2020	7/5/2020	351	101			24.22%	3.13%	72.08%	0.57%	
		7/7/2020	7/7/2020	132	57			22.73%	6.06%	68.18%	2.27%	0.76%
		7/8/2020	7/8/2020	158	69			17.09%	6.33%	75.32%	1.27%	
		7/9/2020	7/9/2020	306	135			21.90%	4.58%	69.28%	4.25%	
		7/10/2020	7/10/2020	57	42			21.05%	3.51%	70.18%	5.26%	
		7/11/2020	7/11/2020	62	23			22.58%		77.42%		
		7/12/2020	7/12/2020	142	17			25.35%	6.34%	68.31%		
		7/13/2020	7/13/2020	28	27			21.43%	3.57%	75.00%		
	Port Moller Test Fishery Total					*0.03%*		*26.19%*	*3.71%*	*68.26%*	*1.76%*	*0.06%*
Togiak District	*Togiak River Section Set Mix Harvest*	7/2/2020	7/4/2020	118	4,893			17.80%		81.36%		0.85%
		7/6/2020	7/9/2020	235	39,792			19.57%		78.72%		1.70%
		7/14/2020	7/16/2020	361	49,727			17.73%		81.72%		0.55%
	Togiak River Section Set Mix Harvest Total							*18.35%*		*80.67%*		*0.98%*
Ugashik District	*Ugashik District Harvest*	7/13/2020	7/14/2020	405	335,282			42.72%	9.38%	46.67%	0.99%	0.25%
		7/15/2020	7/16/2020	396	491,065			34.09%	9.85%	54.80%	1.26%	
		7/17/2020	7/18/2020	201	313,228			34.83%	5.47%	58.71%	1.00%	
		7/19/2020	7/21/2020	311	441,312			45.34%	10.29%	43.41%	0.96%	
		7/23/2020	7/23/2020	200	71,627			52.00%	9.50%	38.50%		
	Ugashik District Harvest Total							*41.18%*	*9.19%*	*48.65%*	*0.93%*	*0.07%*
	Ugashik River Escapement	7/9/2020	7/12/2020	409	380,814	7.82%	0.49%	68.95%	4.89%	17.60%	0.24%	
		7/13/2020	7/14/2020	320	320,118	5.63%	0.63%	88.13%	3.13%	2.50%		
		7/16/2020	7/18/2020	306	339,912	3.92%	0.33%	91.50%	0.65%	3.59%		
		7/19/2020	7/20/2020	279	132,654	5.02%		80.65%	9.32%	5.02%		
	Ugashik River Escapement Total					*5.78%*	*0.38%*	*81.35%*	*4.41%*	*7.99%*	*0.08%*	
Sockeye Salmon Total						**0.69%**	**0.42%**	**36.61%**	**3.22%**	**58.24%**	**0.73%**	**0.09%**

Rows 1 - 128 (All Rows)

Appendix D

The 32 ADF&G daily run summaries for Bristol Bay in 2020.

Includes all those published between June 15 – July 30, 2020

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

- Bristol Bay Daily Run Summary -

through 06/19/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**0**	**0**	**0**	**0**	**0**
	Ugashik River			0	0	0	
	Egegik	**17,042**	**23,643**	**5,034**	**6,180**	**0**	**29,823**
	Egegik River			5,034	6,180	0	
	Naknek-Kvichak	**0**	**106**	**678**	**678**	**0**	**784**
	Alagnak River			0	0	0	
	Kvichak River			0	0	0	
	Naknek River			678	678	0	
Bristol Bay West	**Nushagak**	**0**	**2,846**	**16,811**	**60,247**	**0**	**63,093**
	Igushik River			0	0	0	
	Nushagak River			11,459	41,005	0	
	Wood River			5,352	19,242	0	
	Togiak	**0**	**24**	**0**	**0**	**0**	**24**
	Togiak River			0	0	0	
Bristol Bay Totals:		**17,042**	**26,619**	**22,523**	**67,105**	**0**	**93,724**

Sockeye per Drift Delivery for: June 19

	Sockeye per Delivery
Ugashik	
Egegik	110
Naknek-Kvichak	
Nushagak	
Togiak	

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 06/20/2020

		Catch Daily	Catch Cumulative	Escapement Daily	Escapement Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**0**	**0**	**0**	**0**	**0**
	Ugashik River			0	0	0	
	Egegik	**0**	**23,643**	**2,490**	**8,670**	**0**	**32,313**
	Egegik River			2,490	8,670	0	
	Naknek-Kvichak	**0**	**106**	**4,074**	**4,752**	**0**	**4,858**
	Alagnak River			0	0	0	
	Kvichak River			0	0	0	
	Naknek River			4,074	4,752	0	
Bristol Bay West	**Nushagak**	**0**	**2,846**	**15,116**	**75,363**	**0**	**78,209**
	Igushik River			0	0	0	
	Nushagak River			10,250	51,255	0	
	Wood River			4,866	24,108	0	
	Togiak	**0**	**24**	**0**	**0**	**0**	**24**
	Togiak River			0	0	0	
Bristol Bay Totals:		**0**	**26,619**	**21,680**	**88,785**	**0**	**115,404**

Sockeye per Drift Delivery for: June 20

	Sockeye per Delivery
Ugashik	
Egegik	
Naknek-Kvichak	
Nushagak	
Togiak	

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Registrations as of: June 21 09:00 AM- and - June 23 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	233	258	189	207	44	51
Naknek-Kvichak	67	70	66	69	1	1
Nushagak	179	201	149	168	30	33
Togiak	20	20	20	20		
Ugashik	7	7	6	6	1	1
Grand Total	**506**	**556**	**430**	**470**	**76**	**86**

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

- Bristol Bay Daily Run Summary -

through 06/21/2020

		Catch Daily	Catch Cumulative	Escapement Daily	Escapement Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**0**	**0**	**0**	**0**	**0**
	Ugashik River			0	0	0	
	Egegik	**33,818**	**57,461**	**12,762**	**21,432**	**0**	**78,893**
	Egegik River			12,762	21,432	0	
	Naknek-Kvichak	**0**	**106**	**9,084**	**13,836**	**0**	**13,942**
	Alagnak River			0	0	0	
	Kvichak River			0	0	0	
	Naknek River			9,084	13,836	0	
Bristol Bay West	**Nushagak**	**3,799**	**14,288**	**20,573**	**95,936**	**0**	**110,224**
	Igushik River			0	0	0	
	Nushagak River			7,313	58,568	0	
	Wood River			13,260	37,368	0	
	Togiak	**0**	**24**	**0**	**0**	**0**	**24**
	Togiak River			0	0	0	
Bristol Bay Totals:		**37,617**	**71,879**	**42,419**	**131,204**	**0**	**203,083**

Sockeye per Drift Delivery for: June 21

	Sockeye per Delivery
Ugashik	
Egegik	173
Naknek-Kvichak	
Nushagak	
Togiak	

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

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	267	279	214	223	53	56
Naknek-Kvichak	94	96	84	86	10	10
Nushagak	213	244	177	201	36	42
Togiak	22	22	22	22		
Ugashik	7	7	6	6	1	1
Grand Total	**603**	**648**	**503**	**538**	**100**	**109**

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

- Bristol Bay Daily Run Summary -

through 06/22/2020

		Catch Daily	Catch Cumulative	Escapement Daily	Escapement Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**0**	**0**	**0**	**0**	**0**
	Ugashik River			0	0	0	
	Egegik	**23,000**	**80,461**	**12,534**	**33,966**	**0**	**114,427**
	Egegik River			12,534	33,966	0	
	Naknek-Kvichak	**2,900**	**3,006**	**4,086**	**17,922**	**0**	**20,928**
	Alagnak River			0	0	0	
	Kvichak River			78	78	0	
	Naknek River			4,008	17,844	0	
Bristol Bay West	**Nushagak**	**0**	**14,288**	**26,359**	**122,295**	**0**	**136,583**
	Igushik River			0	0	0	
	Nushagak River			15,337	73,905	0	
	Wood River			11,022	48,390	0	
	Togiak	**100**	**124**	**0**	**0**	**0**	**124**
	Togiak River			0	0	0	
Bristol Bay Totals:		**26,000**	**97,879**	**42,979**	**174,183**	**0**	**272,062**

Sockeye per Drift Delivery for: June 22

	Sockeye per Delivery
Ugashik	
Egegik	118
Naknek-Kvichak	74
Nushagak	
Togiak	15

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

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	278	274	224	220	54	54
Naknek-Kvichak	119	125	104	109	15	16
Nushagak	274	304	228	249	45	54
Togiak	25	25	25	25		
Ugashik	7	7	6	6	1	1
Grand Total	**703**	**735**	**587**	**609**	**115**	**125**

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

- Bristol Bay Daily Run Summary -

through 06/23/2020

		Catch Daily	Catch Cumulative	Escapement Daily	Escapement Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**0**	**0**	**0**	**0**	**0**
	Ugashik River			0	0	0	
	Egegik	**0**	**87,126**	**13,488**	**47,454**	**0**	**134,580**
	Egegik River			13,488	47,454	0	
	Naknek-Kvichak	**12,000**	**15,132**	**7,272**	**25,194**	**0**	**40,326**
	Alagnak River			0	0	0	
	Kvichak River			132	210	0	
	Naknek River			7,140	24,984	0	
Bristol Bay West	**Nushagak**	**0**	**14,288**	**24,572**	**146,867**	**0**	**161,155**
	Igushik River			426	426	0	
	Nushagak River			13,646	87,551	0	
	Wood River			10,500	58,890	0	
	Togiak	**232**	**362**	**0**	**0**	**0**	**362**
	Togiak River			0	0	0	
Bristol Bay Totals:		**12,232**	**116,908**	**45,332**	**219,515**	**0**	**336,423**

Sockeye per Drift Delivery for: June 23

	Sockeye per Delivery
Ugashik	
Egegik	
Naknek-Kvichak	113
Nushagak	
Togiak	11

Test Fishery Port Moller

No recent results found. Potentially weathered out.

