SUPPLEMENT TO:
ANALYSIS OF SABLEFISH MANAGEMENT AND TRAWL ALLOCATION ATTAINMENT ISSUES

Impact of Gear Switching on Attainment of Other Species

There has been substantial discussion of the impact of gear switching for sablefish and the challenges presented by the development of markets for imported tilapia and catfish (including swai) on attainment of trawl allocations, for Dover sole in particular. Figure 1 shows the history of Dover sole and sablefish landings since the start of the license limitation program in 1994. Landings of Dover peaked in 2009. The main analysis shows the recent year declines in sablefish harvest correspond to reduced sablefish allocation. Figure 2 shows the expansion of imports of tilapia and catfish peaking as the trawl IFQ program was implemented in 2011.

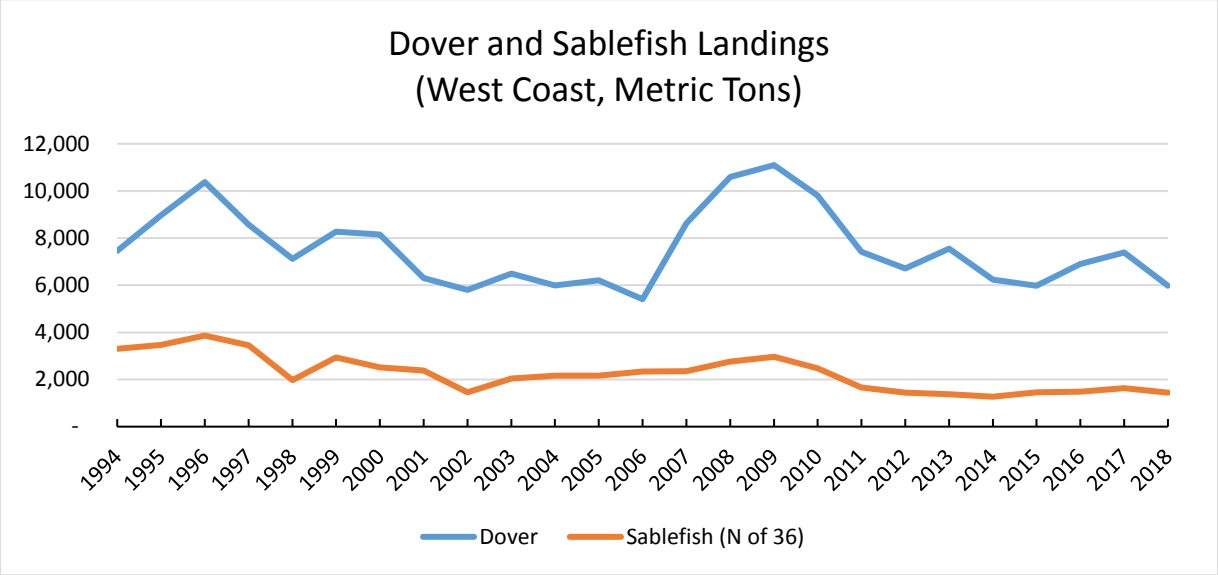

Figure 1. Total trawl catch for Dover sole and northern sablefish (Source: PacFIN)

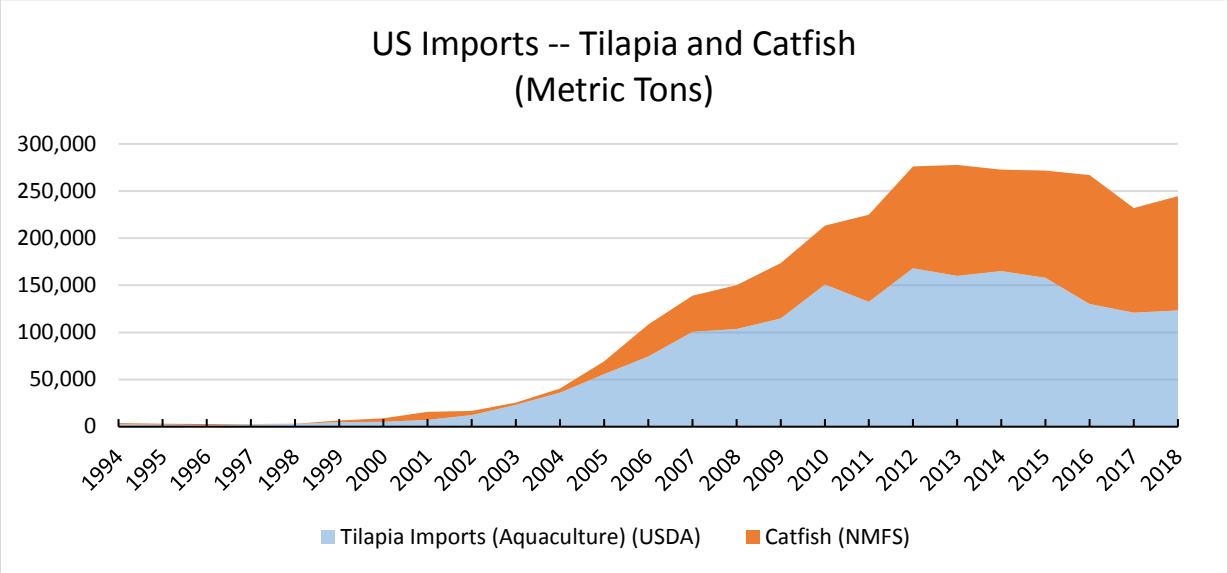

Figure 2. Total US imports of tilapia and catfish (catfish amounts graphed on top of tilapia: stacked area graph).

