
Socioeconomic Benefits of the Area E Gillnet Fishery

Prepared for the Copper River/Prince William Sound Marketing Association

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ABSTRACT

The Area E gillnet fishery is generally recognized as an important contributor to the local and regional economies. In an effort to better understand how future fishery policy changes potentially could impact not just those who fish, but also the broader economy, the Copper River/Prince William Sound Marketing Association contracted Resilient Economics to assess the direct, indirect and induced economic impacts of this fishery.

For such an analysis, collection of primary data specific to the fishery and study area ideally would occur; however, time constraints prevented the collection of any primary data, so all results are derived from existing data and sources publically available at the time this study was conducted. While this is a recognized limitation, we also believe that the existing studies and data sources used provided sufficient detail and specificity, allowing for estimation of a reasonable range of economic benefits associated with the Area E gillnet fishery. Existing data sources are cited in both the narrative and footnotes.

Key findings from this study are as follows:

- In 2016, the estimated value Area E drift and set gillnet permits totals almost \$90 million dollars. Alaska residents hold 77.0% of these permits and 41.2% are held by residents of Cordova.
- A recent study by Wood (2017) of Bristol Bay gillnet fishery permit values found that “total earnings have a positive and significant relationship with permit prices, and total costs have a negative and significant relationship in both the short- and long-run”¹ – suggesting that permit holders individual finances and economic behavior may not only be affected by their annual earnings in the fishery, but also by how the fishery does as a whole.
- Over the last ten years, ex-vessel revenues from the Area E gillnet fishery totaled almost half a billion dollars, with average annual revenues of just under \$50 million. Alaska and Cordova residents earned 79.5% (\$391.1 million) and 41.8% (\$205.4 million) of these ex-vessel revenues.
- In 2016, the Area E gillnet fishery accounted for an estimated \$20.3 million in direct economic benefits (i.e., ex-vessel revenues of residents and spending by non-residents who season there) and \$32.1 million (including harvesting and processing) in total economic impact for Cordova.
- In 2016, the Area E gillnet fishery accounted for an estimated \$36.3 million in direct economic benefits (i.e., ex-vessel revenues) and \$65.6–\$67.7 million (including harvesting and processing) in total economic impact for Alaska.
- From 2007-2016, the Area E gillnet fishery accounted for an estimated \$491.8 million in direct economic benefits (i.e., ex-vessel revenues) and \$887.8–\$915.2 million (harvesting and processing) in total economic impact for Alaska.

¹ Wood, MD. 2017. Analyzing factors affecting Alaska's salmon permit values: evidence from Bristol Bay drift gillnet permits. Thesis (M.S.) University of Alaska Fairbanks.

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1. SCOPE OF WORK

The Alaska Department of Fish and Game (ADFG) defines the Prince William Sound (PWS) fisheries management area, also known as Area E, as “all coastal waters and inland drainages entering the north central Gulf of Alaska between Cape Suckling and Cape Fairfield as well as the Bering and Copper rivers”.² Area E is also further divided into 11 districts for the purposes of salmon and herring management. Within this management area, the commercial gillnet fishery is a limited entry fishery composed of two permit types: S03E – drift gillnet and S04E – set gillnet.

The Area E gillnet fishery is generally recognized as an important contributor to the local and regional economies. In an effort to better understand how future fishery policy changes affecting harvest potentially could impact not just those who fish, but also the broader economy, the Copper River/Prince William Sound Marketing Association (CR/PWSMA) contracted Resilient Economics to assess the direct, indirect and induced economic impacts of the Area E gillnet fishery using existing data sources.

The remaining sections of this study present methods and results for the following:

1. Limited-entry permit values and the distribution of Area E gillnet fishery permit holders by geographic location.
2. Copper River District (CRD) commercial drift gillnet ex-vessel values.
3. Area E gillnet fishery ex-vessel values (drift and set gillnet combined). These results are presented for a) all permit holders; b) Alaska permit holders; c) Valdez-Cordova Census Area (CA) permit holders; and d) Cordova permit holders only.
4. Multiplier values associated with the Area E gillnet fishery.

Note that all dollar estimates included in this document are adjusted for inflation using the Bureau of Labor Statistics Consumer Price Index (CPI) and are presented in real 2016 dollars (2016\$) rounded to the nearest hundred.³

2. METHODS

This section provides a brief overview of data collection methods used. As there are several different analyses conducted in this study, methods for each analysis are included in that section.

