

## **Appendix A: Socioeconomic Considerations in the Scallop Fishery Off Alaska**

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### **A1.1 Introduction**

This chapter provides an update of available economic information in an attempt to identify factors that have contributed to major changes in the Alaska scallop fishery over time. Thus, the analyst is limited to landings, price, value, ownership, and basic marketing data and does not have access to current vessel operational costs, crew shares, or other economic information. Nonetheless, every effort has been made to utilize data submissions from industry for past analyses to highlight likely current conditions in the fishery.

The following overview of the management history of the fishery is largely excerpted from information presented in Appendix A of the current Scallop Fishery Management Plan (NPFMC, 2009) and incorporates that discussion and information sources identified in that discussion here by reference.

### **A1.2 History of the Alaska Weathervane Scallop Fishery Fishery Management History**

Alaska weathervane scallop *Patinopecten caurinus* populations were first evaluated for commercial potential in the early 1950s by government and private sector investigators. Interest in the Alaska fishery increased in the late 1960s as catches from U.S. and Canadian sea scallop *Placopecten magellanicus* fisheries on Georges Bank declined.

From the inception of the fishery in 1967 through mid-May 1993, the scallop fishery was passively managed with minimal management measures. Closed waters and seasons were established to protect crabs and crab habitat. When catches declined in one bed, vessels moved to new areas. This management strategy may have been acceptable for a sporadic and low intensity fishery; increased participation inevitably led to boom and bust cycles.

In the early 1990s, the Alaska weathervane scallop fishery expanded rapidly with an influx of boats from the East Coast of the United States. Concerns about overharvest of scallops and bycatch of other commercially important species such as crabs prompted the ADF&G Commissioner to designate the weathervane scallop fishery a high-impact emerging fishery on May 21, 1993. This action required ADF&G to close the fishery and implement an interim management plan prior to reopening. The interim management plan contained provisions for king and Tanner crab bycatch limits (CBLs) for most areas within the Westward Region. Since then, crab bycatch limits have been established for the Kamishak District of the Cook Inlet Registration Area and for the Prince William Sound Registration Area. The commissioner adopted the regulations and opened the fishery on June 17, 1993, consistent with the measures identified in the interim management plan. The interim management plan included a provision for 100% onboard observer coverage to monitor crab bycatch and to collect biological and fishery data. In March 1994, the Alaska Board of Fisheries (BOF) adopted the interim regulations identified as the Alaska Scallop Fishery Management Plan, 5 AAC 38.076.

From 1967 until early 1995, all vessels participating in the Alaska scallop fishery were registered under the laws of the State of Alaska. Scallop fishing in both state and federal waters was managed under state jurisdiction. In January 1995, the captain of a scallop fishing vessel returned his 1995 scallop interim use permit card to the State of Alaska Commercial Fisheries Entry Commission in Juneau and proceeded to fish scallops in the EEZ with total disregard to harvest limits, observer coverage, and other management measures and regulations. In response to this unanticipated event, federal waters in the EEZ were closed to scallop fishing by emergency rule on February 23, 1995.

The initial emergency rule was in effect through May 30, 1995, and was extended for an additional 90 days through August 28, 1995. The intent of the emergency rule was to control the unregulated scallop

fishery in federal waters until an FMP could be implemented to close the fishery. Prior to August 28, NPFMC submitted a proposed FMP which closed scallop fishing in the EEZ for a maximum of one year with an expiration date of August 28, 1996. The final rule implementing Amendment 1 to the FMP was filed July 18, 1996 and published in the Federal Register on July 23, 1996. It became effective August 1, 1996, allowing the weathervane scallop fishery to reopen in the EEZ. Scallop fishing in state waters of the Westward Region was delayed until August 1, 1996 to coincide with the opening of the EEZ. The state continued as the active manager of the fishery with in-season actions duplicated by the federal system.

In March 1997, NPFMC approved Amendment 2, a vessel moratorium under which 18 vessels qualified for federal moratorium permits to fish weathervane scallops in federal waters off Alaska. By February 1999, the Council recommended replacing the federal moratorium program with a Federal License Limitation Program (LLP), which became Amendment 4 to the FMP (NPFMC 1999). The Council's goal was to reduce capacity to approach a sustainable fishery with maximum net benefits to the Nation, as required by the Magnuson-Stevens Act. These changes ushered in a new era in the scallop fishery off Alaska. The successes of the early exploratory years had now necessitated stock and effort management measures and capacity reduction.

NPFMC's preferred alternative for Amendment 4 created a total of nine licenses with no area endorsements; each vessel is permitted to fish statewide. However, vessels that fished exclusively in the Cook Inlet Registration Area where a single 6-foot dredge was the legal gear type during the qualifying period were also limited to fishing a single 6-foot dredge in federal waters outside Cook Inlet. The NPFMC later modified the gear restriction in Amendment 10 to allow these vessels to fish 2 dredges with a combined maximum width of 20 feet (NPFMC 2005).

Amendment 10 was approved on June 22, 2005. NMFS published final regulations on July 11, 2005, which were effective August 10, 2005. NMFS implemented Amendment 10 by reissuing the two LLP licenses with the larger gear restriction.

In 1997, the Alaska legislature approved legislation (AS 16.43.906) establishing a scallop vessel moratorium in state waters. In 2001, the legislature authorized a 3-year extension of the moratorium set to expire July 1, 2004. During the 2002 legislative session, passage of CSHB206 resulted in significant changes to the state's limited entry statutes. The changes authorized use of a vessel-based limited entry program in the weathervane scallop and hair crab fisheries. However, the program had a sunset provision. Under AS 16.43.450-520, the vessel permit system was set to expire on December 30, 2008 unless statutory authority was extended. Introduced in the 25th Alaska Legislature in January 2007, House Bill 16 would have extended the existing vessel permit system until December 30, 2013. House Bill 16 became locked in committee. It was offered up under Senate Bill 254, where it passed through the legislative process and was signed into law on June 5, 2008. The State's vessel-based limited entry program for weathervane scallops did expire on December 30, 2013.

In January 2014, the Board of Fisheries implemented a new State-Waters Weathervane Scallop Management Plan (5 AAC 38.078) that delineates additional tools needed to manage open-access weathervane scallop fisheries in waters of Alaska. The management plan applies to the Yakutat, Prince William Sound, Kodiak, and Dutch Harbor scallop registration areas, which all have scallop beds that span both state and federal waters. The new management plan is in addition to the existing Alaska Scallop Fishery Management Plan (5 AAC 38.076) that establishes registration, reporting, gear, and observer coverage requirements.

The state-waters management plan allows the department to manage scallop beds in waters of Alaska separately from beds in adjacent federal waters if effort increases in the open-access state-waters fishery. The plan defines the scallop vessel registration year (April 1 – March 31) and establishes an annual pre-season registration deadline of April 1. It also requires a registered scallop vessel to have onboard an activated vessel monitoring system, permits the department to establish trip limits, and allows for separate

registrations for state and federal-waters fishing. The additional management measures are necessary to prevent overharvest of the weathervane scallop resource during an open-access fishery.

In 2014, eight vessels acquired state open-access permits. None of these vessels fished for scallops, however. Information provided at the 2015 Scallop Plan Team meeting indicated that these vessels may not have fished due to the cost of carrying observers and/or a lack of needed scallop harvesting gear. In the years since, several vessel owners have obtained scallop permits but to date, none have participated in the fishery.

### **Historic Fishery Participation, Catch, and Revenue Pre License Limitation Program**

Commercial fishing effort first took place in Alaska during 1967 when two vessels harvested weathervane scallops from fishing grounds east of Kodiak Island and made six landings totaling less than 1,000 pounds of shucked meats. By the following year, 19 vessels including New England scallopers, converted Alaskan crab boats, salmon seiners, halibut longliners, and shrimp trawlers, entered the fishery.

As shown in, Table A2.1 an additional 17 vessels entered the fishery in 1968 and the 19 vessels that participated made 125 landings totaling 1,677,268 pounds of shucked meats. In 1969, 19 vessels continued harvesting scallops and made 157 landings totaling 1,849,947 pounds of shucked meats. The 1969 fishery had the largest number of landings and the largest pound total in the history of the fishery. first wholesale value of the 1969 catch was just over \$1.5 million (inflation adjusted value would exceed \$6.6 million<sup>1</sup>). However, this level of harvest and effort was not to be sustained.

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<sup>1</sup> Note that previous versions of this document provided inflation-adjusted values for the historic time series; however, at the urging of the SSC the inflation adjustment that has been provided in the economic section of the Scallop SAFE utilizes the Frozen and Processed Seafood Producer Price Index and that index is presently re-based to the year 1996, and not available for the historic time series of harvests shown here. The intent here is to show the changing scale of harvest and participation in this fishery and inflation-adjusted wholesale value from 1993/94 to the present is available in below.

