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The Importance of the Bristol Bay Salmon Fisheries to the Region and its Residents: An Overview

Prepared for

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November 2012

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The Importance of the Bristol Bay Salmon Fisheries to the Region and its Residents

This document is an updated overview of the importance of Bristol Bay Salmon harvesting to region residents. A larger and more in-depth analysis is forthcoming, and is an update of the work Northern Economics published in 2009. Bristol Bay Economic Development Corporation again sponsored this project to continue developing an understanding of how the fishery affects Bristol Bay Region residents.

This overview addresses the following:

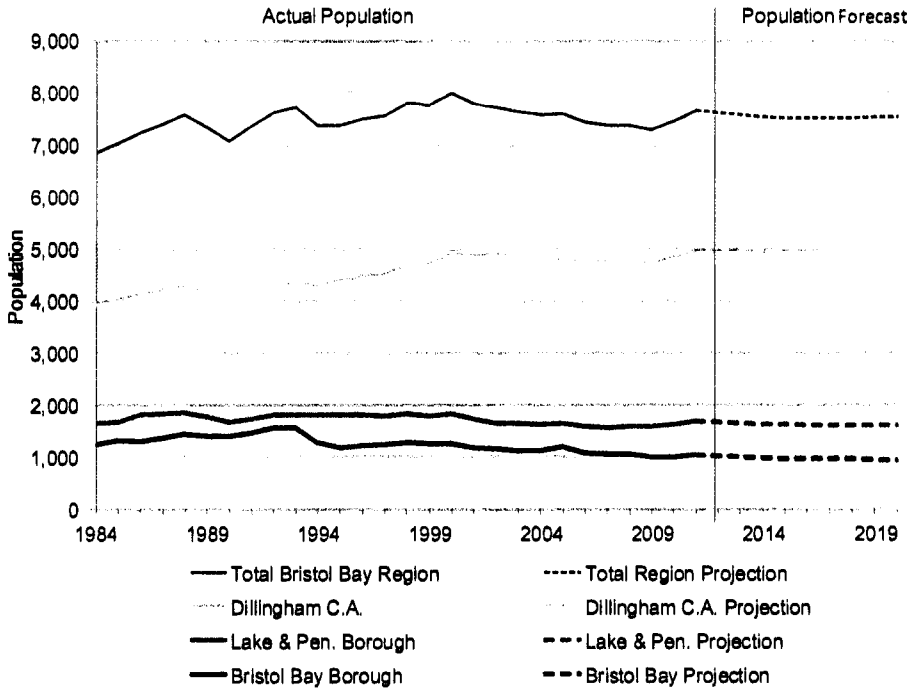
- Population in Bristol Bay
- Cost of Living in Bristol Bay
- The Drift Gillnet Fishery
- Capitalization of Drift Gillnet Vessels
- The Set Gillnet Fishery
- The Bottom Line

This summary, as well as our forthcoming analysis, consists of a series of figures, each with a paragraph or two of explanatory text. While Northern Economics developed the figures, the information is derived almost entirely from publically available data.

Population in Bristol Bay

The total population in the Bristol Bay rose from 1984 through the turn of the century before slipping into a decade-long decline. The current population of the region is roughly the same as it was 15 years ago and the 5-year forecast is basically flat. Population in the Dillingham Census Area increased in the 1990s but fell slightly through 2009. Population in the Lake and Peninsula Borough declined steadily from 2000 – 2009, but has move slightly higher with the census in 2010. Population in the Bristol Bay Borough dropped sharply in the early '90s with closure of the air force base, and has been relatively stable since then. The Bristol Bay region, and it's sub-regions, all saw population increases in with the 2010 census between 0.2 and 4 percent.

