



2016 BBRSDA Processor Survey

Prepared for

**Bristol Bay Regional Seafood
Development Association**

April 2017



**Northern
Economics**

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PROFESSIONAL CONSULTING SERVICES IN APPLIED ECONOMIC ANALYSIS

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Abbreviations

ADF&G	Alaska Department of Fish and Game
BBEDC	Bristol Bay Economic Development Corporation
BBRSDA	Bristol Bay Regional Seafood Development Association
H&G	Head and Gut
MMlb	Million pounds
RSW	Refrigerated Sea Water

1 Introduction and Summary Conclusions

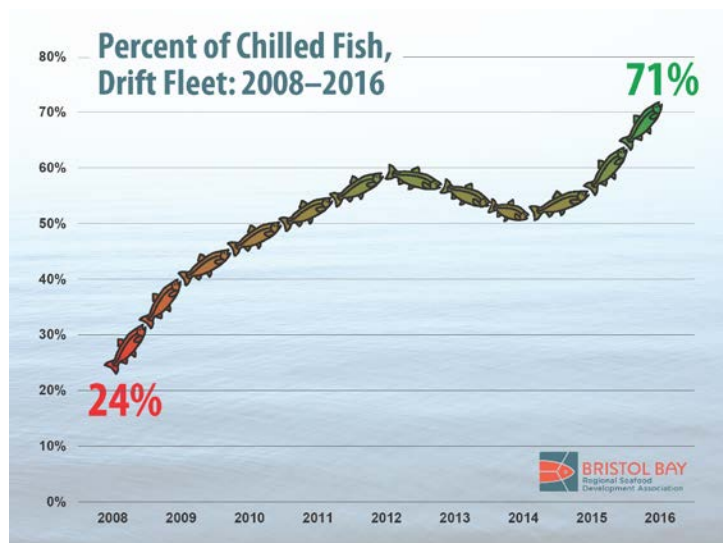
The Bristol Bay Regional Seafood Development Association (BBRSDA) contracted with Northern Economics, Inc. to conduct a survey of processors who operated in the 2016 Bristol Bay salmon fishery. This report summarizes the results of the study.

As in prior surveys, the survey instrument consisted of a series of questions about processor operations in Bristol Bay. The 2016 survey captured raw product data, fleet information, ice production volumes, chilling methods, and respondents' opinions of trends and priorities within the fishery. The 2016 survey collected a second year of responses to a series of questions introduced in 2015 to collect data on the quality of chilled product and preferred chilling practices. The operational questions focused on processors' purchase of chilled product and the distribution of their production among the four major product forms (i.e., canned, Head and Gut [H&G] frozen, H&G Fresh, and Fillet).¹ All of the processors who have traditionally responded to the survey responded this year.²

The 2016 Bristol Bay sockeye run was 46 percent above the average run over the last 20 years and 10 percent above the Alaska Department of Fish and Game (ADF&G) preseason forecast. ADF&G estimates the total Bristol Bay salmon harvest at 211.7 million pounds (MMLb) for 2016, 16.7 MMLb more than in the large 2015 run (ADF&G 2014). This year's processor survey captured over 95 percent of the ADF&G estimate, and respondent processors reported processing 202.2 MMLb of raw (round weight) product from all sources (drift and set permits) in 2016.

This year's key takeaways are:

- The harvest in 2016 was the second largest in the last 20 years and harvesters, both set and drift, responded by chilling the largest amount of raw product ever in the history of the fishery. Product chilled prior to delivery reached astounding 137.2 MMLb in the aggregate fishery and 122.7 MMLb in the drift net fishery. Both of these numbers are records and the drift net fleet chilled 40 percent more sockeye than they did during the 2015 record-setting run. There was a slight decrease (3 percent) in the chilled raw product amounts from the set net fleet after two consecutive years of substantial growth.
- The total volume of drift fleet chilled purchases surpassed the previous all-time record of 87.7 MMLb with a new record of 122.7 MMLb of chilled product. Overall, 71 percent of drift fleet deliveries were chilled. This year's portion of chilled product is well above the previous all-time high of 59 percent set by the fleet in 2012. This year's survey results shed light on the chilling capacity in Bristol Bay, delivering the largest portion of



¹ The full survey instrument is contained in an appendix to this report.

² In addition, Silver Bay Seafoods also joined our seasoned group of processors that take the time to complete the survey every year.

chilled product during a season with one of the largest runs on record. This year's survey results also punctuates the drastic shift in chilling practices over the past 9 years, with chilled purchases growing from 24 percent in 2008 to 71 percent in 2016. These increases in chilling percentage and poundage appear to be driven by new processor requirements and bonuses for chilled fish, supported by efforts from BBRSDA, BBEDC, and the processors themselves to make sure that permit holders are supported in this transition.

- 2016 saw a shift in the amount of raw product flowing into each product form, with a notable shift away from canned product and more of a focus on Fillet and H&G Fresh products. Canned production dropped by nearly 17 million pounds while H&G Fresh production increased nearly eight-fold to 13.6 million pounds and Fillet production increased by 50 percent to just over 49 million pounds. H&G Frozen production stayed constant.
- Processors also reported improvements in the consistency of chilling practices among the drift fleet, with nearly 64 percent of vessels making chilled deliveries over 75 percent of the time. The number of vessels delivering chilled product none of the time (dry deliveries) dropped to 21.7 percent in 2016, nearly half the portion of vessels making dry deliveries first recorded in 2009.
- In 2016, Refrigerated Sea Water (RSW) systems chilled 100.4 MMLb of fish, or 82 percent of the drift fleet's total chilled deliveries. Slush ice chilled the remaining 18 percent of chilled deliveries, roughly 22.1 MMLb. For the second year in a row, when asked if there are any notable quality improvements gained from chilled floated fish (RSW) compared to chilled non-floated fish (slush ice), 90 percent of respondents indicated that the quality of chilled floated fish is typically better than the quality of chilled non-floated fish.
- Attitudinal questions added to the survey the previous year captured a shift in processors' attitudes toward canning in Bristol Bay. The portion of respondents that disagreed with the statement "I can foresee a day when processors don't can any fish from Bristol Bay" decreased from 70 percent in 2015 to 40 percent of respondents in 2016. There was also a corresponding decrease in the portion of respondents that felt that canned product would account for more than 25 percent of the product mix in Bristol Bay, dropping from 90 percent of respondents in 2015 to only 30 percent of respondents in 2016.

2 Raw Product Purchases and Chilling

The combined raw product purchases of the set and drift net fleets increased in 2016 by nearly six percent to 202.2 MMLb, marking the largest total harvest recorded by this survey (see Table 1). The 10.9 MMLb increase in raw product purchases in 2016 continues a three-year trend of increasing harvests in Bristol Bay. Chilled raw product purchases increased by 31.8 MMLb (30 percent) while unchilled product decreased by 20.9 MMLb (24 percent). About 68 percent (137.2 MMLb), of the total aggregate raw product purchases were chilled in 2016, a new survey record for chilled product both in terms of total volume and portion of total raw product purchases that were chilled. Inversely, the 2016 survey also recorded the lowest portion of total raw product purchases that were unchilled (32 percent), and the second lowest volume of unchilled raw product purchases (64.9 MMLb).

This year's survey results provide some interesting insights into the chilling capacity in the region. In previous years with a significant increase in run size and harvest, we saw a decrease in the portion of total product purchases that were chilled, but the data collected by the 2016 survey do not follow that trend, recording both an increase in overall raw product purchases and an increase in the portion of the raw product purchases that were chilled. This suggests that the chilling capacity in the region is greater than previously assumed, or that the size of the run has less of an impact on the portion of raw product purchases that are chilled and some other variable, such as run timing or duration, has more of an impact on the chilling practices in the region.

It is also worth noting that the portion of total raw product purchases that were chilled from both the set and drift net fleets has more than doubled since this survey first started recording data in 2008. This is a clear indication of a shift in chilling practices and a resulting increase in the quality of raw product purchases in the region.

Table 1. Total Raw Product (Drift and Set) Purchases, 2008–2016

Product	2008	2009	2010	2011	2012	2013	2014	2015	2016	Year over Year Change	Average, 2008-2016
MMLb											
Chilled	46.7	63.4	67.2	61.7	69.0	49.9	78.8	105.4	137.2	31.8	75.5
Unchilled	116.7	113.9	98.7	67.3	62.4	43.2	81.9	85.8	64.9	-20.9	81.6
Total	163.4	177.3	165.9	129	131.4	93.1	160.7	191.2	202.2	10.9	157.1
%											
Chilled	29	36	41	48	52	54	49	55	68	30	48
Unchilled	71	64	59	52	48	46	51	45	32	-24	52
Total	100	100	100	100	100	100	100	100	100	0	100