**Table A2.1 Historic Statewide Commercial Weathervane Scallop Statistics, 1967-2019/20.**

Year	Vessels	Landings <sup>a</sup>	Catch (lb meats) <sup>b</sup>	Average Price/lb	Wholesale Value	Real Wholesale Value
1967	2	6	778 <sup>c</sup>	\$0.70	\$545	
1968	19	125	1,677,268	\$0.85	\$1,425,678	
1969	19	157	1,849,947	\$0.85	\$1,572,455	
1970	7	137	1,440,338	\$1.00	\$1,440,338	
1971	5	60	931,151	\$1.05	\$977,709	
1972	5	65	1,167,034	\$1.15	\$1,342,089	
1973	5	45	1,109,405	\$1.20	\$1,331,286	
1974	3	29	504,438	\$1.30	\$655,769	
1975	4	56	435,672	\$1.40	\$609,941	
1976	7	21	264,788	\$1.59	\$421,013	
1977-79			No Fishery			
1980	8	56	616,717 <sup>c</sup>	\$3.60	\$2,220,181	
1981	18	101	924,441	\$4.00	\$3,697,764	
1982	13	120	913,996	\$3.25	\$2,970,487	
1983	5	30	192,310	\$5.00	\$961,550	
1984	6	52	383,512	\$4.00	\$1,534,048	
1985	7	47	615,564	\$4.00	\$2,462,256	
1986	8	74	667,258	\$4.25	\$2,835,847	
1987	4	54	599,947 <sup>d</sup>	\$3.45	\$2,069,817	
1988	4	47	341,070	\$3.68	\$1,255,138	
1989	7	55	534,763	\$3.87	\$2,069,533	
1990	9	144	1,481,136	\$3.43	\$5,080,296	
1991	6	136	1,136,649	\$3.82	\$4,341,999	
1992	8	136	1,785,673	\$3.96	\$7,071,265	
1993 <sup>e</sup>	7	51	568,077	\$5.15	\$2,925,597	
1993/94	15	111	984,583	\$5.15	\$5,070,602	\$7,491,342
1994/95	15	104	1,240,775	\$5.79	\$7,184,087	\$10,520,805
1995/96	10	29	410,743 <sup>d</sup>	\$6.05	\$2,484,995	\$3,737,433
1996/97	9	30	732,424	\$6.30	\$4,614,271	\$6,419,856
1997/98	9	31	818,913	\$6.50	\$5,322,935	\$7,028,704
1998/99	8	35	822,096	\$6.40	\$5,261,414	\$5,945,280
1999/00	10	22	837,971	\$6.25	\$5,237,319	\$5,297,194
2000/01	8	20	750,617	\$5.50	\$4,128,394	\$4,779,911

Year	Vessels	Landings <sup>a</sup>	Catch (lb meats) <sup>b</sup>	Average Price/lb	Wholesale Value	Real Wholesale Value
2001/02	6	26	572,838	\$5.25	\$3,007,400	\$3,495,463
2002/03	6	28	509,455	\$5.25	\$2,674,639	\$3,059,055
2003/04	4	32	500,379	\$5.25	\$2,626,990	\$2,707,200
2004/05	5	22	431,594	\$5.50	\$2,373,767	\$2,674,427
2005/06	3	35	532,741	\$8.02 <sup>f</sup>	\$4,272,583	\$5,525,127
2006/07	3	21	486,564	\$7.78 <sup>f</sup>	\$3,785,468	\$4,916,922
2007/08	4	21	458,313	\$5.94	\$2,722,379	\$3,499,537
2008/09	4	20	342,434	\$6.34	\$2,171,032	\$3,009,430
2009/10	3	31	488,059	\$6.48	\$3,162,622	\$3,807,175
2010/11	3	37	459,759	\$8.35	\$3,838,988	\$4,269,364
2011/12	4	26	456,058	\$10.39	\$4,738,443	\$5,678,577
2012/13	4	24	417,551	\$10.63	\$4,438,567	\$4,488,507
2013/14	4	20	399,134	\$12.25	\$4,889,392	\$4,988,904
2014/15	4	24	308,888	\$12.39	\$3,827,122	\$4,050,401
2015/16	3	20	264,316	\$12.22	\$3,229,942	\$3,152,920
2016/17	2	17	233,003	\$12.53	\$2,919,528	\$3,017,693
2017/18	2	8	238,710	\$11.54	\$2,754,713	\$2,782,610
2018/19	2	13	238,973	\$11.26	\$2,690,836	\$2,690,836
2019/20	2	17	229,955	\$11.26	\$2,589,293	\$2,589,293
2020/21	2	8	227,270	\$10.43	\$2,370,426	\$2,370,426
2021/22	2	10	298,755	\$11.06	\$3,304,230	\$3,304,230
2022/23	2	15	329,095	\$13.56	\$4,462,528	\$4,462,528
2023/24	2		318,647			
10 year average	2	15	268,782	\$11.85	\$3,334,725	\$3,770,910

(notes continued next page)

(Continued from Table 1 previous page)

Sources: ADF&G fish ticket data, and Alaska Department of Revenue annual fish prices through 2016, Industry provided prices, 2017-2021, preliminary estimated price for 2021/22.

<sup>a</sup> Prior to and including 1995, number of landings equals number of fish tickets. After 1995, the number of landings equals number of deliveries (off-loads). A delivery typically includes multiple tickets, normally one per week.

<sup>b</sup> Pounds of shucked scallop meats.

<sup>c</sup> Unshucked scallop deliveries were converted to shucked meats using a 10 percent conversion factor.

<sup>d</sup> Includes illegal harvest.

<sup>e</sup> January 1 through June 30

<sup>f</sup> estimated by fresh product ex-vessel price and limited first wholesale product value data.

Data from 1970 suggest that there may have been relatively few vessels landing most of the scallops during 1968 and 1969. This appears so because only 7 vessels remained in the fishery in 1970 despite an 18 percent increase in the average nominal price per pound. These 7 vessels made 137 landings totaling 1,440,338 pounds of shucked meats, which was 78 percent of the harvest taken by 19 vessels the previous year. The first wholesale value of the 1970 catch was about \$1.4 million, or an average of more than \$205,000 per vessel. While this revenue picture appears rosy, there is no data available on operating costs or effort levels in the early days of this fishery, and the trend during the rest of the 1970's suggests that the fishery was not as lucrative as the 1970 revenue numbers suggest.

In 1971, effort fell to 5 vessels and remained at 5 vessels for several years before falling to 3 vessels in 1974. During those years, landings fell from 137 in 1970 to 29 in 1974. However, shucked meat totals stayed near or above 1 million pounds through 1973 before falling by more than 50 percent to approximately a half million pounds in 1974. Prices continued to rise over this time frame, however, the declining catch forced revenue to decline to just over \$421,000 in 1976 when 264,788 pounds, just 14 percent of the 1969 peak harvest, of shucked meats were caught. In 1977 and 1978, no effort was expended in the weathervane scallop fishery off Alaska.

The period of 1967 to 1976 demonstrates what can happen in an emerging fishery with passive management. There were no effort controls, limits, or guideline harvest levels in place. The fishery expanded rapidly as scallop beds were located and exploited, experienced substantial effort consolidation as marginal vessels departed, and eventually overexploited the known beds to the point that the fishery was not economically viable by 1977 and 1978. This could have been the end of the weathervane scallop fishery off Alaska, except for the fact that scallops are somewhat resilient and discoveries of new beds had yet to be made.

In 1979, following two years with no harvest, a single vessel made 4 landings totaling less than 25,000 pounds of shucked meats. Three years of zero or minimal effort had likely allowed the scallop resource to regenerate somewhat. That likelihood, combined with a price increase to \$3.80 per pound contributed to 8 vessels making 56 landings totaling about 617,000 pounds in 1980.

Given fishing success in 1980 and significant price increases to \$3.60 per pound, it is not surprising to see that 1981 participation increased to 18 vessels that made 101 landings totaling 924,441 pounds of shucked meats. The 1980 first wholesale value was approximately \$2.2 million and rose to nearly \$3.7 million in 1981. However, data for the next several years show a similar cycle as occurred between 1969 and 1974. By 1983, five vessels made 30 landings totaling less than 200,000 pounds of shucked meats. However, 1983 was the year of record high nominal prices of \$5 per pound so first wholesale value was nearly \$1 million.

