Herein are two reports provided to the Government of Newfoundland and Labrador by The McDowell Group of Alaska. This company was contracted by the Provincial Government in November 2011 to provide a market report on yellowtail flounder and redfish. The first report was received in January 2012 with an update on flatfish markets provided in November 2012.

Market for Newfoundland and Labrador Yellowtail Flounder and Redfish

Final Report

Prepared for:

Newfoundland and Labrador Department of Fisheries and Aquaculture

McDowell GROUP

Research-Based Consulting

Juneau
Anchorage

January 2012

Table of Contents

Foreword

The Newfoundland and Labrador Department of Fisheries and Aquaculture commissioned McDowell Group, Inc. to produce an independent report on markets for Yellowtail flounder and Redfish. This report is intended to provide the Department with objective reference material, and does not advocate for or against any specific policy position or action. Data contained in this report comes from publicly available sources. No Canadian or American seafood processors were consulted during the course of this report.

McDowell Group is an Alaska-based research and consulting firm with 40 years of seafood industry experience. Since 1972, the company has completed over 300 seafood-related projects for a wide variety of public and private sector clients involved in seafood harvesting, processing and marketing.

Client Disclaimer

This report has been prepared by and represents the views of McDowell Group, Inc. Although the information has been taken from sources believed to be reliable, the Newfoundland and Labrador Department of Fisheries and Aquaculture does not guarantee the accuracy or completeness of the report. The views expressed in this report are those of the authors and do not necessarily reflect those of the Government of Newfoundland and Labrador. Neither the Government of Newfoundland and Labrador nor any person acting on its behalf is responsible for the information provided in this document.

Notes on Data Used for this Report

Canadian ex-vessel prices (or landed value) quoted in this report come from Fisheries and Oceans Canada (DFO). A portion of Atlantic flatfish and redfish is harvested by catcher-processors, and processed at sea. Because catcher-processor operations are vertically integrated and there is no transaction between fisher and processor – it becomes difficult to accurately assess the ex-vessel price of those fish. As a proxy, DFO uses ex-vessel price information from landings made by catcher-vessels to inshore processing plants. This proxy price is applied to the round weight of fish harvested and processed at sea by catcher-processors to estimate total value.

Canadian ex-vessel prices in this report are broadly defined. Available data does not reflect price differences within the flatfish or redfish complex. For instance, Yellowtail flounder may fetch a higher price than the prices shown in this report, but the average flatfish price may be weighted down by other less valuable species present in the broader flatfish harvest. Similarly, there are size stratifications within the redfish fishery which can affect price, so certain species of redfish may be more valuable than others.

The report utilizes data collected on fish imported into the US. The value of these products is reported to US Customs and Border Protection by the importer, and generally reflects the transaction value between foreign (CAN) exporter and domestic (US) importer. These values may differ from wholesale prices or retail prices

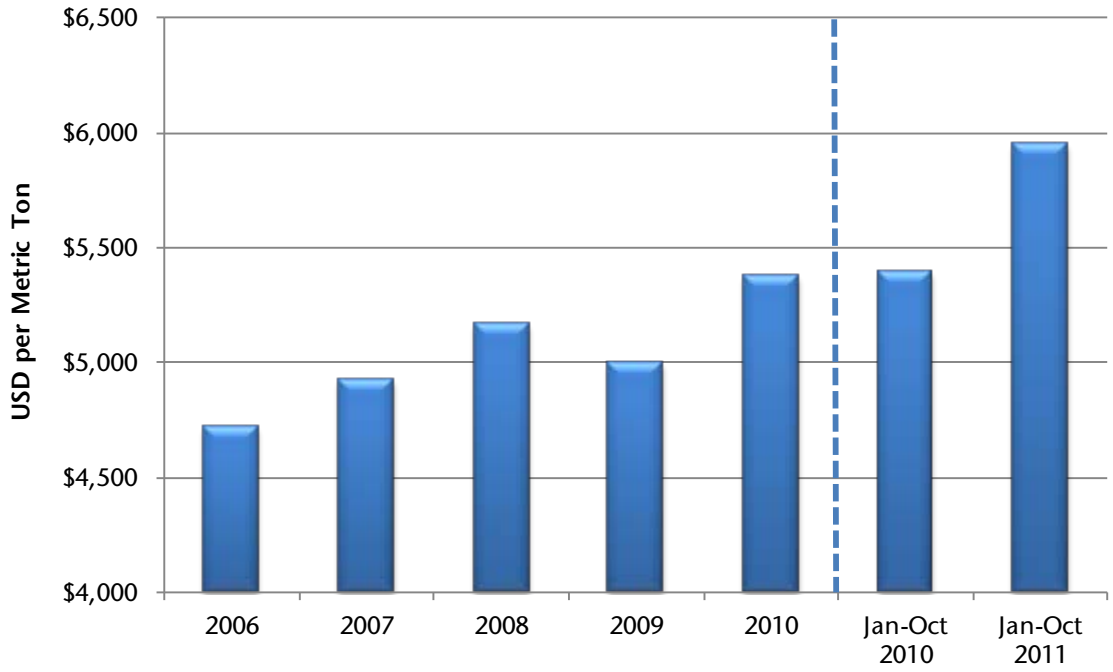
reported in other sources due to a number of factors, such as product-form differences, supply chain mark-ups, transportation costs, or other costs associated with selling seafood.

Summary of Findings

Flatfish and redfish fisheries in the Newfoundland and Labrador (NL) region have been negatively impacted over the past several years by the following factors: a stronger Canadian dollar, smaller harvest volumes, rising costs (inflation), and increased supply from competing species in the US market, such as sole, tilapia, and pangasius.

The average unit value (US dollar per metric ton) of all fresh and frozen fish imported into the US increased by 10 percent in 2011, through October, versus the same ten-month period in 2010. The average value per ton of all US seafood imports is up 15 percent in 2011.

US Import Value per Metric Ton of All Fresh and Frozen Fish
2006 - 2011



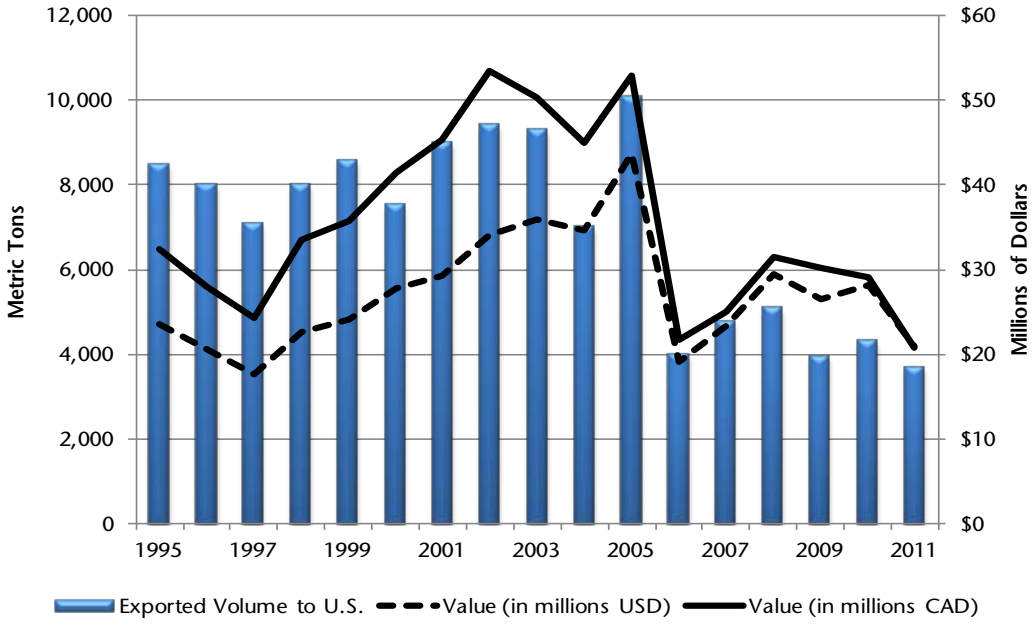
Source: US Census Bureau – Foreign Trade Data.

Key Flatfish Findings

- Ex-vessel prices for Canadian flounder are at historically low levels. Ex-vessel prices have been negatively affected by a stronger Canadian dollar and market pressure from competing whitefish species.

- Most Canadian flatfish exports go to the United States. Export volume and value have decreased substantially in recent years (see chart below). Through October 2011, only 3,681 metric tons (MT) of Canadian flatfish have been exported to the US.

US Imports of Canadian Flatfish (Flounder and Sole)
1995 - 2011



Note: Does not include larger flatfish species such as halibut, turbot, or Dover Sole. Data from 2011 is current through October.
Source: US Census Bureau – Foreign Trade Data.

- China has become a more important flatfish trading partner in the US market during the past 15 years. In 1996, China accounted for 18 percent of all flatfish imported into the US; in 2010, China accounted for 68 percent (see chart on page 18).

- Canada's flatfish fishery has been negatively impacted by a strong Canadian dollar in recent years. Ex-vessel prices for NL flatfish, expressed in USD, were virtually the same in 2002 and 2010. However, because the Canadian dollar appreciated versus the US dollar, ex-vessel prices in CAD terms were 36 percent lower in 2010 versus prices seen in 2002 (see table on page 10 for more information).

- Even if exchange rates were not working against Canadian producers, the value of flatfish exports in 2010 is roughly equal to the value of flatfish exports in 2000 (denominated in USD). Meanwhile, costs related to transportation, labor, utilities, and insurance have all gone up substantially during the past ten years.

- North American flatfish harvests have been relatively large in each of the past four seasons, due to larger harvests of sole and Arrowtooth flounder in Alaska. Ex-vessel prices for Alaska sole have declined as supply has increased.

- According to the US National Marine Fisheries Service, average import prices for sole products imported to the US from China (originating from Alaska and Russia fisheries) declined from 2008 to 2010, but have increased in 2011.

- Due to minimum processing requirements and their proximity to US east coast markets, NL flatfish are typically processed into fillet products. In Alaska, over 80 percent of the high-volume flatfish harvest is frozen at-sea as a headed-and-gutted product, then exported to Asian markets where most of it is filleted and re-exported.

- World supplies of pollock, cod, and other whitefish increased 11 percent in 2011, but are projected to only post a 2 percent gain in 2012.

- In Dalian, a Chinese city with major seafood processing facilities, seafood processing workers earn $385 on average per month. While this is a fraction of what US and Canadian processing workers earn, labor costs are rising quickly in China. Since 2002, wages have risen at an annual rate of 15 percent and employee turnover is high. Continued wage growth could have a significant impact on where product is secondarily processed.

- Chinese seafood processing plants exist primarily to transform frozen, dressed product into various frozen fillet products. Because hand filleting provides the greatest yields, these plants rely on armies of skilled workers as opposed to automated fillet machines to process product.

- China imported over 2.2 million metric tons (MMT) of seafood in 2009. Most of that is processed into whitefish fillets, fish meal, or other fillet products. Dalian, Qingdao and Xiamen are home to large processing plants. The largest plants are modern facilities with sophisticated quality control technology employing several thousand workers.

- Import data show that fresh Yellowtail flounder product, which is imported to the US from Canada, is typically sold at premium prices well above those of frozen sole or flounder imported from China. However, that does not mean that all flatfish product from Canada can be exported as fresh product because these markets are very sensitive to supply. Flooding the fresh market with more supply almost always drives down price. In addition, some regions, such as NL, would have a difficult time producing large amounts of premium fresh product due to their distance from US east coast markets.

Key Redfish (Ocean Perch) Findings

- Canada accounts for the majority of US ocean perch imports. US imports of ocean perch are near historic lows, as a result of smaller Canadian harvests.

- Alaska fisheries produce significant volumes of Pacific Ocean perch, a species very similar to Atlantic redfish (also known as Atlantic Ocean perch). Due to questions about mislabeling, estimating volume of Alaskan product that goes to the US market is problematic.

- Worldwide production of Atlantic redfish and Pacific Ocean perch reached 198,000 MT in 2009. Harvests of Atlantic redfish have declined since the early 2000s and the Groundfish Forum, comprised of seafood industry executives from around the world, estimates the 2012 Atlantic redfish harvest will be on the order of 160,000 MT.

- Redfish ex-vessel prices have not increased significantly to offset harvest volume declines during the past several years. However, import prices rose in 2011.

- Canadian Atlantic Ocean perch fillets are generally more expensive than Alaska pollock, tilapia[1], and pangasius (based on import unit values). However, Canadian Atlantic Ocean perch frozen fillets are generally less expensive than frozen, reprocessed Pacific Ocean perch fillets from China, according to the US Census Bureau trade data (see table on page 28 for more details). Price differences between Atlantic Ocean perch and Pacific Ocean perch may be explained by slight product form differences, which are not specified in the trade data. For instance, a product which is skinless and boneless would sell at a premium to the same fillet with the skin-on and bone-in, but these differences would not be delineated in the trade data. Amongst similar sized fillets, it is likely that consumers do not differentiate between Atlantic and Pacific Ocean perch species. Import prices for fresh and frozen fillets have shown some gains recently.