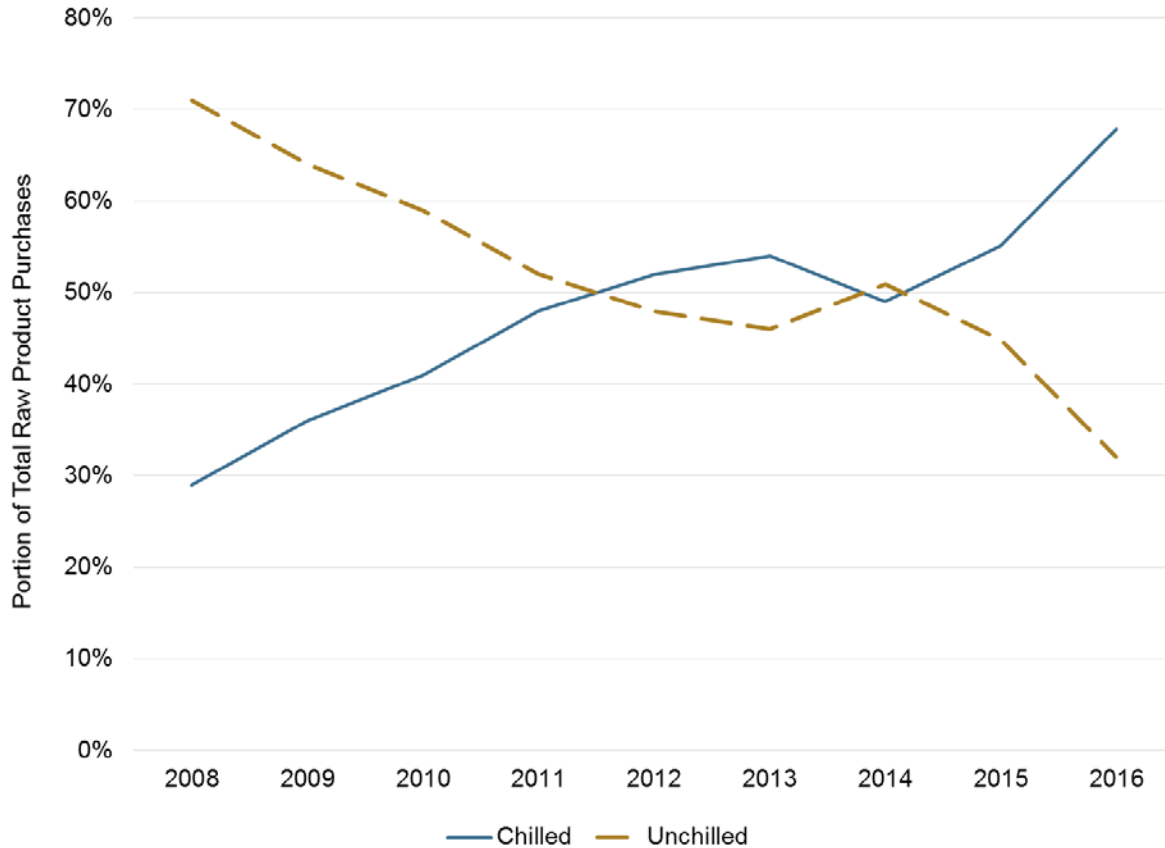
Note: Column totals may not sum due to rounding.

Source: Northern Economics, Inc. 2017.

Figure 1 displays the portion of the total raw product purchases that were chilled or unchilled from 2008 through 2016. With the exception of 2014, the survey has recorded year-over-year increases in the percentage of chilled raw product purchases, and a corresponding decrease in the percentage of unchilled raw product purchases. Both the chilled and unchilled percentages follow fairly linear trends. A significant increase in run size, relatively high base prices compared to bonuses, and a compressed run timing in 2014 are thought to have caused the temporary disruption in that trend, with the survey recording a decrease in the portion of chilled product and an increase in the portion of unchilled

product, but it appears that the region has been able to adjust to the larger run sizes seen in recent years. Results from the 2016 survey show a continuation of an increasing trend in chilling product, recording the highest portion of chilled product purchases captured by this survey.

Figure 1. Total Chilled and Unchilled Product



Source: Northern Economics, Inc., 2017.

Table 2 displays the raw product purchases from the drift fleet alone and excludes the contributions to the fishery made by setnet permit holders. Total purchases from the drift fleet increased by 35 MMLb, or roughly 40 percent between 2015 and 2016. This marks the largest increase in chilled raw product from the drift fleet in terms of volume since the survey began in 2008. Chilled purchases from the drift fleet were the highest recorded in the history of this survey at nearly 123 MMLb. The overall share of the total purchases from the drift fleet that were chilled increased from 56 percent in 2015 to 71 percent in 2016, the highest portion of chilled drift fleet raw product purchases recorded by the survey.

Unlike the two previous years, the 2016 survey recorded an overall decrease in the total volume and portion of unchilled raw product purchases from the drift fleet. Processors reported a total of 49 MMLb of unchilled raw product purchases from the drift fleet, accounting for roughly 29 percent of their total drift fleet raw product purchases. This marks the lowest portion of unchilled drift fleet raw product purchases recorded by this survey.

Table 2. Drift Fleet Raw Product Purchases, 2008–2016

Product	2008	2009	2010	2011	2012	2013	2014	2015	2016	Year over Year Change	Average, 2008-2016
MMlb											
Chilled	32.5	60.0	63.4	58.8	64.8	45.5	67.3	87.7	122.7	35.0	67.0
Unchilled	102.2	91.7	72.6	51.4	44.6	35.5	65.0	69.8	49.0	-20.8	64.6
Total	134.7	151.7	136.0	110.2	109.4	81.0	132.3	157.4	171.7	14.3	131.6
%											
Chilled	24	40	47	53	59	56	51	56	71	40	51
Unchilled	76	60	53	47	41	44	49	44	29	-30	49
Total	100	100	100	100	100	100	100	100	100	9	100

Note: Column totals may not sum due to rounding.

Source: Northern Economics, Inc. 2017.

After seeing a dip in the portion of the total drift net purchases that were chilled from 2013–2014, the results from 2016 show a return to the increasing trend recorded over the first five years of the survey. In 2014, the decrease in the portion of purchases that were chilled was attributed to a significant increase in run size, but it appears that the drift fleet was able to increase its chilling capacity to accommodate an even larger run in 2015 and 2016.

The increase in total chilled raw product purchases in 2016 can primarily be attributed to the drift fleet, with processors reporting 122.7 MMlb or nearly 90 percent of the total chilled raw product purchases coming from the drift fleet. The volume of chilled raw product purchases from the setnet fleet, although still the second highest recorded by the survey, actually decreased by just over six percent in 2016 to 14.5 MMlb in 2016.

The majority of processors indicated ice available to permit holders remained unchanged or only increased marginally between 2015 and 2016, which suggests that the increase in chilled product purchases from the drift fleet was primarily driven by RSW systems.³ Chilling methods are discussed in more detail in Section 4 of this report.

Table 3. Setnet and Drift Fleet Chilled Product Purchases, 2008–2016

Product	2008	2009	2010	2011	2012	2013	2014	2015	2016	Year over Year Change	Average, 2008-2016
Chilled Drift MMlb	32.5	60.0	63.4	58.8	64.8	45.5	67.3	87.7	122.7	35.0	67.0
Chilled Set MMlb	14.2	3.4	3.8	2.9	4.2	4.4	11.5	17.8	14.5	-3.3	8.5
Set Net Portion (%)	30.4	5.4	5.7	4.7	6.1	8.8	14.6	16.9	10.6	-6.3	11.5

Source: Northern Economics, Inc. 2017.

Figure 2 displays the chilled and unchilled portions of the raw product purchases from the drift fleet between 2008 and 2016. During the first five years of this survey, the portion of chilled drift net purchase consistently increased, but in 2013 and 2014 the trend reversed and the share of raw product that drift permit holders were chilling declined. The reversal of the trend of increased product chilling

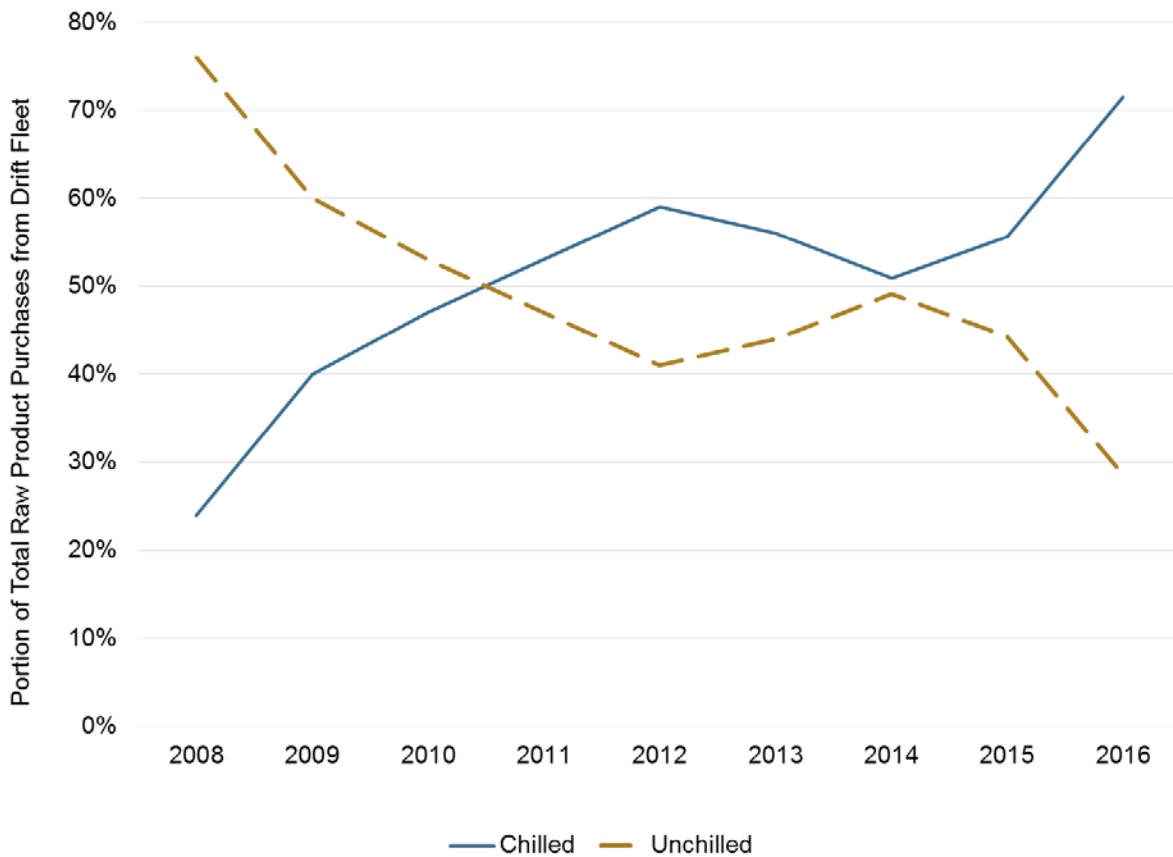
³ 50 percent of respondents reported marginally more ice, 30 percent reported no change, 10 percent reported marginally less ice and the remaining 10 percent did not provide a response to this question.

was not surprising, in light of our finding in 2012 that easier conversions to RSW largely had been completed and that future conversions would be limited to smaller and older vessels.