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	271	289	219	233	52	56
Naknek-Kvichak	135	163	120	141	15	22
Nushagak	338	360	278	297	59	62
Togiak	29	29	29	29		
Ugashik	8	9	7	7	1	2
Grand Total	**781**	**850**	**653**	**707**	**127**	**142**

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

- Bristol Bay Daily Run Summary -

through 06/24/2020

		Catch Daily	Catch Cumulative	Escapement Daily	Escapement Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**0**	**0**	**0**	**0**	**0**
	Ugashik River			0	0	0	
	Egegik	**59,000**	**146,126**	**49,908**	**97,362**	**30,000**	**273,488**
	Egegik River			49,908	97,362	30,000	
	Naknek-Kvichak	**19,500**	**34,804**	**12,270**	**37,464**	**0**	**72,268**
	Alagnak River			0	0	0	
	Kvichak River			0	210	0	
	Naknek River			12,270	37,254	0	
Bristol Bay West	**Nushagak**	**12,000**	**26,288**	**96,247**	**243,114**	**0**	**269,402**
	Igushik River			2,268	2,694	0	
	Nushagak River			26,095	113,646	0	
	Wood River			67,884	126,774	0	
	Togiak	**300**	**662**	**0**	**0**	**0**	**662**
	Togiak River			0	0	0	
Bristol Bay Totals:		**90,800**	**207,880**	**158,425**	**377,940**	**30,000**	**615,820**

Sockeye per Drift Delivery for: June 24

	Sockeye per Delivery
Ugashik	
Egegik	223
Naknek-Kvichak	101
Nushagak	
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/21/2020	8	92
6/22/2020	10	102
6/23/2020	46	148
6/24/2020	30	213

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	313	242	252	58	61
Naknek-Kvichak	182	198	158	170	24	28
Nushagak	625	682	478	515	146	166
Togiak	31	31	31	31		
Ugashik	16	21	12	15	4	6
Grand Total	**1,154**	**1,245**	**921**	**983**	**232**	**261**

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

- Bristol Bay Daily Run Summary -

through 06/25/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**8,800**	**9,044**	**0**	**0**	**0**	**9,044**
	Ugashik River			0	0	0	
	Egegik	**87,000**	**233,118**	**19,506**	**116,868**	**20,000**	**369,986**
	Egegik River			19,506	116,868	20,000	
	Naknek-Kvichak	**40,000**	**74,832**	**15,486**	**52,950**	**0**	**127,782**
	Alagnak River			0	0	0	
	Kvichak River			0	210	0	
	Naknek River			15,486	52,740	0	
Bristol Bay West	**Nushagak**	**160,000**	**193,660**	**119,060**	**362,174**	**0**	**555,834**
	Igushik River			3,336	6,030	0	
	Nushagak River			73,946	187,592	0	
	Wood River			41,778	168,552	0	
	Togiak	**130**	**801**	**0**	**0**	**0**	**801**
	Togiak River			0	0	0	
Bristol Bay Totals:		**295,930**	**511,455**	**154,052**	**531,992**	**20,000**	**1,063,447**

Sockeye per Drift Delivery for: June 25

	Sockeye per Delivery
Ugashik	391
Egegik	319
Naknek-Kvichak	278
Nushagak	194
Togiak	9

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/22/2020	10	102
6/23/2020	46	148
6/24/2020	30	213
6/25/2020	24	237

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	329	354	264	281	65	73
Naknek-Kvichak	279	302	229	246	50	56
Nushagak	703	701	532	531	170	169
Togiak	31	31	31	31		
Ugashik	25	29	19	21	6	8
Grand Total	**1,367**	**1,417**	**1,075**	**1,110**	**291**	**306**

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

- Bristol Bay Daily Run Summary -

through 06/26/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**9,010**	**0**	**0**	**0**	**9,010**
	Ugashik River			0	0	0	
	Egegik	**117,000**	**349,740**	**17,580**	**134,448**	**25,000**	**509,188**
	Egegik River			17,580	134,448	25,000	
	Naknek-Kvichak	**163,000**	**237,569**	**19,260**	**72,210**	**0**	**309,779**
	Alagnak River			0	0	0	
	Kvichak River			66	276	0	
	Naknek River			19,194	71,934	0	
Bristol Bay West	**Nushagak**	**145,000**	**338,434**	**109,901**	**472,075**	**0**	**810,509**
	Igushik River			4,302	10,332	0	
	Nushagak River			55,037	242,629	0	
	Wood River			50,562	219,114	0	
	Togiak	**100**	**905**	**0**	**0**	**0**	**905**
	Togiak River			0	0	0	
Bristol Bay Totals:		**425,100**	**935,658**	**146,741**	**678,733**	**25,000**	**1,639,391**

Sockeye per Drift Delivery for: June 26

	Sockeye per Delivery
Ugashik	
Egegik	365
Naknek-Kvichak	360
Nushagak	238
Togiak	34

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/23/2020	46	148
6/24/2020	30	213
6/25/2020	24	237

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	395	409	308	319	87	90
Naknek-Kvichak	361	414	284	320	77	94
Nushagak	669	672	511	512	157	159
Togiak	32	32	32	32		
Ugashik	29	29	21	21	8	8
Grand Total	**1,486**	**1,556**	**1,156**	**1,204**	**329**	**351**

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

- Bristol Bay Daily Run Summary -

through 06/27/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**9,010**	**966**	**966**	**15,000**	**24,976**
	Ugashik River			966	966	15,000	
	Egegik	**0**	**349,979**	**9,564**	**144,012**	**20,000**	**513,991**
	Egegik River			9,564	144,012	20,000	
	Naknek-Kvichak	**22,000**	**259,670**	**33,624**	**105,834**	**300**	**365,804**
	Alagnak River			0	0	0	
	Kvichak River			102	378	300	
	Naknek River			33,522	105,456	0	
Bristol Bay West	**Nushagak**	**165,000**	**502,671**	**66,644**	**538,719**	**0**	**1,041,390**
	Igushik River			1,128	11,460	0	
	Nushagak River			27,236	269,865	0	
	Wood River			38,280	257,394	0	
	Togiak	**0**	**914**	**0**	**0**	**0**	**914**
	Togiak River			0	0	0	
Bristol Bay Totals:		**187,000**	**1,122,244**	**110,798**	**789,531**	**35,300**	**1,947,075**

Sockeye per Drift Delivery for: June 27

	Sockeye per Delivery
Ugashik	
Egegik	
Naknek-Kvichak	44
Nushagak	203
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/24/2020	30	213
6/25/2020	24	237

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	409	424	318	332	91	92
Naknek-Kvichak	393	440	309	340	84	100
Nushagak	671	674	512	514	158	159
Togiak	34	34	34	34		
Ugashik	31	31	23	23	8	8
Grand Total	**1,538**	**1,603**	**1,196**	**1,243**	**341**	**359**

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

- Bristol Bay Daily Run Summary -

through 06/28/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**9,000**	**18,010**	**1,704**	**2,670**	**15,000**	**35,680**
	Ugashik River			1,704	2,670	15,000	
	Egegik	**126,000**	**475,979**	**30,480**	**174,492**	**30,000**	**680,471**
	Egegik River			30,480	174,492	30,000	
	Naknek-Kvichak	**9,000**	**268,348**	**6,636**	**112,470**	**5,000**	**385,818**
	Alagnak River			0	0	0	
	Kvichak River			1,302	1,680	5,000	
	Naknek River			5,334	110,790	0	
Bristol Bay West	**Nushagak**	**240,000**	**741,883**	**58,428**	**597,147**	**0**	**1,339,030**
	Igushik River			4,428	15,888	0	
	Nushagak River			14,586	284,451	0	
	Wood River			39,414	296,808	0	
	Togiak	**0**	**914**	**0**	**0**	**0**	**914**
	Togiak River			0	0	0	
Bristol Bay Totals:		**384,000**	**1,505,134**	**97,248**	**886,779**	**50,000**	**2,441,913**