Over the next several years, participation increased slightly as did landings and catch but repeated the cyclical pattern by trending back downwards before another cyclic increase in landings and catch began in 1989. Beginning in 1990, an influx of East Coast scallop vessels began to occur; once again this was because of unfavorable economic conditions in East Coast scallop fisheries. The upward trend continued into 1992, when the second highest historic catch of 1,785,673 pounds was taken by 8 vessels making 136 landings. The first wholesale value of over \$7 million recorded in 1992 is the second highest nominal first wholesale value ever recorded in the fishery and if inflation adjusted is the historic high value in the history of this fishery.

This period of this fishery has been characterized as a “gold rush atmosphere” (Barnhart, 2006). It is also important to note that by this time, scallop beds had been located in several areas around Kodiak Island, in Shelikof Strait, near Yakutat, in the Northern Gulf of Alaska near Kayak Island, in Cook Inlet, as well as in the Aleutians and Bering Sea.

Catch statistics shown in table 1 for the 1993-94 season indicate participation by 15 vessels making 111 landings of a total of 984,583 pounds of shucked meats. Total first wholesale value was just over \$5 million in 1993-94. The 1994-95 season also had participation by 15 vessels making 104 landings totaling 1,240,775 pounds. Total first wholesale value in 1994-95 was nearly \$7.2 million, the highest nominal value in history.

### **A1.3 Economic Performance in the LLP Fishery**

An overview of Alaska weathervane scallop harvest and wholesale revenue and real wholesale value is presented in Table 1

. Vessel participation in this fishery has declined since the late 1990s due to the Federal LLP and formation of a voluntary marketing association which will both be discussed in detail below. The Federal LLP limits the participation to 9 permit holders. In the early 2000s as many as 8 vessels have participated; however, since 2014 no more than 4 vessels have participated. In each of the past four years two vessels have participated, as the harvest levels have fallen to historically low levels.

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<sup>2</sup> The seasons established in the management plan extend into the first three months of the following year.

1 provides estimated statewide commercial Weathervane scallop landings and value from 1993/94 to present. Total real gross first wholesale revenue is calculated by multiplying landed pounds of meats by the adjusted price. Adjusted price converts the landed prices by year-to-year 2019 values to allow for comparisons in current dollar values, after accounting for inflation. The statewide scallop price used here is calculated by the Alaska Department of Revenue (ADOR), Division of Taxation, and is an average of all the reported annual State fish tax revenue collected from all participants in the scallop fishery as reported on Commercial Operators Annual Report submissions.

The majority of the scallop meats that are landed have been processed (shucked) and frozen at sea and their value represents gross revenue at the first wholesale level. However, in some past years some shucked meats were delivered fresh to dockside processors (pers. comm, Bill Harrington, February 2013). There have also been some anecdotal reports of scallop meats landed and sold in a roadside stand outside of Homer in the distant past. In 2018, the Alaska Board of Fisheries approved a proposal to allow delivery of live scallops; however, none of the current Scallop LLP holders have delivered live scallops to port to date. Thus, although landed price is often referred to as an ex-vessel price, it is actually primarily a first wholesale price in that the landed product is a primary processed product. As a result, gross revenue is identified as first wholesale gross revenue here.

Nominal Alaska scallop prices have shown considerable variability over time and have increased dramatically since the mid-2000s. After trending downward to \$5.25 per pound in the early to mid-2000s, nominal scallop prices increased to \$7.86 by the 2006/07 season. However, in the 2007/08 season the nominal scallop price declined significantly to \$5.94 per pound of shucked meats. Since the 2007/08 season, nominal Alaska Weathervane scallop price has trended upward and reached \$12.53 per pound of shucked meats in 2016/17 but fell to \$11.54 in 2017/18 and \$11.26 in 2018/19 and 2019/20. Prices declined in the first of the Covid-19 pandemic to \$10.43 in 2020/21, but have rebounded to an estimated \$11.06 in 2021/22 and \$13.56 in 2022/23. Industry provided price data is not yet available for 2023/24 but will be incorporated prior to this document being presented to the Council.

The historical variability in Alaska scallop prices are likely due to market factors that are driven by the much larger U.S. east coast sea scallop fishery, as well as by import markets. However, in recent years, the Alaska Scallop Association has made considerable progress in its marketing efforts and has been able to maintain relatively high prices it receives for the scallops landed by the three vessels that are associated with the cooperative. However, the strength in Alaska scallop prices have faced market pressure in the in recent years as indicated by declines in U.S. commercial sea scallop average price per pound from \$12.52 per pound in 2014 to \$12.00 per pound in 2016 and below \$10 per pound as supply expanded in 2017 but has risen to \$12.18 in 2018, declined to \$9.39 in 2019 and rebounded to \$10.53 by 2021. Largely due to a sharp decline in Atlantic Sea Scallop landings, there was a dramatic increase to \$15.08 per pound in 2022. 2023 price and landings data are not yet available. The average price per pound of imported scallop products declined from \$7.11 to \$6.40 between 2015 and 2017 and continued declines to \$5.24 and 5.93 in 2018 and 2019 respectively, and to \$5.35 in 2020 before rebounding to \$5.86 in 2021 and declined significantly to 3\$ per pound in 2022. Please see section 4 for further discussion of competing scallop markets.

First wholesale revenue in this fishery has varied considerably over the period as both price and landings have varied. The peak value in the fishery, occurred in 1994/95 season when inflation adjusted \$10.5 million was earned. Since that time, real total first wholesale revenue in the fishery has fluctuated with prices, and the reduction in landed pounds. Overall, the total value has trended downward as landings have fallen from more than 1.2 million pounds down to a preliminary low in 2019/20 of 229,955 pounds. The total real first wholesale revenue of less than \$2.4 million in 2020/21 is lowest revenue total historically. The 2021/22 fishery earned \$3.3 million as catch and prices both increased. Price data for 2024 is not yet available; however, landings were slight less and there have been high inflationary pressures so an

evaluation of these factors will be completed once industry provides an estimated average first wholesale price.

### **Port of Landing and Impacts on Communities**

At the present time all Alaska scallop harvests are landed in ports within Alaska. However, during the 2020-21 fishery one scallop vessel transited from Seattle to the fishing grounds and back to offload at Fishermen's Terminal in Seattle due to Covid 19 quarantine (pers. Comm, Jim Stone, via e-mail February 25, 2022). The vessels that fish within the Alaska Scallop Association make landings of frozen product in several ports including, but not limited to, Dutch Harbor, Kodiak, Yakutat, Juneau, and Sitka (pers. comm, Jim Stone, February 2013). Given that these landings are often made by a single vessel in a port, these landings would normally be confidential; however, Amendment 4 included provisions for confidentiality waivers for LLP holders. In addition to the cooperative vessels, one vessel has made landings of fresh product in Homer and Kodiak in the past decade. However these landings are made to too few processors for the quantity and value to be released due to confidentiality restrictions, as shore based processors do not provide confidentiality waivers. Thus, it is not possible to release landings by port on fresh product that is then processed or sold directly. Furthermore, there is no economic data collection program in place to collect vessel expenditure data while vessels, and crew, are in port. Unfortunately, the limits of confidentiality and limited expenditure data make it difficult to establish the potential importance of this fishery to dependent communities.

Table A2.2 below provides historic port landings from 1990 through 2023/23. Not included in this table are single deliveries to Juneau (2011/12, Ketchikan (1990) and Whittier (2006/07, two deliveries to Petersburg in 1990, 3 deliveries to Pelican (1990) and Seldovia (2003/04, 2004/05) and four deliveries to single deliveries to Seattle (2001/02, 2002/03, 2018/19, 2020/21)

Recent landings data shows that 15 or fewer total landings have occurred in each year, and they have occurred in Dutch Harbor, Homer, Kodiak, Yakutat, and recently Seattle due to Covid 19 quarantine protocols. Kodiak is presently receiving a majority of the landings.

The ADF&G office in Kodiak (Ryan Burt) has researched difficulties with reporting landing by port of frozen at sea product since formation of the LLP program. In that process, several historic landings spreadsheets were located and fish ticket data was preliminarily reviewed to provide the landing by port for the past three seasons. ADF&G staff have begun to develop a plan to try to recover the landings data and will use the following process to recover the data as time permits:

- Create a dedicated Access database for this project
- Download select columns of scallop fish ticket data from the State's fish ticket system and import into Access database
- Import spreadsheets of historic fish ticket data from the Kodiak office file server and import into Access database
- Using the unique fish ticket numbers, create data queries to compare these data sets against each other to determine what data is useful from the fish ticket and/or spreadsheet data
- If port of landing cannot be recovered from the fish ticket and/or spreadsheet data, a request (listing unique fish ticket numbers) may need to be submitted to Information Services in Juneau so staff there can physically retrieve select archived fish tickets



- Assign Kodiak staff to go through these retrieved fish tickets to recover port of landing data
- Create queries to summarize the data as needed for incorporation into analysis

Considerable progress was made on these tasks in 2022 and 2023 with the result being port landing counts from 1990 through 2022/23, with 2023/24 data pending. The results of these queries are presented in table A2.2 below.