[1] Although the average 2011 import price of Chinese tilapia is greater than the import price of Canadian redfish - the price of imported Chinese tilapia has fallen significantly in recent months while prices of Canadian redfish have increased. Redfish prices are now higher than tilapia. As of October 2011, the average import price of frozen Canadian redfish fillets was USD$4.45/kg while frozen Chinese tilapia fillets averaged USD$3.93/kg.

Introduction to Flatfish and Redfish Markets

Flatfish

Whitefish is a generic term given to species like sole, flounder, plaice, pollock, hake, cod, halibut, turbot, and other finfish which produce a white fillet. Canadian Yellowtail flounder, including the harvest from Newfoundland and Labrador waters, is a relatively small part of the global whitefish supply. North America, primarily the United States, is the principal market for Yellowtail flounder.

Some flatfish species, like Pacific halibut or European Dover sole, are also small pieces of the global whitefish supply but go to high-value, niche markets. That special market status means prices for those high-value species are generally unrelated to overall whitefish supply. Prices for Pacific halibut and European Dover sole are much more dependent on supply for those particular species, rather than the global supply of other whitefish. Chefs and high-end consumers are less willing to substitute less expensive species for Pacific halibut or Dover sole.

Yellowtail flounder is generally relegated to more of a commodity status than Pacific halibut or European Dover sole. Therefore, the value of Yellowtail flounder is tied partly to the supply of Yellowtail flounder, but is also impacted by the supply of similar flatfish such as Yellowfin sole.

The term "flatfish" in this report generally includes various species of flounder, plaice, and sole, but does not include halibuts, turbots, or Dover sole.

Though difficult to quantify, the market for Yellowtail flounder may also be hurt by consumer uncertainty surrounding the sustainability of the Atlantic fishery. The Canadian Grand Bank Yellowtail flounder fishery is certified as sustainable by the Marine Stewardship Council (MSC), but the Blue Ocean Institute ranks the entire Atlantic flounder species as "yellow" (meaning there are sustainability issues). Seafood Watch, a sustainability ranking published by the Monterey Bay Aquarium, assigns a "red" listing to US-caught Yellowtail Flounder and recommends consumers avoid the fish. Seafood Watch recommends sole and flounder from Pacific fisheries as a "good alternative" to those species harvested in "US Atlantic" waters.[2]

US buyers typically do not differentiate between Canadian and American Yellowtail flounder, which is unfortunate given the differences in sustainability rankings. At New York's Fulton Fish Market, Canadian product is sometimes blended with American product.

People familiar with the fisheries might understand that fish sourced from Canada is a sustainable choice while fish caught in US fisheries off the east coast might not be; however, the average consumer is likely confused by the different sustainability ratings. Further research (beyond the scope of this report) would be needed to accurately assess the impact of these sustainability grades, but it is possible these rankings do affect some buyers' proclivity to use Yellowtail flounder.

[2] http://www.montereybayaquarium.org/cr/SeafoodWatch/web/sfw_factsheet.aspx?fid=261

This report will focus more on the general supply and market trends for all flatfish and whitefish because Yellowtail flounder do not possess a unique market as robust as Pacific halibut or European Dover sole.

Redfish

Redfish, most commonly known as ocean perch, typically refers to various species in the *Sebastes* genus. The flesh is dense and almost always has a reddish hue – hence the generic term "redfish." *Sebastes fasciatus* and *Sebastes mentella* are the most common species caught in Canada's Atlantic fisheries. These redfish species can live up to 40 years, and other redfish can live even longer.

While the seafood industry may know these species as redfish, particularly in the Atlantic fisheries, it often appears on menus as "whitefish" (or sometimes "rockfish"). This low volume, niche market can make analysis very difficult. Tracking one species through the value chain (from fisherman, to processor, to wholesaler, to market) is problematic because the name of these fish can change as they move towards the consumer's plate. The species Atlantic redfish and the term Atlantic Ocean perch are used interchangeably in this report. Fishermen and processors are more likely to know these fish as "redfish," while wholesalers, retailers, and cooks are more likely to know them as "perch" or "rockfish." Given the variety of terms used to describe this fish and its relative obscurity in ports outside of New England or Japan, it is likely that some product is mislabeled.

This report outlines the market for ocean perch, utilizing what data is available. However, due to the smaller volumes, analyzing the market for these fish will not yield the same depth as other more plentiful species.

Historical Supply and Relative Value of Flatfish and Competing Whitefish Species

Canadian Flatfish

Yellowtail flounder are the most common flatfish harvested in the Newfoundland and Labrador districts and the Nova Scotia districts. The flatfish fishery has seen total harvests rebound to the 10,000 to 15,500 metric ton (MT) range in recent years after reaching a low-point in 2006, when just 5,300 MT were caught.

Canada Atlantic Flatfish Harvest and Value
1995 - 2010

Year	Atlantic Harvest Volume (MT)	Atlantic Landed Value (000's CAD)	Average Price/KG (CAD)	Average Price/KG (USD)
1995	10,832	CAD $15,008	CAD $1.39	USD $1.01
1996	9,287	12,359	1.33	0.98
1997	10,817	13,713	1.27	0.92
1998	13,730	15,552	1.13	0.76
1999	17,145	17,702	1.03	0.70
2000	22,060	21,371	0.97	0.65
2001	25,078	21,887	0.87	0.56
2002	21,136	18,427	0.87	0.56
2003	23,004	19,589	0.85	0.61
2004	19,593	16,727	0.85	0.66
2005	20,337	17,047	0.84	0.69
2006	5,380	6,016	1.12	0.99
2007	9,102	8,415	0.92	0.86
2008	15,508	11,617	0.75	0.70
2009	10,666	6,650	0.62	0.55
2010	13,848	7,774	0.56	0.54

Note: Data for 2009 and 2010 are preliminary. The 2010 data may also be incomplete, based on personal communication with DFO staff. Average prices, both in CAD and converted USD terms, are based on available data from public sources and may differ from specific prices paid to individual producers. Prices reflect the weighted average value per kilo for all flatfish harvested in Canada's Atlantic regions during the time period and is not intended to quote the price for any individual flatfish species.

Source: Canada Department of Fisheries and Oceans, USD conversions computed with data from OANDA.

The ex-vessel price of Canadian Atlantic flatfish has fallen significantly, in both Canadian dollar (CAD) and US dollar (USD) terms, since the mid 1990's. However, a weakening US dollar has had a significant effect on the price Canadian fishermen and processors receive for their product.

In 2002, one US dollar was worth $1.57 Canadian dollars and Canadian fishermen received $0.87 per kilogram for flatfish. In 2010, one US dollar was only worth $1.03 Canadian dollars and fishermen received $0.56 per kilogram for their flatfish, or 36 percent less than they received in 2002. In USD terms the 2002 price was virtually the same as in 2010. Although the fish may have cost the same from the American buyer's perspective, Canadian producers received much less for their product (in CAD terms).

From 1995 to 2008 a classic inverse relationship existed between harvest volume and price. Generally speaking, if harvest volumes decline, the price would rise. This was not the case in 2009, and moreover, the price of Canadian Yellowtail flounder fell significantly since the mid 2000s (see appendix) while operating costs increased and harvests broadly declined. There are several possible explanations why prices have declined and why the relationship between price and supply has not held up in the long-term or in recent years:

- The US dollar has weakened considerably versus the Canadian dollar, making Canadian goods like Yellowtail flounder more expensive from an American buyer's perspective (even though the sales price from the Canadian perspective may not change).
- The economic recession of 2009 and 2010 may have hurt demand for more expensive products; especially for fresh fish which sells at a premium to frozen fish.
- Consolidation within the food industry (in both distribution and retail) over the past two decades has given more market power to larger producers. Large food distributors and retailers are less willing to take on suppliers with smaller volumes, and focus more on fisheries with larger volumes, consistent supply, and lower prices.
- The supply of flatfish caught in North America and the volume of whitefish imported into the United States increased substantially in recent years. The increased supply of these alternatives may have attracted some buyers to substitute cheaper product for Canadian Yellowtail flounder.
- Every wild fishery which experiences a downturn in supply risks losing customers in subsequent years. In 2006 and 2007, the Canadian harvest of Atlantic flatfish was relatively small and US east coast harvests were in a state of decline. The lack of available product could have prompted product substitution, and those buyers do not always return when harvests go back up.

Flatfish harvests in the North Pacific have increased in recent years while harvests have generally decreased in Western Atlantic fisheries. Canada's share of the flatfish supply was 13.5 percent in 2001, but just 4.9 percent in 2010 (see table on following page).

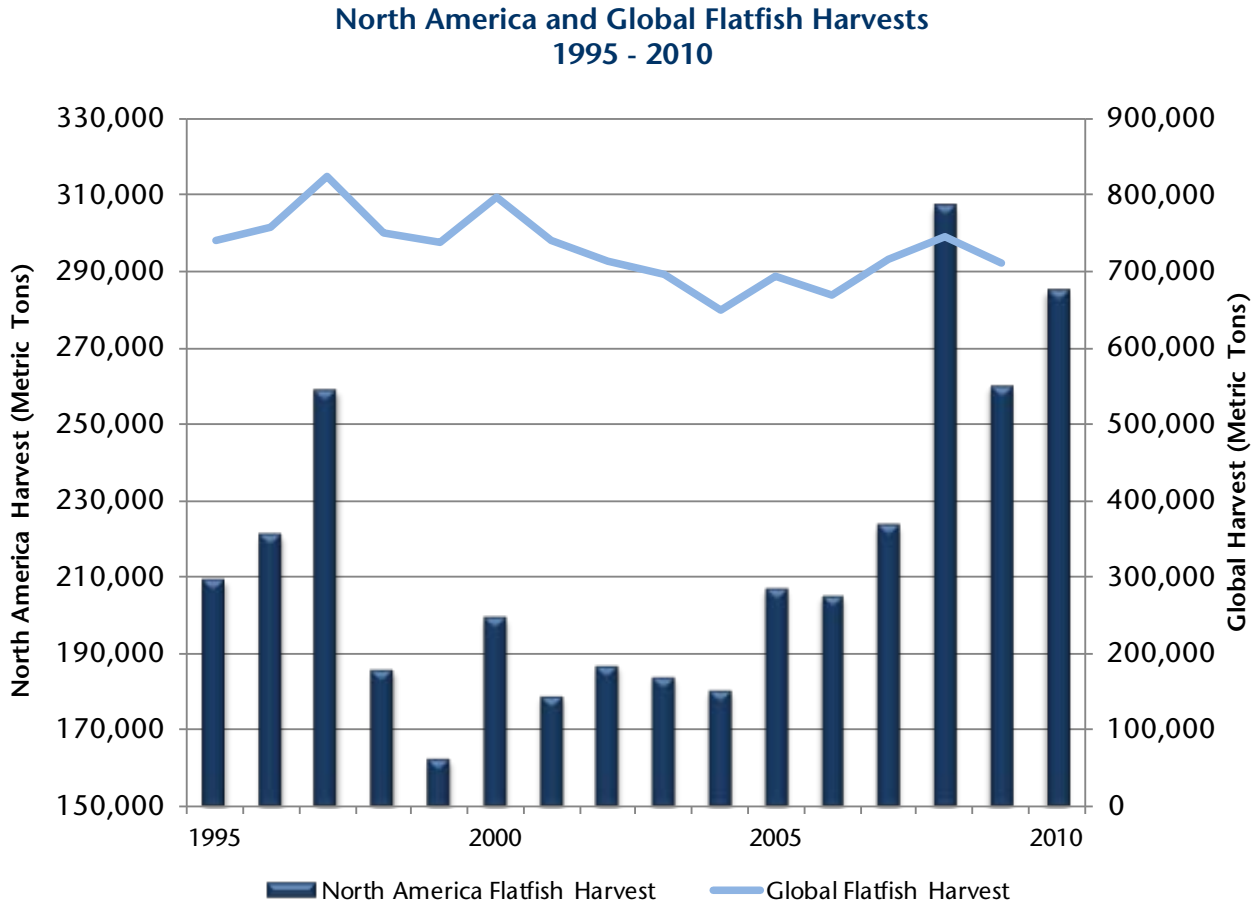
Atlantic Canadian Flatfish Harvest versus Total North America Flatfish Harvest 2001 and 2010

Year	Atlantic Canadian Flatfish Harvest (MT)	Total North America Flatfish Harvest (MT)	Atlantic Canadian Flatfish (as Pct.)
2001	25,078	185,906	13.5%
2010	13,848	284,668	4.9%

Note: Data for 2010 are preliminary and may be incomplete, based on personal communication with DFO staff.

Source: Canada Department of Fisheries and Oceans and National Marine Fisheries Service.

North America and Global Flatfish Supply



Note: Does not include larger flatfish species such as halibut, turbot, or Dover Sole.
Source: FAO, DFO, and NMFS.

