

**Southwest Alaska Fisheries Resource Allocations:**

**A 30 Year Analysis of Changes**

Prepared by

Southwest Alaska Municipal Conference



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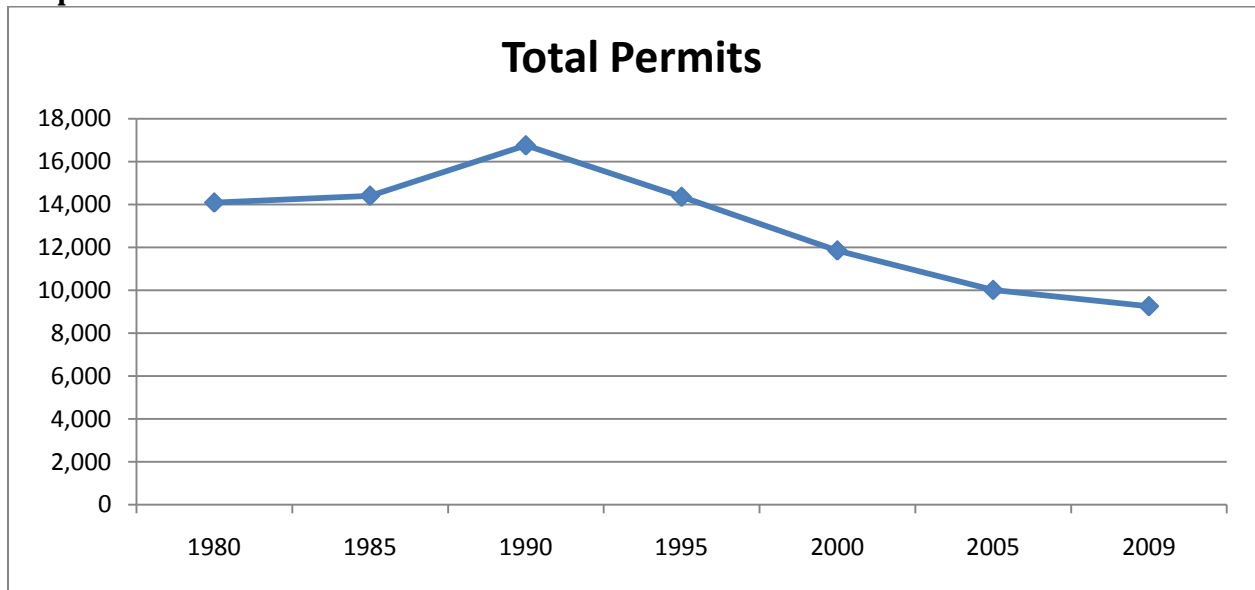
## **Introduction**

The following section will investigate actual market behavior for defined resource allocations of fisheries. Data has been collected from the Alaska Department of Fish and Game (ADF&G), Commercial Fisheries Entry Commission (CFEC). Data reflects boats that hold a license provided by the ADF&G to harvest Alaska's fisheries resources, including some, but not all fisheries, extending to the 200 mile US Exclusive Economic Zone (EEZ). Due to the overlapping management structure and complexity of collecting data it is understood that anomalies will be present and all data will not be validated. Harvest data is representative of boats that have made deliveries to processing facilities, and does not include catch data from vertically integrated companies that control harvest and processing operations. In some aspects of the Bering Sea groundfish fishery, some licenses may not be accounted for. Fisheries licenses do not necessarily represent harvest allocation, only that a vessel/person has obtained a license to harvest from the State, even if that vessel is fishing in federal waters. However, disregarding the identified data anomalies, the vast majority should be accurate and provide a clear set of trends over the time horizon identified. The results are as follows.

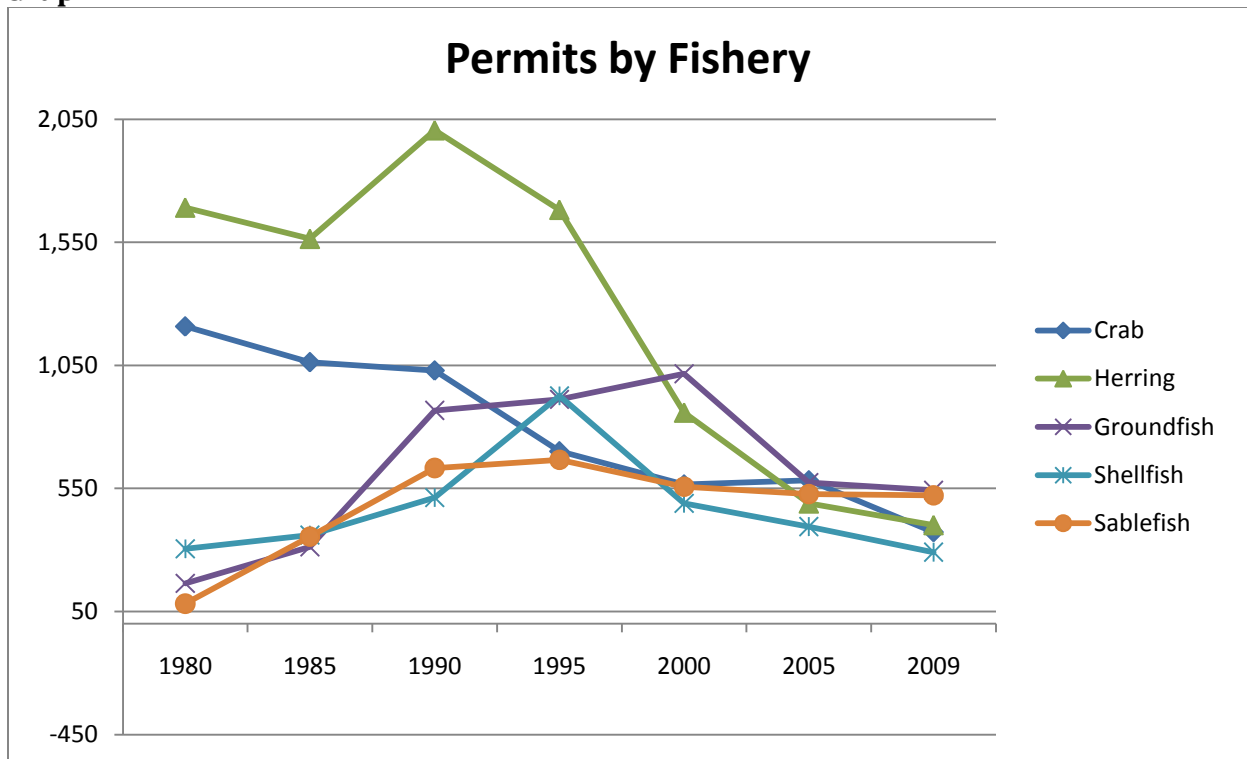
## **Alaska Residents**

The absolute number of permits held by residents of Alaska Residents has declined since 1990 as seen in Graph AK 1. Total fishing licenses renewed fell from 14,085 to 9,258, a factor of 34% from the peak to present. As displayed in Graphs AK 2-3, Permits of Crab, Herring and Salmon have declined; permits of Shellfish and Halibut are about the same; and Groundfish and Sablefish have increased over the period. Groundfish, Sablefish and Halibut fisheries experienced an increase in permits in the years prior to rationalization and a sharp drop after programs were implemented. Crab fisheries did not follow the increasing trend, although there was a sharp fall after program implementation. The most drastic increase in licenses can be seen leading up to the IFQ system instilled in the halibut fishery in 1995. Similar trends can be identified in groundfish during the Comprehensive Rationalization Program discussion from the late 1980's to the early 1990's, leading to the Inshore/Offshore Allocations in 1992 and raising again prior to the actual implementation of the American Fisheries Act in 1999 which rationalized the Bering Sea Pollack fishery. These fisheries appear to be trending downward, post rationalization, as the industry consolidates towards fewer, more efficient operations.

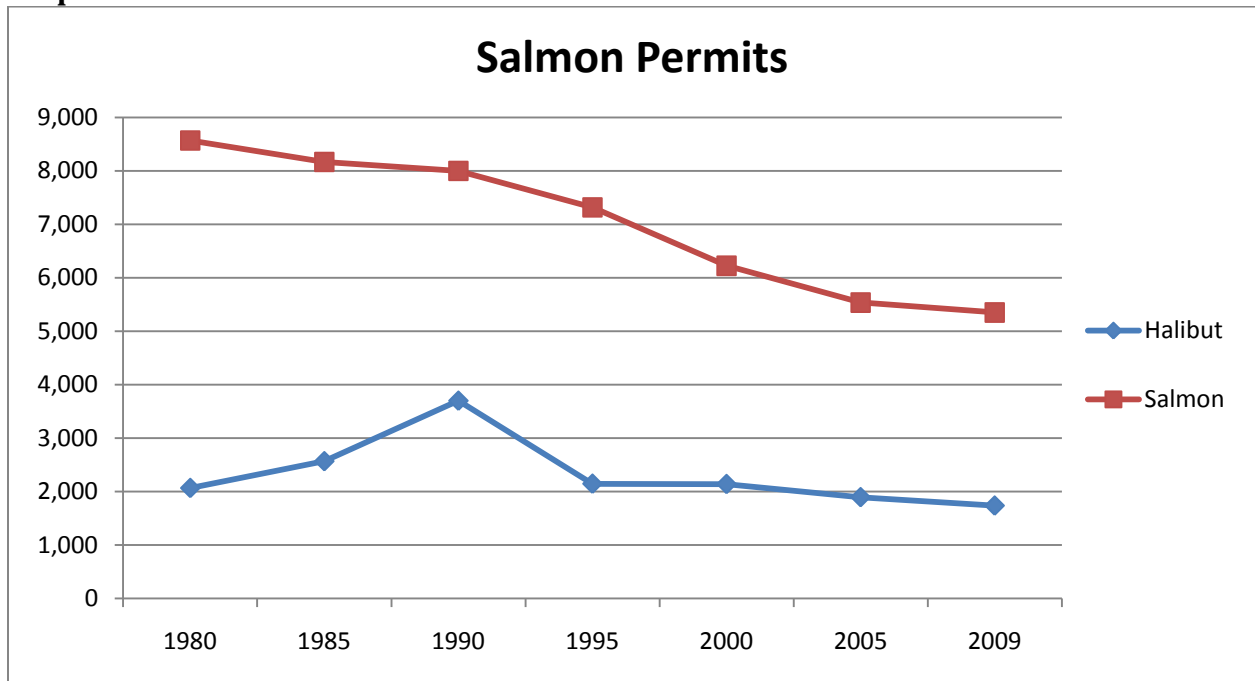
**Graph AK 1**



**Graph AK 2**

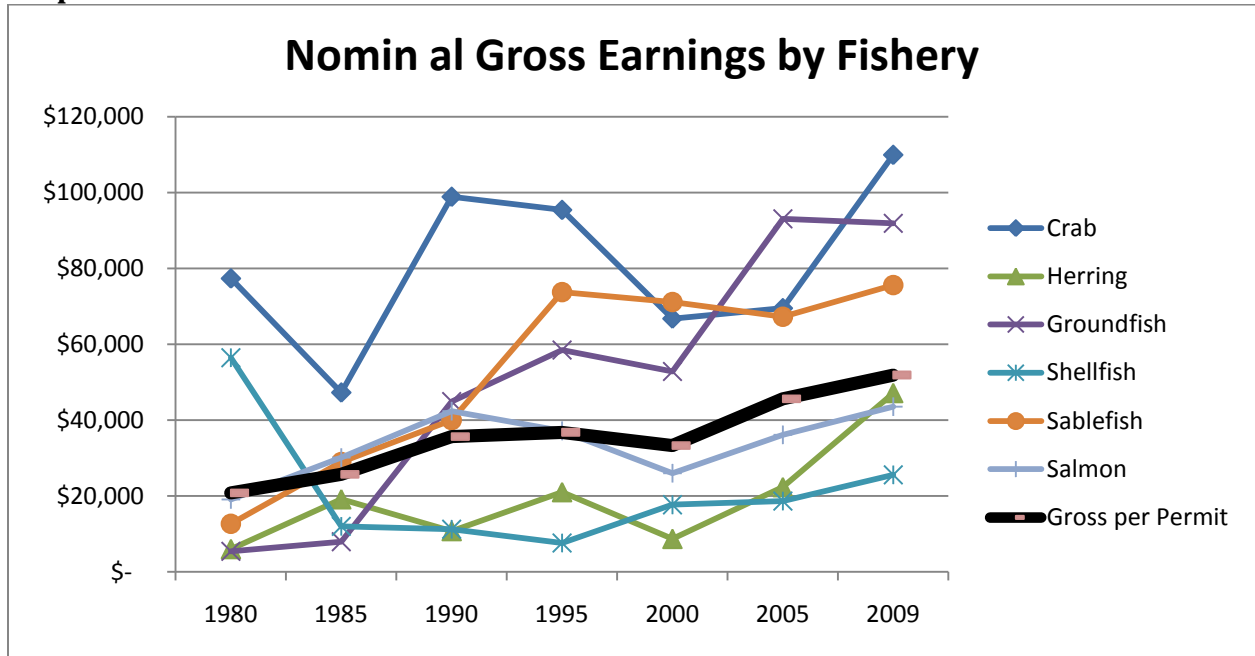


Graph AK 3

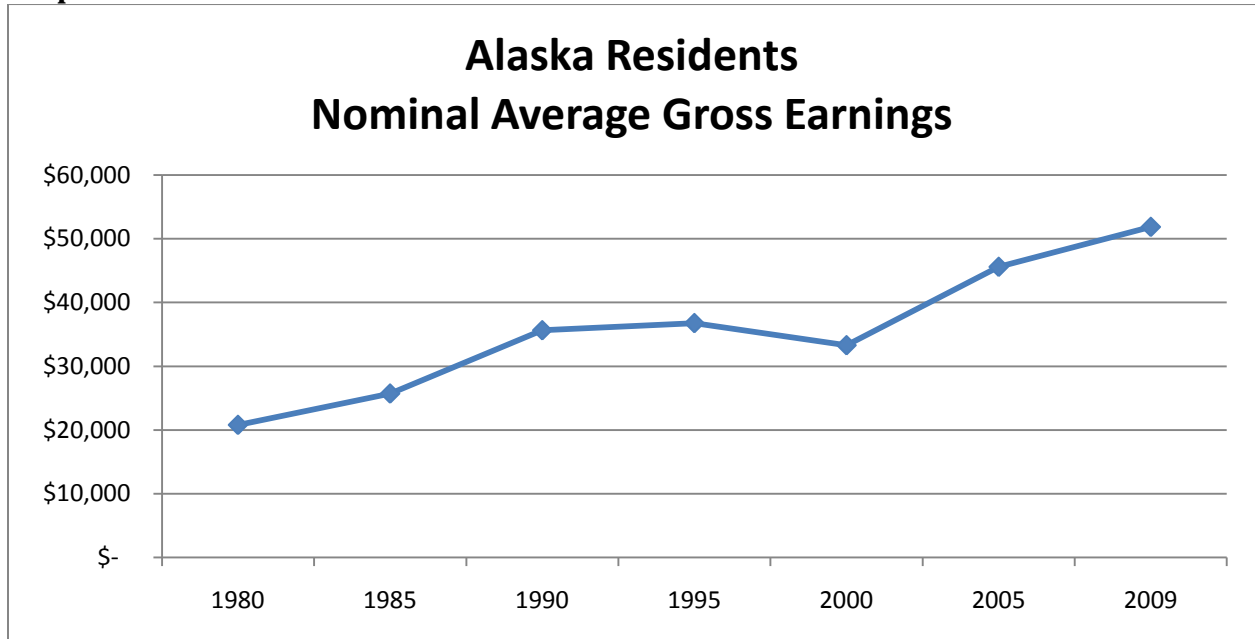


While the number of permits was falling, every permit by species became more valuable (Shellfish did not appreciate until after a sharp fall until 1985) in terms of Nominal Gross Earnings per Fishery as seen in Graphs AK 4-5. This is expected since resource allocation allows for the number of licenses to be reduced to remove less productive operations. The value of Crab, Groundfish and Sablefish expand substantially after rationalization, which would have an even greater effect on reducing inefficient operations, and consolidating resources towards the most effective use. Herring and salmon appear to be more affected by market fluctuations, such as competition from farmed salmon and the strength of the Japanese economy. Earnings for halibut is not reliable, and thus omitted from these results, although the price per pound and average value per pound of halibut quota has risen substantially over the past 15 years since rationalization. Graph AK 6, Nominal Average Price per Pound shows that while the nominal average earnings were expanding over the period, average price per pound is only up slightly. This is likely a function of increasing salmon prices driving the average price higher through the 1980's followed by a downward trends, and an increasing volume of lower value hatchery salmon and groundfish. Graph AK 7-8 shows Adjusted Real Gross Earnings by Fishery, which adjusts for inflation over time by accounting for a 3.54% annual price increase in the Consumer Price Index (CPI). Once adjusted for the time value of money, the average value remains flat over the period; however, each rationalized fishery increases in value after program implementation. The values for Halibut are not reliable, and thus omitted, although it is reasonable to assume that Halibut earnings would be similar to Sablefish, if not better; the exvessel price per pound of halibut have expanded steadily since rationalization. Graph AK 9 shows that the Adjusted Real Average Price per Pound reflects a decline over the period.

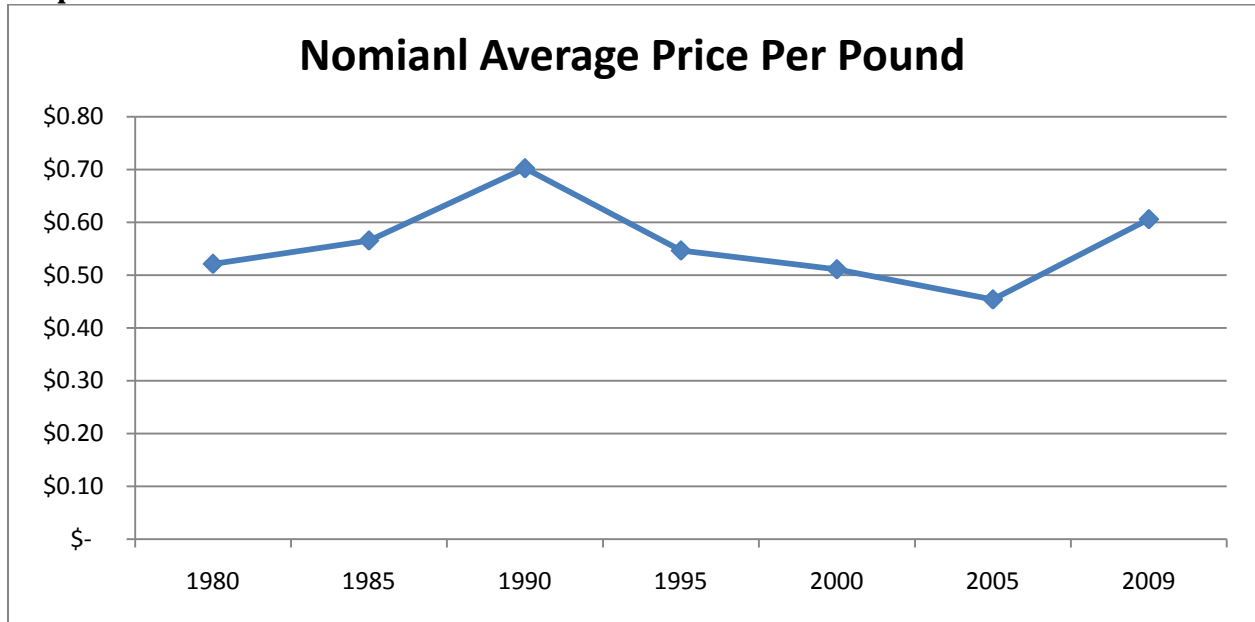
**Graph AK 4**



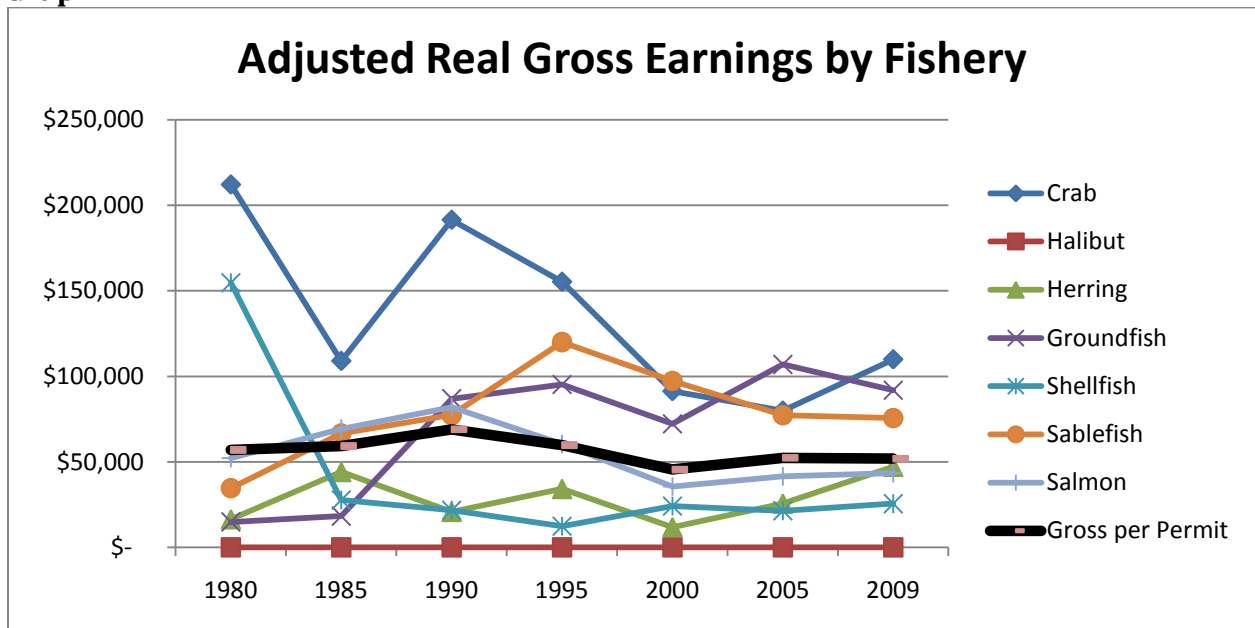
**Graph AK 5**



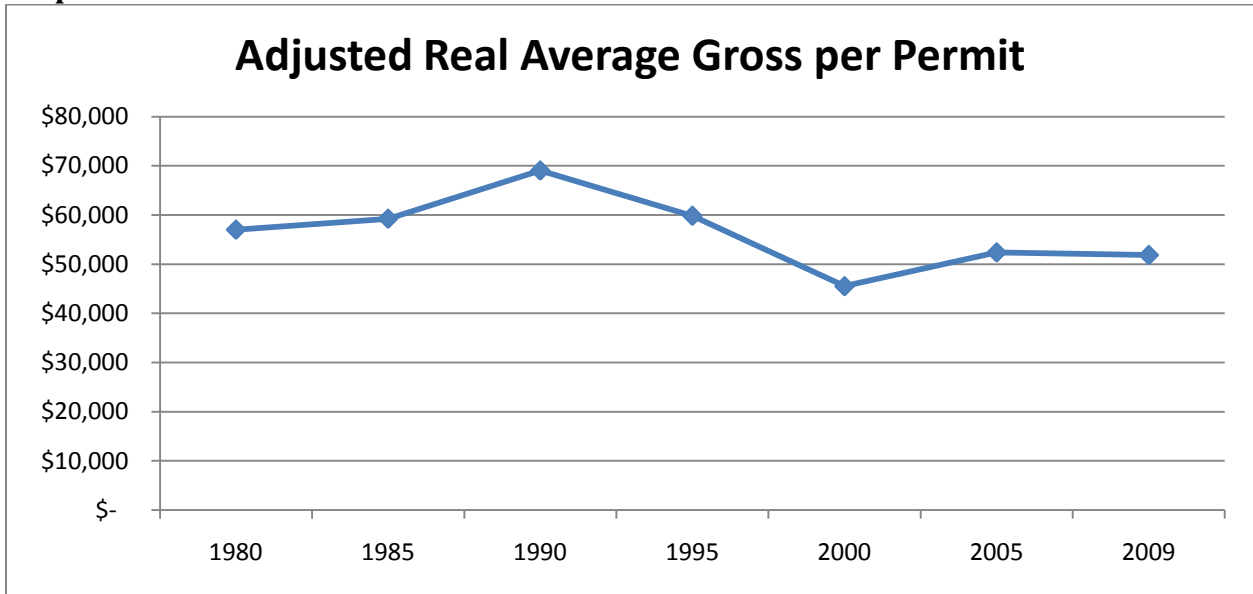
**Graph AK 6**



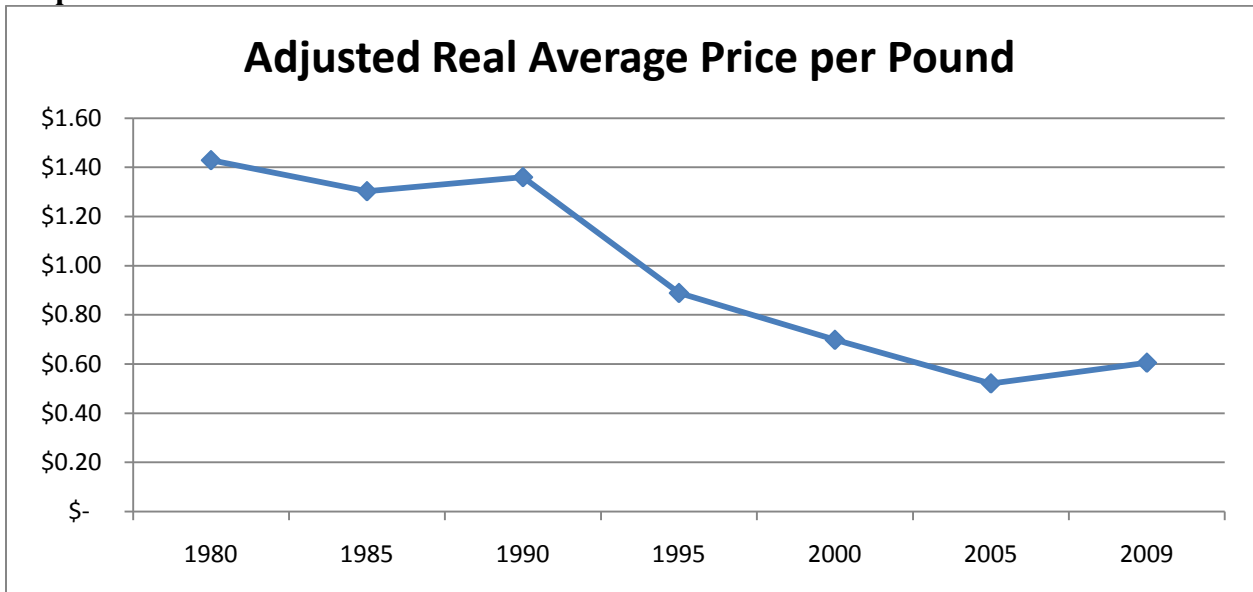
**Graph AK 7**



**Graph AK 8**

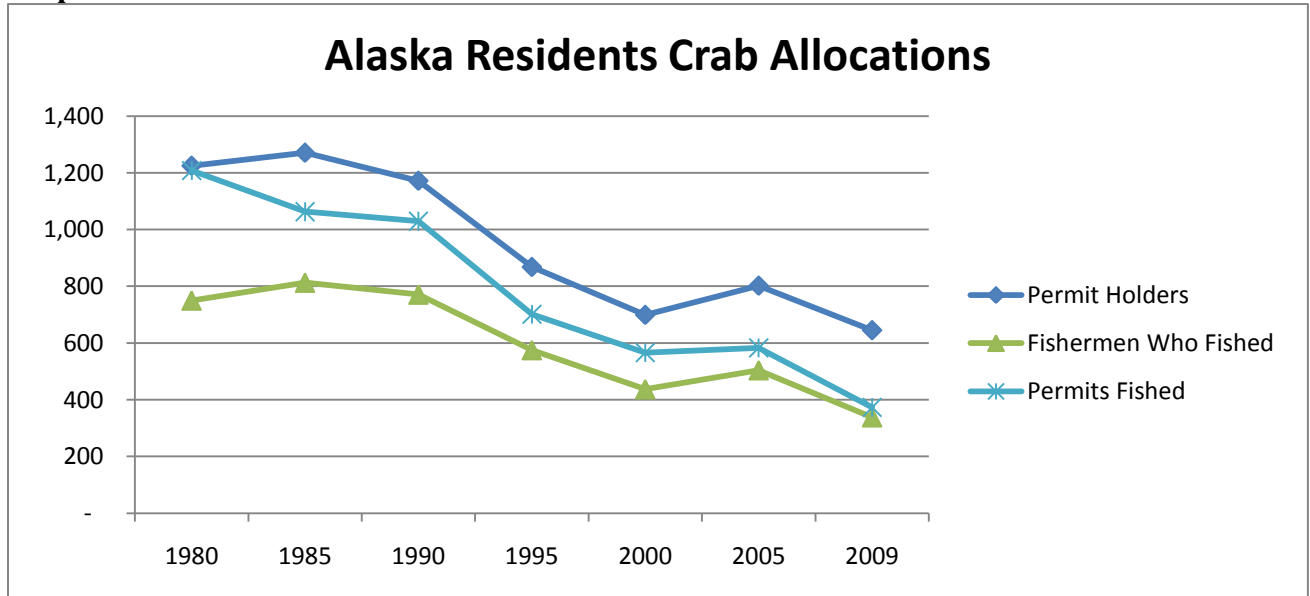


**Graph AK 9**

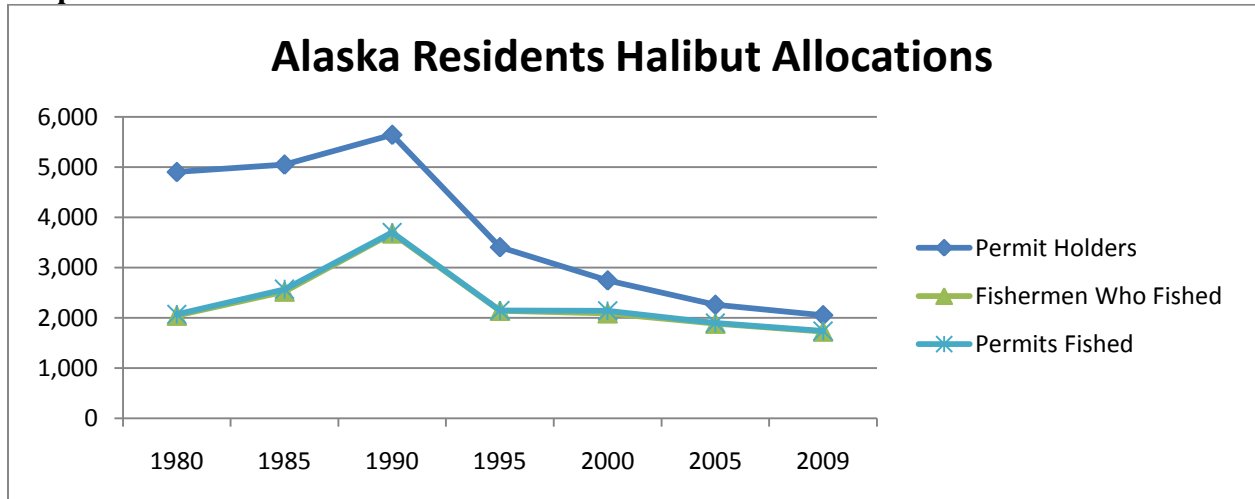


The make-up of Permit Holders, Fishermen Who Fish and Permits Fished varies from season to season as seen in Graphs AK 10-17. If Permit Holders is greater, this can be an indication that fishermen are “stacking” permits, permits are not actually being fished or fishermen are fishing two permits, but recording all the catch under one permit, (common in the salmon set-net industry). The data may support the claim that, with the exception of the Crab fishery, categories narrow after fisheries are rationalized, but fisheries managed by limited entry permits, Salmon and Herring, Permit Holders declines slower than Fishermen Who Fish and Permits Fished. All fisheries display an increase in allocations prior to rationalization, and a steep fall following program implementation. In Graph AK 17, Total Allocations, Permits Fished rises above the other categories, and falls below Permit Holders after 2005.

