

West Coast Groundfish, Shorebased IFQ Program September 2014 Catch Report

Sean E. Matson, Ph.D.

National Marine Fisheries Service

West Coast Region, Sustainable Fisheries Division

August 13, 2014

Contents

A. List of figures	i
B. List of tables	ii
1. Summary	1
2. Narrative	1-4
2.1. Data used in this report	
2.2. Non-whiting delivery frequency, landing size and revenue	
2.3. IFQ groundfish catch by gear type	
2.4. IFQ sablefish catch by gear type	
2.5. Catch of rebuilding species	
3. Figures and tables	5-14
4. Appendix	15-16

A. Figures

Figure 1. Average number of non-whiting IFQ trips per week (averaged annually), and annual non-whiting IFQ landings and revenue sums, among port groups for 2008 through 2013. The IFQ fishery began in 2011. Ports were grouped to preserve PacFIN data confidentiality. See text for port group details.....5

Figure 2. Post-IFQ average values for three metrics as a percent of the corresponding pre-IFQ average. Metrics expressed in this manner include from left to right, number of non-whiting IFQ trips per week (vessel-days, blue columns), average trip size (landed pounds round weight, orange columns), and revenue per trip (dollars per trip, green columns). For example, average weekly trip frequency in Astoria during IFQ was 68 percent of what it was before IFQ, but the average post-IFQ trip size is 135 percent, and post-IFQ average revenue per trip is 172 percent of pre-IFQ values. The pattern is consistent across port groups. See Tables 3 and 4 for values. Red dashed line is 100 percent (pre-IFQ = post-IFQ). See text for port group details.....7

Figure 3. IFQ landings of groundfish species (blue columns, left axis) ex-vessel revenue (orange columns, left axis) and price (black lines, black open circles, right axis) by gear type, trip type and year, for non-whiting trips only. Trips were designated as vessel-days. See Table 1 for values.9

Figure 4. Detail from Figure 1 to enhance visibility for minor gears; non-whiting IFQ landings and revenue for minor gears for 2011 through 2013.9

Figure 5. Counts of IFQ trips (green columns, left axis) and vessels (black lines, open circle markers, right axis) by gear type and trip type (whiting or non-whiting) for 2011 through 2013.10

Figure 6. Distribution of sablefish landings and revenue among gear types within each year, in the IFQ sector during 2011 through 2013. Values have been revised from preliminary numbers in the 2012 report.11

Figure 7. Total annual catch of rebuilding species from 2008 through 2010, in the limited entry trawl and shoreside whiting fisheries, as well as 2011 through 2013, in the Shorebased IFQ Program, in metric tons. Source = WCGOP Groundfish Mortality Report (2008-2010) and the Shorebased IFQ Vessel Accounts System (2011-2013). The yellow vertical line separates pre-IFQ and IFQ years.....12

B. Tables

Table 1. Average non-whiting trips per week (averaged annually), and annual landings and revenue among port groups for 2008 through 2013, as well as distribution of annual landings and revenue sums among port groups, within each year (two right columns, “Land. dist.” and “Rev. dist.”. The IFQ fishery began in 2011. Ports were grouped to preserve PacFIN data confidentiality.6

Table 2. Average number of non-whiting IFQ trips per week (vessel-days) and standard deviation, from three years before IFQ compared with the three years following IFQ. Standard deviation is abbreviated as “std. dev.” within the table.7

Table 3. Average non-whiting IFQ trip size (landed pounds round weight), and revenue per trip, from three years before IFQ compared with the three years during IFQ. Percent change between three years before IFQ and during IFQ is shown in the two right hand columns. Also see Figure 6. Revenue is abbreviated as “rev.” within the table, and standard deviation is abbreviated as “std. dev.”8

Table 4. IFQ landings of groundfish species, corresponding ex-vessel revenue, trips and vessels participating by trip type (whiting or non-whiting), for 2011-present. Trips were defined as vessel-days. *See text for 2014 data completeness in PacFIN as of the date of this query. Columns “NW Land %” and “NW Rev %” show non-whiting landings and revenue as a percentage within each year, among gear types and trip types.10

Table 5. Landings, ex-vessel revenue, price per pound, and distribution of sablefish landings and revenue among gear types, in the IFQ sector during 2011 through 2013; revised since the 2012 report. The columns “Land. dist.” and “Rev. dist.” within each year in panels A and B show the distribution of landings or revenue among gear types, within each year as a percent. 11

Table 6. Total annual catch of rebuilding species from 2008 through 2010, in the limited entry trawl and shoreside whiting fisheries, as well as 2011 and 2012, in the Shorebased IFQ Program, in metric tons. Two-year average catch, and average annual catch in 2011-12 as a percentage of that of 2009-10 is presented in the far right column (“post/pre IFQ”). Source = WCGOP Groundfish Mortality Report (2009-2010) and the Shorebased IFQ Program, Vessel Accounts System (2011-2012). 13

Table 7. Sector allocations, catch, and attainment of currently rebuilding Pacific coast groundfish stocks in the West Coast Shorebased IFQ Program. 14

1. Summary

This report covers select topics in the West Coast Groundfish, Shorebased Individual Fishing Quota (IFQ) Program, for catch and related metrics, during 2013 and previous years for comparison. It should be considered along with the other reports published during 2014 (Agenda Item F.1. June 2014 PFMC, http://www.pcouncil.org/wp-content/uploads/F4b_SUP_NMFS_Rpt_WC_GF_ShorebasedIFQProgram_JUNE2014BB.pdf); Agenda Item D.4.b. March Pacific Fishery Management Council meeting (PFMC), included in the Groundfish Management Team (GMT) inseason statement, http://www.pcouncil.org/wp-content/uploads/D4b_SUP_GMT_RPT_MAR2014BB.pdf). Another report may be released for the November PFMC meeting, which would cover quota pound (QP) and quota share (QS) transfer activity, and potentially other topics.

In June, we reported that non-whiting IFQ landings, revenue, and numbers of trips with mid-water gear have been increasing rapidly since 2011 through 2013, with targets of yellowtail and widow rockfish. In contrast, non-trawl IFQ landings and revenue have been consistently dropping over the same period, coinciding with a declining trend in sablefish prices, the primary non-trawl target. Bottom trawl metrics varied little over this period by comparison. Retention rates have remained high, varied little from 2011 to 2013, and continued to be similar early in 2014. Monthly non-whiting effort and catch per unit effort (CPUE) were also tracking close to historical averages, except that January values were unusually high in 2014, coinciding with unusually high Dover sole and longspine thornyhead catch in January. Catch, effort, and retention was also covered in the March report.