Survey results from the 2015 and 2016 seasons show that the drift fleet has returned to its initial upward trend, with the portion of chilled raw product purchases from the drift fleet increasing over two consecutive years. During the 2016 season, 71 percent of drift fleet purchases were chilled, surpassing the previous survey record set in 2012 by nearly 12 percent.

As discussed in Section 5, the portion of permit holders that “chill nearly all of the time” increased slightly in 2015 and 2016 after three years of recorded declines, which also suggest more consistent chilling practices across the drift fleet.

Figure 2. Drift Fleet Chilled and Unchilled Product



Source: Northern Economics, Inc., 2017.

One variable that could be influencing the portion of chilled product is the chilling bonus offered by processors for delivering properly chilled raw product. This chilling bonus is a premium that is added to the base ex-vessel price of Bristol Bay salmon on a per-pound basis. Table 4 shows the number of processors that offered chilling bonuses and the average bonus per pound offered. The average chilling bonus has steadily increased since this survey began, starting at \$0.11 per pound in 2008 and rising to \$0.16 per pound in 2016, despite variability in the average base ex-vessel price. For example, the average chilling bonus was steady at \$0.15 per pound from 2011 through 2015, but the average base price dropped from \$1.10 per pound to \$0.54 per pound during that same time period. The chilling bonus as a portion of the base ex-vessel price during that time period significantly increased as a result.

In 2016 we saw a slight reduction in the chilling bonus as a percent of the base price due to a rise in the average base price, but the chilling bonus was still over 20 percent of the base price. If the chilling bonus has a greater impact on the final ex-vessel price (base ex-vessel price plus the chilling bonus), there is a greater incentive for the drift fleet to deliver properly chilled product.

Table 4. Bristol Bay Ex-Vessel Salmon Prices and Chilling Bonuses (2008-2016)

Year	Total Processors	Processors Offering Bonus	Average Base Price/lbs	Average Bonus/lbs	Bonus as % of Base Price	% of Total Drift Purchases Chilled
2008	11	10	0.73	0.11	15.2	24
2009	11	9	0.72	0.10	14.0	40
2010	9	8	0.96	0.12	12.1	47
2011	10	7	1.10	0.15	13.2	53
2012	7	6	1.10	0.15	13.7	59
2013	<i>Data Not Available</i>					
2014	<i>Data Not Available</i>					
2015	9	7	0.54	0.15	27.8	56
2016	11	8	0.78	0.16	21.0	71

Source: Bristol Bay Fishermen's Association, 2016.

Between 2008 and 2012, the number of processors offering chilling bonuses steadily decreased, but in 2015 and 2016 that number has started to increase again. It should be noted that there are a number of processors operating in Bristol Bay that mandate chilling, so the chilling bonus are included in the base ex-vessel price for those processors. This suggests that chilled product is becoming more of a standard rather than an option that needs to be incentivized. The processors that mandate chilled product rather than offer chilling bonuses have a higher average ex-vessel prices to account for the increased level of quality of their purchases.

Similar to chilling, some processors have also started to offer bonuses for using slides and bleeding fish, which are seen as best practices that increase the overall quality of purchases. These incentives reinforce the importance and value place on high quality product purchases, which in turn allow processors the flexibility to direct product to the most profitable product forms. By ensuring the value chain starts at the highest possible level permit holders do their part in ensuring that all of the stakeholders in the system (i.e, permit holders, processors, the community, and state government) maximize the value of the fishery.

3 Finished Product Forms

Along with the increase in the total raw product consumed by the aggregate of all product forms, there was also a shift in the product mix that was produced in Bristol Bay in 2016 (see Table 5). Most notably, the portion of raw product purchases used to produce H&G Fresh (7 percent) and Fillet (24 percent) products increased to the highest levels recorded by this survey. Conversely, the portion of raw product purchases used to produce canned products decreased sharply by 16.5 MMlb to a record low of 27 percent. H&G Frozen products still consume the largest portion of the total raw product (83.9 MMlb), but decreased slightly from 45 percent of total raw product purchases in 2015 to 42 percent in 2016.

Table 5. Total Raw Product Consumed by Estimated First Wholesale Product Form, 2008-2016

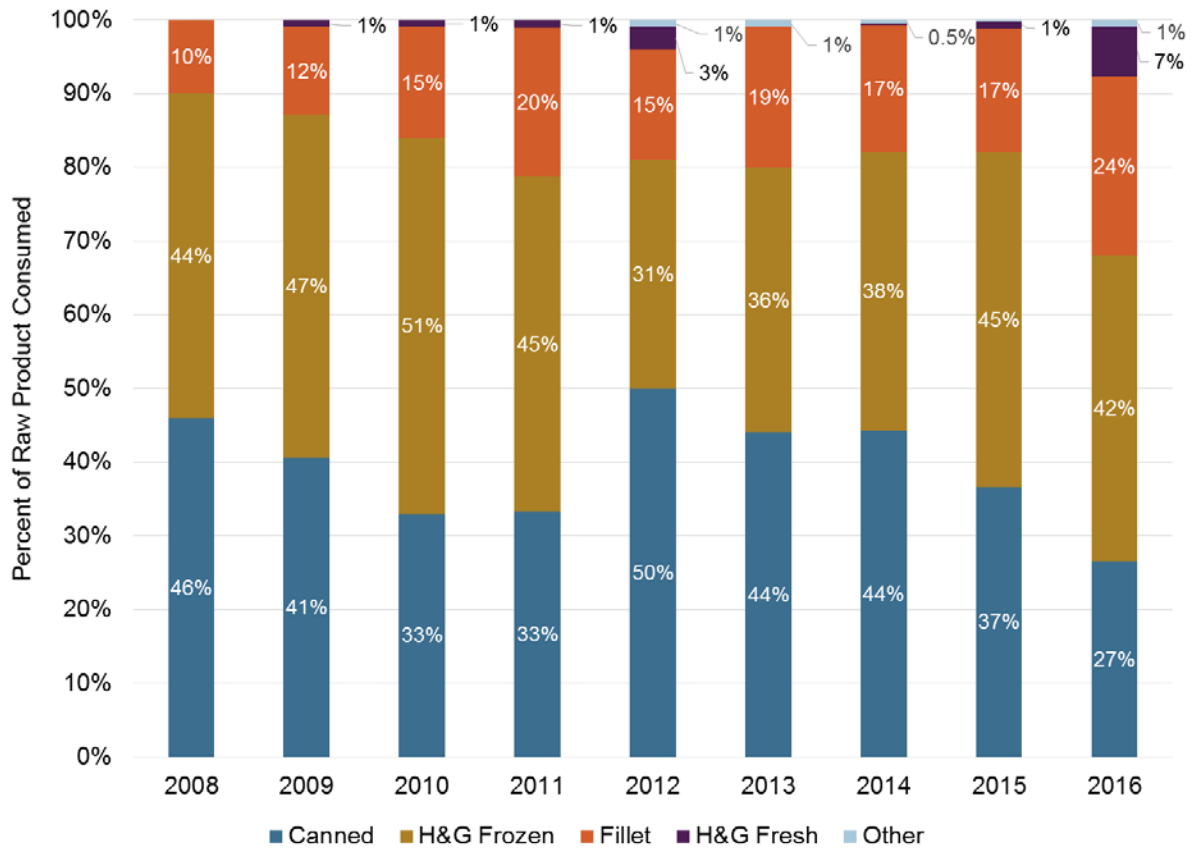
Product Form	2008	2009	2010	2011	2012	2013	2014	2015	2016	Year over Year Change	Average, 2008-2015
MMlb											
Canned	74.6	71.9	55.0	42.9	66.0	40.8	71.2	70.1	53.6	-16.5	60.7
H&G Frozen	71.2	83.1	84.5	58.7	40.3	33.5	60.7	86.7	83.9	-2.8	66.9
H&G Fresh	0.8	1.0	1.3	1.3	4.1	0.2	0.4	1.8	13.6	11.8	2.7
Fillet	16.2	20.7	24.9	25.9	20.3	17.8	27.7	32.3	49.1	16.9	26.1
Other	0.7	0.6	0.1	0.2	0.7	0.7	0.8	0.4	1.9	1.5	0.7
Total	163.5	177.3	165.8	129.0	131.4	93.0	160.7	191.2	202.2	10.9	157.1
%											
Canned	46	41	33	33	50	44	44	37	27	-24	39
H&G Frozen	44	47	51	45	31	36	38	45	42	-3	42
H&G Fresh	0	1	1	1	3	0	0	1	7	657	2
Fillet	10	12	15	20	15	19	17	17	24	52	17
Other	0	0	0	0	1	1	0	0	1	0	0
Total	100	101	100	99	100	100	100	100	100	6	100

Note: Column totals may not sum due to rounding.

