

# NOAA Catch Share Performance Indicator Series

## Pacific

### Pacific Coast Sablefish Permit Stacking Program

**NOAA Fisheries** has developed standard indicators to measure the economic performance of individual U.S. catch share programs over time. To calculate these metrics catch, effort, landings, revenue, share accumulation and cost recovery data are used.

**Management History:** Overcapacity in the Pacific sablefish fishery during the 1990's led to derby fishing, seasons as short as five days long, market gluts, and compromised safety at sea. As a first step in controlling the derby, the Pacific Fishery Management Council implemented a system in which each permit is assigned a maximum harvest level. With the end of the Magnuson-Stevens Act moratorium on new individual quota systems, the Council was able to extend the season length to seven months, effectively making the individual permit's maximum harvest level into defacto quotas. In the same action, the Council allowed the "stacking" (combining) of up to three sablefish permits, making the fishery more economical.

**Objectives:** The Pacific Coast Sablefish Permit Stacking Program (Program) was developed by the Pacific Fisheries Management Council as Amendment 14 to the Pacific Groundfish Fishery Management Plan. The catch share program manages 85% of the sablefish allocated to the limited entry groundfish fixed gear fishery, which is about 30% of all commercially harvested sablefish on the West Coast. The Program aims to improve economic efficiency, increase benefits for fishing communities, promote equity, mitigate reallocation effects of previous harvest regulations, promote safety, and improve product quality and value.

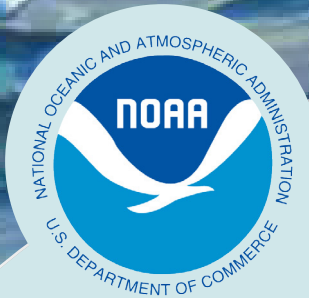
**Key Management Events:** Under the Program, each permit is associated with an individual quota (based upon a vessel's historical catch), and owners may register more than one sablefish endorsed permit (and associated quota) to their vessel. This stacking allows the number of overall vessels participating in the fishery to decline without reducing the total quota allocation. Amendment 14 to the Fishery Management Plan prohibited permit ownership by corporations and partnerships, and included an owner-on-board requirement, introduced in order to preserve the owner-operator nature of the fleet.

Quota allocated to the Program was reduced by 37% in 2002 when compared to the previous year. Quota was subsequently increased (by 47%) the following year and followed an upward trend until 2006. In 2006 and 2007, the quota was again reduced by 2% and 21% when compared to the previous years, respectively. Sablefish quota increased for the following three years and was reduced in 2011 by 24%, relative to 2010. These reductions in quota were implemented to manage Pacific Coast Sablefish stocks and would have occurred regardless of whether the catch share program was implemented.

**Performance Trends:** The fishery opens on April 1 and ends on October 31 of the same year. Information is shown for 2001 onwards; however, the Permit Stacking Program was only partially implemented in 2001 therefore this was an incomplete fishing year. Amounts reported are based on sablefish harvested in the primary limited entry groundfish fixed gear fishery and do not include sablefish harvested in the daily fishery component of the limited entry fixed gear fishery. Revenue and pricing information are presented in real terms (adjusted for inflation with the GDP 2010 index).