The North American flatfish fisheries have added considerable supply to the market during the past ten years. The three largest harvests of sole and flounder since 1995 have all occurred in the past three years. Global harvests have been steadier, generally between 650,000 to 750,000 MT of sole and flounder.

Europe and Russia account for a large share of the flatfish harvest. Over the past ten years, flatfish harvests in Europe have steadily declined from around 260,000 MT to 180,000 MT in 2009. Russian flatfish production has been steady in recent years, producing harvest volumes on the order of 90,000 to 100,000 MT.

Alaska accounts for the vast majority of the US flatfish harvest. Most Alaska flatfish is caught in the Bering Sea by trawlers. The Alaska flatfish fishery saw landings by 286 trawl vessels in 2010. Most flatfish trawlers are registered as catcher/processors, but only the larger vessels (known as factory trawlers, like the F/T Northern Glacier[3]) contain onboard filleting capabilities.

[3] http://www.glacierfish.com/operations.htm

Larger North American harvests are being driven by two factors. First, Alaska's offshore Bering Sea and Aleutian Islands (BSAI) fisheries have an all-species hard cap of two million metric tons (MMT). This rule was put in place by Congress for sustainability purposes; however, the acceptable biological catch (ABC) of all BSAI commercial species is usually much higher than the two MMT cap. In the event that the ABC of all BSAI species is below two million metric tons, the total allowable catch (TAC) would be set below the two MMT cap.

All commercial species in BSAI fisheries are regularly surveyed in order produce estimates about the biomass, spawning biomass, and acceptable biological catch. In addition, bycatch and other fishery impacts are catalogued by onboard observers employed by the federal government. These survey data and federal fishery regulations provide the North Pacific Fishery Management Council the tools needed to decide the TAC for various fishing groups and species.

Typically, less valuable species have TACs set well below the ABC for that species so that more valuable species, such as cod and pollock, can be fully utilized. Reduced pollock TACs in recent years have left more room under the two-million-ton hard cap for species like Yellowfin sole, Rock sole, and Flathead sole to be harvested.

Secondly, harvests of Arrowtooth flounder have increased significantly in recent years as the biomass of that species has expanded, especially in the Gulf of Alaska. Since 2004, US Arrowtooth harvests increased from 12,800 MT to 49,600 MT. While Arrowtooth harvests add to the total flatfish supply, the fish produces very low quality fillets due to an enzyme present in the fish. Arrowtooth flounder has little to no effect on markets for mid-market flatfish, because it is not a suitable substitute for more valuable flatfish species due to intrinsic quality issues.

Alaska sole harvest volumes are up 26,600 MT in 2011 over last year even though sole TACs are similar to last year. Larger sole harvests are partly due to the closure of an Atka Mackerel fishery in areas surrounding Stellar Sea Lion habitat in the Aleutian Island chain, which displaces fishing effort to other species. Quota utilization has also increased in the Alaska flatfish fisheries due to regulation changes which encourage cooperation (over competition), discourage bycatch, and promote efficiency.

Although the pollock TAC increased in 2011 and has been set at a similar level in 2012, the harvest of sole in Alaska is likely to remain steady in 2012. A pollock harvest of 1.2 to 1.3 MMT is not enough to displace large volumes of sole and other flatfish because there is still ample room under the 2.0 MMT hard cap. However, if pollock TACs increase to the 1.5 MMT range in the future, that could potentially displace some flatfish harvest volume.

Three varieties of sole (Yellowfin, Rock, and Flathead sole), primarily harvested in Alaska, account for 71 percent of the US total sole and flounder harvest. Ex-vessel prices for these species declined in recent years as supply increased.

Average Ex-Vessel Price and Volume of Sole Caught in Alaska versus Canadian Flatfish
2006 - 2010

	2006	2007	2008	2009	2010
Alaska Yellowfin Sole					
Harvest Volume (in MT)	90,571	109,085	141,237	100,644	113,246
Average Ex-Vessel Price/KG	USD $0.37	0.39	0.39	0.35	0.29
Alaska Rock Sole					
Harvest Volume (in MT)	34,234	34,353	52,974	50,037	53,420
Average Ex-Vessel Price/KG	USD $ 0.57	0.56	0.52	0.42	0.35
Alaska Flathead Sole					
Harvest Volume (in MT)	16,402	16,201	25,273	20,914	21,759
Average Ex-Vessel Price/KG	USD $0.43	0.46	0.43	0.36	0.28
Canadian Atlantic Flatfish					
Harvest Volume (in MT)	5,380	9,102	15,508	10,666	13,848
Average Ex-Vessel Price/KG	USD $0.99	0.86	0.70	0.55	0.54

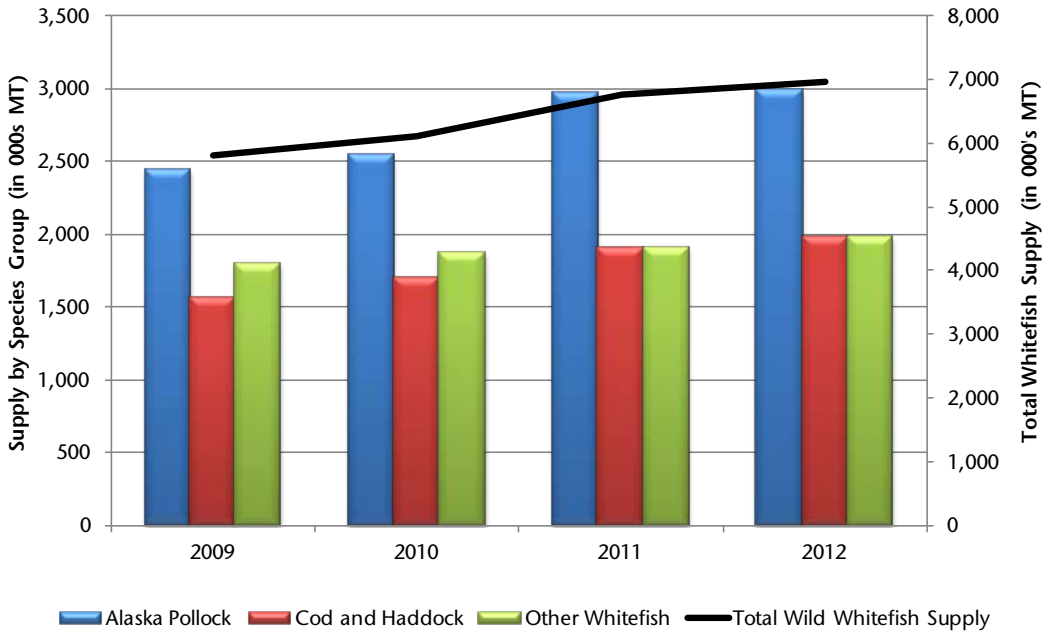
Note: Prices are denominated in US dollars. Atlantic flatfish data for 2009 and 2010 is preliminary. Methodologies employed to track harvest data may not be consistent between US and Canadian fisheries.

Source: US National Marine Fisheries Service and Canada Department of Fisheries and Oceans.

Global Whitefish Supply

The supply of wild whitefish increased 5 percent in 2010 and 11 percent in 2011. Industry members from the Groundfish Forum estimate wild whitefish supplies will increase only 2 percent in 2012 (these estimates do not include flatfish species, but rather competing whitefish species such as cod, pollock, saithe, etc.).

Global Whitefish Supply
2009 - 2012



Note: These data do not include flatfish.

Source: FAO and Groundfish Forum estimates.

The supply of tilapia is expected to increase from 2.76 MMT in 2011 to 2.85 MMT in 2012. Farmed pangasius and catfish supplies are expected to decline from 1.51 MMT to 1.45 MMT.

Supply Summary

Global harvest of sole, flounder and other non-premium flatfish have remained steady in recent years at a level of approximately 710,000 MT. Larger Alaskan harvests of sole and flounder have increased supplies in North America. Alaska is the major flatfish producer in North America; flatfish harvest increased in 2011 and harvest volumes are projected to be steady in 2012. Harvests in eastern Russia have been stable in recent years while European production has declined. Flatfish production in the western Atlantic regions has declined as well.

Supplies of other wild and farmed whitefish are projected to increase 2.0 percent in 2012, after posting year-on-year increases of 4.6 percent in 2010 and 5.3 percent in 2011.

Product Forms and Product Flow for Canadian Yellowtail Flounder

Yellowtail flounder caught in Canada is sold into markets for fillets and whole fish. The US east coast is a major market for Yellowtail flounder products, and local Canadian markets also absorb some volume. Relatively little product is exported to countries other than the United States.

Product Forms and Product Flow for Alaska Sole and Flounder

The small size of Yellowfin sole and Rock sole, combined with the higher cost of labor and power generation in Alaska relative to the rest of the US and other parts of the world, result in a higher processing costs per pound. Consequently, over 80 percent of the sole and flounder caught in the Bering Sea are frozen in a headed-and-gutted (H/G) format before being exported to Asia. Most of these fish are headed-and-gutted, then frozen at sea. Almost all H/G product exported abroad goes to Chinese reprocessing facilities, where it is filleted into individual frozen skinless/boneless fillets or utilized in value-added products. Qingdao, Dalian, and Xiamen are major Chinese reprocessing centers.

After the fish have been filleted in China, most is exported back to the United States and Canada as frozen fillets for use in foodservice applications. However, there are anecdotal reports that more product is being exported to Europe or sold domestically in Chinese markets. China represents a large potential market for inexpensive sole fillets, but it is limited by high tariffs. Flatfish imported into China for sale within the country are charged duties and value-added taxes. When added together these duties and taxes can approach 30 percent, according to Chinese importers. Product imported into China for the purpose of re-export is not charged a tariff.

Roe Products

Rock sole roe is a high value product in Japan. The fish is harvested in Alaska waters during February and March. Once caught, Rock sole are separated by gender. Most males will go to China for re-processing while females with roe are packed for export to Japan. Prices for Rock sole roe have fallen in recent years, but remain an important part of the fleet's early season income.

US Wholesale Flatfish Market

Prices for fresh and frozen flatfish imported into the US rebounded in 2011 after declining in 2009 and 2010. However, trends vary depending on the country of origin and distinctions like fresh/frozen or filleted/whole. The average value of all imported flatfish, on a per pound basis, is at its highest point in over 15 years.

Average Import Price per Kilogram and Import Volume of Flatfish Imported into US 2006 - 2011

	2006	2007	2008	2009	2010	2011
Import Price						
Canada Fresh	USD $5.68	$4.98	$6.50	$8.65	$8.22	$8.40
Canada Frozen	3.14	4.74	4.99	5.39	4.89	3.93
Total Fresh	5.33	4.75	5.81	8.67	8.41	8.66
Total Frozen	4.04	4.11	4.63	4.34	4.22	4.52
Total Flatfish	**USD $4.23**	**$4.23**	**$4.81**	**$4.78**	**$4.68**	**$4.92**
Import Volumes (MT)						
Canada Fresh	2,661	3,530	2,736	1,609	2,152	1,454
Canada Frozen	1,297	1,205	2,349	2,330	2,149	2,227
Total Fresh	4,538	6,221	4,889	2,542	3,220	2,430
Total Frozen	26,121	28,586	27,060	22,521	25,777	22,523
Total Flatfish	**30,660**	**34,807**	**31,949**	**25,063**	**28,997**	**24,953**

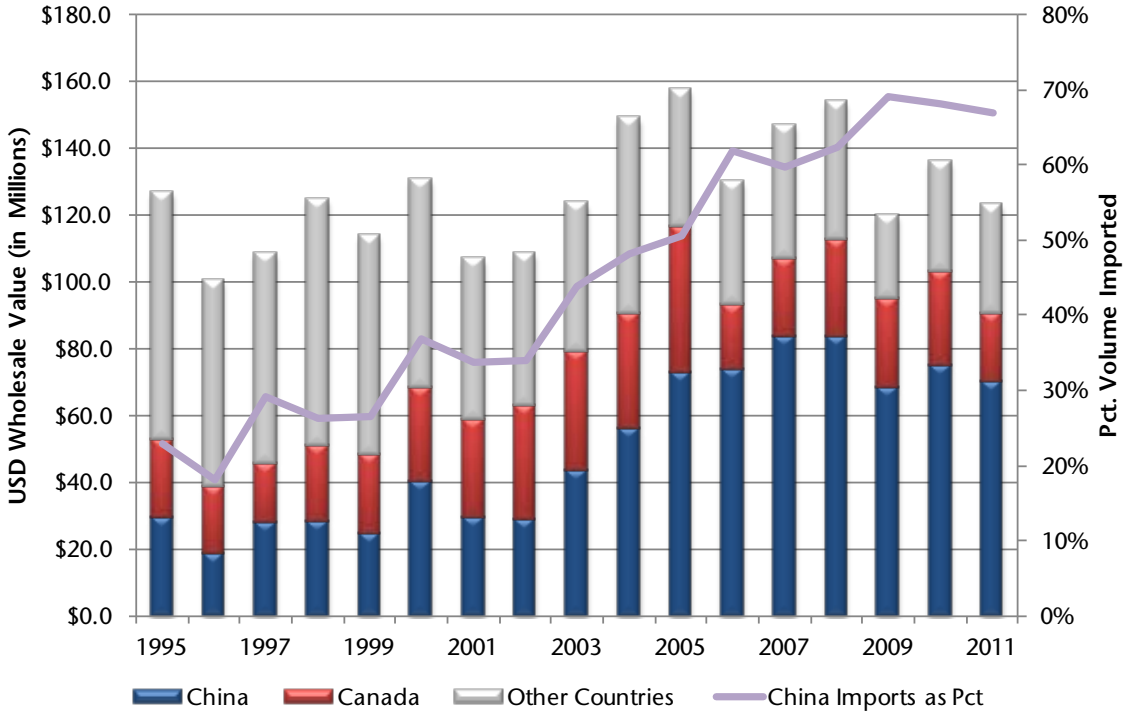
Note: Prices are denominated in US dollars. Data for 2011 is current through October.
Source: US Census Bureau – Foreign Trade Data.