Source: Northern Economics, Inc. 2017.

During the 2016 season, it appears that processors reallocated some of their resources previously used for frozen and canned products to produce a greater volume of fresh product forms (H&G Fresh and Fillet). The portion of raw product consumed by canned and H&G Frozen products has steadily been between 80 and 90 percent of the total purchases since the survey began in 2008, but in 2016, canned and H&G Frozen products consumed less than 70 percent of the total purchases. The change in product mix could be the result of changing market demands and preferences, increased processing capacity for fresher products, or a more efficient supply chain that can get less preserved products to market more reliably.

Figure 3. Raw Product Forms of Product Processed in Bristol Bay, 2008-2016



Source: Northern Economics, Inc., 2017.

The changes in final product form between 2015 and 2016 mirror those exhibited among raw product forms in terms of both volume and raw product share (see Table 6). Using the responses from the processor survey, the study team estimates that 135.1 MMLb of first wholesale product was produced from the 2016 run. This is an increase of 5.4 MMLb, or a 4 percent increase from the previous year, which can be attributed to a second year in a row of above-average runs, with 2016 ranking second largest out of the runs over the past 20 years. H&G Fresh and Fillet product forms saw the largest increases in the volume of first wholesale product produced with increases of 8.7 MMLb and 8.9 MMLb respectively since 2015. The total volume of canned first wholesale products dropped by 24 percent between 2015 and 2016 to 35.9 MMLb. Canned products accounted for only 27 percent of the total estimated first wholesale products, the lowest portion recorded by this survey to date. The combination of a larger run size and a decrease in canned product suggests that the region has a larger processing capacity for other products forms, such as H&G Fresh and Fillet, than previously assumed. It also might be a strong indication of changes in market preferences, shifting from more processed products to fresh products.

Table 6. Estimated First Wholesale Product Form, 2008–2016

Product Form	2008	2009	2010	2011	2012	2013	2014	2015	2016	Year over Year Change	Average, 2008-2016
MMlb											
Canned	50.0	48.2	36.9	28.8	44.2	27.3	47.7	47.0	35.9	-11.0	40.7
H&G Frozen	52.7	61.5	62.5	43.4	29.8	24.8	44.9	64.1	62.1	-2.0	49.5
H&G Fresh	0.6	0.8	1	1	3.1	0.2	0.3	1.3	10.0	8.7	2.0
Fillet	9.2	11.8	14.2	14.8	10.8	9.4	14.7	17.1	26.0	8.9	14.2
Other	0.7	0.6	0.1	0.2	0.4	0.4	0.4	0.2	1.0	0.8	0.4
Total	113.2	122.9	114.7	88.2	88.3	62.1	107.9	129.7	135.1	5.4	106.9
%											
Canned	44	39	32	33	50	44	44	36	27	-24	39
H&G Frozen	47	50	55	49	34	40	42	49	46	-3	46
H&G Fresh	1	1	1	1	3	0	0	1	7	657	2
Fillet	8	10	12	17	12	15	14	13	19	52	13
Other	1	0	0	0	0	1	0	0	1	0	0
Total	101	100	100	100	99	100	100	100	100	4	100

Note: Column totals may not sum due to rounding.

Source: Northern Economics, Inc. 2017.

The amount of raw product canned in the Bay dropped to 53.4 MMLb in 2016, a 12.1 MMLb decrease from the eight-year high recorded in 2015 (see Table 7). The amount of raw product canned outside the Bay also decreased in 2016 to 0.2 MMLb, the lowest volume of outside canned product recorded by this survey. In terms of the percent of total production, product canned within the Bay accounted for only 26 percent of total production and product canned outside the Bay accounted for less than 1 percent. The results of the 2016 survey show an overall shift away from canned products, with a smaller portion of raw product purchases being allocated towards canning both within and outside of the region.

Table 7. Canning Location, 2008–2016

Product Form	2008	2009	2010	2011	2012	2013	2014	2015	2016	Average, 2008-2016
Round Pounds										
Reported Canned in the Bay	47.0	59.2	51.6	41.8	64.1	39.7	63.4	65.5	53.4	54.0
Assumed Canned Outside the Bay	27.5	12.7	3.4	1.1	1.9	1.0	7.8	4.6	0.2	6.7
Total	74.6	71.9	55.0	42.9	66.0	40.8	71.2	70.1	53.6	60.7
% of Total Production										
Reported Canned in the Bay	29	33	31	32	49	43	39	34	26	35
Assumed Canned Outside the Bay	17	7	2	1	1	1	5	2	1	4
Total	46	41	33	33	50	44	44	37	27	39

Note: Column totals may not sum due to rounding.

Source: Northern Economics, Inc. 2017.

4 Product Chilled Prior to Delivery

As in previous iterations, the 2016 survey asks processors about the use of RSW and slush ice systems within the drift fleet. RSW and slush ice systems were used to chill an estimated 122.4 MMlb of raw product in 2016, the largest year over year increase (40 percent) and the largest volume of chilled product recorded by the survey to date (see Table 8). The majority of product, about 82 percent, was chilled using RSW systems and the remaining 18 percent was chilled using slush ice. Between 2015 and 2016 the survey recorded a slight decrease in the portion of products chilled with RSW systems and a corresponding increase to the portion of products chilled with slush ice, returning a chilling composition similar to the one recorded by the 2013 survey.

Table 8. Drift Fleet Chilling Methods 2008 – 2016

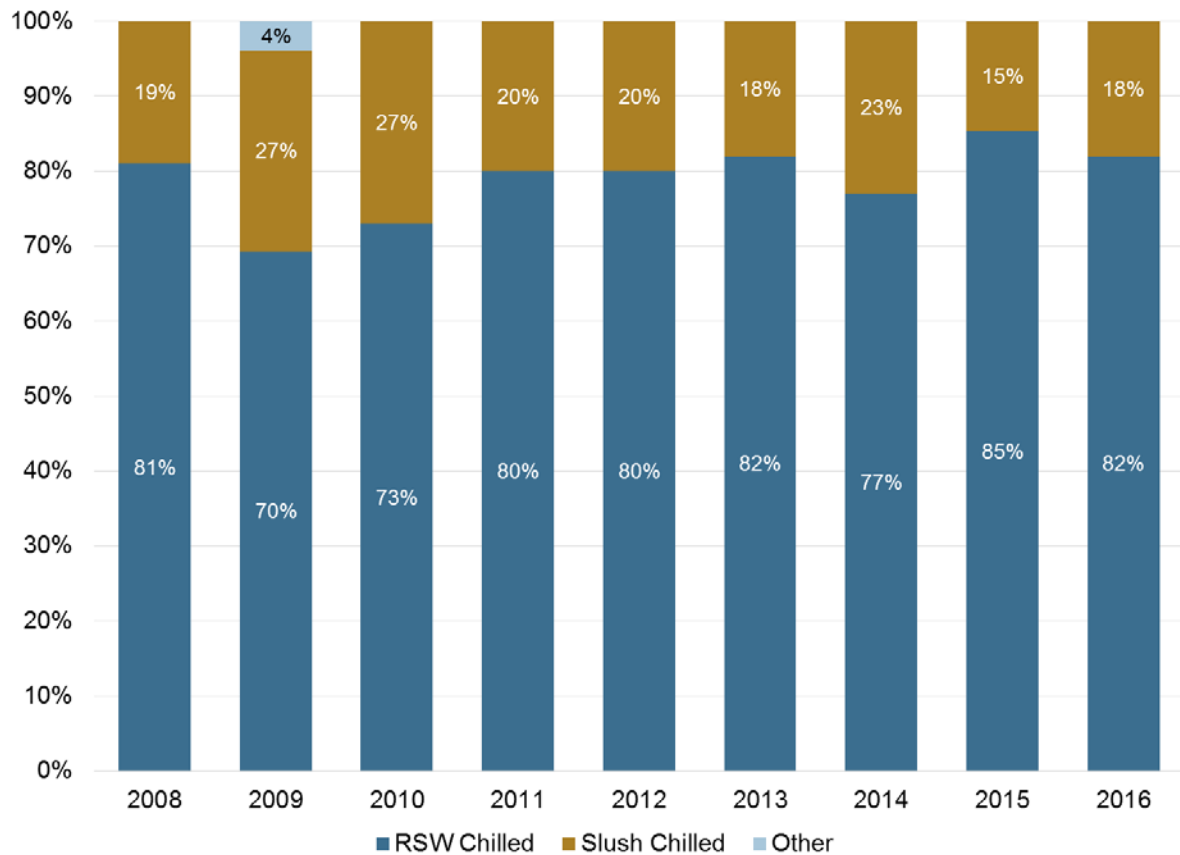
Chilling Method	2008	2009	2010	2011	2012	2013	2014	2015	2016	Year over Year Change	Average, 2008-2015
MMlb											
RSW Chilled	26.5	41.7	46.0	47.2	51.6	37.5	51.8	74.8	100.4	25.6	53.1
Slush Chilled	6.1	16.1	17.0	11.6	13.2	8.0	15.5	12.9	22.1	9.2	13.6
Other	N/A	2.2	-	-	-	-	-	-	-	-	2.2
Total	32.6	60.0	63.0	58.8	64.8	45.5	67.3	87.7	122.4	34.8	68.9
%											
RSW Chilled	81	70	73	80	80	82	77	85	82	34	79
Slush Chilled	19	27	27	20	20	18	23	15	18	71	21
Other	N/A	4	0	0	0	0	0	0	0	0	1
Total	100	101	100	100	100	100	100	100	100	40	100

Notes: Not all processors could estimate the division of RSW vs. slush chilled product; 2010 round pounds by chilling method do not equal total chilled round pounds; column totals do not sum due to rounding.