In this September installment, we examined IFQ landings and revenue by gear type from 2011-2013 in finer detail for non-trawl gear, dividing it into hook-and-line and pot, at the request of industry members. We found that pot gear consistently takes a larger amount of landings and revenue, and garners higher prices than hook-and-line gear in the IFQ fishery. Landings from both types of non-trawl gear within IFQ have been declining during 2012 and 2013. We also found that non-whiting landings and revenue from mid-water gear have increased from trace amounts in 2011 up to 3.4 percent of non-whiting landings in 2013, higher than non-trawl gear types combined for that year. We also looked at the frequency of non-whiting deliveries by port group, comparing years before and during IFQ management, also at the request of industry members. We found that although the average number of trips per week has been lower during IFQ management than before it, the average amount landed per trip, and the average revenue per trip were both substantially higher in the rationalized fishery, suggesting improved efficiency. We saw that annual landings and revenue have been higher for some port groups under IFQ management, but lower for others. We examined landings and revenue from sablefish by gear type, and revised the early estimates from the 2012 annual IFQ report; we found a decline in the proportion of sablefish landings and revenue from IFQ non-trawl gears in general, but especially hook-and-line gear from 2011 to 2013. IFQ landings and resultant revenue for sablefish caught with all gears have been dropping, along with prices, during 2012 and 2013. Finally, we examined catch of rebuilding groundfish stocks before and during IFQ. Catch of rebuilding stocks has been lower on average during the first three years of IFQ than the three before it, although IFQ catch of those stocks has been gradually increasing from 2011 to 2013 for potentially different reasons among species.

2. Narrative

2.1. Data used in this report

Data from the Pacific Fisheries Information Network (PacFIN) and the National Marine Fisheries Service (NMFS) Shorebased IFQ Vessel Accounts Database (VA) were used for this report. PacFIN data were used to inform landings, revenue, gear type, and corresponding counts of trips, deliveries and vessels; they were queried from the VDRFD table on June 6, 2014 (originated from paper fish tickets). Data completeness at that time was estimated as 100 percent for years 2013 and earlier. Only data from groundfish landings on IFQ trips are presented. Trip type is designated based on vessel-day. NMFS VA data were used for total catch, landings, discard and derived metrics by IFQ species category. NMFS vessel account data were queried on June 10 2014; they are final and complete for years 2013 and earlier.

2.2. Non-whiting delivery frequency, landing size and revenue (source = PacFIN)

We examined the frequency of non-whiting deliveries by port group, comparing three years before and after IFQ, at the request of industry members (Figures 1 and 2, Tables 1-3). We found that although the average number of trips per week was lower during three years of IFQ management than the three years before it (between 40 and 91 percent of pre-IFQ levels), the average amount landed per trip, and the average revenue per trip were both substantially higher (120 to 207 percent, and 149 to 304 percent of pre-IFQ levels respectively; Figure 2, Table 2). This suggests improved efficiency, if one assumes that trips are of similar duration and distance traveled before and during IFQ management; we did not examine those factors here. Note that Figure 1 shows the average trips per week with standard deviation, along with annual sums of non-whiting landings and revenue by port group, while Figure 2 shows the average number of trips per week, landings per trip and revenue per trip, expressed as percent of pre-IFQ levels. Annual sum landings and revenue are higher for some port groups under IFQ management, but lower for others (Figure 1). Within the port groupings used for Figures 1 and 2, Central Oregon ports include Newport, Tillamook, and Garibaldi, Southern Oregon ports include those from Winchester Bay to the Oregon-California border, Northern California ports include those from the border to San Francisco, and Southern California ports include those south of San Francisco.

2.3. IFQ groundfish catch by gear type (source = PacFIN)

In the June report, we saw that IFQ non-trawl landings and revenue have been consistently dropping during 2012 and 2013, and that non-whiting landings, revenue, and trips with mid-water gear have been increasing rapidly over that time. Landings and revenue from bottom trawl gear have stayed consistently high. Sablefish is overwhelmingly the main species caught with fixed gear under IFQ, and primarily north of 36 degrees N. latitude. Yellowtail rockfish has been the most obvious target species from non-whiting mid-water trips, with substantial catch of widow rockfish as well.

This time we divided non-trawl gears further, into hook-and-line and pot, at the request of industry members (Figures 3-5, Table 4). This division couldn't be made with the 2014 data included in the June report, due to data confidentiality. With the additional division within non-trawl gear, we can see that

pot gear consistently took a larger amount of landings and revenue, and garnered higher prices than hook-and-line gear. Landings from both types of non-trawl gear within IFQ have been declining during 2012 and 2013. We can see that mid-water non-whiting landings and revenue have increased from trace amounts in 2011 to 3.4 percent of non-whiting landings in 2013, higher than non-trawl gear combined for 2013.

Annual trip counts followed a very similar pattern, but less so for vessels; non-whiting mid-water landings increased without an accompanying increase in vessel count. The number of vessels fishing non-whiting mid-water gear has varied little and average ex-vessel prices for these landings increased from 2011 to 2012, then dropped slightly in 2013 (Figure 5, Table 4). The number of vessels using pot gear fell off along with landings in 2013, but a few more vessels fished hook-and-line gear but caught less with it in 2013.

2.4. IFQ sablefish catch by gear type (source = PacFIN)

Turning to IFQ sablefish in particular, the data show a decline in the proportion of sablefish landings and revenue from IFQ non-trawl gears in general, but especially hook-and-line gear from 2011 to 2013 (Figure 6, Table 5). IFQ landings and resultant revenue for sablefish caught with all gears have been dropping, along with prices, during 2012 and 2013. We revised the estimates since our 2012 IFQ report (Agenda Item D.2.c. April PFMC, http://www.pcouncil.org/wp-content/uploads/D2c_SUP_NMFS_APR2013BB.pdf). Those data were preliminary, and were from a mix of early (January) electronic tickets and paper tickets. Final data from paper fish tickets show a different picture. Data for the June and later reports written during 2014 were produced from final and complete paper ticket data in PacFIN.

2.5. Catch of rebuilding species (source = WCGOP and NMFS VA)

Three-year average catches of rebuilding groundfish stocks (a.k.a. overfished species) are still lower after IFQ than during the three years before, and for many species catch is substantially lower (Figure 7, Tables 6 and 7). Three-year average catch of cowcod, darkblotched, Pacific ocean perch and yelloweye rockfish are all at levels lower than 50 percent of pre-IFQ; while bocaccio is at 70 percent, canary is at 81, and petrale sole is at 81 percent of pre-IFQ levels.

Total catch of overfished species showed a stark decrease in 2013, when we compared two years of IFQ catch to two years of pre-IFQ catch in last year's report. However, after three years of IFQ, we see a trend of increasing annual catch of several OFS species, including cowcod, canary, and bocaccio rockfish, as well as petrale sole, for potentially different reasons. Bocaccio, canary and petrale allocations have increased substantially since 2011, and attainment rates of those allocations have increased at the same time. However, petrale sole is a target species being managed under a rebuilding program, and attainment rates have been higher than 90 percent for all years under IFQ. Catch of yelloweye rockfish has not increased since 2011, but catch of Pacific ocean perch and darkblotched rockfish have increased somewhat (Table 7, Figure 7).

