

Port Moller Test Fishery, Update #6, June 19, 2005.

Daily Summary, Port Moller sockeye test fishery, 2005.

Date	Sockeye Catch by Station						Avg fish length (mm) ^a	Avg. Temp (°C)	Traditional Index ^b		Comments
	2	4	6	8	10	12			Daily	Cum.	
9-Jun	1	1	0	2	0	-	580				
10 Jun ^d	-	-	5	5	9	-	580	9.4	6		Stn 8&10 fished twice (stn avgs shown)
11-Jun	6	-	-	-	-	-	568	8.0	13	13	Cum. starts; short day - training on 10th
12-Jun	-	-	-	-	-	-		8.0	13	27	No fishing; strong westerly wind
13-Jun	2	0	0	5	10	-	566	9.8	5	32	Calm to light NW winds
14-Jun	-	1	9	41	-	-	552	9.0	42	73	Variable winds. Troubles at stn 10.
15-Jun	4	10	13	31	13	1	559	10.7	39	112	Clear, light SE wind on transect
16 Jun ^e	-	-	-	-	-	43	555	10.0	39	151	Technical difficulties at stn 12.
17-Jun	-	-	-	-	-	-			0	151	Repairs in PM
18-Jun	-	-	-	-	-	-			0	151	Repairs in PM
Totals	13	12	27	84	32	44					
Percent^c	8	7	16	50	19						

^a To put the *average for the entire catch* into perspective, 3-ocean fish typically range from 560 to 580 and 2-ocean fish from 500 to 530 mm (length measured from middle of the eye to the fork of the tail).

^b Traditional index based on stations 2,4,6, and 8 (stn 8 weighted double, stn 10 not used).

^c Percent of the boat's cumulative sockeye catch for stations 2-10 by station.

^d As part of training new crew, stations 8 and 10 were fished twice. Catches were 0&10 and 13&5 for stns 8 and 10.

^e There were actually 141 fish caught at station 12 over a ~3-hour soak. The 43 fish represents the catch per average soak time, which is ~54 min. This was done to not exaggerate the size of the 141 fish catch relative to other sets.

Unfortunately, the crew wasn't able to complete needed repairs and leave port until last night's high tide. It is unlikely they did any fishing last night (18th). At the least, they should have been in place last night to start fishing first thing this morning.

Special thanks to the ADF&G Genetics Lab personnel for literally working around the clock since Friday evening. As a result, we now have the stock composition results available for the PM catch up to and including June 16th. We also now have available age data from PM (table below).

Age Data

Age composition from Port Moller, 2005.

Date	Daily Index	Sample Size	AGE COMPOSITION (%)				
			0.3	1.2	1.3	2.2	2.3
10-Jun	6	28	4	11	61	11	14
11-Jun	13	5			60		40
13-Jun	5	13			23	8	69
14-Jun	42	39			54	21	26
15-Jun	39	60	2	3	52	15	27
16-Jun	39	107	1	1	54	8	34
Total (%; weighted)	144	252	1	2	53	13	30
% from preseason forecast			0	18	49	10	22

When interpreting the age composition information to date from Port Moller there are a couple things to note. First, the larger 3-ocean fish (1.3 and 2.3) will be over represented in the sample due to the fact that they are more likely to be caught in the net than 2-ocean fish. The data above have not been adjusted to account for this phenomenon. Second, not all age classes are expected to be distributed evenly across the season. For example, early run Egegik's 2.3s may skew the year-to-date sample relative to what it will look like later. The last line in the table represents the % composition of the complete run (if all stocks came in at forecast).

The limited age data are reasonably consistent with the preseason forecast with the exception that 1.2s are scarce. We expect the 1.2s to arrive a little later in the run than the 3-ocean fish but the 2% year to date and the 18% of the entire run is significant. I have included the more detailed ADF&G 2005 preseason forecast by age class below. Note that Egegik 2.3s represented ~60% of the preseason forecast of 2.3s.

Forecasted production, spawning escapement goals, and expected harvests of major age classes of sockeye salmon returning to Bristol Bay river systems in 2005.