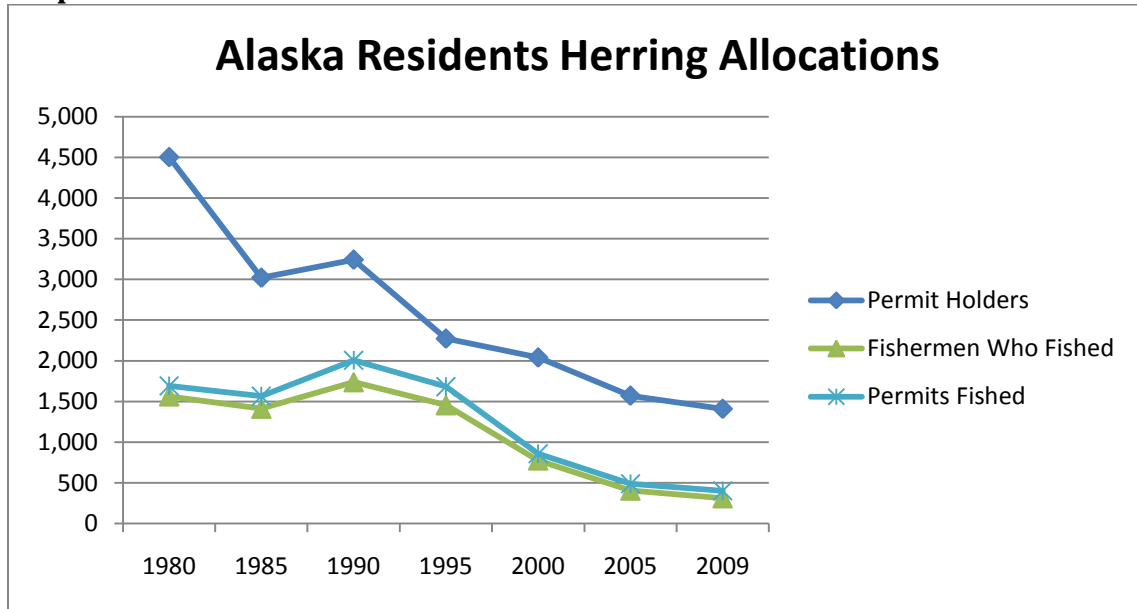
Graph AK 10



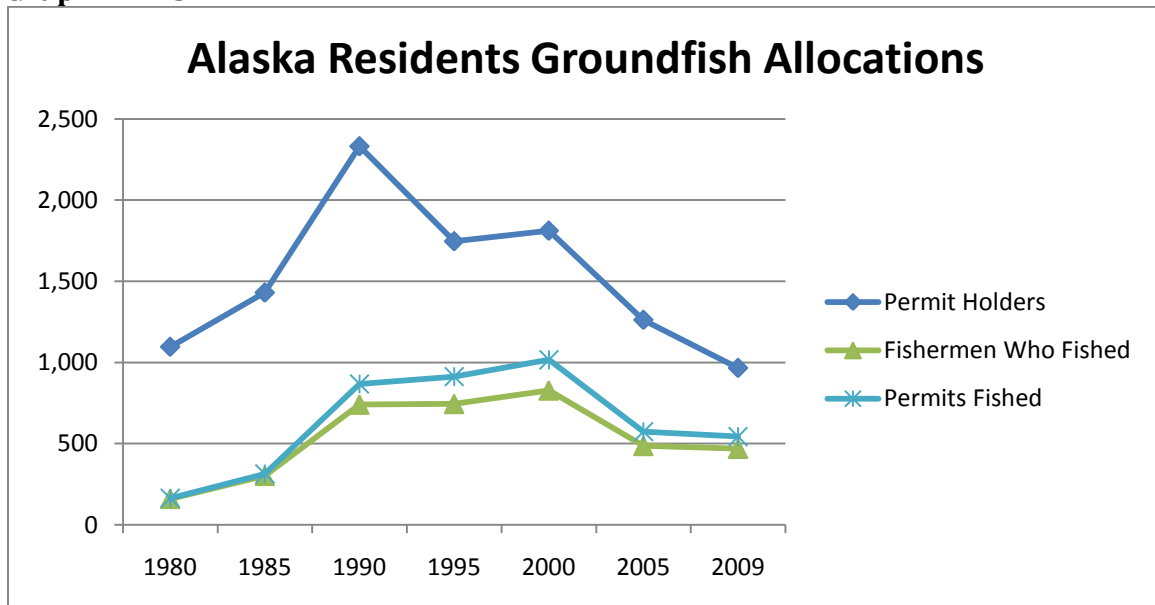
Graph AK 11



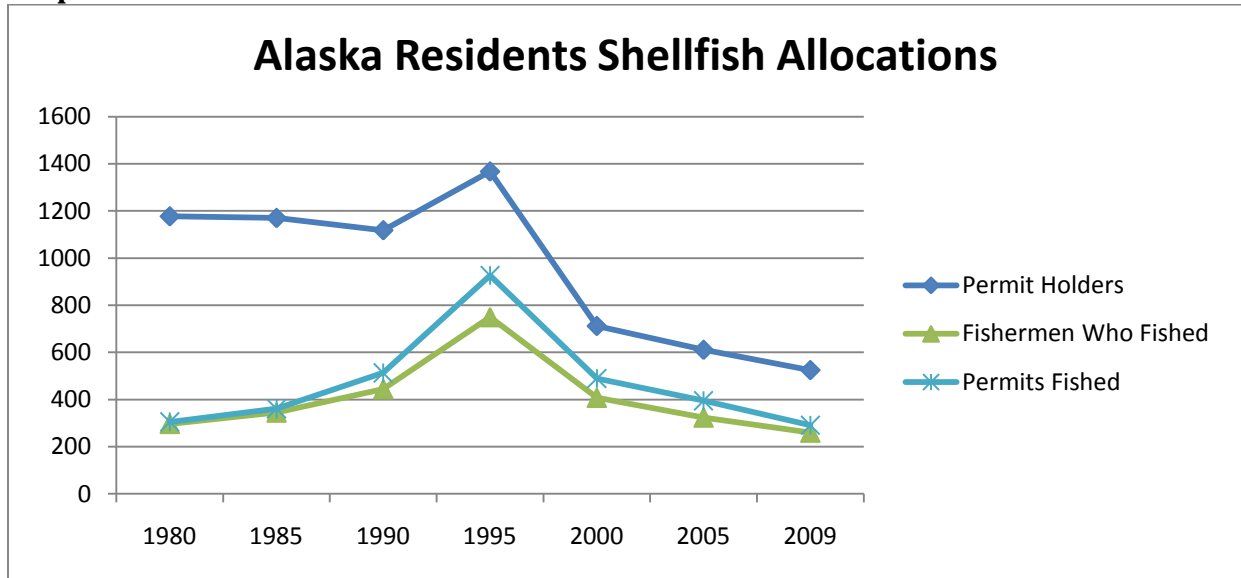
**Graph AK 12**



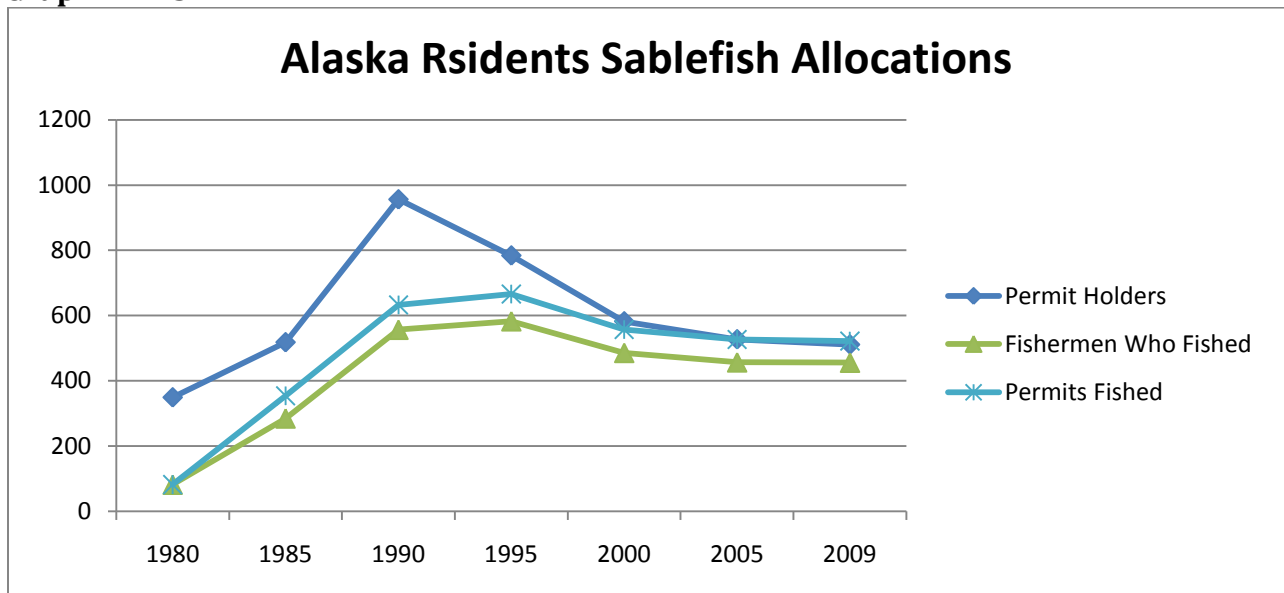
**Graph AK 13**



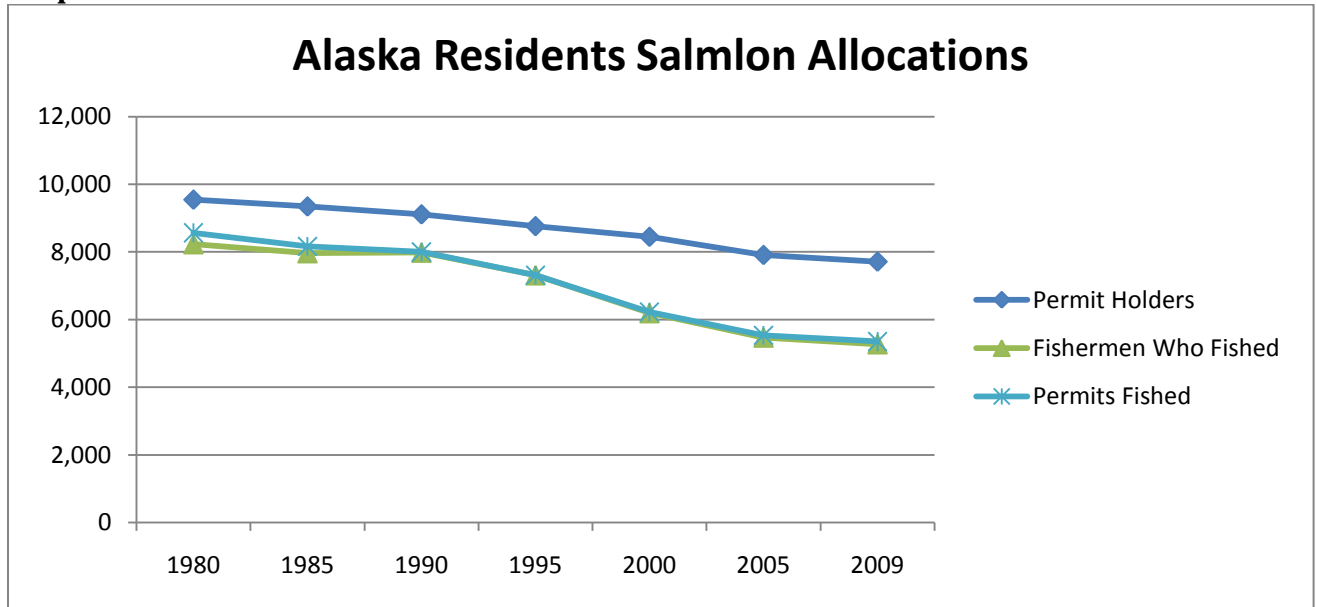
**Graph AK 14**



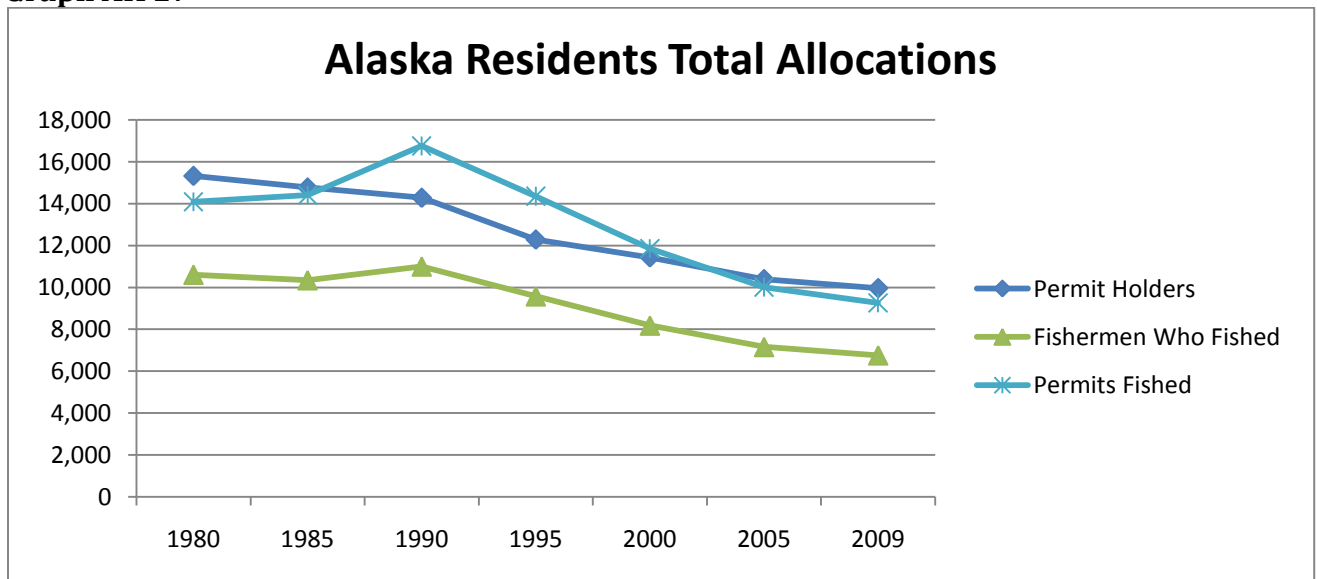
**Graph AK 15**



Graph AK 16

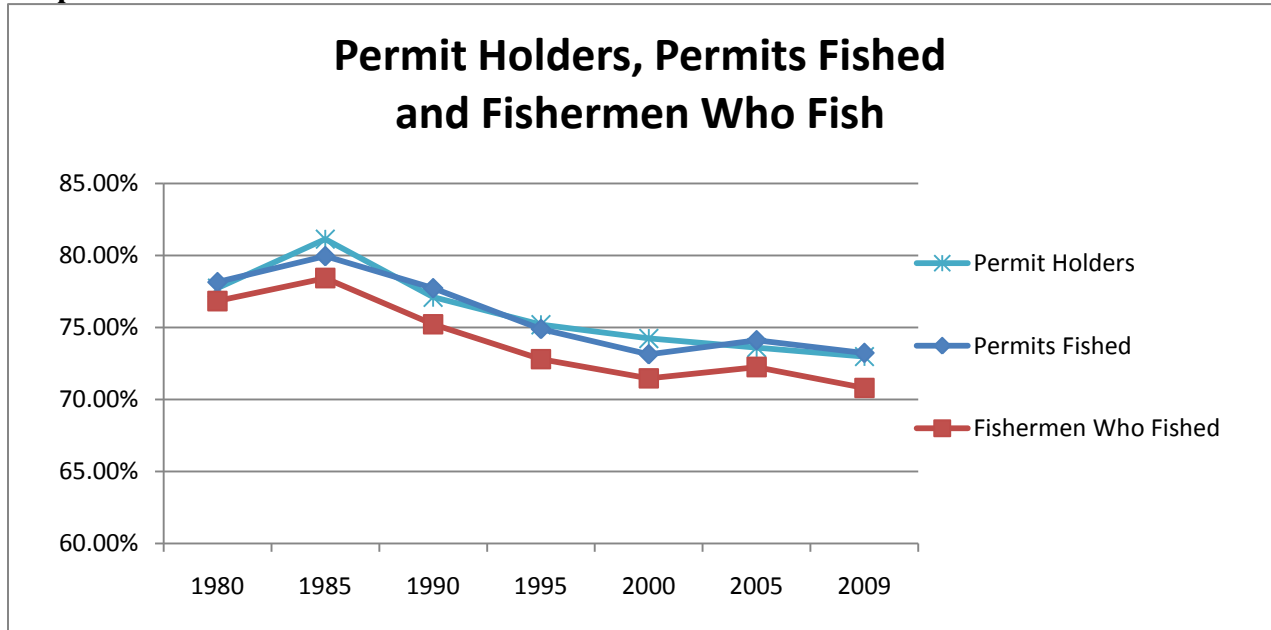


Graph AK 17

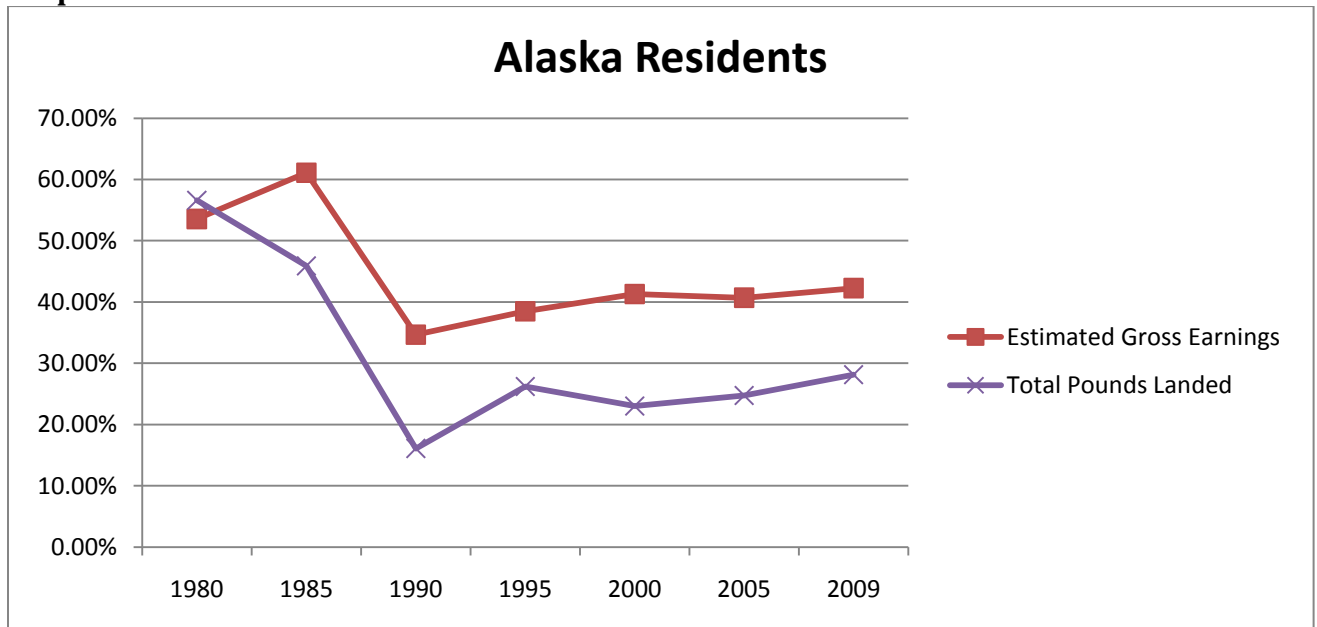


Relative to all other fishermen Alaska Residents permit allocations are down about 6%. Relative Alaska Resident Earnings and Pounds Landed fell substantially through the 1980s, and have since leveled off.

**Graph AK 16**



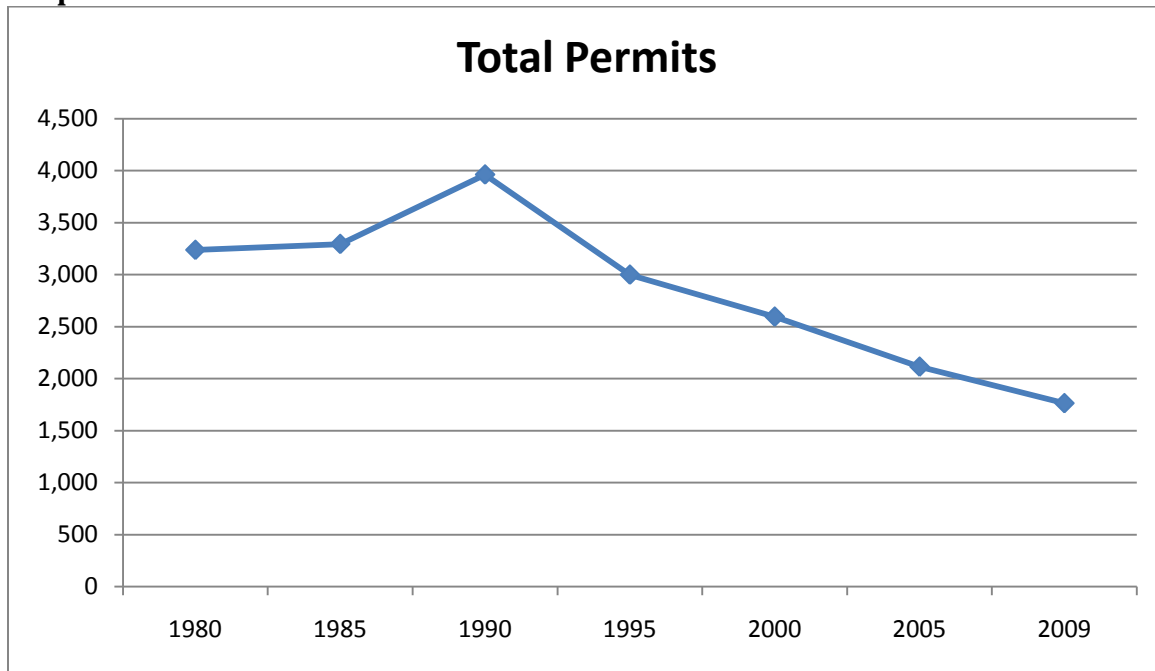
**Graph AK 17**



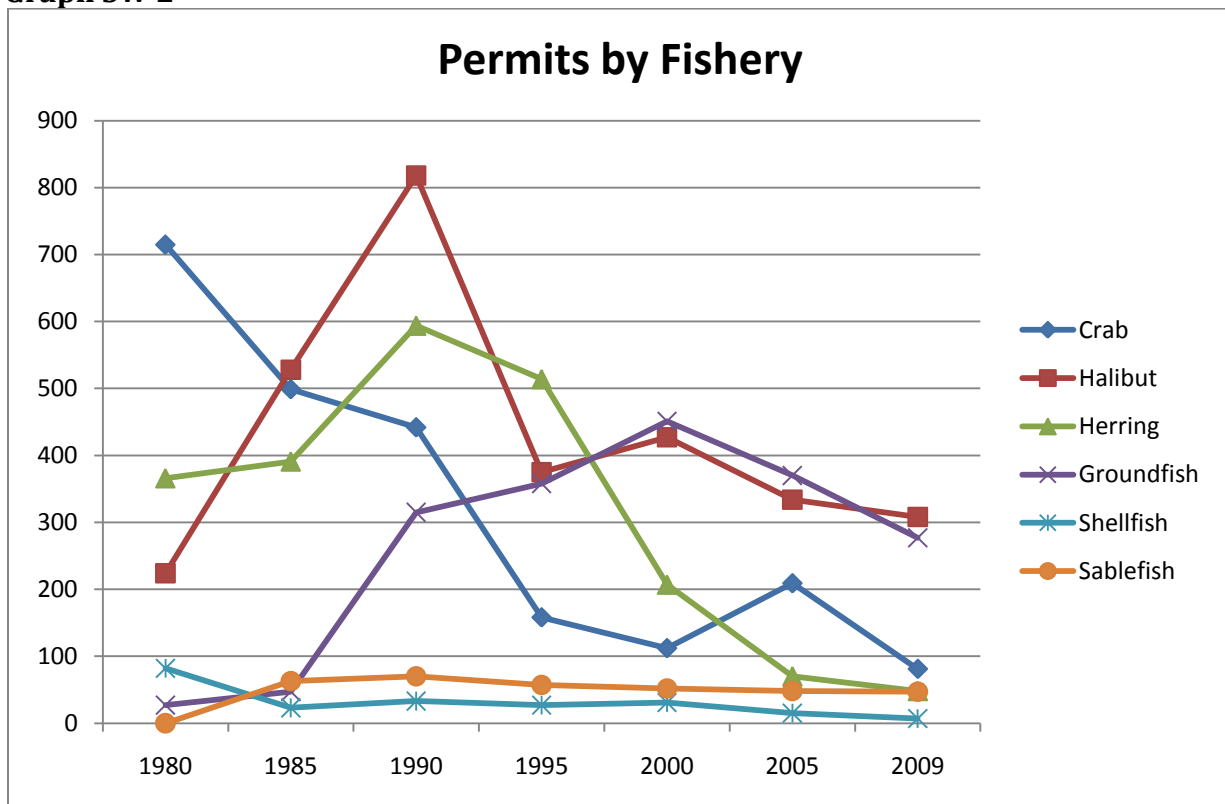
## **Southwest Alaska Residents**

The absolute number of permits held by residents of Southwest Alaska Residents has declined since 1990 as seen in Graph SW 1. Total fishing licenses renewed fell from 3,962 to 1,763, a factor of 55% from the peak to present. As displayed in Graph SW 2, Permits of Crab, Herring and Shellfish have declined, while permits of Halibut, Groundfish and Sablefish increased over the period. All fisheries to experience rationalization saw an increase in permits in the years prior to privatization, and a sharp drop after programs were implemented. The most drastic increase in licenses can be seen leading up to the IFQ system instilled in the halibut fishery in 1995. Similar trends can be identified in groundfish during the Comprehensive Rationalization Program discussion from the late 1980's to the early 1990's, leading to the Inshore/Offshore Allocations in 1992 and raising again prior to the actual implementation of the American Fisheries Act in 1999 which rationalized the Bering Sea Pollack fishery; and the crab fishery prior to the rationalization program initiation in 2005. These fisheries may be trending downward, post rationalization, as the industry consolidates towards fewer, more efficient operations.

Graph SW 1

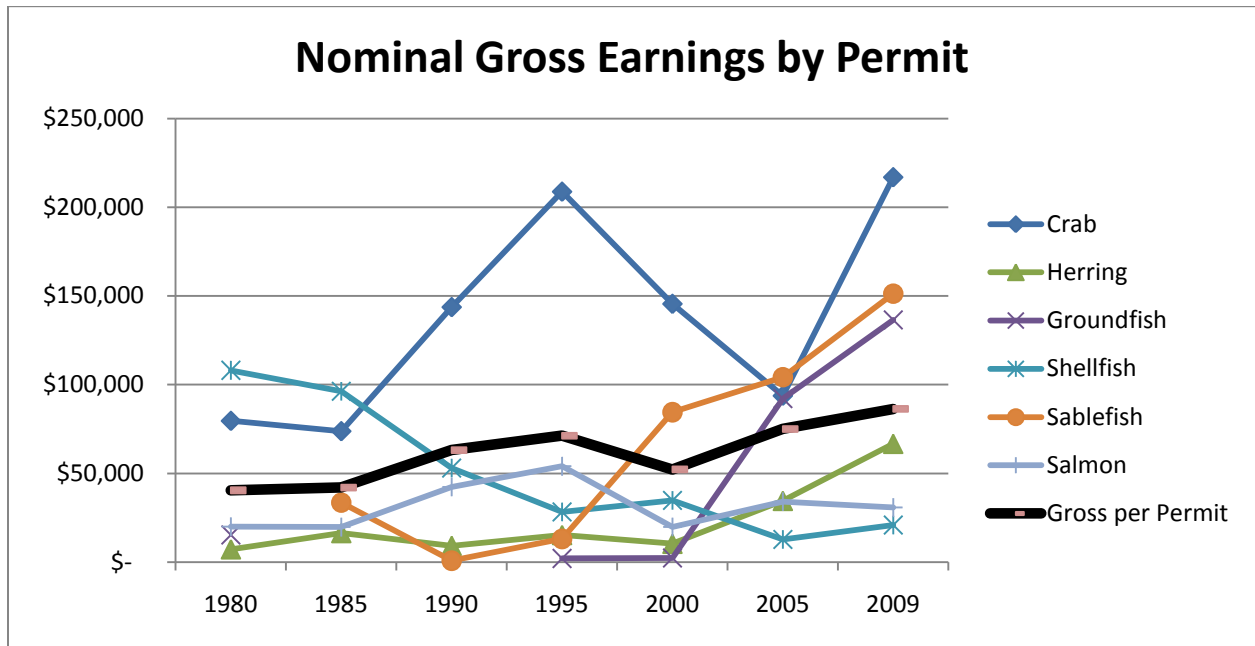


Graph SW 2

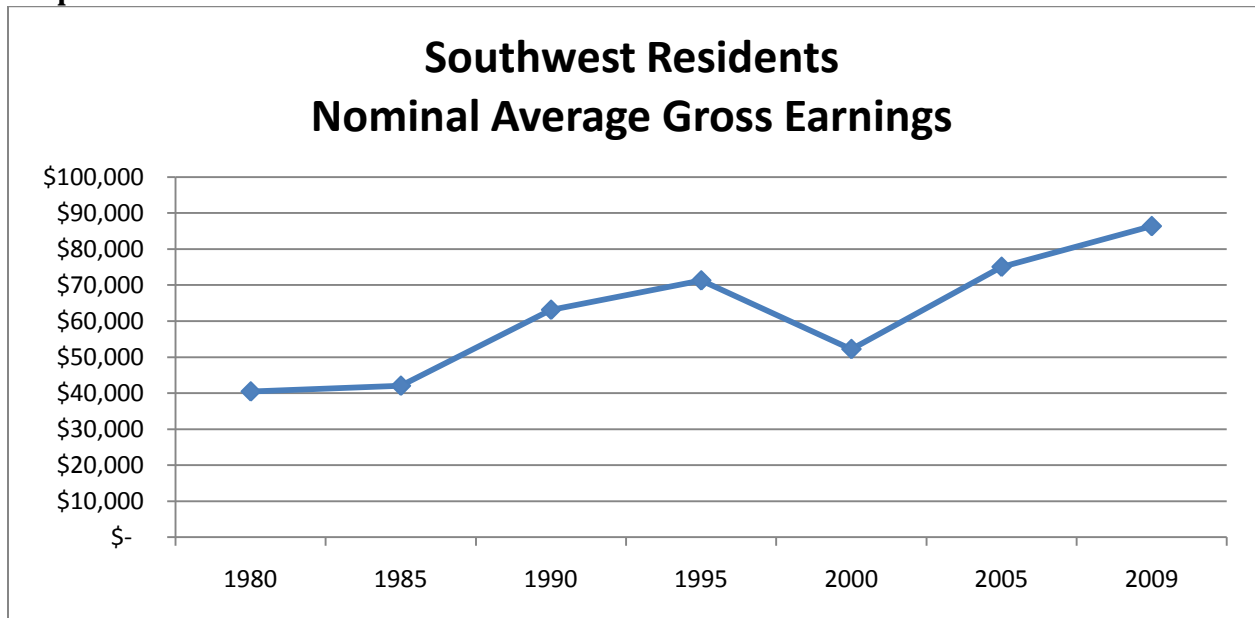


While the number of permits was falling, with the exception of shellfish, every permit by species became more valuable in terms of Nominal Gross Earnings per Permit as seen in Graph SW 3. This is expected since resource allocation allows for the number of licenses to be reduced to remove less productive operations. The value of Crab, Groundfish and Sablefish expand substantially after rationalization, which would have an even greater effect on reducing inefficient operations, and consolidating resources towards the most effective use. Herring and salmon appear to be more affected by market fluctuations, such as competition from farmed salmon and the strength of the Japanese economy. Earnings for halibut is not reliable, and thus omitted from these results, although the price per pound and average value per pound of halibut quota has risen substantially over the past 15 years since rationalization. Graph SW 4 displays Southwest Alaskan Residents Nominal Average Gross Earnings. Graph SW 5 shows that while the nominal average earnings were expanding over the period, the Nominal Average Price per Pound decreased. This is likely a function of increasing salmon prices driving the average price higher through the 1980's followed by a downward trends, and an increasing volume of lower value hatchery salmon and groundfish. Graph SW 6 shows Real Gross Earnings by Permit, which adjusts for inflation over time by accounting for a 3.54% annual price increase in the Consumer Price Index (CPI). Once adjusted for the time value of money, most fisheries real value decreases over the period; however, each rationalized fishery increases in value after program implementation. The values for Halibut are not reliable, and thus omitted, although it is reasonable to assume that Halibut earnings would be similar to Sablefish, if not better; the exvessel price per pound of halibut have expanded steadily since rationalization. Graph SW 8 shows that the Adjusted Real Average Price per Pound reflects a decline over the period.

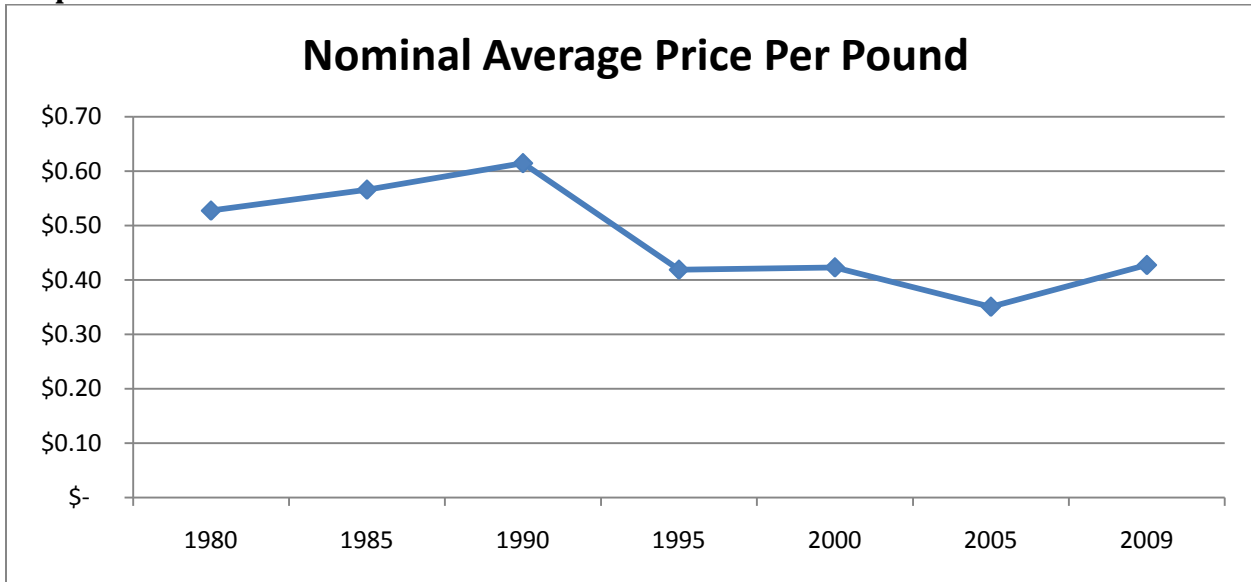
Graph SW 3



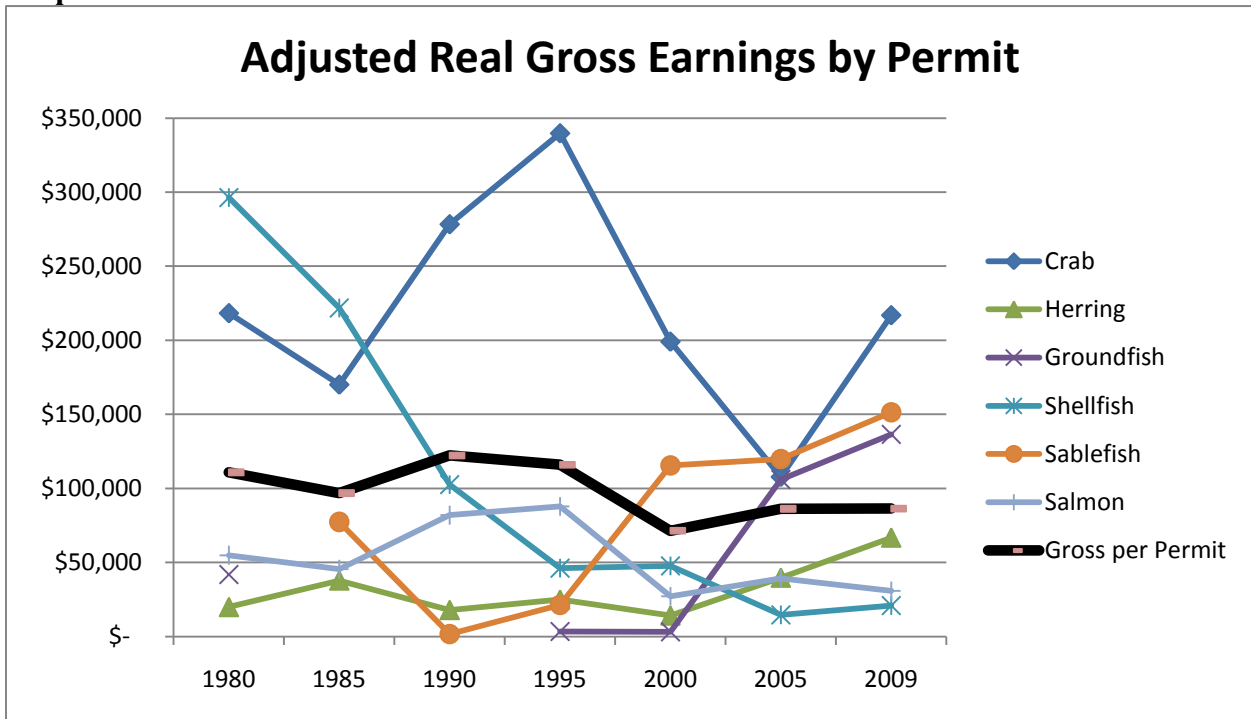
Graph SW 4



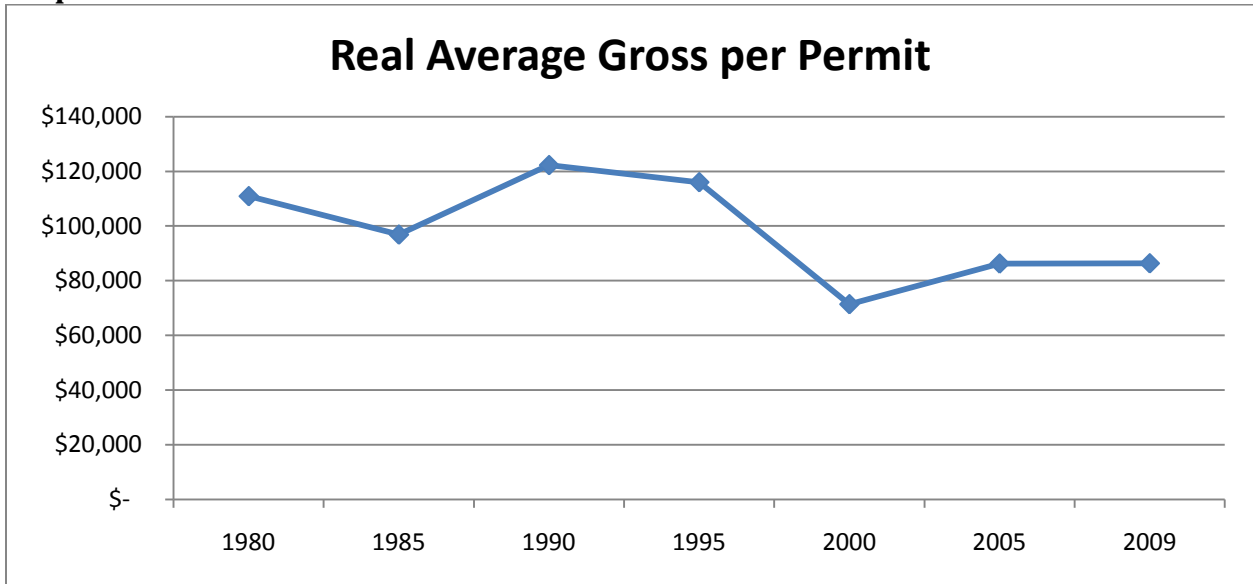
Graph SW 5



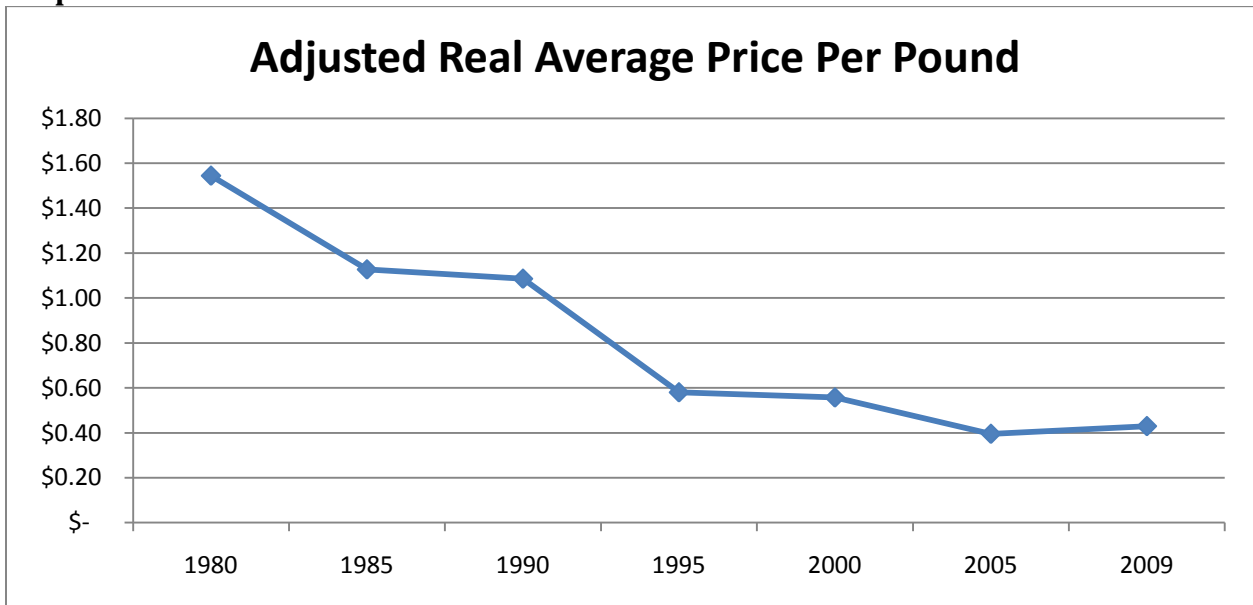
Graph SW 6



**Graph SW 7**

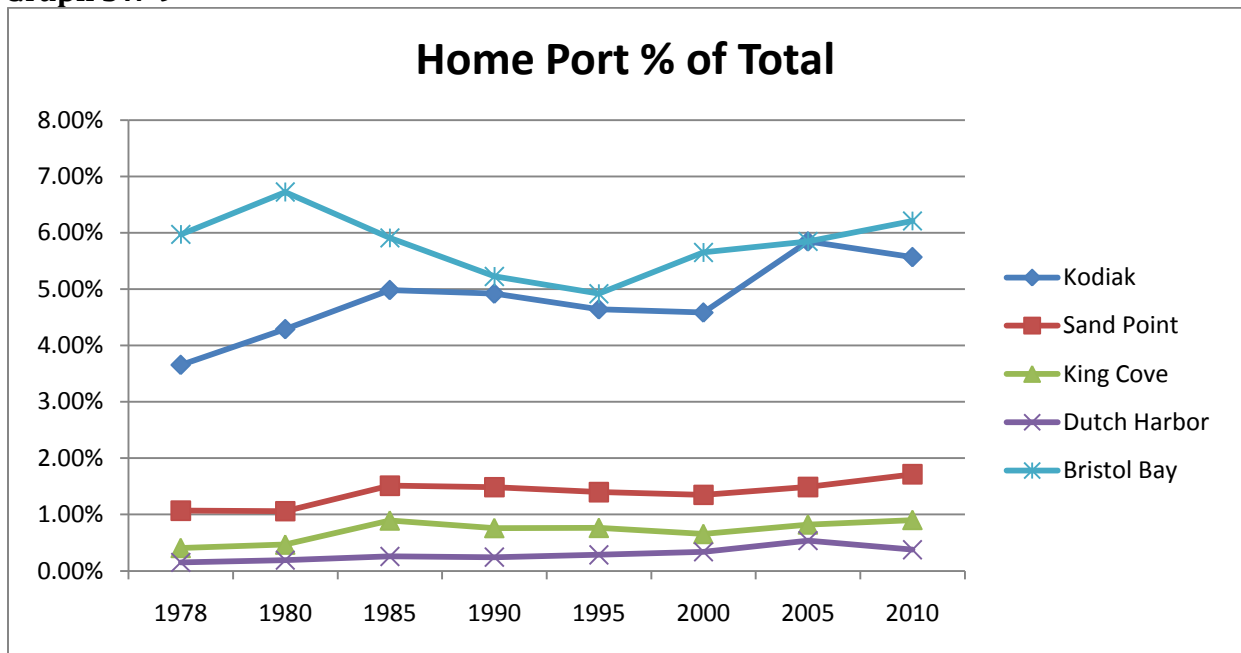


**Graph SW 8**

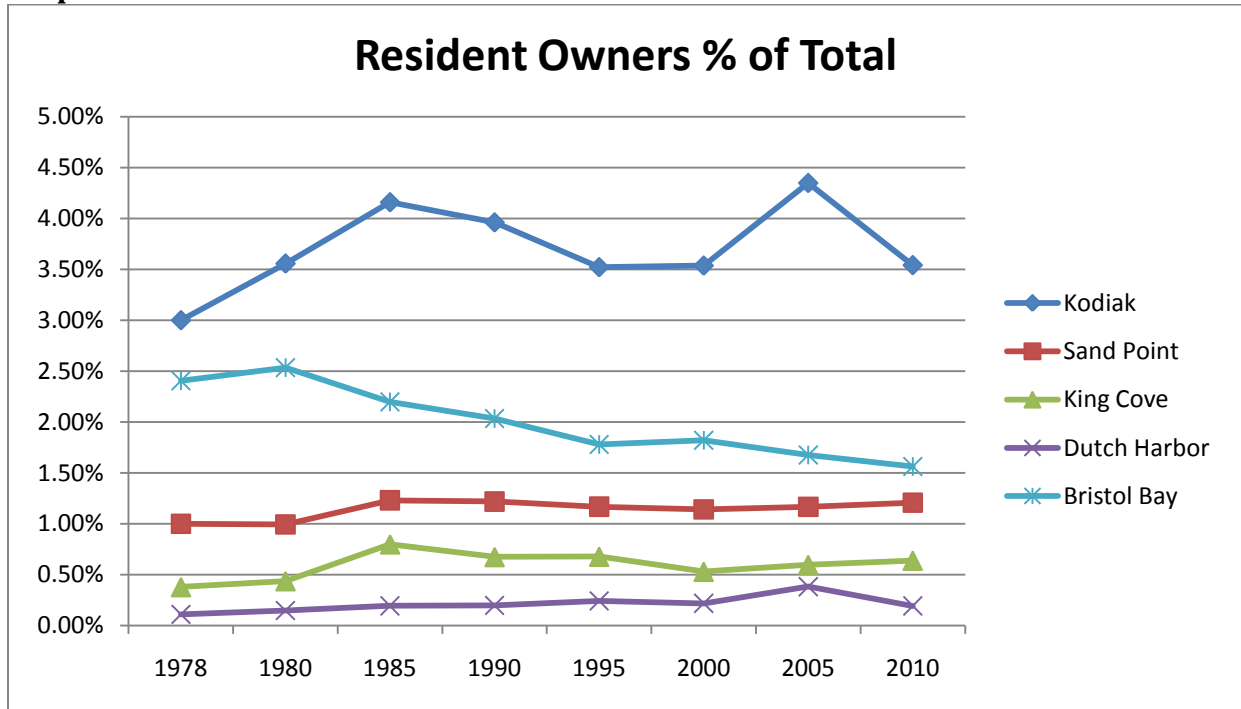


Vessel ownership is not a defined resource allocation, but it is important in describing the make-up and strength of fishing communities. In relative terms, Home Port in the region has increased in SW communities. While the relative percentage has increased over the period in all communities, both Bristol Bay and Kodiak have realized downward trends. Bristol Bay saw a substantial reduction in Home Port vessels, between 1980 and 1995. Kodiak saw a slow reduction in Home Port vessels between 1985 and 2000, increasing sharply to 2005, and then reducing after Crab rationalization in 2005. As shown in Graph SW 10, resident boat owners have maintained a similar portion to other boat owners over the time period, with slight increases in all communities except Bristol Bay. Resident Boat Owners display the private operators choosing to live in the community, and this is an important indicator of profits being derived from the industry, and retained by communities. The steady decline in Bristol Bay Resident Boat Owners may be of concern as continued rents leave the community. Graph SW 11 shows that the ratio of Resident Boat Owners and Home Port vessels has widened in all communities over the period. The data displayed below does not provide enough evidence to draw conclusions as to why these numbers are diverging, although this should be of concern and investigated further. The data could support a claim that rationalization has made it easier for boat owners chose to keep their vessels in one community, but live in another.