Table A2.2 Scallop Landings by port, 2019-2022.

Year/Season	Port of Delivery										
	Bellingham	Cordova	Dutch Harbor	Floating Catcher Processor	Homer	Kodiak	Seward	Sitka	Unknown	Yakutat	Grand Total
1990		1	12		2	62	5	8	1	22	116
1991			13			46		24		17	100
1992		6	8			46	1	15		28	104
1993		1	27		11	50	3	6		4	105
1994			22		8	35	4	2		4	75
1995		1	1		2	6	2	2		3	17
1996/97					9	13	5			4	31
1997/98		1	10		5	14	4			6	40
1998/99		1	4		12	10	6			9	42
1999/20		1	4		3	11	6			3	30
2000/01	15	3	2		3	6	4			2	35
2001/02	2		5	2	5	7	3			4	29
2002/03	1		5	2	7	8		1		4	29
2003/04	1		2	2	12	10				3	31
2004/05	1		1		5	11	1			1	20
2005/06	1	6	1	3	5	9				5	33
2006/07	1		2	1	5	7				2	18
2007/08			3		5	8			2	4	22
2008/09									16		16
2009/10			2		2	8			15		27
2010/11			2		11	12			5	6	36
2011/12			3		4	13			2		23
2012/13			3		5	9		1	2		20
2013/14		1	1		1	9		2	4		19

Year/Season	Port of Delivery										
	Bellingham	Cordova	Dutch Harbor	Floating Catcher Processor	Home r	Kodiak	Seward	Sitka	Unknown	Yakutat	Grand Total
2015/16			1		1	7		1	6		16
2016/17			1			10			3	1	15
2017/18			1			4				4	9
2018/19					2	6			2	2	13
2019/20			1		1	5				3	10
2020/21						5				2	8
2021/22						9				2	11
2022/23			1			10			1	3	15
<b>Grand Total</b>	<b>22</b>	<b>25</b>	<b>141</b>	<b>10</b>	<b>130</b>	<b>477</b>	<b>44</b>	<b>63</b>	<b>61</b>	<b>148</b>	<b>1139</b>

Source: ADF&G Kodiak Scallop Program Office, 2023

There have been several developments in this fishery with regard to the permanent location of vessels and with maintenance and repair of these vessels. All three cooperative associated vessels, that are presently fishing, are now permanently home ported in Kodiak. In addition, the one non-cooperative vessel presently fishing is also permanently home ported in Kodiak.

With the installation of a new 600 ton Marine Travelift, virtually all maintenance and repair work is now done in Kodiak (Stone, Jim, public testimony at the 2018 Scallop Plan Team meeting February 2018). Thus, at present, all landings of Alaska scallops are made in Alaska ports, all vessels presently operating in the fishery are home ported in Kodiak, Alaska, and the Port of Kodiak is able to provide the necessary facilities for haul out, repair, and annual maintenance that these vessels require.

#### **A1.4 License Limitation Program Permit Ownership, Consolidation, and Current Participation**

A review of fish ticket data suggest that, in the early days of this fishery, much of the harvest was made by catcher vessels (CVs) making single day trips and delivering to shoreside processors. The shoreside processors then processed the meats (e.g. trim, freezing, and packaging) and moved the product to market, whether in fresh or frozen form. That method appears to have continued into the mid 1990's. At that time, single day trips had begun to be replaced by multiday trips and freezing at sea by catcher processors (CPs). This change was likely the result of some vessels earning marginal returns due to the cost of daily transit to and from port as well as the 10 day maximum that shucked meats can be held on ice by a CV (Kandianis 2006) The further vessels operated from port the more severe this inefficiency became. As new beds were found in distant areas some vessels likely found their participation was not economically sustainable. This fact was likely exacerbated by the fact that harvesters had little or no market power.

Under these conditions, vessel operators are constrained by the inefficiency of the day trip and external market forces dictating the value of their catch. Thus, operators would look to reduce inefficiencies, reduce operating costs, and attempt to capture processing value added that was being captured by the shoreside processing sector. Operators might even attempt to improve value by increasing quality. It can be argued that fresh frozen (at sea) product may be superior to product that is iced for a period of time before being consumed and/or frozen. The result of these forces appears to be the entrance of catcher processors (CPs) into the scallop fishery. That this began to happen should be no surprise. It was around this time that the CP fleet began to expand in several of the Bering Sea fisheries for many of the same reasons. This practice expanded over the next several seasons. By the time the vessel moratorium was imposed in 1997 there were 18 vessels included under the moratorium.

Further consolidation of the fleet was deemed necessary by the North Pacific Fisheries Management Council. In 1999 the Council adopted Amendment 4 to the Scallop FMP, which established the Federal License Limitation Program (LLP) (NPFMC 1999). The LLP recognized 9 participants and granted them statewide access with maximum vessel length overall (MLOA) limits (equal to the length of the vessel they were using during the qualifying period) and with gear restrictions for two vessels that primarily fished inside the Cook Inlet registration area. All of the remaining 7 participants in the statewide fishery outside the Cook Inlet registration area were using vessels categorized as CPs. Thus, at the time of the LLP, virtually all effort in the statewide fishery outside the Cook Inlet registration area was from CPs. Thus, the transition away from the inefficiency of day trips, the capture of shoreside processing value added by offshore processing, and any potential improvement in quality brought about by at-sea freezing appeared to be complete by the time of LLP implementation in 2000. However, further fleet consolidation was predictable, and had already begun.

The Regulatory Impact Review (RIR) analysis supporting the action to create the LLP (NPFMC 1999) develops a breakeven analysis for the scallop fishery in the statewide fishery outside the Cook Inlet

registration area. This analysis estimates the number of vessels that could breakeven in the fishery under a series of price and landings scenarios. The analysis is based on operating cost and revenue data provided voluntarily by fishery participants. Table 3 presents the analysis.

**Table A2.3 Number of Vessels that Could Breakeven Under Various Price and Landings Scenarios (recreated from Regulatory Impact Review for Amendment 4 to the North Pacific Scallop FMP).**

Price	Landing (pounds)			
	600,000	800,000	1,000,000	1,200,000
\$5.00	3.6	4.9	6.1	7.3
\$5.50	4.0	5.3	6.7	8.0
\$6.00	4.4	5.8	7.3	8.7
\$6.50	4.7	6.3	7.9	9.5
\$7.00	5.1	6.8	8.5	10.2
\$7.50	5.5	7.3	9.1	10.9
\$8.00	5.8	7.8	9.7	11.6

In the 1999/00 season 10 vessels, including two inside the Cook Inlet registration area, landed 837,971 pounds of scallops with an average price of \$6.25. The analysis recreated in **Error! Reference source not found.** indicates that approximately 6 vessels could breakeven fishing in the statewide fishery outside the Cook Inlet registration area under this price and landings scenario. Thus, participation in the statewide fishery outside the Cook Inlet registration area exceeded the breakeven number of vessel by two.

In 2000/01 8 vessels, including two operating inside the Cook Inlet registration area, landed 750,617 pounds of scallops with an average price of \$5.50 per pound. The breakeven analysis suggests that this price and landings combination could probably support 5 vessels in the statewide fishery outside the Cook Inlet registration area; however, 6 were fishing in that season.

In 2001/02 6 vessels, likely four in the statewide fishery outside the Cook Inlet registration area, landed 572,838 pounds of scallops with an average price of \$5.25 per pound. The breakeven analysis suggests that this landings and price scenario could support fewer than four vessels at breakeven levels and this appears to be the case in 2002/03 as well.

In 2000 a group of six of the LLP holders, who traditionally have fished in the statewide fishery outside the Cook Inlet registration area, formed a voluntary marketing cooperative (NPFMC 2005). The cooperative members agreed to reduce harvesting capacity and entered into revenue sharing agreements with members who agreed to not use their vessel(s). That the cooperative chose to do this is not surprising given the effect of declining landings and price on breakeven numbers in this fishery between 2000/01 and 2002/03.

In 2001, the cooperative reduced vessel participation by 50 percent, however, one vessel continued to operate independently in the statewide fishery outside the Cook Inlet registration area. Two vessels continued to fish independent of the cooperative inside the Cook Inlet registration area. Thus, capacity reduction efforts made by the cooperative had reduced overall capacity but not to the level suggested by the breakeven analysis presented above.