Fisher familiarity with the IFQ program after more than three years, coupled with increased confidence given established quota pound trading markets and risk pools may be driving increased catch and attainment of some of these species. Under IFQ management, catch of these species is behaving less like the “bycatch” paradigm of trip limit fisheries (pre-rationalization), and more like that of IFQ target species. Although many rebuilding species are probably more valuable as QP, and insurance for enabling catch of target species, the current era of closely managed individual vessel accounts with debiting of total catch for all IFQ species treats “bycatch species” the same way as targets, just with low quotas. Given that, it’s not surprising to see catch increasing a bit. It’s also not concerning, given that the allocations are set to ensure stock rebuilding on schedule, even if the entire allocations were caught.

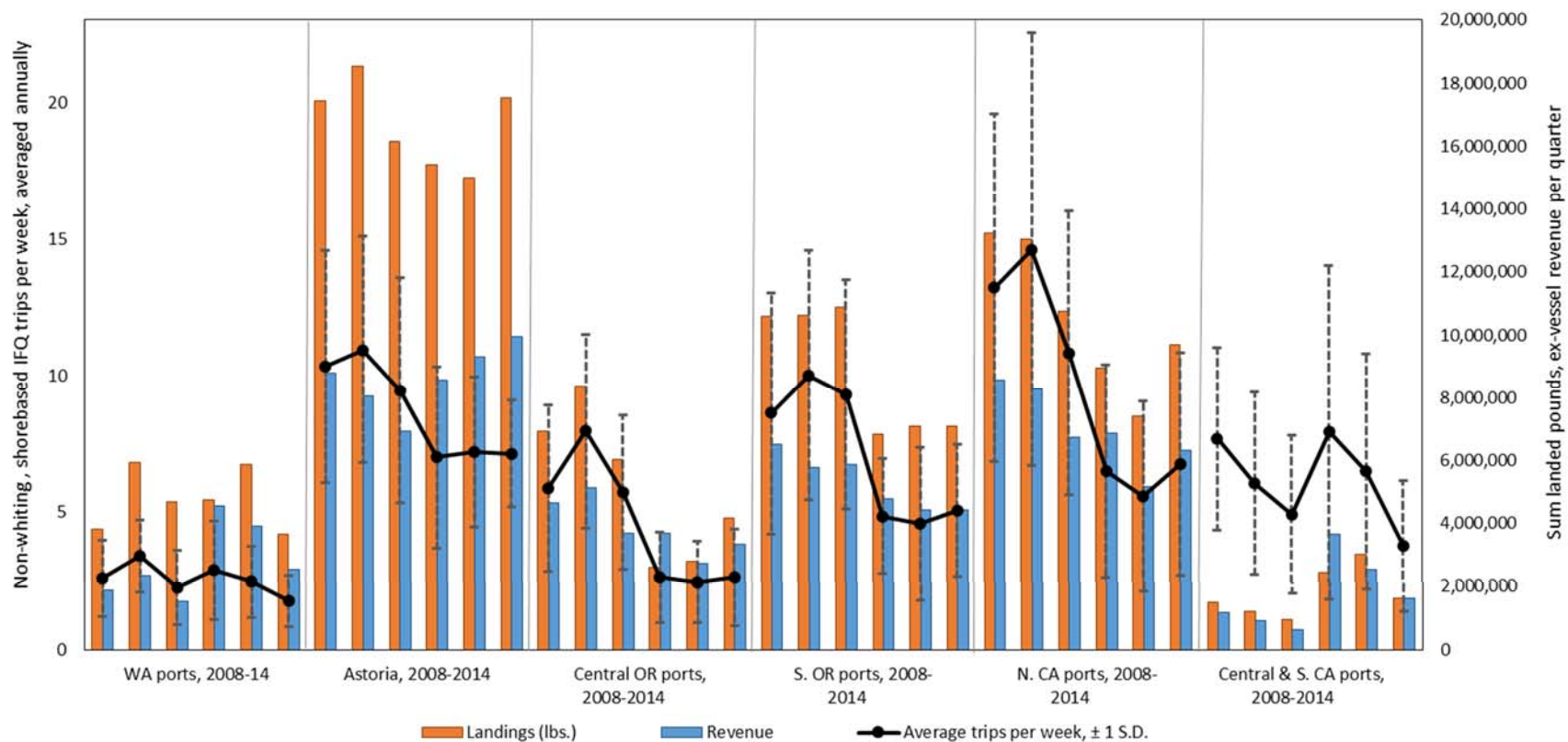


Figure 1. Average number of non-whiting IFQ trips per week (averaged annually), and annual non-whiting IFQ landings and revenue sums, among port groups for 2008 through 2013. The IFQ fishery began in 2011. Ports were grouped to preserve PacFIN data confidentiality. See text for port group details.

Table 1. Average non-whiting trips per week (averaged annually), and annual landings and revenue among port groups for 2008 through 2013, as well as distribution of annual landings and revenue sums among port groups, within each year (two right columns, “Land. dist.” and “Rev. dist.”. The IFQ fishery began in 2011. Ports were grouped to preserve PacFIN data confidentiality.

Year	Port group name	Ave. trips/ week	Std. dev.	Landings (lbs.)	Revenue	Land. dist.	Rev. dist.
2008	WA ports	2.59	1.38	3,807,312	1,884,507	7%	6%
2008	Astoria	10.34	4.26	17,440,948	8,785,359	33%	28%
2008	Central OR ports	5.88	3.05	6,930,055	4,654,545	13%	15%
2008	S. OR ports	8.62	4.42	10,611,562	6,508,949	20%	21%
2008	N. CA ports	13.23	6.36	13,238,977	8,563,250	25%	27%
2008	Central/S. CA ports	7.69	3.36	1,497,628	1,181,239	3%	4%
2009	WA ports	3.39	1.31	5,929,552	2,341,008	10%	8%
2009	Astoria	10.96	4.14	18,526,265	8,049,597	32%	26%
2009	Central OR ports	7.98	3.55	8,378,336	5,138,304	15%	17%
2009	S. OR ports	10.02	4.56	10,618,361	5,780,017	18%	19%
2009	N. CA ports	14.62	7.92	13,024,576	8,277,613	23%	27%
2009	Central/S. CA ports	6.08	3.34	1,206,495	910,186	2%	3%
2010	WA ports	2.26	1.35	4,687,538	1,537,406	9%	6%
2010	Astoria	9.46	4.12	16,165,609	6,917,069	33%	27%
2010	Central OR ports	5.73	2.83	6,023,878	3,676,880	12%	14%
2010	S. OR ports	9.32	4.20	10,887,617	5,882,231	22%	23%
2010	N. CA ports	10.84	5.20	10,750,683	6,738,560	22%	27%
2010	Central/S. CA ports	4.94	2.87	937,580	638,857	2%	3%
2011	WA ports	2.88	1.78	4,750,357	4,553,114	12%	14%
2011	Astoria	7.02	3.33	15,406,157	8,566,846	38%	27%
2011	Central OR ports	2.63	1.63	2,603,927	3,689,596	6%	11%
2011	S. OR ports	4.86	2.10	6,830,078	4,794,072	17%	15%
2011	N. CA ports	6.52	3.90	8,963,189	6,881,252	22%	21%
2011	Central/S. CA ports	7.94	6.09	2,436,250	3,668,140	6%	11%
2012	WA ports	2.47	1.28	5,877,453	3,902,634	14%	14%
2012	Astoria	7.22	2.76	14,983,755	9,325,606	36%	33%
2012	Central OR ports	2.46	1.48	2,793,972	2,705,143	7%	10%
2012	S. OR ports	4.58	2.79	7,098,437	4,419,603	17%	16%
2012	N. CA ports	5.60	3.47	7,410,158	5,156,652	18%	18%
2012	Central/S. CA ports	6.50	4.30	3,005,761	2,532,966	7%	9%
2013	WA ports	1.77	0.92	3,662,224	2,532,676	8%	9%
2013	Astoria	7.16	1.97	17,521,987	9,951,516	40%	35%
2013	Central OR ports	2.64	1.77	4,172,771	3,344,535	10%	12%
2013	S. OR ports	5.08	2.41	7,090,499	4,439,522	16%	16%
2013	N. CA ports	6.78	4.09	9,705,984	6,327,764	22%	22%
2013	Central/S. CA ports	3.77	2.39	1,641,214	1,612,347	4%	6%