The following data were downloaded from the Commercial Fisheries Entry Commission (CFEC) website⁴ for the commercial drift and set gillnet fisheries for the years 2007-16:

- Permanent permits renewed;
- Interim permits issued;
- Total permits issued/renewed;
- Total permits fished;
- Total pounds harvested;
- Average pounds harvested;

² Accessed September 2017 at <http://www.adfg.alaska.gov/FedAidPDFs/FMR17-17.pdf>.

³ Accessed May 2017 at https://www.bls.gov/data/inflation_calculator.htm.

⁴ Accessed September 2017 at https://www.cfec.state.ak.us/fishery_statistics/earnings.htm.

- Total gross earnings;
- Average gross earnings; and
- Average permit price.

These data were downloaded for a) all permits; b) all permits registered in the Valdez-Cordova Census Area; and c) all permits registered in Cordova.

ADFG Annual Prince William Sound Area Finfish Management Reports⁵ were used to obtain the following information on the Copper River District drift gillnet fishery for the years 2007-2016:

- Number of permits;
- Number of salmon harvested by species;
- Average weight by species (for PWS - drift gillnet); and
- Average price per pound by species (for PWS - drift gillnet).

Data for the year 2016 were obtained directly from ADFG staff as the 2016 report had not been published at the time this study was conducted.

3. PERMIT VALUES

In 2016, 537 drift gillnet permits and 29 set gillnet permits were issued for the Area E gillnet fishery, with average permit prices of \$155,400 and \$190,800, respectively. These limited entry permits do not necessarily contribute directly to the economy themselves, but do provide real value to the holders as these individuals have the right to transfer the permits through gift, inheritance or sale.

A recent study by Wood (2017) of Bristol Bay gillnet fishery permit values found that “total earnings have a positive and significant relationship with permit prices, and total costs have a negative and significant relationship in both the short- and long-run”⁶ — suggesting that permit holders individual finances and economic behavior may not only be affected by their annual earnings in the fishery, but also by how the fishery does as a whole.

Table 1 shows the estimated value of Area E gillnet fishery permits for the current year and averaged over the last ten years (in real dollars). In both cases, the estimated value of permits from PWS drift and set gillnet combined totals almost \$90 million dollars.

Table 1 PWS gillnet permit values

2016	Drift Gillnet	Set Gillnet	2007-2016	Drift Gillnet	Set Gillnet
Permanent Permits	537	29	Permanent Permits	537	29
Avg. Permit Price	\$ 155,400	\$ 190,800	Avg. Permit Price	\$ 160,800	\$ 110,400
Estimated Total Value	\$ 83,449,800	\$ 5,533,200	Estimated Total Value	\$ 86,349,600	\$ 3,201,600

⁵ Accessed September 2017 at <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareapws.salmon#management>.

⁶ Wood, MD. 2017. Analyzing factors affecting Alaska's salmon permit values: evidence from Bristol Bay drift gillnet permits. Thesis (M.S.) University of Alaska Fairbanks.

We also used the CFEC data to analyze the geographic distribution of Area E gillnet permit holders by geography—with a focus on Cordova and the nearby region. As seen in Table 2, Cordova residents hold over 40% of permits and Alaskans hold almost 80%. It is important to note that residency is based on the address a permit holder registers with the CFEC—which in some cases may or may not be where the individual resides full time.

Table 2 Distribution of PWS gillnet permit holders by geographic area

Area	# of Permit Holders	% of Total
Cordova	233	41.2%
Valdez-Cordova CA	239	42.2%
Alaska	436	77.0%
Total	566	—

4. COPPER RIVER DISTRICT

As mentioned previously, estimates of ex-vessel revenues for the CRD drift gillnet fishery were calculated using ADFG data. The following steps were used:

- For each species (i.e., Chinook, sockeye, coho, pink & chum) the number of fish harvested was multiplied by the average weight per fish resulting in the total pounds harvested. Note that the “average weight” values used were not specific to the Copper River District, but were for PWS as a whole. Average weight estimates were not available at the district level.
- For each species the total pounds harvested was then multiplied by the average price per pound resulting in total ex-vessel revenues.
- Ex-vessel revenues for all species were summed resulting in total ex-vessel revenues for the CRD.
- Estimated total ex-vessel revenues were updated to constant 2016 dollars using the CPI.