Sockeye per Drift Delivery for: June 28

	Sockeye per Delivery
Ugashik	306
Egegik	404
Naknek-Kvichak	77
Nushagak	305
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/25/2020	24	237

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	419	428	327	334	92	94
Naknek-Kvichak	436	446	337	346	99	100
Nushagak	676	679	516	518	159	160
Togiak	34	34	34	34		
Ugashik	31	31	23	23	8	8
Grand Total	**1,596**	**1,618**	**1,237**	**1,255**	**358**	**362**

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

- Bristol Bay Daily Run Summary -

through 06/29/2020

		Catch Daily	Catch Cumulative	Escapement Daily	Escapement Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**18,292**	**1,932**	**4,602**	**15,000**	**37,894**
	Ugashik River			1,932	4,602	15,000	
	Egegik	**80,000**	**555,594**	**19,212**	**193,704**	**30,000**	**779,298**
	Egegik River			19,212	193,704	30,000	
	Naknek-Kvichak	**200,000**	**468,440**	**9,894**	**122,364**	**500**	**591,304**
	Alagnak River			0	0	0	
	Kvichak River			882	2,562	500	
	Naknek River			9,012	119,802	0	
Bristol Bay West	**Nushagak**	**285,000**	**1,025,142**	**72,812**	**669,959**	**0**	**1,695,101**
	Igushik River			3,984	19,872	0	
	Nushagak River			30,830	315,281	0	
	Wood River			37,998	334,806	0	
	Togiak	**1,500**	**2,414**	**0**	**0**	**0**	**2,414**
	Togiak River			0	0	0	
Bristol Bay Totals:		**566,500**	**2,069,882**	**103,850**	**990,629**	**45,500**	**3,106,011**

Sockeye per Drift Delivery for: June 29

	Sockeye per Delivery
Ugashik	
Egegik	227
Naknek-Kvichak	505
Nushagak	444
Togiak	51

Test Fishery Port Moller

No recent results found. Potentially weathered out.

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	432	437	338	340	94	97
Naknek-Kvichak	459	465	357	363	102	102
Nushagak	670	673	511	513	158	159
Togiak	36	36	36	36		
Ugashik	29	34	22	25	7	9
Grand Total	**1,626**	**1,645**	**1,264**	**1,277**	**361**	**367**

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

- Bristol Bay Daily Run Summary -

through 06/30/2020

		Catch Daily	Catch Cumulative	Escapement Daily	Escapement Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**18,292**	**2,994**	**7,596**	**15,000**	**40,888**
	Ugashik River			2,994	7,596	15,000	
	Egegik	**0**	**560,789**	**14,340**	**208,044**	**130,000**	**898,833**
	Egegik River			14,340	208,044	130,000	
	Naknek-Kvichak	**177,000**	**642,881**	**165,114**	**287,478**	**10,000**	**940,359**
	Alagnak River			2,946	2,946	0	
	Kvichak River			2,058	4,620	10,000	
	Naknek River			160,110	279,912	0	
Bristol Bay West	**Nushagak**	**195,000**	**1,220,193**	**85,278**	**755,237**	**0**	**1,975,430**
	Igushik River			4,266	24,138	0	
	Nushagak River			31,614	346,895	0	
	Wood River			49,398	384,204	0	
	Togiak	**2,000**	**4,259**	**0**	**0**	**0**	**4,259**
	Togiak River			0	0	0	
Bristol Bay Totals:		**374,000**	**2,446,414**	**267,726**	**1,258,355**	**155,000**	**3,859,769**

Sockeye per Drift Delivery for: June 30

	Sockeye per Delivery
Ugashik	
Egegik	
Naknek-Kvichak	173
Nushagak	296
Togiak	47

Test Fishery Port Moller

No recent results found. Potentially weathered out.

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	441	445	343	346	98	99
Naknek-Kvichak	467	491	364	383	103	108
Nushagak	663	654	506	502	156	151
Togiak	36	36	36	36		
Ugashik	30	36	23	27	7	9
Grand Total	**1,637**	**1,662**	**1,272**	**1,294**	**364**	**367**

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

- Bristol Bay Daily Run Summary -

through 07/01/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**18,292**	**3,552**	**11,148**	**10,000**	**39,440**
	Ugashik River			3,552	11,148	10,000	
	Egegik	**313,000**	**873,789**	**69,006**	**277,050**	**350,000**	**1,500,839**
	Egegik River			69,006	277,050	350,000	
	Naknek-Kvichak	**16,000**	**658,472**	**53,790**	**341,268**	**20,000**	**1,019,740**
	Alagnak River			15,510	18,456	0	
	Kvichak River			15,810	20,430	20,000	
	Naknek River			22,470	302,382	0	
Bristol Bay West	**Nushagak**	**83,000**	**1,302,106**	**112,185**	**867,422**	**0**	**2,169,528**
	Igushik River			6,522	30,660	0	
	Nushagak River			56,883	403,778	0	
	Wood River			48,780	432,984	0	
	Togiak	**2,300**	**6,700**	**0**	**0**	**0**	**6,700**
	Togiak River			0	0	0	
Bristol Bay Totals:		**414,300**	**2,859,359**	**238,533**	**1,496,888**	**380,000**	**4,736,247**

Sockeye per Drift Delivery for: July 1

	Sockeye per Delivery
Ugashik	
Egegik	615
Naknek-Kvichak	84
Nushagak	111
Togiak	46

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/28/2020	32	327
6/29/2020	35	362
6/30/2020	46	408
7/1/2020	46	454

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	447	462	348	358	99	104
Naknek-Kvichak	477	503	372	389	105	114
Nushagak	633	633	487	487	145	145
Togiak	36	36	36	36		
Ugashik	36	46	27	36	9	10
Grand Total	**1,629**	**1,680**	**1,270**	**1,306**	**358**	**373**

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

- Bristol Bay Daily Run Summary -

through 07/02/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**16,000**	**34,292**	**5,886**	**17,034**	**10,000**	**61,326**
	Ugashik River			5,886	17,034	10,000	
	Egegik	**395,000**	**1,268,968**	**100,344**	**377,394**	**200,000**	**1,846,362**
	Egegik River			100,344	377,394	200,000	
	Naknek-Kvichak	**179,000**	**837,737**	**46,434**	**387,702**	**20,000**	**1,245,439**
	Alagnak River			12,258	30,714	0	
	Kvichak River			32,046	52,476	20,000	
	Naknek River			2,130	304,512	0	
Bristol Bay West	**Nushagak**	**58,000**	**1,360,091**	**89,857**	**957,279**	**0**	**2,317,370**
	Igushik River			3,570	34,230	0	
	Nushagak River			36,877	440,655	0	
	Wood River			49,410	482,394	0	
	Togiak	**1,700**	**8,393**	**0**	**0**	**0**	**8,393**
	Togiak River			0	0	0	
Bristol Bay Totals:		**649,700**	**3,509,481**	**242,521**	**1,739,409**	**230,000**	**5,478,890**

Sockeye per Drift Delivery for: July 2

	Sockeye per Delivery
Ugashik	447
Egegik	593
Naknek-Kvichak	482
Nushagak	73
Togiak	30

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/29/2020	36	362
6/30/2020	46	408
7/1/2020	49	454
7/2/2020	105	566

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	450	501	350	382	100	119
Naknek-Kvichak	495	520	383	399	113	122
Nushagak	590	586	461	459	128	126
Togiak	36	36	36	36		
Ugashik	37	47	28	37	9	10
Grand Total	**1,608**	**1,690**	**1,258**	**1,313**	**350**	**377**

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

- Bristol Bay Daily Run Summary -

through 07/03/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**34,227**	**4,680**	**21,714**	**15,000**	**70,941**
	Ugashik River			4,680	21,714	15,000	
	Egegik	**579,000**	**1,848,408**	**26,994**	**404,388**	**170,000**	**2,422,796**
	Egegik River			26,994	404,388	170,000	
	Naknek-Kvichak	**623,000**	**1,461,099**	**46,206**	**433,908**	**10,000**	**1,905,007**
	Alagnak River			2,652	33,366	0	
	Kvichak River			39,114	91,590	10,000	
	Naknek River			4,440	308,952	0	
Bristol Bay West	**Nushagak**	**60,000**	**1,420,550**	**62,185**	**1,019,464**	**0**	**2,440,014**
	Igushik River			3,396	37,626	0	
	Nushagak River			13,363	454,018	0	
	Wood River			45,426	527,820	0	
	Togiak	**1,500**	**9,924**	**0**	**0**	**0**	**9,924**
	Togiak River			0	0	0	
Bristol Bay Totals:		**1,263,500**	**4,774,208**	**140,065**	**1,879,474**	**195,000**	**6,848,682**