A point worth considering is that several of the LLP holders who had joined the cooperative had, at one time, been involved in the East Coast Atlantic sea scallop fishery. This was true of the LLP associated with the vessels Carolina Girl and Carolina Boy and the vessel Pursuit. The Pursuit was operating out of Kodiak when the LLP was implemented and the Carolina Boy and Carolina Girl were operating out of Seward (Barnhart, 2006). Each of these operations, however, was East Coast based and likely had to bear

costs of travel to and from the east coast, or vessel caretaking costs during the off-season, and idle vessel time. These factors likely contributed to these three vessels not fishing under the cooperative and limiting participation.

Another consideration is that the Kamishak beds traditionally fished by the two primarily cook inlet vessels have been closed for some time. The south bed has been closed since the 2008/09 season, while the north bed was last open for fishing during the 2017/18 season. During the 2017/18 season, the GHF was 10,000 lb shucked meats, and no vessels participated in the fishery. The Kamishak District remained closed for the 2021/22 season. Further, the outside waters adjacent to the Kenai peninsula and outside of Prince William Sound are fished via a Commissioner's permits, as the area have very limited scallop beds, necessitating enhanced management of harvests. These restrictions, combined with the gear restrictions (maximum of 20 foot total dredges) may have significantly contributed to the elimination of active participation in the scallop fishery by LLP holders that previously had operated out of Homer and Seward, and likely caused reductions in deliveries to historic scallop ports of Homer, Seward, and Cordova. All vessels that historically fished these areas have been sold or lengthened and repurposed.

Instead of fishing, the owners of the LLP that originally used the east coast vessels received some form of revenue and/or ownership sharing while the other cooperative members continued to fish. Evidence of this was presented in Appendix A to the Environmental Assessment conducted for Amendment 10 to the FMP (NPFMC 2005). Provider Inc. and Ocean Fisheries LLC provided operating cost data for their scallop fishing enterprise in 2003. This data shows that these two operators paid \$244,516 in "scallop leases" in 2003.

The fees paid by Ocean Hunter and Provider Inc. could only be afforded if the operations gained considerably more revenue and/or if they are able to decrease operating costs under the cooperative. The breakeven analysis presented in the RIR for Amendment 4 (LLP establishment) to the FMP determined that the average fixed and variable non-labor costs of the fleet at the time (pre LLP, pre coop) was approximately 59 percent (NPFMC 2005, Appendix B).

The data provided by Provider Inc. and Ocean Hunter/ Ocean Fisheries LLC in 2003 indicate a non-labor cost ratios of 59 percent and 57 percent for Provider and Ocean Hunter respectively. However, these non-labor cost ratios include fees of \$157,493 paid by Provider Inc. and \$87,097 in fees paid by Ocean Hunter. Thus, these two cooperative vessels were able to maintain the same, or slightly lower, cost ratio inclusive of leases paid to other cooperative members totaling \$244,516. Overall revenue for the remaining vessels increased with fewer vessels fishing, and it is likely that payments to labor, including owner shares, increased with greater overall revenue and similar non-labor cost ratios.

While the cooperative initially limited effort by using revenue sharing to compensate owners of unused vessels, a more permanent effort reduction began to take place in 2002. It is important to understand that Federal Alaska Scallop LLP permits are not directly associated with a specific vessel. The only vessel requirement on the LLP permit is that it cannot be used on any vessel larger than the MLOA assigned to the LLP. Further restrictions are that no more than two LLPs may be held by one individual.

In contrast, the Alaska Commercial Fisheries Entry Commission (CFEC) Limited Entry Scallop permit, which was allowed to sunset in 2014 and no longer exists, was specifically attached to a vessel. Thus, through 2013, to fish in both Federal and State waters, one had to have a Federal LLP and would need to use the actual vessel assigned the CFEC Limited Entry permit if also fishing in State waters. However, if one wanted to fish only in Federal waters they could use any vessel so long as it was under the MLOA of that LLP and was not an American Fisheries Act (AFA) vessel (sideboarded by State statute). Alternatively, if an individual or entity were to purchase a Federal LLP, they would not be required to actually fish the LLP, nor would they then have need of a CFEC Limited Entry licensed vessel.

Starting in 2002, the members of the cooperative wishing to remain in the fishery formed several Alaska corporations with shared ownership, purchased the interest of those who no longer wished to remain in the fishery, and consolidated operations on three vessels. There was one additional original cooperative member, Forum Star Inc. The vessel Forum Star was an AFA eligible vessel and has been permitted as such since 2000. Under Amendment 8 to the FMP authority was delegated to the State of Alaska to set an AFA sideboard in the scallop fishery. The State set a limit of approximately 35,000 pounds (Barnhart, 2006) at present stock levels, on that vessel making its active participation in scalloping likely not profitable.

In 2005, Forum Star Inc. and its Scallop LLP were purchased by American Seafoods LLC, also an AFA entity. If the LLP held by American Seafoods LLC remains in the control of an AFA entity, it will continue to be restricted by the AFA sideboard. It is, however, important to note that the LLP itself is not AFA endorsed. This means that it could presumably be sold to a non-AFA entity. As long as a vessel no longer than 97' (the MLOA allowed under Federal Scallop LLP #002) with no AFA endorsement is used with LLP #002, the AFA sideboard restriction would not apply. Thus, an existing scallop operation could buy this LLP and use it on a 97 foot non-AFA vessel under current federal regulations (50 CFR 679.4, 50 CFR 679.7). Alternatively, an existing entity would not have to use it at all as just holding the second permit means more scallop harvest for the remaining vessels.

Table 4 provides a summary of LLP holdings and changes in those holdings over time separately for independent operators and for cooperative members. The three LLPs not associated with cooperative members have also gone through several permit transfers and organizational changes. LLP #003, and the vessel Kilkenny that has most recently been used to fish that LLP, is presently identified in State permit records as owned by Atlantic Cape Fisheries Inc. of New Jersey. Atlantic Capes has not fished that LLP since it was purchased.

LLP #004 was originally registered to Max G. Hulse, and was transferred to Scott Hulse in 2018. The vessels historically utilized by the Hulse family have been lengthened and re-purposed and would no longer be eligible to fish the LLP. As of 2022, Scott Hulse has transferred the LLP to Ty Babb of Maine. Mr. Babb did not participate in the Scallop Plan Team meeting in February of 2022 and his intentions for fishing scallops in Alaska are unknown. He is also a registered Bristol Bay salmon permit holder.

Finally, LLP #006 was most recently transferred to EWT LLC, which was an Alaska LLC with ownership by U.S. East coast scallop interests. However, EWT LLC was involuntarily dissolved by the State of Alaska either due to non-filing of renewal and/or nonpayment of fees. EWT LLC is, however, registered in New Bedford, Massachusetts. The vessel historically used to fish this LLP has been sold by the original LLP holder and is not owned by EWT LLC interests. Thus, none of these three original LLPs are currently directly associated with vessel ownership but could be used on any vessel that meets the MLOA restrictions and gear restrictions for the LLPs.

Also shown in Table 4 are the present owners of LLPs associated with the Alaska Scallop Cooperative. The information provided includes corporate and individual ownership percentages which will be discussed further below. At present, there are effectively two cooperative associated vessels fishing in the statewide fishery outside the Cook Inlet registration area: Ocean Hunter, and Provider. However, Arctic Hunter LLC recently replaced the Arctic Hunter with the Polar Sea, thus, the cooperative has three vessels, all homeported in Kodiak, that are prepared to fish scallops and these are the only known vessels owned by entities that also own LLPs.

Table 4 provides the ownership percentages of Alaska Weathervane Scallop LLPs, by Alaska Corporation. Alaska corporate records available online include the ownership percentages of each identified owner and they are presented in Table 4 as well (ADOC, 2023). Several of the identified owners of LLPs that are associated with the Alaska Scallop Cooperative are Washington based corporate

entities. Table 6 provides available information from Washington corporate records online regarding the individuals who own these Washington corporations, (State of Washington, 2022). Unfortunately, Washington State does not publicly identify ownership percentages. For this analysis, it is assumed that a single identified governor of a Washington corporation holds 100 percent ownership, and when two governors are identified it is assumed they each hold equal 50% shares. Table 5 identifies these individuals and the assumptions regarding their ownership shares.

Utilizing the Alaska corporate LLP ownership percentages and the ownership percentages of individual owners of the Washington corporations identified in Alaska corporate records it is possible to assign ownership shares of each LLP to the individual owners and to tabulate cumulative ownership shares of Alaska Weathervane scallop LLPs attributable to Alaska Scallop Cooperative members. This ownership attribution is provided in Table 6 for each cooperative member, individually, and shows that the highest level of cumulative ownership shares, under the assumptions described above, is 110%, or the equivalent of 1.1 LLP. LLP ownership limitations enacted when the LLP was established allow up to two LLP to be owned by one individual.