In 2016, ex-vessel revenues for the CRD drift gillnet fishery were an estimated \$20.5 million—which represents almost 60% of the total Area E drift gillnet ex-vessel revenues (\$34.8 million) for this year. It should be noted that this estimated total value (as reported by ADFG) varies slightly from the CFEC estimated total value used in the following sections.

From 2007-2016, ex-vessel revenues for the CRD drift gillnet fishery totaled \$221.6 million dollars. While there has been considerable annual variability, mean and median annual ex-vessel revenues were \$22.2 million and \$24.2 million, respectively (see Table 3).

Table 3 Copper River District drift gillnet ex-vessel revenues

Year	Millions (2016\$)
2007	\$ 27.8
2008	\$ 8.4
2009	\$ 15.1
2010	\$ 11.5
2011	\$ 29.1
2012	\$ 25.4
2013	\$ 27.7
2014	\$ 33.1
2015	\$ 22.9
2016	\$ 20.5
10-Year Total	\$ 221.6
Mean	\$ 22.2
Median	\$ 24.2

On an individual level, the mean and median ex-vessel revenues for the average active permit holder were \$43,800 and \$47,200, respectively (see Table 4). In total, the average active permit holder would have earned almost half a million dollars in ex-vessel revenues just from the CRD during these 10 years.

Table 4 Copper River District average earnings

Year	Active Permits	Per Permit (\$2016)
2007	494	\$ 56,300
2008	492	\$ 17,100
2009	486	\$ 31,100
2010	495	\$ 23,300
2011	485	\$ 59,900
2012	510	\$ 49,900
2013	515	\$ 53,700
2014	533	\$ 62,200
2015	515	\$ 44,500
2016	509	\$ 40,200
10-Year Total		\$ 438,200
	Mean	\$ 43,800
	Median	\$ 47,200

5. PRINCE WILLIAM SOUND

As mentioned previously, the Area E gillnet fishery is comprised of two permits: S03E – drift gillnet and S04E – set gillnet. Participation and earnings data for each permit were downloaded from the CFEC website for the last ten years. CFEC data were used for this component of the analysis as data can be accessed online for various geographic areas, including those included in this analysis.

The drift gillnet is the larger of the two Area E gillnet fisheries—with 537 permanent permits (as of 2016), as opposed to set gillnet, which has 29 permanent permits. Over the last ten years, on average, 516 permits and 28 permits were active in a given year for the drift and set gillnet fisheries, respectively.

Unless otherwise noted, information in the following sections is for the two fisheries (i.e., drift and set gillnet) combined.

5.1. ALL PERMITS

In 2016, ex-vessel revenues for the Area E gillnet fishery, calculated using CFEC data, totaled \$36.3 million—with the drift gillnet fishery accounting for approximately 95% of these revenues (see Table 5).

Table 5 2016 Area E gillnet fishery

Permit	Permanent Permits Renewed	Total Fished	Ex-Vessel Revenues (millions \$)	Average Gross Earnings
Drift	537	517	\$ 34.4	\$ 66,500
Set	29	29	\$ 1.9	\$ 66,100
Total	566	546	\$ 36.3	\$ 66,500

From 2007-2016, ex-vessel revenues for the Area E gillnet fishery totaled \$491.8 million dollars with mean and median annual ex-vessel revenues of \$49.2 million and \$49.6 million, respectively (see Table 6).

Table 6 10-year summary for Area E gillnet fishery

Year	Millions (2016\$)
2007	\$ 42.8
2008	\$ 39.0
2009	\$ 38.5
2010	\$ 57.0
2011	\$ 57.6
2012	\$ 67.0
2013	\$ 56.4
2014	\$ 56.4
2015	\$ 40.7
2016	\$ 36.3
10-Year Total	\$ 491.8
Mean	\$ 49.2
Median	\$ 49.6

5.2. ALASKA PERMIT HOLDERS

Alaska residents hold the majority of Area E gillnet fishery permits—in 2016, they held 77.3% and 72.4% of drift and set gillnet permits, respectively. Over the last ten years, the proportion of drift gillnet permits held by Alaska residents has remained relatively constant, but set gillnet permits ownership by residents

has dropped from 25 to 21 (out of 29 total—except for in 2007 when there were 30 total) over the last ten years.

In 2016, Alaska residents earned almost \$28.9 million—representing 79.6% of the total \$36.3 million of ex-vessel revenues earned in the Area E gillnet fishery that year. Average earnings per permit holder were an estimated \$68,000 (see Table 7). In comparison, non-residents earned, on average, \$61,100 per permit in 2016.