Sockeye per Drift Delivery for: July 3

	Sockeye per Delivery
Ugashik	
Egegik	902
Naknek-Kvichak	809
Nushagak	98
Togiak	30

Test Fishery Port Moller

Date	Index Daily	Cumulative
6/30/2020	46	408
7/1/2020	49	454
7/2/2020	105	566
7/3/2020	78	652

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	463	548	358	414	105	134
Naknek-Kvichak	511	538	393	412	119	126
Nushagak	525	525	417	417	108	108
Togiak	36	36	36	36		
Ugashik	44	48	34	38	10	10
Grand Total	**1,579**	**1,695**	**1,238**	**1,317**	**342**	**378**

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

- Bristol Bay Daily Run Summary -

through 07/04/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**34,227**	**8,094**	**29,808**	**20,000**	**84,035**
	Ugashik River			8,094	29,808	20,000	
	Egegik	**694,000**	**2,542,649**	**22,386**	**426,774**	**40,000**	**3,009,423**
	Egegik River			22,386	426,774	40,000	
	Naknek-Kvichak	**366,000**	**1,827,659**	**341,958**	**775,866**	**150,000**	**2,753,525**
	Alagnak River			762	34,128	0	
	Kvichak River			7,416	99,006	150,000	
	Naknek River			333,780	642,732	0	
Bristol Bay West	**Nushagak**	**165,000**	**1,586,309**	**36,820**	**1,056,284**	**0**	**2,642,593**
	Igushik River			3,636	41,262	0	
	Nushagak River			6,130	460,148	0	
	Wood River			27,054	554,874	0	
	Togiak	**1,700**	**11,589**	**24**	**24**	**0**	**11,613**
	Togiak River			24	24	0	
Bristol Bay Totals:		**1,226,700**	**6,002,433**	**409,282**	**2,288,756**	**210,000**	**8,501,189**

Sockeye per Drift Delivery for: July 4

	Sockeye per Delivery
Ugashik	
Egegik	907
Naknek-Kvichak	418
Nushagak	456
Togiak	72

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/1/2020	49	454
7/2/2020	105	566
7/3/2020	78	652
7/4/2020	111	763

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	502	583	382	445	120	138
Naknek-Kvichak	518	545	400	419	119	126
Nushagak	478	488	377	383	101	105
Togiak	36	36	36	36		
Ugashik	47	48	37	38	10	10
Grand Total	**1,581**	**1,700**	**1,232**	**1,321**	**350**	**379**

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

- Bristol Bay Daily Run Summary -

through 07/05/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**110,000**	**144,227**	**4,194**	**34,002**	**15,000**	**193,229**
	Ugashik River			4,194	34,002	15,000	
	Egegik	**529,000**	**3,071,654**	**40,356**	**467,130**	**100,000**	**3,638,784**
	Egegik River			40,356	467,130	100,000	
	Naknek-Kvichak	**891,000**	**2,718,514**	**132,570**	**908,436**	**400,000**	**4,026,950**
	Alagnak River			86,094	120,222	0	
	Kvichak River			8,064	107,070	400,000	
	Naknek River			38,412	681,144	0	
Bristol Bay West	**Nushagak**	**900,000**	**2,484,399**	**21,039**	**1,077,323**	**0**	**3,561,722**
	Igushik River			3,516	44,778	0	
	Nushagak River			5,025	465,173	0	
	Wood River			12,498	567,372	0	
	Togiak	**0**	**11,586**	**762**	**786**	**0**	**12,372**
	Togiak River			762	786	0	
Bristol Bay Totals:		**2,430,000**	**8,430,380**	**198,921**	**2,487,677**	**515,000**	**11,433,057**

Sockeye per Drift Delivery for: July 5

	Sockeye per Delivery
Ugashik	1,829
Egegik	1,165
Naknek-Kvichak	1,138
Nushagak	1,342
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/2/2020	105	566
7/3/2020	78	652
7/4/2020	111	763
7/5/2020	101	872

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	543	578	409	440	134	138
Naknek-Kvichak	532	546	410	420	122	126
Nushagak	478	490	377	385	101	105
Togiak	36	36	36	36		
Ugashik	48	50	38	40	10	10
Grand Total	**1,637**	**1,700**	**1,270**	**1,321**	**367**	**379**

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

- Bristol Bay Daily Run Summary -

through 07/06/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**67,000**	**211,683**	**3,402**	**37,404**	**40,000**	**289,087**
	Ugashik River			3,402	37,404	40,000	
	Egegik	**1,030,000**	**4,102,025**	**183,018**	**650,148**	**160,000**	**4,912,173**
	Egegik River			183,018	650,148	160,000	
	Naknek-Kvichak	**989,000**	**3,708,348**	**626,166**	**1,534,602**	**550,000**	**5,792,950**
	Alagnak River			40,302	160,524	0	
	Kvichak River			106,980	214,050	550,000	
	Naknek River			478,884	1,160,028	0	
Bristol Bay West	**Nushagak**	**957,000**	**3,437,915**	**47,705**	**1,125,028**	**0**	**4,562,943**
	Igushik River			1,410	46,188	0	
	Nushagak River			8,681	473,854	0	
	Wood River			37,614	604,986	0	
	Togiak	**4,000**	**15,586**	**822**	**1,608**	**0**	**17,194**
	Togiak River			822	1,608	0	
Bristol Bay Totals:		**3,047,000**	**11,475,557**	**861,113**	**3,348,790**	**750,000**	**15,574,347**

Sockeye per Drift Delivery for: July 6

	Sockeye per Delivery
Ugashik	1,165
Egegik	1,091
Naknek-Kvichak	955
Nushagak	978
Togiak	82

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/3/2020	78	652
7/4/2020	111	763
7/5/2020	101	872

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	572	573	434	434	138	139
Naknek-Kvichak	545	548	419	422	126	126
Nushagak	488	493	383	388	105	105
Togiak	38	38	38	38		
Ugashik	48	52	38	42	10	10
Grand Total	**1,691**	**1,704**	**1,312**	**1,324**	**379**	**380**

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

- Bristol Bay Daily Run Summary -

through 07/07/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**211,963**	**7,332**	**44,586**	**50,000**	**306,549**
	Ugashik River			7,332	44,586	50,000	
	Egegik	**658,000**	**4,759,574**	**104,736**	**754,884**	**300,000**	**5,814,458**
	Egegik River			104,736	754,884	300,000	
	Naknek-Kvichak	**1,075,000**	**4,783,285**	**517,420**	**2,052,022**	**300,000**	**7,135,307**
	Alagnak River			85,266	245,790	0	
	Kvichak River			170,140	384,190	300,000	
	Naknek River			262,014	1,422,042	0	
Bristol Bay West	**Nushagak**	**940,000**	**4,377,535**	**239,851**	**1,364,879**	**0**	**5,742,414**
	Igushik River			1,764	47,952	0	
	Nushagak River			110,317	584,171	0	
	Wood River			127,770	732,756	0	
	Togiak	**11,000**	**26,635**	**1,416**	**3,024**	**0**	**29,659**
	Togiak River			1,416	3,024	0	
Bristol Bay Totals:		**2,684,000**	**14,158,992**	**870,755**	**4,219,395**	**650,000**	**19,028,387**

Sockeye per Drift Delivery for: July 7

	Sockeye per Delivery
Ugashik	
Egegik	1,373
Naknek-Kvichak	1,237
Nushagak	1,104
Togiak	114

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/4/2020	111	763
7/5/2020	101	872

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	570	570	431	431	139	139
Naknek-Kvichak	548	557	422	428	126	129
Nushagak	484	487	382	385	102	102
Togiak	38	38	38	38		
Ugashik	50	53	40	43	10	10
Grand Total	**1,690**	**1,705**	**1,313**	**1,325**	**377**	**380**