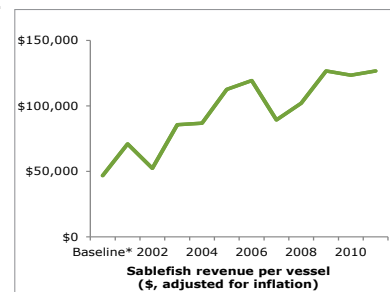
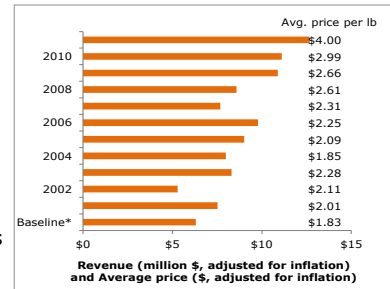
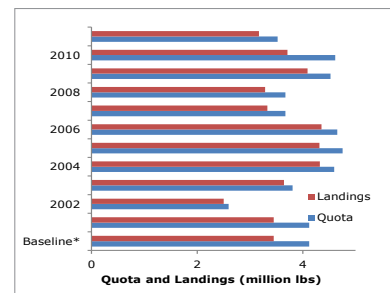
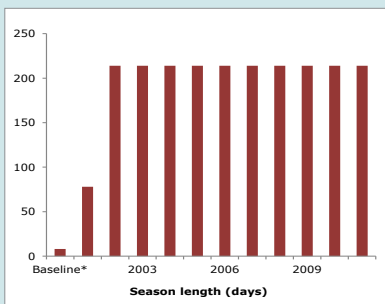
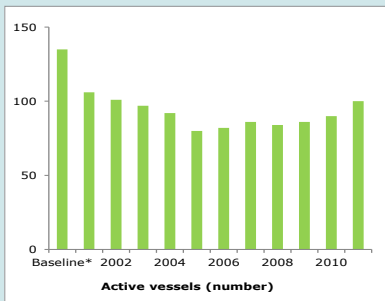
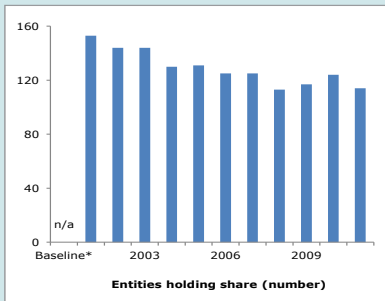
Economic efficiency, as measured by revenue per vessel, improved significantly under the Program. Revenue per vessel in 2011 is 165% greater than in the Baseline Period\*. The Program was also successful in reducing capacity, with the number of vessels active in 2011 26% less than in the Baseline Period\*. The number of entities holding shares also declined over the course of the Program, from 154 in 2001 to 114 in 2011. The Program also ended derby fishing, with season length increasing from five days a year to over 200 days annually.

\*Baseline Period refers to the average of three years prior to implementation of the Pacific Coast Sablefish Permit Stacking Program (1998 - 2000).



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**Cost Recovery Fees:** The Magnuson-Stevens Act authorizes the Secretary to adopt regulations implementing a cost recovery program to recover the actual cost of managing and enforcing limited access privilege programs.

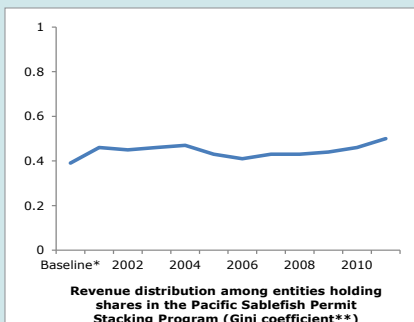
Cost recovery provisions have not yet been implemented in this Program. The Council is working to incorporate cost recovery provisions in the future.

**Share Caps:** The purpose of excessive share caps is to prevent individuals from controlling production and prices, as well as to achieve management objectives, per the Magnuson-Stevens Act and the National Standards.

There is no explicit share cap for sablefish. Sablefish is allocated to permit holders based on three different tier levels, and no vessel may hold more than three permits. Given the limit associated with each permit, the implicit share cap for any one vessel is 4.2%.

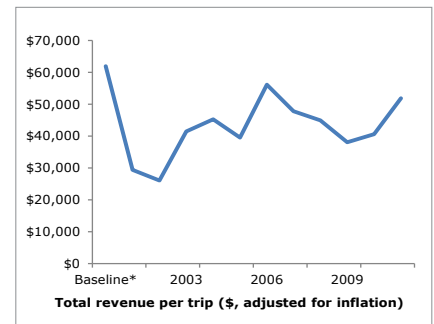
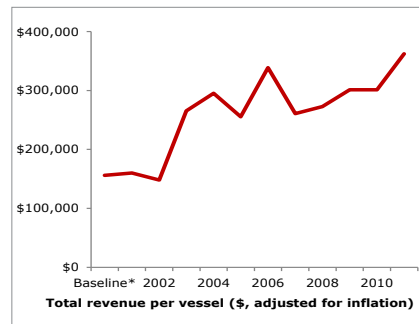
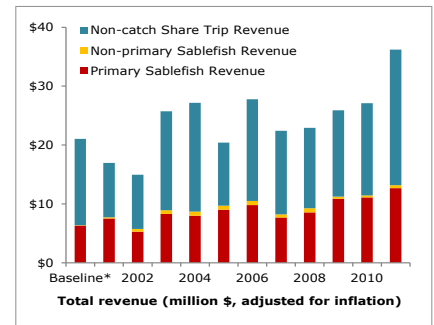
**Revenue Distribution:** The Gini coefficient measures the evenness of a distribution. Here, it measures the distribution of revenue among entities holding shares in the Pacific Coast Sablefish Permit Stacking Program. A value of 0 indicates that all shareholders earn the same amount of revenue, while a value of 1 indicates that one shareholder earns all of the revenue.