Conversely, the price of imported Canadian flatfish has fallen since 2009, due to lower prices for frozen product. In the mid 1990s, over 80 percent of the flatfish exported south to the US consisted of "fresh" product. In 2011, only 40 percent of Canadian flatfish exports to the US consisted of fresh product (not including halibut or turbot). Frozen products accounted for 90 percent of all flatfish[4] imported into the U.S. in 2011 (through October).

China has become the dominant flatfish supplier to the US market over the last 15 years. In 2010, Chinese flatfish imports accounted for two-thirds of all flatfish imported into the United States.

[4] Not including halibut, turbot, or Dover sole.

Wholesale Value of Flatfish Imported into the US, by Major Trade Partner
1995 - 2011

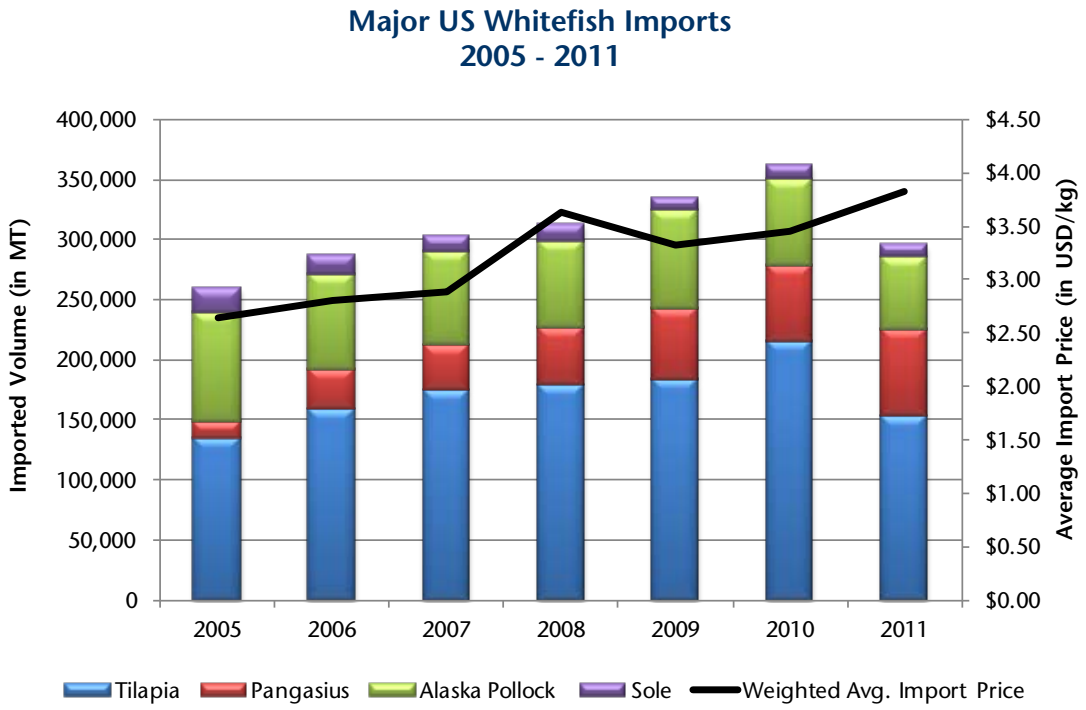


Note: Data for 2011 is current through October.
Source: US Census Bureau – Foreign Trade Data.

Impact of Tilapia, Pangasius and Other Whitefish

Tilapia is the most widely consumed whitefish in the United States, followed by catfish/pangasius and Alaska pollock. US imports of farmed Chinese tilapia and farmed Vietnamese pangasius have risen in recent years. From 2005 to 2010, imports of tilapia and pangasius into the US increased 87 percent.

The US imported over 350,000 metric tons of all whitefish in 2010, in addition to domestically caught whitefish (such as cod, flounder, rockfish, and Alaska pollock). Based on exports through the first ten months of 2011, whitefish import volumes are expected to be flat or perhaps post a small decrease in 2011. On average, import prices are up for sole and pangasius, but down for Alaska pollock in 2011.



Note: Data for 2011 is current through October.
Source: US Census Bureau – Foreign Trade Data.

Tilapia and pangasius are taking market share even more rapidly in the Northeastern United States. From 2005 to 2010, imports of tilapia and pangasius into the Northeast grew from 19,900 MT to 72,400 MT.

Unlike wild species, which are constrained by a number of factors associated with a natural ecosystem, farmed species like tilapia and pangasius are constrained only by the availability of land, water, feed, labor, markets, and capital. As commodities which can be delivered to market continuously, farmed whitefish prices are typically less volatile (compared to wild fish, especially fresh fish). Import prices have increased in recent years even though supply has expanded. These data suggest tilapia and pangasius are rapidly becoming popular seafood choices and gaining consumer acceptance. However, tilapia prices have declined significantly in 2011 even as quarterly import volumes have declined.

Average Northeast US Import Price and Total Import Volume of Major Whitefish Species versus Canadian Flatfish - 2011

	20011-Q1	2011-Q2	2011-Q3	Oct. 2011	YTD 2011
Tilapia (Northeast Ports Only)					
Import Volume (in MT)	17,089	13,716	12,995	5,455	49,255
Import Price - Frozen Fillets (China)	$4.83	4.87	4.35	4.03	4.66
Pangasius (Northeast Ports Only)					
Import Volume (in MT)	4,662	5,834	8,306	2,765	21,568
Import Price - Frozen Fillets (Vietnam)	$3.38	3.61	3.70	3.61	3.60
Alaska Pollock (Northeast Ports Only)					
Import Volume (in MT)	11,477	10,574	13,059	3,876	38,986
Import Price – Frozen Fillets (China)	$2.60	2.64	2.57	2.74	2.62
Sole (Northeast Ports Only)					
Import Volume (in MT)	2,919	1,632	2,120	794	7,464
Import Price – Frozen Fillets (China)	$4.52	4.51	4.68	4.70	4.58
Canadian Atlantic Flatfish					
Import Volume (in MT)	-	-	-	-	3,681
Avg. Import Price/KG – All Products	-	-	-	-	$5.69

Note: Prices are denominated in US dollars per kilogram and represent the average prices of major product forms (except for Canadian Atlantic Flatfish because there is no one dominant product form). Data is current through October.

Source: US Census Bureau – Foreign Trade Data.

Average Northeast US Import Price and Total Import Volume of Major Whitefish Species versus Canadian Flatfish 2007 - 2011

	2007	2008	2009	2010	YTD 2011
Tilapia (Northeast Ports Only)					
Import Volume (in MT)	31,111	35,360	42,275	58,011	36,675
Import Price - Frozen Fillets (China)	$3.25	4.35	3.82	3.98	4.66
Pangasius (Northeast Ports Only)					
Import Volume (in MT)	6,382	9,967	12,335	15,184	21,568
Import Price - Frozen Fillets (Vietnam)	$2.94	3.21	3.20	3.13	3.60
Alaska Pollock (Northeast Ports Only)					
Import Volume (in MT)	49,539	47,401	55,405	45,125	38,986
Import Price – Frozen Fillets (China)	$2.16	2.30	2.82	2.69	2.62
Sole (Northeast Ports Only)					
Import Volume (in MT)	13,399	12,779	8,026	8,864	7,464
Import Price – Frozen Fillets (China)	$4.42	4.54	4.29	4.11	4.58
Canadian Atlantic Flatfish (All US Ports)					
Import Volume (in MT)	4,735	5,085	3,939	4,301	3,681
Avg. Import Price/KG – All Products	$4.92	5.80	6.72	6.56	5.69

Note: Prices are denominated in US dollars per kilogram and represent the average prices of major product forms (except for Canadian Atlantic Flatfish because there is no one dominant product form). Data is current through October.

Source: US Census Bureau – Foreign Trade Data.

Average US Import Price and Total Volume of Major Whitefish Species versus Canadian Flatfish 2007 - 2011

	2007	2008	2009	2010	YTD 2011
Tilapia (All US Ports)					
Import Volume (in MT)	173,755	179,465	183,295	215,378	152,295
Import Price - Frozen Fillets (China)	$3.07	4.25	3.61	3.82	4.45
Pangasius (All US Ports)					
Import Volume (in MT)	38,377	46,489	58,686	62,385	72,035
Import Price - Frozen Fillets (Vietnam)	$3.24	3.18	3.15	3.08	3.56
Alaska Pollock (All US Ports)					
Import Volume (in MT)	76,997	72,585	82,760	72,513	60,891
Import Price – Frozen Fillets (China)	$2.05	2.20	2.67	2.56	2.47
Sole (All US Ports)					
Import Volume (in MT)	13,499	13,801	10,053	11,472	10,024
Import Price – Frozen Fillets (China)	$4.33	4.44	4.24	4.07	4.57
Canadian Atlantic Flatfish (All US Ports)					
Import Volume (in MT)	4,735	5,085	3,939	4,301	3,681
Avg. Import Price/KG – All Products	$4.92	5.80	6.72	6.56	5.69

Note: Prices are denominated in U.S. dollars per kilogram and represent the average prices of major product forms (except for Canadian Atlantic Flatfish because there is no one dominant product form). Data is current through October.
Source: US Census Bureau – Foreign Trade Data.

China's Seafood Reprocessing Sector

China is a major seafood reprocessor. China imported 2.2 MMT of seafood in 2009. Most of this product is secondarily processed for re-export. Alaska pollock, flatfish, and other whitefish account for nearly two-thirds of their seafood imports. Alaska and Russia account for roughly half of China's total seafood imports, but account for the vast majority of their whitefish and salmon imports.

Chinese Workers Hand Filleting Pollock

Many Chinese reprocessing facilities are modern facilities with strict quality control standards. Most of these facilities hand fillet an assortment of fish. A skilled worker can recover much higher fillet yields than any automated machine, especially when it comes to wild fish.

Whitefish and salmon often enter the plant as headed/gutted frozen fish, and leave as IQF packages or frozen fillet blocks.

Labor costs in China are rising quickly. It is estimated that from 2002 to 2010, the average seafood processing worker's wage rose 15 percent per year. In January 2011, Dezan Shira - a firm which advises and processes payrolls for foreign companies operating in Dalian, China - estimated the monthly seafood processing wage to be 900 RMB[5] to

[5] RMB stands for renminbi, which is the official currency of the People's Republic of China. The primary unit of renminbi is the yuán.

2,859 RMB, or 133 to 423 US dollars. On top of that, companies must pay 38.5 percent for social insurance and housing, which brings the monthly wage range to $184 to $585, with a mid-range of $385.

Chinese plants benefit from relatively cheap labor, but also due to larger economies of scale. Many plants process multiple species imported from around the world and operate 11 or even 12 months a year. In a capital intensive business like seafood processing, having access to large quantities of raw product and operating year-round can drive down unitary processing costs.

The increased competition for labor in China doesn't just affect wages, it affects product quality and plant efficiency. Turnover is very costly for these seafood reprocessors. The quality of their product depends on the skill of the filleters. According to the president of a major seafood processing company, it takes four to five months to properly train a worker to become a skilled filleter.

Although Chinese wages are still far below what a seafood processing worker could expect to make in Canada or the United States, the combination of steady wage growth and increasing transport and energy costs may soon affect the economic equation which drives processing activity to China.

More information on China's reprocessing industry can be found here: http://tinyurl.com/d5357y6.

Not All Alaska Whitefish is Exported Abroad for Secondary Processing

Alaska processing plants run by Trident Seafoods at Akutan and Sand Point routinely fillet large volumes of whitefish harvested in the Bering Sea and Gulf of Alaska. However, Trident Seafoods is the largest seafood processor in the country and they are able to operate these fillet-producing plants differently for two reasons.

First, Trident Seafoods is vertically integrated. The company has value-added operations (or third-party contractors) in the United States and Europe which can produce products like frozen, beer-battered portions, breaded fish sticks, breaded cod fillets, and frozen salmon burger patties. They sell these products in retail outlets under their own Trident Seafoods brand. Most of their value-added products are not produced from start to finish in Alaska. Even a company like Trident, that likely does more filleting than any other whitefish processors in Alaska, ships product out for secondary processing.