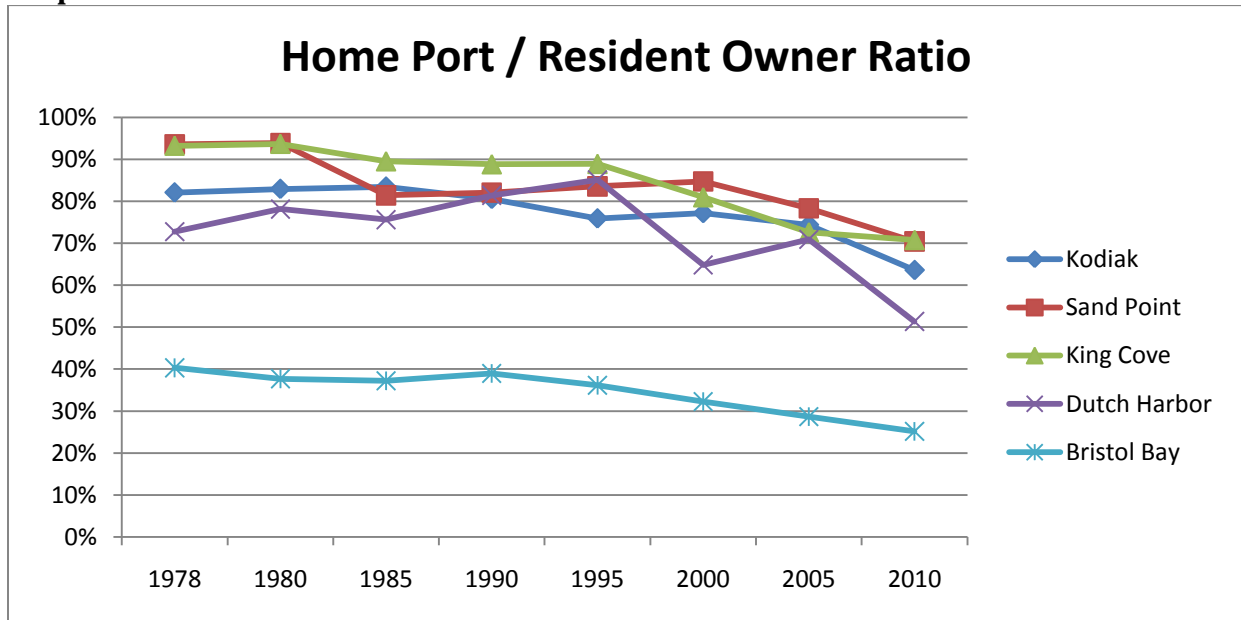
**Graph SW 9**



**Graph SW 10**

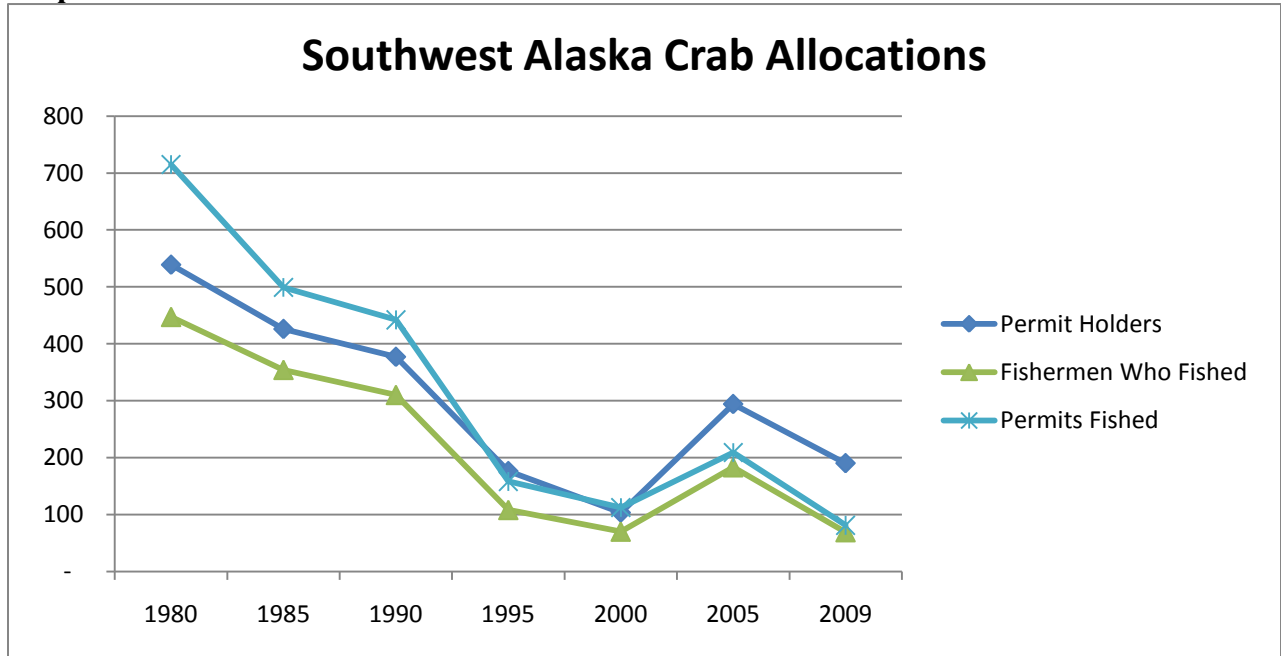


**Graph SW 11**

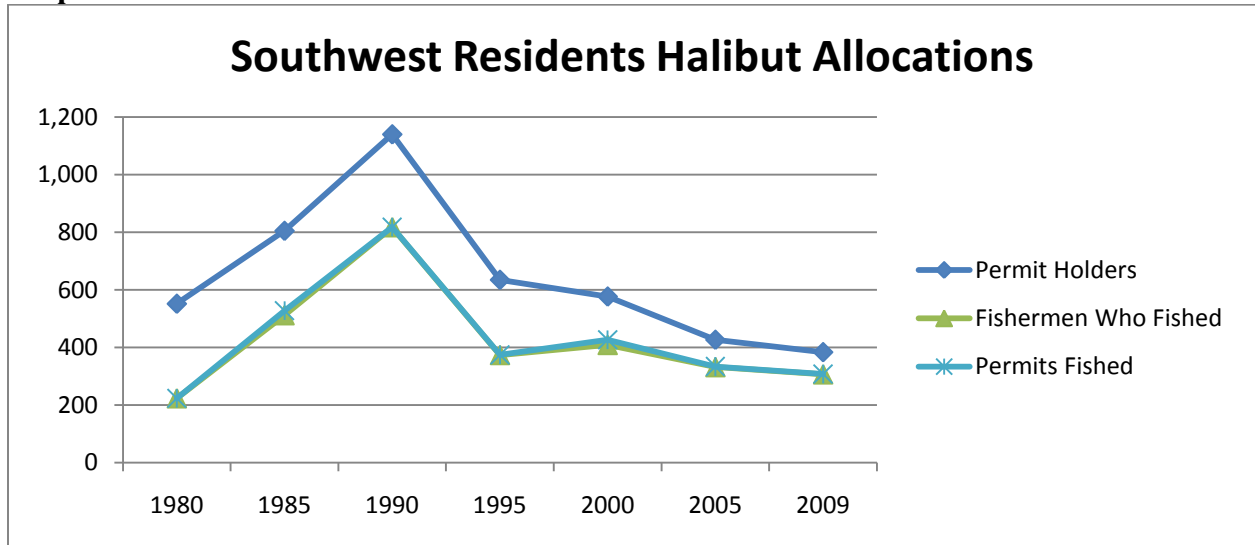


The make-up of Permit Holders, Fishermen Who Fish and Permits Fished varies from season to season as seen in Graphs SW12 - 19. If Permit Holders is greater, this can be an indication that fishermen are “stacking” permits, permits are not actually being fished or fishermen are fishing two permits, but recording all the catch under one permit, (common in the salmon set-net industry). The data may support the claim that the categories narrow after fisheries are rationalized, but fisheries managed by limited entry permits, Salmon and Herring, Permit Holders declines slower than Fishermen Who Fish and Permits Fished. All fisheries display an increase in allocations prior to rationalization, and a steep fall following program implementation. In Graph SW 12, Crab Allocations, the ration between Permits Fished and Permit Holders changes in 1995. In Graph SW 19, Total Allocations, Permits Fished is generally greater than the other categories, which may be in indication that Permit Holders have permits in more than one fishery, although in 2009 these ratios changed.

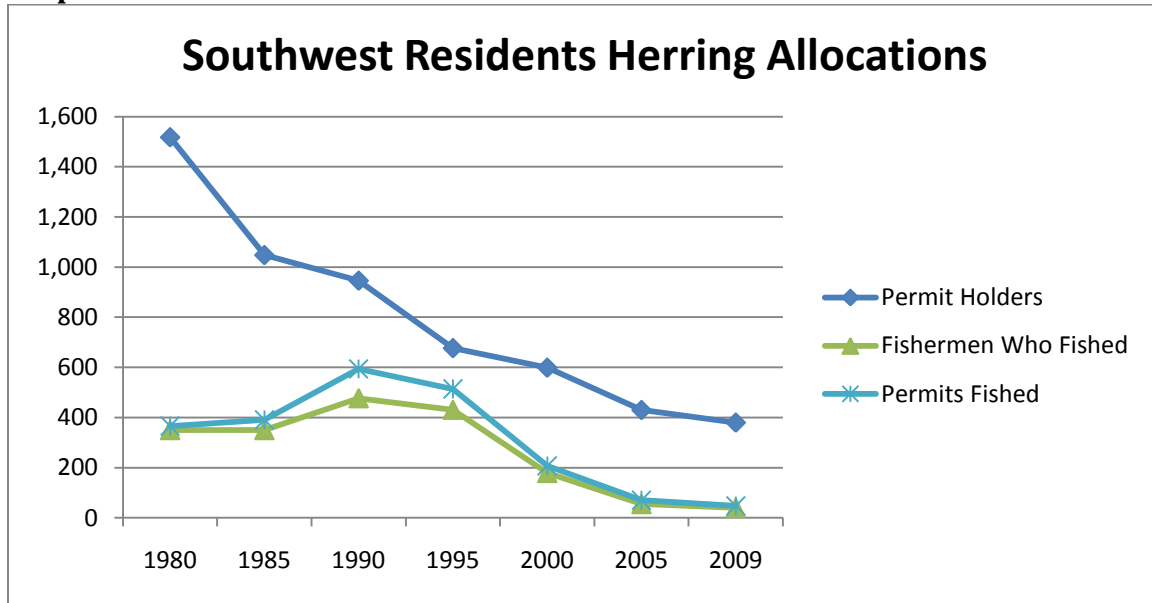
Graph SW 12



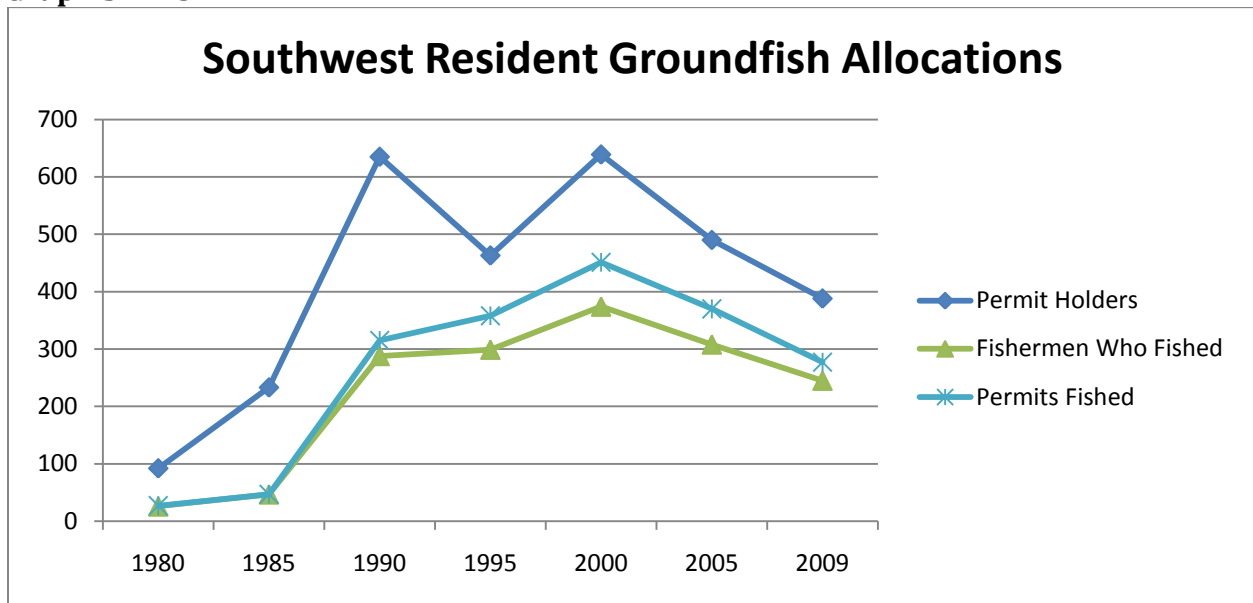
Graph SW 13



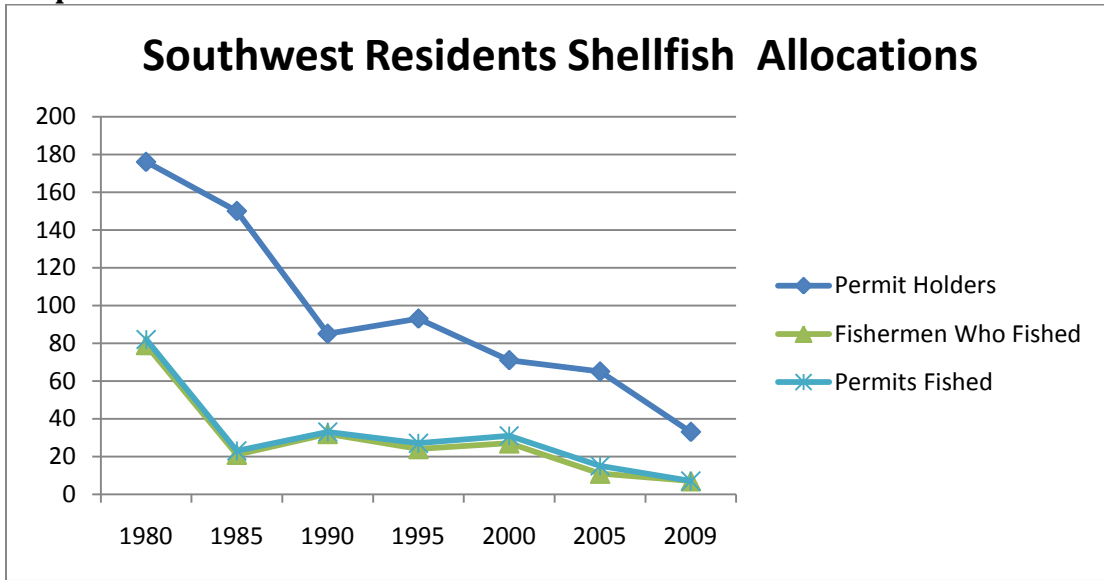
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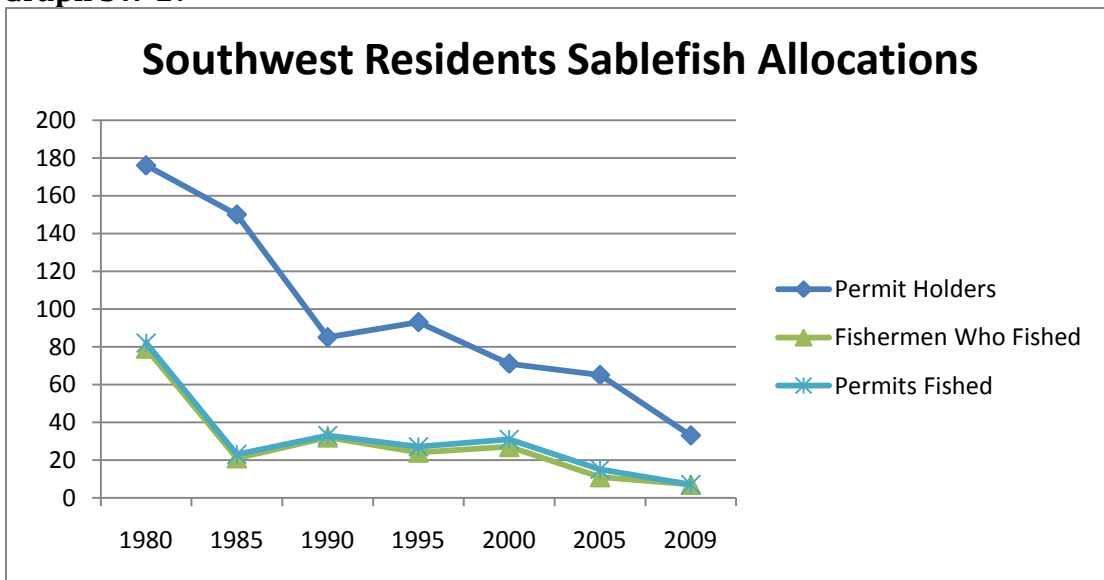
Graph SW 15



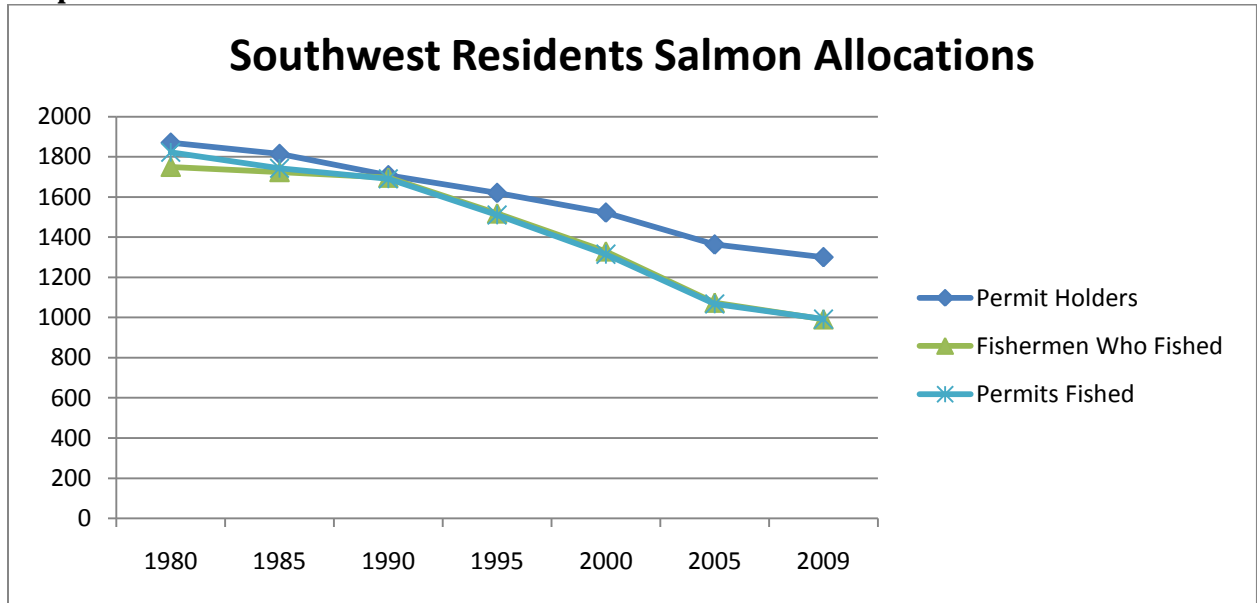
Graph SW 16



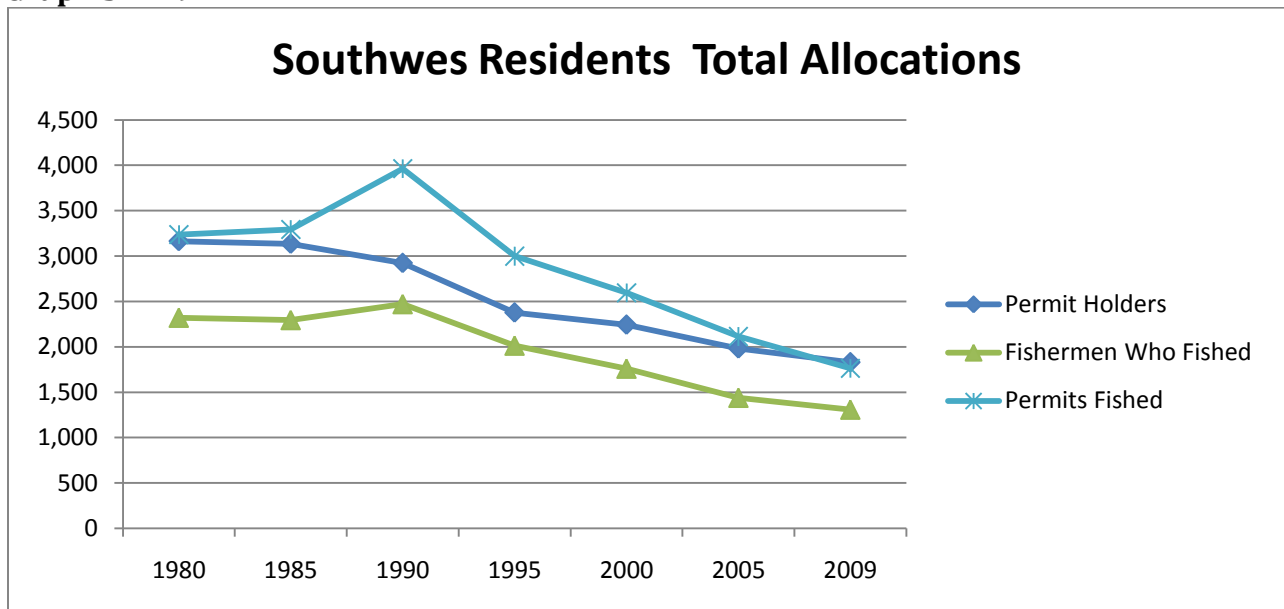
Graph SW 17



Graph SW 18

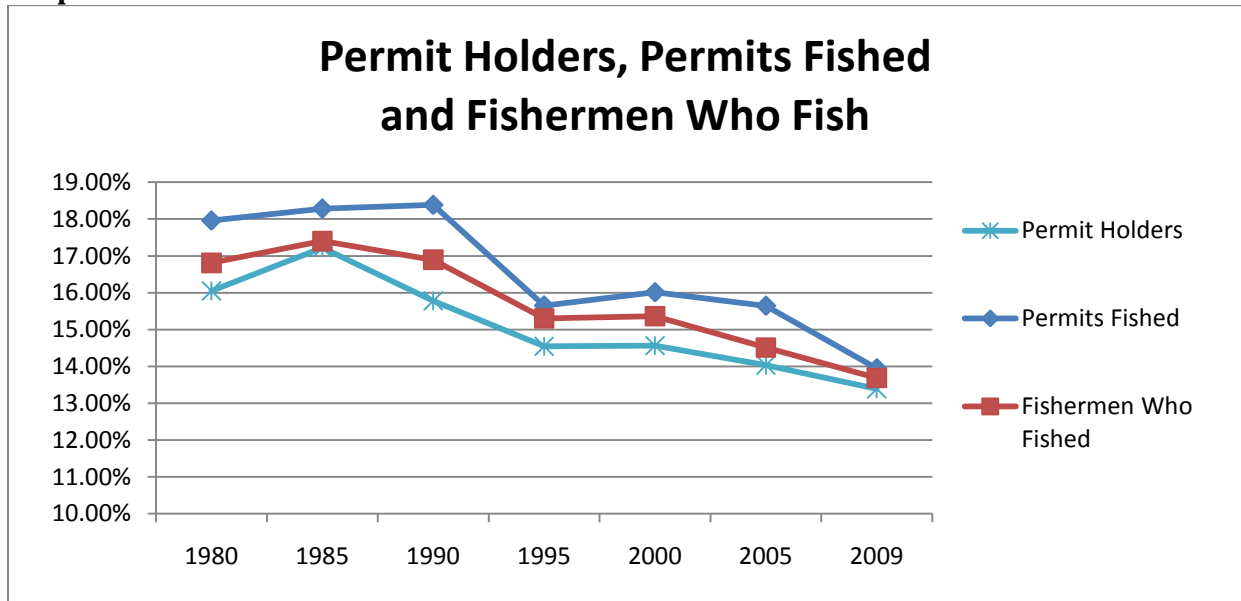


Graph SW 19

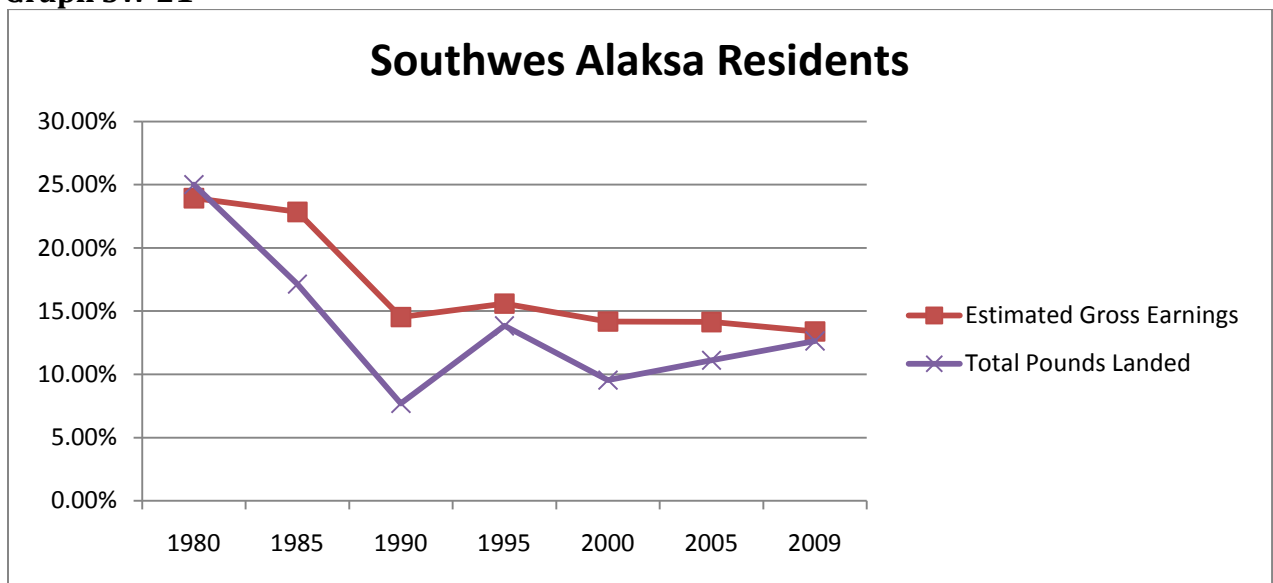


Relative to all other fishermen SW Residents permit allocations are down about 19%. The variation between Permit Holders, Fishermen Who Fish and Permits Fished has narrowed, which could be an indication that fishermen are specializing in certain fisheries, though this is only speculation without further analysis. Relative SW Resident Earnings and Pounds Landed fell substantially through the 1980s, and have since leveled off.

**Graph SW 20**



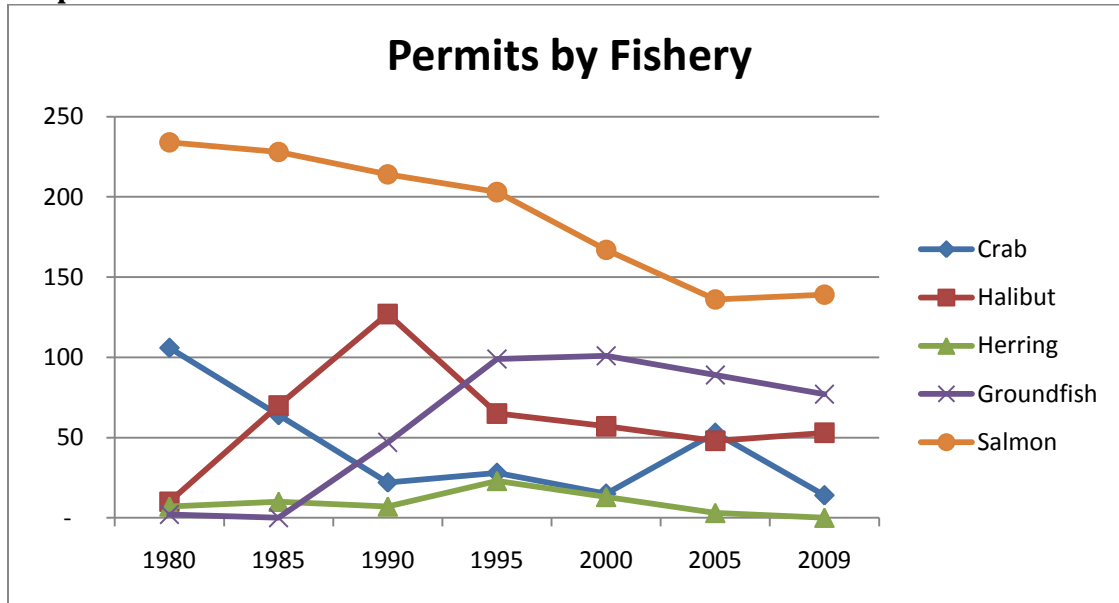
**Graph SW 21**



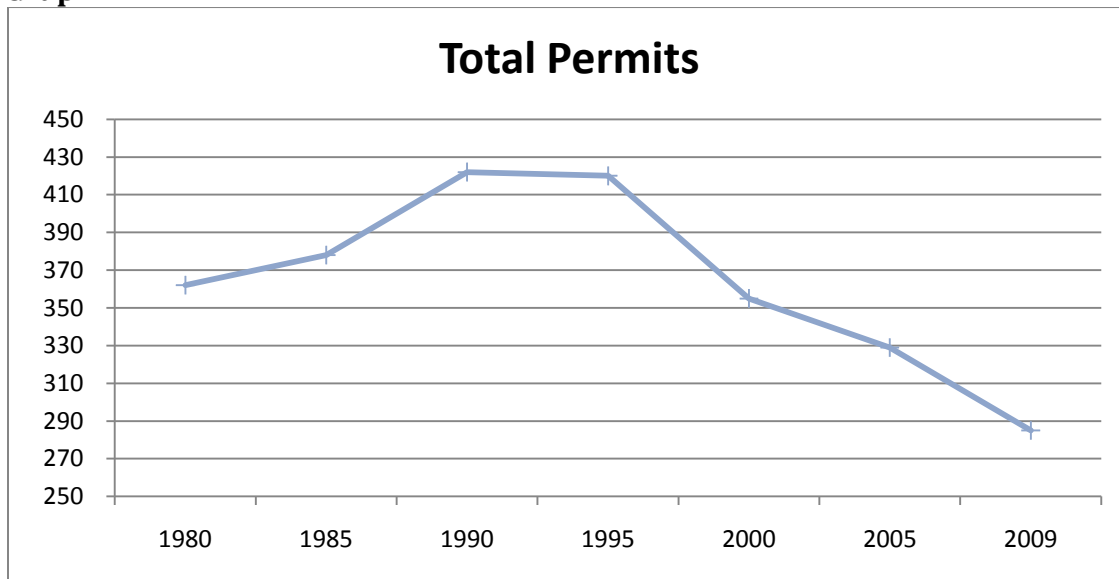
## **Aleutians East Borough**

The total number of permits held by residents the Aleutian East Borough has declined since peaking in 1990. Permits by Species declined in Salmon and Crab, stayed flat in Herring, and increased for Halibut and Groundfish. Both of the rationalized fisheries saw an increase in permits in the years prior to privatization. A sharp drop in Halibut permits followed the build-up prior to implementation. Groundfish have maintained much of the increases seen during the Comprehensive Rationalization Program, leading to the Inshore/Offshore Allocations in 1992. The Crab fishery saw increases in permits prior to the rationalization program initiated in 2005, and has sense fallen off sharply towards levels seen prior to the build-up starting in early 2000's. Halibut and groundfish licenses appear to have settled higher than the number of license prior to rationalization, but may be trending lower in recent years as the industry consolidates towards fewer more efficient operations. The licenses issued in the Crab fishery appear to have fallen substantially before rationalization and continue trending downward after implementation. Total fishing licenses renewed fell from 422 to 285, a factor of 32% between 1990 and 2009.