The Gini coefficient calculated for the Pacific Coast Permit Stacking Program was 0.39 in the Baseline Period\* and 0.46 in 2011. It subsequently increased to 0.50 in 2011.



\*\*0 = perfect equality; 1 = perfect inequality

**Total Revenue:** Vessels participating in the Program generate revenue on primary sablefish trips from both sablefish and non-sablefish landings. In addition, these same vessels also participate in other fisheries (including non-catch share programs), and this revenue contributes to their total revenue. Over the course of the catch share program history, total revenue was lowest in 2002 at \$14.9 million and greatest in 2011 at \$36.2 million, amounting to a more than 72% increase when compared to the Baseline Period\*. Total revenue increased in all but four years between the Baseline Period\* and 2011. Declines in two of those years (2002 and 2007) coincided with declines in the quota allocated to the catch share program and catch share species revenue, as well as declines in the non-catch share trip revenue. In 2005, the decline in total revenue came from a decrease in non-catch share trip revenue. The 2001 total revenue decline coincided with a substantial decline in non-catch share trip revenue.



**Total revenue per vessel and total revenue per trip:** Total revenue per vessel increased in all years except for 2002, 2005, 2007, and 2010. Declines in catch share quota coincided with falling catch share revenues in 2002 and 2007 (see above); whereas, the decline in total revenue per vessel in 2005 coincided with a decline in non-catch share trip revenue. The 2010 decline in total revenue per vessel is most likely due to an increase in the number of active vessels participating in the Permit Stacking Program. In 2011, total revenue per trip was \$52,000, a 16% decline over the Baseline Period\* value.

**Catch Limits:** Following implementation of the catch share program, catch limits have not been exceeded in the Pacific Coast Sablefish Permit Stacking Program.

For more detailed information on the Pacific Coast Sablefish Permit Stacking Program, please visit: <http://www.nwr.noaa.gov/fisheries/management/sablefish.html>

More fact sheets can be found at: <http://www.st.nmfs.noaa.gov/economics/fisheries/commercial/catch-share-program/fact-sheets/index>

For more information on catch share programs: [http://www.nmfs.noaa.gov/sfa/domes\\_fish/catchshare/index.htm](http://www.nmfs.noaa.gov/sfa/domes_fish/catchshare/index.htm)

\*Baseline Period refers to the average of three years prior to implementation of the Pacific Coast Sablefish Permit Stacking Program (1998 - 2000).

# NOAA Catch Share Performance Indicator Series

## Pacific

### Pacific Groundfish Trawl Rationalization Program (Whiting)

**NOAA Fisheries** has developed standard indicators to measure the economic performance of individual U.S. catch share programs over time. To calculate these metrics catch, effort, landings, revenue, share accumulation and cost recovery data are used.

**Management History:** The Pacific Groundfish Trawl Rationalization was implemented in January 2011 and comprises two separate components: (1) a non-whiting trawl fishery that targets a variety of flatfish, roundfish, thornyheads, and some rockfish using a bottom trawl and (2) a whiting fishery that uses mid-water trawls to almost exclusively harvest whiting. The fishery was historically managed through harvest guidelines, quotas, trip and landing limits, seasonal closures, gear restrictions, and area restrictions such as the Rockfish Conservation Areas.