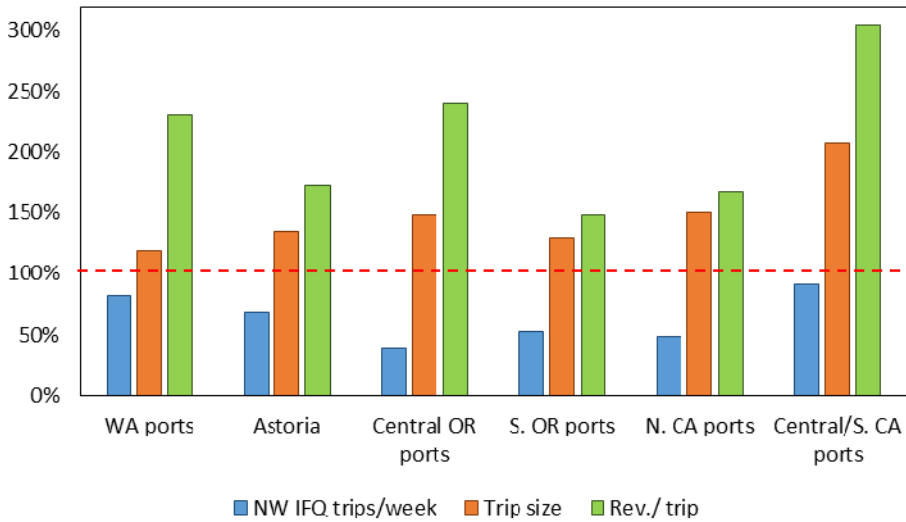


Figure 2. Post-IFQ average values for three metrics as a percent of the corresponding pre-IFQ average. Metrics expressed in this manner include from left to right, number of non-whiting IFQ trips per week (vessel-days, blue columns), average trip size (landed pounds round weight, orange columns), and revenue per trip (dollars per trip, green columns). For example, average weekly trip frequency in Astoria during IFQ was 68 percent of what it was before IFQ, but the average post-IFQ trip size is 135 percent, and post-IFQ average revenue per trip is 172 percent of pre-IFQ values. The pattern is consistent across port groups. See Tables 3 and 4 for values. Red dashed line is 100 percent (pre-IFQ = post-IFQ). See text for port group details.

Table 2. Average number of non-whiting IFQ trips per week (vessel-days) and standard deviation, from three years before IFQ compared with the three years following IFQ. Standard deviation is abbreviated as “std. dev.” within the table.

Port group	Ave. trips/ week 2008-10	Std. Dev.	Ave. trips/ week 2011-14	Std. Dev.	Percent (post/pre-IFQ)
WA ports	2.8	1.4	2.3	1.4	82%
Astoria	10.3	4.2	7.0	2.7	68%
Central OR ports	6.6	3.3	2.6	1.7	40%
S. OR ports	9.3	4.4	4.9	2.4	52%
N. CA ports	12.9	6.8	6.3	3.7	49%
Central/S. CA ports	6.3	3.4	5.7	4.6	91%

Table 3. Average non-whiting IFQ trip size (landed pounds round weight), and revenue per trip, from three years before IFQ compared with the three years during IFQ. Percent change between three years before IFQ and during IFQ is shown in the two right hand columns. Also see Figure 6. Revenue is abbreviated as “rev.” within the table, and standard deviation is abbreviated as “std. dev.”

Port group	2008-2010				2011-2014				Percent (post/pre-IFQ)	
	Ave. trip size	Std. dev. trip size	Ave. rev./trip	Std. dev. rev.	Ave. trip size	Std. dev. trip size	Ave. rev./trip	Std. dev. rev.	Trip size	Rev./trip
WA ports	38,160	27,508	15,246	9,129	45,655	28,262	35,107	21,744	120%	230%
Astoria	33,418	21,954	15,226	8,754	45,072	25,465	26,194	13,911	135%	172%
Central OR ports	21,548	12,662	13,606	8,788	32,009	22,102	32,573	26,403	149%	239%
S. OR ports	22,089	13,565	12,497	8,316	28,597	17,581	18,576	11,330	129%	149%
N. CA ports	18,443	10,638	11,749	7,668	27,774	16,390	19,559	12,313	151%	166%
Central/S. CA ports	3,758	4,651	2,818	3,729	7,775	8,653	8,577	9,601	207%	304%