Graph AEB 1

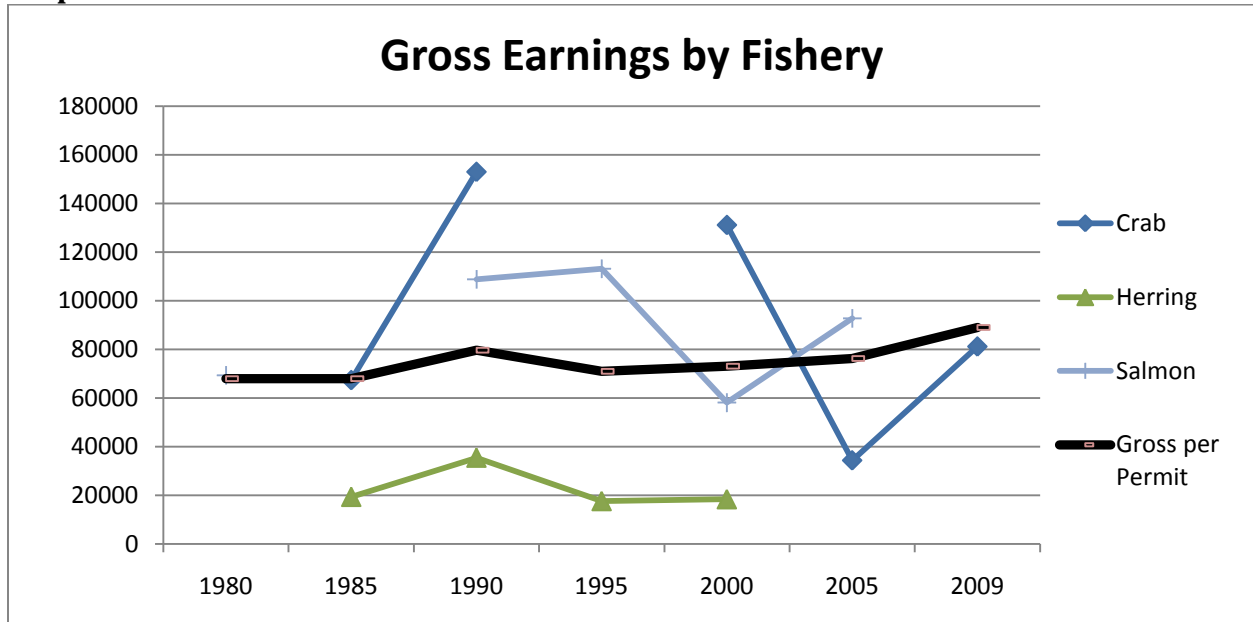


Graph AEB 2

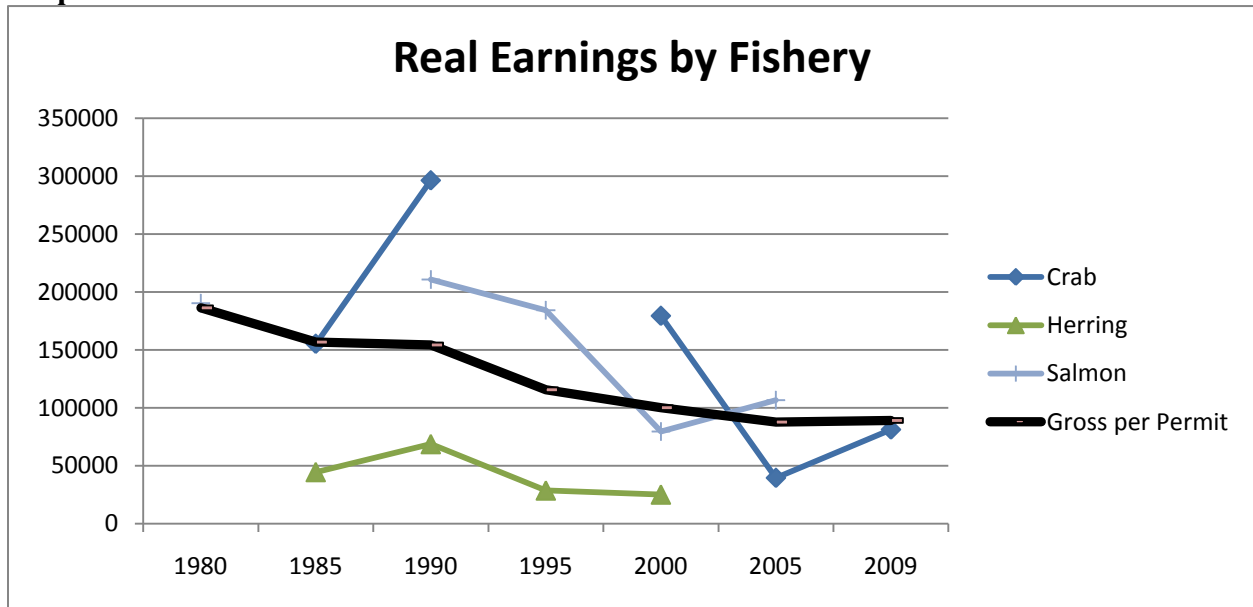


Gross Earnings by Fishery is up for the period about 23%; however, Real Adjusted Gross Earnings declines 42%. The reduction in Real Gross Earnings by Fishery is unexpected since Total Permits have declined as more efficient operations remove less productive operations through consolidation. The limited data available for AEB identifies that Real Gross Earnings increases after 2005, the year Bering Sea Crab fisheries were rationalized. The sharpest fall in earnings per permit in the crab fishery coincide with the increase in permits between 2000 and 2005. Adjusted Real Price tracks inflation over time, which accounts for a 3.54% annual price increase in the Consumer Price Index (CPI). Real Gross Earnings per Pound reflect a steady decline over the period; however, it is likely that Halibut, Sablefish and Groundfish are up, although this data was not available.

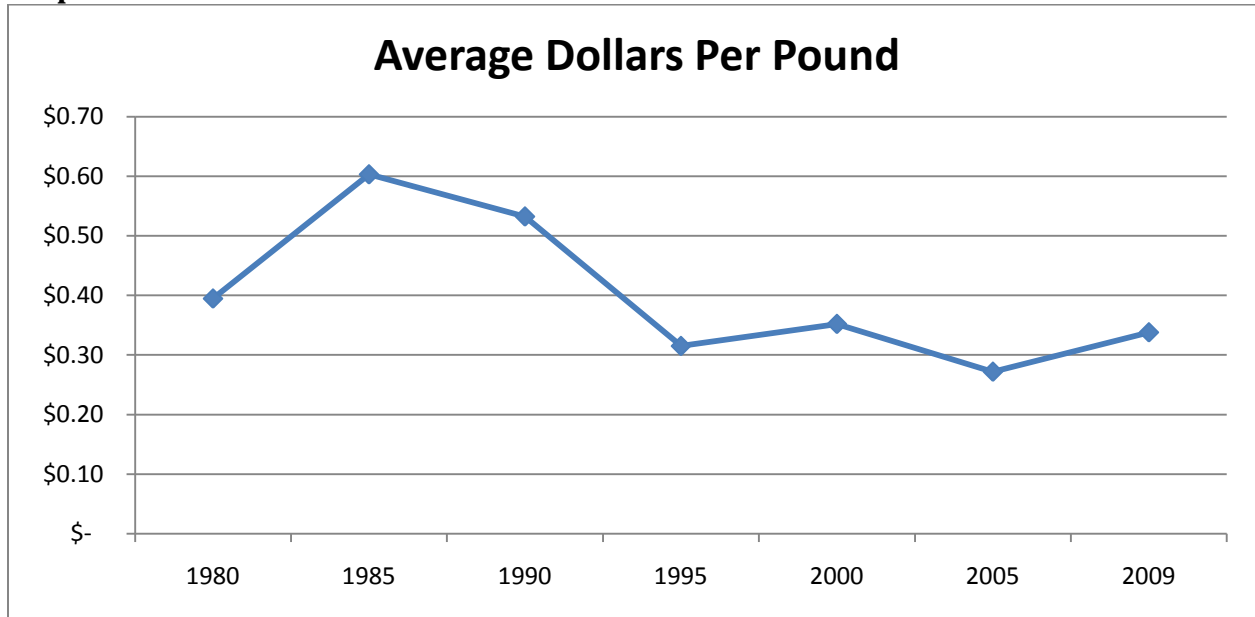
Graph AEB 3



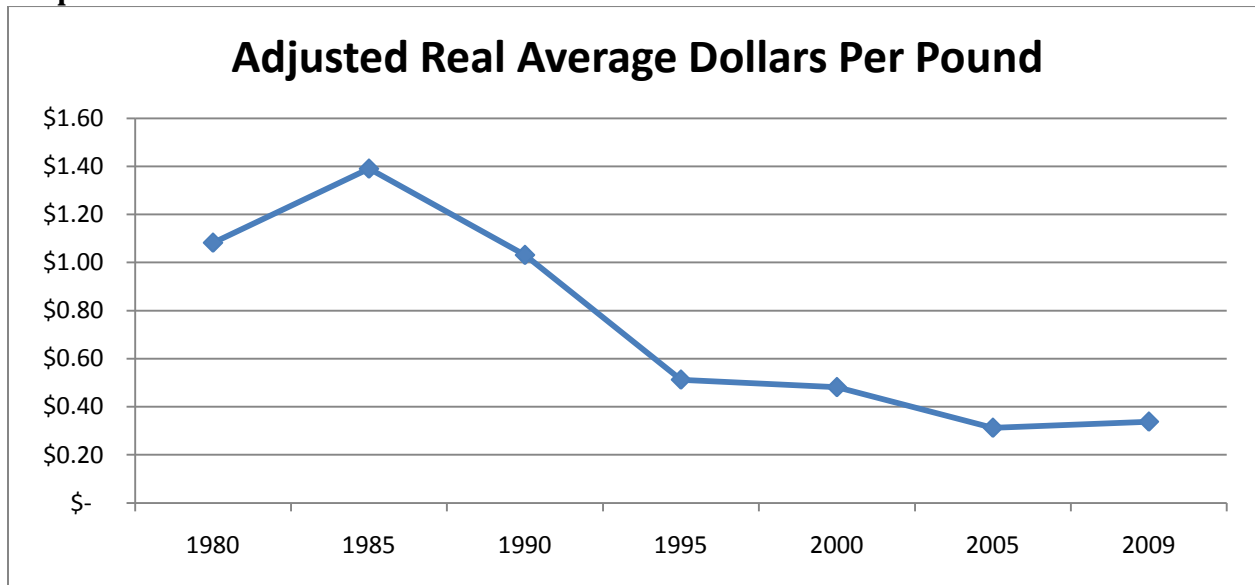
Graph AEB 4



**Graph AEB 5**



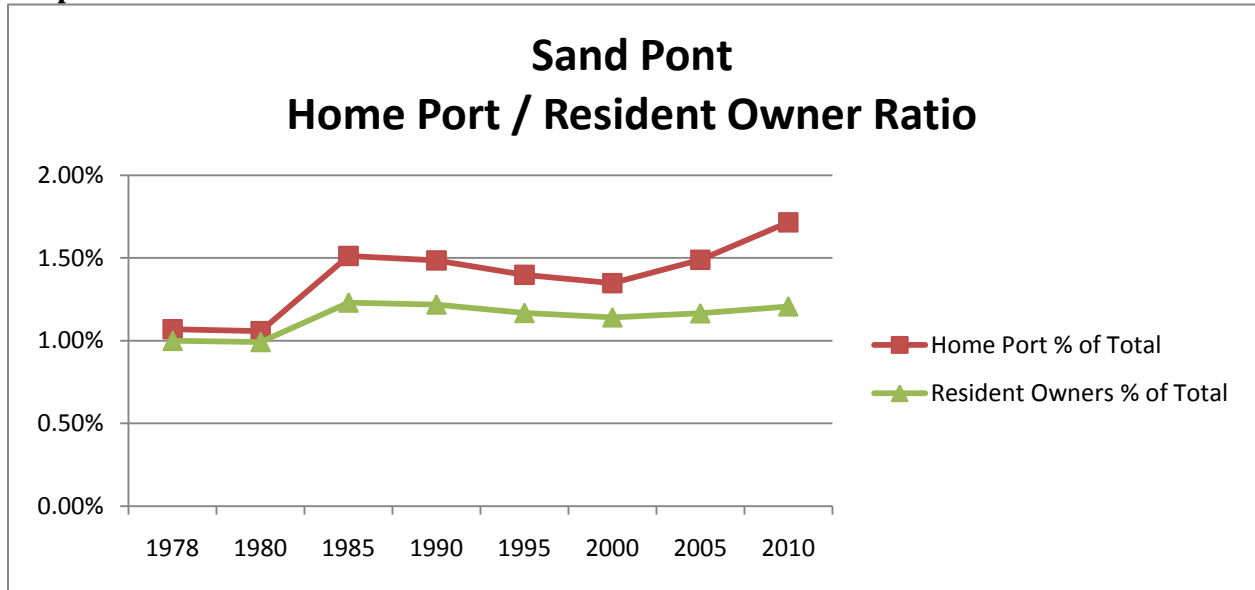
**Graph AEB 6**



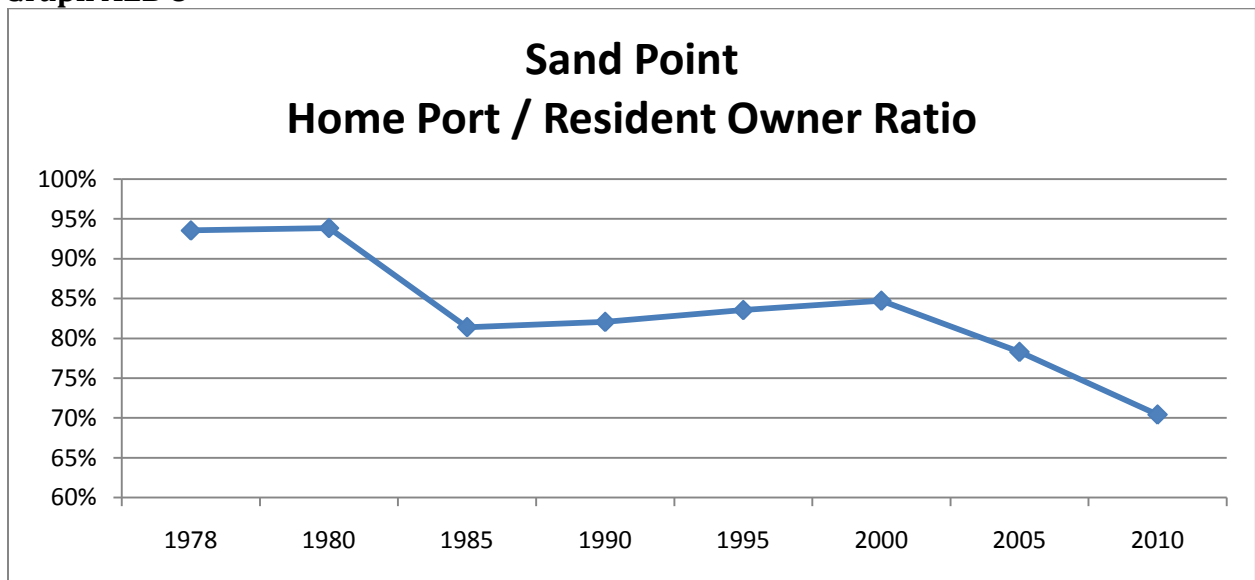
While vessel ownership is not a defined resource allocation, it is important in describing the make-up and strength of the fishing community. In relative terms, Sand Point has increased its percentage of vessels home porting there compared to all other vessels home ports. Resident boat owners have maintained a similar portion to other boat owners over the time period. The total percentage of all Home Port and Resident Boat Owners in Sand Point is quite small. The ratio of Home Port to Resident Boat Owners has declined steadily over the time period, as can be seen in Graph AEB-8. This is more of a function of non-residents calling Sand Point Home port, than a reduction in resident owners, but it does provide evidence that more boats are non-resident owned.

In relative terms King Cove has increased its percentage of Home Port vessels and Resident Boat Owners compared to total. The total percentage of all Home Port and Resident Boat Owners in King Cove is quite small. The ratio of Home Port to Resident Boat Owners has declined steadily over the time period, as can be seen in Graph AEB-10. This is more of a function of non-residents calling Sand Point Home port, than a reduction in Resident Boat Owners, but it does provide evidence that more boats are non-resident owned.

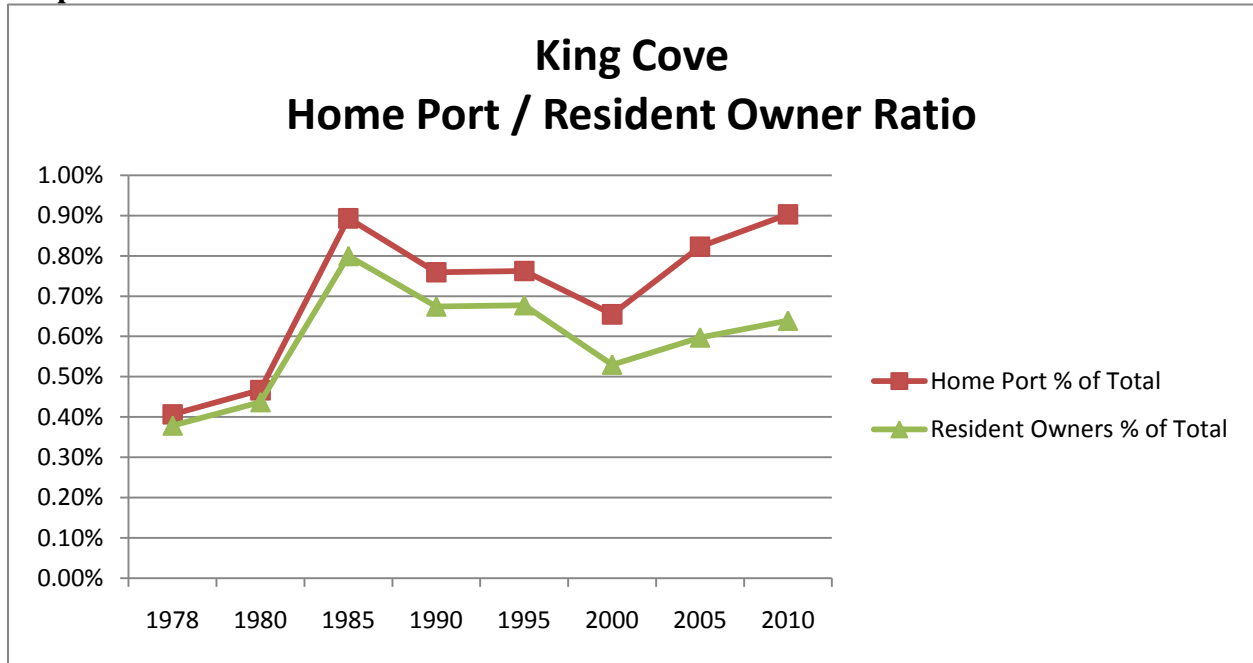
Graph AEB 7



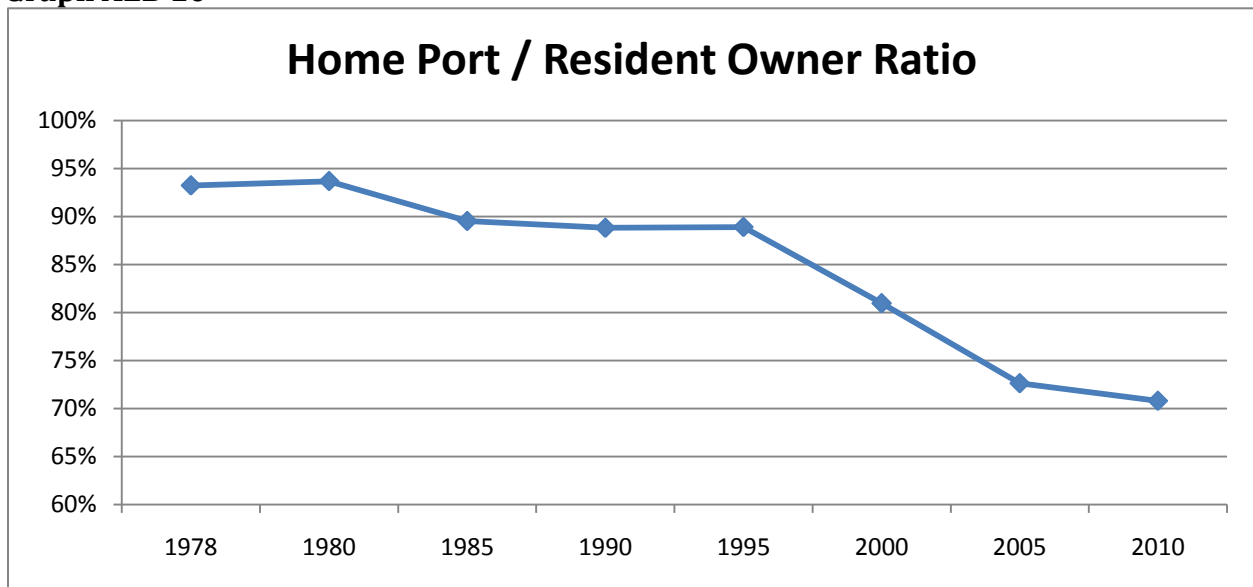
Graph AEB 8



Graph AEB 9

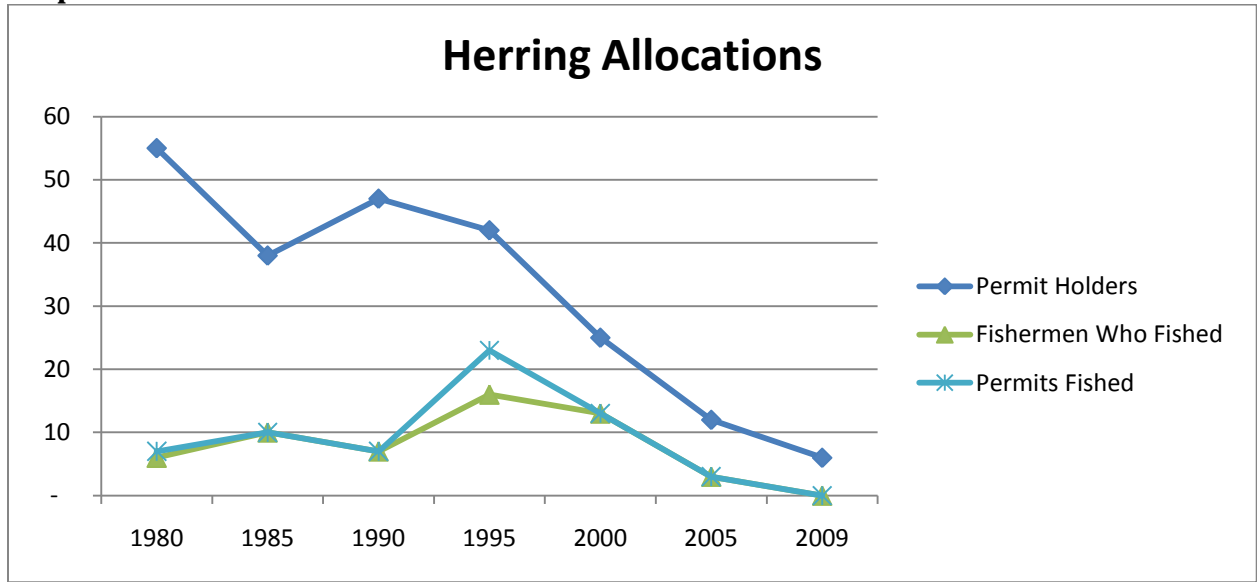


Graph AEB 10

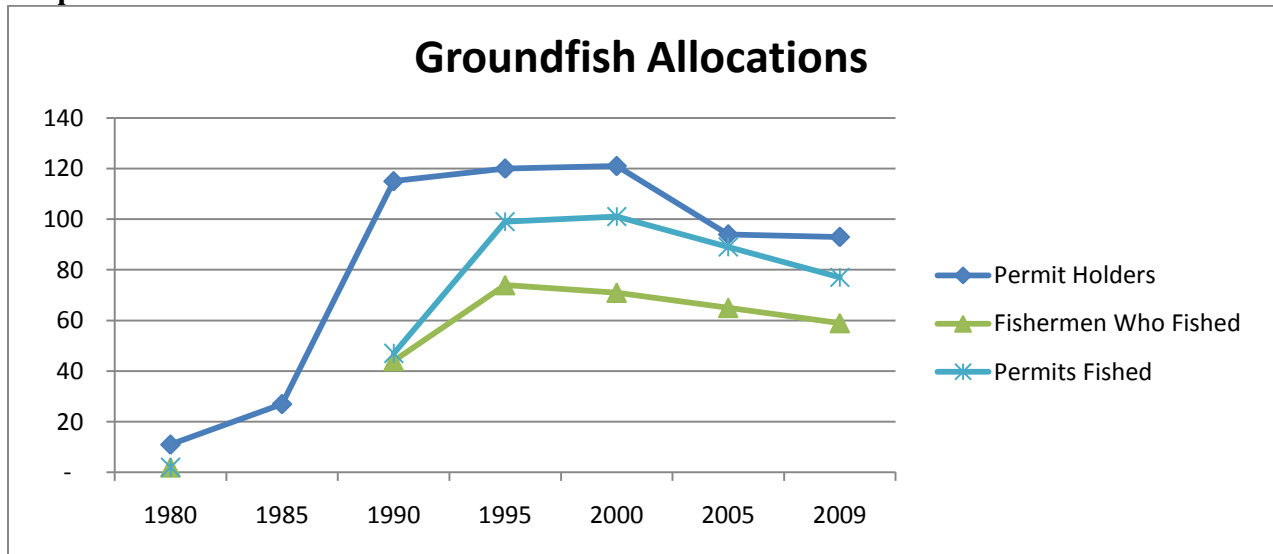


The make-up of Permit Holders, Fishermen Who Fish and Permits Fished varies from season to season as seen in Graphs AEB 11 – KIB 13. There can be a number of reasons that the ratio changes between these classifications. If more Permit Holders are greater than Permits Fish, as is prevalent in the Herring fishery prior to 2000, this can be an indication that fishermen are “stacking” permits, permits are not actually being fished or fishermen are fishing two permits but recording all the catch under one permit.. In the Graph AEB -13 Total Permit Allocations, fishermen can hold permits in a number of various permits, as indicated by more Permits Fished than Permit Holders or Fishermen Who Fished. If Fishermen Who Fish is greater, it could mean that there are fishermen that hold permits in other fisheries, but are not necessarily permit holders in the fishery being investigated.

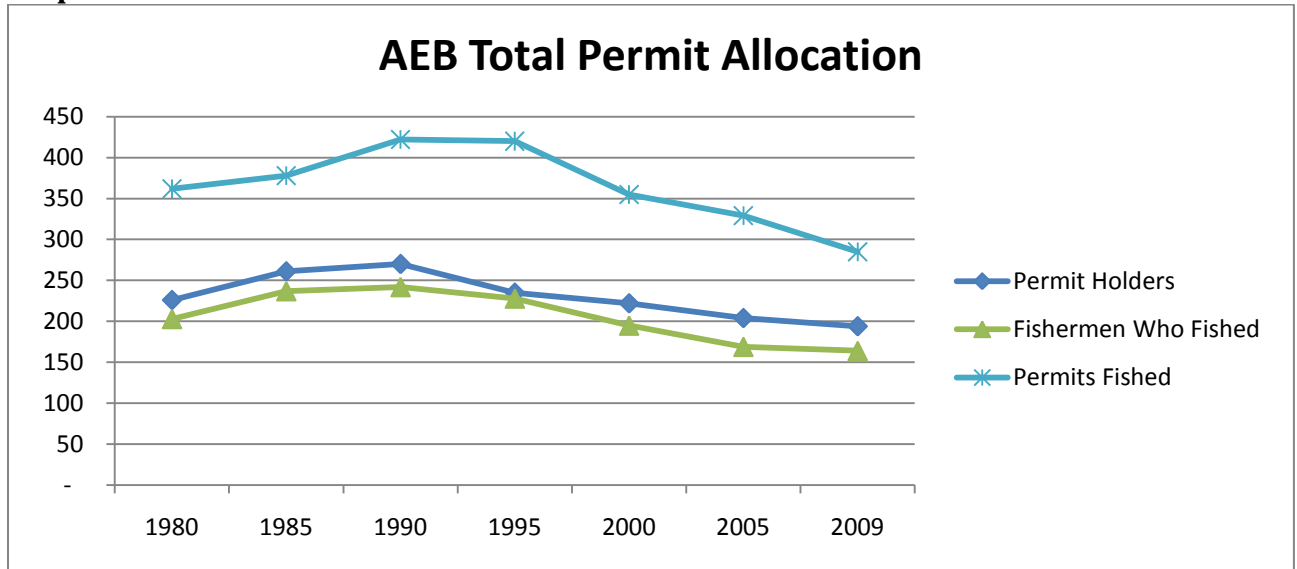
**Graph AEB 11**



**Graph AEB 12**

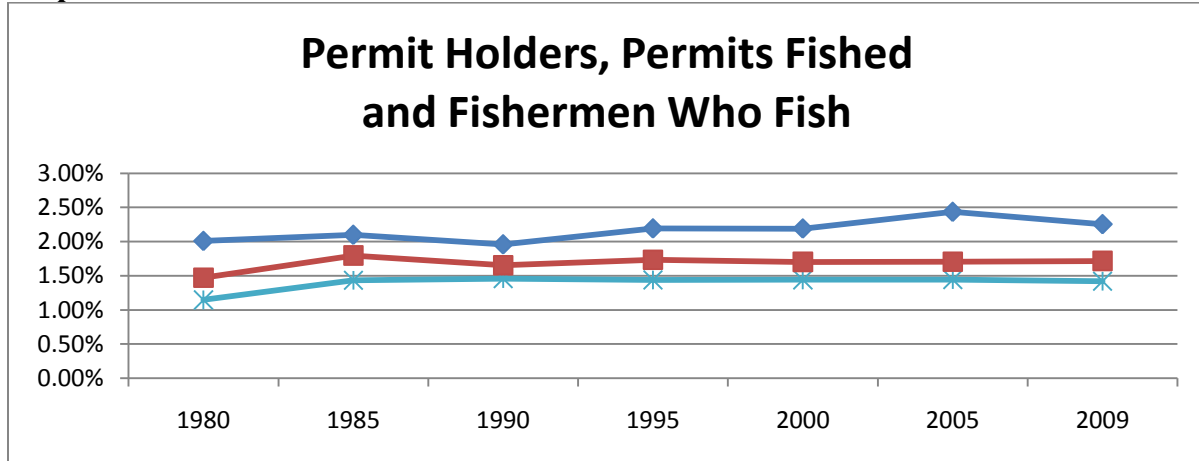


Graph AEB 13

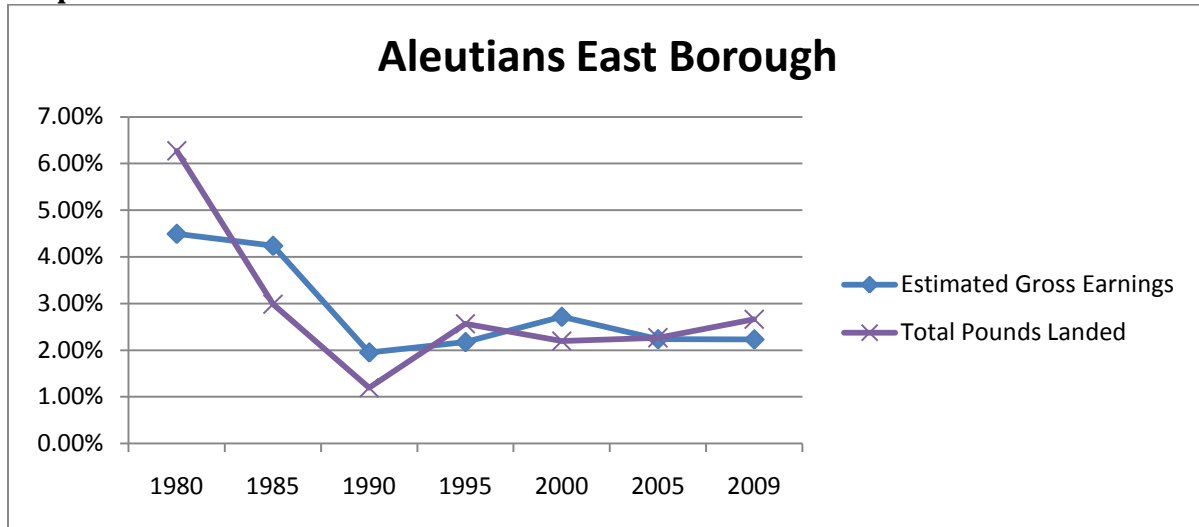


Relative to all other fishermen KIB's permit allocations are up slightly. Relative AEB Earnings and Pounds Landed fell substantially after the crash in crab and shellfish fisheries in during the 1980's, and has since leveled off.

**Graph AEB 14**



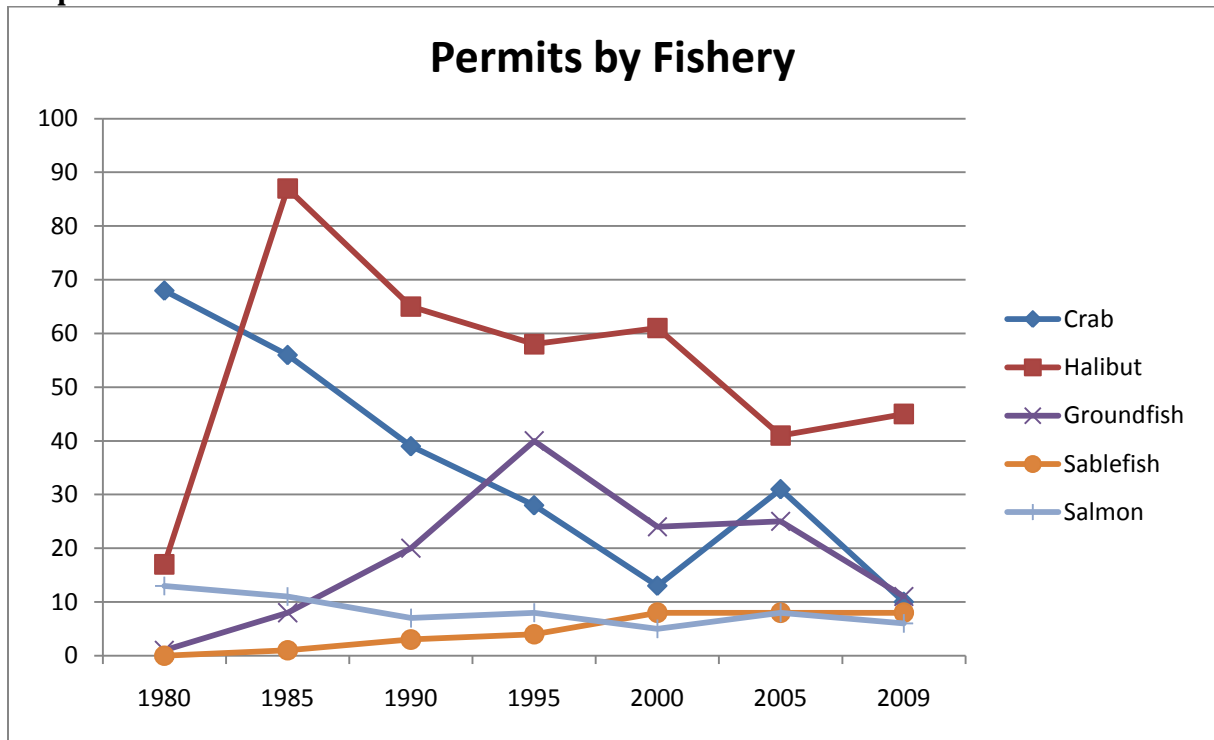
**Graph AEB 15**



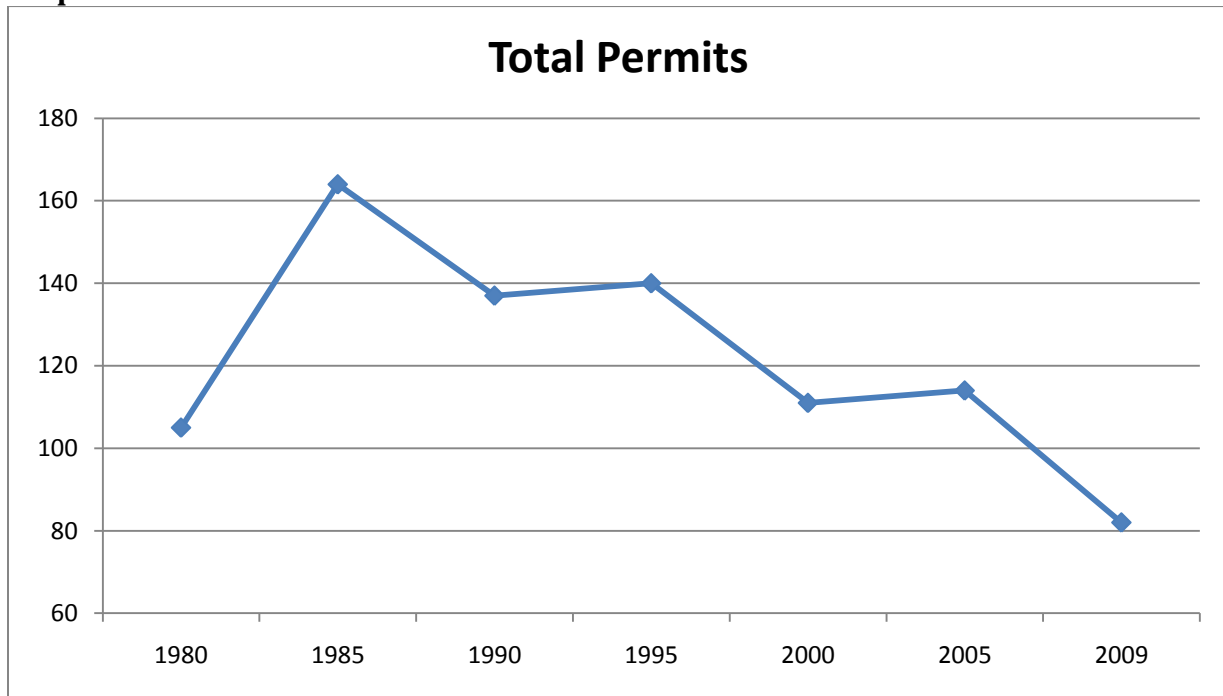
## **Aleutians West Census Area**

The absolute number of permits held by residents of AWCA has declined since 1985. Permits for Halibut, Groundfish and Sablefish have increased, although Halibut permits have been declining since 1985, and Groundfish Permits have been declining since 1995. The rationalization of Groundfish and Crab saw an increase in permits in the years prior to privatization and a sharp drop after programs were implemented; Halibut permits did not follow this trend, and instead permits peaked in 1985, a full decade prior to implementation, and have since declined. These trends can be identified in Groundfish during the Comprehensive Rationalization Program discussion from the late 1980's to the early 1990's, leading to the Inshore/Offshore Allocations in 1992, but not rising to the actual implementation of the American Fisheries Act in 1999 which rationalized the Bering Sea Pollack fishery. Permits increased in the Crab fishery prior to the rationalization program initiation in 2005. Total fishing licenses renewed fell from 164 in 1985 to 82 in 2009, a factor of 49% over the recorded period.