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

- Bristol Bay Daily Run Summary -

through 07/08/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**74,000**	**285,963**	**9,006**	**53,592**	**75,000**	**414,555**
	Ugashik River			9,006	53,592	75,000	
	Egegik	**837,000**	**5,596,294**	**195,336**	**950,220**	**120,000**	**6,666,514**
	Egegik River			195,336	950,220	120,000	
	Naknek-Kvichak	**933,000**	**5,715,534**	**904,164**	**2,956,186**	**500,000**	**9,171,720**
	Alagnak River			119,220	365,010	0	
	Kvichak River			200,460	584,650	500,000	
	Naknek River			584,484	2,006,526	0	
Bristol Bay West	**Nushagak**	**600,000**	**4,973,976**	**367,912**	**1,732,791**	**0**	**6,706,767**
	Igushik River			882	48,834	0	
	Nushagak River			120,802	704,973	0	
	Wood River			246,228	978,984	0	
	Togiak	**12,700**	**39,714**	**864**	**3,888**	**0**	**43,602**
	Togiak River			864	3,888	0	
Bristol Bay Totals:		**2,456,700**	**16,611,481**	**1,477,282**	**5,696,677**	**695,000**	**23,003,158**

Sockeye per Drift Delivery for: July 8

	Sockeye per Delivery
Ugashik	1,121
Egegik	1,067
Naknek-Kvichak	1,213
Nushagak	1,125
Togiak	163

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/5/2020	101	872
7/6/2020	84	956
7/7/2020	57	1,063
7/8/2020	69	1,132

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	560	558	424	423	136	135
Naknek-Kvichak	550	597	424	456	126	141
Nushagak	454	450	362	360	92	90
Togiak	40	41	40	41		
Ugashik	45	57	38	46	7	11
Grand Total	**1,649**	**1,703**	**1,288**	**1,326**	**361**	**377**

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

- Bristol Bay Daily Run Summary -

through 07/09/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**0**	**285,472**	**27,948**	**81,540**	**100,000**	**467,012**
	Ugashik River			27,948	81,540	100,000	
	Egegik	**824,000**	**6,420,160**	**248,796**	**1,199,016**	**180,000**	**7,799,176**
	Egegik River			248,796	1,199,016	180,000	
	Naknek-Kvichak	**600,000**	**6,315,482**	**871,638**	**3,828,408**	**1,000,000**	**11,143,890**
	Alagnak River			136,644	501,654	0	
	Kvichak River			232,164	816,816	1,000,000	
	Naknek River			502,830	2,509,938	0	
Bristol Bay West	**Nushagak**	**745,000**	**5,722,334**	**428,380**	**2,164,171**	**0**	**7,886,505**
	Igushik River			5,106	53,940	0	
	Nushagak River			152,674	860,647	0	
	Wood River			270,600	1,249,584	0	
	Togiak	**12,000**	**51,652**	**2,472**	**6,360**	**0**	**58,012**
	Togiak River			2,472	6,360	0	
Bristol Bay Totals:		**2,181,000**	**18,795,100**	**1,579,234**	**7,279,495**	**1,280,000**	**27,354,595**

Sockeye per Drift Delivery for: July 9

	Sockeye per Delivery
Ugashik	
Egegik	986
Naknek-Kvichak	752
Nushagak	1,082
Togiak	115

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/6/2020	84	956
7/7/2020	57	1,063
7/8/2020	69	1,132

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	553	552	420	419	133	133
Naknek-Kvichak	558	630	429	476	129	154
Nushagak	423	409	343	334	80	75
Togiak	41	41	41	41		
Ugashik	46	62	39	49	7	13
Grand Total	**1,621**	**1,694**	**1,272**	**1,319**	**349**	**375**

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

- Bristol Bay Daily Run Summary -

through 07/10/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**166,000**	**451,472**	**75,222**	**156,762**	**180,000**	**788,234**
	Ugashik River			75,222	156,762	180,000	
	Egegik	**610,000**	**7,030,028**	**328,554**	**1,527,570**	**200,000**	**8,757,598**
	Egegik River			328,554	1,527,570	200,000	
	Naknek-Kvichak	**877,000**	**7,193,392**	**847,098**	**4,675,506**	**700,000**	**12,568,898**
	Alagnak River			315,420	817,074	0	
	Kvichak River			429,006	1,245,822	700,000	
	Naknek River			102,672	2,612,610	0	
Bristol Bay West	**Nushagak**	**440,000**	**6,161,978**	**311,508**	**2,475,679**	**0**	**8,637,657**
	Igushik River			19,026	72,966	0	
	Nushagak River			98,532	959,179	0	
	Wood River			193,950	1,443,534	0	
	Togiak	**12,000**	**63,378**	**2,928**	**9,288**	**0**	**72,666**
	Togiak River			2,928	9,288	0	
Bristol Bay Totals:		**2,105,000**	**20,900,248**	**1,565,310**	**8,844,805**	**1,080,000**	**30,825,053**

Sockeye per Drift Delivery for: July 10

	Sockeye per Delivery
Ugashik	2,525
Egegik	748
Naknek-Kvichak	1,029
Nushagak	560
Togiak	182

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/7/2020	57	1,063
7/8/2020	69	1,132
7/9/2020	69	1,276

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	512	514	390	392	122	122
Naknek-Kvichak	599	706	457	532	142	174
Nushagak	349	338	289	279	60	59
Togiak	41	41	41	41		
Ugashik	57	95	46	71	11	24
Grand Total	**1,558**	**1,694**	**1,223**	**1,315**	**335**	**379**

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

- Bristol Bay Daily Run Summary -

through 07/12/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**16,000**	**563,379**	**124,554**	**434,406**	**300,000**	**1,297,785**
	Ugashik River			124,554	434,406	300,000	
	Egegik	**650,000**	**8,600,844**	**129,096**	**1,835,496**	**0**	**10,436,340**
	Egegik River			129,096	1,835,496	0	
	Naknek-Kvichak	**631,000**	**8,944,062**	**1,224,078**	**6,900,230**	**800,000**	**16,644,292**
	Alagnak River			246,942	1,308,842	0	
	Kvichak River			536,448	2,273,208	800,000	
	Naknek River			440,688	3,318,180	0	
Bristol Bay West	**Nushagak**	**443,000**	**7,102,333**	**186,872**	**2,870,527**	**0**	**9,972,860**
	Igushik River			21,828	115,878	0	
	Nushagak River			51,716	1,060,291	0	
	Wood River			113,328	1,694,358	0	
	Togiak	**0**	**78,374**	**2,838**	**14,028**	**0**	**92,402**
	Togiak River			2,838	14,028	0	
Bristol Bay Totals:		**1,740,000**	**25,288,992**	**1,667,438**	**12,054,687**	**1,100,000**	**38,443,679**

Sockeye per Drift Delivery for: July 12

	Sockeye per Delivery
Ugashik	753
Egegik	873
Naknek-Kvichak	549
Nushagak	907
Togiak	

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/9/2020	135	1,276
7/10/2020	42	1,318
7/11/2020	23	1,341
7/12/2020	17	1,358

Registrations as of: July 13 09:00 AM- and - July 15 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	481	480	368	367	113	113
Naknek-Kvichak	700	731	527	552	173	179
Nushagak	284	282	236	235	48	47
Togiak	43	43	43	43		
Ugashik	95	168	71	128	24	40
Grand Total	**1,603**	**1,704**	**1,245**	**1,325**	**358**	**379**

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

- Bristol Bay Daily Run Summary -

through 07/13/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**139,000**	**702,154**	**184,860**	**619,266**	**250,000**	**1,571,420**
	Ugashik River			184,860	619,266	250,000	
	Egegik	**565,000**	**9,166,033**	**130,752**	**1,966,248**	**0**	**11,132,281**
	Egegik River			130,752	1,966,248	0	
	Naknek-Kvichak	**705,000**	**9,649,340**	**857,178**	**7,757,418**	**500,000**	**17,906,758**
	Alagnak River			295,320	1,604,172	0	
	Kvichak River			469,806	2,743,014	500,000	
	Naknek River			92,052	3,410,232	0	
Bristol Bay West	**Nushagak**	**322,000**	**7,424,269**	**184,157**	**3,054,684**	**0**	**10,478,953**
	Igushik River			28,980	144,858	0	
	Nushagak River			44,777	1,105,068	0	
	Wood River			110,400	1,804,758	0	
	Togiak	**25,000**	**103,374**	**4,092**	**18,120**	**0**	**121,494**
	Togiak River			4,092	18,120	0	
Bristol Bay Totals:		**1,756,000**	**27,045,170**	**1,361,039**	**13,415,736**	**750,000**	**41,210,906**

Sockeye per Drift Delivery for: July 13

	Sockeye per Delivery
Ugashik	620
Egegik	716
Naknek-Kvichak	774
Nushagak	575
Togiak	152

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/10/2020	42	1,318
7/11/2020	23	1,341
7/12/2020	17	1,358
7/13/2020	27	1,385

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	479	479	365	365	114	114
Naknek-Kvichak	717	736	541	556	176	180
Nushagak	281	281	234	234	47	47
Togiak	43	43	43	43		
Ugashik	145	174	111	134	34	40
Grand Total	**1,665**	**1,713**	**1,294**	**1,332**	**371**	**381**