Figure 1. Population of the Bristol Bay Region 1984 – 2011 and Projections to 2020



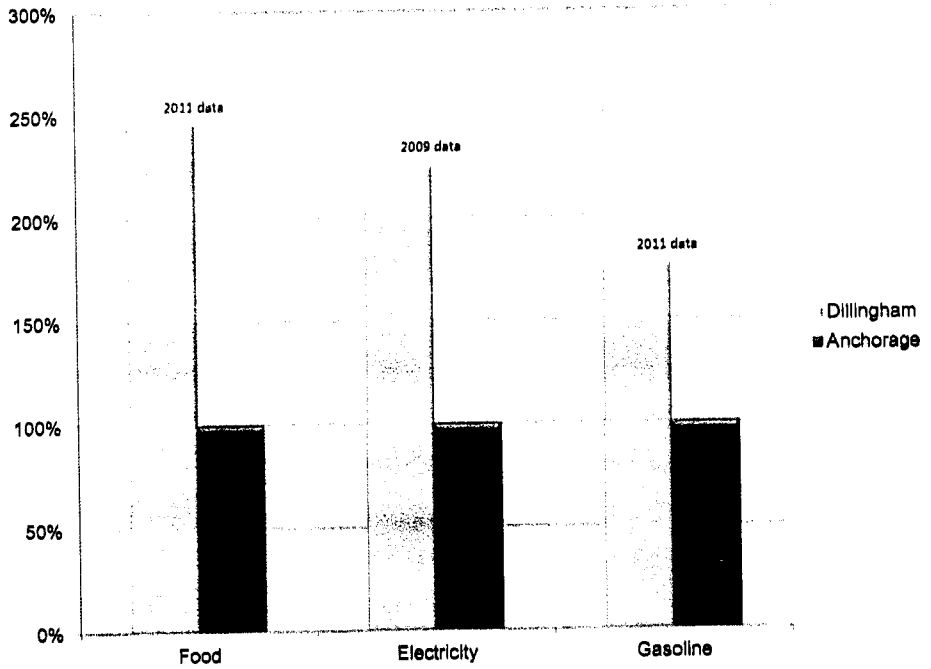
Source: Northern Economics, Inc. using ADOLWD 2012

Cost of Living

Figure 2 compares the cost of living in Dillingham versus Anchorage in select categories. Each quarter the University of Alaska in Fairbanks (UAF) conducts a survey of household costs in communities across the state. The most recent survey shows that prices for food and gasoline in Dillingham were more than 150 percent of the prices in Anchorage. The most recent survey capturing electricity cost for both Dillingham and Anchorage was completed in June 2009—these data show that electricity prices in Dillingham are more than double the prices in Anchorage. The July 2012 *Alaska Economic Trends* issue focuses on the cost of living in Alaska, and also cites the UAF survey stating that groceries in the Dillingham area cost more than in any other surveyed community in the state. Using a sample of grocery items meant to mimic average consumer purchases, the article notes that $132 worth of groceries in Anchorage would cost $354.72 in Dillingham.

In addition to the commodity prices surveyed by UAF, the Department of Commerce, Community, and Economic Development's Fuel Price Report compares the cost of heating fuel across the state. The January 2012 report shows that prices for heating fuel #1in Western and Southwestern Alaska are some of the highest in the state, averaging $6.59 and $5.92 per gallon, respectively. Unfortunately, the report does not list Anchorage fuel prices, so the information is not included in the graphic.

Figure 2. The Cost of Living in Dillingham Compared to Anchorage as of March 2011/June 2009