Graph AWCA 1

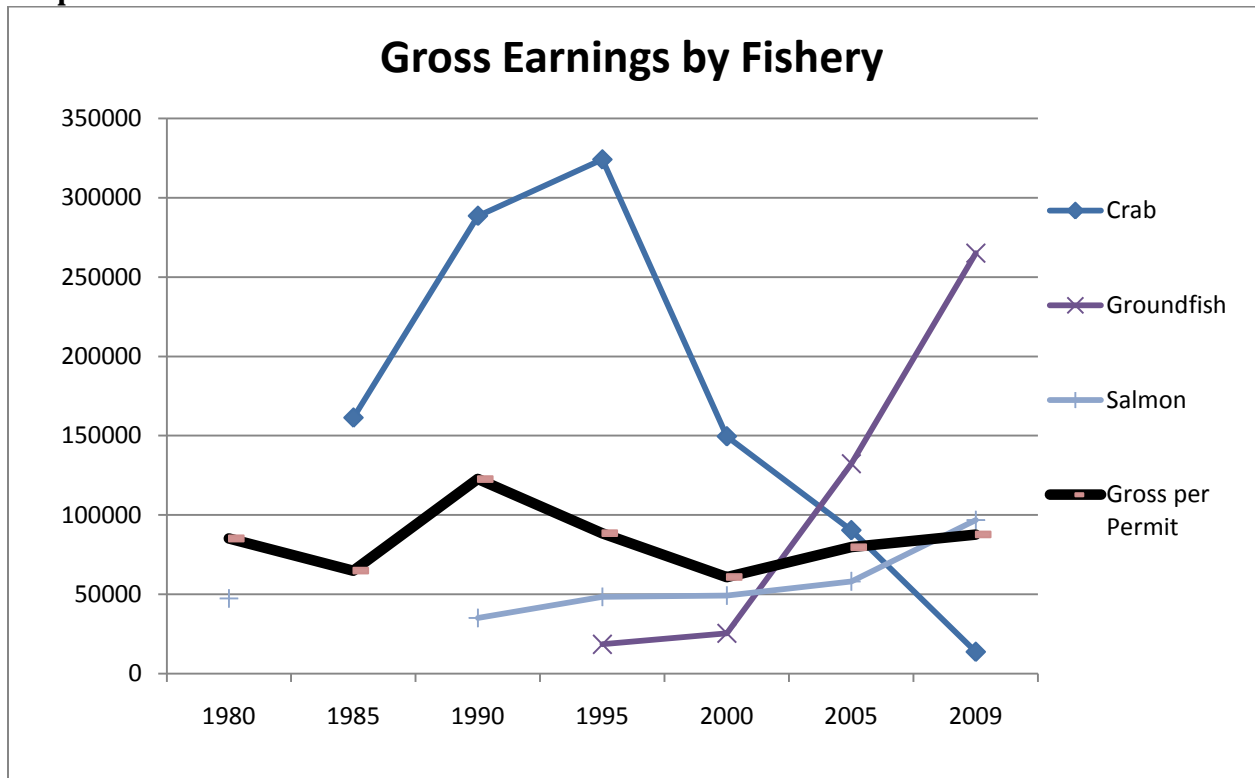


Graph AWCA 2

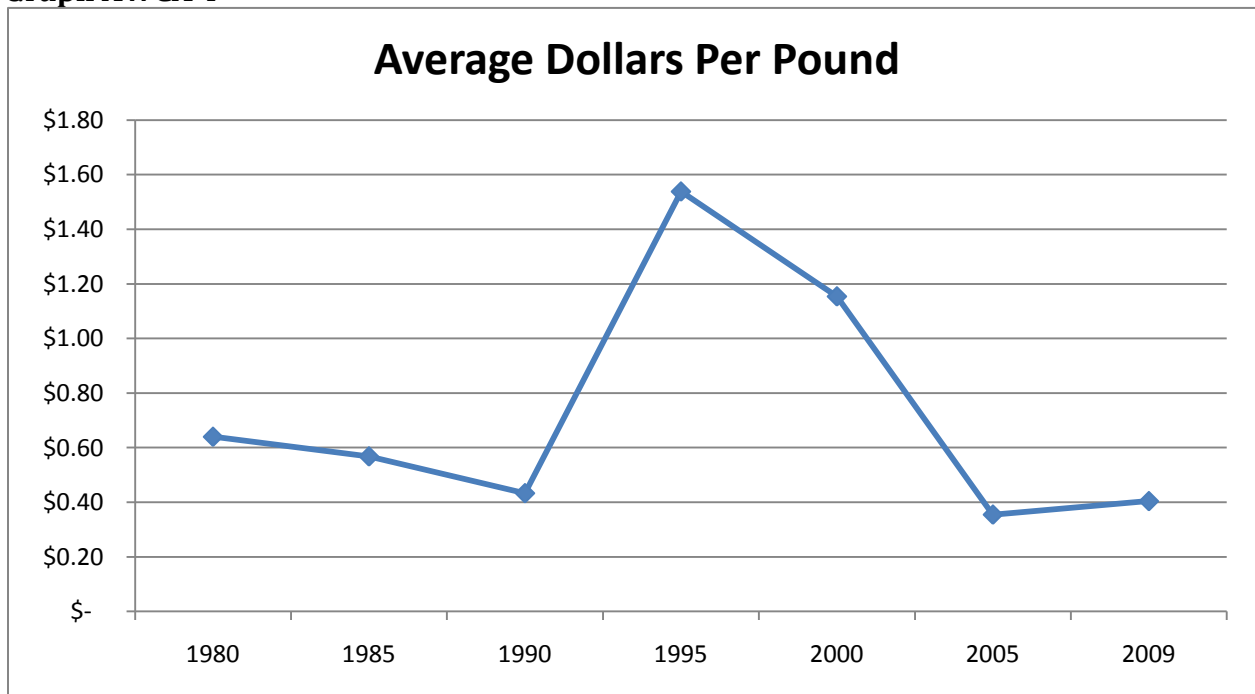


Even as the number of permits was falling, not every permit by species became more valuable in terms of Nominal Gross Earnings per Permit, as Crab Earnings fell from 1995. The Nominal Earnings per Permit for Groundfish expand after rationalization. Salmon earnings increase from 1990, and quite rapidly from 2005. Earnings for halibut is not reliable, and thus omitted from these results, although the price per pound and average value per pound of halibut quota has risen substantially over the past 15 years since rationalization. The Nominal Average Returns per Pound are relatively flat over the period, although there was a substantial increase from 1990 to 2005. Adjusted Real Price tracks inflation over time, which accounts for a 3.54% annual price increase in the Consumer Price Index (CPI). The Adjusted Real Gross Earnings per Permit reflect a decline to 2000, but has since leveled out.

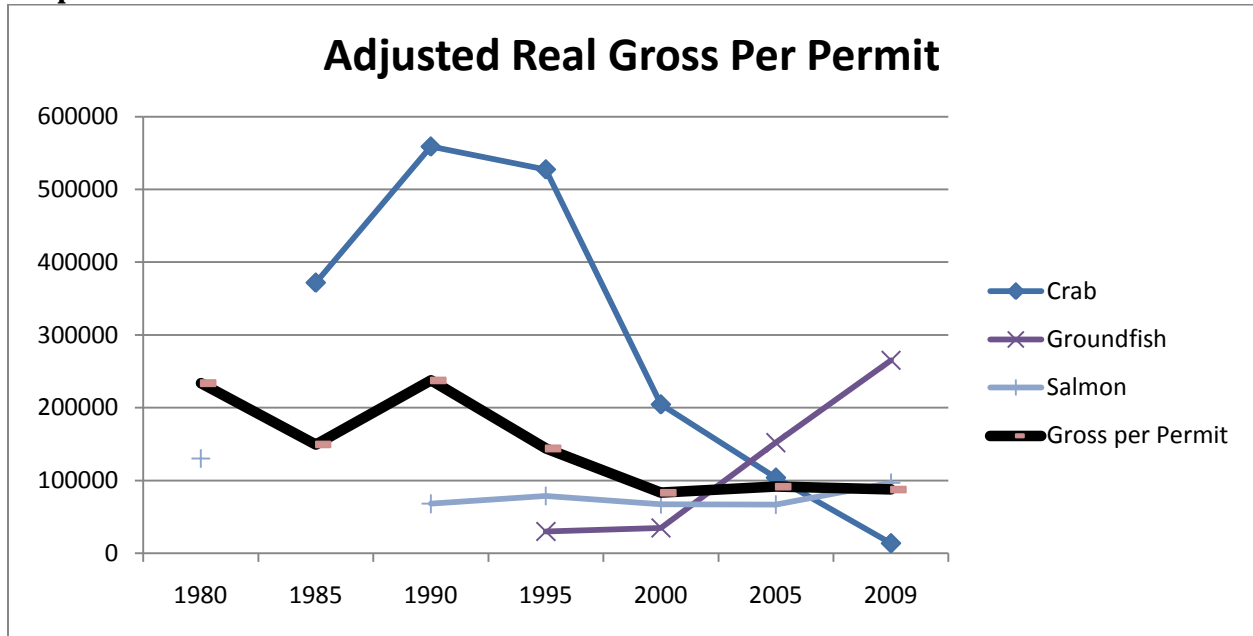
Graph AWCA 3



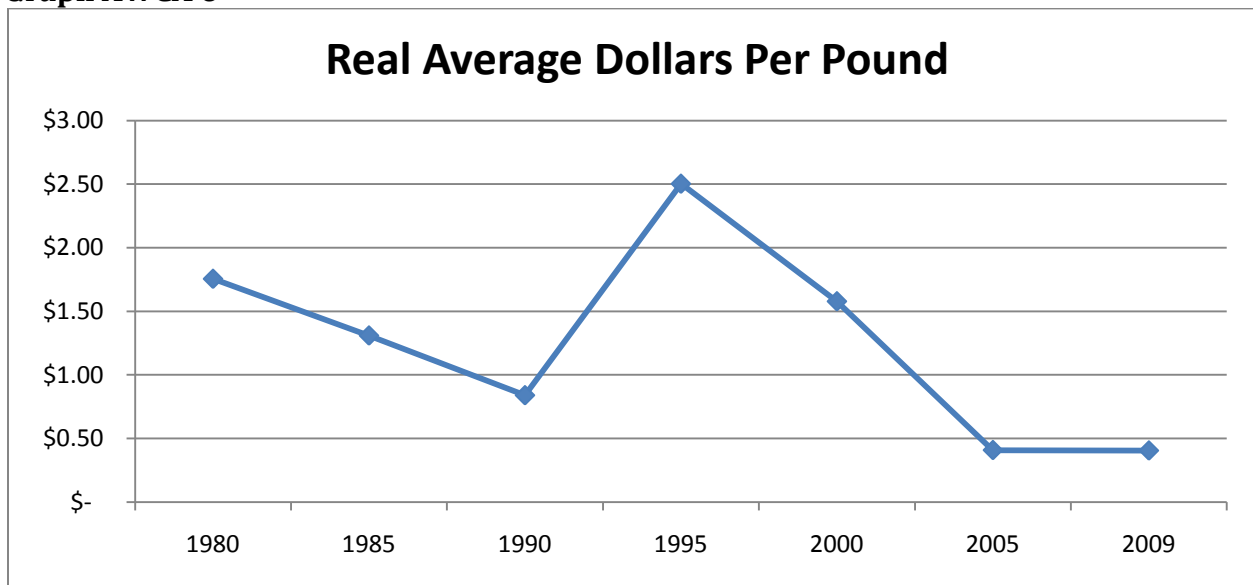
Graph AWCA 4



**Graph AWCA 5**

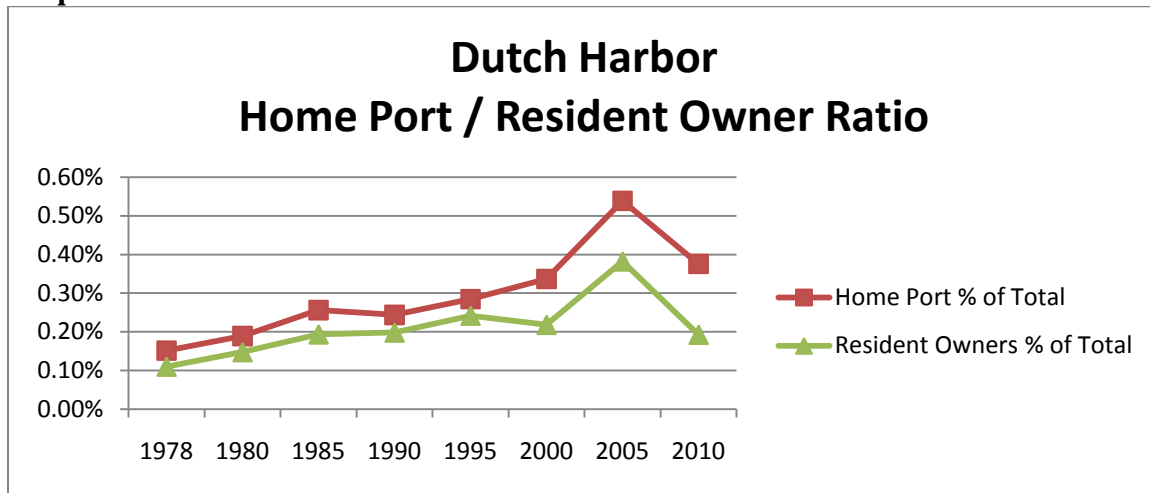


**Graph AWCA 6**

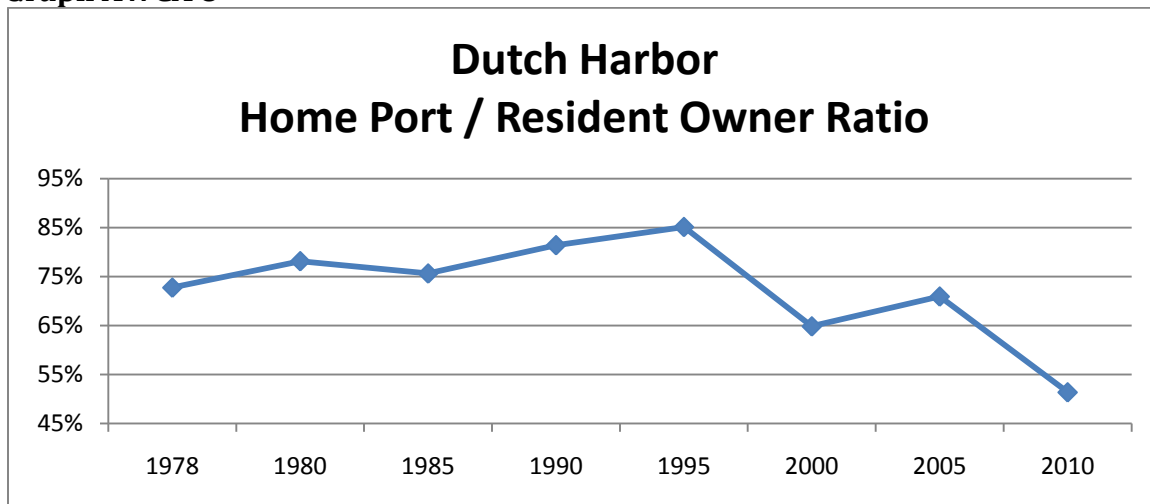


While vessel ownership is not a defined resource allocation, it is important in describing the make-up and strength of the fishing community. In relative terms Dutch Harbor has increased its percentage of Home Port vessels and Resident Boat Owners compared to all others. The separation between those that Home Port in Dutch Harbor and Resident Boat Owners has diverged since 1995, as can be obvious when comparing the ratio of between the two in Graph AWCA-8. The data displayed below does not provide enough evidence to draw conclusions as to why these numbers are diverging, although the relative decline in resident boat owners declines most rapidly 1995, the same year as the implementation of the Halibut and Sablefish IFQ program. The data could support a claim that after rationalization boat owners chose to keep their vessels in Dutch Harbor but live elsewhere.

**Graph AWCA 7**

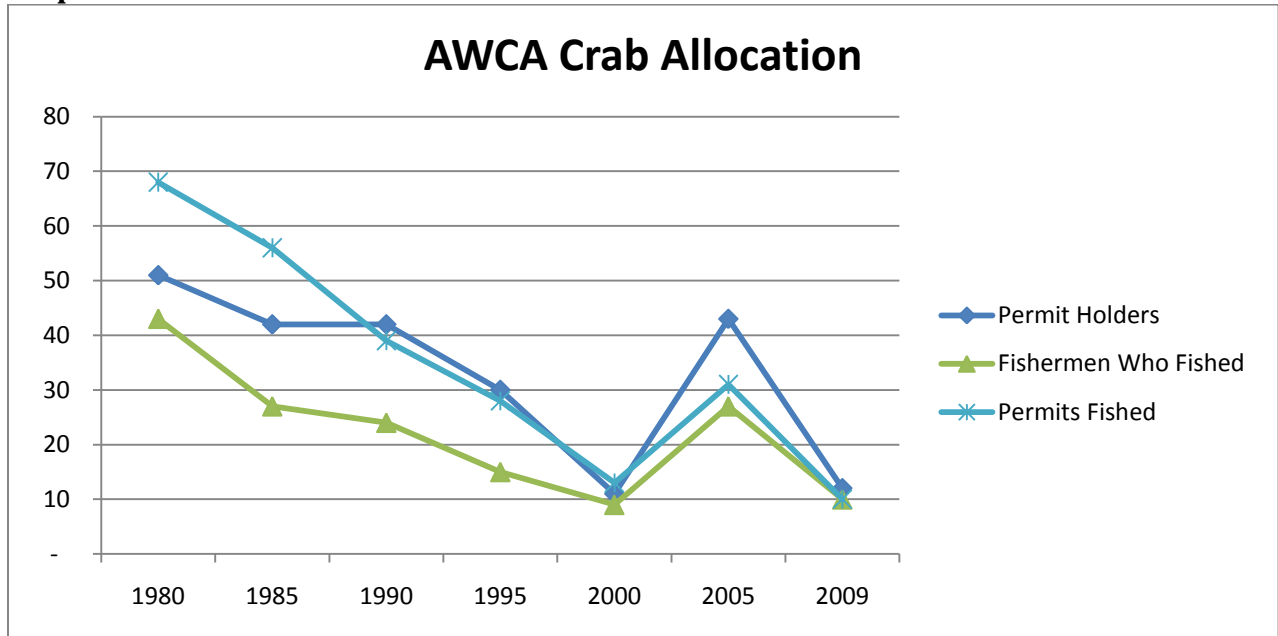


**Graph AWCA 8**

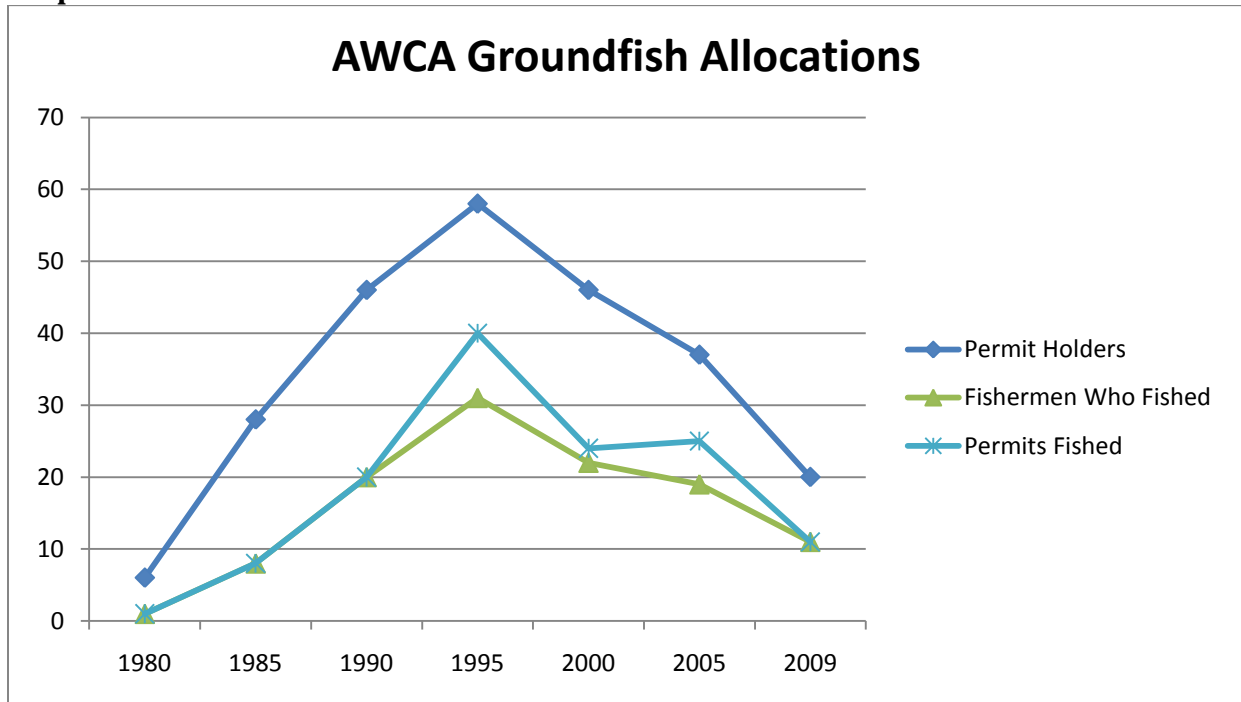


The make-up of Permit Holders, Fishermen Who Fish and Permits Fished varies from season to season as seen in Graphs AWCA 9 - 12. There can be a number of reasons that the ratio changes between these classifications. If Permits Fished is greater, as in Graph AWCA 12, Total Permit Allocation, this may be an indication that fishermen are fishing more than one permit. In the Total Permits Graph, fishermen can hold permits in a number of various permits, as Kodiak fishermen appear to do. In Graph AWCA 9, Crab Allocation, a number of crab fisheries were available to fishermen, but as the stocks decreased in the 1980s there was less opportunity to hold multiple crab permits. If Permit Holders is greater, this can be an indication that fishermen are “stacking” permits, permits are not actually being fished or fishermen are fishing two permits, but recording all the catch under one permit. This is the case for the individual fisheries, but when extrapolated to all fisheries, it can be seen that fishermen generally hold more than one permit, as described earlier. The number of Permit Holders rises in Graphs AWCA 9 & 10, Crab and Groundfish Allocations leading up to rationalization of Crab in 2005 and during the Comprehensive Rationalization Program until the early 1990s. Permit Holders also increase allocation of Halibut up to 1985, which is odd because the trend follows what is expected leading to rationalization, but in this case allocations are changing 10 years prior to program implementation. If Fishermen Who Fish is greater, it could mean that there are fishermen that hold permits in other fisheries, but are not necessarily permit holders in the fishery being investigated. This scenario does not happen for the fisheries investigated for the AWCA. All categories narrow after rationalization programs are implemented.

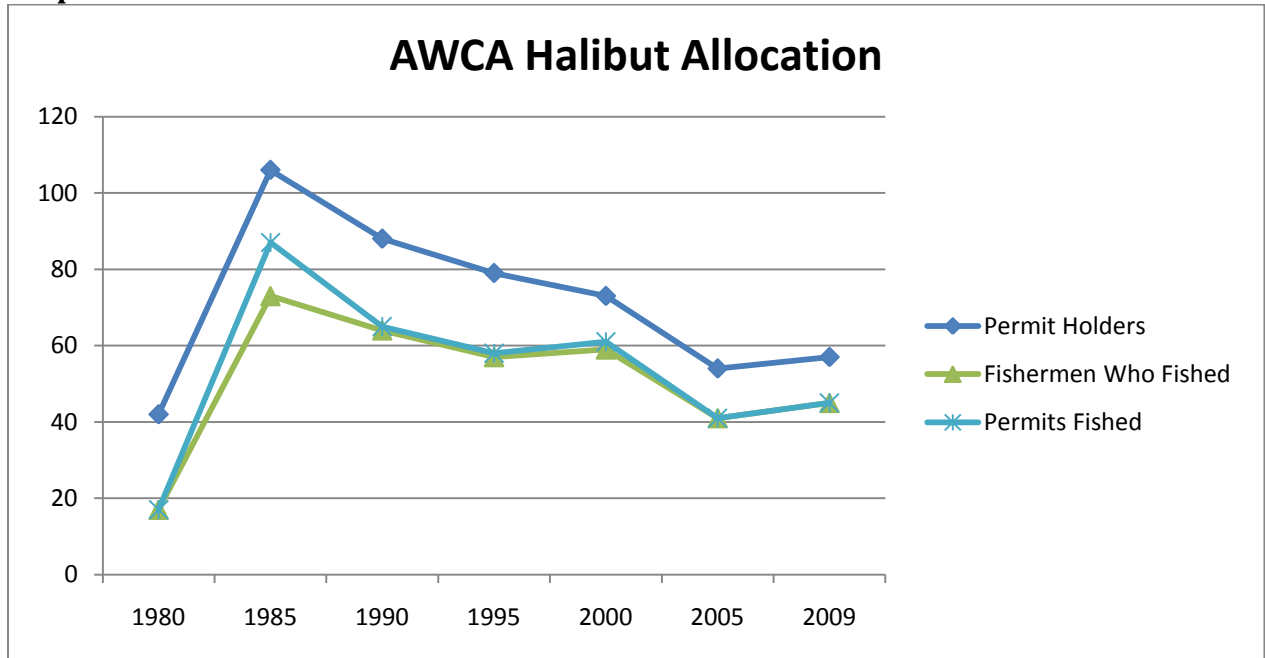
Graph AWCA 9



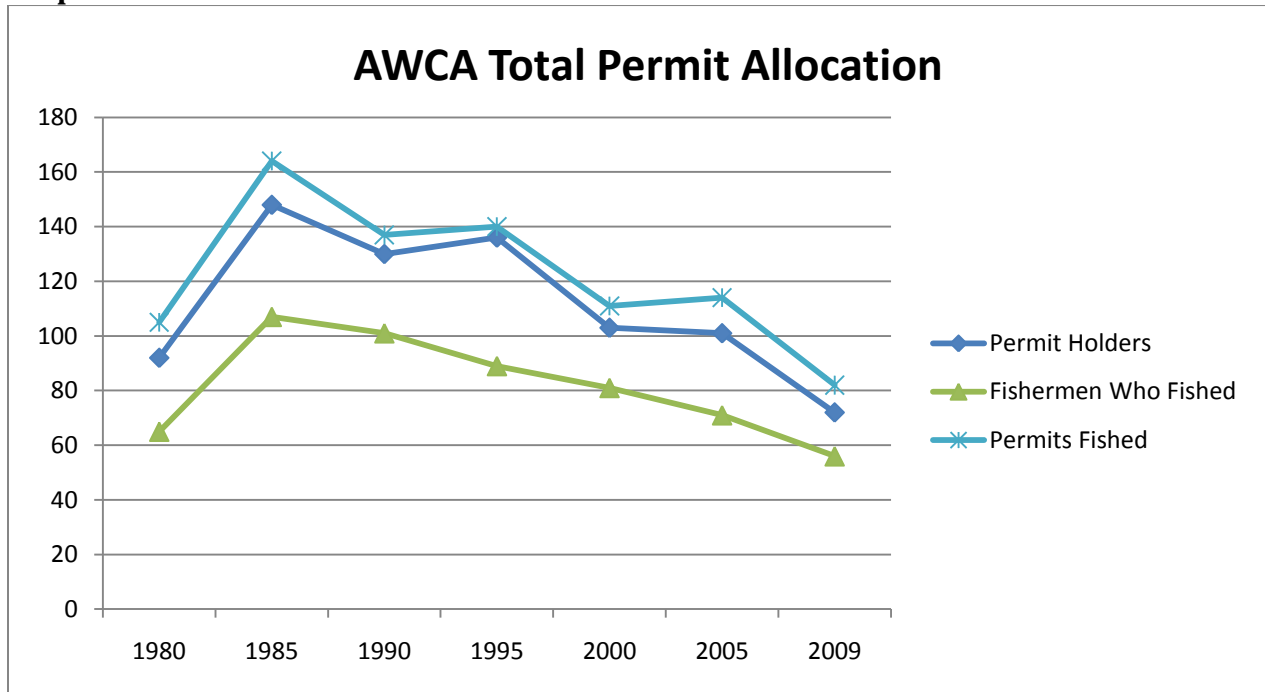
Graph AWCA 10



**Graph AWCA 11**

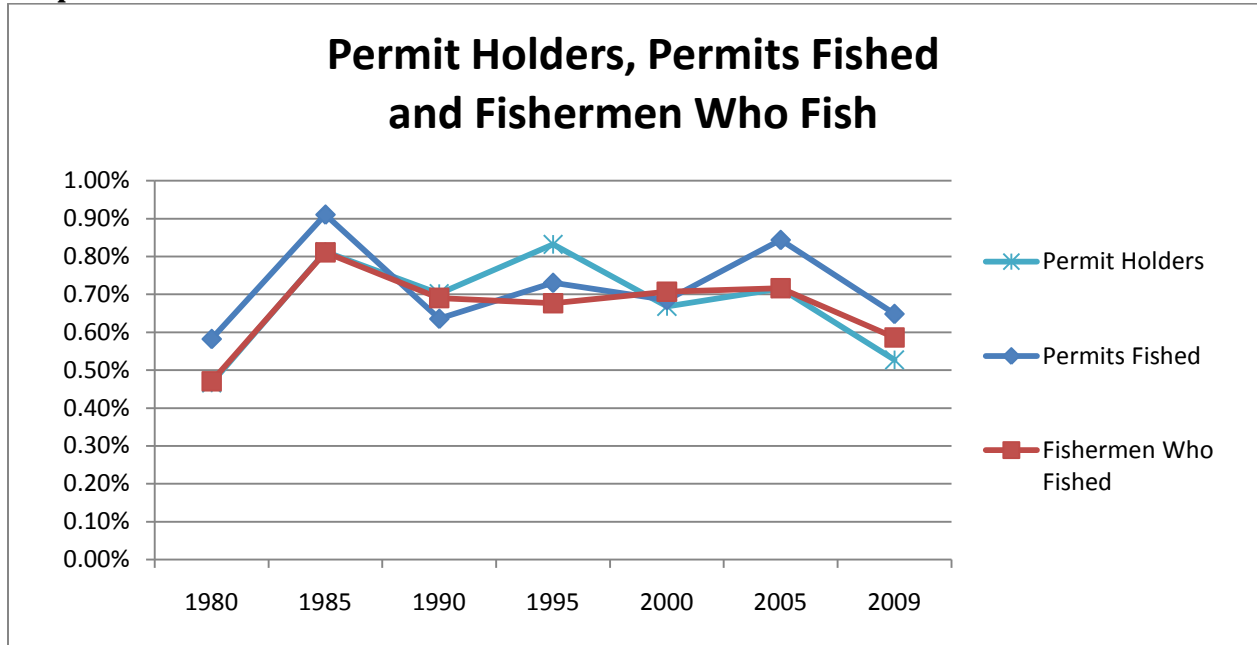


**Graph AWCA 12**

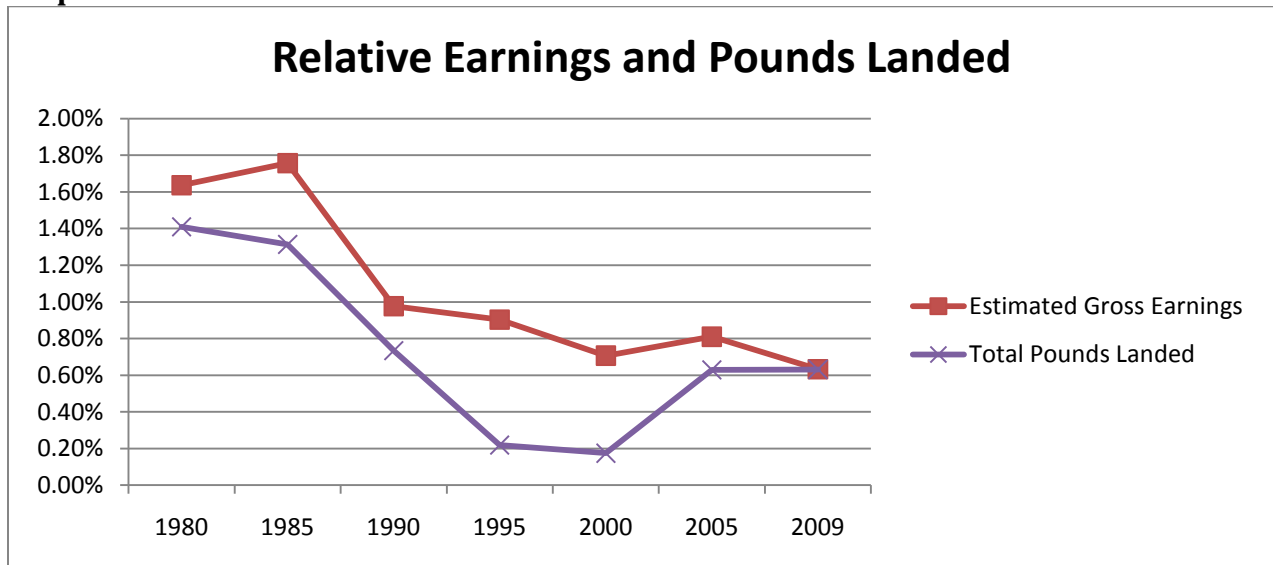


Relative to all other fishermen AWCA permit allocations are up slightly. Starting in 2000, the number of Permits Fished increased, and from 2005 the number of Permit Holders has been reduced at a greater rate; these numbers coincide with the rationalization of the Bering Sea Crab, which allows absentee ownership. Relative AWCA Earnings and Pounds Landed fell substantially during the 1980's, and have since leveled off.

**Graph AWCA 13**



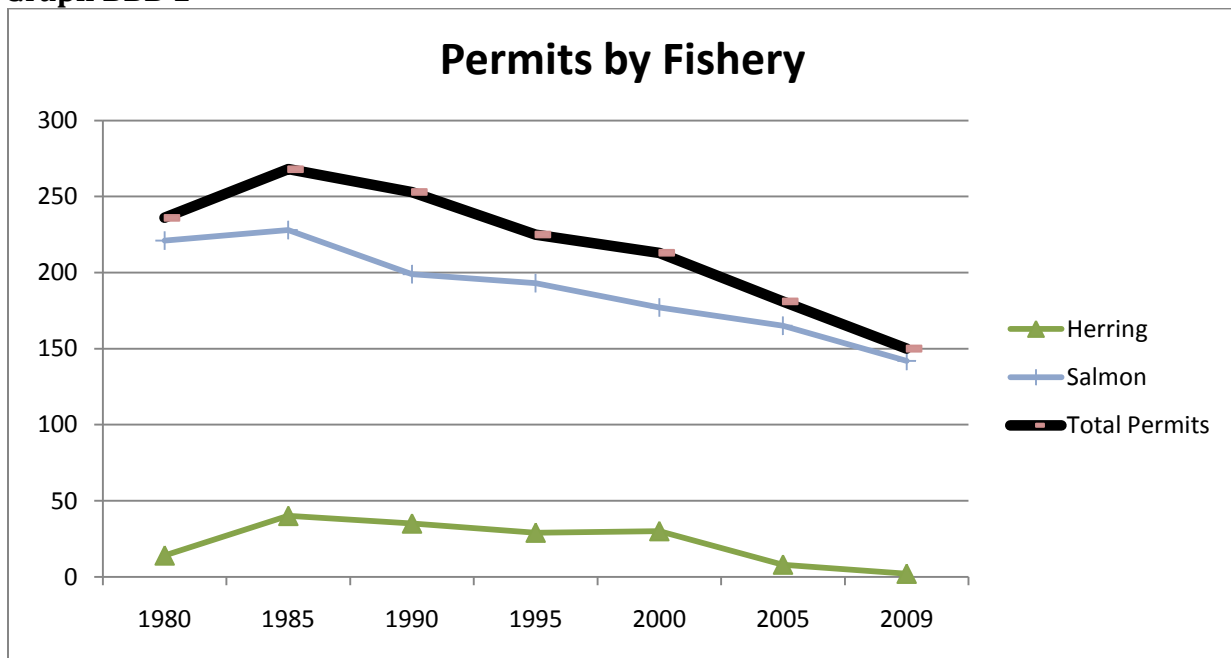
**Graph AWCA 14**



## **Bristol Bay Borough**

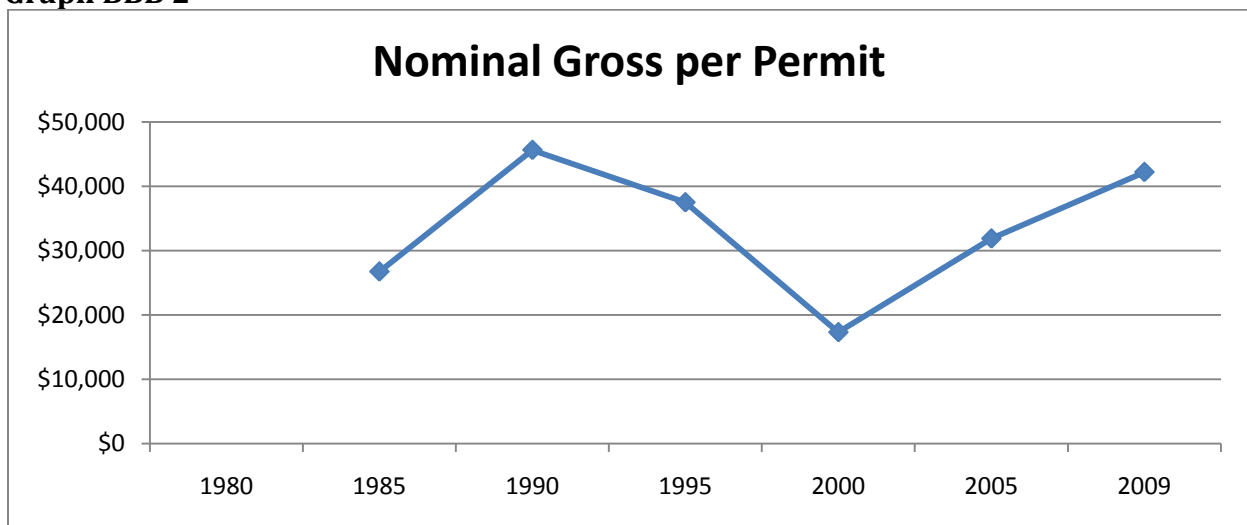
The absolute number of permits held by residents of BBB has declined since 1985. Limited data is available for the BBB due to the limited fishing participation outside of the Salmon and Herring fisheries, and of these Salmon is dominant. The variation between Total Permits and Salmon are only 8 permits. Total Permits Fished fell from 236 in 1985 to 150 in 2009, a factor of 36% over the recorded period.

**Graph BBB 1**

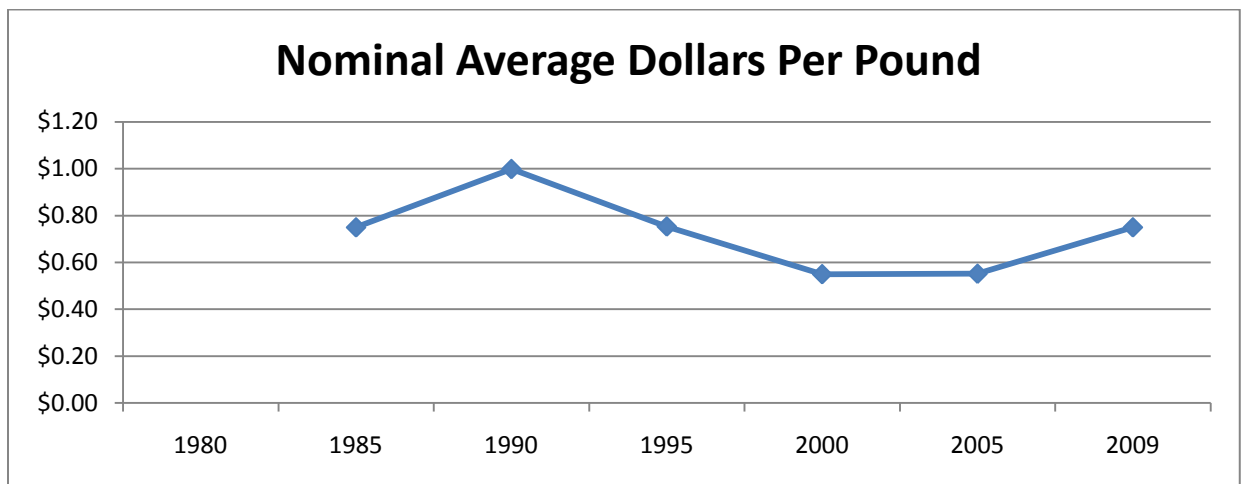


Nominal Gross Earnings per Permit is driven largely by the health of the salmon industry. Until the late 1980s, the industry was strong, but the influx of competition from the farmed salmon industry drove prices lower until the early 2000s, compounded with poor runs until 2004 hurt profitability; the prices and run strength picked up again from 2005 to 2009 improving average returns on a per pound and gross per permit. Adjusted Real Price tracks inflation over time, which accounts for a 3.54% annual price increase in the Consumer Price Index (CPI). Real Gross per Permit shows that even with the stronger runs and prices, today's profits remain substantially below the "heydays" of the late 1980s.