Source: Northern Economics, Inc. 2017.

While there is some variation in the portion of raw product purchases chilled using RSW or slush ice systems, the survey results between 2008 and 2016 show a relatively stable distribution between the two chilling methods. In the first seven years of the survey (2008–2011) it appeared that the run size impacted the chilling method, with the portion of product chilled by RSW systems decreasing on years that saw larger runs, but the results of the 2016 survey directly contradict that perceived trend. Processors and permit holders have told us that the steady and consistent nature of the 2016 run's intensity allowed more time for chilling fish as they were harvested. Thus, run intensity appears to be a factor as well as the size of the run.

Figure 4. Chilling Methods in the Drift Fleet, 2008-2016



Source: Northern Economics, Inc., 2017.

The 2016 survey recorded an increase in the portion of total round pounds chilled by the drift fleet using RSW systems for the second consecutive year (see Table 9). With the exception of the slight dip in 2013 and 2014, the survey has consistently recorded year-over-year increases in the percent of total drift fleet chilled product that was chilled using a RSW system. The inverse can be seen in the portion of the total round pounds unchilled by the drift fleet, which has steadily decreased since 2009 with the exception of 2013 and 2014, which recorded slight increases. In 2016, less than a third of total drift fleet purchases were not chilled, the lowest portion recorded by the survey and a 47 percent decrease from the data collected by the first survey in 2008. The portion of the total drift chilled product that is chilled using ice in 2016 also was the highest recorded by the survey at 13 percent. Over the life of the survey, the portion of the total drift product chilled with ice has remained relatively stable, ranging between 5 percent and 13 percent, and it appears that the increase in product chilled by RSW systems is really driving the overall change in icing practices in the region.

The nine years of data collected by this survey show a distinct shift in the chilling practices in Bristol Bay, from the majority of the drift fleet delivering unchilled product in 2008 (76 percent unchilled) to the majority of the drift fleet delivering chilled products in 2016 (71 percent chilled).

Table 9. Drift Fleet Chilling Methods as a Percentage of Total Drift Chilled Product, 2008-2016

Year	Total Round Pounds	RSW		Ice Chilled		Dry (Unchilled)	
		Round Pounds	Percent of Total	Round Pounds	Percent of Total	Round Pounds	Percent of Total
2016	171.7	100.4	58	22.1	13	49.0	29
2015	157.4	74.8	47	12.9	8	69.8	44
2014	132.3	51.8	39	15.5	12	65.0	49
2013	81.0	37.5	46	8.0	10	35.5	44
2012	109.4	51.6	47	13.2	12	44.6	41
2011	110.1	47.2	43	11.6	10	51.4	47
2010	136.0	46.0	34	17.0	12	72.6	53
2009	151.7	41.7	27	16.1	11	91.7	60
2008	134.7	26.5	20	6.1	5	102.2	76
Total	722.9	240	33	66.7	9	413.7	57

Note: Round pounds may not equal total pounds due to the exclusion of 'other' chilling methods.

Not all processors could estimate the division of RSW vs. slush chilled product; 2010 round pounds by chilling method do not equal total chilled round pounds.

Source: Northern Economics, Inc. 2017.

5 Drift Fleet Size and Chilling

The number of vessels participating in the Bristol Bay salmon run dropped slightly in 2016 to 1,390 vessels returning to a drift fleet size resembling the fleet recorded in 2014 (see Table 10). Similar to the changes in the fleet size in 2012 and 2013, the increase of 91 vessels in 2015 was followed by a slightly larger decrease of 95 vessels in 2016. This suggests that the region has a sustained carrying capacity close to the recorded average of 1,360 vessels and while spikes in the fleet size may occur during seasons with larger runs, the region can't support these larger fleet sizes on a long term basis.

The survey asked processors to consider a boat part of their fleet if it was contractually obligated to deliver to them or if they felt that it made more than 50 percent of its deliveries to them. The average vessels per processor dipped slightly in 2016 to 139 vessels per processor, and the median vessels per processor also decreased slightly from 151 in 2015 to 129 in 2016. Both the maximum and minimum number fleet size reported in the 2015 processor survey were lower than the responses received in 2015 and 2014, and overall there was less variation among the responses received in 2016 than in the previous year. The majority of respondents, approximately 70 percent, reported having between 100 and 200 vessels in their drift fleets.

Since the survey's inauguration, the size of the total Bristol Bay fleet has increased by nearly 20 percent and the average and median number of vessels per processor has increased by 43 percent and 32 percent respectively.

Table 10. Number of Vessels in the Drift Fleet, 2008-2016

Year	Total Vessels in Drift Fleet	Percent Change in Fleet Size	Average Vessels per Processor	Median Vessels per Processor
2016	1,390	6	139	129
2015	1,485	13	149	151
2014	1,394	6	155	143
2013	1,309	-14	145	123
2012	1,530	13	153	134
2011	1,358	1	123	115
2010	1,343	3	122	115
2009	1,309	13	119	100
2008	1,162	N/A	97	98
Average	1,364	N/A	133	123

Source: Northern Economics, Inc. 2017.

As in prior iterations, the 2016 survey asked processors to categorize vessels by the portion of the vessel's deliveries that were chilled. In 2016, 71 percent of vessels delivered chilled product more than 50 percent of the time (note this is an aggregation of the 50 to 75 percent and over 75 percent categories shown in the table), the most consistent chilling practices recorded by this survey to date (see Table 11). This builds off of the previous record set in 2015, on the back of the biggest drift fleet harvest recorded by this survey. The portion of vessels who chilled their deliveries less consistently, less than 25 percent or none of the time, also decreased in 2016 to just over 25 percent of vessels. This is the lowest portion of vessels making unchilled or dry deliveries recorded by the survey.

While the total number of vessels in the drift fleet decreased in 2016, the number of vessels that delivered chilled product more than 75 percent of the time increased by 9 percent to 884 vessels, the

largest number of vessels ever to be recorded in this category. There was also a corresponding decrease in the number of vessels that delivered chilled product none of the time, dropping from 458 vessels in 2015 to 302 vessels in 2016. This suggests that conversions from dry vessels to vessels with RSW systems are still occurring or the drift fleet is using slush ice to properly chill their products more consistently. As more vessels convert to RSW systems, there is also less pressure on the ice supply in Bristol Bay, and more ice is available to permit holders who choose to chill their product deliveries using slush ice. The shift in chilling practices could soon be approaching a tipping point where delivering chilled product is no longer seen as preference, but rather a requirement in Bristol Bay. There are already multiple processors operating in Bristol Bay that mandate the product deliveries be chilled, and pay a higher price per pound, but do not offer icing bonuses. In 2016, half of processors that responded to the survey reported that 100 percent of their total chilled raw product purchases came from the drift fleet.

Table 11. Consistency of Chilling, 2008-2016

Year	Percent of Deliveries that Were Chilled				
	>75% of the Time	50 to 75% of the Time	25 to 50% of the Time	<25% of the Time	None of the Time
Number of Vessels					
2016	884	103	51	53	302
2015	812	92	48	75	458
2014	652	84	38	111	509
2013	617	77	56	72	486
2012	741	87	61	51	589
2011	612	66	32	48	599
2010	514	81	51	87	611
2009	522	112	35	74	565
2008	335	104	51	672	N/A
Percent of Vessels					
2016	63.6	7.4	3.6	3.8	21.7
2015	54.7	6.2	3.2	5.0	30.9
2014	46.8	6.0	2.8	7.9	36.5
2013	47.2	5.9	4.3	5.5	37.1
2012	48.5	5.7	4	3.3	38.5
2011	45.1	4.9	2.4	3.6	44.1
2010	38.3	6	3.8	6.4	45.5
2009	39.9	8.5	2.7	5.7	43.2
2008	28.8	8.9	4.4	57.8	N/A