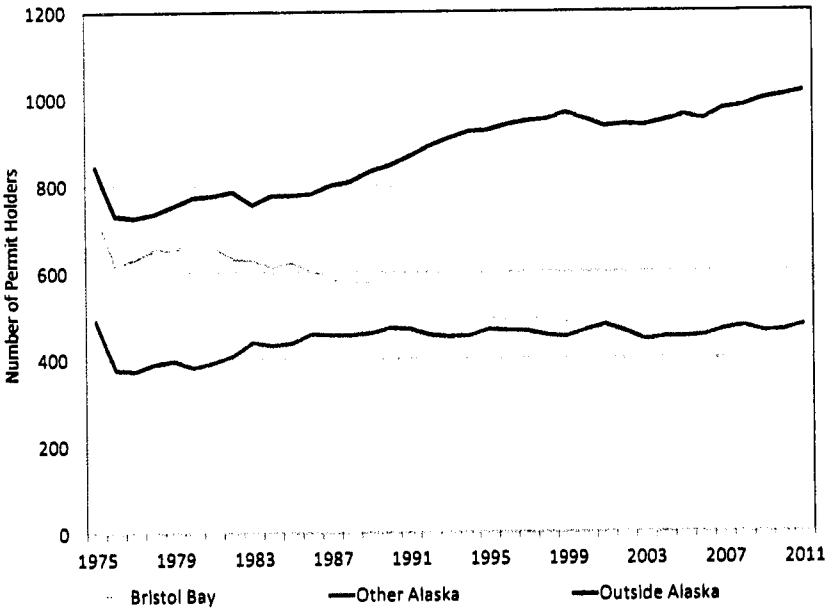
Source: Figure developed by Northern Economics based on data from UAF Cooperative Extension Service Alaska Food Cost Survey (UAF Cooperative Extension Service, 1996 – 2011). Gasoline data for Anchorage are from GasPriceData.com by GasBuddy.

Drift Gillnet Fishery

In our examination of the fishery we divided permit holders into three groups: Bristol Bay residents, Other Alaska residents and permit holders from Outside Alaska.

Figure 3 shows that the number of locally owned drift gillnet permits has declined at a relatively constant rate over the past 30 years. Currently there are less than 400 drift gill net permit holers residing in the watershed; only 20 percent of the permits in the fishery. The out-migration of drift gillnet permits is a long-term issue for the region. The data reveal that the out-migration of permits from the Bristol Bay region has not slowed in recent years and has continued at a relatively constant rate over the past 30 years. The majority of these permits are eventually held by individuals who live outside of Alaska; the number of "other Alaska" permits has stayed relatively constant over the last decade. It is not clear whether these data represent an out-migration of individuals, an out-migration of permits, or both.

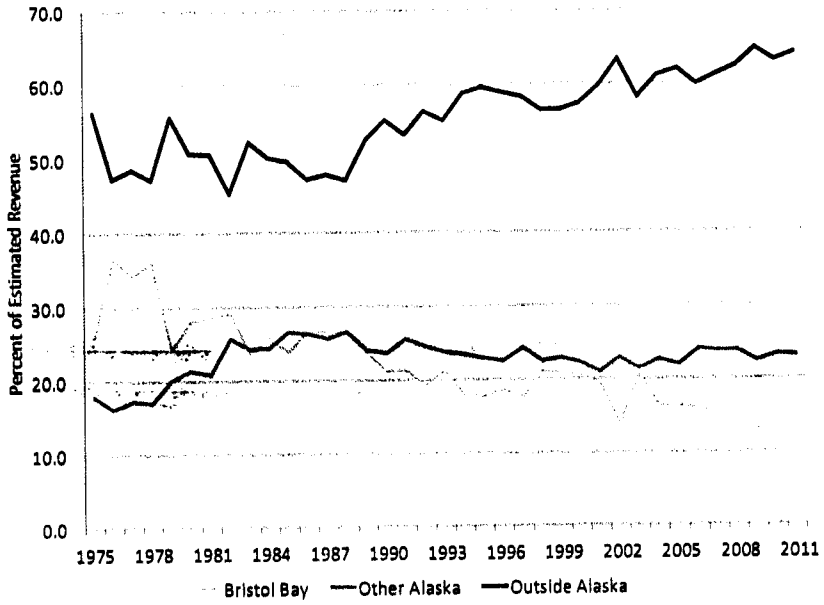
Figure 3. Number of Drift Gillnet Permit Holders By Residence, 1975 - 2012



Source: Figure developed by Northern Economics based on data from Commercial Fishery Entry Commission (CFEC, 1980 - 2011) and (CFEC, 2012).