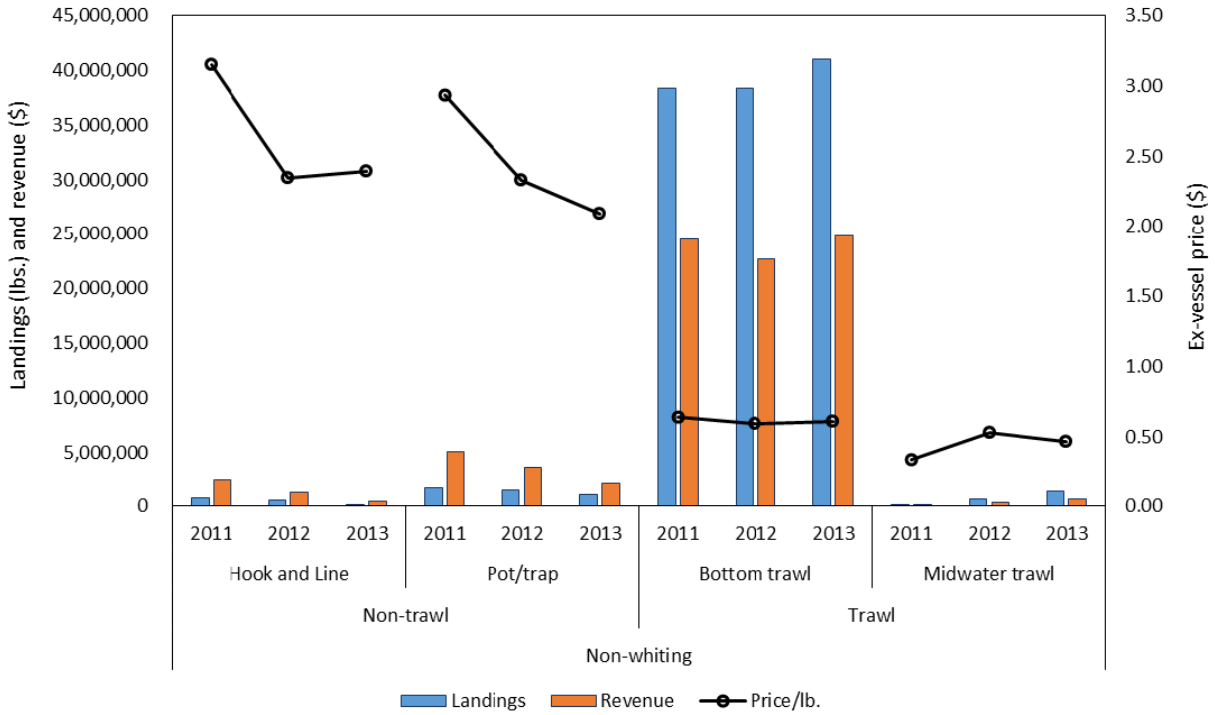


Figure 3. IFQ landings of groundfish species (blue columns, left axis) ex-vessel revenue (orange columns, left axis) and price (black lines, black open circles, right axis) by gear type, trip type and year, for non-whiting trips only. Trips were designated as vessel-days. See Table 1 for values.

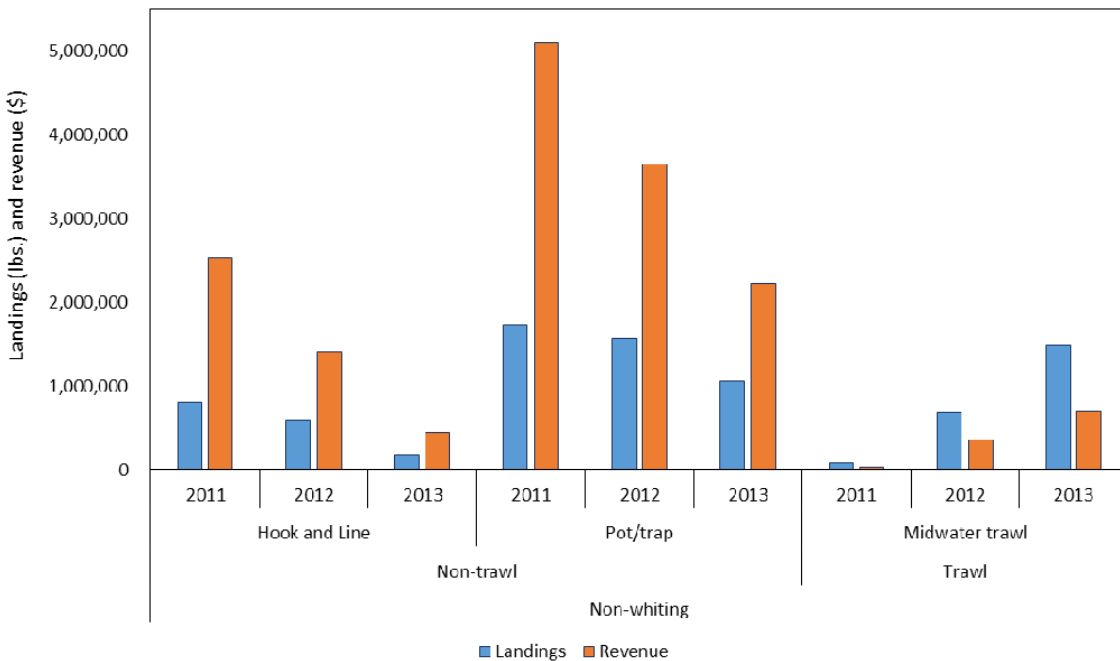


Figure 4. Detail from Figure 1 to enhance visibility for minor gears; non-whiting IFQ landings and revenue for minor gears for 2011 through 2013.

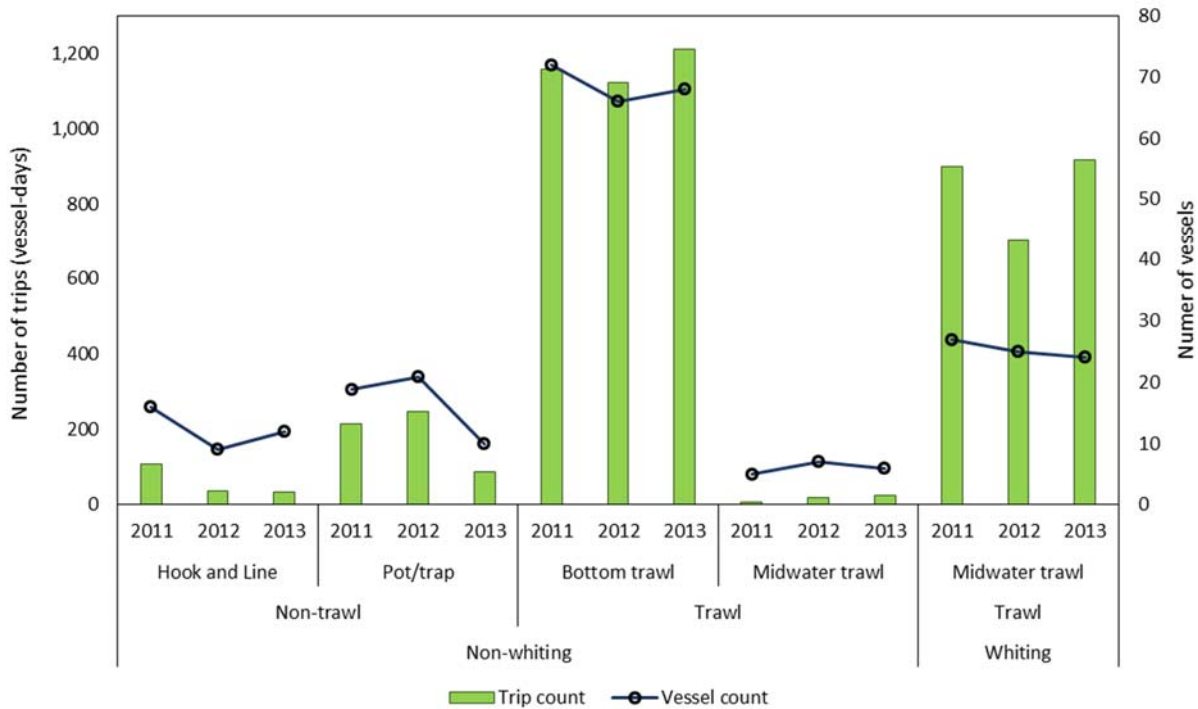


Figure 5. Counts of IFQ trips (green columns, left axis) and vessels (black lines, open circle markers, right axis) by gear type and trip type (whiting or non-whiting) for 2011 through 2013.