**Table A2.4 Federal Scallop LLP Holder History and Current Activity.**

LLP	Original Holder	MLOA	Current Holder	Restrictions	Corporate Ownership and Homestate	Vessel Historically Used	Fished in 2015-2022
<b>Independent Operators</b>							
003	Hogan, Thomas C.	75	Atlantic Capes Fisheries LLC	2 dredges with 20' max. combined width	Atlantic Capes Fisheries Inc: Daniel Cohen (100%) in good standing, Cape May NJ	<b>Kilkenny:</b> Owned by Atlantic Cape Fisheries Inc,	no
004	Hulse, Max G. et al.	79	Ty W. Babb	2 dredges with 20' max. combined width	Transferred to Scott D. Hulse in 2018, transferred to Ty W. Babb in 2021, corporate status unknown.	<b>La Brisa / Wayward Wind:</b> Vessels rebuilt (lengthened) and re-purposed	no
006	Oceanic Research Services	70	EWT LLC	none	EWT LLC: Eric Orman (66.67%) Warren Alexander (33.33%) New Bedford, MA	<b>Arctic Storm:</b> sold	no
<b>Alaska Scallop Association Members</b>							
002	Forum Star Inc.	97	American Seafoods Co., LLC	State Imposed AFA Sideboard	American Seafoods Group, LLC (100%), in turn owned by ASG Parent LLC (100%) Delaware, Operations Seattle WA	<b>Forum Star</b> (owned by Forum Star LLC, which is 100% owned by American Seafoods Company LLC )	no
005	Ocean Fisheries LLC	102	Arctic Hunter LLC	none	Egil Mikkelsen, Glenn Mikkelsen, James Stone, John Lemar, Stein Nyhammer (20% each), Lakewood, WA	Arctic Hunter, Replaced by <b>Polar Sea</b> (owned by Arctic Hunter LLC)	yes
007	Pursuit, Inc.	101	Ocean Fisheries LLC	none	Festus Fisheries Inc (WA). (20%) Mikkelsen Fisheries Inc (WA). (40%) Stein Enterprises Inc. (WA) (20%), Stone Maritime Inc (WA). (20%), Tacoma, WA	<b>Pursuit</b> (no longer documented)	no
008	Provider, Inc.	124	Provider Fisheries LLC	none	Egil Mikkelsen (20%), Glenn Mikkelsen (20%), James Stone (25%), John Lemar (25%), Tom Minio (10%) Lakewood, WA	<b>Provider</b> (owned by Provider Fisheries LLC)	yes
009	Carolina Boy, Inc.	95	Ocean Fisheries, LLC	none	Festus Fisheries Inc(WA). (20%) Mikkelsen Fisheries Inc(WA). (40%) Stein Enterprises inc. (WA) (20%), Stone Maritime Inc(WA) (20%), Lakewood, WA	<b>Ocean Hunter</b> (owned by Ocean Fisheries LLC)	yes
010	Carolina Girl, Inc.	96	Alaska Scallop Fisheries , LLC	none	Egil Mikkelsen (20%), Glenn Mikkelsen (20%), James Stone (25%), John Lemar (25%), Tom Minio (10% each), Kodiak, AK	<b>Carolina Girl</b> (no longer documented)	no

Source: <https://alaskafisheries.noaa.gov/> and <https://myalaska.state.ak.us/business/sosb>

**Table A2.5 Ownership Interest of Washington Corporations.**

Washington Corporation	Governors	Ownership
Festus Fisheries, Inc.	John Lemar, Curtis Lemar	Assumed equal 50% shares
Mikkelsen Fisheries Inc.	Egil Mikkelsen, Glenn Mikkelsen	Assumed equal 50% shares
Stein Enterprises	Stein Nyhammer	100%
Stone Maritime	James Stone	100%

Source: Washington Corporate Records Search: <https://www.sos.wa.gov/corps/>

**Table A2.6 Cooperative Member LLP Ownership Attribution.**

Owner	LLP Number						Cumulative Ownership
	002	005	007	008	009	010	
American Seafoods	100%						100%
John Lemar		20%	10%	25%	10%	25%	90%
Curtis Lemar			10%		10%		20%
Egil Mikkelsen		20%	20%	20%	20%	20%	100%
Glenn Mikkelsen		20%	20%	20%	20%	20%	100%
Tom Minio				10%		10%	20%
Stein Nyhammer		20%	20%		20%		60%
James Stone		20%	20%	25%	20%	25%	110%

### Effects of Fleet Consolidation

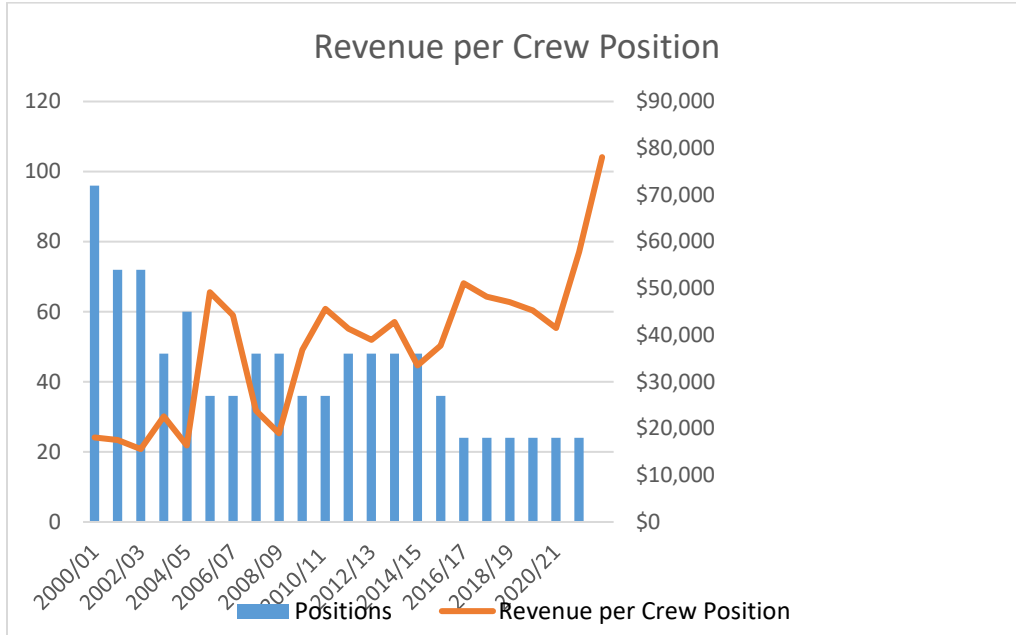
The story of fleet consolidation in the Alaska Weathervane scallop fishery is not unlike that of any other fishery that has had overexploitation under open access, inefficiency caused by the race for fish, and marginally profitable operations due to overcapacity. Fleet consolidation likely results in access to a greater proportion of available harvest for each remaining participant, and reductions in cost are likely due to reduced crowding on available grounds and elimination of the inefficiencies of the race for fish that occurs in an overcapitalized fishery. However, consolidation has also likely occurred as the harvest levels have trended downwards to historically low levels in the most recent years.

Fleet consolidation undoubtedly has a direct effect on the number of crew and operator positions in the fishery. At the time of the vessel moratorium, 18 vessels qualified and likely employed at least 216 crew members (12, including operator, cooks, mechanics, etc. per vessel). However, crew earnings and data linking crew members to vessels do not exist. It is impossible to say, using presently available data, exactly how many crew were employed or the amount of their crew shares. Similarly, it is impossible to determine how many crew were locally (Alaska Residents) acquired or available. In any event, the Federal LLP effectively reduced the number of crew positions, including operators etc., to 108. The fleet consolidation that has occurred under the cooperative, and due to declining guideline harvest levels, has further reduced crew positions to no more than 24. It is possible; however, that the crew shares earned by these crew members are higher than what was earned in the past.

Fishery participants were asked to voluntarily submit information on the percent of total revenue paid to crew during the 2012/13 season. However, three quarters of the present participants declined to provide crew payment data due to the information being highly proprietary to each fishing business. One operator did provide an estimate of crew wages paid; however, this information is unique to that fishing operation and not necessarily indicative of crew wage percentage for the entire fishery. Further, were that information divulged here, it would allow a straightforward back calculation of total revenue earned by that operation, which could then be used to calculate landed pounds. Since that operation delivers product to two processors in two ports, divulging information that could then be used to calculate landed pounds delivered to fewer than three processors would violate confidentiality restrictions. Thus, it is not possible to address current crew compensation, or changes in crew compensation, with existing sources of data.