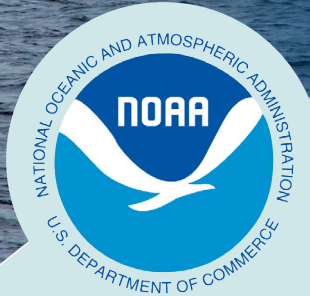
**Objectives:** The objectives of the Pacific Groundfish Trawl Rationalization Program are to: provide a mechanism for total catch accounting; provide for a viable, profitable and efficient groundfish; promote practices that reduce bycatch and discard mortality and minimize ecological impacts; increase operational flexibility; minimize adverse effects from an IFQ Program on fishing communities and other fisheries; promote measurable economic and employment benefits through the seafood catching, processing, distribution elements, and support sectors of the industry; provide quality product for the consumer; and increase safety in the fishery. Performance measures will be presented separately for the two program components: whiting and non-whiting. The information provided herein refers to the whiting component of the Trawl Rationalization Program.

**Key Management Events:** Coincident with the introduction of the Groundfish Trawl Rationalization Program, the quota was aggregated across all program species; therefore, aggregate quota is not available for the Baseline Period\*. In 2011, the total quota available to the whiting component of the Program was 206 million pounds, of which 199 million pounds were landed (a 76% increase in landings from the Baseline Period\*).

**Performance Trends:** Upon implementation of the Groundfish Trawl Rationalization Program, 78 entities were issued quota share for the whiting component of the Program. The number of active vessels declined by 28% from 36 during the Baseline Period\* to 26 vessels in 2011.

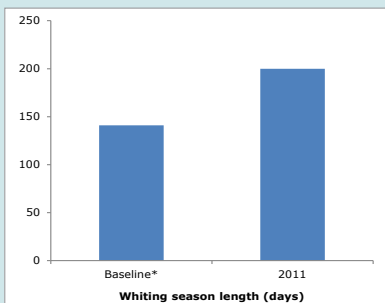
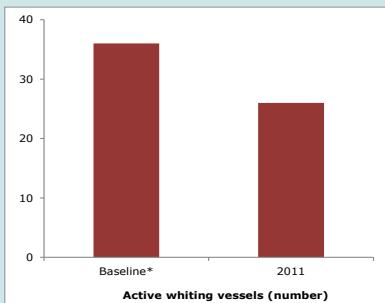
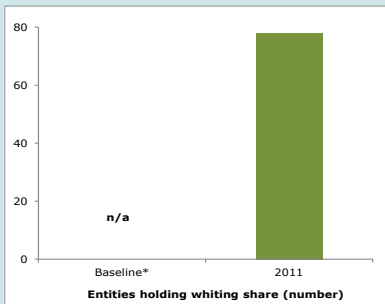
Overall, the average price for whiting increased (by 41%) from \$0.08 per pound during the Baseline Period\* to \$0.11 per pound in 2011. In the same time period, aggregate landings of whiting increased by 76%. These combined factors increased economic benefits, with whiting landings revenue increasing 147% in 2011 relative to the Baseline Period\*. In addition, economic efficiency, as measured by revenue per vessel, also showed significant improvement. In particular, revenue per vessel more than tripled, increasing 242% from \$251,000 during the Baseline Period\* to \$860,000 in 2011.

\*Baseline Period refers to average of three years prior to implementation of the Pacific Groundfish Trawl Rationalization Program (2008 - 2010).