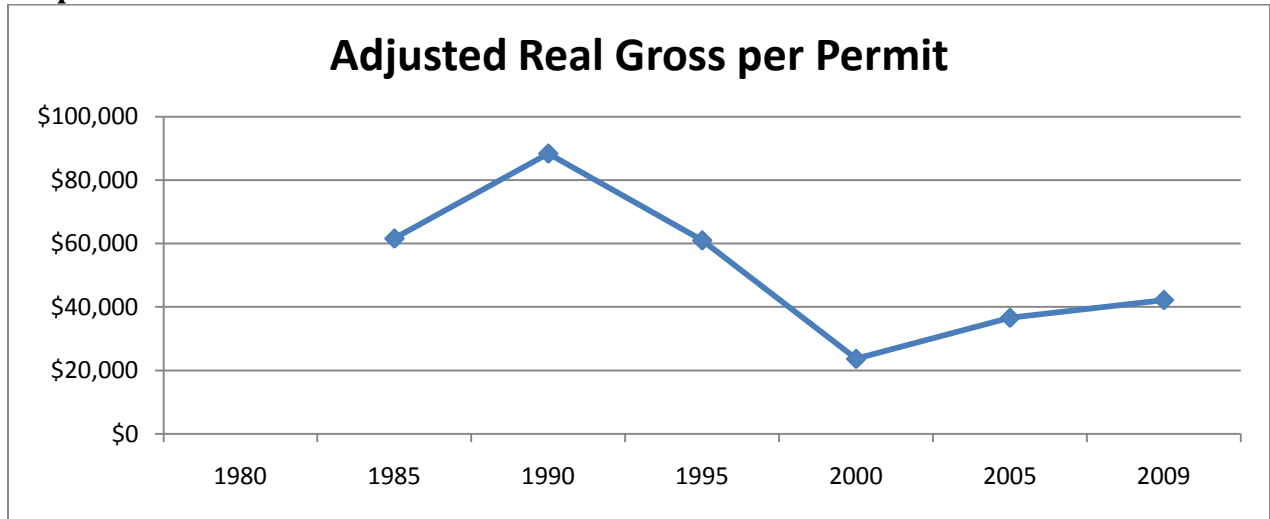
**Graph BBB 2**



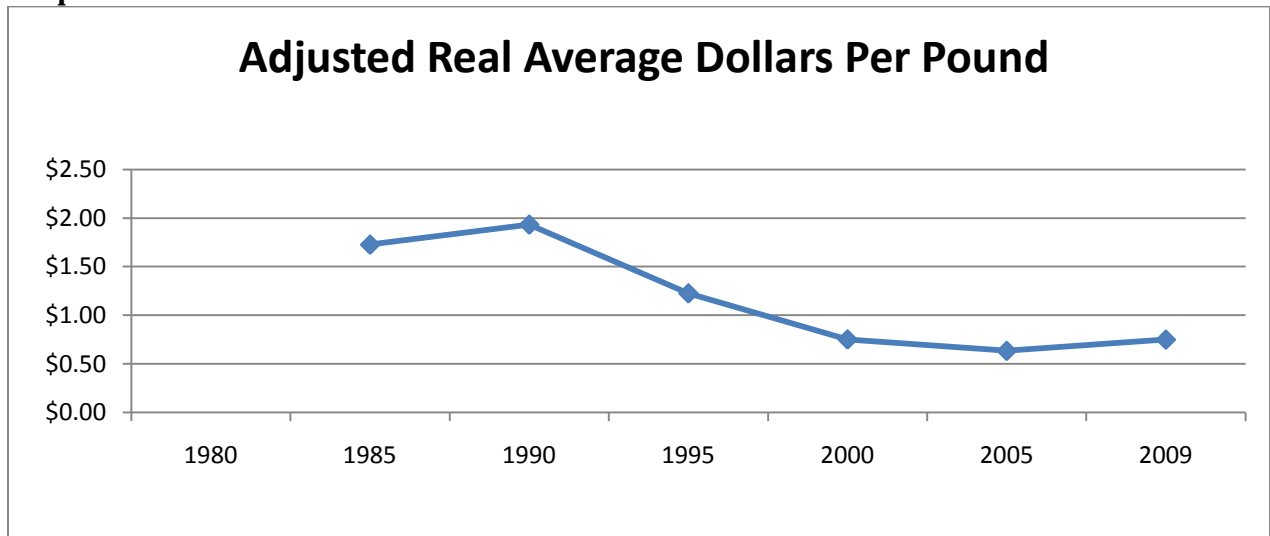
**Graph BBB 3**



**Graph BBB 4**

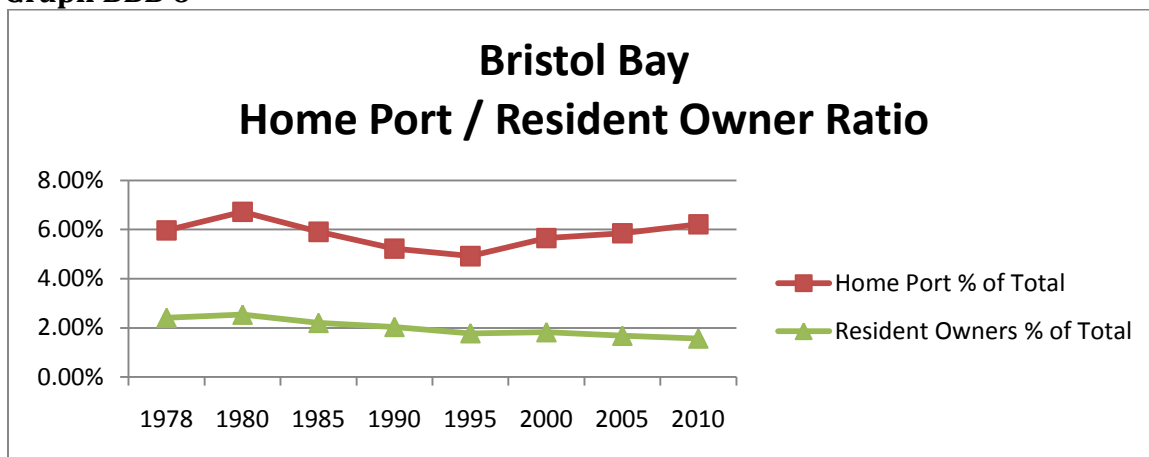


**Graph BBB 5**

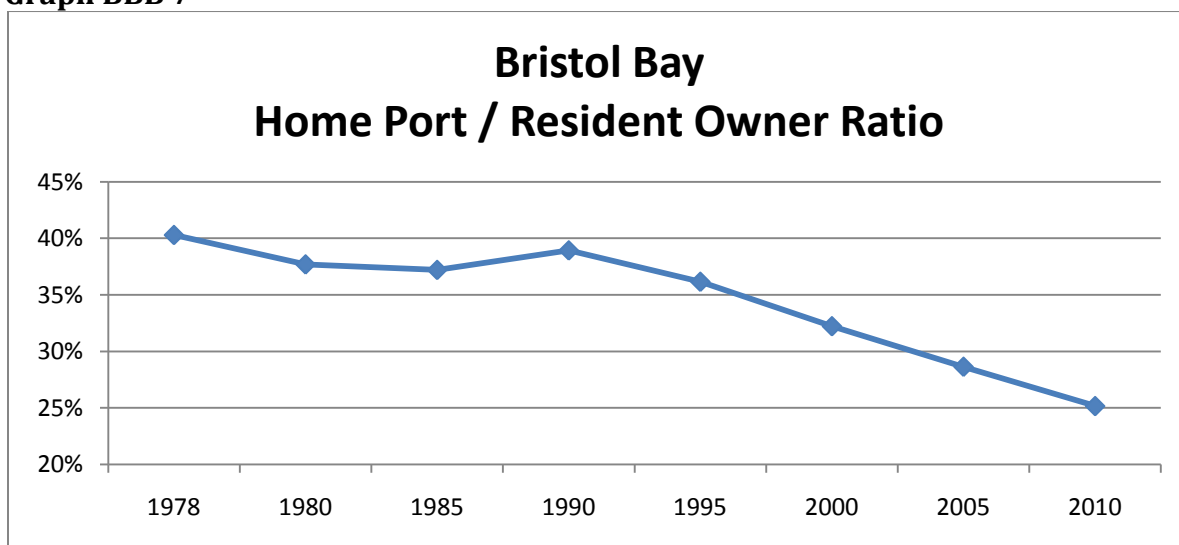


While vessel ownership is not a defined resource allocation, it is important in describing the make-up and strength of the fishing community. In relative terms Bristol Bay has maintained its percentage of Home Port vessels, but Resident Boat Owners have declined steadily. Notice the large separation between Home Port and Resident Boat Owner, which is reflected in the low ratio in Graph BBB 7 of only 25% in 2009. This could be an indication that many fishermen travel to Bristol Bay only to fish, but do not live in the Bristol Bay communities. Starting in 1995, the ratio of Home Port/Resident Boat Owner diverged more rapidly.

**Graph BBB 6**

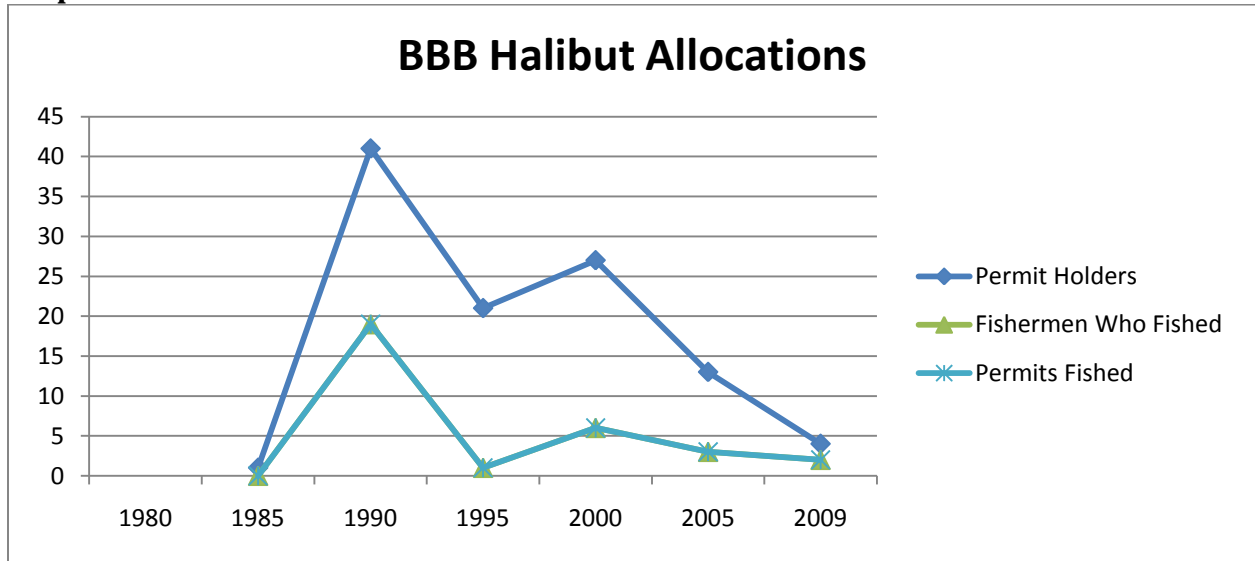


**Graph BBB 7**

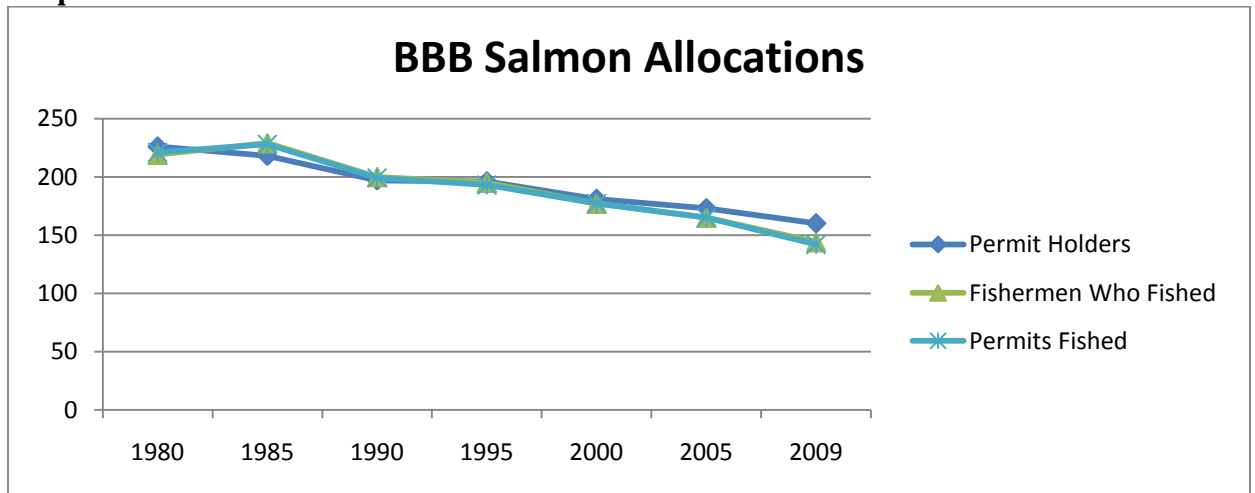


The make-up of Permit Holders, Fishermen Who Fish and Permits Fished varies from season to season as seen in Graphs BBB 8 - 10. There can be a number of reasons that the ratio changes between these classifications. If Permits Fished is greater, as in Graph BBB 10, Total Permit Allocation between 1985 and 2005, this may be an indication that fishermen are fishing more than one permit. If Permit Holders is greater, as in Graph BBB 8, Halibut Allocation, this can be an indication that fishermen are “stacking” permits, permits are not actually being fished or fishermen may be leasing their catch rights to other. Graph BBB 9, Salmon Allocations displays a slight increase of Permit Holders relative to the other categories after 2005, which may be indicative of permit stacking.

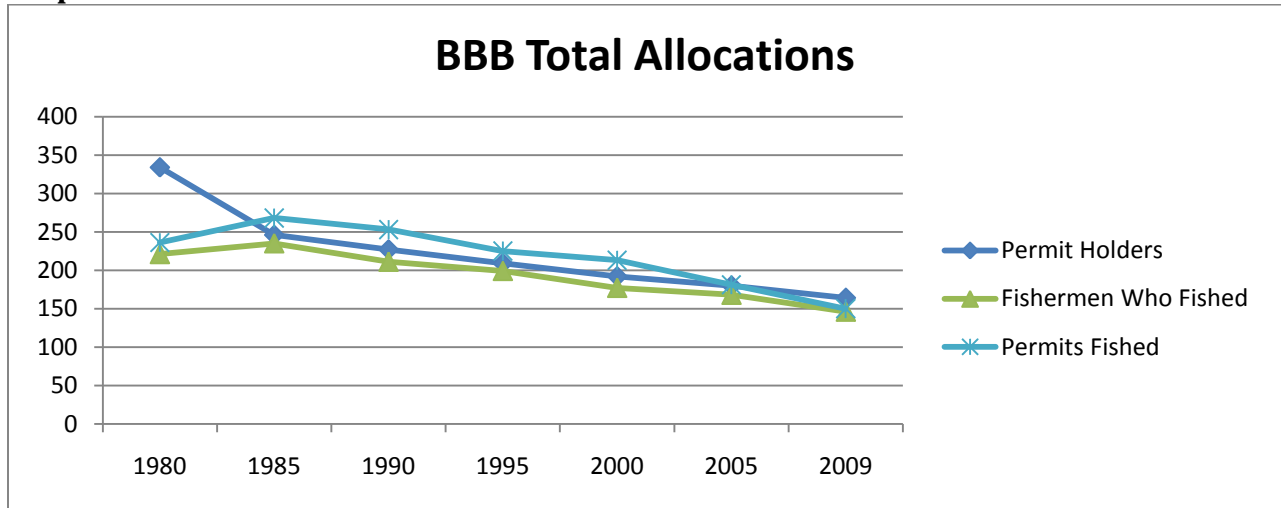
Graph BBB 8



Graph BBB 9

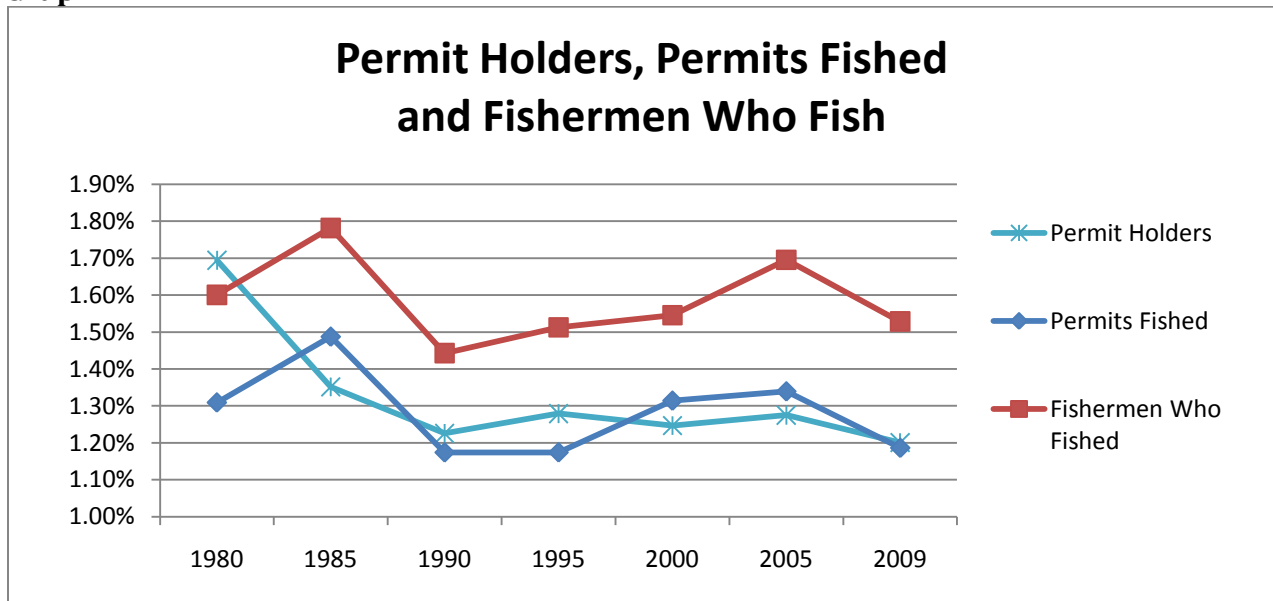


**Graph BBB 10**

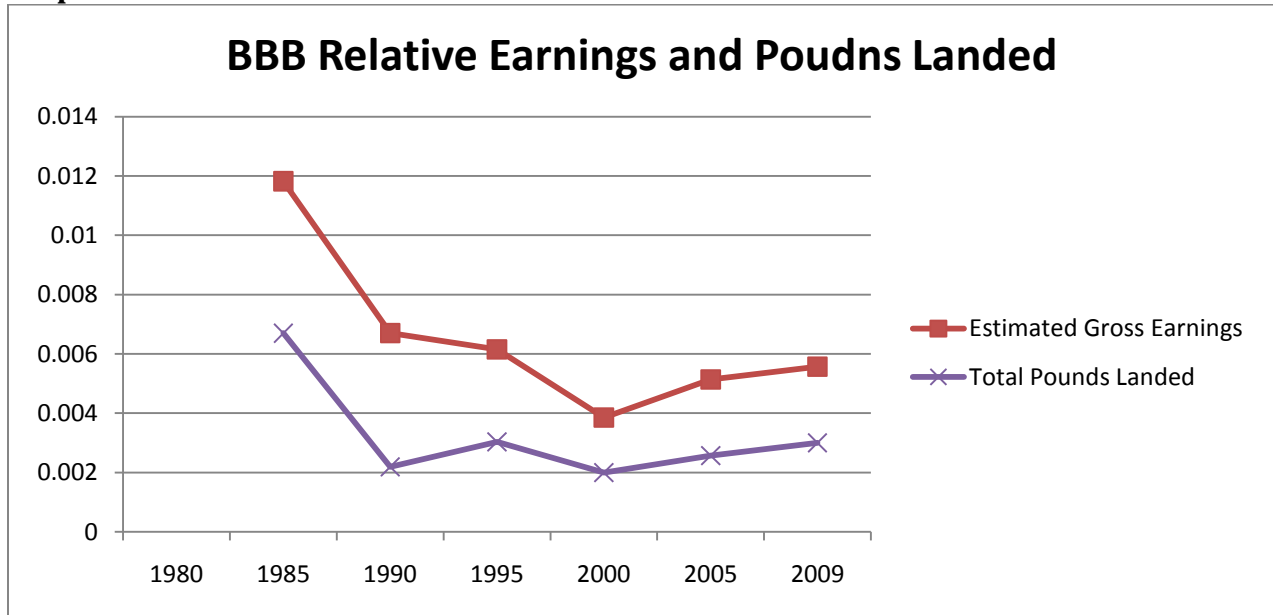


Relative to all other fishermen BBB permit allocations are down slightly; Permit Holders is down considerably more than the other categories to 1990, before leveling out. Total Pounds Landed falls considerably before leveling off. Poor harvest are recorded in 2000, and improving in 2005 and 2009, although this is such a relatively small portion to relative to all pounds landed it does not reflect much of a change. Notice that total pounds landed by Bristol Bay Residents represents only .3% of all landings in Alaska.

**Graph BBB 11**



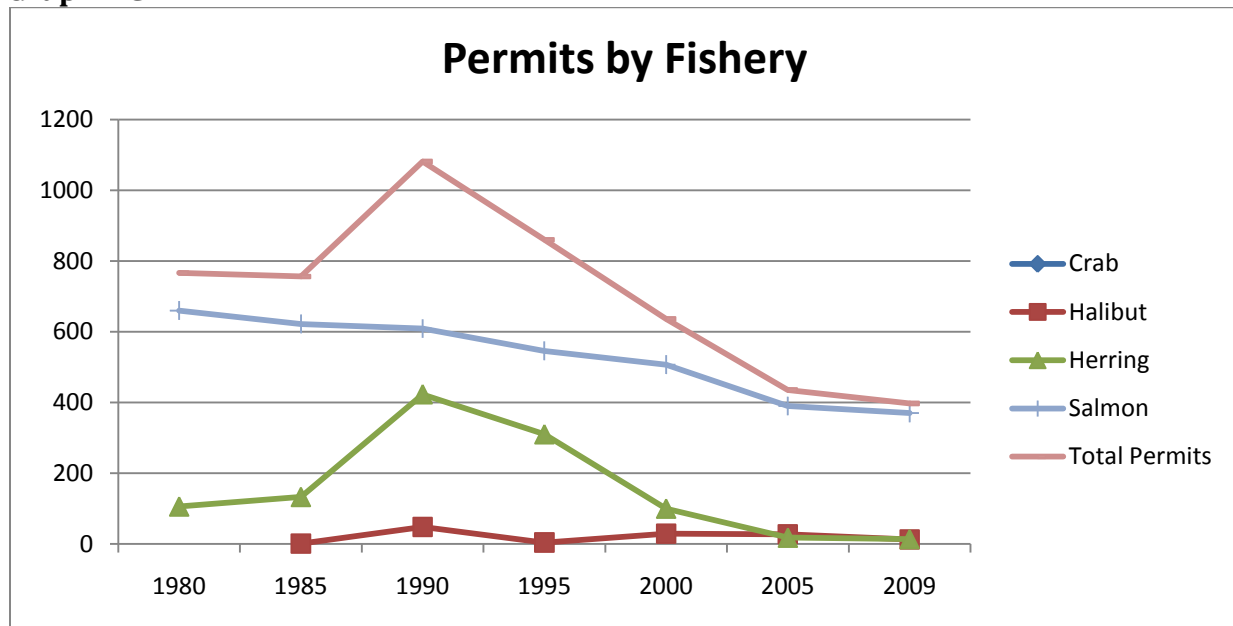
Graph BBB 12



## Dillingham Census Area

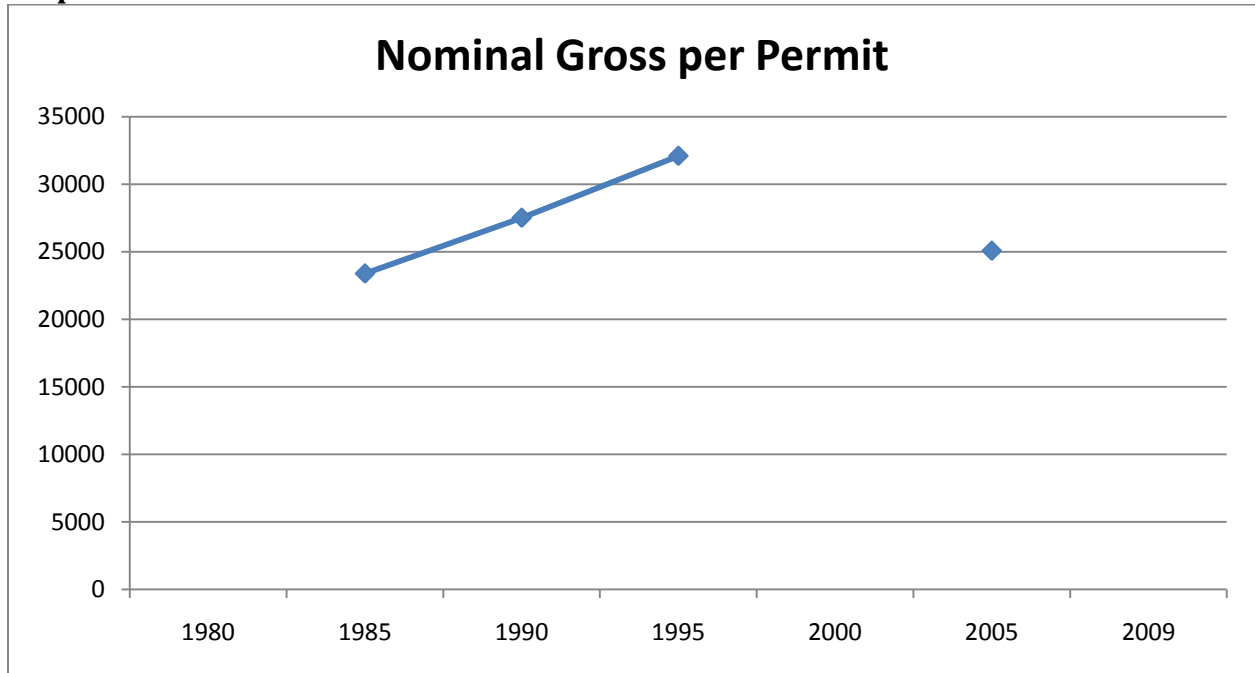
The absolute number of permits held by residents of DCA has declined since 1990. DCA is dominated by the Salmon fishery, and for a period between 1985 and 2000 the Herring fishery. The variation between By 2009 the variance between Total Permits and Salmon is only 27 permits. Total Permits fished fell from 1081 in 1990 to 397 in 2009, a reduction of 63% over the recorded period.

**Graph DCA 1**

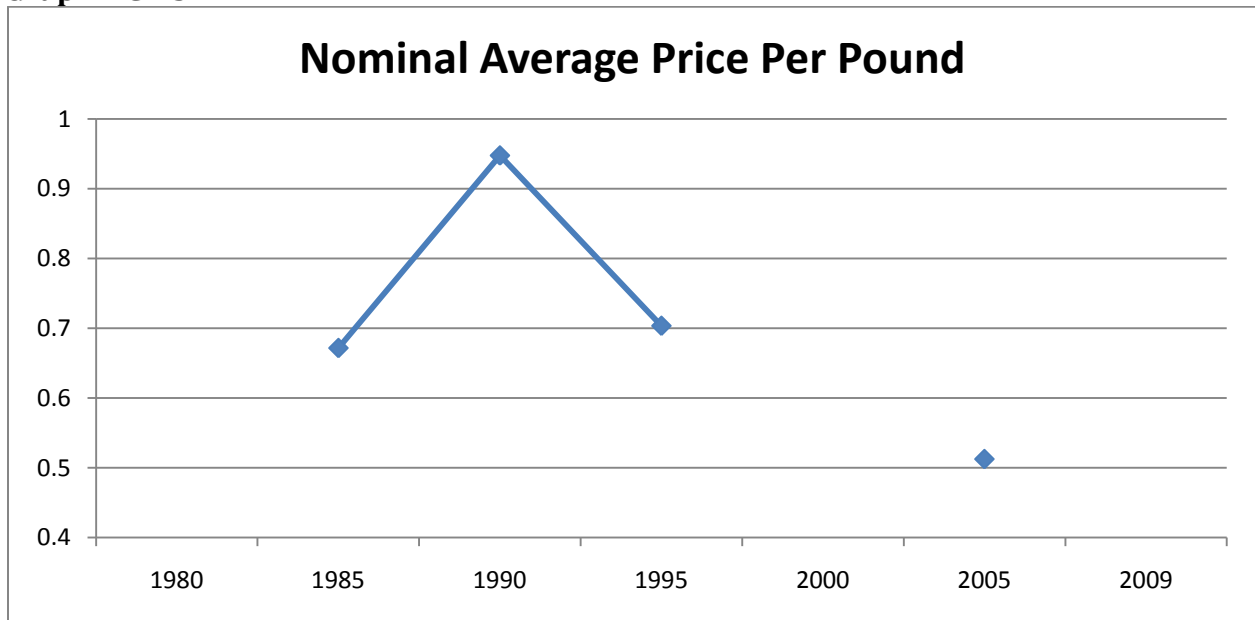


It is difficult to draw conclusions from the limited data provide. Similar to other salmon fisheries, prices paid to fishermen for salmon increased to 1990, and have since fallen to 2005. Adjusted Real Price tracks inflation over time, which accounts for a 3.54% annual price increase in the Consumer Price Index (CPI). Real Average Price per Pound shows that prices fell from the even further from the high of 1990.

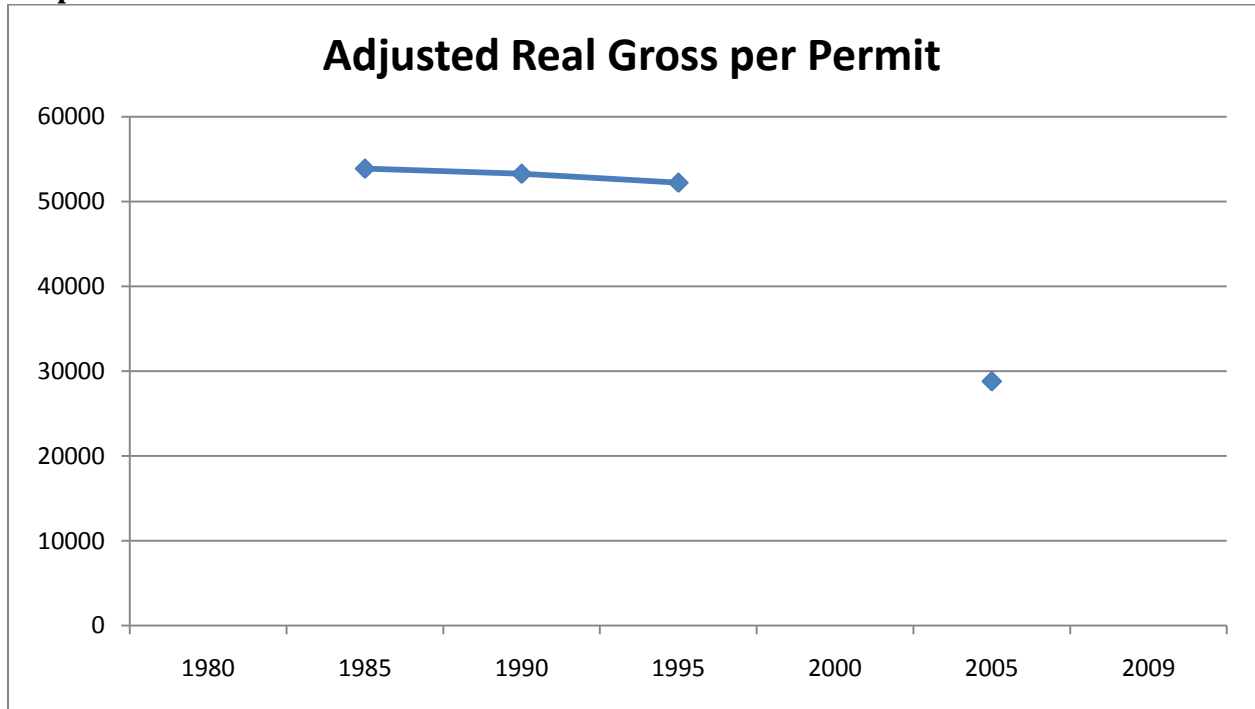
**Graph DCA 2**



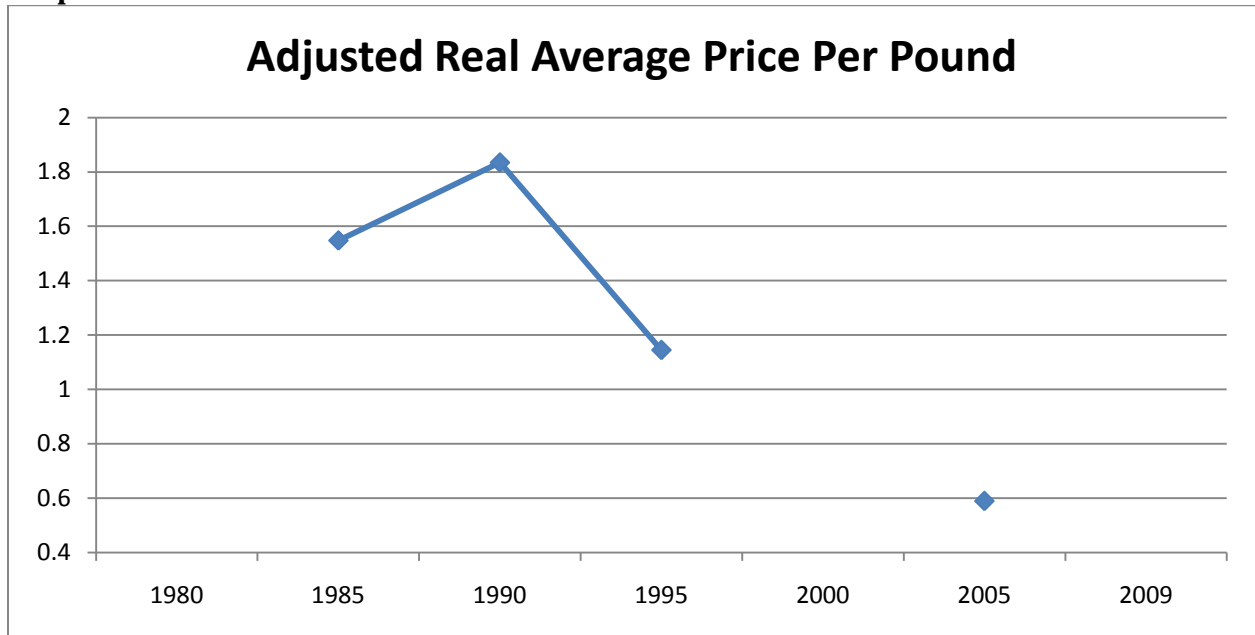
**Graph DCA 3**



**Graph DCA 4**

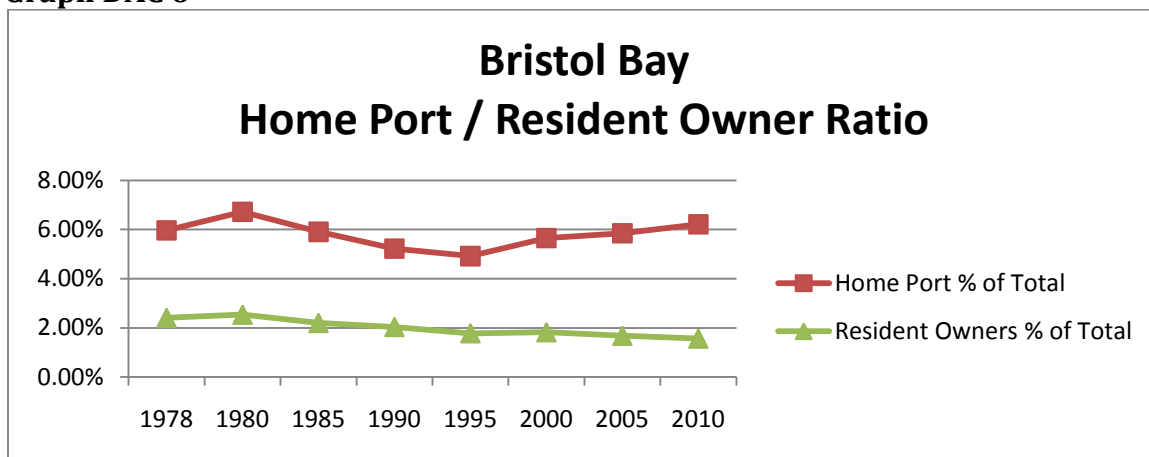


**Graph DCA 5**

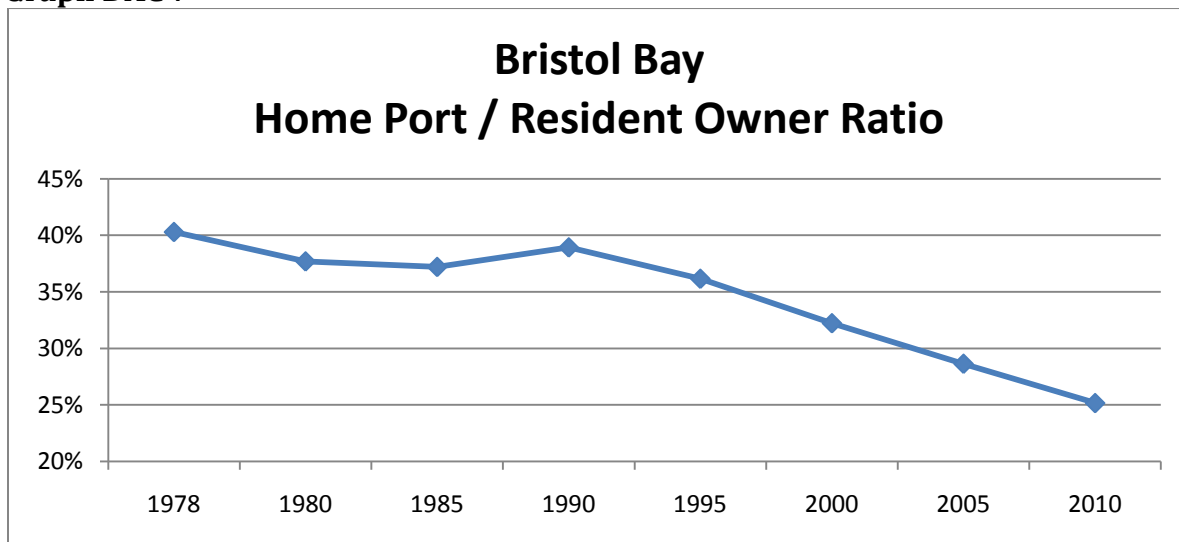


While vessel ownership is not a defined resource allocation, it is important in describing the make-up and strength of the fishing community. In relative terms Bristol Bay has maintained its percentage of Home Port vessels, but Resident Boat Owners have declined steadily. Notice the large separation between Home Port and Resident Boat Owner, which is reflected in the low ratio in Graph BBB 7 of only 25% in 2009. This could be an indication that many fishermen travel to Bristol Bay only to fish, but do not live in the Bristol Bay communities. Starting in 1995, the ratio of Home Port/Resident Boat Owner diverged more rapidly.