Secondly, plants in Akutan and Sand Point have access to enormous volumes of Alaska pollock, Yellowfin sole, and Pacific cod. With long operating seasons and large volumes, the plants can achieve tremendous economies of scale and lower processing costs on a per pound basis.

Regardless of their physical presence in Alaska, many of Alaska's largest processing plants are in remote areas and are staffed primarily by "non-Alaskan" labor. In remote areas, the percentage of processing workers who do not reside anywhere in Alaska can exceed 80 percent.

Supply

Newfoundland and Labrador (NL) account for about a fifth of Canada's total Atlantic redfish harvest. Nova Scotia fisheries now account for the majority of Atlantic redfish harvests. In NL fisheries, total harvest volume and ex-vessel value are both down sharply. From 2006 to 2010, NL harvests were down 60 percent and the ex-vessel value of redfish fell 63 percent.

Atlantic Redfish Harvest and Landed Value
1995 - 2011

Year	Total Atlantic Harvest (MT)	Newfoundland-Labrador Harvest (MT)	Newfoundland-Labrador Value (000's CAD)	Average NL Price/KG (CAD)	Average NL Price/KG (USD)
1995	17,955	5,647	CAD $1,956	CAD $0.35	CAD $0.25
1996	21,404	9,644	3,211	0.33	0.24
1997	18,751	6,407	2,888	0.45	0.33
1998	25,757	10,229	6,777	0.66	0.45
1999	19,698	7,505	4,467	0.60	0.40
2000	19,872	5,870	3,360	0.57	0.39
2001	19,826	8,114	5,364	0.66	0.43
2002	16,773	6,918	4,270	0.62	0.39
2003	15,242	7,385	4,232	0.57	0.41
2004	12,930	6,048	2,666	0.44	0.34
2005	16,008	7,882	4,064	0.52	0.43
2006	14,248	6,476	4,281	0.66	0.58
2007	9,214	2,496	1,360	0.54	0.51
2008	7,829	1,493	840	0.56	0.53
2009	12,117	2,662	1,788	0.67	0.59
2010	13,244	2,584	1,603	0.62	0.60
2011	-	2,870	1,601	0.56	0.56

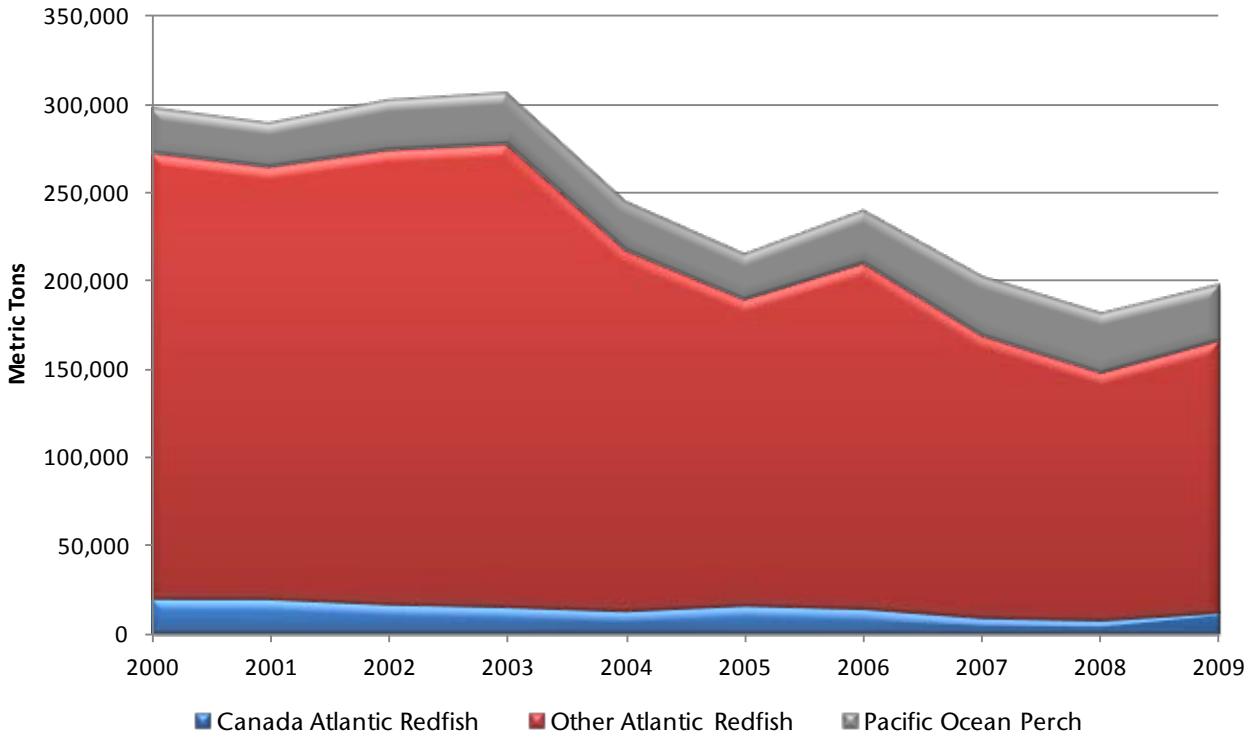
Note: 2011 data is preliminary and incomplete.
Source: Canada Department of Fisheries and Oceans and NL Department of Fisheries and Aquaculture. USD conversions computed with data from OANDA.

Annual NL harvests have been well below their annual TACs since 2007. US fisheries exhibit a similar pattern of low utilization but American fishermen receive higher ex-vessel prices. US fishermen caught 1,646 MT of redfish and received USD $1.19/KG in 2010.

The world supply of Atlantic redfish was 166,000 MT in 2009. This represented an increase from 2008, but as recently as 2003 world production was nearly twice its current level. Iceland, Russia, and Canada are the world's largest Atlantic redfish producers, according to the Food and Agriculture Organization of the United

Nations. Pacific Ocean perch, a very similar species in the *Sebastes* genus, add to the world supply. Both species of ocean perch generally average 35 to 40 cm in length. In 2009, fishermen harvested 32,000 MT of Pacific Ocean perch bringing the total supply of these similar species to 198,000 MT.

Worldwide Atlantic Redfish and Pacific Ocean Perch Harvests
2000 - 2009



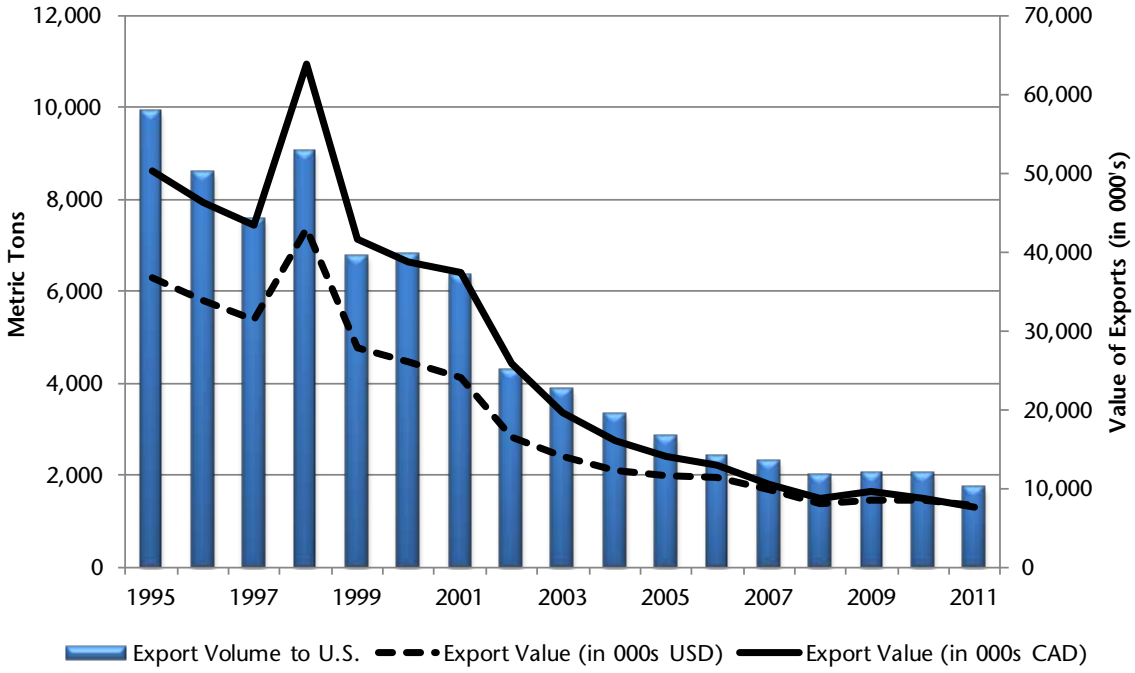
Source: FAO.

Market Trends

Note: Redfish are more commonly known as "ocean perch" in the wholesale market, and as such these terms are used interchangeably in this section.

US imports of ocean perch have fallen significantly during the past 15 years, primarily due to smaller harvests from Canada's Atlantic redfish fisheries. Canadian product makes up over half of all ocean perch imports into the United States. In 2000, the US imported 9,205 MT worth USD $33.1 million. The US imported just 4,900 MT of ocean perch through all ports in 2010, worth USD $20.2 million.

Volume and Value of Canadian Atlantic Ocean Perch Exported to United States 1995 - 2011



Note: 2011 data is current through October.
Source: US Census Bureau – Foreign Trade Data.

Even though supply has decreased significantly, the unit value for imported ocean perch has generally remained between $3.50/kg to $4.20/kg since 2000. This suggests that US buyers have readily substituted other species for the lost ocean perch supply during the past ten years, rather than bidding up prices for ocean perch.

Unit values for fresh Canadian Atlantic ocean perch fillets have increased 10 percent since 2008 even though import volumes for the product have remained flat. This suggests that importers may be bidding up the price for fresh fillet products, despite a weakening dollar. Frozen fillet import prices have increased 13 percent since 2008, as well. However, the average import price per metric ton of all US imported fresh and frozen fish products increased 15 percent during the same time period.

Japan imports a significant amount of Canadian ocean perch, where the species is well regarded for its firm texture and red color. In 2010, Japan imported 5,500 MT of redfish/rockfish from Canada according to Japanese customs statistics – more than twice the volume exported to the United States (from Canada). The majority of this product likely came from redfish fisheries in British Columbia.

US Imports of Canadian Atlantic Ocean Perch Fillets
2005 - 2011

Year	Fresh Fillet Import Volume (in MT)	Average Fresh Fillet Unit Value (in USD/kg)	Frozen Fillet Import Volume (in MT)	Average Frozen Fillet Unit Value (in USD/kg)
2005	1,341	USD $4.46	1,422	USD $3.71
2006	1,099	5.10	1,297	4.42
2007	1,090	4.38	1,201	4.14
2008	1,097	4.29	836	3.81
2009	1,097	4.38	875	3.96
2010	929	4.63	1,088	3.86
2011	793	4.85	903	4.20

Note: 2011 data is current through October.
Source: US Census Bureau – Foreign Trade Data.

Potential for Ocean Perch

Rockfish, yet another name for ocean perch and other species in the *Sebastes* genus, have become a popular ingredient in fish tacos. Rockfish have a firm texture and mix well with sauces. The firm texture allows them to hold up better when sautéed, baked or grilled, as opposed to cod and pollock. Cod and pollock are more likely to be fried or breaded when used in fish tacos; which could turn off health-conscious eaters.

Fish tacos are quickly becoming a popular menu item in the United States. The number of fish taco menu offerings increased by 22.5 percent in the first half of 2010 over the first half of 2009, according to the research firm Technomic. This food trend is expected to continue gaining momentum because fish tacos are an affordable and tasty way to get the health benefits of eating seafood. However, further research would be needed to quantify the volume of ocean perch product being utilized in fish tacos.

In general, larger rockfish fillets command higher prices. However, fillet size and shape are not as important when used in fish tacos. The attractive price point of ocean perch (similar to that of sole or tilapia) and the fact that it is a "rockfish" make it a good fit for the fish taco market.

Challenges with Ocean Perch

Ocean perch are very small. Fresh fillets of Atlantic ocean perch are being imported for USD $4.85 per kilo; however, to obtain 1 kilo in fillets could require 10 fish. This greatly multiplies the cost to process these fillets.

The recovery rate, or yield, is relatively low for ocean perch. Yield on ocean perch is in the range of 20 to 30 percent. So 70 to 80 percent of every fish is either wasted or must be turned into a by-product. However, the processor buys the fish on a round weight basis.

As is the case with many small flatfish species, increasingly this processing work is being done in countries like China that have lower labor costs and access to larger economies of scale. Or, frozen product is being 'refreshed' by retailers and foodservice cooks and being filleted before being sold or utilized.

The US exported 4,300 MT of ocean perch to China in 2010, worth just $7.1 million. Given a harvest of 33,500 MT, this would suggest that either most US product is sold domestically or a sizeable amount of exported product is mislabeled. Mislabeled product is a common problem in the seafood industry.