Table 7 2016 summary for Alaska permit holders

Permit	Permanent Permits Renewed	Total Fished	Ex-Vessel Revenues (millions \$)	Average Gross Earnings
Drift	415	404	\$ 27.5	\$ 68,100
Set	21	21	\$ 1.4	\$ 67,100
Total	436	425	\$ 28.9	\$ 68,000

We also calculated the ex-vessel revenues earned by residents and non-residents over the last ten years (2007-2016). As seen in Table 8, over the past ten years Alaska residents earned the majority of ex-vessel revenues (79.5%), totaling over \$391 million dollars.

Table 8 10-year summary for Alaska permit holders

Alaska	Average Permits Fished/Year	Ex-Vessel Revenues (millions \$)	% of Total Ex-Vessel Revenues	% of Total Permits Fished
Non-resident	118	\$ 100.7	20.5%	21.8%
Resident	425	\$ 391.1	79.5%	78.2%
Total	544	\$ 491.8	—	—

5.3. VALDEZ-CORDOVA CENSUS AREA PERMIT HOLDERS

In 2016, permit holders registered in the Valdez-Cordova Census Area (“VCCA”) held 43.8% (235) and 13.8% (4) of PWS drift and set gillnet permits, respectively. Both permits have seen small but steady decreases in ownership by VCCA residents over the last ten years — in 2007, VCCA residents held 48.8% of drift gillnet permits and 23.3% of set gillnet permits in PWS.

VCCA permit holders earned an estimated \$14.2 million in 2016 — representing 39% of total ex-vessel revenues for that year. Average earnings per permit holder were approximately \$60,800 (see Table 9).

Table 9 2016 summary for Valdez-Cordova Census Area permit holders

Permit	Permanent Permits Renewed	Total Fished	Ex-Vessel Revenues (millions \$)	Average Gross Earnings
Drift	235	229	\$ 13.9	\$ 60,800
Set	4	4	\$ 0.2	\$ 58,800
Total	239	233	\$ 14.2	\$ 60,800

We also calculated the ex-vessel revenues earned by VCCA residents over the last ten years (2007-2016), which totaled approximately \$209 million or 42.5% of total Area E gillnet fishery earnings for that time period.

5.4. CORDOVA PERMIT HOLDERS

In 2016, permit holders registered with addresses in Cordova held 42.6% (229) and 13.8% (4) of PWS drift and set gillnet permits, respectively. Permit holders registered in Cordova earned just over \$14.0 million in 2016 —representing 39% of total ex-vessel revenues for that year. Average earnings per permit holder were approximately \$61,500 (see Table 10).

Table 10 2016 summary for Cordova permit holders

Permit	Permanent Permits Renewed	Total Fished	Ex-Vessel Revenues (millions \$)	Average Gross Earnings
Drift	229	224	\$ 13.8	\$ 61,600
Set	4	4	\$ 0.2	\$ 58,800
Total	233	228	\$ 14.0	\$ 61,500

We also calculated the ex-vessel revenues earned by Cordova residents over the last ten years (2007-2016), which totaled approximately \$205 million or approximately 41.8% of total Area E gillnet fishery earnings for that time period.

5.5. SUMMARY

Table 11 summarizes information from the previous sections and shows estimated annual ex-vessel revenues and totals by geographic location.

Table 11 Annual ex-vessel revenues by area (millions 2016\$)

Year	All	Alaska Residents	VCCA Residents	Cordova Residents
2007	\$ 42.8	\$ 33.6	\$ 20.3	\$ 19.7
2008	\$ 39.0	\$ 30.8	\$ 17.7	\$ 17.3
2009	\$ 38.5	\$ 30.4	\$ 16.8	\$ 16.4
2010	\$ 57.0	\$ 45.3	\$ 22.7	\$ 22.3
2011	\$ 57.6	\$ 45.6	\$ 24.9	\$ 24.4
2012	\$ 67.0	\$ 52.8	\$ 28.2	\$ 27.6
2013	\$ 56.4	\$ 45.2	\$ 24.1	\$ 23.8
2014	\$ 56.4	\$ 46.0	\$ 24.5	\$ 24.3
2015	\$ 40.7	\$ 32.5	\$ 15.7	\$ 15.5
2016	\$ 36.3	\$ 28.9	\$ 14.2	\$ 14.0
Total	\$ 491.8	\$ 391.1	\$ 209.1	\$ 205.4
% of Total	—	79.5%	42.5%	41.8%