Table 4. IFQ landings of groundfish species, corresponding ex-vessel revenue, trips and vessels participating by trip type (whiting or non-whiting), for 2011-present. Trips were defined as vessel-days. *See text for 2014 data completeness in PacFIN as of the date of this query. Columns “NW Land %” and “NW Rev %” show non-whiting landings and revenue as a percentage within each year, among gear types and trip types.

Trip type	Gear group	Gear type	Year	Landings	Revenue	NW Land %	NW Rev %	Price /lb.	Vessels	Trips
Non-whiting	Non-trawl	Hook and Line	2011	806,139	2,539,597	2.0%	7.9%	3.15	16	110
			2012	598,379	1,402,165	1.5%	5.0%	2.34	9	36
			2013	185,973	445,421	0.4%	1.6%	2.40	12	31
		Pot/trap	2011	1,737,470	5,099,863	4.2%	15.9%	2.94	19	217
			2012	1,567,953	3,649,162	3.8%	13.0%	2.33	21	247
			2013	1,060,996	2,218,366	2.4%	7.9%	2.09	10	88
	Trawl	Bottom trawl	2011	38,370,973	24,488,020	93.6%	76.2%	0.64	72	1,156
			2012	38,324,474	22,634,517	93.1%	80.7%	0.59	66	1,121
			2013	41,070,364	24,852,911	93.8%	88.1%	0.61	68	1,210
Whiting	Trawl	Midwater trawl	2011	75,376	25,539	0.2%	0.1%	0.34	5	5
			2012	678,731	356,760	1.6%	1.3%	0.53	7	17
			2013	1,477,346	691,662	3.4%	2.5%	0.47	6	23
		Bottom trawl	2011	200,908,989	22,527,476	NA	NA	0.11	27	899
			2012	145,356,364	20,832,282	NA	NA	0.14	25	702
			2013	214,370,280	26,568,537	NA	NA	0.12	24	916

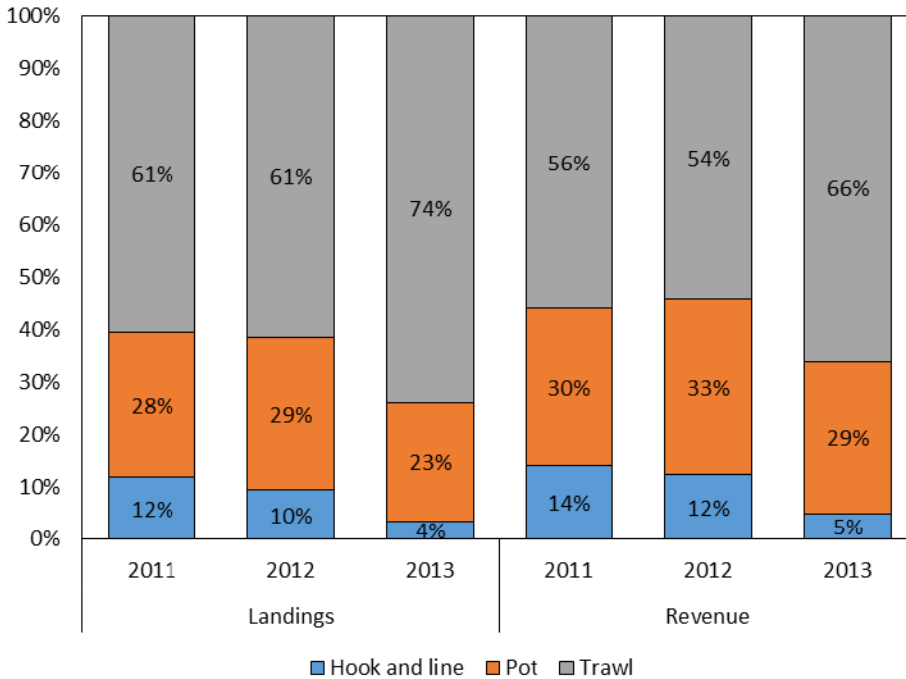


Figure 6. Distribution of sablefish landings and revenue among gear types within each year, in the IFQ sector during 2011 through 2013. Values have been revised from preliminary numbers in the 2012 report.

Table 5. Landings, ex-vessel revenue, price per pound, and distribution of sablefish landings and revenue among gear types, in the IFQ sector during 2011 through 2013; revised since the 2012 report. The columns “Land. dist.” and “Rev. dist.” within each year in panels A and B show the distribution of landings or revenue among gear types, within each year as a percent.

A. Landings		2011		2012		2013	
Gear	Landings	Land. dist.	Landings	Land. dist.	Landings	Land. dist.	
Hook and line	743,566	12%	517,231	10%	146,831	4%	
Pot	1,713,364	28%	1,542,065	29%	949,623	23%	
Trawl	3,771,833	61%	3,288,868	61%	3,081,570	74%	
Sum	6,228,763	100%	5,348,163	100%	4,178,024	100%	

B. Revenue		2011		2012		2013	
Gear	Revenue	Rev. dist	Revenue	Rev. dist	Revenue	Rev. dist	
Hook and line	2,394,665	14%	1,349,444	12%	376,096	5%	
Pot	5,076,710	30%	3,615,220	33%	2,147,379	29%	
Trawl	9,457,141	56%	5,841,938	54%	4,890,422	66%	
Sum	16,928,516	100%	10,806,602	100%	7,413,896	100%	

C. Price						
Gear	Price/lb. 2011	Price/lb. 2012	Dif. 2012-2011	Price/lb. 2013	Dif. 2013-2012	Dif. 2013-2011
Hook and line	3.22	2.61	-0.61	2.56	-0.05	-0.66
Pot	2.96	2.34	-0.62	2.26	-0.08	-0.70
Trawl	2.51	1.78	-0.73	1.59	-0.19	-0.92
Sum	2.72	2.02	-0.70	1.77	-0.25	-0.94