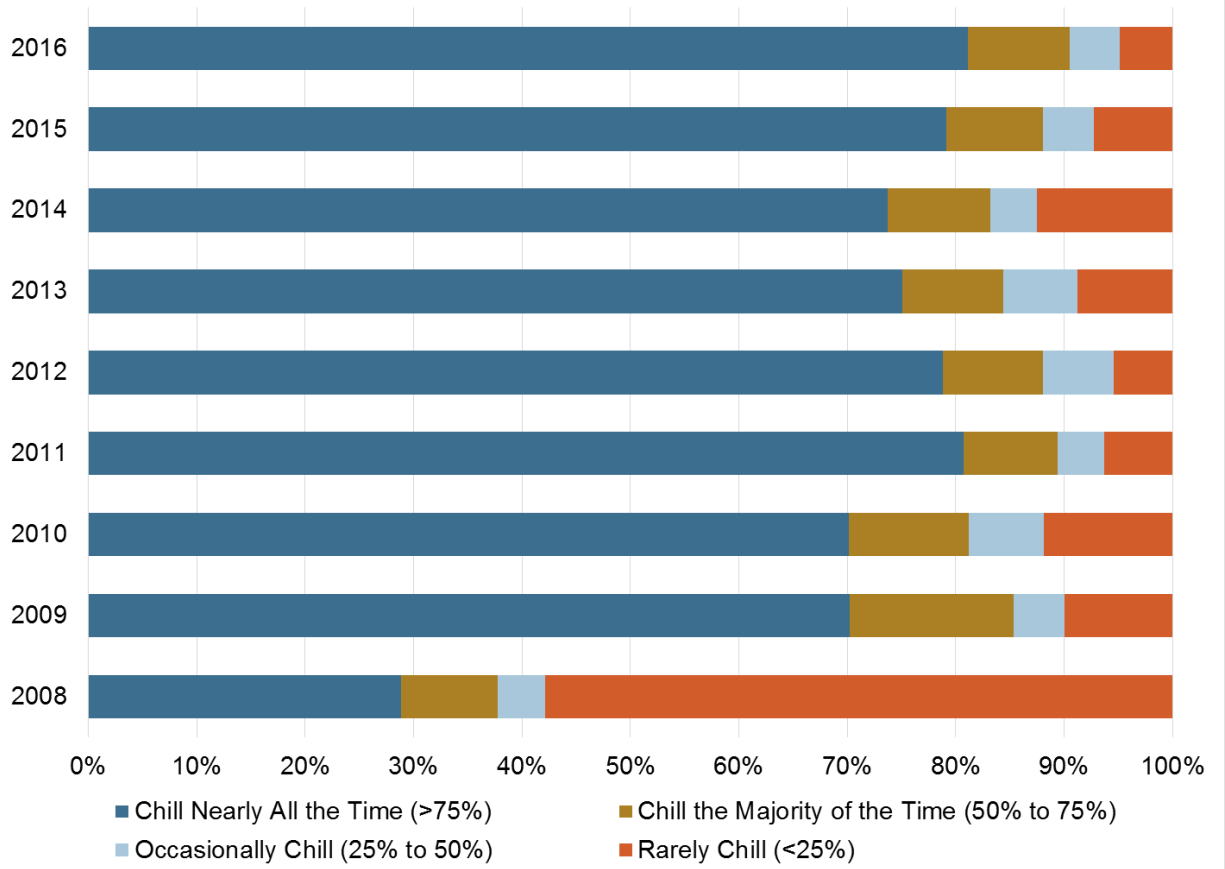
Note: Totals may not match the table above because of rounding.

Source: Northern Economics, Inc. 2017

Figure 5 displays the distribution of the drift fleet vessels who chilled at least a portion of their deliveries (excluding vessels in the “none of the time” category) by how consistently they delivered chilled raw product from 2008 to 2016. In 2016, the drift fleet chilled their deliveries more consistently than any other year recorded by the survey, with over 91 percent of vessels who chill their product making chilled deliveries the majority (greater than 50 percent) of the time. The portion of vessels delivering chilled

product less consistently (delivering chilled product less than 25 percent of the time) also decreased in 2016, accounting for only five percent of chilled deliveries, the lowest level ever recorded by the survey.

Figure 5. Chilling Consistency among the Drift Fleet, 2008-2016



Source: Northern Economics, Inc. 2017.

6 Quality of Chilled Product

The 2015 survey introduced a new subset of questions aimed at capturing data on the quality of the chilled product in the Bristol Bay driftnet fishery. The 2016 survey collected a second year of data using the same questions to start to identify trends or changes in the preferred practices and shifting attitudes towards the predicted quality of Bristol Bay products moving forward.

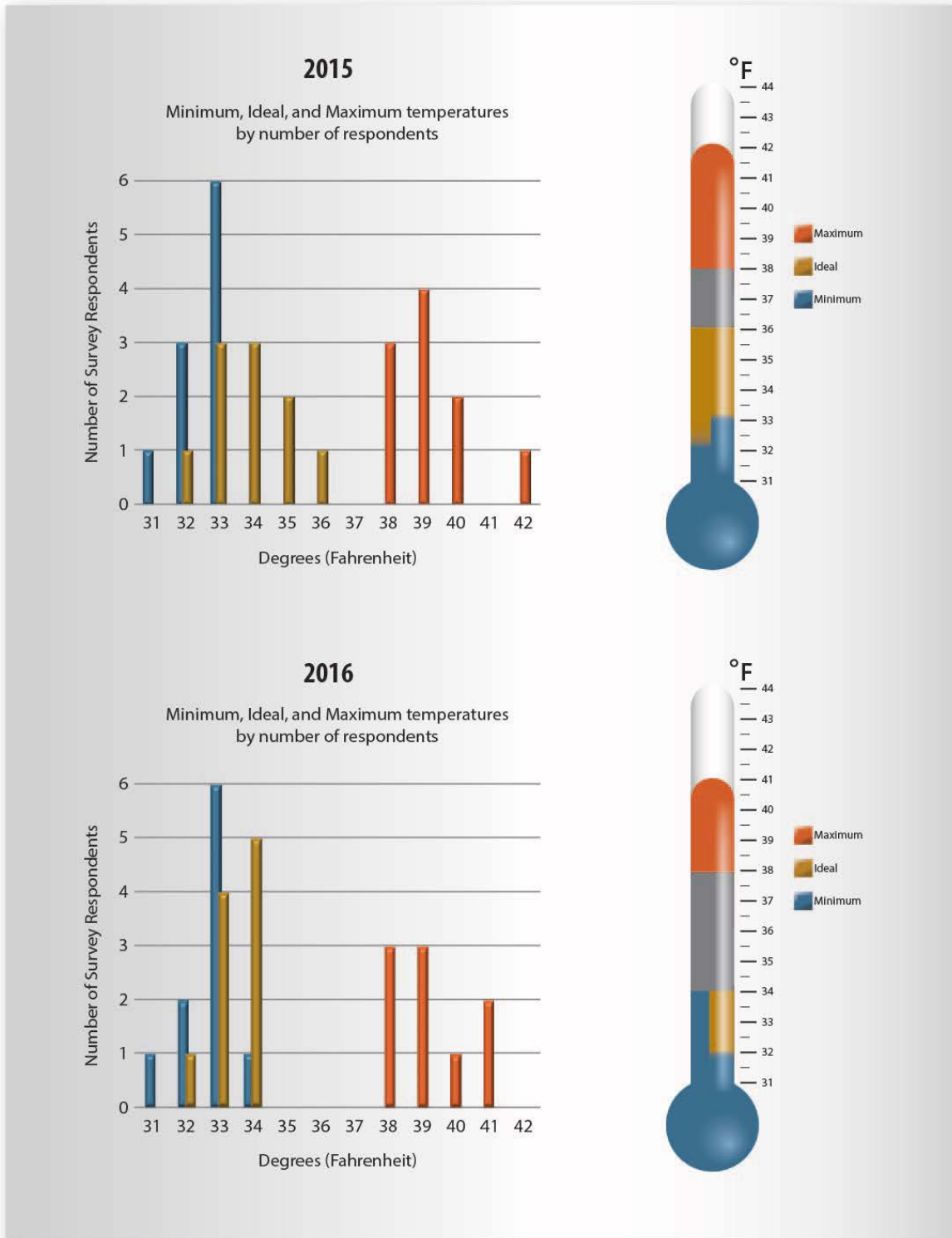
For the second year in a row, when asked if there are any notable quality improvements gained from chilled floated fish (RSW) compared to chilled non-floated fish (slush ice), survey respondents pointed out to us that the question should ask respondents to rate four categories of fish instead of two: floated RSW, non-floated RSW, floated slush ice, and non-floated slush ice, as floating really refers to the degree of crowding and can be achieved using both chilling methods. An RSW system can be filled to a level where the fish are no longer floated and you can float with slush ice by effectively using the ice as the chilling agent for seawater. We will be recommending a change in this question for next year. That said, 90 percent of respondents indicated that the quality of chilled floated RSW fish is typically better than the quality of slush chilled, non-floated fish. We think that the emphasis is on the float as opposed to the chilling method, and next year's question will be designed to tease out those refined differences.

The 2016 survey also continued the series of questions that asked processors what they considered to be the maximum, ideal, and minimum allowable temperatures to qualify as a chilled product. Figure 6, on the following page, shows the number of responses received for each temperature for all three measures. The figure shows the results for both the 2015 and 2016 surveys for comparison purposes. The 2016 survey results show less variation in each of the temperature categories and slightly colder allowable or preferred temperatures. Processors considered temperatures between 32 and 34 degrees Fahrenheit to be ideal temperatures for chilled product, a smaller range compared to the previous year's ideal range between 32 and 36 degrees. The tighter distribution of temperatures considered to be ideal by processors may indicate a shift toward more stringent qualifications for product deliveries to be considered as chilled. As delivering chilled product becomes a more common practice, gains in quality will come from refining chilling practices, a process which will most likely be guided by the standards to qualify as a chilled product set by processors.

The maximum allowable temperature for product to still be considered as chilled ranged between 38 and 41 degrees in 2016. This is a slight shift toward colder temperatures from the previous year's maximum allowable temperature range, which extended out to 42 degrees. In 2016, respondents said the minimum allowable temperature for chilled product was between 31 and 34 degrees, a slight shift toward warmer minimum temperatures compared to the previous year.

Based on the responses received, the average allowable range to qualify as a chilled product is between 32.7 and 39.8 degrees Fahrenheit. Multiple respondents reiterated that delivery time could also impact the allowable range of temperature to qualify as chilled product—the shorter the delivery time, the more lenient the processor can be with the stated allowable range.