6. MULTIPLIER EFFECTS

The direct economic contributions of a given fishery are the value, income and employment the fishery creates—alternately, without the fishery, this value, income and employment would not exist. The economic value of the Area E gillnet fishery, like any fishery, extends beyond the direct economic impacts (i.e., ex-vessel revenues received by fishermen) — as they in turn generate additional economic activity and support other industries in the region/state through a) indirect impacts - the purchase of supplies and services to support their fishing activities (e.g., purchase of a new net or payment for boat maintenance); and b) induced impacts - personal spending by these fishermen as well as any employees (e.g., purchase of groceries). The sum of the direct, indirect and induced impacts is the total economic impact.

Input-output (I-O) modeling is a method commonly used to model the interrelationships of economic sectors and describe the multiplier effect of changes in one sector across a broader economy. This method is frequently used to assess the potential economic impact of a new program or investment in a particular industry, but it can also be used to understand how changes within an existing industry (e.g., decreased revenue and/or jobs) might impact the broader economy. Results of I-O analyses are typically expressed as multipliers that represent the additional economic impact above the direct contributions of the industry being considered.

One of the most commonly recognized models used is IMPLAN, however, as summarized in Seung and Waters (2006), there are a variety of reasons why this model may not be ideal for assessing changes in Alaska fisheries.⁷ A number of individuals and groups have created modified IMPLAN models more suited to assessing Alaska fisheries—for more details on the fundamentals of input-output modeling, as well as how modified models have been made for the fishery context, please refer to Knapp et al. 2013⁸; Leonard and Watson 2011⁹; TCW Economics 2010¹⁰; or Seung & Waters 2006¹¹.

Creating a modified I-O model specific to the Area E gillnet fishery was not feasible for the purposes of this study, so we relied on multipliers derived from existing studies focused on estimating total economic impacts associated with various Alaska fisheries (see Note that the city, region and state estimates of total economic impact do not include ANY benefits associated with permit holders registered outside these areas and as such should be viewed a low-bound estimates. For example, a permit holder from Anchorage who spends the fishing season in Cordova (and makes purchases there) is not accounted for in the calculation of estimated total impact on Cordova. This additional spending (and associated impacts) is discussed further at the end of this section.

Table 12).

Note that the city, region and state estimates of total economic impact do not include ANY benefits associated with permit holders registered outside these areas and as such should be viewed a low-bound estimates. For example, a permit holder from Anchorage who spends the fishing season in Cordova (and

⁷ Seung, C., and E. Waters. 2006. “A Review of Regional Economic Models for Fisheries Management in the U.S.” *Marine Resource Economics* 21(1):101–24.

⁸ Knapp, G., M. Guettabi, and S. Goldsmith, “The Economic Importance of the Bristol Bay Salmon Industry” (Anchorage, Alaska: Institute of Social and Economic Research, University of Alaska Anchorage, 2013), available at <http://www.bbrsda.com/wp-content/uploads/2013/05/Economic-Importance-of-Bristol-Bay-Full-Report.pdf>.

⁹ Leonard, J., and P. Watson. 2011. Description of the input-output model for Pacific Coast fisheries. U.S. Dept. Commerce, NOAA Tech. Memo. NMFS-NWFSC-111, 64 p.

¹⁰ TCW Economics. 2010. Economic Contributions and Impacts of Salmonid Resources in Southeast Alaska. Prepared for Trout Unlimited Alaska Program.

¹¹ Seung, C., and E. Waters. 2006.

makes purchases there) is not accounted for in the calculation of estimated total impact on Cordova. This additional spending (and associated impacts) is discussed further at the end of this section.

Table 12 Summary of relevant Alaska fishery I-O multipliers

Study Year	Final Output Multiplier	Region	Fishery	Industry	Source
2013	1.58	Cordova	All	Harvest & Processing	McDowell Group
2017	1.57	Southeast Alaska	All	Harvest & Processing	McDowell Group
2010	2.08	Southeast Alaska	All	Harvest & Processing	TCW Economics
2017	2.34	Alaska	Salmon	Harvest & Processing	McDowell Group
2013	2.27	Alaska	Salmon	Harvest & Processing	ISER
2013	3.05	All US	Salmon	Harvest & Processing	ISER

A few notes on these studies:

- The 2013 McDowell Group study multiplier appears to be the impact of all Southeast Alaska fisheries on Cordova only and includes harvest and processing.¹²
- The 2017 McDowell Group study multiplier for Southeast Alaska represents the impact of all Southeast Alaska fisheries on this region and includes harvesting and processing.¹³
- The TCW Economics multiplier is the estimated impact of Southeast Alaska salmon fisheries for harvesting and processing on the Southeast region.¹⁴
- The 2017 McDowell Group study multiplier for Alaska represents the impact of commercial salmon fisheries on Alaska and includes harvesting and processing.
- The ISER multiplier for Alaska represents the estimated impact of harvesting and primary processing of Bristol Bay salmon on the State of Alaska.¹⁵
- The ISER multiplier for the United States represents the estimated impact of fishing and primary processing of Bristol Bay salmon on the United States.

None of these studies perfectly match the focus of this study, however, they do allow us to present a reasonable range of the broader economic impacts (in terms of final output) associated with the Area E gillnet fishery.

Table 13 shows the estimated total economic impact of the Area E gillnet fishery in 2016:

- Area E gillnet fishery ex-vessel revenues from Cordova permit holders contributed an estimated \$22.2 million in total economic impact for Cordova.
- Area E gillnet fishery ex-vessel revenues from VCCA permit holders contributed an estimated \$22.2-\$29.5 million in total economic impact for the Southeast Region of Alaska.

¹² McDowell Group. 2015. The Economic Impact of the Seafood Industry in Southcentral Alaska. Prepared for the Alaska Salmon Alliance.

¹³ McDowell Group. 2017. The Economic Value of Alaska's Seafood Industry. Prepared for the Alaska Seafood Marketing Institute.

¹⁴ Accessed May 2017 at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd530437.pdf.

¹⁵ Knapp et al. 2013.

- Area E gillnet fishery ex-vessel revenues from Alaska permit holders contributed an estimated \$65.6–\$67.7 million in total economic impact for Alaska.
- Total Area E gillnet fishery ex-vessel revenues contributed an estimated \$110.8 million to the overall economy of the United States.

Table 13 Estimated total economic impact (2016)¹⁶

Region of Impact	Multiplier	Millions 2016\$			
		Cordova	Valdez-Cordova CA	Alaska	Total
Ex-Vessel Revenues (2016)	—	\$14.0	\$14.2	\$28.9	\$36.3
Cordova	1.58	\$22.2			
Southeast Alaska	1.57		\$22.2		
	2.08		\$29.5		
Alaska	2.27			\$65.6	
	2.34			\$67.7	
United States	3.05				\$110.8

Similarly, Table 14 shows the estimated total economic impact of the Area E gillnet fishery over the last ten years:

- Area E gillnet fishery ex-vessel revenues from Cordova permit holders contributed an estimated \$324.5 million in total economic impact for Cordova.
- Area E gillnet fishery ex-vessel revenues from VCCA permit holders contributed an estimated \$328.3–\$434.9 million in total economic impact for the Southeast Region of Alaska.
- Area E gillnet fishery ex-vessel revenues from Alaska permit holders contributed an estimated \$887.8–\$915.2 million in total economic impact for Alaska.
- Total Area E gillnet fishery revenues contributed an estimated \$1.5 billion to the overall economy of the United States.

¹⁶ Source of multipliers listed from top to bottom: 1.58 (McDowell Group 2015); 1.75 (McDowell Group 2017); 2.08 (TCW Economics 2010); 2.27 (ISER 2013); 2.34 (McDowell Group 2017); 3.05 (ISER 2013).

Table 14 Estimated total economic impact (2007-2016)

Region of Impact	Multiplier	Millions 2016\$			
		Cordova	CA	Alaska	Total
Ex-Vessel Revenues (2007-2016)	—	\$205.4	\$209.1	\$391.1	\$491.8
Cordova	1.58	\$324.5			
Southeast Alaska	1.57		\$328.3		
	2.08		\$434.9		
Alaska	2.27			\$887.8	
	2.34			\$915.2	
United States	3.05				\$1,500.0

6.1. ADDITIONAL BENEFITS TO CORDOVA

As mentioned previously, CFEC data break out ex-vessel revenue by location based on the registered addresses of permit holders—which does not account for that fact that many permit holders who do not live in Cordova do spend time (and money) there during the fishing season.