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

- Bristol Bay Daily Run Summary -

through 07/14/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**201,000**	**897,053**	**135,258**	**754,524**	**300,000**	**1,951,577**
	Ugashik River			135,258	754,524	300,000	
	Egegik	**684,000**	**9,850,307**	**61,950**	**2,028,198**	**0**	**11,878,505**
	Egegik River			61,950	2,028,198	0	
	Naknek-Kvichak	**953,000**	**10,602,530**	**976,170**	**8,733,588**	**700,000**	**20,036,118**
	Alagnak River			130,044	1,734,216	0	
	Kvichak River			628,572	3,371,586	700,000	
	Naknek River			217,554	3,627,786	0	
Bristol Bay West	**Nushagak**	**245,000**	**7,669,613**	**175,452**	**3,230,196**	**0**	**10,899,809**
	Igushik River			26,340	171,198	0	
	Nushagak River			37,140	1,142,208	0	
	Wood River			111,972	1,916,790	0	
	Togiak	**25,000**	**128,151**	**6,276**	**24,396**	**0**	**152,547**
	Togiak River			6,276	24,396	0	
Bristol Bay Totals:		**2,108,000**	**29,147,654**	**1,355,106**	**14,770,902**	**1,000,000**	**44,918,556**

Sockeye per Drift Delivery for: July 14

	Sockeye per Delivery
Ugashik	1,439
Egegik	852
Naknek-Kvichak	828
Nushagak	611
Togiak	169

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/11/2020	23	1,341
7/12/2020	17	1,358
7/13/2020	27	1,385

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	473	473	361	361	112	112
Naknek-Kvichak	726	734	547	555	179	179
Nushagak	282	282	235	235	47	47
Togiak	43	43	43	43		
Ugashik	168	183	128	139	40	44
Grand Total	**1,692**	**1,715**	**1,314**	**1,333**	**378**	**382**

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

- Bristol Bay Daily Run Summary -

through 07/15/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**300,000**	**1,198,436**	**147,498**	**902,022**	**325,000**	**2,425,458**
	Ugashik River			147,498	902,022	325,000	
	Egegik	**407,000**	**10,257,729**	**101,310**	**2,129,508**	**0**	**12,387,237**
	Egegik River			101,310	2,129,508	0	
	Naknek-Kvichak	**530,000**	**11,132,632**	**610,422**	**9,344,010**	**600,000**	**21,076,642**
	Alagnak River			171,090	1,905,306	0	
	Kvichak River			176,034	3,547,620	600,000	
	Naknek River			263,298	3,891,084	0	
Bristol Bay West	**Nushagak**	**297,000**	**7,966,179**	**109,522**	**3,339,718**	**0**	**11,305,897**
	Igushik River			15,984	187,182	0	
	Nushagak River			20,596	1,162,804	0	
	Wood River			72,942	1,989,732	0	
	Togiak	**17,000**	**145,415**	**7,734**	**32,130**	**0**	**177,545**
	Togiak River			7,734	32,130	0	
Bristol Bay Totals:		**1,551,000**	**30,700,391**	**976,486**	**15,747,388**	**925,000**	**47,372,779**

Sockeye per Drift Delivery for: July 15

	Sockeye per Delivery
Ugashik	1,583
Egegik	639
Naknek-Kvichak	530
Nushagak	661
Togiak	124

Test Fishery Port Moller

Date	Index Daily	Cumulative
7/12/2020	17	1,358
7/13/2020	27	1,385

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	472	472	360	360	112	112
Naknek-Kvichak	725	730	549	554	176	176
Nushagak	279	279	233	233	46	46
Togiak	43	43	43	43		
Ugashik	174	191	134	143	40	48
Grand Total	**1,693**	**1,715**	**1,319**	**1,333**	**374**	**382**

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

- Bristol Bay Daily Run Summary -

through 07/16/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**191,000**	**1,389,928**	**123,144**	**1,025,166**	**325,000**	**2,740,094**
	Ugashik River			123,144	1,025,166	325,000	
	Egegik	**447,000**	**10,718,084**	**88,536**	**2,218,044**	**0**	**12,936,128**
	Egegik River			88,536	2,218,044	0	
	Naknek-Kvichak	**577,000**	**11,708,868**	**395,460**	**9,739,470**	**250,000**	**21,698,338**
	Alagnak River			134,514	2,039,820	0	
	Kvichak River			187,764	3,735,384	250,000	
	Naknek River			73,182	3,964,266	0	
Bristol Bay West	**Nushagak**	**225,000**	**8,191,225**	**102,187**	**3,441,905**	**0**	**11,633,130**
	Igushik River			23,526	210,708	0	
	Nushagak River			12,415	1,175,219	0	
	Wood River			66,246	2,055,978	0	
	Togiak	**8,000**	**153,173**	**10,920**	**43,050**	**0**	**196,223**
	Togiak River			10,920	43,050	0	
Bristol Bay Totals:		**1,448,000**	**32,161,278**	**720,247**	**16,467,635**	**575,000**	**49,203,913**

Test Fishery Port Moller

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	431	428	329	326	102	102
Naknek-Kvichak	716	729	545	555	171	174
Nushagak	278	281	232	234	46	47
Togiak	44	44	44	44		
Ugashik	183	231	139	172	44	59
Grand Total	**1,652**	**1,713**	**1,289**	**1,331**	**363**	**382**

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

- Bristol Bay Daily Run Summary -

through 07/17/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**164,000**	**1,553,501**	**119,376**	**1,144,542**	**250,000**	**2,948,043**
	Ugashik River			119,376	1,144,542	250,000	
	Egegik	**332,000**	**11,050,277**	**61,902**	**2,279,946**	**0**	**13,330,223**
	Egegik River			61,902	2,279,946	0	
	Naknek-Kvichak	**473,000**	**12,180,921**	**198,882**	**9,938,352**	**100,000**	**22,219,273**
	Alagnak River			43,140	2,082,960	0	
	Kvichak River			121,974	3,857,358	100,000	
	Naknek River			33,768	3,998,034	0	
Bristol Bay West	**Nushagak**	**188,000**	**8,378,555**	**74,111**	**3,516,016**	**0**	**11,894,571**
	Igushik River			22,140	232,848	0	
	Nushagak River			14,291	1,189,510	0	
	Wood River			37,680	2,093,658	0	
	Togiak	**8,500**	**161,378**	**9,018**	**52,068**	**0**	**213,446**
	Togiak River			9,018	52,068	0	
Bristol Bay Totals:		**1,165,500**	**33,324,632**	**463,289**	**16,930,924**	**350,000**	**50,605,556**

Sockeye per Drift Delivery for: July 17

	Sockeye per Delivery
Ugashik	649
Egegik	788
Naknek-Kvichak	544
Nushagak	534
Togiak	231

Test Fishery Port Moller

No recent results found. Potentially weathered out.

Registrations as of: July 18 09:00 AM- and - July 20 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	426	428	324	325	102	103
Naknek-Kvichak	728	728	554	554	174	174
Nushagak	290	290	243	243	47	47
Togiak	44	44	44	44		
Ugashik	228	226	169	168	59	58
Grand Total	**1,716**	**1,716**	**1,334**	**1,334**	**382**	**382**

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

- Bristol Bay Daily Run Summary -

through 07/18/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**150,000**	**1,703,486**	**97,392**	**1,241,934**	**200,000**	**3,145,420**
	Ugashik River			97,392	1,241,934	200,000	
	Egegik	**260,000**	**11,310,332**	**27,240**	**2,307,186**	**0**	**13,617,518**
	Egegik River			27,240	2,307,186	0	
	Naknek-Kvichak	**415,000**	**12,596,086**	**134,994**	**10,073,346**	**0**	**22,669,432**
	Alagnak River			48,654	2,131,614	0	
	Kvichak River			53,820	3,911,178	0	
	Naknek River			32,520	4,030,554	0	
Bristol Bay West	**Nushagak**	**164,000**	**8,548,953**	**47,315**	**3,563,331**	**0**	**12,112,284**
	Igushik River			13,926	246,774	0	
	Nushagak River			9,365	1,198,875	0	
	Wood River			24,024	2,117,682	0	
	Togiak	**0**	**161,438**	**5,988**	**58,056**	**0**	**219,494**
	Togiak River			5,988	58,056	0	
Bristol Bay Totals:		**989,000**	**34,320,295**	**312,929**	**17,243,853**	**200,000**	**51,764,148**

Sockeye per Drift Delivery for: July 18

	Sockeye per Delivery
Ugashik	595
Egegik	716
Naknek-Kvichak	529
Nushagak	510
Togiak	