Figure 4 shows ex-vessel revenue for each group as a percent of total ex-vessel revenue for the fishery. Revenue of local drift permit holders has fallen from over 30 percent of the total in the late 70's to about 12 percent in recent years. The decline is due in part to the decline in the number of locally owned permits and in part due to the fact that locally owned permits are generating less revenue per permit fished. (See Figure 5.)

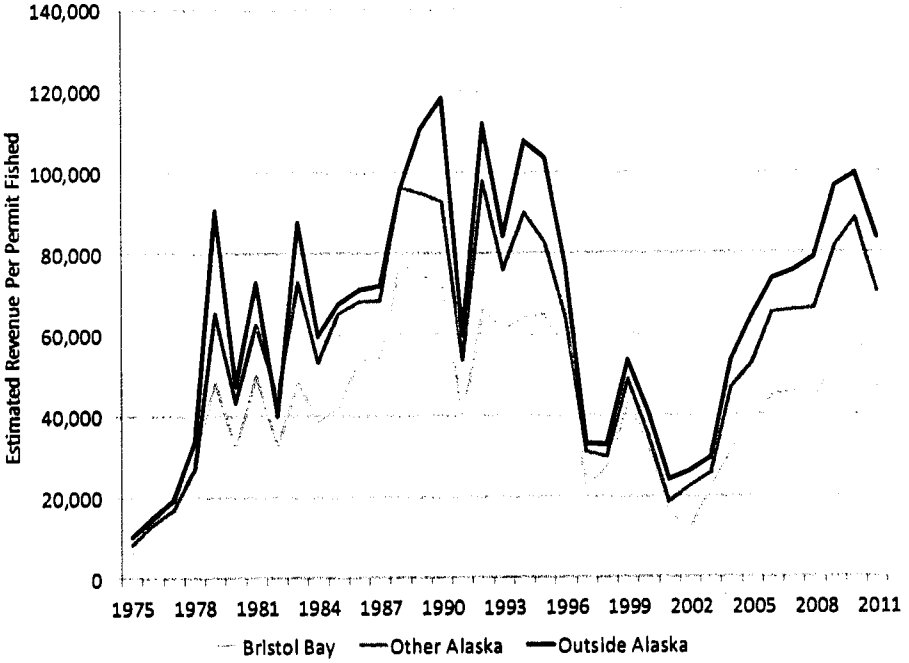
Figure 4. Percent of Total Revenue in the Drift Gillnet Fishery by Residence, 1975 - 2011



Source: Figure developed by Northern Economics based on data from Commercial Fishery Entry Commission (CFEC, 1980 - 2011) and (CFEC, 2012).

In 2011, the revenues of the average watershed resident were only 63 percent of the average revenue for permit holders from outside Alaska. We do not have data that can fully explain these differences, but they appear primarily due to lower overall catches per permit and not due to lower ex-vessel prices paid to locals. The gap in earning per permit between Bristol Bay residents and the other groups has increased steadily since 2003.