The formation of the scallop cooperative, and its further development into what is now the Alaska Scallop Association, along with declining CPUE in several areas, reduced harvest levels, and high participation costs have had some impacts on crew positions. Some participants have reported that they will vary the number of crew they carry depending on their expectations of fishing conditions. Essentially, if they feel that the pace of fishing will slow, on any given trip, they may carry anywhere between 8 and 12 crew. The one non-cooperative vessel in the fleet, the Kilkenny, most recently fished the Kamishak Bay beds, when open, and areas near Kodiak Island. They delivered fresh-shucked meats to buyers in Homer and Kodiak and indicate that, since they are not freezing their product at sea, they can fish with as few as 3 crew but usually take 4 or more (pers. comm, Bill Harrington, February 2013).

Crew wages in the present fishery are undoubtedly less, in the aggregate, than they would have been as a share of total revenue in the past. What is not clear; however, is whether individual crew shares have increased for those who continue to work in the scallop fishery. Improved efficiency and reduced numbers of crew on a vessel create the opportunity to have increased crew shares; however, there is no economic data collection program in the scallop fishery that could be used to confirm this possibility. The figure below is an example of the potential crew shares within the cooperative over time. This example assumes 42 percent of revenue goes to crew shares (based on industry provided data from two cooperative vessels) and that each vessel participating utilizes the maximum of 12 crew (position numbers shown on left axis). This example does not account for differentiation in crew compensation based on position (Captain vs. deck and plant crew) or experience. What this example does illustrate is that potential crew shares within the cooperative have fluctuated with landings, price, and the number of positions. However, with the cooperative's ability to reduce overcapitalization by utilizing two of its three associated vessels it appears that potential crew compensation has stabilized and possibly increased with the 2021/22 and 2022/23 increase in GHL and wholesale prices. The ability of the cooperative to manage capacity may also be influenced by the fact that one associated boat only participates in the scallop fishery, while owners of the other two boats and associated scallop LLPs are known to be participants in the BSAI crab rationalization program fisheries.



**Figure A2.1 Potential Cooperative Revenue per Crew Position, 2000-2021.**

As has been discussed above, the Alaska Scallop Association has entered into a revenue sharing system that resulted in payments to members who agreed to not use their LLPs so that the vessels that do fish can remain economically viable. At present, all three active vessels associated with the Alaska Scallop Association members are homeported in Kodiak (personal communication, Jim Stone, February 2018) as is the one identified non-cooperative vessel that has recently fished.

Fleet consolidation has also affected deliveries to several Alaska ports. Information on scallop deliveries to ports from 1990-2023 (ADF&G 2023) show that, since formation of the cooperative and associated fleet consolidation, scallop landings have occurred in several ports and the location of landings has varied over the years. Cordova, Dutch Harbor, Homer, Kodiak, Sitka and Yakutat have all had landings in between 2012 and 2017; however occasional past landings in Alaska ports of Juneau, Ketchikan, Pelican, Petersburg, Sand Point, Seldovia, Seward and Whittier are not presently occurring. Also of note is that past landings made outside of Alaska to ports in Bellingham, and Seattle had not occurred since 2008 and not by any of the present members of the Alaska Scallop Association, except for a single Covid-19 related delivery to Seattle in 2021.

Scallop harvests are taxed in different ways depending on where they are caught and on where they are landed. Scallops caught in State of Alaska waters are subject to the Fishery Business Tax, while scallops caught in Federal waters of the Exclusive Economic Zone are subject to the Resource Landings Tax. The Alaska Department of Revenue requires scallop-fishing entities to record both where scallops were harvested as well as where they were landed. Additionally, there are local taxes, such as Kodiak’s Natural Resources Severance tax for fish products harvested within the Kodiak borough. These local taxes vary by community. Tax data for this fishery is not available due to confidentiality.

All of the vessels that participate in this fishery, at present, are homeported in Alaska ports and, as discussed above, pay both Alaska Business taxes and Resource Landings taxes and any applicable local taxes in landing ports and their home port (e.g. sales tax). From 2017-2019 the two vessels fishing made

between 8 and 17 landings per year in ports of Yakutat, Homer, Kodiak and Dutch Harbor. While all of the effects of consolidation mentioned above have negative consequences for some fishery participants and fishing communities, it is likely that the overall effect of fleet reduction is improved profitability for the remaining participants given that the harvest level is at historic lows.

A fundamental question is whether another vessel could fish in the Alaska Scallop Fishery profitably. Table 7 decomposes the breakeven analysis from the Amendment 4 Regulatory Impact Review and re-specifies those breakeven levels using present harvest and price ranges. Doing so imposes the same fixed cost ratios as were used in the Amendment 4 analysis and data from vessels that, with the exception of the Provider, do not currently participate in the fishery. With that limitation duly noted, application of present price of \$11.00 to \$11.50 and just over 200,000 pounds of harvest roughly 1.2 vessels would breakeven under present fishery and market conditions assuming cost ratios are similar to the past. It is likely that the members of the Alaska Scallop Cooperative have achieved some cost efficiencies since this breakeven analysis was conducted as evidenced by their two vessels currently operating.

In addition, Appendix B to the analysis of Amendment 10 to the Scallop FMP (NPFMC 2005) contains cost and breakeven data from 2003 for the Provider and Ocean Hunter, both of which are presently active in the fishery. That data, though limited to an average of two vessels shows that breakeven levels of income from 2003, inflation adjusted to 2019 values using the U.S. Gross Domestic Product Implicit Price Deflator, also suggests that fewer than two vessels would breakeven under current price and landings values.

**Table A2.7 Number of Vessels that Could Breakeven Under Current Price and Landings Scenarios (recreated from Regulatory Impact Review for Amendment 4-10 to the North Pacific Scallop FMP).**

Price	Landing (pounds)			
	200,000	400,000	600,000	800,000
\$10.00	1.1	2.1	3.2	4.3
\$10.50	1.1	2.2	3.4	4.5
\$11.00	1.2	2.3	3.5	4.7
\$11.50	1.2	2.4	3.7	4.9
\$12.00	1.3	2.6	3.8	5.1
\$12.50	1.3	2.7	4.0	5.3
\$13.00	1.4	2.8	4.2	5.5

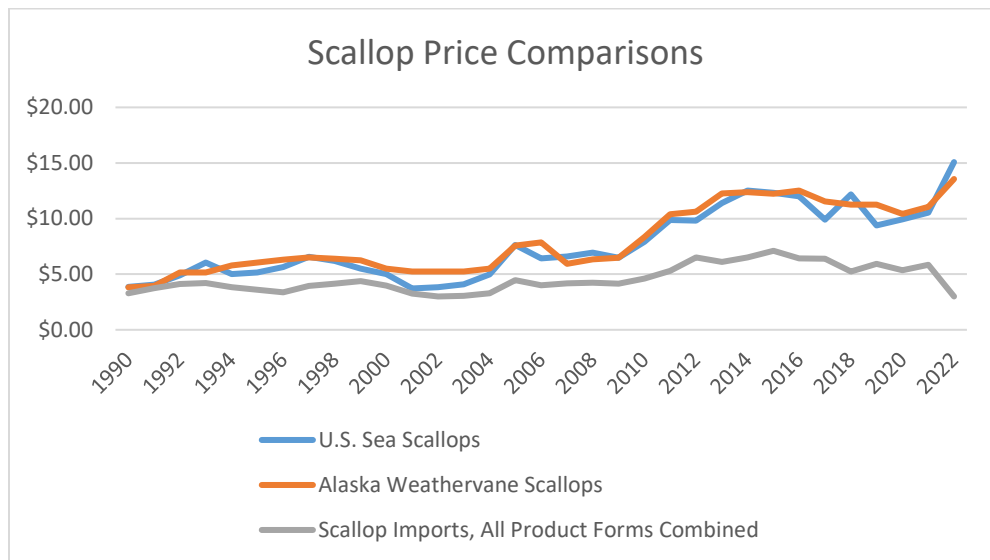
Purchase of LLPs from other cooperative members has likely reduced revenue sharing obligations for active participants, albeit with the potential cost of debt finance for these transactions. Overall, it is likely that fleet consolidation has resulted in a more efficient fleet with lower operating costs, potentially greater average crew wages, and improved returns to owned capital. However, the historically low harvest levels in the Alaska Weathervane scallop fishery, even with historically high prices are limiting the economic performance of the fishery and likely also preventing new entrants to the State waters fishery.

### **A2.5 Scallop Market Conditions**

In the domestic U.S. market, Alaska weathervane scallops are similar to Atlantic sea scallops; however, they tend to be smaller and sweeter to the palate. Table 8 compares total landings and value of Alaska weathervane scallops with Atlantic sea scallops from 1990 through 2020/21 and with imports of all scallop products from 1990 through December of 2021. These data show that Atlantic sea scallop harvest is consistently orders of magnitude larger than weathervane scallop harvests off Alaska.