**Graph DAC 6**

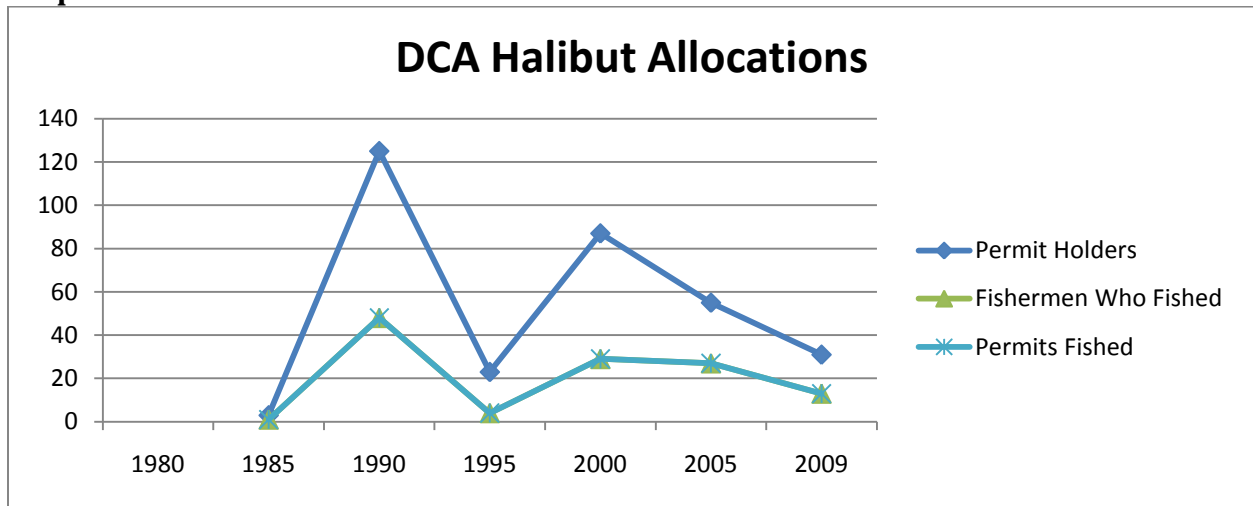


**Graph DAC 7**

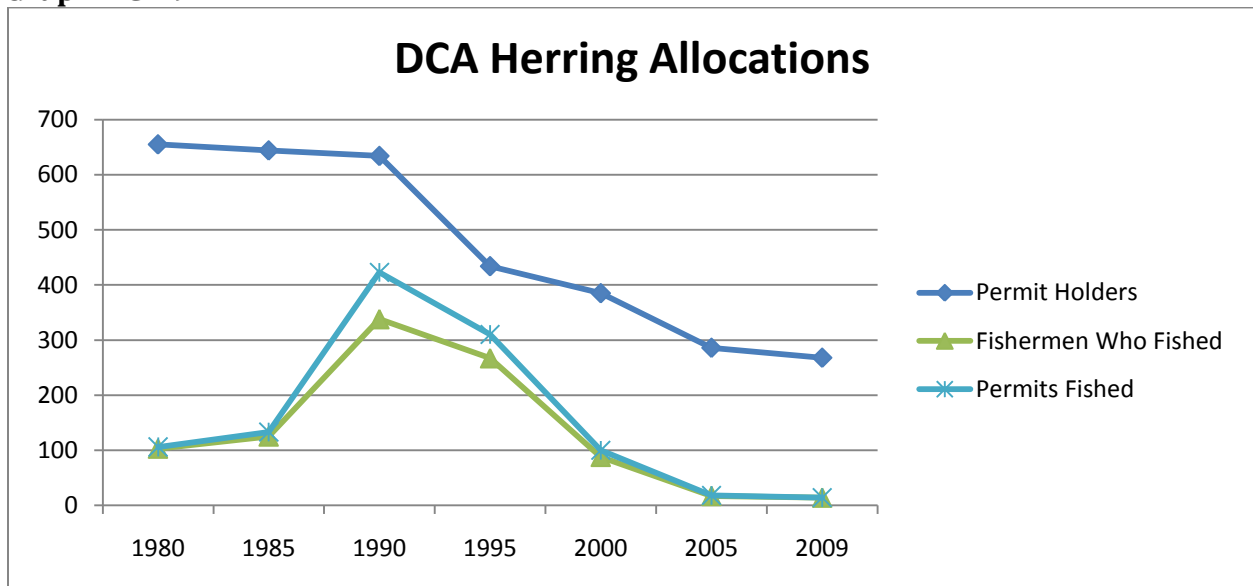


The make-up of Permit Holders, Fishermen Who Fish and Permits Fished varies from season to season as seen in Graphs DCA 8 - 11. There can be a number of reasons that the ratio changes between these classifications. If Permit Holders is greater, as in Graph BBB 8 - 10, in each of the individually investigated fisheries, this can be an indication that fishermen are “stacking” permits, permits are not actually being fished or fishermen may be leasing their catch rights to other. Graph BBB 10, Salmon Allocations displays a slightly smaller decrease relative to the other categories, after 2000, which may be indicative of permit stacking. Graph DCA 11 shows that while all categories have decreased over the period, Permit Holders have declined less.

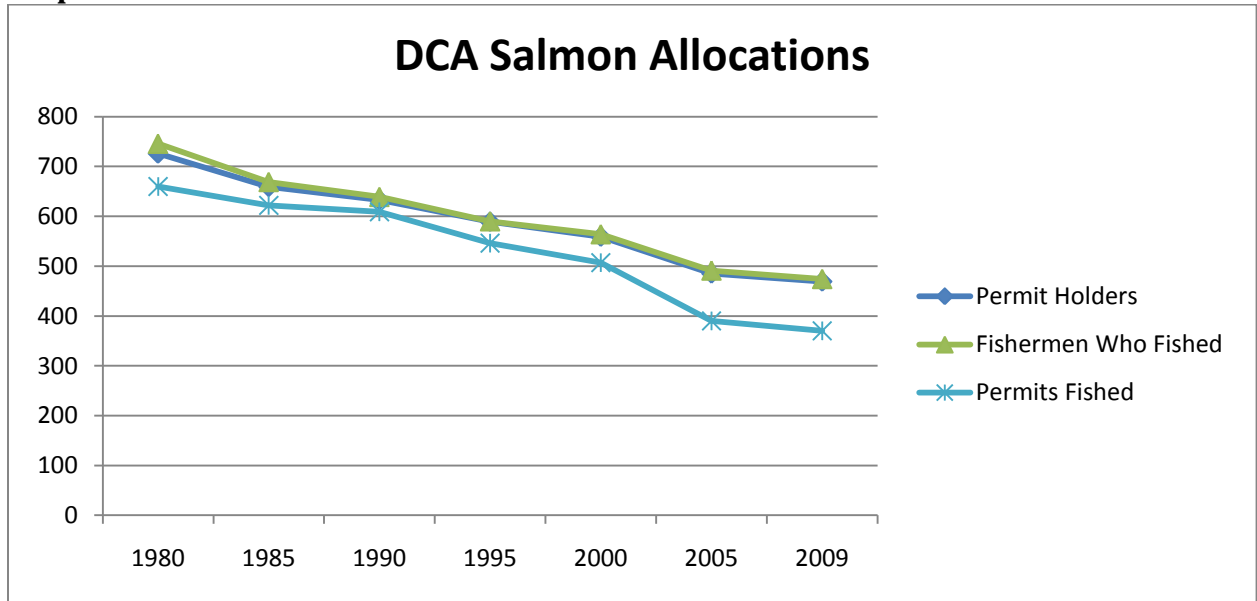
Graph DCA 8



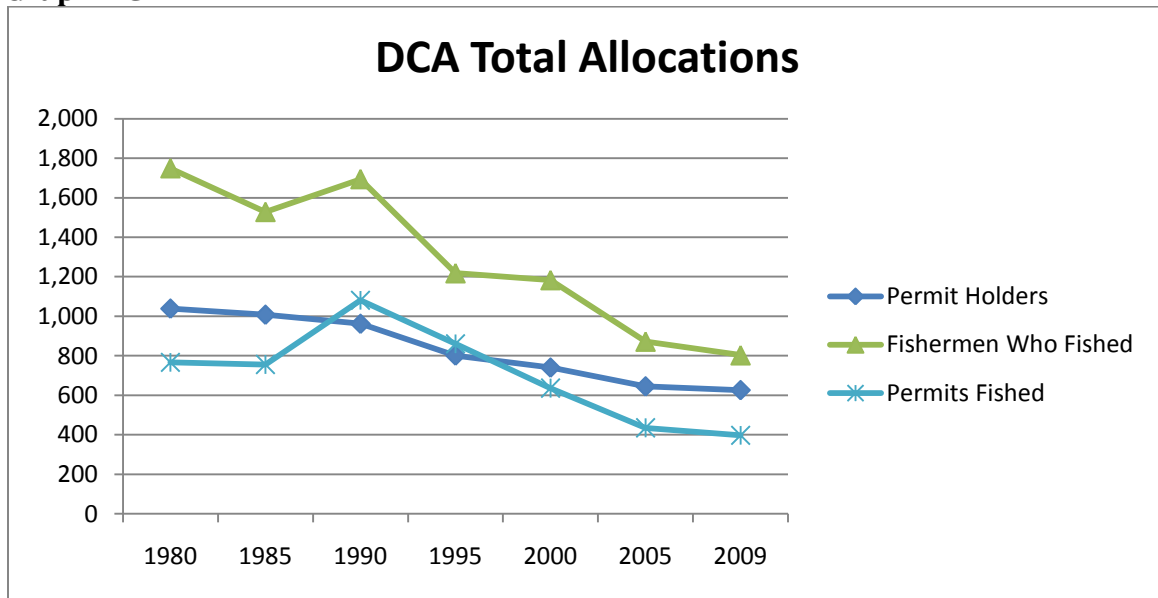
Graph DCA 9



**Graph DCA 10**

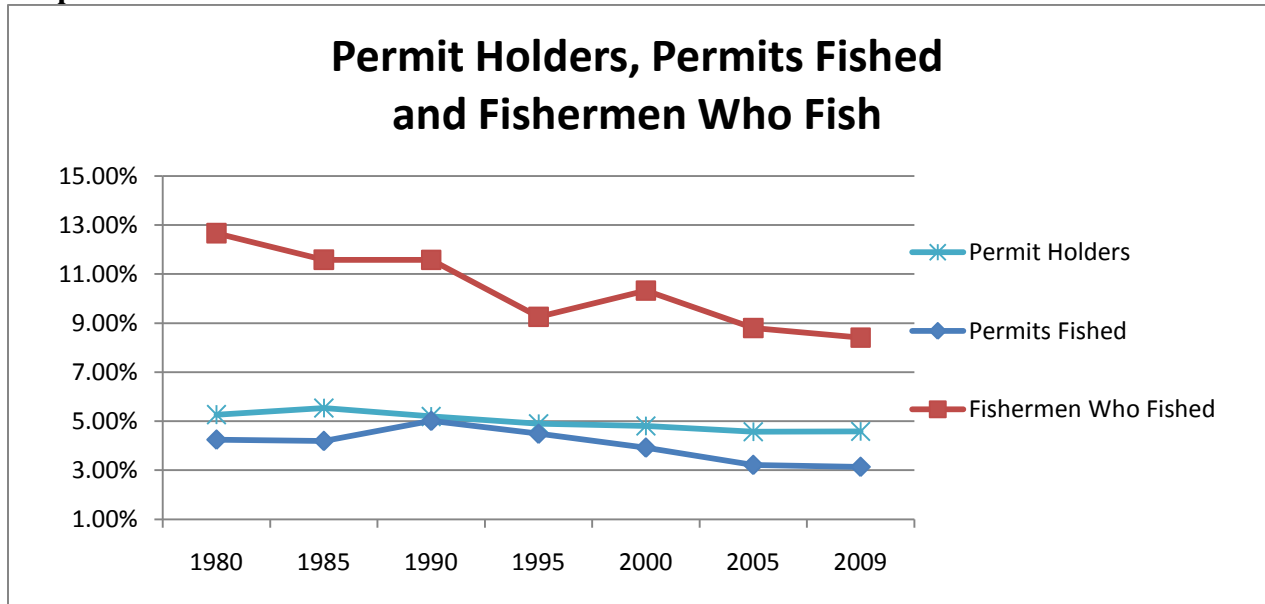


**Graph DCA 11**

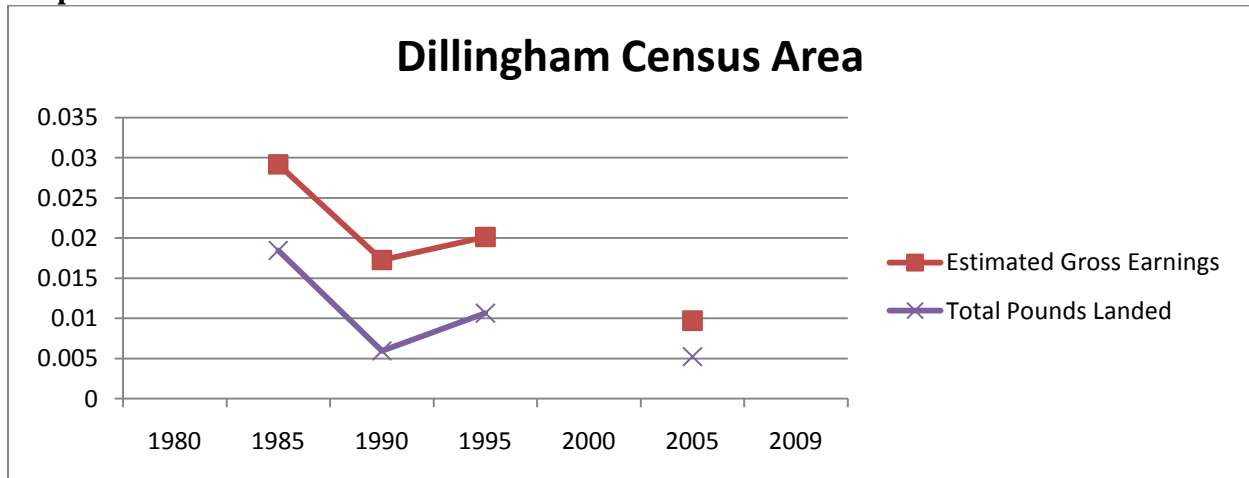


Relative to all other fishermen BBB permit allocations are down; There is considerable variation between Fishermen Who Fish compared to Permits Fished and Permit Holders, although the separation has narrowed over the time period. Total Pounds Landed and Estimated Gross earnings are directly related to conditions in the salmon seasons; relatively little data is provided in these categories to draw conclusions.

**Graph DCA 12**



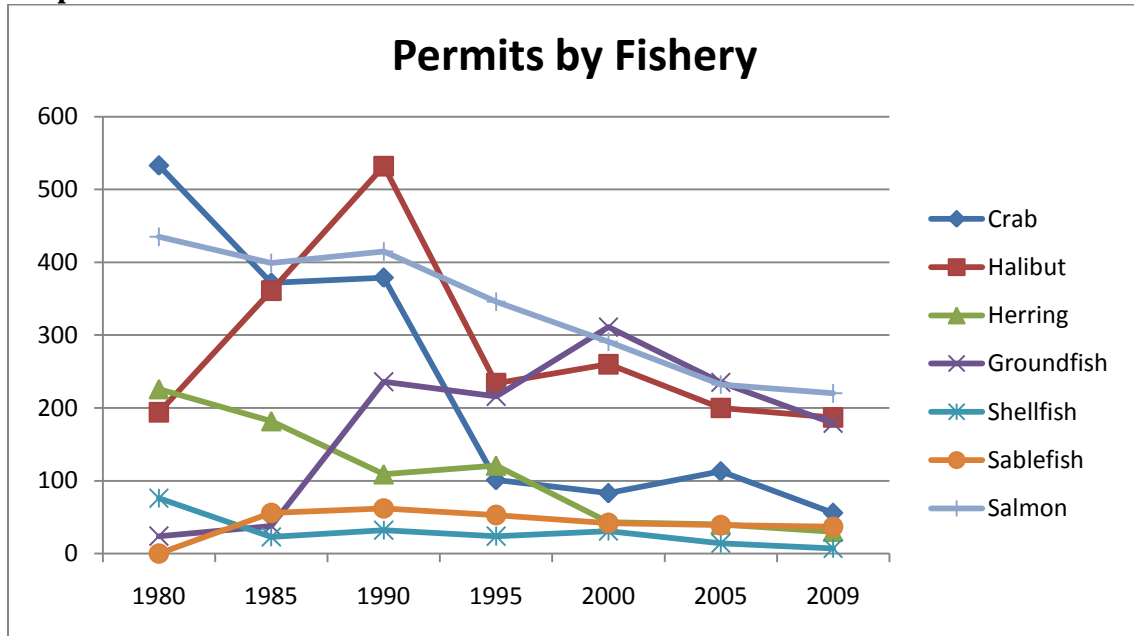
**Graph DCA 13**



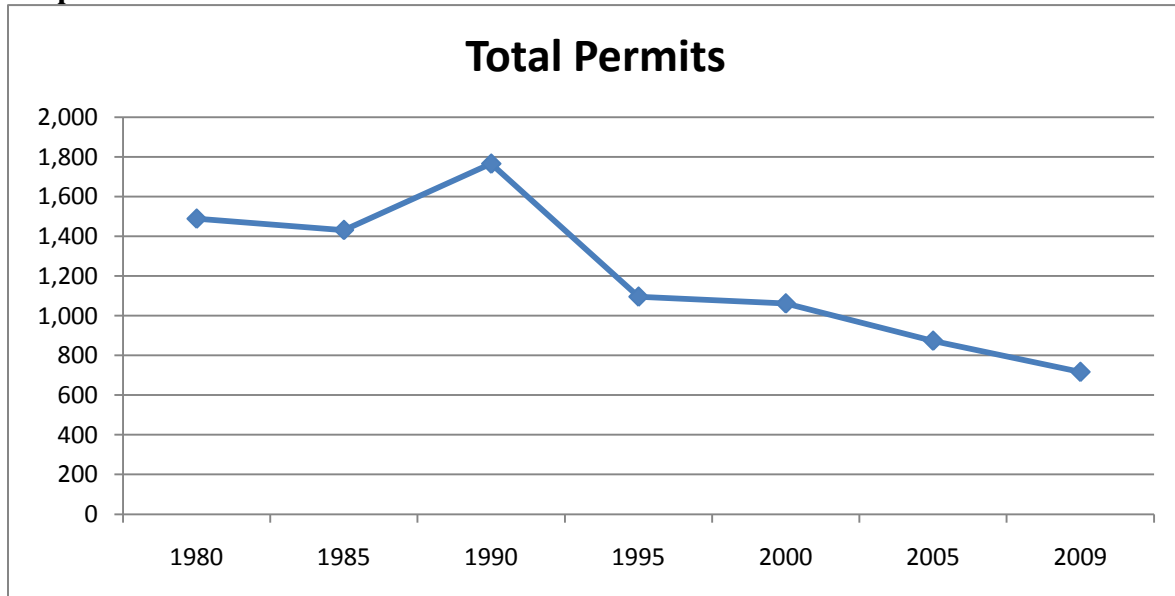
## **Kodiak Island Borough**

The absolute number of permits held by residents of Kodiak has declined since 1980. All permits of commercially harvestable species have declined, except for groundfish that have increased, and halibut and sablefish, which have remained stable over the 30 year history. All fisheries to experience rationalization saw an increase in permits in the years prior to privatization, and a sharp drop after programs were implemented. The most drastic increase in licenses can be seen leading up to the IFQ system instilled in the halibut fishery in 1995. Similar trends can be identified in groundfish during the Comprehensive Rationalization Program discussion from the late 1980's to the early 1990's, leading to the Inshore/Offshore Allocations in 1992 and rising again prior to the actual implementation of the American Fisheries Act in 1999 which rationalized the Bering Sea Pollock fishery; and the crab fishery prior to the rationalization program initiation in 2005. Both the groundfish and crab participation have since declined after rationalization. Halibut and groundfish licenses appear to have settled around the traditional number of licenses prior to rationalization, but may be trending lower in recent years as the industry consolidates towards fewer, more efficient operations. The licenses issued in the crab fishery appear to have fallen substantially before rationalization and continue trending downward after implementation. Total fishing licenses renewed fell from 1,488 to 716, a factor of 52% over the recorded period.

Graph KIB 1

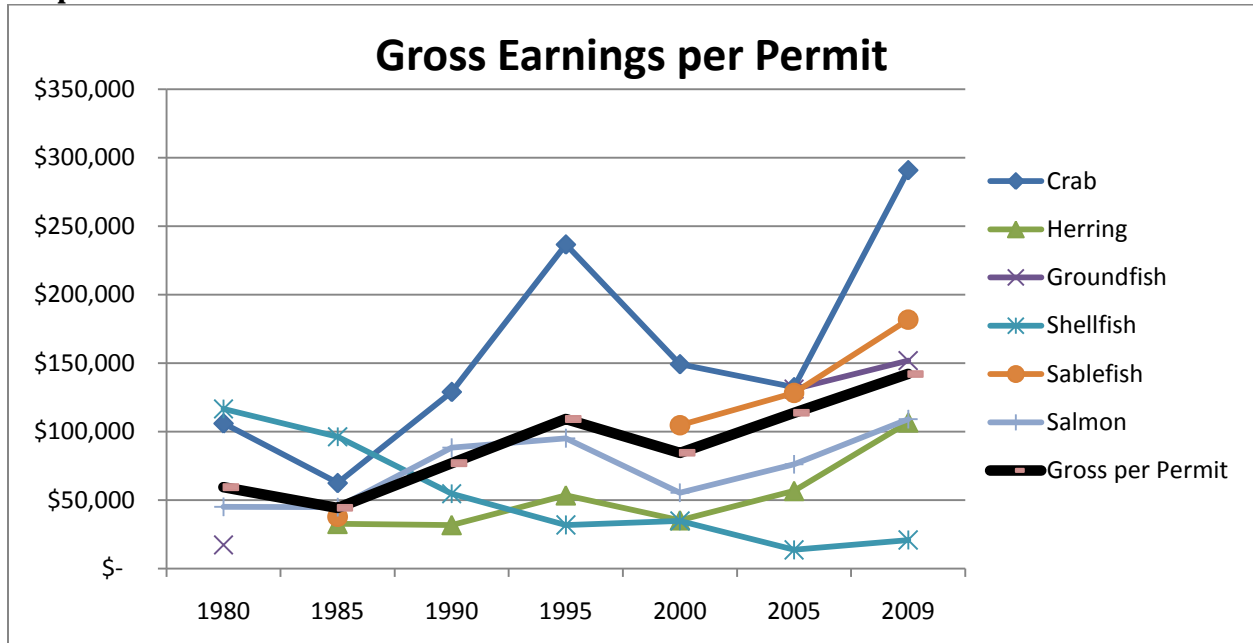


Graph KIB 2

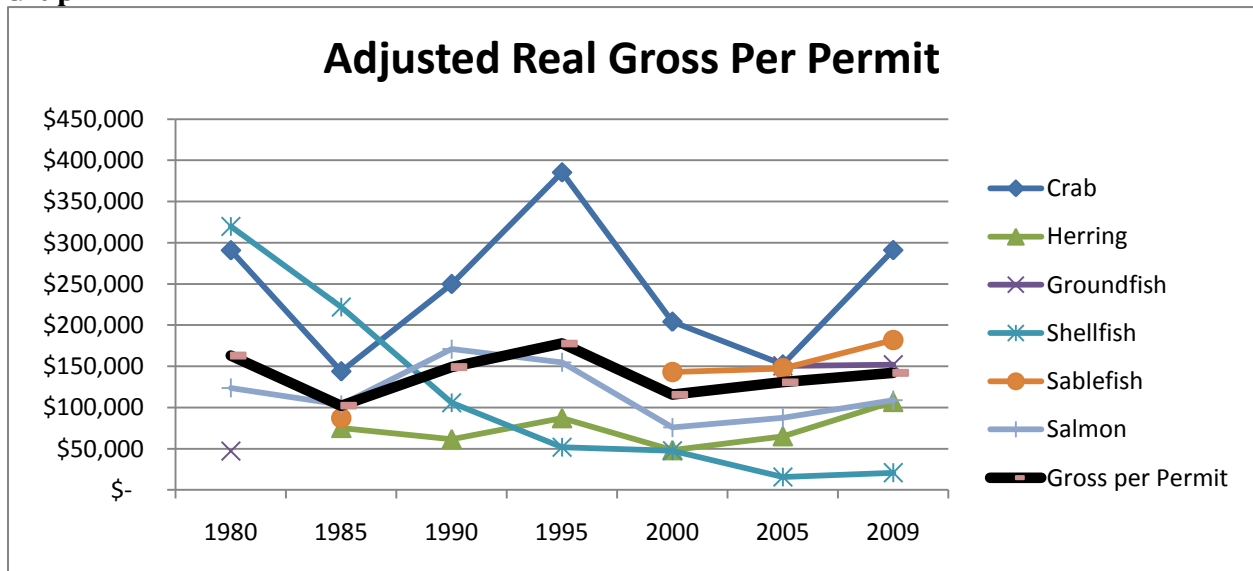


While the number of permits was falling, every permit by species became more valuable in terms of gross earnings per permit with the exception of shellfish. This is expected since resource allocation allows for the number of licenses to be reduced, and to remove less productive operations. The earnings per permit for crab, groundfish and sablefish expand substantially after rationalization, which would have an even greater effect on reducing inefficient operations, and consolidating resources towards the most effective use. Herring and salmon appear to be more affected by market fluctuations, such as competition from farmed salmon and the strength of the Japanese economy. Earnings for halibut is not reliable, and thus omitted from these results, although the price per pound and average value per pound of halibut quota has risen substantially over the past 15 years since rationalization. While the average earnings per permit have increased over the period, the average returns per pound have decreased. This is likely a function of increasing salmon prices driving the average price higher through the 1980's followed by a downward trends, and an increasing volume of lower value groundfish. Adjusted Real Price tracks inflation over time, which accounts for a 3.54% annual price increase in the Consumer Price Index (CPI). The Adjusted Real Gross Earnings per Pound reflect a steady decline over the period. The Real Gross per Permit remains generally flat, only Sablefish and Groundfish have seen a real increase in the average returns per permit. An Assumption can be made that halibut would track similarly to the Sablefish, if not better.

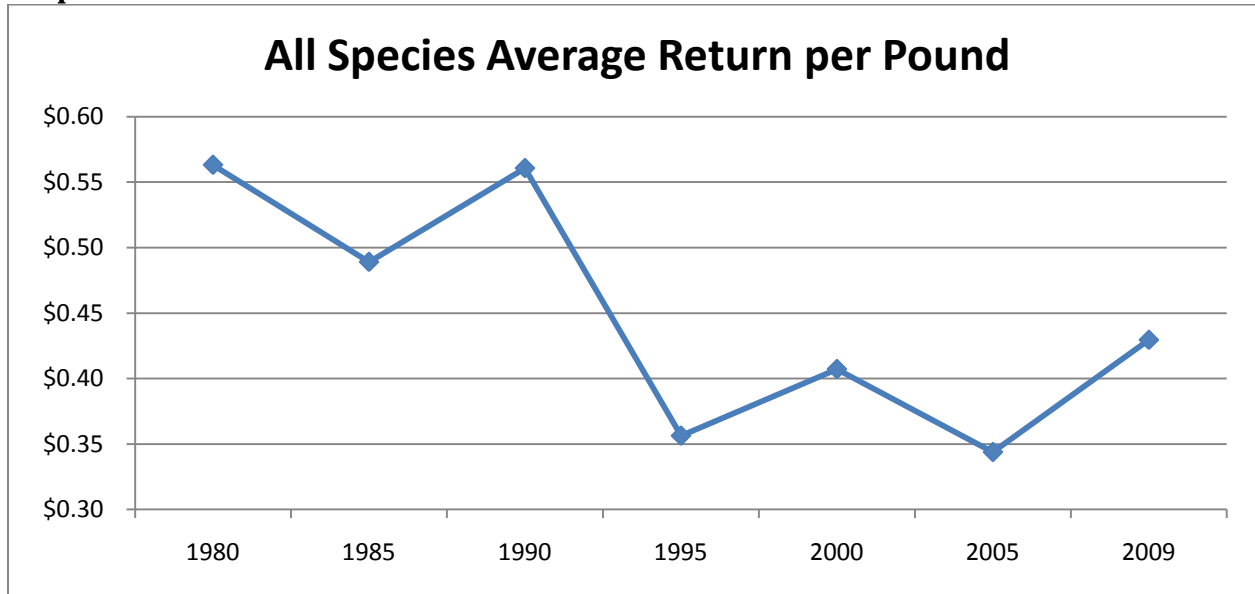
**Graph KIB 3**



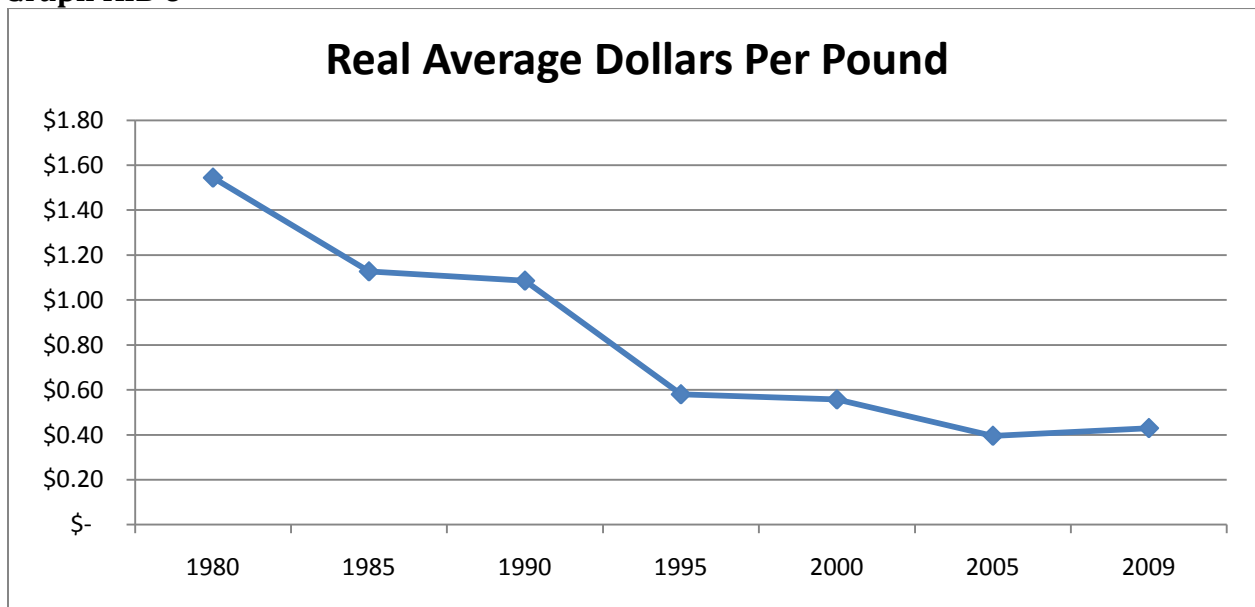
**Graph KIB 4**



**Graph KIB 5**

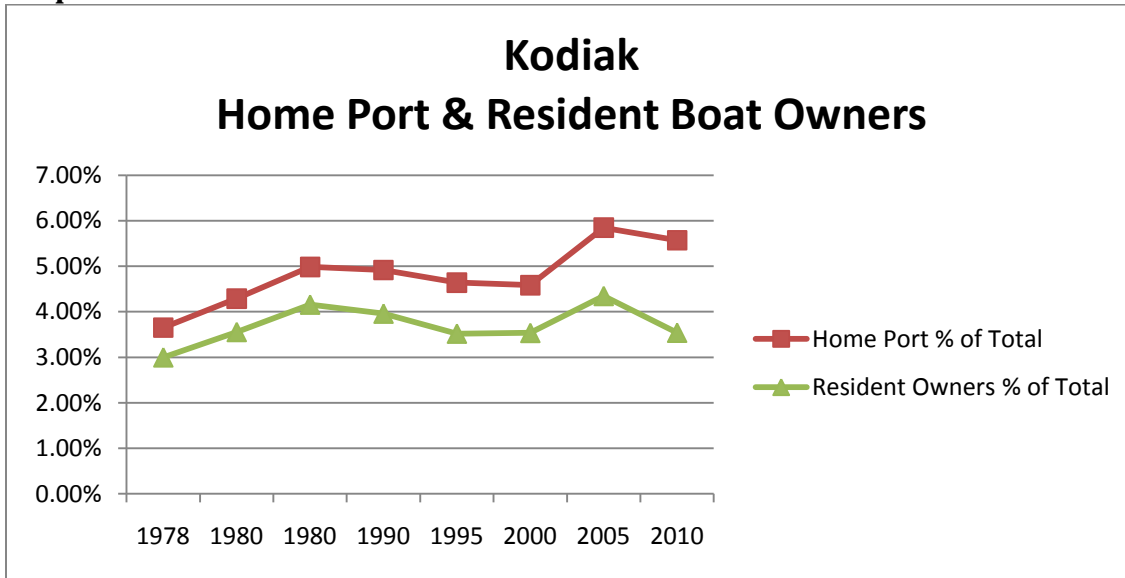


**Graph KIB 6**

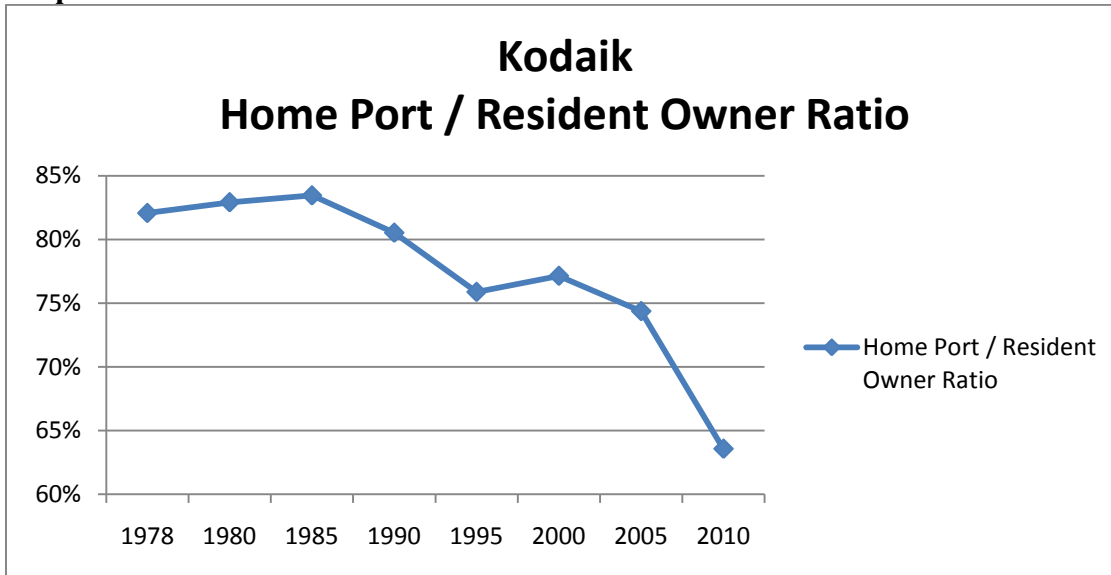


While vessel ownership is not a defined resource allocation, it is important in describing the make-up and strength of the fishing community. In relative terms Kodiak has increased its percentage of vessels home porting there, compared to all other vessel home ports. Resident boat owners have maintained a similar portion to other boat owners over the time period. However, the separation between those that home port in Kodiak and those resident boat owners has diverged quite rapidly in recent years. This is obvious when comparing the ratio of between the two in Graph KIB-7. The data displayed below does not provide enough evidence to draw conclusions as to why these numbers deviate, although the relative decline in resident boat owners declines most rapidly after 2005, the same year as the Bering Sea crab rationalization. The data could support a claim that after rationalization boat owners chose to keep their vessels in Kodiak, but live elsewhere.