Figure 5. Average Revenue per Drift Permit by Residency Group, 1975-2011

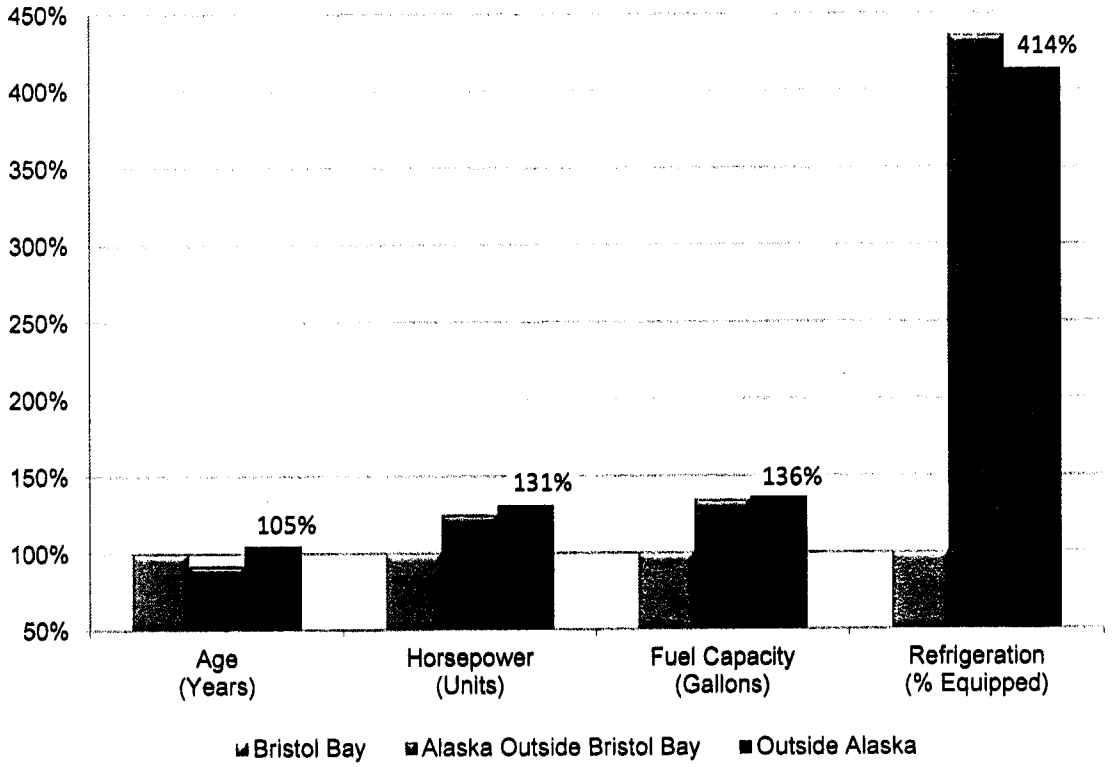


Source: Figure developed by Northern Economics based on data from Commercial Fishery Entry Commission (CFEC, 1980 - 2011) and (CFEC, 2012).

Some of the differences in revenues for watershed permit holders can be attributed to difference in vessel capacity. This figure compares vessel age, horsepower, fuel capacity, and refrigeration capacity by residence groups as of 2012. Because the different characteristics all have their own units we have set the average of each characteristic for vessels operating in the Bristol Bay drift gillnet fishery, residing in the watershed, to 100 percent. We then show the relative value of the vessels registered for the Bristol Bay drift gillnet fishery, owned by other residency groups. For example, the average age of locally owned vessels was 28.5 years, while the average age of vessels owned by permit holders outside Alaska was 29.9 years (or 105 percent of the age of vessels owned by watershed residents).

Drift gillnet vessels owned by local residents on average have lower horsepower, less fuel capacity, and have significantly less capacity for chilling fish. These differences have been increasing over time as is shown Northern Economics' more detailed study available from BBEDC (Northern Economics, Inc., 2009).

Figure 6. Comparison of 2012 Drift Gillnet Vessel Characteristics across Residency Groups