Figure 6. Maximum, Minimum, and Ideal Chilling Temperatures, 2015 and 2016

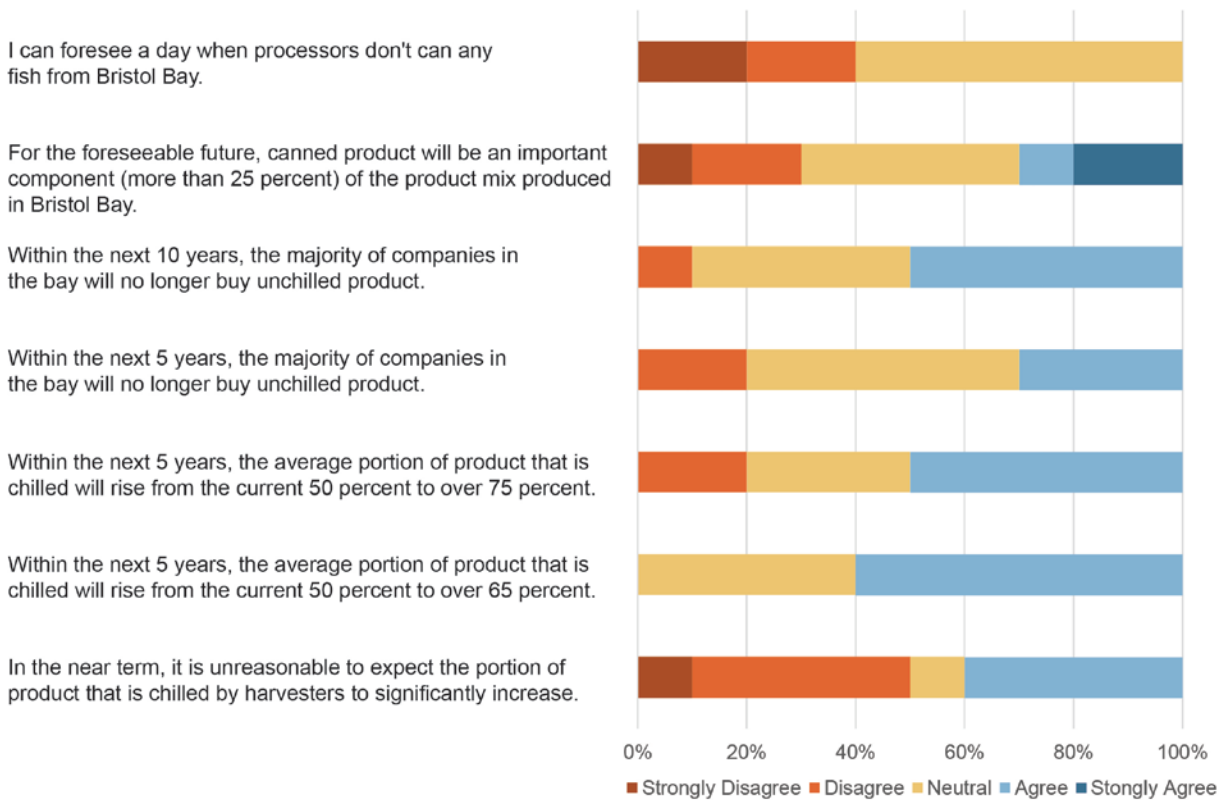


Source: Northern Economics, Inc. 2016.

We also asked processors how many fish tenders are required to sample in a delivery to determine the chilled temperature and possibly qualify for a chilling bonus. Responses ranged from 2 fish to 20 fish per delivery, with the most common response being 3 fish (50 percent of respondents) and the average was 5.4 fish.

New questions introduced in the 2015 survey presented processors with a set of seven statements regarding the future of product mixes and the portion of chilled product purchases in Bristol Bay and asked them to indicate if they strongly disagree, disagree, neither agree or disagree, agree, or strongly agree with each statement. The 2016 survey continued collecting data on processors' attitudes towards these forward-looking statements (see Figure 7).

Figure 7. Future of Product Mix and Chilling Trends in Bristol Bay



Source: Northern Economics, Inc. 2017.

Comparing the results from the responses received in 2015 and 2016, there appears to be a shift in processors' attitudes toward canning in Bristol Bay as well as the portion of product that is chilled. The portion of respondents that disagreed with the statement "I can foresee a day when processors don't can any fish from Bristol Bay" decreased from 70 percent in 2015 to 40 percent of respondents in 2016. There was also a corresponding decrease in the portion of respondents that felt that canned product would account for more than 25 percent of the product mix in Bristol Bay, dropping from 90 percent of respondents in 2015 to only 30 percent of respondents in 2016. The shift in attitude toward the role that canned product will play in Bristol Bay in the future comes on the heels of a season where processors reported a 16.5 MMB drop in canned product from the previous year, and in 2016 canned product accounted for only 27 percent of the Bristol Bay product mix.

The survey also recorded a shift in processors' attitudes toward the predicted portion of purchases that will be chilled over the next five years. In 2015, 70 percent of processors indicated that it was reasonable to expect the portion of chilled harvest to significantly increase in the near term, but only 50 percent of respondents shared that same sentiment in 2016. It is interesting to note that the processors were less optimistic about an increase in the portion of chilled product after a year where the drift fleet chilled 71 percent of raw product purchases in 2016, exceeding the previous survey record set back in 2012 by nearly 12 percent. This may suggest that processors don't view the 2016 chilling levels as sustainable or that there is a disconnect between the perceived level of chilling and the amount of chilling that is actually occurring.

7 Processor Ice-Making Capability

After reporting record high daily ice production in 2015, total ice production dropped by 18 percent to 795 tons per day in 2016. The amount of ice available to permit holders from processors also slightly decreased from 113 tons in 2015 to 104 tons in 2016, but the percent of total ice production available to permit holders from processors saw a slight bump from 12 to 13 percent. The change in ice production and the portion of ice available to permit holders brings the 2016 survey results closer in line with the nine-year average recorded over the life of the survey.

When barge ice is added to the equation, the total amount of daily ice available increases to 202 tons per day. This is a four percent decrease from the previous year. The decrease in ice availability combined with an increase in chilled deliveries suggests that RSW systems have played a key role in the increased portion of chilled deliveries in Bristol Bay. While the increased use of RSW systems to chill product may have taken some of the pressure off of processors to provide their fleets with ice, there is still a significant portion of the drift fleet that uses slush ice to chill their product, with about 18 percent of chilled deliveries using slush ice in 2016.

Table 12. Ice Production in Tons per Day, 2008-2016

	2008	2009	2010	2011	2012	2013	2014	2015	2016	Avg
Total Ice Production Capacity	760	750	680	735	820	615	710	975	795	760
Available to permit holders from processors	85	89	155	130	202	85	59	113	104	114
Percent available to permit holders from processors	11	12	23	18	25	14	8	12	13	15
Barge Ice		98	98	98	98	98	98	98	98	98
Total ice available to permit holders		187	253	228	300	183	157	211	202	215

Source: Northern Economics, Inc. 2017.

8 Open-Ended Responses

Questions 22 and 23 of the 2016 survey captured processor priorities and opinions regarding the fishery. These questions asked respondents to rank in importance areas on which BBRSDA should focus to improve the overall health of the fishery, and to identify the most important projects that the BBRSDA can undertake to improve the fishery. Each is restated below (in italics), and processor responses are summarized in the following paragraphs.

Question 22

BBRSDA is authorized to spend money in four areas to improve the overall health and value of the Bristol Bay salmon fishery. These areas include: Infrastructure, Research, Quality, and Marketing. BBRSDA is interested in knowing which area you think it is most important for BBRSDA to focus. Thinking back on the last 5 years, what areas are most important for BBRSDA to focus on?

Since this question was first introduced in 2012, quality has received the highest average score each year, but in 2016 quality tied with research for the highest average score with an average score of 3.8 on a 5-point scale. All of the respondents indicated that quality and research were important focuses for BBRSDA, with 60 percent indicating that these two topics were of high or very high importance (see Table 13). Quality and Research are also the areas on which processors are most likely to agree with each other, whereas infrastructure and marketing received more varied responses, with some processors indicating that they are of higher importance, and other processors saying they are less so. This difference of opinion is reflected in the data; the variances of quality improvements and research are 0.6, while the variances of infrastructure and marketing responses are around 1.3 and 0.9 respectively. A smaller variance indicates that answers are largely clustered together, while a larger variance means that answers are more spread out.

Since its debut in 2008, the survey has recorded notable gains in the chilling practices in Bristol Bay, which can be directly tied to the quality of product purchases. It is possible that as chilling and other quality-related goals are met, processors could shift their priorities to more heavily focus on research, the second most important topic rated by processors.

Table 13. Prioritization of Spending Areas

Area for Focus	Average Score 1-5 Scale*					Portion at or above Moderate Importance				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Infrastructure	3.7	3.3	3.4	3.6	3.4	80	67	67	80	70
Research	3.5	4.0	4.0	3.7	3.8	80	89	100	90	100
Quality	4.1	4.2	4.4	3.9	3.8	80	89	100	90	100
Marketing	3.0	2.9	3.0	3.5	3.5	60	67	75	80	90

*1= Very Low Importance, 5=Very High Importance

Source: Northern Economics, Inc. 2016.

Question 2

Please describe what you think is the single most important project that BBRSDA could undertake in the coming year. If you were BBRSDA, what project would you undertake?