Competition from Other Whitefish Species

Ocean perch markets also face competition from tilapia and pangasius. These fish are imported in increasingly large volumes into the United States. In addition, Alaska pollock and imported sole are also widely available. These species are generally less expensive than Canadian Atlantic ocean perch.

Average Unit Value and Volume of Major US Imported Whitefish Products versus Ocean Perch - 2011

Product	Average Fillet Unit Value (in USD/kg)	Import Volume (in MT)
Frozen Alaska Pollock Fillets from China	USD $2.66	28,100
Frozen Pangasius (Catfish) Fillets from Vietnam	3.56	66,400
Frozen Tilapia Fillets from China	4.45	91,100
Frozen Sole Fillets from China	4.57	6,400
Frozen Ocean Perch Fillets from China (NSPF)	4.87	892
Frozen Atlantic Ocean Perch Fillet Blocks from China	4.40	665
Fresh Atlantic Ocean Perch Fillets from Canada	**USD $4.85**	**903**
Frozen Atlantic Ocean Perch Fillets from Canada	**4.20**	**793**

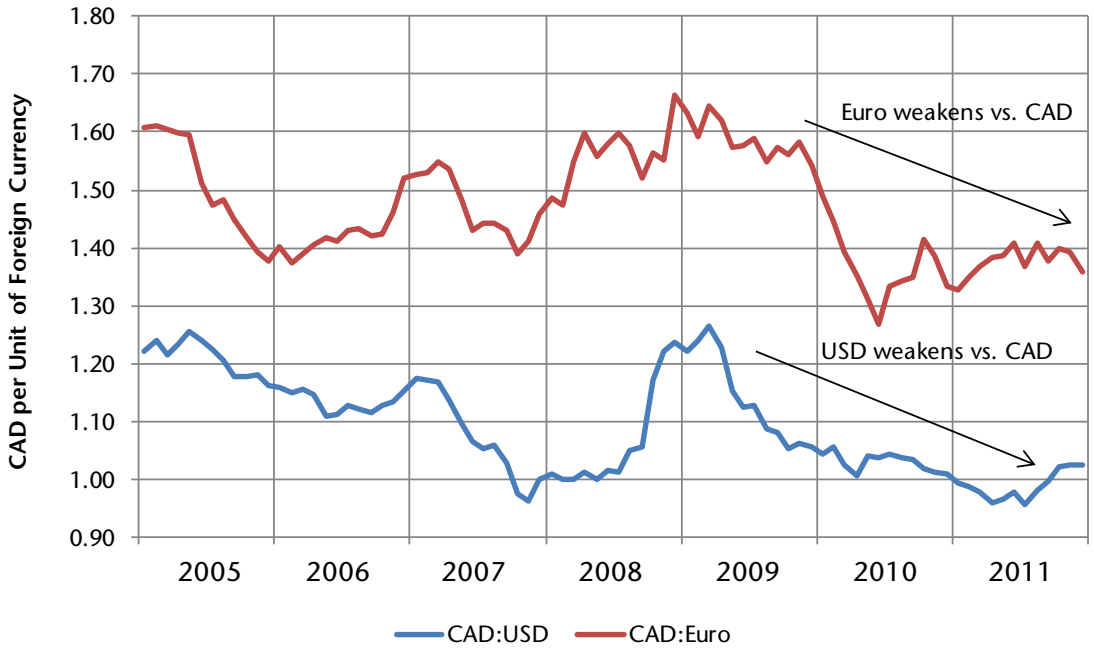
Note: 2011 data is current through October. NSPF stands for "not specifically provided for."
Source: US Census Bureau – Foreign Trade Data.

Although import prices of frozen Atlantic Ocean perch were lower than those of Chinese tilapia on average in 2011 (through October), tilapia fillets are usually less expensive. As of October 2011, frozen tilapia fillets imported from China were worth USD$3.93/kg while frozen Atlantic Ocean perch fillets imported from Canada were worth USD$4.45/kg.

Implications of Currency Markets

The Canadian dollar has appreciated considerably over the past six years versus the US dollar and the euro. The US and Eurozone are the world's largest markets for whitefish products. A strong Canadian dollar makes Canada's goods more expensive in these markets. All things being equal, this hurts domestic Canadian producers and benefits domestic producers in countries with the weaker currency.

Canadian Dollar versus US Dollar and Euro Currencies
2005 - 2011



Source: OANDA and McDowell Group analysis.

In addition to putting pressure on export markets, a strong currency can lower import prices. Therefore, Canadian whitefish buyers may buy more product from American or Chinese producers, further eroding the market for Canadian flatfish.

Flatfish (Sole and Flounder) Data

US Total Flatfish Imports from Canada
1995 - 2011

Year	Import Volume (in MT)	Import Value (in Millions USD)	Average Price (in USD/kg)	Average Price (in CAD/kg)
1995	8,487	USD $23.6	USD $2.78	CAD $3.82
1996	7,995	20.5	2.57	3.50
1997	7,070	17.6	2.49	3.45
1998	7,981	22.6	2.84	4.21
1999	8,550	24.0	2.81	4.18
2000	7,499	27.9	3.72	5.52
2001	8,995	29.3	3.26	5.05
2002	9,379	34.1	3.63	5.70
2003	9,278	35.9	3.87	5.42
2004	6,987	34.6	4.95	6.44
2005	10,073	43.6	4.33	5.25
2006	3,958	19.2	4.85	5.50
2007	4,735	23.3	4.92	5.29
2008	5,085	29.5	5.80	6.19
2009	3,939	26.5	6.72	7.67
2010	4,301	28.2	6.56	6.76
2011	3,681	21.0	5.69	5.62

Note: 2011 data is current through October.
Source: US Census Bureau – Foreign Trade Data.

US Fresh and Frozen Flatfish Imports from Canada
1995 - 2011

Year	Import Volume (in MT)	Import Value (in Millions)	Average Price (in USD/kg)	Import Volume (in MT)	Import Value (in Millions)	Average Price (in USD/kg)
	----------*FRESH*----------			----------*FROZEN*----------		
1995	6,916	USD $16.4	USD $2.37	1,571	USD $7.2	USD $4.62
1996	6,521	13.3	2.04	1,474	7.2	4.89
1997	6,016	12.6	2.09	1,054	5.0	4.76
1998	6,104	12.8	2.10	1,877	9.8	5.23
1999	6,468	13.9	2.14	2,081	10.2	4.89
2000	5,076	15.8	3.11	2,423	12.1	4.99
2001	5,329	14.0	2.63	3,666	15.3	4.17
2002	6,110	19.4	3.18	3,269	14.6	4.48
2003	5,583	19.1	3.42	3,694	16.8	4.56
2004	3,856	20.9	5.43	3,130	13.6	4.36
2005	6,225	26.8	4.30	3,848	16.8	4.37
2006	2,661	15.1	5.68	1,297	4.1	3.14
2007	3,530	17.6	4.98	1,205	5.7	4.74
2008	2,736	17.8	6.50	2,349	11.7	4.99
2009	1,609	13.9	8.65	2,330	12.6	5.39
2010	2,152	17.7	8.22	2,149	10.5	4.89
2011	1,454	12.2	8.40	2,227	8.7	3.93

Note: 2011 data is current through October.
Source: US Census Bureau – Foreign Trade Data.

US Frozen Flounder Fillet Imports from Canada
1995 - 2011

Year	Import Volume (in MT)	Import Value (in Millions)	Average Price (in USD/kg)
FROZEN FLOUNDER FILLETS			
1995	650.5	USD $3.02	USD $4.64
1996	755.9	4.01	5.30
1997	629.0	3.48	5.53
1998	1,266.0	7.88	6.22
1999	1,130.5	6.25	5.53
2000	1,551.3	8.83	5.69
2001	2,535.7	11.75	4.63
2002	2,070.2	10.06	4.86
2003	2,390.9	12.13	5.07
2004	1,750.6	9.02	5.15
2005	1,914.1	11.51	6.01
2006	250.1	1.44	5.77
2007	485.0	3.42	7.06
2008	1,226.4	7.65	6.24
2009	1,309.5	8.19	6.25
2010	863.0	5.90	6.84
2011	488.3	3.78	7.73

Note: 2011 data is current through October.
Source: US Census Bureau – Foreign Trade Data.

Selected US Flatfish Harvest Volumes (in Metric Tons)
2004 - 2011

Year	Yellowfin Sole	Rock Sole	Flathead Sole	Yellowtail Flounder
2004	62,630	29,256	13,927	7,235
2005	85,324	28,252	14,491	4,117
2006	90,571	34,247	16,422	1,939
2007	109,085	34,362	16,203	1,754
2008	141,237	52,979	25,274	1,639
2009	100,644	50,041	20,916	1,604
2010	113,246	53,427	21,761	1,318
2011*	146,655	60,522	16,028	N/A

Note: 2011 data is current through November 19, 2011.
Source: US National Marine Fisheries Service.

NL Yellowtail Flounder Harvest and Value
2000 - 2011

Year	Harvest Volume (MT)	Landed Value (000's CAD)	Average Price/KG (CAD)	Average Price/KG (USD)
2000	9,570	CAD $7,742	CAD $0.81	USD $0.54
2001	12,400	9,991	0.81	0.52
2002	10,000	6,752	0.68	0.43
2003	12,761	9,177	0.72	0.51
2004	12,590	9,494	0.75	0.58
2005	13,297	10,494	0.79	0.65
2006	190	152	0.80	0.70
2007	3,717	2,501	0.67	0.63
2008	10,303	6,485	0.63	0.59
2009	5,440	3,274	0.60	0.53
2010	8,079	4,403	0.55	0.53
2011	3,955	2,179	0.55	0.56

Note: 2011 data are incomplete, as they do not represent harvest totals for an entire calendar year.
Source: NL Department of Fisheries and Aquaculture, USD conversions computed with data from OANDA.

Currency Data

Historical Currency Valuations (CAD/USD)
1995 - 2011

Year	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Yearly Average
1995	CAD 1.41	CAD 1.37	CAD 1.36	CAD 1.36	CAD 1.37
1996	1.37	1.36	1.37	1.35	1.36
1997	1.36	1.39	1.38	1.41	1.38
1998	1.43	1.45	1.51	1.54	1.48
1999	1.51	1.47	1.49	1.47	1.49
2000	1.45	1.48	1.48	1.53	1.48
2001	1.53	1.54	1.54	1.58	1.55
2002	1.59	1.55	1.56	1.57	1.57
2003	1.51	1.40	1.38	1.32	1.40
2004	1.32	1.36	1.31	1.22	1.30
2005	1.23	1.24	1.20	1.17	1.21
2006	1.15	1.12	1.12	1.14	1.13
2007	1.17	1.10	1.05	0.98	1.07
2008	1.00	1.01	1.04	1.21	1.07
2009	1.24	1.17	1.10	1.06	1.14
2010	1.04	1.03	1.04	1.01	1.03
2011	0.99	0.97	0.98	1.02	0.99

Source: Average of bid/ask CAD/USD quotes from OANDA.

Redfish Data

US Total Atlantic Ocean Perch Imports from Canada
1995 - 2011

Year	Import Volume (in MT)	Import Value (in Millions USD)	Average Price (in USD/kg)	Average Price (in CAD/kg)
1995	9,899	USD $36.7	USD $3.71	CAD $5.09
1996	8,565	33.9	3.96	5.40
1997	7,541	31.4	4.16	5.76
1998	9,036	43.0	4.76	7.06
1999	6,759	28.0	4.14	6.14
2000	6,807	26.0	3.82	5.68
2001	6,328	24.1	3.81	5.90
2002	4,293	16.5	3.85	6.04
2003	3,866	14.0	3.63	5.08
2004	3,340	12.3	3.70	4.81
2005	2,834	11.6	4.08	4.94
2006	2,408	11.4	4.73	5.37
2007	2,309	9.8	4.25	4.56
2008	2,006	8.2	4.06	4.33
2009	2,049	8.5	4.15	4.73
2010	2,039	8.6	4.20	4.33
2011	1,747	7.8	4.48	4.43

Note: 2011 data is current through October.
Source: US Census Bureau – Foreign Trade Data, CAD conversions computed with data from OANDA.

Market Brief: NL Yellowtail Flounder and Other Groundfish

Final Report

Prepared for:

Newfoundland and Labrador Department of Fisheries and Aquaculture

McDowell GROUP

Research-Based Consulting

Juneau
Anchorage

November 2012

Market Brief: Yellowtail Flounder and Other Groundfish

Foreword and Disclaimer

This market summary was commissioned by the Newfoundland and Labrador (NL) Department of Fisheries and Aquaculture. The brief has been compiled by McDowell Group, Inc., an Alaska-based research and consulting firm with 40 years of seafood industry experience. Information contained herein is intended to provide the Department with objective reference material and does not advocate for or against any specific policy position or action. Data contained in this report comes from publicly available sources and interviews with selected U.S. distributors.