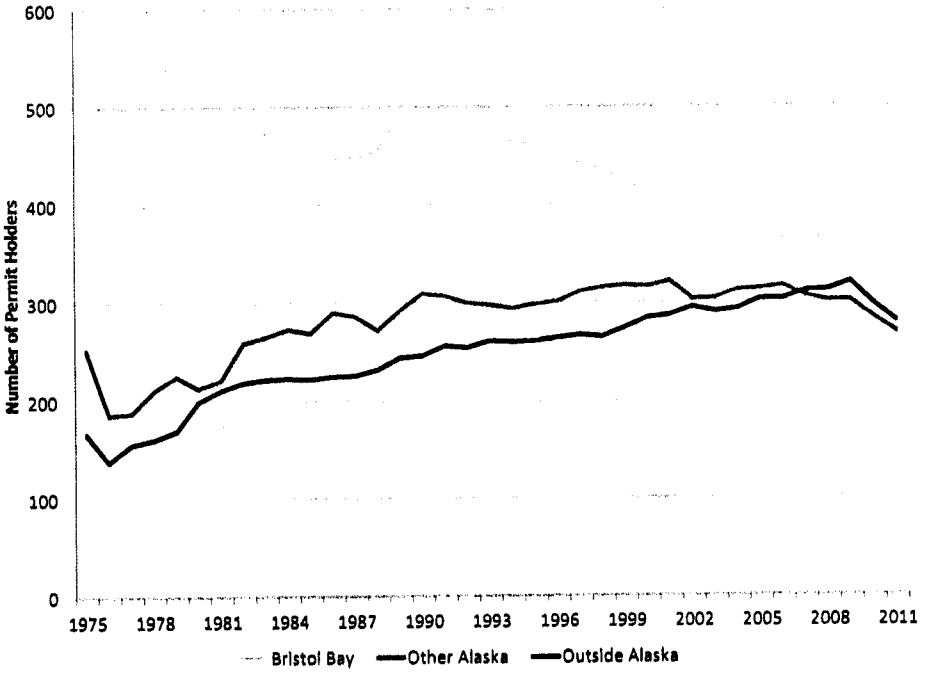


Source: Figure developed by Northern Economics based on data from Commercial Fishery Entry Commission (CFEC, 1982 - 2012).

Set Gillnet Fishery

The next two figures examine the set gillnet fishery in Bristol Bay. In the Set Gillnet fishery the number of permits owned and fished by watershed residents has continued to decline over the past 15 years but has leveled out at about 350 permits. Watershed residents now own about 38 percent of the total number of permits, the largest of the three groups. The out-migration of set net permits was nearly zero in 2002 and 2003 then increased steadily from 2003 to 2009, and has recently dipped back down. Also note that the destination of out-migrating permits has been almost equally distributed between the "Other Alaska" and "Outside Alaska" groups.

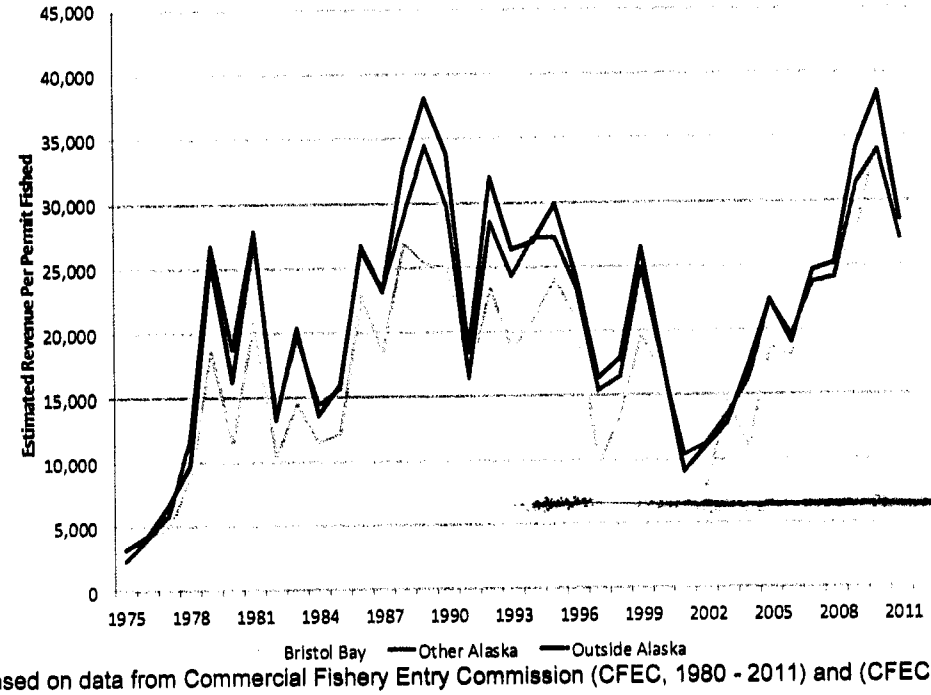
Figure 7. Number of Set Gillnet Permit Holders by Residence, 1975-2011