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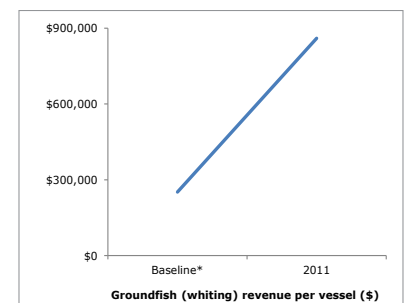
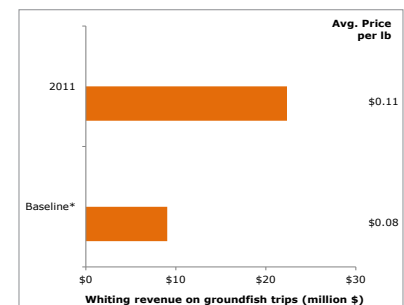
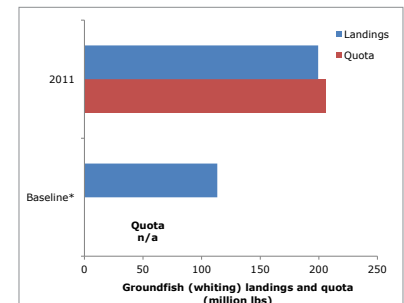
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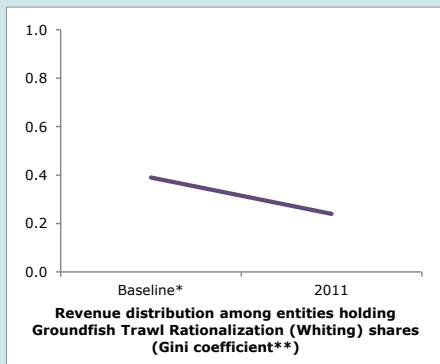


**Cost Recovery Fees:** The Magnuson-Stevens Act authorizes the Secretary to adopt regulations implementing a cost recovery program to recover the actual cost of managing and enforcing limited access privilege programs. A cost recovery program has not yet been implemented in the Trawl Rationalization Program.

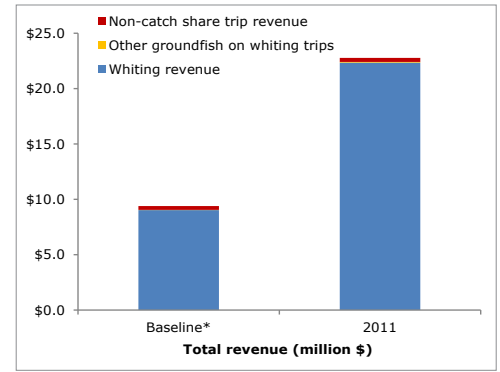
**Share Caps:** The purpose of share caps is to prevent individual shareholders from controlling production and prices, as well as to achieve management objectives, per the Magnuson-Stevens Act and the National Standards. There are 90 species covered under the West Coast Groundfish Fishery Management Plan, of which 40 are allocated under the Trawl Rationalization Program. The share ownership cap is 10% for whiting.

**Revenue Distribution:** The Gini coefficient measures the evenness of a distribution. Here, it measures the distribution of revenue among entities holding shares in the Groundfish Trawl Rationalization Program (Whiting). A value of 0 indicates that all shareholders earn the same amount of revenue, while a value of 1 indicates that one shareholder earns all of the revenue.

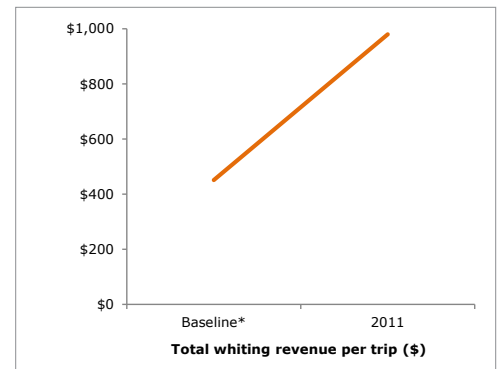
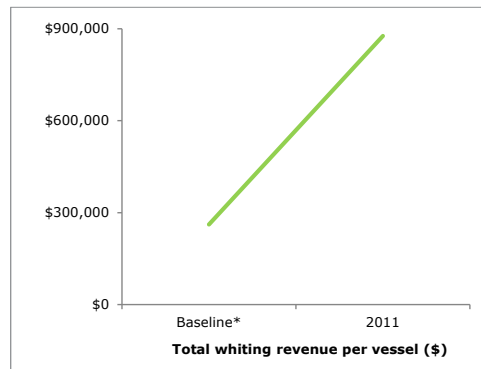
Prior to implementation of the Pacific Groundfish Trawl Rationalization Program, the Gini coefficient for the whiting component was 0.39 in the Baseline Period\* and in 2011 decreased to 0.24.



**Total Revenue:** Vessels who participate in the whiting component of the Pacific Groundfish Trawl Rationalization Program generate revenue from landings of whiting, as well as small amounts of other groundfish species on whiting trips. In addition, these same vessels also participate in other fisheries (including non-catch share programs) and this revenue contributes to their total revenue.