This report has been prepared by and represents the views of McDowell Group, Inc. Although the information has been taken from sources believed to be reliable, the Newfoundland and Labrador Department of Fisheries and Aquaculture does not guarantee the accuracy or completeness of the report. The views expressed in this report are those of the authors and do not necessarily reflect those of the Government of Newfoundland and Labrador. Neither the Government of Newfoundland and Labrador nor any person acting on its behalf is responsible for the information provided in this document.

Purpose of this Report

The purpose of this report is to provide the Newfoundland and Labrador Department of Fisheries and Aquaculture with an objective assessment of the market for flatfish and other groundfish. Flounder are the focus of this report, but as it was prepared under a tight schedule a more thorough investigation of all key NL species could not be accomplished. This report serves as an update to a January 2012 report which explored market trends in Yellowtail flounder and Redfish.

Notes on Data Used

Canadian ex-vessel prices (or landed value) quoted in this report come from the Canadian Department of Fisheries and Oceans (DFO). A portion of Atlantic flatfish is harvested by catcher-processors and processed at sea. Because catcher-processor operations are vertically integrated, and there is no transaction between fisher and processor, it becomes difficult to accurately assess the ex-vessel price of those fish. As a proxy, DFO uses ex-vessel price information from landings made by catcher-vessels to inshore processing plants. This proxy price is applied to the round weight of fish harvested and processed at sea by catcher-processors to estimate total value.

Canadian ex-vessel prices in this report are broadly defined averages. Available data does not always allow for differences within the flatfish or redfish complex. For instance, Yellowtail flounder may fetch a higher price than the prices shown in this report, but the average flatfish price may be reduced by other less valuable species present in the total flatfish harvest.

The report utilizes data collected on fish imported into the US. The value of these products is reported to the US Customs and Border Protection by the importer, and generally reflects the transaction value between foreign (CAN) exporter and domestic (US) importer. These values may differ from wholesale prices or retail prices found in other sources due to a number of factors, such as product-form differences, supply chain mark-ups, transportation costs, or other costs associated with selling seafood.

Interviews with several wholesalers and distributors were used to supplement and help evaluate available statistical data with respect to market conditions.

Unless noted otherwise, dollar figures quoted in this report are denominated in U.S. dollars.

Key Findings

Canadian whitefish have lost market share in the U.S. in 2012, as greater amounts of tilapia and pangasius are being imported. U.S. imports of Canadian flounder (especially frozen flounder fillets) are down significantly in 2012 versus the same period from the prior year. U.S. harvests of flounder in Northeastern states increased 33 percent from 2009 to 2011, but the 2012 harvest is expected to be similar or perhaps down slightly. Finally, earlier this year China announced a temporary decrease in import duties on frozen flatfish and many other products, potentially making it more lucrative to export frozen flatfish to China for consumption.

SUMMARY OF KEY CHANGES IN 2012

- U.S. and Canadian Yellowtail flounder harvests were down significantly in 2012. It is possible that the 2013 harvest could be even smaller. However, harvests of U.S. summer flounder are trending up.
- U.S. imports of frozen Canadian flounder fillets continued to decline significantly in 2012. Between 2009 and 2011, the volume of frozen Canadian flounder fillets imported by the U.S. – mainly into Northeastern markets – fell from 1,309 MT to 520 MT (p.9).
- Through September 2012, U.S. imports of the selected Canadian whitefish species have changed as follows (compared to the same period in 2011):
    - Canadian flounder, sole, and plaice are down 36 percent by volume and down 32 percent in total value.
    - Canadian cod is down 10 percent by volume but up 6 percent in total value.
    - Canadian haddock is down 46 percent by volume and down 40 percent in total value.
    - Canadian salted cod and salted haddock are down 5 percent by volume and up 5 percent in total value.
    - U.S. imports of all major Canadian major whitefish species are down 3 percent by volume and up 2 percent in total value. This is at least partly due to expanding global farmed whitefish supplies and steady to lower harvests of key whitefish species in Canada.

- U.S. imports of all major whitefish species (imported from all countries) are up 16 percent by volume and up 18 percent in total value through September 2012 (see tables on pages 12-13).

- China has temporaryily lowered import tariffs on many commodities in the hopes of easing domestic inflation pressure. Frozen flounder, turbot, cod, and herring are included in this list of commodities. The prior most-favored nation tariff rate for frozen plaice/flounder was 12 percent, but the new rate is 2 percent.

- U.S. imports of flounder/sole and Alaska pollock are down significantly while total imports of tilapia and pangasius (also known as swai, basa, or catfish) are up. It is possible that more Alaska pollock product is being supplied to the U.S. market from domestic sources (from Alaskan producers) or that more Alaska pollock is being imported as value added products (such as breaded fish fingers/sticks). In both cases, those products would not show up in the trade data contained in this report (p.11).

- U.S. imports of Canadian flounder/sole are down 32 percent by value and 36 percent by volume. The total value of major Canadian whitefish species imported into the U.S. is up slightly through September 2012 (p.12). However, Canadian products continue to lose market share in the U.S. whitefish market.

- Commercial flounder harvests by U.S. fishermen in Northeastern states has increased in recent years (p.14), although 2012 will likely see similar or perhaps lower harvests than 2011. The ex-vessel price of U.S. flounder fell between 2009 and 2011.

- The Canadian dollar has strengthened about 4 percent versus the Euro in 2012 and maintains roughly a 1:1 parity with the U.S. dollar. Several years ago, the U.S. dollar was much stronger versus the Canadian dollar, making Canadian imports cheaper from an American perspective (p.6-7).

- The average price of fresh Canadian flounder imported into the U.S. has increased in 2012, while the average price of frozen product has decreased (p.8).

FLATFISH HARVESTS

- Large, fresh Yellowtail flounder occupy a premium niché market position in Northeast U.S. markets, though other flounder species are also in high demand. However, the size of this niché market has contracted. The volume of fresh flounder and sole imported by the U.S. has fallen since 2007. Right now only about 10 percent of all flounder and sole imported by the U.S. is fresh product, and the majority of this fresh product comes from Canada. It is likely that larger U.S. Northeast flounder harvests have displaced some markets which were previously supplied by imported fresh flounder.

- Higher prices are primarily paid for U.S. caught whole fish sold to chefs and fresh fish distributors at auction in Boston and New York. Even though some fresh flatfish attract premium prices, the price is highly dependent on supply because the market size is so well defined.

- U.S. commercial harvest allocations for Yellowtail flounder in 2013 have not yet been finalized. The New England Fishery Management Council's (NEFMC) approved a catch limit similar to last year for the Georges Bank fishery, even though their Science and Statistical Committee recommended a

much lower total allowable catch (TAC). The upshot is that the U.S. Yellowtail flounder harvest in 2013 should be either similar to or lower than 2012 harvests.

OTHER GROUNDFISH HARVESTS

- Alaska pollock is a groundfish species and the largest whitefish fishery in the world. It is primarily caught in Russia and Alaska. Total harvest volume is projected to hit 3.157 million metric tons in 2012, according to estimates made by the Groundfish Forum panel. This is a 24 percent increase since 2010, but similar to the 2011 harvest. Prices for Alaska pollock fillets have been flat in the U.S. and Europe during the past year. Alaska pollock harvests are projected to remain at roughly the same level in 2013 (Groundfish Forum estimates). The Groundfish Forum panel is made up of senior executives from major processing and distribution companies utilizing groundfish species.

- Total Atlantic cod harvests are projected to increase 200,000 metric tons, or 20 percent, in 2013. This harvest level would mark a 39 percent increase since 2010. Haddock harvests, however, are expected to decline from 430,000 metric tons to 312,000 metric tons (Groundfish Forum estimates).

U.S IMPORTS OF CANADIAN FLATFISH/GROUNDFISH

- The Canadian dollar remains strong versus the U.S. dollar. This favors producers in the U.S. and works against Canadian producers who export products to the United States (p.6-7).

- Canada has lost market share in the U.S. since 2009. In 2009, Canada accounted for 22 percent of the total value of flounder and sole imported into the United States. Through September 2012 Canada accounts for less than 13 percent of the total value. This trend is also seen in redfish, cod/haddock, and miscellaneous groundfish species (p.11-12).

FLATFISH PRICING

- In general, ex-vessel prices for U.S. Northeast flounder species declined from 2007 to 2011. The U.S. harvest volume of these species increased 21 percent during that period, but the total ex-vessel value was essentially unchanged at $53 million (p.14).

- Yellowtail flounder attract lower ex-vessel prices in the U.S. than summer flounder, witch flounder (grey sole), American plaice, and winter flounder.

- Flounder pricing is still heavily dependent on size, with larger fillets attracting a higher price. One buyer remarked it was hard to sell many fillets at a 2-4oz size, though larger fillets were popular.

- Import prices of Canadian frozen flounder fillets into Northeast U.S. ports have fallen in 2012 while average prices of imported sole (from China) have increased. A number of explanations could account for this trend:

    - U.S. buyers could be substituting imported flatfish from China for Canadian product

    - Price differences could have arisen out of a change in the coding structure for many seafood products traded internationally that took effect in 2012

- Differences in size or fillet composition (pin-bone in, or pin-bone out) could explain year over year changes
- The mix of flatfish species covered in the data could be different from year to year, affecting the average yearly price.

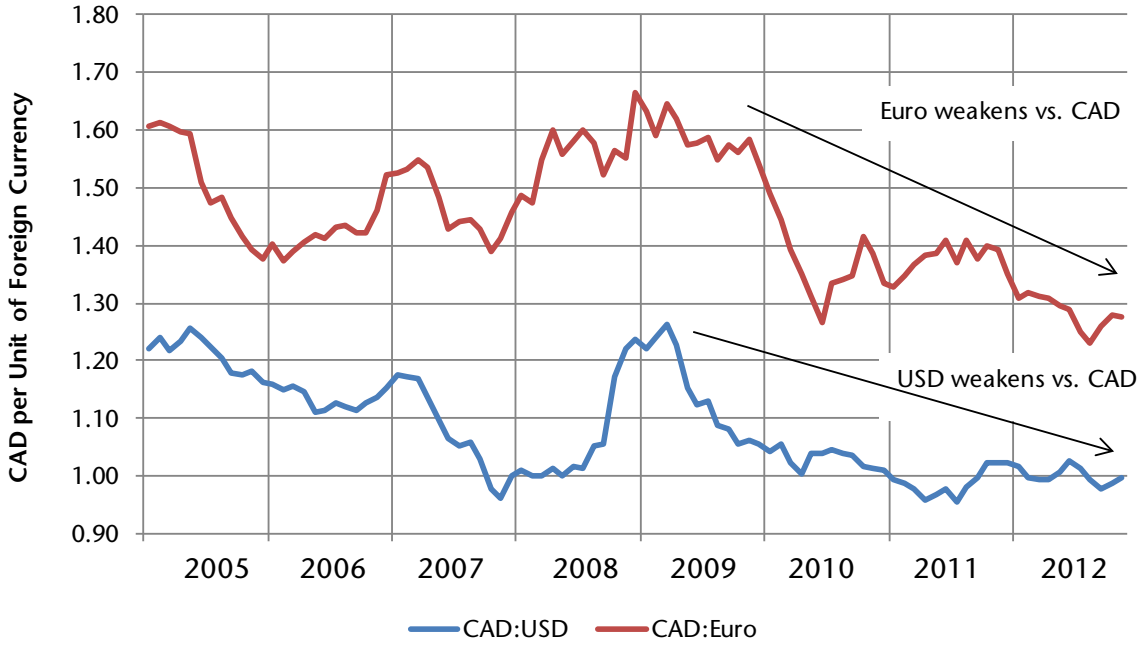
ROLE OF CHINA

- China recently lowered tariffs significantly on 730 commodities, including frozen flatfish (turbot and plaice), cod, and herring. Prior to 2012, the tariff on most imported seafood was between 10 and 20 percent (unless it was bound for re-export). Some analysts have suggested that a move to lower import tariffs on frozen seafood and other goods is aimed at curtailing inflation in China. It is likely that Canadian yellowtail flounder, a member of the Pleuronectidae family, would be included in the list of commodities with reduced tariffs, as the HS code 030332 refers to "plaice" as a species in the Pleuronectidae family.
- Alaska harvests a significant volume of sole. These fish are harvested using trawl gear, and are typically exported abroad, often to China, for secondary processing. These fish are believed to be re-exported to markets in the U.S. and Europe. Total U.S. exports of sole (almost entirely Alaskan product) are down 4 percent by volume and up 2 percent by value in 2012.
- Alaska processors received an average export price of $1.28/kg for yellowfin sole exported to China in 2012 (through September), compared to $1.03 during the same period in 2011. Higher prices could be due to lower export volume and/or rising costs borne by fishing companies.

Currency Valuations

The Canadian dollar continues to strengthen versus the U.S. dollar and Euro. The US and Eurozone are the world's largest markets for whitefish products. A strong Canadian dollar makes Canada's goods more expensive in these markets. All things being equal, this hurts domestic Canadian producers and benefits domestic producers in countries with the weaker currency.