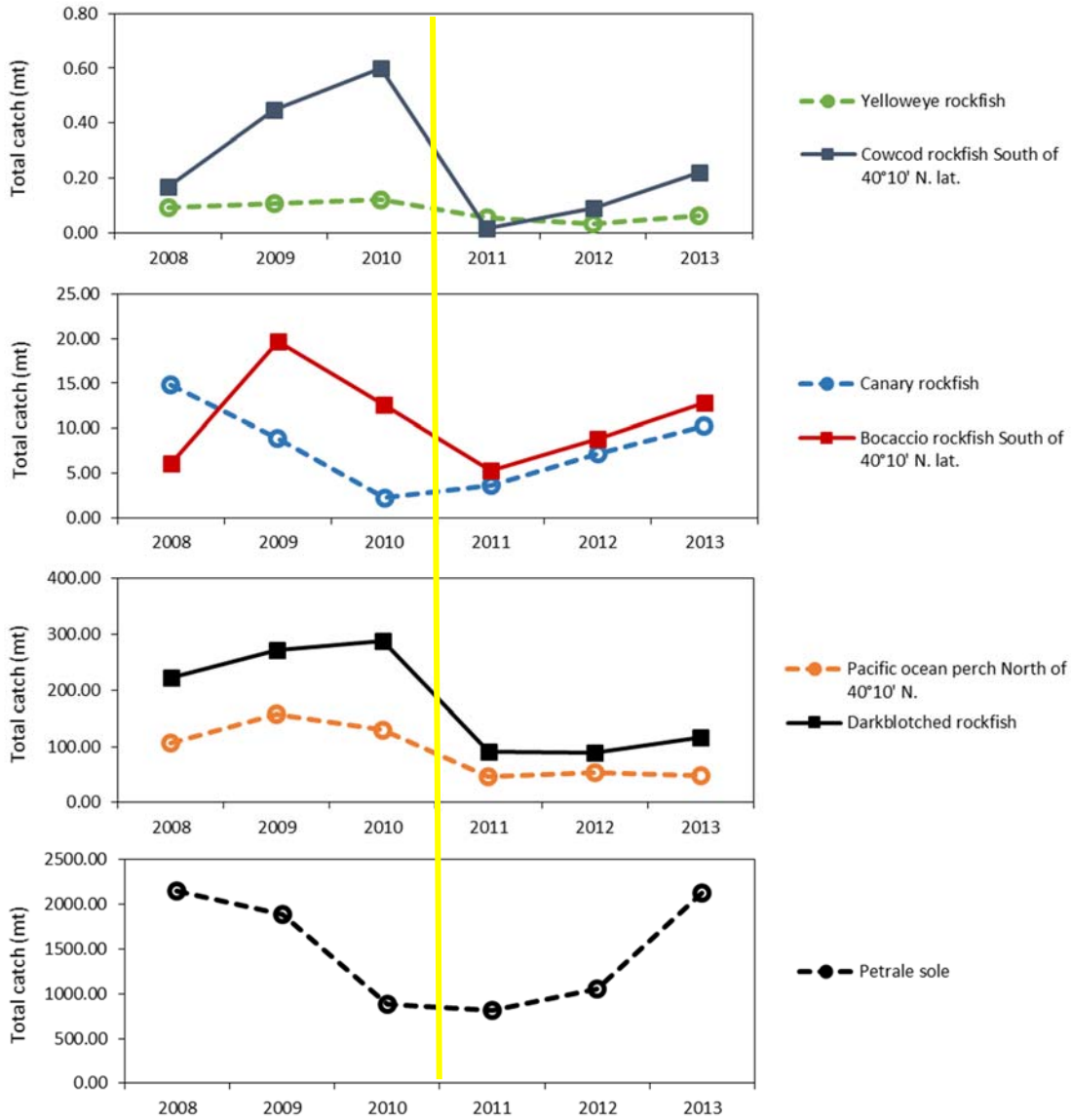


Figure 7. Total annual catch of rebuilding species from 2008 through 2010, in the limited entry trawl and shoreside whiting fisheries, as well as 2011 through 2013, in the Shorebased IFQ Program, in metric tons. Source = WCGOP Groundfish Mortality Report (2008-2010) and the Shorebased IFQ Vessel Accounts System (2011-2013). The yellow vertical line separates pre-IFQ and IFQ years.

Table 6. Total annual catch of rebuilding species from 2008 through 2010, in the limited entry trawl and shoreside whiting fisheries, as well as 2011 and 2012, in the Shorebased IFQ Program, in metric tons. Two-year average catch, and average annual catch in 2011-12 as a percentage of that of 2009-10 is presented in the far right column ("post/pre IFQ"). Source = WCGOP Groundfish Mortality Report (2009-2010) and the Shorebased IFQ Program, Vessel Accounts System (2011-2012).

	Pre-IFQ					Post-IFQ					Post/pre ave.
	2008	2009	2010	Pre-ave.	Post-std. dev.	2011	2012	2013	Post-ave	Post-std. dev.	
Bocaccio rockfish South of 40°10' N. lat.	6.14	19.65	12.65	12.81	6.76	5.31	8.83	12.85	9.00	3.77	70%
Canary rockfish	14.83	8.88	2.32	8.68	6.26	3.69	7.23	10.22	7.04	3.27	81%
Cowcod rockfish South of 40°10' N. lat.	0.17	0.45	0.60	0.41	0.22	0.02	0.09	0.22	0.11	0.10	27%
Darkblotched rockfish	223.15	271.38	288.61	261.05	33.93	90.84	89.77	116.34	98.98	15.04	38%
Petrale sole	2154.76	1884.69	885.62	1641.69	668.56	811.76	1057.87	2130.04	1333.22	700.95	81%
Yelloweye rockfish	0.10	0.11	0.12	0.11	0.01	0.06	0.03	0.06	0.05	0.02	47%
Pacific ocean perch North of 40°10' N.	106.74	158.20	129.98	131.64	25.77	46.01	53.59	49.02	49.54	3.82	38%

Table 7. Sector allocations, catch, and attainment of currently rebuilding Pacific coast groundfish stocks in the West Coast Shorebased IFQ Program.

IFQ species/area category	2011 allocation	2011 catch	2011 attain.	2012 allocation	2012 catch	2012 attain.	2012-2011 attain.	2013 allocation	2013 catch	2013 attain.	2013-2011 attain.	2013/2011 allocation
Bocaccio rockfish South of 40°10' N.	132,277	11,715	9%	132,277	19,461	15%	6%	165,126	28,332	17%	8%	125%
Canary rockfish	57,100	8,125	14%	57,761	15,942	28%	13%	87,964	22,526	26%	11%	154%
Cowcod South of 40°10' N.	3,968	39	1%	3,968	204	5%	4%	2,205	486	22%	21%	56%
Darkblotched rockfish	552,997	200,264	36%	548,808	197,918	36%	0%	587,976	256,485	44%	7%	106%
Pacific ocean perch North of 40°10' N.	263,148	101,433	39%	263,441	118,146	45%	6%	241,241	108,062	45%	6%	92%
Petrale sole	1,920,226	1,789,627	93%	2,324,995	2,332,199	100%	7%	5,110,315	4,695,933	92%	-1%	266%
Yelloweye rockfish	1,323	128	10%	1,323	76	6%	-4%	2,205	139	6%	-3%	167%

Appendix A.1. Allocations, total catch, remainder and attainment rates, in the West Coast Groundfish, Shorebased IFQ Program during 2011 and 2012.