Source: Based on data from Commercial Fishery Entry Commission (CFEC, 1980 - 2011) and (CFEC, 2012).

Historically, set net permit holders from the watershed have had lower average gross earnings per permit than permit holders from outside the region. In recent years however, watershed residents are basically on par with other groups. This is very different than in the drift gillnet fishery.

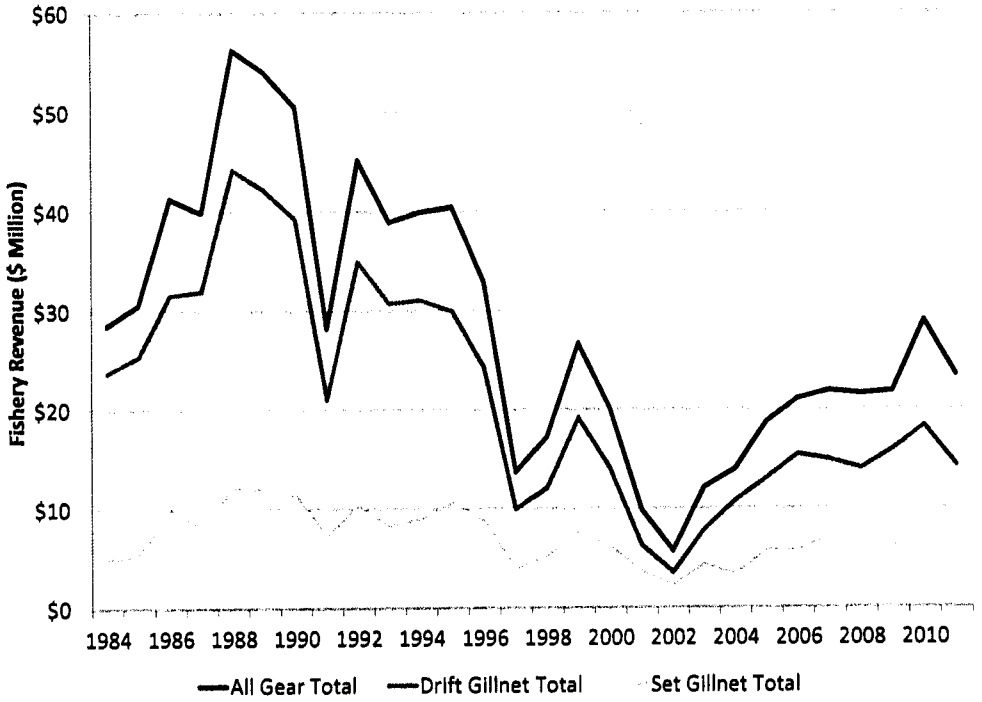
Figure 8. Revenue per Set Permit by Residency Group, 1975-2011



Source: Based on data from Commercial Fishery Entry Commission (CFEC, 1980 - 2011) and (CFEC, 2009).

Figure 9 combines gross revenues of watershed residents for both the drift and set gillnet fisheries. The drift fishery has been much more volatile than the set net fishery. Overall there was been a markedly downward trend in total revenue from the 1980s through 2002 followed by increases nearly every year since then with the exception of the declines seen in 2011.