Graph KIB 7

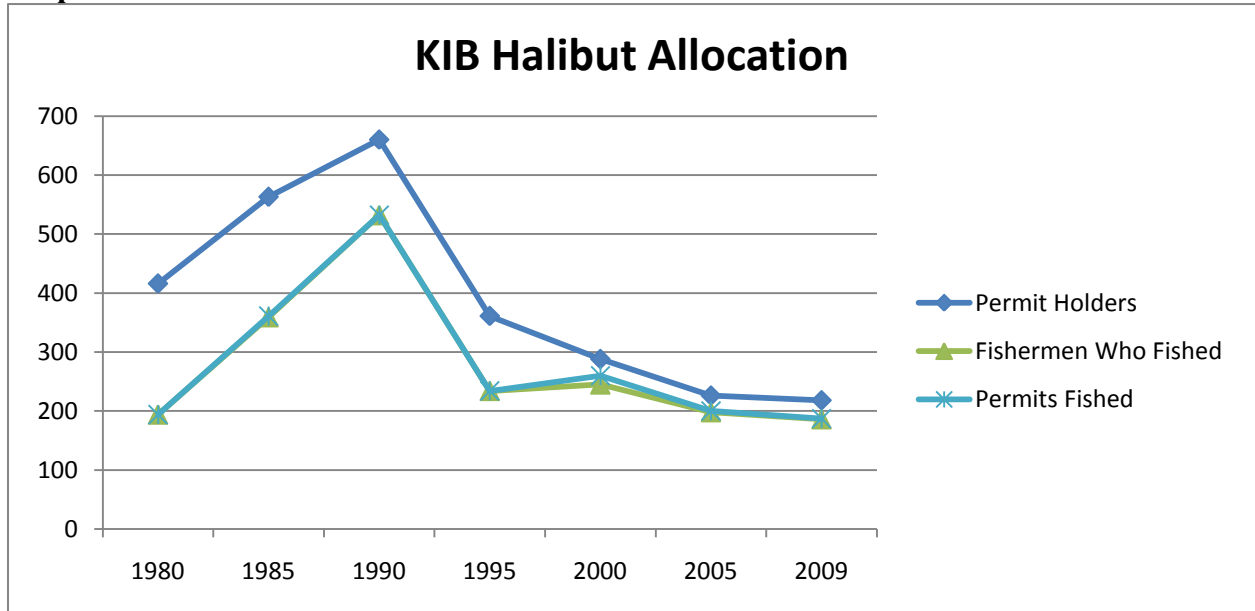


Graph KIB 8

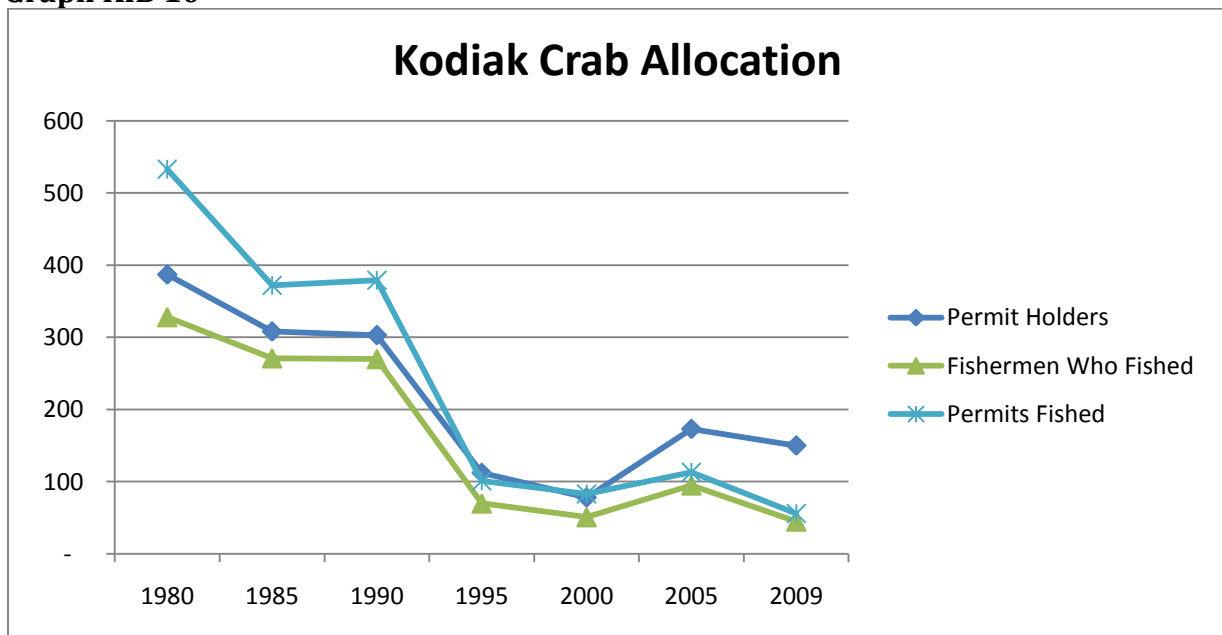


The make-up of Permit Holders, Fishermen Who Fish and Permits Fished varies from season to season as seen in Graphs KIB 8 – KIB 11. There can be a number of reasons that the ratio changes between these classifications. If Permits Fished is greater, as in the Crab Allocation prior to 1995, and in the Total Permits Graphs, this may be an indication that fishermen are fishing more than one permit. In the Crab Allocation Graph, a number of crab fisheries were available to fishermen, but as the stocks decreased there was less opportunity to hold multiple crab permits. In the Total Permits Graph, fishermen can hold permits in a number of various fisheries, as Kodiak fishermen appear to do. If Permit Holders is greater, this can be an indication that fishermen are “stacking” permits, permits are not actually being fished or fishermen are fishing two or more permits, but recording all the catch under one permit (common in the salmon set-net industry). This is the case for the individual fisheries, but when extrapolated to all fisheries, it can be seen that fishermen generally hold more than one permit, as described earlier. If Fishermen Who Fish is greater, it could mean that there are fishermen that hold permits in other fisheries, but are not necessarily permit holders in the fishery being investigated. This scenario happens only briefly in the Salmon fishery, when prices were at their historical high, and could attract many fishermen. In the Halibut and Crab fisheries the number of Permit Holders declines more slowly than the other categories after rationalization. While the categories narrow after rationalization of the Halibut fishery, this is not the case in the crab fishery. This may be due to the regulations limiting leasing in the halibut fishery, but allowing for absentee ownership in the crab fishery. After 2005, the same year as the crab rationalization, the number of Permits Fished and Fishermen Who Fished falls, while the Permit Holders remains relatively stable for the first five year period, between 2005 and 2009.

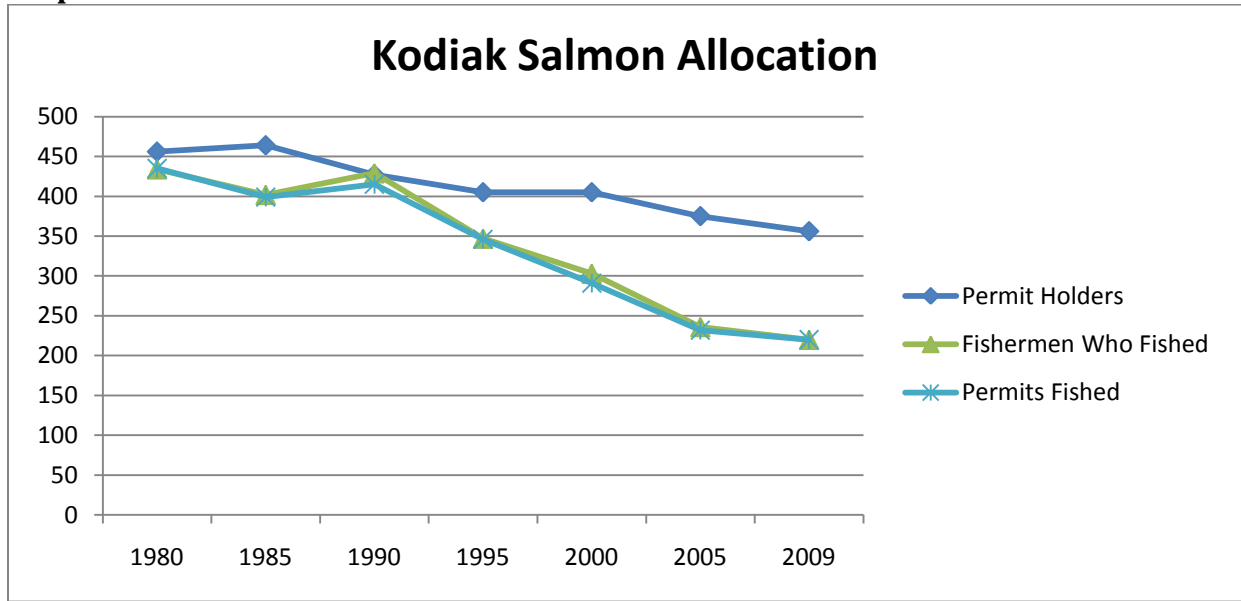
Graph KIB 9



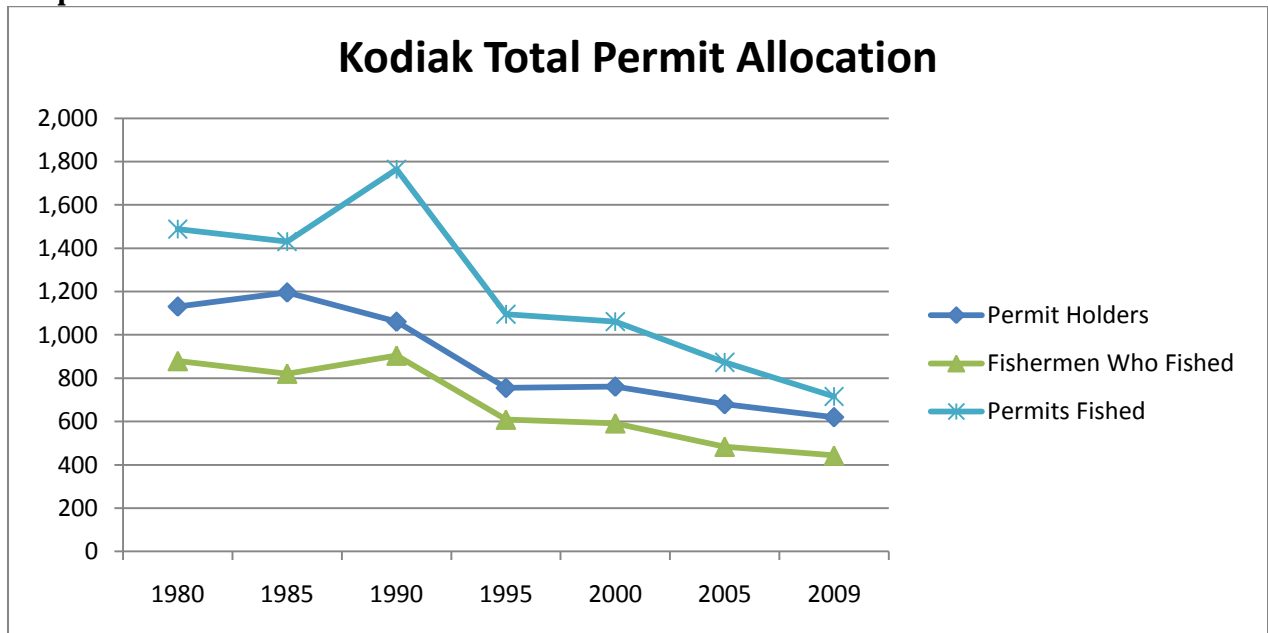
Graph KIB 10



Graph KIB 11

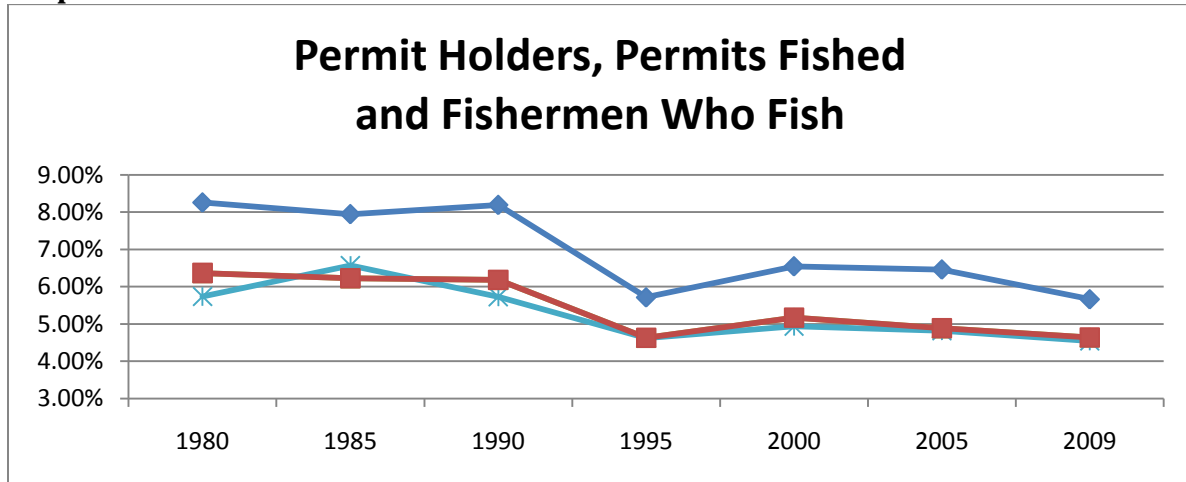


Graph KIB 12

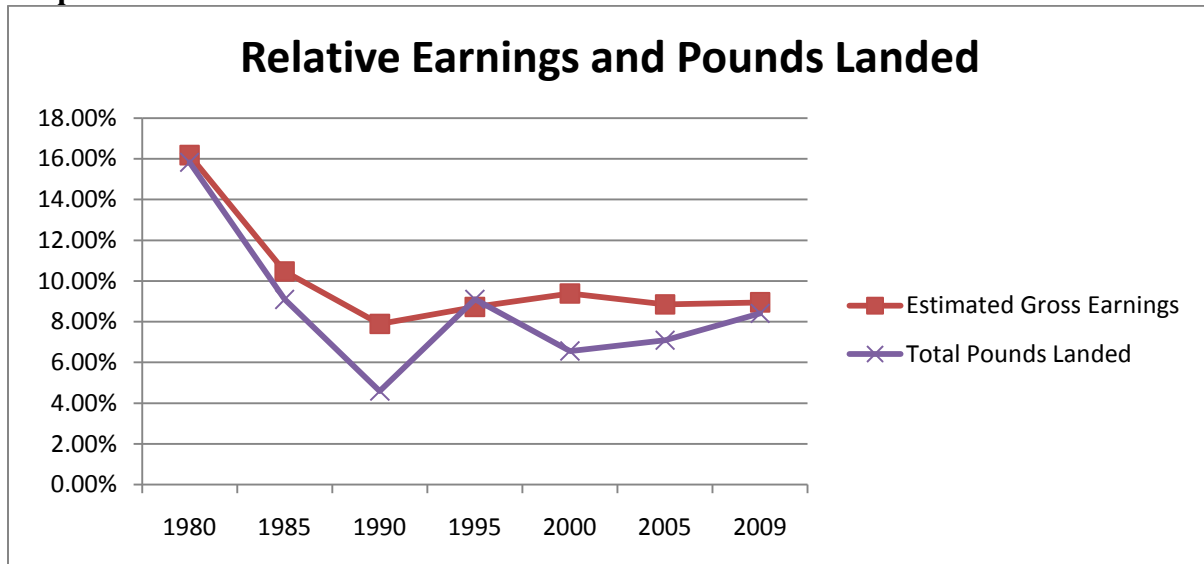


Relative to all other fishermen KIB's permit allocations are down slightly, about 25%. The variation between Permit Holders and Fishermen Who Fish has narrowed, which could be an indication that fishermen are specializing in certain fisheries, though this is only speculation without further analysis. Relative KIB Earnings and Pounds Landed fell substantially after the crash in crab and shellfish fisheries during the 1980's, and has since leveled off. Relative Earnings and Pounds Landed are trending upwards, but there is not enough information to determine if the trends over the past few years will be sustained.

**Graph KIB 13**



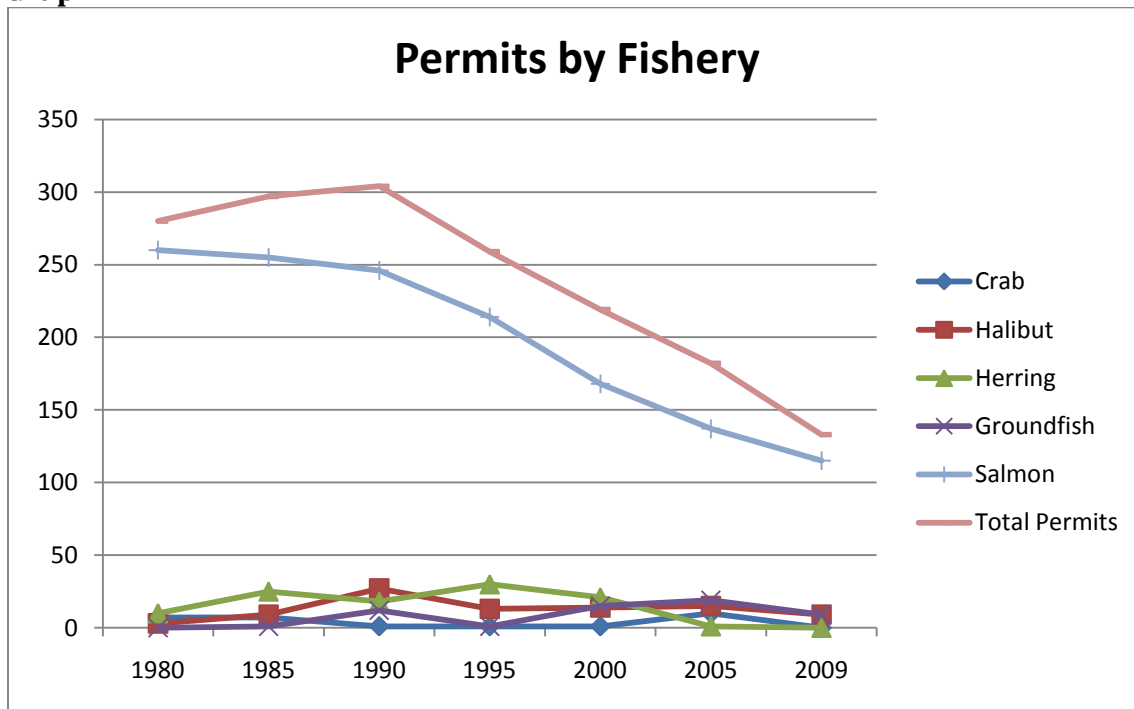
**Graph KIB 14**



## Lake and Peninsula Borough

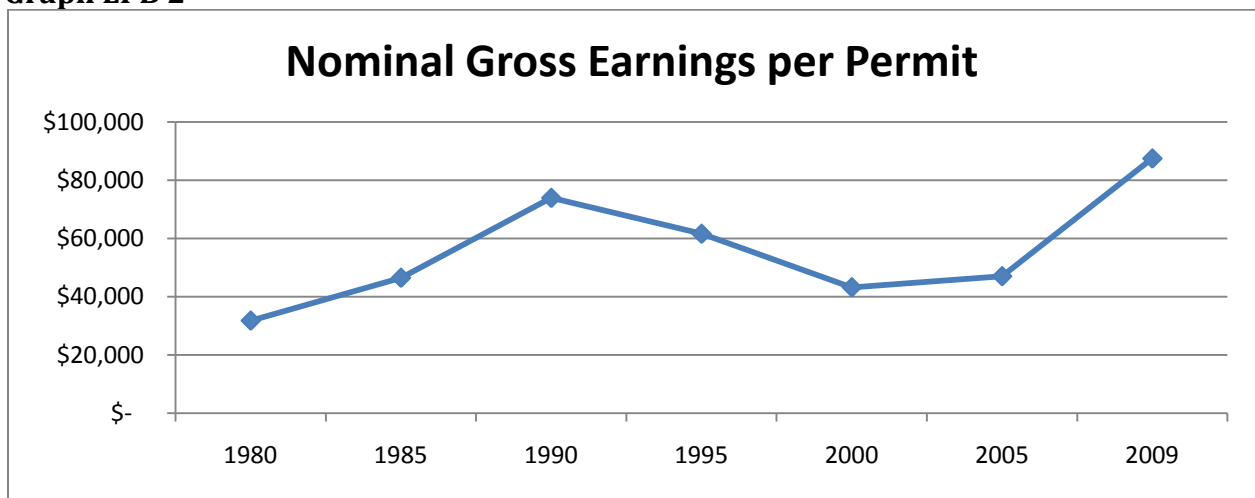
The total number of permits held by residents the Lake and Peninsula Borough has declined since peaking in 1990. Permits by Species declined in Salmon and stayed flat in Herring, Halibut and Groundfish, although the holdings of these fisheries are marginal compared to the Salmon fishery. While only representing a small actual number of permits, rationalized fisheries of Halibut, in 1990, and Crab in 2005 saw an increase in permits in the years prior to privatization. A sharp drop in Halibut permits followed the build-up prior to implementation, and Crab permits fell upon implementation in 2005. Groundfish did not follow any discernable trends.

Graph LPB 1

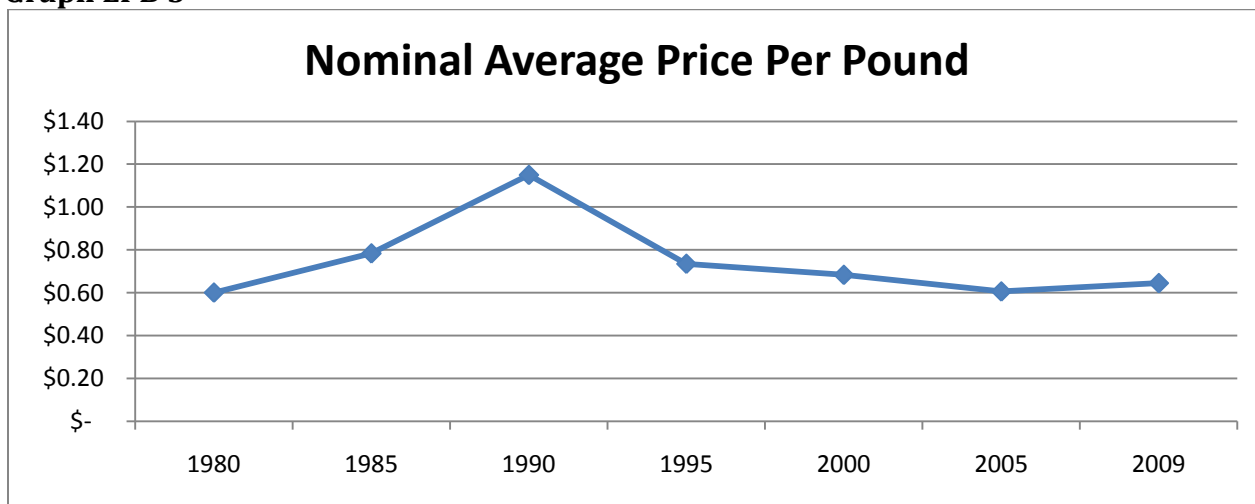


Nominal Gross Earnings has doubled over the period; this has come in trends, increasing to 1990, falling to 2000, and gaining steeply to 2009. Much of these gains can be attributed to the health of the Salmon industry; as can the Nominal Average price per Pound. Adjusted Real Price tracks inflation over time, which accounts for a 3.54% annual price increase in the Consumer Price Index (CPI). Adjusted Real Gross Earnings per Permit have fluctuated, but are flat as recorded in 1980 and 29 years later in 2009. Adjusted Real Price per Pound has declined over the period.

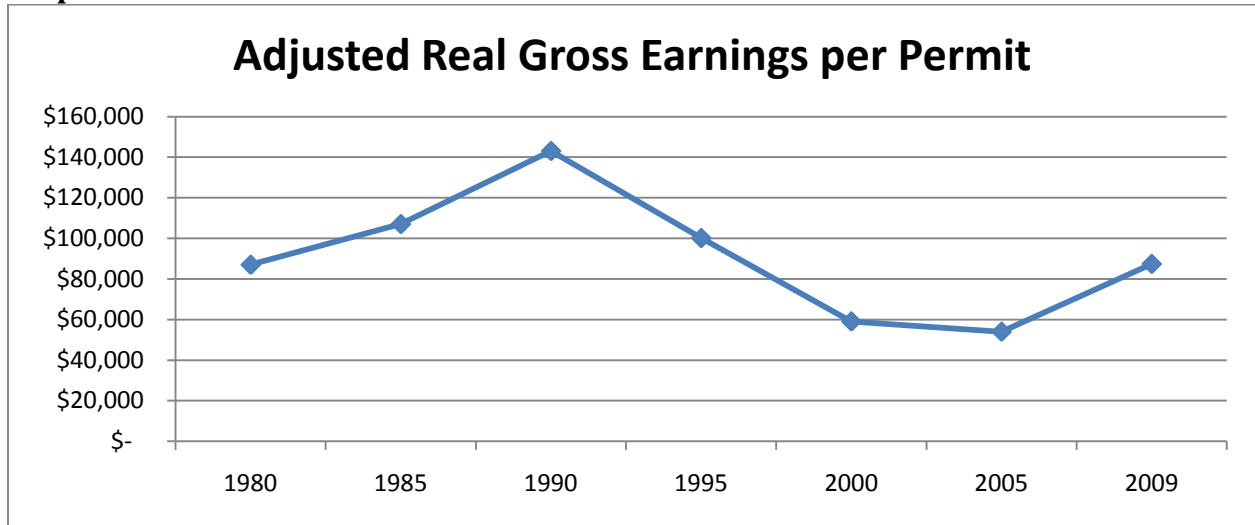
**Graph LPB 2**



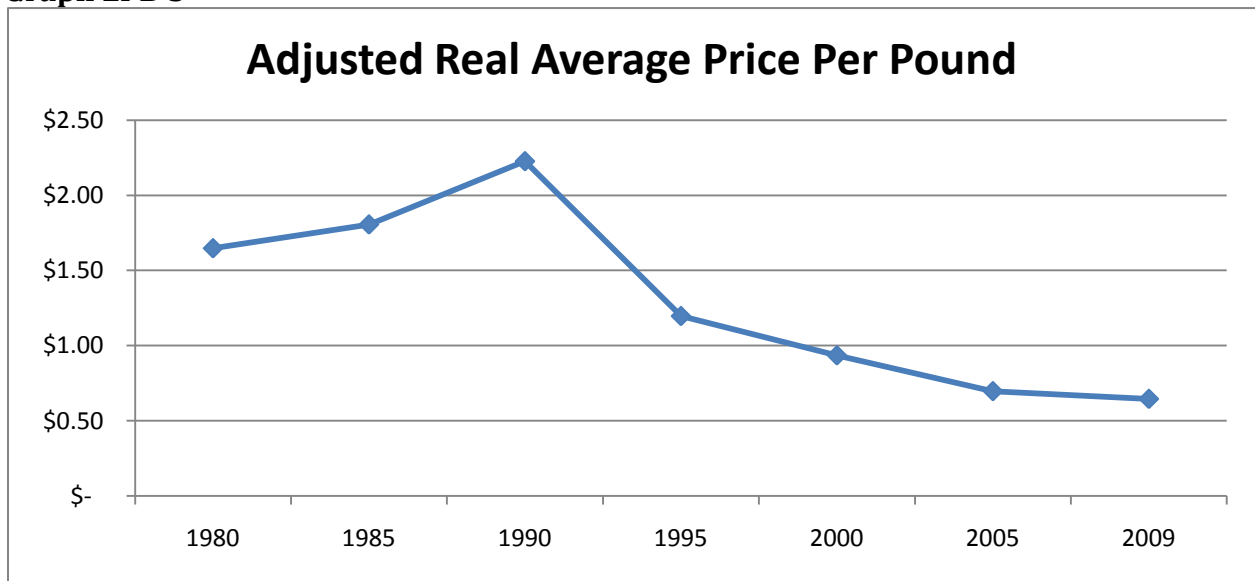
**Graph LPB 3**



**Graph LPB 4**

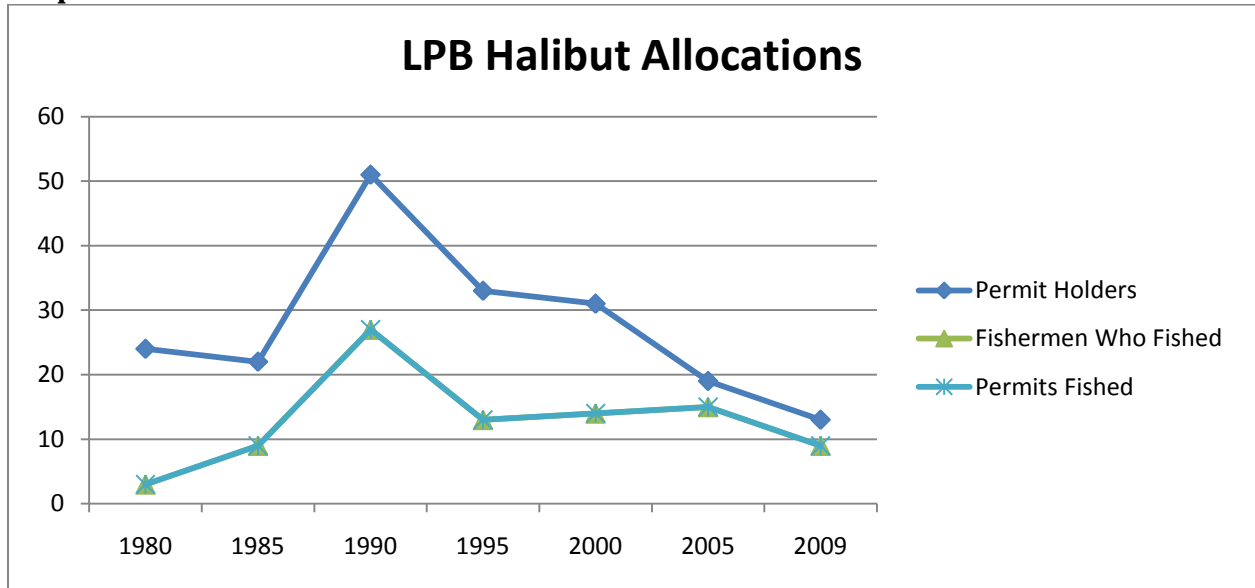


**Graph LPB 5**

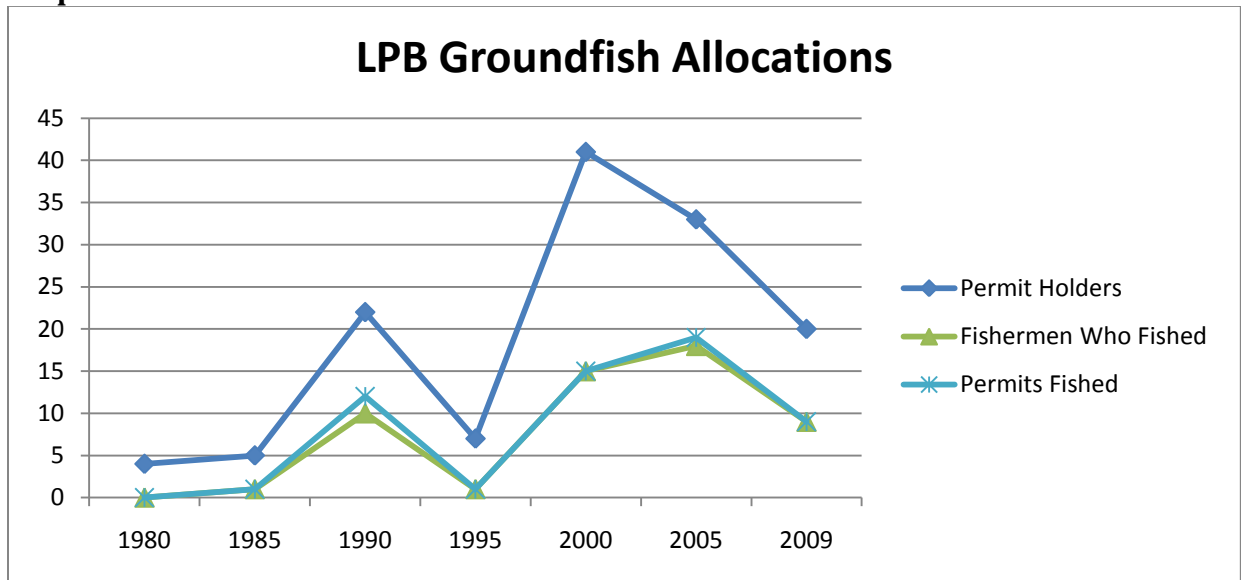


The make-up of Permit Holders, Fishermen Who Fish and Permits Fished varies from season to season as seen in Graphs LPB 6 – 9. There can be a number of reasons that the ratio changes between these classifications. If Permit Holders are greater, as is prevalent in the individual fisheries, this can be an indication that fishermen are “stacking” permits, permits are not actually being fished or fishermen are fishing two permits but recording all the catch under one permit. Prior to the Halibut and Groundfish Rationalization, the numbers of Permit Holders increases at a greater rate than Fishermen Who Fish and Permits Fished. In the Graph LPB 9 Total Permit Allocations, fishermen can hold permits in a number of various permits, as indicated by more Permits Fished than Permit Holders or Fishermen Who Fish. In 2009, as in 1980, there are more Permit Holders than fishermen.

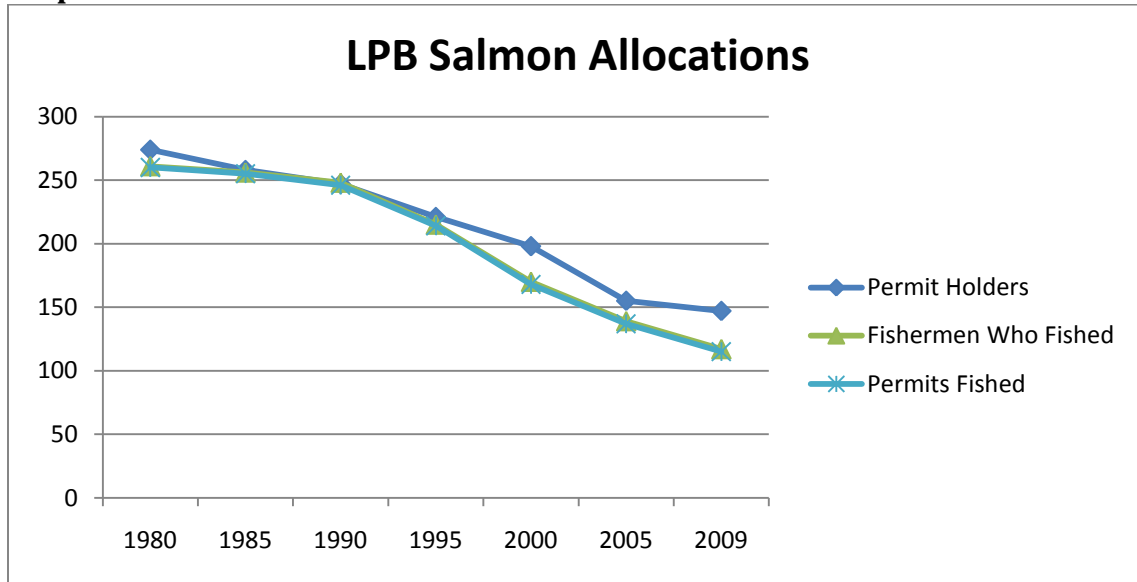
Graph LPB 6



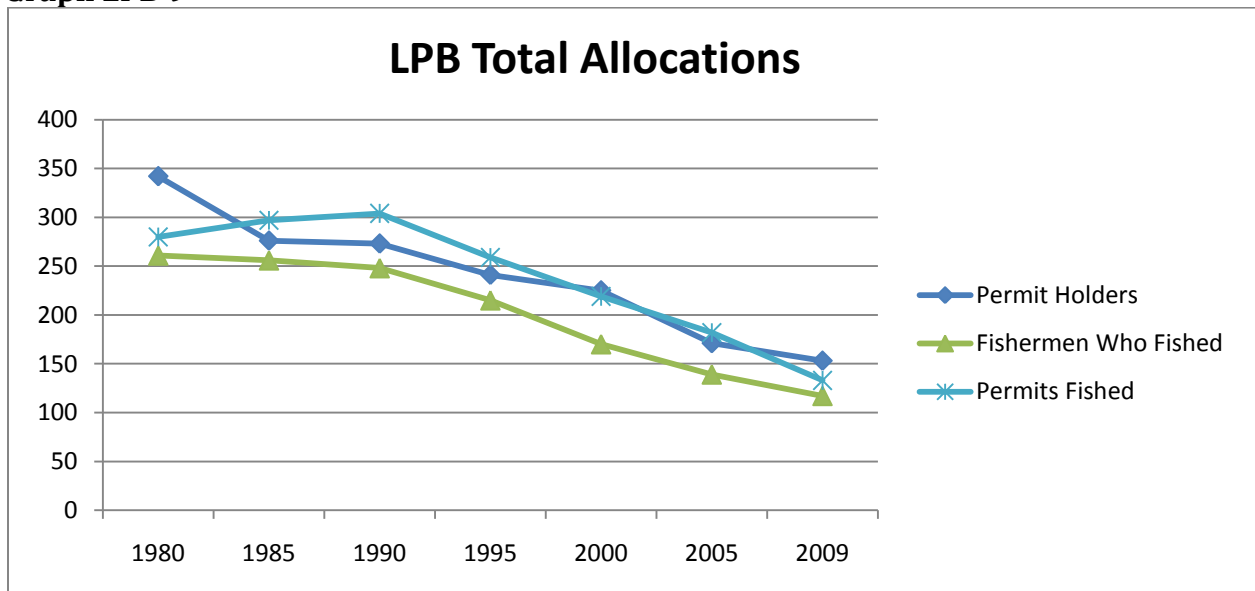
Graph LPB 7



Graph LPB 8

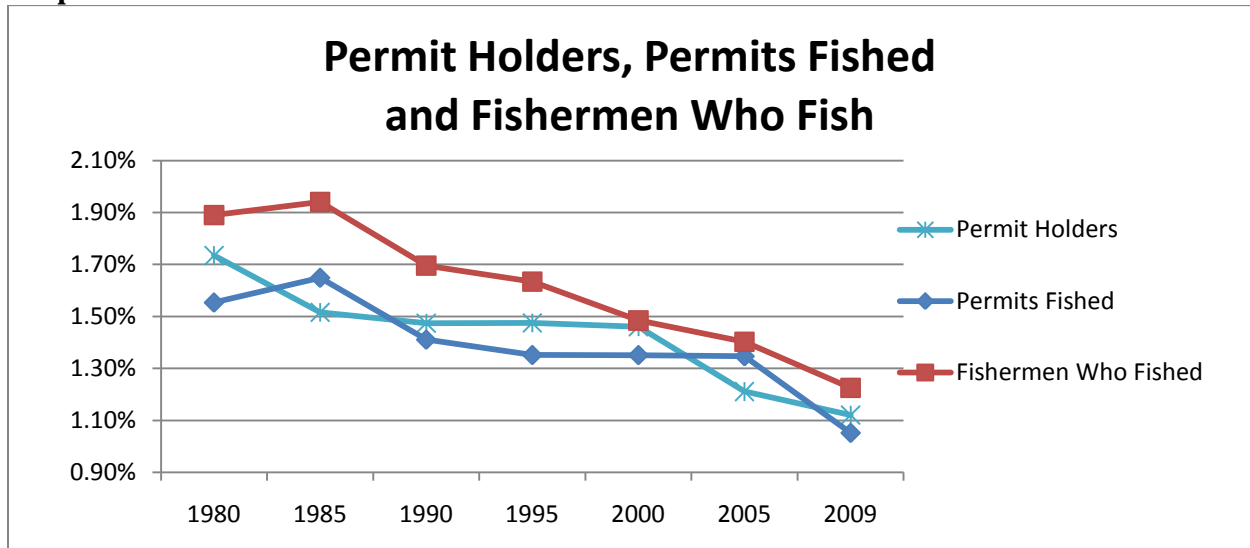


Graph LPB 9



Relative to all other fishermen LPB's permit allocations have fallen. Permits Fished and Fishermen Who Fish have switched relative position four times over the period, and after a sharp fall in Permits Fished, there are again more Permits Holders than Permit Fished. Relative LPB Earnings and Pounds Landed fell over the period. A divergence in earnings and pounds landed developed from 1985, but has since narrowed. Since 2005 both earnings and pounds have trended up.

**Graph LPB 10**



**Graph LPB 11**