Total revenue was \$9.4 million during the Baseline Period\* and increased by 143% to \$22.8 million in 2011. Revenue from whiting landings (96%) makes up the vast majority of total revenue; non-catch share revenue accounts for 3.6% of total revenue and the remainder (0.1%) is from other groundfish landed on whiting trips. In 2011, whiting landings accounted for 98% of total revenue, other groundfish landed on whiting trips accounted for 0.2% of total revenue and landings on non-catch share trips accounted for less than 2% of total revenue.



**Total revenue per vessel** and **total revenue per trip** for the whiting component of the Trawl Rationalization Program both increased (tripled and doubled, respectively) when the IFQ Program began relative to the Baseline Period\*.

For more detailed information on the Pacific Groundfish Trawl Rationalization Program, please visit: [http://www.nwfsc.noaa.gov/research/divisions/fram/catch\\_shares.cfm](http://www.nwfsc.noaa.gov/research/divisions/fram/catch_shares.cfm)

More fact sheets can be found at: <http://www.st.nmfs.noaa.gov/economics/fisheries/commercial/catch-share-program/fact-sheets/index>

For more information on catch share programs: [http://www.nmfs.noaa.gov/sfa/domes\\_fish/catchshare/index.htm](http://www.nmfs.noaa.gov/sfa/domes_fish/catchshare/index.htm)

\*Baseline Period refers to average of three years prior to implementation of the Pacific Groundfish Trawl Rationalization Program (2008 - 2010).

\*\*0 = perfect equality; 1 = perfect inequality

# NOAA Catch Share Performance Indicator Series

## Pacific

### Pacific Groundfish Trawl Rationalization Program (Non-Whiting)

**NOAA Fisheries** has developed standard indicators to measure the economic performance of individual U.S. catch share programs over time. To calculate these metrics catch, effort, landings, revenue, share accumulation and cost recovery data are used.

**Management History:** The Pacific Groundfish Trawl Rationalization was implemented in January 2011 and comprises two separate components: (1) a non-whiting trawl fishery that targets a variety of flatfish, roundfish, thornyheads, and some rockfish using a bottom trawl and (2) a whiting fishery that uses mid-water trawls to almost exclusively harvest whiting. The fishery was historically managed through harvest guidelines, quotas, trip and landing limits, seasonal closures, gear restrictions, and area restrictions such as the Rockfish Conservation Areas.

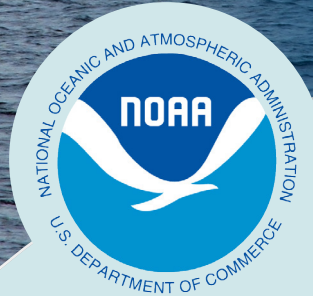
**Objectives:** The objectives of the Pacific Groundfish Trawl Rationalization Program are to: provide a mechanism for total catch accounting; provide for a viable, profitable and efficient groundfish fishery; promote practices that reduce bycatch and discard mortality and minimize ecological impacts; increase operational flexibility; minimize adverse effects from an IFQ Program on fishing communities and other fisheries; promote measurable economic and employment benefits through the seafood catching, processing, distribution elements, and support sectors of the industry; provide quality product for the consumer; and increase safety in the fishery. Performance measures will be presented separately for the two program components: whiting and non-whiting. The information provided herein refers to the non-whiting component of the Trawl Rationalization Program.

**Key Management Events:** The Groundfish Trawl Rationalization Program aggregated quota across all species: quota for the non-whiting component of the Program was 169 million pounds in 2011. In the first year of the Trawl Program, quota utilization was 23% for non-whiting species.

**Performance Trends:** One hundred twenty-eight entities were issued quota share for the non-whiting component of the Trawl Rationalization Program in 2011. While overall there was an 18% decrease in the number of active vessels in 2011 relative to the Baseline Period\*, there were some new vessels that entered the fishery. These new vessels target sablefish using fixed gear, which yields higher quality product than sablefish harvested by trawl gear.