District: River	Millions of Sockeye Salmon						
	Forecasted Production by Age Class					Spawning Goal	Total Harvest
	1.2	2.2	1.3	2.3	Total		
NAKNEK-KVICHAK:							
Kvichak	0.69	0.29	0.49	0.88	2.35	2.00	0.35
Alagnak	1.75	0.17	2.65	0.36	4.93	0.19 ^a	4.75
Naknek	0.34	0.14	2.49	0.79	3.76	1.10	2.66
Total	2.78	0.60	5.62	2.03	11.04	3.29	7.76
EGEGIK	0.39	1.80	3.72	4.46	10.37	1.10	9.27
UGASHIK	0.72	0.85	1.52	0.52	3.61	0.85	2.76
NUSHAGAK^b							
Wood	1.50	0.09	3.31	0.14	5.04	1.10	3.94
Igushik	0.17	0.02	0.46	0.05	0.70	0.23	0.48
Nushagak	0.26	0.01	1.16	0.01	1.69 ^c	0.55	1.14
Total	1.93	0.12	4.93	0.20	7.43	1.88	5.56
TOGIAK ^d	0.08	0.02	0.22	0.07	0.39	0.15	0.24
BRISTOL BAY	5.90	3.39	16.01	7.28	32.84	7.26	25.58

^a The Alagnak River spawning goal is based on aerial surveys.

^b Forecast for Snake River system was not included (1971 - 1991 average escapement was 18,000).

^c Nushagak River forecast includes ages 0.3 (103 thousand) and 1.4 (150 thousand).

^d Forecasts for Kulukak, Kanik, Osviak, and Matogak River systems were not included. These systems may contribute an additional 56,000 (1995 - 2004 mean catch) to Togiak District harvest.

^e The total harvest does not account for South Peninsula harvest or inseason capacity concerns.

Stock Composition Data

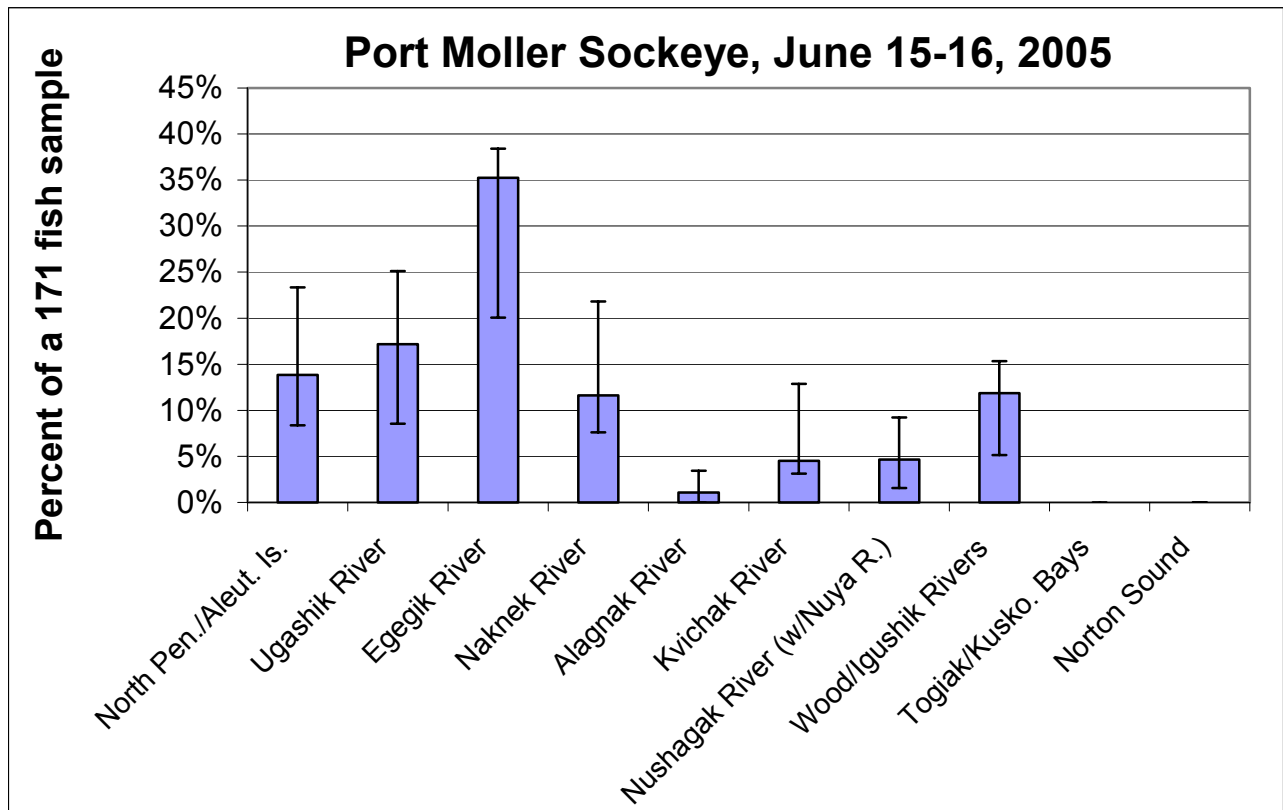
Below is the estimated stock composition from 171 fish in the PM catch on June 15 and 16. The columns represent the "best" point estimate of the proportion of the sample for each stock. The error bars represent the 90% confidence intervals, which are not symmetric about the "best" estimate. The data from earlier dates (102 fish) were similar to the results from June 15-16 but rather than complicate the interpretation with the earlier catches, it was best to present the results from the latest two dates. The later two dates also represent a larger proportion of the incoming fish and therefore they are more useful.