There are some intuitive conclusions that can be made from the data presented in Table 8 and from the price trends displayed in Figure 2. First, domestic markets are dominated by Atlantic sea scallop production and scallop imports. For example, in 2021, an estimated 43.3 million pounds of Atlantic Sea Scallops were landed in the United States, down from a decade high of nearly 61 million pounds in 2019. Additionally, 55.4 million pounds of scallop products were imported into the United States, which is a considerable increase over the 36.5 million pounds imported the previous year. Imports have continued to rise with 55.4 Million pounds imported in 2022 and a more than four times increase to 232.5 million pounds in 2023. This compares to just under 300,000 pounds of Alaska Weathervane scallop landings in 2021/22 and 2022/23 Even in the highest production year of 1994, the 1.2 million pounds of Alaska Weathervane scallop landings made in that year compare to 16.8 million pounds of Atlantic Sea scallop landings and 56.8 million pounds of imported scallop products.

Second, prices of weathervane scallops track closely to those of Atlantic sea scallops. Thus, it is highly likely that domestic market price is dominated by the relationship between quantity supplied in the Atlantic sea scallop fishery and domestic market demand as well as by substitution of imported scallop product. Figure A2.2 provides a very clear picture of the relationship between Sea scallop prices and Alaska Weathervane scallop prices. These data appear to show that Alaska Weathervane scallop price declines tend to lag U.S. Sea scallop price declines and, at least since formation of the Alaska Scallop Association, have tended to slightly lead market price increases.



**Figure A2.2 Scallop Price Comparisons, 1990-2021.**

One might argue that the appearance may be driven by data collection differences. Sea Scallop prices are tabulated somewhat continuously through the season and landings and value are available on a monthly basis. In contrast, Alaska Weathervane scallops are primarily processed at sea and a value is not established at the time of landing but rather via the annual tax filings of harvesting entities with the Alaska Department of Revenue. The Alaska Weathervane scallop price determination for the previous year is usually published in May or June of the following year. However, for this analysis, average prices are tabulated for each year and, thus, are from a comparable time frame leading one to wonder as to the price dynamics at work behind the apparent time lag in declines and slight lead in increases that Alaska Weathervane scallops seem to exhibit.

Unfortunately, while Sea Scallop landings and value data are incredibly rich, Alaska Weathervane scallop pricing data is represented by a single data point per year with occasional fish ticket values when fresh product has been landed. These imbalanced data sets largely prevent meaningful econometric analysis of the demand for each product, including the extent to which Alaska Weathervane scallop prices may be driven by the Sea Scallop market.

Another important factor in scallop market is imports of scallop products. Unfortunately, available import data commingles imports of several small scallop species (e.g. pink, calico, bay etc.) with larger scallop varieties such as sea scallops and weathervane scallops. However, as these products are substitutes for one another, although not perfectly, the imports of these other species may influence domestic market prices.

The conclusion that can be drawn from the data presented in Table 8

**Table** is that the wholesale price of weathervane scallops is likely heavily influenced by domestic supply and import supply. This suggests that North Pacific harvesters have little market power to negotiate prices, except based on quality and taste preferences, and are likely price takers in the wholesale market.

It may also be possible that inflationary pressures have pushed 2023/24 prices to levels possibly exceeding Atlantic Sea Scallop; however, the dramatic increase in imports produced a significant decline in import prices to \$3 per pound thus some negative pressure may be occurring due to substitution of low cost imported products. Complete price data is not presently available but will be included in this document prior to presentation to the Council.



**Table A2.8 US Scallop Landings and Value versus Scallop Imports and Value, 1990-2017.**

Year	U.S. Sea Scallops			Alaska Weathervane Scallops*			Scallop Imports, All Product Forms Combined		
	Millions of Pounds	Value (\$ millions)	Av. \$/lb	Millions of Pounds	Value (\$ millions)	Av. \$/lb	Millions of Pounds	Value (\$ millions)	Av. \$/lb
1990	38.6	\$149.1	\$3.87	1.1	\$4.3	\$3.82	40.0	\$131.6	\$3.29
1991	37.9	\$153.7	\$4.05	1.8	\$7.1	\$3.96	29.7	\$111.4	\$3.76
1992	31.3	\$153.4	\$4.90	0.6	\$2.9	\$5.15	38.8	\$160.2	\$4.13
1993	16.1	\$97.1	\$6.04	1.0	\$5.1	\$5.15	52.1	\$219.2	\$4.21
1994	16.8	\$84.1	\$5.01	1.2	\$7.2	\$5.79	56.8	\$216.9	\$3.82
1995	17.4	\$89.8	\$5.16	0.4	\$2.5	\$6.05	48.4	\$174.8	\$3.61
1996	17.5	\$98.8	\$5.64	0.7	\$4.6	\$6.30	58.8	\$198.8	\$3.38
1997	13.6	\$89.5	\$6.56	0.8	\$5.3	\$6.50	60.3	\$238.1	\$3.95
1998	12.1	\$75.1	\$6.19	0.8	\$5.3	\$6.40	53.2	\$221.1	\$4.16
1999	22.0	\$121.0	\$5.49	0.8	\$5.2	\$6.25	44.6	\$194.7	\$4.37
2000	32.2	\$160.9	\$5.00	0.8	\$4.1	\$5.50	54.1	\$214.8	\$3.97
2001	46.4	\$172.6	\$3.72	0.6	\$3.0	\$5.25	40.0	\$130.0	\$3.25
2002	52.7	\$202.1	\$3.84	0.5	\$2.7	\$5.25	49.0	\$146.7	\$3.00
2003	56.0	\$229.1	\$4.09	0.5	\$2.6	\$5.25	52.9	\$161.9	\$3.06
2004	64.1	\$320.0	\$4.99	0.4	\$2.3	\$5.50	45.3	\$149.4	\$3.29
2005	56.6	\$432.5	\$7.64	0.5	\$4.0	\$7.58	51.4	\$229.8	\$4.47
2006	60.1	\$386.3	\$6.43	0.5	\$3.8	\$7.86	60.8	\$243.3	\$4.00
2007	58.5	\$386.0	\$6.60	0.5	\$2.7	\$5.94	56.6	\$236.8	\$4.18
2008	53.4	\$370.1	\$6.93	0.3	\$2.2	\$6.34	57.8	\$244.8	\$4.24
2009	57.9	\$375.6	\$6.48	0.5	\$3.2	\$6.48	56.3	\$233.0	\$4.14
2010	57.5	\$455.7	\$7.92	0.5	\$3.8	\$8.35	51.9	\$238.5	\$4.60
2011	59.2	\$585.1	\$9.89	0.5	\$4.7	\$10.39	56.8	\$300.4	\$5.29
2012	56.9	\$559.0	\$9.82	0.4	\$4.4	\$10.63	34.5	\$224.7	\$6.52
2013	41.0	\$466.8	\$11.39	0.4	\$4.9	\$12.25	60.9	\$371.9	\$6.11
2014	33.8	\$423.7	\$12.52	0.3	\$3.8	\$12.39	60.7	\$394.4	\$6.50
2015	35.7	\$439.7	\$12.32	0.3	\$3.2	\$12.22	49.3	\$350.2	\$7.11
2016	40.5	\$486.0	\$12.00	0.2	\$2.9	\$12.53	51.0	\$328.5	\$6.43
2017	53.8	\$532.9	\$9.90	0.2	\$2.8	\$11.54	41.3	\$264.5	\$6.40
2018	60.1	\$732.0	\$12.18	0.2	\$2.8	\$11.26	46.5	\$243.6	\$5.24
2019	60.7	\$570.1	\$9.39	0.2	\$2.7	\$11.26	35.3	\$208.9	\$5.92
2020	48.9	\$486.2	\$9.94	0.2	\$2.4	\$10.43	36.5	\$195.4	\$5.35
2021	40.0	\$421.4	\$10.53	0.3	\$3.3	\$11.06	55.4	\$324.4	\$5.86
2021	43.3	\$671.8	\$10.53	0.3	\$4.5	\$11.06	55.4	\$324.4	\$5.86
2022	31.8	\$479.60	\$15.08	0.3	\$3.2	\$13.56	232.6	\$697.1	\$3.00

Sources: NMFS Data at <https://www.fisheries.noaa.gov> and ADF&G Fish Ticket data. \* Seasonal data is displayed as annual data for comparison with annual sea scallop landings. n/a= data for 2019/20 Atlantic US Sea scallop fishery is not yet available.

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