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

Registrations as of: July 19 09:00 AM- and - July 21 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	433	433	329	329	104	104
Naknek-Kvichak	732	732	556	556	176	176
Nushagak	291	283	244	240	47	43
Togiak	44	44	44	44		
Ugashik	216	224	161	165	55	59
Grand Total	**1,716**	**1,716**	**1,334**	**1,334**	**382**	**382**

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

- Bristol Bay Daily Run Summary -

through 07/19/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**143,000**	**1,845,729**	**85,488**	**1,327,422**	**0**	**3,173,151**
	Ugashik River			85,488	1,327,422	0	
	Egegik	**267,000**	**11,577,721**	**17,472**	**2,324,658**	**0**	**13,902,379**
	Egegik River			17,472	2,324,658	0	
	Naknek-Kvichak	**281,000**	**12,877,000**	**110,040**	**10,183,386**	**0**	**23,060,386**
	Alagnak River			44,250	2,175,864	0	
	Kvichak River			32,334	3,943,512	0	
	Naknek River			33,456	4,064,010	0	
Bristol Bay West	**Nushagak**	**96,000**	**8,646,551**	**48,492**	**3,611,823**	**0**	**12,258,374**
	Igushik River			14,916	261,690	0	
	Nushagak River			4,398	1,203,273	0	
	Wood River			29,178	2,146,860	0	
	Togiak	**0**	**161,438**	**5,844**	**63,900**	**0**	**225,338**
	Togiak River			5,844	63,900	0	
Bristol Bay Totals:		**787,000**	**35,108,439**	**267,336**	**17,511,189**	**0**	**52,619,628**

Sockeye per Drift Delivery for: July 19

	Sockeye per Delivery
Ugashik	750
Egegik	811
Naknek-Kvichak	482
Nushagak	308
Togiak	

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

Registrations as of: July 20 09:00 AM- and - July 22 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	434	434	330	330	104	104
Naknek-Kvichak	736	735	559	558	177	177
Nushagak	278	278	236	236	42	42
Togiak	44	44	44	44		
Ugashik	224	225	165	166	59	59
Grand Total	**1,716**	**1,716**	**1,334**	**1,334**	**382**	**382**

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

- Bristol Bay Daily Run Summary -

through 07/23/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**72,000**	**2,305,295**	**51,234**	**1,527,900**	**0**	**3,833,195**
	Ugashik River			51,234	1,527,900	0	
	Egegik	**247,000**	**12,613,065**	**9,816**	**2,383,698**	**0**	**14,996,763**
	Egegik River			9,816	2,383,698	0	
	Naknek-Kvichak	**101,000**	**13,843,516**	**37,956**	**10,426,596**	**0**	**24,270,112**
	Alagnak River			33,528	2,313,726	0	
	Kvichak River			4,428	4,000,710	0	
	Naknek River			0	4,112,160	0	
Bristol Bay West	**Nushagak**	**48,000**	**8,863,225**	**25,542**	**3,749,595**	**0**	**12,612,820**
	Igushik River			5,760	296,088	0	
	Nushagak River			3,264	1,220,823	0	
	Wood River			16,518	2,232,684	0	
	Togiak	**0**	**161,438**	**9,726**	**101,664**	**0**	**263,102**
	Togiak River			9,726	101,664	0	
Bristol Bay Totals:		**468,000**	**37,786,539**	**134,274**	**18,189,453**	**0**	**55,975,992**

Sockeye per Drift Delivery for: July 23

	Sockeye per Delivery
Ugashik	653
Egegik	871
Naknek-Kvichak	305
Nushagak	527
Togiak	

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

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

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	445	447	338	340	107	107
Naknek-Kvichak	741	741	564	564	177	177
Nushagak	270	269	229	228	41	41
Togiak	46	46	46	46		
Ugashik	216	215	159	158	57	57
Grand Total	**1,718**	**1,718**	**1,336**	**1,336**	**382**	**382**

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

- Bristol Bay Daily Run Summary -

through 07/30/2020

		Catch Daily	Cumulative	Escapement Daily	Cumulative	In-River Estimate	Total Run
Bristol Bay East	**Ugashik**	**17,000**	**2,614,308**	**0**	**1,745,940**	**0**	**4,360,248**
	Ugashik River			0	1,745,940	0	
	Egegik	**26,000**	**13,224,313**	**0**	**2,389,728**	**0**	**15,614,041**
	Egegik River			0	2,389,728	0	
	Naknek-Kvichak	**0**	**14,105,924**	**0**	**10,526,190**	**0**	**24,632,114**
	Alagnak River			0	2,383,062	0	
	Kvichak River			0	4,030,968	0	
	Naknek River			0	4,112,160	0	
Bristol Bay West	**Nushagak**	**0**	**8,926,285**	**2,856**	**3,790,234**	**0**	**12,716,519**
	Igushik River			2,856	317,844	0	
	Nushagak River			0	1,228,504	0	
	Wood River			0	2,243,886	0	
	Togiak	**12,000**	**353,900**	**15,162**	**183,132**	**0**	**537,032**
	Togiak River			15,162	183,132	0	
Bristol Bay Totals:		**55,000**	**39,224,730**	**18,018**	**18,635,224**	**0**	**57,859,954**

Sockeye per Drift Delivery for: July 30

	Sockeye per Delivery
Ugashik	451
Egegik	535
Naknek-Kvichak	206
Nushagak	29
Togiak	312

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

Registrations as of: July 31 09:00 AM- and - August 02 09:00 AM

District	Permits	Permits in 48 hrs.	Vessels	Vessels in 48 hrs.	DBoats	DBoats in 48 hrs.
Egegik	456	456	344	344	113	113
Naknek-Kvichak	732	732	560	560	172	172
Nushagak	269	269	228	228	41	41
Togiak	50	50	50	50		
Ugashik	215	215	158	158	57	57
Grand Total	**1,722**	**1,722**	**1,340**	**1,340**	**383**	**383**

Appendix E

ADF&G season summary of the 2020 Bristol Bay salmon season.

Published September 2020

Division of Commercial Fisheries
Sam Rabung, Director

Anchorage Office
333 Raspberry Road
Anchorage, AK 99518

Alaska Department of Fish and Game
Doug Vincent-Lang, Commissioner

PO Box 115526
Juneau, AK 99811-5526
www.adfg.alaska.gov

Advisory Announcement

For Immediate Release:
September 23, 2020

Time: 11:00 a.m.

CONTACT:
Tim Sands, Nushagak/Togiak Area Biologist
Travis Elison, Naknek-Kvichak Area Biologist
Aaron Tiernan, Egegik/Ugashik Area Biologist
(907) 842-5227

2020 BRISTOL BAY SALMON SEASON SUMMARY

The following is an overview of the 2020 Bristol Bay commercial salmon season. All data are preliminary. The 2020 inshore Bristol Bay sockeye salmon run of 58.2 million fish (Table 1) is the fifth largest total run and was 46% above the 40.0 million average run for the latest 20-year time period (2000–2019). It was the sixth consecutive year that the Bristol Bay inshore sockeye salmon run exceeded 50.0 million fish.

The 2020 Bristol Bay sockeye salmon run was 25% above the preseason inshore forecast of 46.6 million fish (Table 2). Runs to the Egegik, Naknek-Kvichak, and Nushagak districts were larger than the preseason forecast. The commercial harvest of 39.5 million sockeye salmon (Table 1) was 14% above the 34.6 million preseason forecast and is the fifth largest harvest on record. All sockeye salmon escapement goals were met or exceeded, with a total bay-wide escapement of 18.7 million fish (Table 3). The preliminary harvest estimates for other species are 10,000 Chinook, 425,000 chum, 107,000 coho, and 73,000 pink salmon (Table 1).

EXVESSEL VALUE

Exvessel value of salmon caught in Bristol Bay in 2020 was estimated using the weight, harvest, and price paid for each species. The 2020 Bristol Bay preliminary exvessel value of $140.7 million of all salmon species (Table 4) ranks ninth in the last 20 years and was 5% below the 20-year average of $147.8 million. The 40.1 million harvest of all salmon species was the fourth largest since 2000 (Table 1). Prices are an average of postseason processor final operations reports and do not include future price adjustments for icing, bleeding, or production bonuses.

SPECIES PERFORMANCE

Sockeye Salmon

The 2020 harvest of 39.5 million fish (Table 5) was 46% higher than the recent 20-year average for all districts (Table 5). Sockeye salmon escapement goals were met on Kvichak, Alagnak, Togiak, and Igushik rivers. All other systems exceeded their respective escapement goal ranges (Table 3). All districts observed relatively late run timing this season. Unlike the most recent three years, the timing was such that large harvests were seen in the Nushagak, Naknek-Kvichak, and Egegik districts simultaneously. This resulted in several days of harvest over 2.5 million sockeye salmon and subsequently, some processors placed temporary restrictions on their fleet's harvest.