Figure 9. Combined Revenue of All Watershed Permit Holders

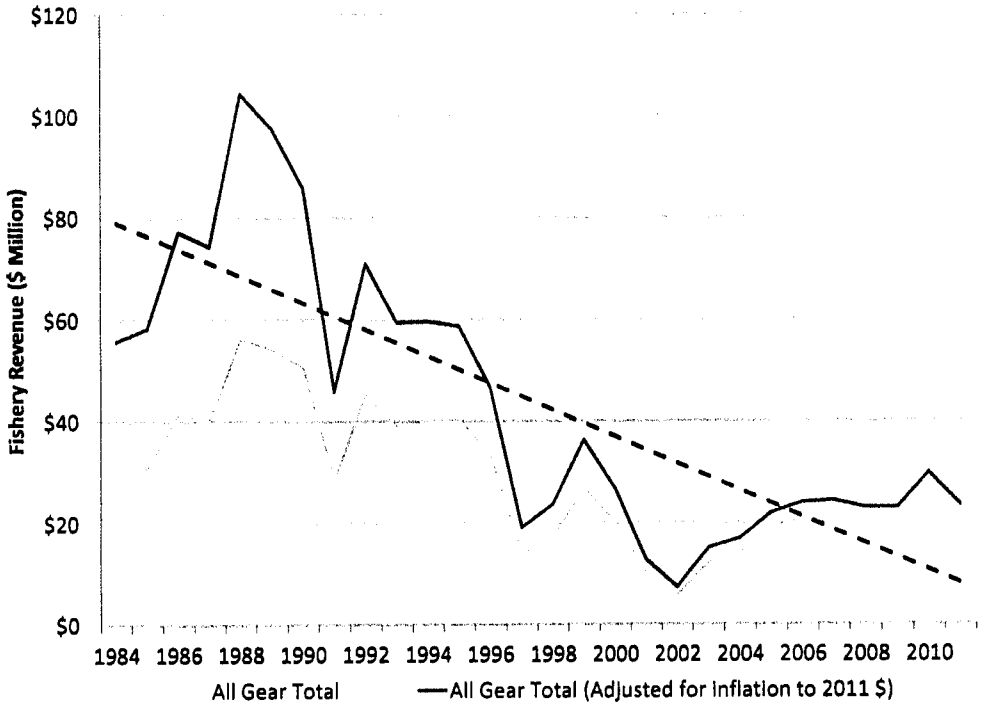


Sources: Both Figure 8 and Figure 9 were developed by Northern Economics based on data from Commercial Fishery Entry Commission (CFEC, 1980 - 2008).

In Figure 10 we adjust the combined set and drift revenues of all watershed residents for inflation. The inflation adjustment shifts revenues from previous years upward because a dollar in earlier years would buy more goods than it does now. After adjusting for inflation the downward trend in revenues from the watershed (as shown in the dashed blue line) is very apparent.

Sensitivity testing on some of the factors contributing to this decline indicates that approximately 30 percent of the decline is due to the out-migration of permits, and another 60 percent is due to the fact that ex-vessel prices have not kept up with inflation. The remaining 10 percent of the decline is not explained by the variables that we examined.

Figure 10. Inflation Adjusted Revenue of Watershed Permit Holders



Sources: Figure developed by Northern Economics based on data from Commercial Fishery Entry Commission (CFEC, 1980 - 2011) and the US Bureau of Labor Statistics (US BLS, 1980 - 2011).

The Bottom Line

We conclude with the following statements and a final figure.

- The decline in value derived from the fishery by watershed residents has had a significant impact on the region's economy.
- The decline however does necessarily diminish the fishery's overall importance to residents.

The final figure shows the inflation adjusted per capita revenue from the Bristol Bay drift and set gillnet fisheries of permit holders residing in the Watershed. Over the last 25 years per capita revenue from the Bristol Bay fisheries (in real dollars after adjusting for inflation) has fallen an average of $340 per year.

In the 1980s, per capita revenue was over $10,000 with a peak in 1988 of over 15,000. However, since 2005 watershed permit holders have brought in an average of just $3,452 per man, woman, and child living in the Region.