There are several reasons why one should use extreme caution when interpreting these results.

First, the sample size is relatively small so the estimates are somewhat imprecise (wider 90% confidence intervals than is possible with large samples). Second, although we are confident that the stock origins for the 171 fish that were analyzed for genetic information were not bias toward one stock or another, **we cannot measure how representative the sample is of all fish headed for Bristol Bay** and we know it probably isn't completely representative. Three-ocean fish will be over represented in the PM catch and to the extent that some stocks have a higher proportion of 3-ocean fish than other stocks (e.g., Egegik), their % composition will be biased high relative to all fish moving past Port Moller. Another reason why the sample may not be representative of all fish could be because most of the fish in this sample come from station 12 on June 16th. We may later learn that some stocks are present at station 12 to a greater degree than other stocks. The fact that the other 102 fish sampled across all stations looked similar to the June 15-16 sample suggests that any bias associated with station 12 only isn't likely huge, but, again, interpret the results with caution.

It is important to note that the North Peninsula stocks will likely be over represented in the Port Moller test catch relative to their abundance. We expect this because they will be spending more time in the area than Bristol Bay bound fish and therefore are significantly more vulnerable to being caught in the test net (North Pen. stocks are milling off their natal streams whereas BB fish are 200 miles from their natal streams). Once we are farther into the Bristol Bay run, we can expect this expected bias in our composition estimates to become insignificant.

In summary, it is a small, unadjusted sample from early in the run and it was dominated by station 12 catches. However, it is still better than no sample. As more results are added to this season and as we have more years experience understanding the intra-season and intra-station variability, we will be able to more confidently make in-season forecasts even at this early stage of the run.



One way to deal with the North Peninsula presence in the sample is to characterize “of the 147 Bristol Bay bound fish in the catch, what portion is from each Bristol Bay stock”. Of the Bristol Bay bound fish in this June 15-16 sample, the best estimate is that 41% were Egegik, 20% Ugashik, 14% Naknek, 14% Wood/Igushik, 5% to Nushagak, 5% Kvichak and 1.2% Alagnak. Again, these are unadjusted for differences in vulnerability with fish size and the majority of fish were from station 12.

The Alagnak (Branch) component is smaller than expected. Last year on a 43 million fish run, the Alagnak, which came in at over 6 million fish, was showing 6% of the PM catch for this approx. date (and 5% a week later). Again, such a result could be a sampling problem, but Alagnak does seem like one that should be added to a “watch list” at this point. Commenting any more on the stock composition results will give an appearance of more concreteness than the results deserve.

This year's Port Moller project is being managed and staffed by the Bristol Bay Science and Research Institute. Including the genetics analysis, the out-of-pocket cost of the project is about \$150,000. The project was funded by ADF&G (60%), 10 processing companies (25%) and BBSRI (15%).

The PM vessels sets a 200 fathom 5 1/8" mesh net for about one hour at each station. Station 2 is the nearshore station and is 33 nm offshore from PM; the remaining stations fished are 10 nm apart. Station 10 is 73 nm offshore. Station 12 is 83 nm and station 14 is 93 nm offshore from PM. They typically fish stations on the way out on day one, spend the night offshore and fish the same stations on the way back on day two of a two-day trip.

Greg Buck manages the Port Moller test fishery program. Technicians Zachary Babb and Demetri Gust conduct the sampling on the *F/V Deliverance* and BBSRI's Executive Director Michael Link prepares project updates. These updates are provided by BBSRI as a public service to fishermen and processors. Although none of this would have been possible without the help of ADF&G personnel and funding, the interpretations contained in these updates are not "official" ADF&G interpretations of the Port Moller test fishery data.

Fred West (ADF&G) manages the scale ageing operation in King Salmon and provides timely summaries of age composition from the Port Moller catch.

Chris Habicht (ADF&G) manages the genetic stock identification component of the project and he works with Dr. Jim Seeb (ADF&G) to analyze and interpret the genetics results.