We used anecdotal evidence to approximate the additional benefits of the Area E gillnet fishery to Cordova through additional spending by non-Cordova permit holders during the fishing season. In order to do this, two key pieces of information were needed — the average annual spending per permit holder and the average number of non-Cordova residents that homeport in Cordova for the fishing season.

Due to time constraints, we relied on a focus group of individuals working in (or in industries related to) the Area E gillnet fisheries. Furthermore, the focus group was comprised of both Cordova residents and non-residents. Based on the information provided by the focus group, we estimated that the average non-Cordova drift gillnet permit holder who home ports in Cordova spends \$31,550 in Cordova annually. This estimate includes: \$1,300 – moorage; \$500 – storage; \$10,000 – fuel; \$4,000 – meals; \$4,000 – repairs and maintenance (barring major repairs); \$7,000 – supplies (assuming one net purchase); \$3,750 – housing; and \$1,000 – utilities.

In 2016, there were 537 gillnet and 29 set permanent permits issued. Set gillnet permit holders were removed from the analysis as their expenses are quite different, and they typically do not fish in the Copper River District¹⁷. Of the 537 drift gillnet permits, 229 are held by individuals registered in Cordova—leaving 308 non-residents. Tony Schinella, Harbormaster in Cordova, estimated that a conservative estimate would be that 200 of these would, on average, homeport in Cordova for the season.¹⁸

Using these estimates, Area E non-resident permit holders would have spent approximately \$6.3 million in Cordova during the 2016 fishing season.

Table 15 summarizes the ex-vessel revenues of local residents and estimated spending by non-residents for 2016. This result provides an estimate of total direct spending related to the Area E gillnet fishery, which is

¹⁷ Christa Hoover. Personal communication. 30 October 2017.

¹⁸ Tony Schinella. Personal communication through Christa Hoover. 30 October 2017.

then combined with the multiplier to create an estimate of total overall impact—an estimated \$32.1 million in 2016.

Table 15 2016 estimated total economic impact – Cordova only

Region of Impact	Multiplier	Millions 2016\$			
		Ex-Vessel Revenues	Non-Resident Spending	Total Direct	Total w/ Multiplier Effect
Cordova	1.58	\$14.0	\$6.3	\$20.3	\$32.1

Similarly, additional impacts derived from non-resident spending could (and should) also be estimated for the Valdez-Cordova Census Area and Alaska, but we do not attempt to calculate these here as time constraints prevented the collection of necessary data.

7. CONCLUSIONS

Key findings from this study are as follows:

- In 2016, the estimated value Area E drift and set gillnet permits totals almost \$90 million dollars. Alaska residents hold 77.0% of these permits and 41.2% are held by residents of Cordova.
- A recent study by Wood (2017) of Bristol Bay gillnet fishery permit values found that “total earnings have a positive and significant relationship with permit prices, and total costs have a negative and significant relationship in both the short- and long-run”¹⁹ — suggesting that permit holders individual finances and economic behavior may not only be affected by their annual earnings in the fishery, but also by how the fishery does as a whole.
- Over the last ten years, ex-vessel revenues from the Area E gillnet fishery totaled almost half a billion dollars, with average annual revenues of just under \$50 million. Alaska and Cordova residents earned 79.5% (\$391.1 million) and 41.8% (\$205.4 million) of these ex-vessel revenues.
- In 2016, the Area E gillnet fishery accounted for an estimated \$20.3 million in direct economic benefits (i.e., ex-vessel revenues of residents and spending by non-residents who season there) and \$32.1 million (including harvesting and processing) in total economic impact for Cordova.
- In 2016, the Area E gillnet fishery accounted for an estimated \$36.3 million in direct economic benefits (i.e., ex-vessel revenues) and \$65.6–\$67.7 million (including harvesting and processing) in total economic impact for Alaska.
- From 2007-2016, the Area E gillnet fishery accounted for an estimated \$491.8 million in direct economic benefits (i.e., ex-vessel revenues) and \$887.8–\$915.2 million (harvesting and processing) in total economic impact for Alaska.

¹⁹ Wood, MD. 2017.

7.1. LIMITATIONS

The following limitations of the study should be noted:

- This analysis relies on the best available data from existing, publically available sources and targeted focus groups.
- This analysis does not include economic impacts associated with the Prince William Sound sport, personal use or subsistence salmon fisheries.
- This analysis does not include estimates of multiplier benefits associated with employment or personal income.
- Residency is based on the address a permit holder registers with the CFEC.