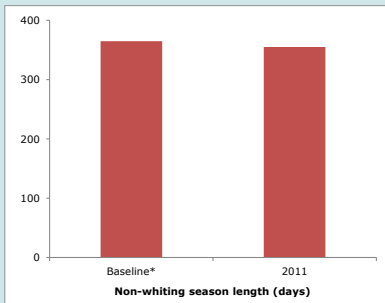
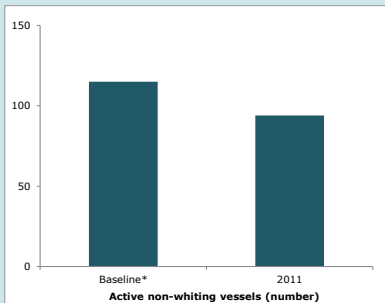
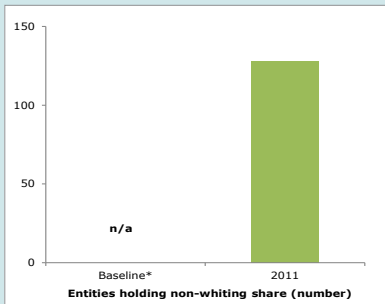
While landings of non-whiting species decreased (by 25%) from 51 million pounds in the Baseline Period\* to 38 million pounds in 2011, ex-vessel revenue increased by 10%. This increase in economic benefits was driven by a 46% increase in the average price for non-whiting harvest. Much of this price increase can be attributed to changes in the market for sablefish, a key component of non-whiting revenue. Revenue per vessel also increased by one-third, from \$248,000 in the Baseline Period\* to \$330,000 in 2011.

\*Baseline Period refers to average of three years prior to implementation of the Pacific Groundfish Trawl Rationalization Program (2008 - 2010).



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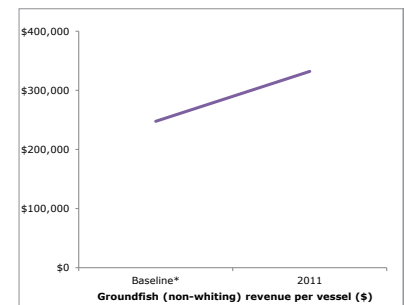
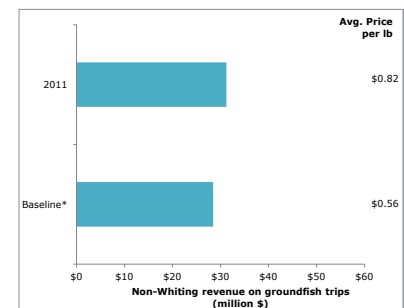
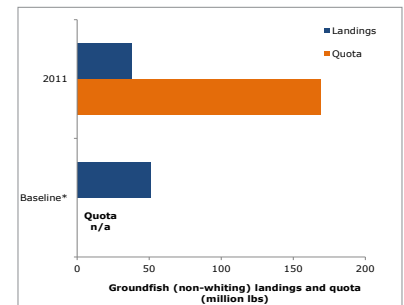
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**Cost Recovery Fees:**

The Magnuson-Stevens Act authorizes the Secretary to adopt regulations implementing a cost recovery program to recover the actual cost of managing and enforcing limited access privilege programs. A cost recovery program has not yet been implemented in the Trawl Rationalization Program.

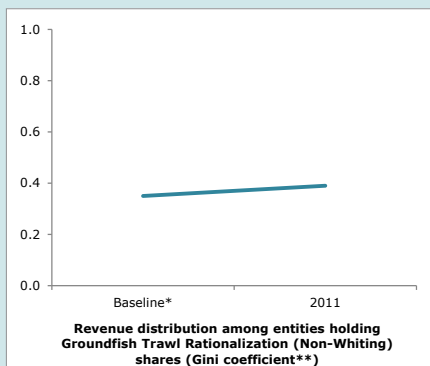
**Share Caps:**

The purpose of share caps is to prevent individual shareholders from controlling production and prices, as well as to achieve management objectives, per the Magnuson-Stevens Act and the National Standards. There are 90 species covered under the West Coast Groundfish Fishery Management Plan, of which 40 are allocated under the Trawl Rationalization Program. The aggregate cap for non-whiting species is 2.7%, but can vary by individual species.