The 2020 Bristol Bay sockeye salmon run was dominated by the 1.2 and 1.3 age classes, or fish with one year of freshwater residence. Fish with two years of freshwater residence (2.2s and 2.3s) were below the

preseason forecast, particularly in the Egegik and Kvichak rivers. Average weight at age for sockeye salmon were nearly one pound less than their respective historical averages.

Chinook Salmon

Except in the Ugashik District, the 2020 Chinook salmon harvests in Bristol Bay were below average (Table 6). All Chinook salmon were caught during directed sockeye salmon periods in all commercial districts and a preliminary total of 10,000 fish were harvested, which is below the most recent 20-year average of 44,000 fish (Table 6). Chinook salmon passage into the Nushagak River as enumerated at the sonar site was 43,000 fish, below the escapement goal range of 55,000–120,000.

Chum Salmon

The 2020 preliminary Bristol Bay chum salmon harvest was 425,000 fish (Table 1), which was below the latest 20-year average of 1,106,000 fish. The Nushagak District was the largest producer of chum salmon, where 260,000 fish were harvested. The Nushagak River chum salmon escapement of 112,000 was below the minimum escapement goal of 200,000.

Pink Salmon

Though pink salmon return to Bristol Bay in greater numbers in even years, it is difficult to say what the overall magnitude of the pink salmon return was in 2020. There was little directed commercial effort for pink salmon and no escapement enumeration of pink salmon in Bristol Bay. The commercial harvest of 73,000 fish (Table 1) was far short of the 510,000 even-year average harvest but was not the lowest harvest in the last 20 years.

Coho Salmon

The preliminary coho salmon harvest in 2020 was 107,000 fish (Table 1), which was above the latest 20-year average of 96,000 fish. The Nushagak District is typically the largest producer of coho salmon, as was the case in 2020. Coho salmon harvest in the Nushagak District was 76,388 fish (Table 1).

ALLOCATION

Bristol Bay fisheries are managed to achieve allocation between drift and set gillnet gear groups in four of five districts. 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. The Egegik, Naknek-Kvichak, and Nushagak District harvest percentages either met or were relatively close to their established allocation goals The Ugashik District deviated from the allocation plan by 16%, with the set gillnet fleet harvesting more than their allocation (Table 7).

Acknowledgements

The department would like to thank the Bristol Bay Fisheries Collaborative (BBFC) for funding assistance in 2020. Created in 2016, this was the fourth season that BBFC provided financial support to assist management of the salmon fishery. BBFC is an agreement between ADF&G and the Bristol Bay Science and Research Institute (BBSRI) to work together and with stakeholders to restore a world class fisheries management system and raise funds for its support and maintenance. This agreement is supported by ADF&G, drift and set gillnet fishermen, processors, municipalities, villages, support industries, and other stakeholders. BBFC provided $600,000 to support management projects in 2020. A list of organizations that have provided financial support to the BBFC, as well as additional information about this agreement can be found at https://www.bbsri.org/bbfc.

Port Moller Test Fishery – Separately from BBFC and for the third consecutive season, BBSRI and the Bristol Bay Regional Seafood Development Association (BBRSDA) funded the deployment of a second vessel in the Port Moller Test Fishery in 2020. The second test fishing vessel documented a substantial portion of the Bristol Bay sockeye salmon run moving by the test fishery well beyond the historically fished locations. The 2020 program provided a better index of the arrival timing, abundance, and stock composition of this year's return than was possible with a single vessel. Mechanical problems that precluded the arrival of the core test fishing vessel this season made the second vessel essential to all the 2020 Port Moller results.

Table 1.–Preliminary 2020 Bristol Bay salmon harvest and escapement by district and species.

District	Sockeye	Chinook	Chum	Pink	Coho	TOTAL
Naknek-Kvichak catch	14,083,915	530	41,733	999	598	14,127,775
Escapement-Kvichak	4,030,968	ND	ND	ND	ND	4,030,968
Naknek	4,112,160	ND	ND	ND	ND	4,112,160
Alagnak	2,386,518	ND	ND	ND	ND	2,386,518
NK Subtotal	24,613,561	530	41,733	999	598	24,657,421
Egegik catch	13,361,640	476	47,300	732	20,373	13,430,521
Escapement-Egegik	2,389,728	ND	ND	ND	ND	2,389,728
Egegik subtotal	15,751,368	476	47,300	732	20,373	15,820,249
Ugashik catch	2,613,661	1,216	21,661	0	242	2,636,780
Escapement-Ugashik	1,745,940	ND	ND	ND	ND	1,745,940
Ugashik subtotal	4,359,601	1,216	21,661	0	242	4,382,720
Nushagak catch	8,940,438	6,826	260,154	28,691	76,388	9,312,497
Escapement- Wood	2,243,886	ND	ND	ND	ND	2,243,886
Igushik	323,814	ND	ND	ND	ND	323,814
Nushagak	1,228,059	43,032	112,731	ND	ND	1,383,822
Nushagak subtotal	12,736,197	49,858	372,885	28,691	76,388	13,264,019
Togiak catch	458,844	753	54,186	42,623	9,857	566,263
Escapement - Togiak	261,126	ND	ND	ND	ND	261,126
Togiak R. & trib.	ND	ND	ND	ND	ND	0
Kulukak	ND	ND	ND	ND	ND	0
Togiak subtotal	719,970	753	54,186	42,623	9,857	827,389
Bristol Bay catch	39,458,498	9,801	425,034	73,045	107,458	40,073,836
Bristol Bay escapement	18,722,199	43,032	112,731	0	0	18,877,962
Bristol Bay total run	58,180,697	52,833	537,765	73,045	107,458	58,951,798

[a] Nushagak sonar enumerated Chinook, sockeye, and chum salmon in 2020.

Table 2.–Difference between Bristol Bay sockeye salmon actual inshore run and preseason forecast, 2020.

District	Inshore forecast	Inshore run	% Above/below forecast
Naknek-Kvichak	19,010,000	24,613,561	30% Above
Egegik	10,230,000	15,751,368	54% Above
Ugashik	4,450,000	4,359,601	2% Below
Nushagak	12,030,000	12,736,197	6% Above
Togiak	880,000	719,970	18% Below
Totals	46,600,000	58,180,697	25% Above

Table 3.–Bristol Bay sockeye salmon escapement goals and actual escapements, 2020.

River system	Escapement goal range	Escapement
Kvichak River	2,000,000–10,000,000	4,030,968
Naknek River	800,000–2,000,000	4,112,160
Alagnak River	320,000 minimum	2,386,518
Egegik River	800,000–2,000,000	2,389,728
Ugashik River	500,000–1,400,000	1,745,940
Nushagak River	370,000–900,000	1,228,059
Wood River	700,000–1,800,000	2,243,886
Igushik River	150,000–400,000	323,814
Togiak River	120,000–270,000	261,126
Total		18,722,199

Table 4.–Average price, weight, harvest, and value of salmon harvest in Bristol Bay, 2020.

Species	Price/lb.	Avg. weight (lb.)	Number of fish	Total weight	Value
Sockeye	$0.70	5.1	39,458,498	199,275,503	$139,492,852
Chinook	$0.50	8.6	9,801	83,897	$41,948
Chum	$0.25	6.1	425,034	2,569,544	$642,386
Pink	$0.05	3.3	73,045	240,310	$12,016
Coho	$0.70	6.2	107,458	668,151	$467,706
Totals			40,073,836	202,837,405	$140,656,908

Table 5.–2020 Preliminary commercial sockeye salmon harvests and 20-year averages by district.

District	2000–2019 Average sockeye harvest	2020 Sockeye salmon harvest
Naknek-Kvichak	8,433,034	14,083,915
Egegik	7,190,984	13,361,640
Ugashik	2,871,760	2,613,661
Nushagak	7,915,926	8,940,438
Togiak	623,378	458,844
Totals	27,035,082	39,458,498

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

District	2000–2019 Average Chinook salmon harvest	2020 Chinook salmon harvest
Naknek-Kvichak	1,727	530
Egegik	802	476
Ugashik	974	1,216
Nushagak	34,883	6,826
Togiak	5,325	753
Totals	43,711	9,801

Table 7.–Allocation of Bristol Bay drift and set gillnet harvest, 2020.

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	84% / 80%	16% / 20%	Naknek: 8% / 12% Kvichak: 8% / 8%
Egegik	86% / 86%	14% / 14%	–
Ugashik	90% / 74%	10% / 26%	–
Nushagak[a]	74% / 71 %	26% / 23%	Nushagak: 20% / 26% Igushik: 6% / 3%

[a] Wood River Special Harvest Area harvest was entirely drift gillnet and is included in the 71% listed above.