Canadian Dollar versus U.S. Dollar and Euro Currencies
2005 - 2012



Source: OANDA and McDowell Group analysis.

Historical Currency Valuations (CAD/USD)
1995 - 2012

Year	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Yearly Average
1995	CAD 1.41	CAD 1.37	CAD 1.36	CAD 1.36	CAD 1.37
1996	1.37	1.36	1.37	1.35	1.36
1997	1.36	1.39	1.38	1.41	1.38
1998	1.43	1.45	1.51	1.54	1.48
1999	1.51	1.47	1.49	1.47	1.49
2000	1.45	1.48	1.48	1.53	1.48
2001	1.53	1.54	1.54	1.58	1.55
2002	1.59	1.55	1.56	1.57	1.57
2003	1.51	1.40	1.38	1.32	1.40
2004	1.32	1.36	1.31	1.22	1.30
2005	1.23	1.24	1.20	1.17	1.21
2006	1.15	1.12	1.12	1.14	1.13
2007	1.17	1.10	1.05	0.98	1.07
2008	1.00	1.01	1.04	1.21	1.07
2009	1.24	1.17	1.10	1.06	1.14
2010	1.04	1.03	1.04	1.01	1.03
2011	0.99	0.97	0.98	1.02	0.99
2012	1.00	1.01	1.00	0.99	1.00

Source: Average of bid/ask CAD/USD quotes from OANDA.

Trade and Harvest Data

US Fresh and Frozen Sole and Flounder Imports from Canada 1995 - 2012

Year	Import Volume (in MT)	Import Value (in Millions)	Average Price (in USD/kg)	Import Volume (in MT)	Import Value (in Millions)	Average Price (in USD/kg)
	----------*FRESH*----------			----------*FROZEN*----------		
1995	6,916	USD $16.4	USD $2.37	1,571	USD $7.2	USD $4.62
1996	6,521	13.3	2.04	1,474	7.2	4.89
1997	6,016	12.6	2.09	1,054	5.0	4.76
1998	6,104	12.8	2.10	1,877	9.8	5.23
1999	6,468	13.9	2.14	2,081	10.2	4.89
2000	5,076	15.8	3.11	2,423	12.1	4.99
2001	5,329	14.0	2.63	3,666	15.3	4.17
2002	6,110	19.4	3.18	3,269	14.6	4.48
2003	5,583	19.1	3.42	3,694	16.8	4.56
2004	3,856	20.9	5.43	3,130	13.6	4.36
2005	6,225	26.8	4.30	3,848	16.8	4.37
2006	2,661	15.1	5.68	1,297	4.1	3.14
2007	3,530	17.6	4.98	1,205	5.7	4.74
2008	2,736	17.8	6.50	2,349	11.7	4.99
2009	1,609	13.9	8.65	2,330	12.6	5.39
2010	2,152	17.7	8.22	2,149	10.5	4.89
2011	1,536	12.9	8.39	2,402	9.3	3.89
2012	1,075	9.6	8.91	1,109	3.4	3.05

Note: 2012 data is current through September.
Source: US Census Bureau – Foreign Trade Data.

US Frozen Flounder Fillet Imports from Canada
1995 - 2012

Year	Import Volume (in MT)
FROZEN FLOUNDER FILLETS	
1995	650.5
1996	755.9
1997	629.0
1998	1,266.0
1999	1,130.5
2000	1,551.3
2001	2,535.7
2002	2,070.2
2003	2,390.9
2004	1,750.6
2005	1,914.1
2006	250.1
2007	485.0
2008	1,226.4
2009	1,309.5
2010	863.0
2011	519.9
2012	271.8*

* 2012 data is current through September.
Source: US Census Bureau – Foreign Trade Data.

US Fresh Flounder Fillet Imports from Canada
1995 - 2012

Year	Import Volume (in MT)	Import Value (in Millions)	Average Price (in USD/kg)
FRESH FLOUNDER FILLETS			
1995	441.0	USD $2.79	USD $6.33
1996	421.5	2.18	5.17
1997	452.6	2.29	5.06
1998	473.9	2.77	5.85
1999	515.9	2.45	4.76
2000	419.9	2.06	4.92
2001	341.1	1.24	3.63
2002	431.0	2.03	4.70
2003	558.1	2.05	3.68
2004	470.2	2.45	5.22
2005	1,000.3	5.82	5.82
2006	176.4	1.24	7.01
2007	506.6	3.49	6.89
2008	623.8	4.65	7.45
2009	524.7	4.11	7.83
2010	508.8	4.05	7.95
2011	261.5	2.13	8.15
2012	205.6	1.54	7.51

Note: 2012 data is current through September.
Source: US Census Bureau – Foreign Trade Data.

Total U.S. Imports of Groundfish and Flatfish

Volume (MT)	2008	2009	2010	2011	YTD 2011	YTD 2012
Flounder and Sole	31,949	25,063	28,997	29,578	22,642	18,931
Halibut and Turbot	8,619	6,879	7,910	7,184	5,775	5,787
Ocean Perch	5,184	4,344	4,900	5,119	3,815	5,168
Cod and Haddock	73,818	75,789	84,114	90,140	63,283	63,272
Alaska Pollock	69,574	80,659	69,664	72,832	54,549	38,277
Pangasius and Catfish	46,489	58,686	62,385	92,388	62,811	83,417
Tilapia	179,465	183,295	215,378	192,900	134,445	167,035
Other	20,937	17,898	19,636	12,880	8,776	31,342
Total	**436,034**	**452,614**	**492,984**	**503,020**	**356,096**	**413,227**
Value ($000s)	**2008**	**2009**	**2010**	**2011**	**YTD 2011**	**YTD 2012**
Flounder and Sole	$153,710	$119,788	$135,743	$146,489	$110,548	$104,479
Halibut and Turbot	79,496	67,175	83,721	95,805	74,593	77,652
Ocean Perch	19,297	16,799	20,206	21,621	15,549	25,567
Cod and Haddock	451,709	374,532	417,231	507,547	346,347	371,984
Alaska Pollock	160,781	223,337	190,246	191,293	141,494	98,730
Pangasius and Catfish	158,478	193,810	201,011	341,231	227,280	292,560
Tilapia	734,450	696,086	842,866	838,350	596,587	717,362
Other	50,461	35,250	34,137	32,289	22,677	118,134
Total	**1,808,382**	**1,726,777**	**1,925,161**	**2,174,626**	**1,535,075**	**1,806,467**
Unit Value ($/KG)	**2008**	**2009**	**2010**	**2011**	**YTD 2011**	**YTD 2012**
Flounder and Sole	$4.81	$4.78	$4.68	$4.95	$4.88	$5.52
Halibut and Turbot	9.22	9.77	10.58	13.34	12.92	13.42
Ocean Perch	3.72	3.87	4.12	4.22	4.08	4.95
Cod and Haddock	6.12	4.94	4.96	5.63	5.47	5.88
Alaska Pollock	2.31	2.77	2.73	2.63	2.59	2.58
Pangasius and Catfish	3.41	3.30	3.22	3.69	3.62	3.51
Tilapia	4.09	3.80	3.91	4.35	4.44	4.29
Other	2.41	1.97	1.74	2.51	2.58	3.77
Total	**4.15**	**3.82**	**3.91**	**4.32**	**4.31**	**4.37**

Note: YTD data is current through September 2012.
Source: US National Marine Fisheries Service.

Total U.S. Imports of Canadian Groundfish and Flatfish

Volume (MT)	2008	2009	2010	2011	YTD 2011	YTD 2012
Flounder and Sole	5,085	3,939	4,301	3,938	3,493	2,220
Halibut and Turbot	4,848	4,724	4,906	4,498	3,648	3,715
Ocean Perch	2,614	2,732	2,660	2,768	2,162	2,596
Cod and Haddock	14,636	16,053	15,153	11,587	9,024	6,285
Other	10,484	10,012	12,822	7,630	4,845	7,745
Total	**37,667**	**37,461**	**39,842**	**30,420**	**23,172**	**22,561**
Value ($000s)	**2008**	**2009**	**2010**	**2011**	**YTD 2011**	**YTD 2012**
Flounder and Sole	$29,520	$26,481	$28,208	$22,235	$19,602	$13,268
Halibut and Turbot	55,576	48,399	59,204	64,784	51,945	54,349
Ocean Perch	9,510	10,012	9,893	10,591	8,187	11,365
Cod and Haddock	65,942	65,895	61,675	55,450	40,273	36,091
Other	16,654	12,597	12,688	11,708	7,555	15,294
Total	**177,202**	**163,384**	**171,668**	**164,768**	**127,561**	**130,368**
Unit Value ($/KG)	**2008**	**2009**	**2010**	**2011**	**YTD 2011**	**YTD 2012**
Flounder and Sole	$5.80	$6.72	$6.56	$5.65	$5.61	$5.98
Halibut and Turbot	11.46	10.25	12.07	14.40	14.24	14.63
Ocean Perch	3.64	3.66	3.72	3.83	3.79	4.38
Cod and Haddock	4.51	4.10	4.07	4.79	4.46	5.74
Other	1.59	1.26	0.99	1.53	1.56	1.97
Total	**4.70**	**4.36**	**4.31**	**5.42**	**5.51**	**5.78**

Note: YTD data is current through September 2012.
Source: US National Marine Fisheries Service.

Selected US Flatfish Harvest Volumes (in Metric Tons)
2004 - 2012

Year	Yellowfin Sole	Rock Sole	Flathead Sole	Yellowtail Flounder
2004	62,630	29,256	13,927	7,235
2005	85,324	28,252	14,491	4,117
2006	90,571	34,247	16,422	1,939
2007	109,085	34,362	16,203	1,754
2008	141,237	52,979	25,274	1,639
2009	100,644	50,041	20,916	1,604
2010	113,246	53,427	21,761	1,318
2011	146,416	59,174	14,284	1,830
2012	137,716	75,806	12,901	N/A

Note: 2012 data is current through November 3, 2012.
Source: US National Marine Fisheries Service.

NL Yellowtail Flounder Harvest and Value
2000 - 2012

Year	Harvest Volume (MT)	Landed Value (000's CAD)	Average Price/KG (CAD)	Average Price/KG (USD)
2000	9,570	CAD $7,742	CAD $0.81	USD $0.54
2001	12,400	9,991	0.81	0.52
2002	10,000	6,752	0.68	0.43
2003	12,761	9,177	0.72	0.51
2004	12,590	9,494	0.75	0.58
2005	13,297	10,494	0.79	0.65
2006	190	152	0.80	0.70
2007	3,717	2,501	0.67	0.63
2008	10,303	6,485	0.63	0.59
2009	5,440	3,274	0.60	0.53
2010	8,079	4,403	0.55	0.53
2011	3,955	2,534	0.64	0.65
2012	1,546	1,060	0.69	0.69

Note: 2012 data are incomplete, they reflect preliminary landings data through November 13, 2012.
Source: NL Department of Fisheries and Aquaculture, USD conversions computed with data from OANDA.

Avg. Ex-Vessel Price and Volume of Alaska Sole, US Northeast Flounder, and Canadian Flatfish

	2007	2008	2009	2010	2011
Alaska Yellowfin Sole					
Harvest Volume (in MT)	109,085	141,237	100,644	113,246	146,416
Average Ex-Vessel Price/KG	$0.39	$0.39	$0.35	$0.29	$0.31
Alaska Rock Sole					
Harvest Volume (in MT)	34,353	52,974	50,037	53,420	59,174
Average Ex-Vessel Price/KG	0.56	0.52	0.42	0.35	0.36
Alaska Flathead Sole					
Harvest Volume (in MT)	16,201	25,273	20,914	21,759	14,284
Average Ex-Vessel Price/KG	0.46	0.43	0.36	0.28	0.32
US Northeast Summer Flounder					
Harvest Volume (in MT)	4,445	4,095	4,898	5,971	7,209
Average Ex-Vessel Price/KG	5.38	5.38	4.58	4.80	4.44
US Northeast Winter Flounder					
Harvest Volume (in MT)	1,068	998	948	759	870
Average Ex-Vessel Price/KG	4.62	4.20	3.66	4.39	3.77
US Northeast Yellowtail Flounder					
Harvest Volume (in MT)	1,754	1,656	1,606	1,318	1,830
Average Ex-Vessel Price/KG	4.11	3.31	2.96	3.18	2.61
Canadian Atlantic Flatfish					
Harvest Volume (in MT)	9,102	15,508	10,666	13,879	8,318
Average Ex-Vessel Price/KG	0.86	0.70	0.55	0.76	0.77
NL Yellowtail Flounder					
Harvest Volume (in MT)	3,717	10,303	5,440	8,079	3,955
Average Ex-Vessel Price/KG	0.63	0.59	0.53	0.53	0.65

Note: Prices are denominated in US dollars. Atlantic flatfish data for 2010 and 2011 is preliminary. Methodologies employed to track harvest data may not be consistent between US and Canadian fisheries.

Source: US National Marine Fisheries Service and Canada Department of Fisheries and Oceans.