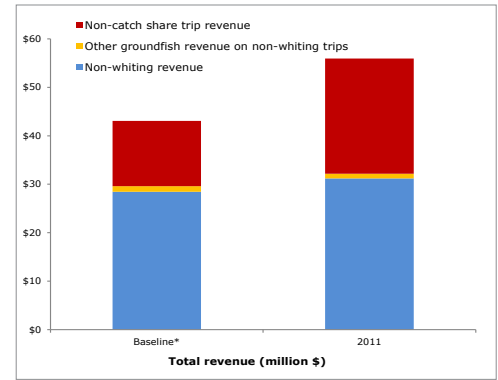
**Revenue Distribution:**

The Gini coefficient measures the evenness of a distribution. Here, it measures the distribution of revenue among entities holding shares in the Groundfish Trawl Rationalization Program (Non-Whiting). A value of 0 indicates that all shareholders earn the same amount of revenue, while a value of 1 indicates that one shareholder earns all of the revenue.

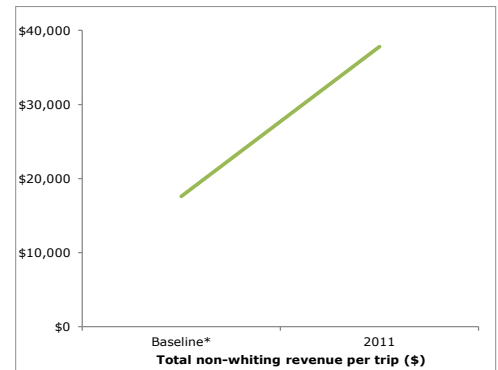
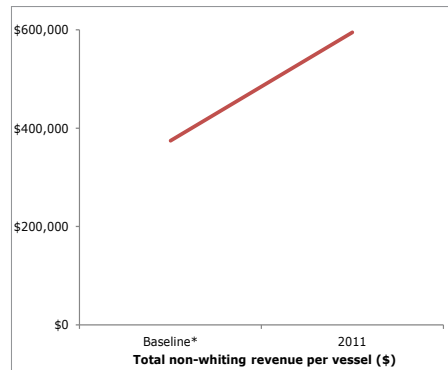
Prior to implementation of the Pacific Groundfish Trawl Rationalization Program, the Gini coefficient for the non-whiting component was 0.35 in the Baseline Period\* and in 2011 increased slightly to 0.39.



**Total Revenue:** Vessels participating in the non-whiting component of the Pacific Groundfish Trawl Rationalization Program generate revenue on groundfish trips from non-whiting landings, as well as small amounts of other species on groundfish trips. In addition, these same vessels also participate in other fisheries (including non-catch share programs) and this revenue contributes to their total revenue.



Total revenue was \$43.1 million during the Baseline Period\* and increased by 30% to \$55.9 million in 2011. Revenue from non-whiting landings makes up the majority (66%) of total revenue; non-catch share trip revenue accounts for 31% of total revenue and the remainder (2.6%) is from other groundfish species landed on non-whiting trips. In 2011, revenue from non-catch share trips accounted for a larger portion (43%) of total revenue.



**Total revenue per vessel** and **total revenue per trip** for the non-whiting component of the Trawl Rationalization Program both increased (by 59% and 115%, respectively) in 2011, relative to the Baseline Period\*.

**Other Trends:**

The non-whiting component of the Trawl Rationalization Program substantially reduced its bycatch rates for rebuilding species. Catches of rebuilding species were lower in the non-whiting fleet in 2011 than in 2010, with reductions ranging between 10% - 97% of 2010 levels, depending on the species.

For more detailed information on the Pacific Groundfish Trawl Rationalization Program, please visit: [http://www.nwfsc.noaa.gov/research/divisions/fram/catch\\_shares.cfm](http://www.nwfsc.noaa.gov/research/divisions/fram/catch_shares.cfm)

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\*Baseline Period refers to average of three years prior to implementation of the Pacific Groundfish Trawl Rationalization Program (2008 - 2010).

\*\*0 = perfect equality; 1 = perfect inequality