IFQ species/area category	2011 allocation	2011 catch	2011 remainder	2011 attain.	2012 allocation	2012 catch	2012 remainder	2012 attain.	2012/2011 attain.
Arrowtooth flounder	27,406,105	5,576,000	21,830,105	20%	20,861,131	5,497,232	15,363,899	26%	6%
Bocaccio rockfish South of 40°10' N.	132,277	11,715	120,562	9%	132,277	19,461	112,816	15%	6%
Canary rockfish	57,100	8,125	48,975	14%	57,761	15,942	41,819	28%	13%
Chilipepper rockfish South of 40°10' N.	3,252,370	688,187	2,564,183	21%	2,934,904	642,329	2,292,575	22%	1%
Cowcod South of 40°10' N.	3,968	39	3,929	1%	3,968	204	3,764	5%	4%
Darkblotched rockfish	552,997	200,264	352,733	36%	548,808	197,918	350,890	36%	0%
Dover sole	49,018,682	17,269,411	31,749,271	35%	49,018,682	16,063,162	32,955,520	33%	-2%
English sole	41,166,808	302,936	40,863,872	1%	21,037,611	324,291	20,713,320	2%	1%
Lingcod	4,107,873	639,244	3,468,629	16%	3,991,800	839,509	3,152,291	21%	5%
Lingcod North of 40°10' N.	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lingcod South of 40°10' N.	NA	NA	NA	NA	NA	NA	NA	NA	NA
Longspine thornyheads North of 34°27' N.	4,334,839	2,119,804	2,215,035	49%	4,219,648	2,010,604	2,209,044	48%	-1%
Minor shelf rockfish North of 40°10' N.	1,150,813	34,225	1,116,588	3%	1,150,813	88,221	1,062,592	8%	5%
Minor shelf rockfish South of 40°10' N.	189,598	6,633	182,965	3%	189,598	28,522	161,076	15%	12%
Minor slope rockfish North of 40°10' N.	1,828,779	319,938	1,508,841	17%	1,828,779	486,088	1,342,691	27%	9%
Minor slope rockfish South of 40°10' N.	831,958	113,337	718,621	14%	831,958	271,674	560,284	33%	19%
Other flatfish	9,253,683	1,527,767	7,725,916	17%	9,253,683	1,514,202	7,739,481	16%	0%
Pacific cod	2,502,247	556,691	1,945,556	22%	2,502,247	873,698	1,628,549	35%	13%
Pacific halibut (IBQ) North of 40°10' N.	257,524	70,839	186,685	28%	232,856	100,647	132,209	43%	16%
Pacific ocean perch North of 40°10' N.	263,148	101,433	161,715	39%	263,441	118,146	145,295	45%	6%
Pacific whiting	204,628,442	201,030,361	3,598,081	98%	151,373,798	144,759,024	6,614,774	96%	-3%
Petrals sole	1,920,226	1,789,627	130,599	93%	2,324,995	2,332,199	-7,204	100%	7%
Sablefish North of 36° N.	5,613,719	5,287,802	325,917	94%	5,438,797	4,928,150	510,647	91%	-4%
Sablefish South of 36° N.	1,170,390	1,009,286	161,104	86%	1,133,352	503,511	629,841	44%	-42%
Shortspine thornyheads North of 34°27' N.	3,156,138	1,574,518	1,581,620	50%	3,120,533	1,571,037	1,549,496	50%	0%
Shortspine thornyheads South of 34°27' N.	110,231	18,653	91,578	17%	110,231	803	109,428	1%	-16%
Splitnose rockfish South of 40°10' N.	3,045,245	88,523	2,956,722	3%	3,206,513	130,462	3,076,051	4%	1%
Starry flounder	1,471,586	25,936	1,445,650	2%	1,480,404	18,404	1,462,000	1%	-1%
Widow rockfish	755,348	303,703	451,645	40%	755,352	340,220	415,132	45%	5%
Yelloweye rockfish	1,323	128	1,195	10%	1,323	76	1,247	6%	-4%
Yellowtail rockfish North of 40°10' N.	6,821,455	1,629,184	5,192,271	24%	6,850,556	2,194,139	4,656,417	32%	8%
Sum all	375,004,872	242,304,309	132,700,563	65%	294,855,819	185,869,875	108,985,944	63%	-2%
Without whiting	170,376,430	41,273,948	129,102,482	24%	143,482,021	41,110,851	102,371,170	29%	4%

Appendix A.2. Allocations, total catch, remainder and attainment rates, in the West Coast Groundfish, Shorebased IFQ Program during 2013, and comparisons between years.

IFQ species/area category	2013 allocation	2013 catch	2013 remainder	2013 attain.	2013- 2011 attain.	2013- 2012 attain.
Arrowtooth flounder	8,479,264	5,365,841	3,113,423	63%	43%	37%
Bocaccio rockfish South of 40°10' N.	165,126	28,332	136,794	17%	8%	2%
Canary rockfish	87,964	22,526	65,438	26%	11%	-2%
Chilipepper rockfish South of 40°10' N.	2,423,983	870,774	1,553,209	36%	15%	14%
Cowcod South of 40°10' N.	2,205	486	1,719	22%	21%	17%
Darkblotched rockfish	587,976	256,485	331,491	44%	7%	8%
Dover sole	49,018,682	17,583,083	31,435,599	36%	1%	3%
English sole	14,032,486	486,273	13,546,213	3%	3%	2%
Lingcod	3,785,298	786,769	2,998,529	21%	5%	0%
Lingcod North of 40°10' N.	2,695,305	749,955	1,945,350	28%	NA	NA
Lingcod South of 40°10' N.	1,089,993	36,814	1,053,179	3%	NA	NA
Longspine thornyheads North of 34°27' N.	4,100,267	2,400,808	1,699,459	59%	10%	11%
Minor shelf rockfish North of 40°10' N.	1,119,948	65,686	1,054,262	6%	3%	-2%
Minor shelf rockfish South of 40°10' N.	178,574	44,443	134,131	25%	21%	10%
Minor slope rockfish North of 40°10' N.	1,712,835	431,244	1,281,591	25%	8%	-1%
Minor slope rockfish South of 40°10' N.	829,181	258,778	570,403	31%	18%	-1%
Other flatfish	9,236,501	1,767,468	7,469,033	19%	3%	3%
Pacific cod	2,480,830	339,657	2,141,173	14%	-9%	-21%
Pacific halibut (IBQ) North of 40°10' N.	236,660	72,707	163,953	31%	3%	-13%
Pacific ocean perch North of 40°10' N.	241,241	108,062	133,179	45%	6%	0%
Pacific whiting	216,707,790	215,218,208	1,489,582	99%	1%	4%
Petrable sole	5,110,315	4,695,933	414,382	92%	-1%	-8%
Sablefish North of 36° N.	4,030,050	4,080,318	-50,268	101%	7%	11%
Sablefish South of 36° N.	1,327,800	200,064	1,127,736	15%	-71%	-29%
Shortspine thornyheads North of 34°27' N.	3,054,183	1,825,663	1,228,520	60%	10%	9%
Shortspine thornyheads South of 34°27' N.	110,231	8,150	102,081	7%	-10%	7%
Splitnose rockfish South of 40°10' N.	3,346,838	101,757	3,245,081	3%	0%	-1%
Starry flounder	1,656,774	7,705	1,649,069	0%	-1%	-1%
Widow rockfish	2,191,016	907,513	1,283,503	41%	1%	-4%
Yelloweye rockfish	2,205	139	2,066	6%	-3%	1%
Yellowtail rockfish North of 40°10' N.	5,809,905	1,585,755	4,224,150	27%	3%	-5%
Sum all	345,851,426	260,307,396	85,544,030	75%	11%	12%
Without whiting	129,143,636	45,089,188	84,054,448	35%	11%	6%