In 2016, quality and chilling were the primary topics of the open-ended responses collected for this question. Processors would like to see chilling units for smaller 32' platforms developed and made

available to the Bristol Bay drift fleet. This is the second year in a row that at least one processor has brought up the need to adapt RSW systems to smaller vessel sizes as well as providing financing or loan options for vessel owners once the technology is available. In addition to improvements to RSW systems, processors would also like to see projects that increase the ice production and availability in the region to support vessels that are chilling their product using slush ice.

Another topic that was brought up for the second year is continued support and funding to help ADF&G maintain critical data collection programs in the face of recent budget and program cuts. It is clear that the processors operating in the bay view ADF&G's services and programs as valuable and this is becoming a more common topic of concern raised by processors through this survey.

9 References

- Alaska Department of Fish and Game (ADF&G). 2016 *Bristol Bay Salmon Season Summary*. Issued September 9, 2016. Available at <https://www.adfg.alaska.gov/static/applications/dcfnewsrelease/741340987.pdf>. Accessed on February 23, 2017.
- Bristol Bay Fishermen's Association (formerly AIFMA). Fisherman's Prices (Current Prices Available to Members). Available at http://www.aifma.org/fishermans_prices.html. Accessed on March 7, 2017.

Appendix: Survey Instrument

1. Introduction

Welcome to the 2016 Bristol Bay Salmon Fishery Processing Survey! We're glad to be conducting this survey again after successful 2008-2015 surveys. The 2016 survey builds on the data in prior surveys and will allow you to see aggregate changes in the fishery that have occurred between 2008 and 2016.

As with the prior surveys:

The purpose of the survey is to collect information on the chilling of fish by fishermen and the distribution of finished product among four dominant product forms (excluding roe).

All of the data reported by individual respondents will be held in confidence by Northern Economics and will only be reported in aggregate. At no time will anyone other than Northern Economics staff have access to individual survey responses.

The aggregated survey results will be submitted to the survey sponsor, the Bristol Bay Regional Seafood Development Association (BBRSDA). BBRSDA will also distribute the same report that it receives from Northern Economics to each participant who completes the survey.

If you experience problems while completing the survey, please call Michelle Humphrey at 907-274-5600.

PLEASE MAKE SURE YOU HIT NEXT AT THE BOTTOM OF EACH PAGE.

1. What is the name of your processing company?

2. What is your name?

3. What is your primary contact phone number?

4. Please enter your email so that we may send you a copy of the survey results.

2. Raw Product

This section asks questions about a processor's purchase of raw product (round weight fish) in 2016. Please ensure that all answers are for the 2016 season.

Please note that some questions refer to all of your operations in 2016 while other questions refer specifically to the DRIFT NET fleet.

The survey form does not accept commas, \$ signs, decimals, or % symbols. Please enter whole numbers only. For example \$1,254, would be entered as 1254 while 50% would be entered as 50.

NOTE: THE PAGE WILL NOT ADVANCE IF A REQUIRED SUM TO 100 DOES NOT SUM TO 100 OR IF A % SYMBOL IS INCLUDED IN THE ENTRY.

5. In 2016, how many pounds of raw product (round weight fish) did your company purchase from the Bristol Bay salmon fishery?

2015 Raw Product Weight

6. In 2016, how many pounds of previously chilled raw product (using ice or refrigerated sea water [RSW]) did your company purchase in the Bristol Bay salmon fishery?

2016 Chilled Raw Product Weight

7. What percentage of each of the following categories came from the DRIFT NET fleet in 2016?

For example, if the DRIFT NET fleet accounted for 75% of your purchases you would enter 75 below. The survey form does not accept % symbols or decimals.

Portion of Total Raw Product from the Drift Net Fleet

Portion of Total Chilled Raw Product from the Drift Net Fleet

8. What percentage of your 2016 purchases in the Bristol Bay salmon fishery was shipped long-haul for processing at a plant outside of Bristol Bay?

Percentage Processed Outside Bristol Bay

9. Of the raw product (round weight fish) that your company purchased in 2016, and processed INSIDE Bristol Bay, please estimate the percent that your company used for each of the following product forms. The total should equal 100. ENTER ONLY NUMBERS. DO NOT ENTER PERCENT SYMBOLS (%).

Canned Product

H&G Frozen

H&G Fresh

Fillet

Other

10. What percentage of the chilled raw product your company purchased from drift net fleet boats in 2016 was from each of the following categories? The total of your answer should be 100.

RSW

Slush Ice

Other

3. Your Fleet

This page asks questions about drift net boats that you consider to be part of "your fleet."

11. In 2016, how many drift net boats did you consider to be part of "your fleet"? A boat would be counted as part of your fleet if they were contractually obligated to deliver to your company or if you felt they made more than 50% of their deliveries to your company in 2016.

Number of Drift Fleet Vessels

12. Please estimate the percentage of the drift net boats in your fleet that fit into the following categories. Please make sure your answers sum to 100.

75% to 100% of their 2016 deliveries were chilled

50% to 75% of their 2016 deliveries were chilled

25% to 50% of their 2016 deliveries were chilled

1% to 25% of their 2016 deliveries were chilled

None of their 2016 deliveries were chilled

4. Processor Ice Production

This section of the survey asks about chilling in the bay including your company's production of ice in 2016 and its availability to your fleet.

13. In 2016, what was your company's total daily ice making capacity in Bristol Bay in tons? Please exclude any ice produced by the BBEDC ice barges.

Daily Ice Production Capacity (tons)

14. What percentage of your 2016 daily ice making capacity located in Bristol Bay is available for use by your drift boat fleet? Please exclude any ice produced by the BBEDC ice barges.

Portion Available to Your Drift Boat Fleet (%)

15. Which statement do you think best describes how the amount of ice available to permit holders from ALL processors in aggregate is likely to change in the next five years? Please check one box.

- Substantially More Ice Available from Processors
- Marginally More Ice Available from Processors
- No Change in the Amount of Ice Available from Processors
- Marginally Less Ice Available from Processors
- Substantially Less Ice Available from Processors

5. Quality of Chilled Product

This section of the survey asks about the quality of the chilled product purchased in the Bristol Bay driftnet salmon fishery during the 2016 season.

16. On average, are there any notable quality improvements gained from chilled floated fish (RSW) compared to chilled non-floated fish (slush ice)?

...significantly worse... ...slightly worse... ...not different... ...slightly better... ...significantly better...

On average, the quality of chilled floated (RSW) product is... than the average quality of non-floated chilled (slush ice) product.

17. Using the temperature scale below (in Fahrenheit) please indicate what you consider to be the maximum allowable temperature to qualify as a chilled product.

30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

Maximum allowable temperature to qualify as chilled product

Other (please specify)

18. Using the temperature scale below (in Fahrenheit) please indicate what you consider to be the ideal temperature for chilled product.

30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

Ideal temperature for chilled product

Other (please specify)

19. Using the temperature scale below (in Fahrenheit) please indicate what you consider to be the minimum allowable temperature to qualify as chilled (not frozen) product.

27 28 29 30 31 32 33 34 35 36 37 38 39 40

Minimum allowable temperature to qualify as chilled product

Other (please specify)

20. How many fish are the tenders required to sample in a delivery to determine the chilled temperature and possibly qualify for a chilling bonus?

21. The growth in the portion of Bristol Bay product which is chilled prior to delivery has slowed or stopped in recent years. Harvesters chilled 52 percent of the harvest in 2012, 54 percent in 2013, and 49 percent in 2014. By comparison, the average gain between 2008 and 2011 was more than 6 percentage points per year. BBRSDA is interested in exploring what processors think the future might hold for product mixes and the portion of chilled product. Please tell us how much you agree or disagree with the following statements.

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
In the near term, it is unreasonable to expect the portion of product that is chilled by harvesters to significantly increase.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Within the next 5 years, the average portion of product that is chilled will rise from the current 50 percent to over 65 percent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Within the next 5 years, the average portion of product that is chilled will rise from the current 50 percent to over 75 percent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Within the next 5 years, the majority of companies in the bay will no longer buy unchilled product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Within the next 10 years, the majority of companies in the bay will no longer buy unchilled product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the foreseeable future, canned product will be an important component (more than 25 percent) of the product mix produced in Bristol Bay.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can foresee a day when processors don't can any fish from Bristol Bay.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Processor Input

BBRSDA believes that increased communication between processors and permit holders will lead to cooperative opportunities that benefit both groups. The distribution of our survey results are an example of this concept in action. BBRSDA is interested in knowing if the processing industry believes there are certain actions BBRSDA can take or promote that will benefit both groups. We're interested in knowing what you would like our role to be in the fishery.

22. BBRSDA is authorized to spend money in four areas to improve the overall health and value of the Bristol Bay salmon fishery. These areas include: Infrastructure, Research, Quality, and Marketing. BBRSDA is interested in knowing which area you think it is most important for BBRSDA's focus. Thinking back on the last 5 years, what areas are most important for BBRSDA to focus on?

	1-Very Low Importance	2-Low Importance	3-Moderate Importance	4-High Importance	5-Very High Importance
Infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marketing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. Please describe what you think is the single most important project that BBRSDA could undertake in the coming year. If you were BBRSDA, what project would you undertake?

7. Thank You!

Thank you for completing the survey. As always, we greatly appreciate your time and efforts. A copy of the survey results will be available from BBRSDA in the first half of 2017. BBRSDA will email a copy of the results to you using the contact information you provided with the survey.

All individual data will remain in confidence with Northern Economics.