Catfish import data includes the genera *Icatlurus*, *Silurus*, and *Pangasius*, the latter of which is also known as swai or asian catfish. Other domestic market and import/export information, such as that for whitefish in general, may also have a bearing on the Dover sole market.

LEFG Relationship

Given that there is an limited entry fixed gear (LEFG) allocation specifically for sablefish north, it warrants consideration on why vessels made the investment to participate within the IFQ sector as gear switching vessels, particularly in light of the greater costs for participating in the IFQ fishery (at sea monitoring, cost recovery, and quota required to cover catch rather than landings). One possibility, explored here, is that vessels might be participating in the IFQ fishery because the permit stacking limits imposed on the LEFG sector impede them from expanding business operations, possibly to more efficient levels.

In the LEFG primary fishery, a sablefish endorsed limited entry permit is required and each permit is assigned to one of three cumulative limit levels (Tiers 1, 2 or 3). The cumulative limits are poundages that can be landed during the primary season. The ratio of the cumulative limits among tiers is 3.85:1.75:1, for Tiers 1, 2 and 3, respectively. Vessels are permitted to stack up to three LEFG permits at a time. Under the tier program in 2019, the maximum cumulative limit a vessel can harvest is 142,911 lbs (three Tier 1 permits at 47,637 lbs each). Comparatively, in the IFQ fishery the annual vessel limit for sablefish north in 2019 is 256,086 lbs. Therefore, the potential additional landings by a vessel that participates only in the IFQ fishery with fixed gear is 113,175 lbs more than a vessel that participates only in the LEFG primary fishery Based on the 2016 to 2018 IFQ fishery average price for fixed gear northern area sablefish ($2.80/lb), the difference is $316,890 in ex-vessel revenue. Of the 39 vessels that have gear switched from 2011-2018, 14 have participated in both the trawl IFQ and LEFG fisheries. A vessel participating in both fisheries could take up to a maximum of almost 400,000 pounds of northern area sablefish ($1.1 million in exvessel value at $2,80/lb). This is 180 percent more than the maximum opportunity provided in the LEFG fishery alone.

As noted in Table 8 in the main analytical document, there have been between five and eight vessels that have participated in both the IFQ and LEFG fisheries between 2011 and 2018. All vessels which participated in both the primary fishery and the IFQ fishery between 2016 and 2018 stacked three LEFG tier permits, and all but one had at least 1 Tier 1 permit (Table 1). Only one or two vessels had three Tier 1 permits stacked in a given year, while others had various combinations of three Tier 1, 2, and 3 permits.

Table 1. LEFG permit sablefish tier combinations held by vessels that also participated in the trawl IFQ fishery, 2016-2018.

Year	Tier Combination (Number of Permits by Tier for: Tier 1, Tier 2, Tier 3, Respectively)	Number of Vessels
2016	3,0,0	2
2017		1
2018		2
2016	2,1,0	3
2017		2
2018		2
2016	1,2,0	1
2017		1
2018		1
2016	1,1,1	1
2017		1
2018		1
2018	0,2,1	1

Since 2011, LEFG/trawl IFQ fixed gear vessels have taken at least 83 percent of their tier limits, with an average of 97.5 percent for the last three years. In the IFQ sector, these vessels have taken 148,146 lbs on average from 2016 to 2018, slightly more than could be harvested in the tier fishery alone in 2019. In contrast, vessels that used fixed gear only in the IFQ sector took less, an average of 97,974 lbs during the same period. However, the top three vessels that used fixed gear only in the IFQ sector averaged 187,712 lbs during the three year period.

While the five to seven vessels that used fixed gear in both the LEFG and IFQ fishery from 2016 to 2018 all stacked three permits (Table 1), during that period there have been 19 to 23 vessels that stacked three LEFG tier permits and did not cross over into the IFQ program. Table 2 shows the number of LEFG vessels that did not switch gear in the IFQ program, by year and number of stacked permits.

Table 2. Number of tier vessels, by year and number of stacked permits, that did not cross over into the IFQ program.

	Number of Vessels by Year		
Number of Permits	2016	2017	2018
1	33	35	37
2	26	22	19
3	19	23	20

While all but one of the five to seven LEFG vessels that participated in the trawl IFQ fishery from 2016 to 2018 had at least one Tier 1 permit, there were between 10 and 12 vessels that had at least one Tier 1 permit that did not cross over into the IFQ program from 2016 to 2018. Table 3 below shows for vessels that did not cross into the IFQ fishery the number of Tier 1 permits on a vessel and the number of other permits (none to two) stacked on that vessel from 2016 to 2018. Four of these vessels had trawl permits but did not gear switch. For 2016 to 2018, there was only one vessel with three stacked Tier 1 permits that in one year did not participate in the IFQ fishery.

Table 3: Number of Tier 1 permits on vessels that did not participate in the IFQ fishery from 2016-2018 and the number of other permits on those vessels.

Number of Stacked LEFG Permits		Number of Vessels
Tier 1 Permits	Tier 2 or 3 Permits	
3	0	1
2	1	4
	0	2
1	2	4
	1	2
	0	1

QP Acquired by Gear Switchers

In the main analytical document, quarterly QP price data is provided for 2011-2018 (in aggregate) for gear switching businesses and trawl businesses (Figure 12, page 33). That data is summarized by whether the transfer is from a QS account to a vessel account (VA) or between VAs. Here annual QP price data is provided but, in order to preserve confidentiality, there is not a distinction between transfers from QS accounts to VAs and between VAs ("suppressed" indicates that the data is not included because there were not enough transactions to ensure confidentiality, Figure 3). The average prices paid by gear switching businesses appears to be somewhat higher than those paid by trawl businesses for 2012 to 2014 but tended to be somewhat lower than for trawl businesses in 2015 to 2018 but not with statistical significance in any instance.

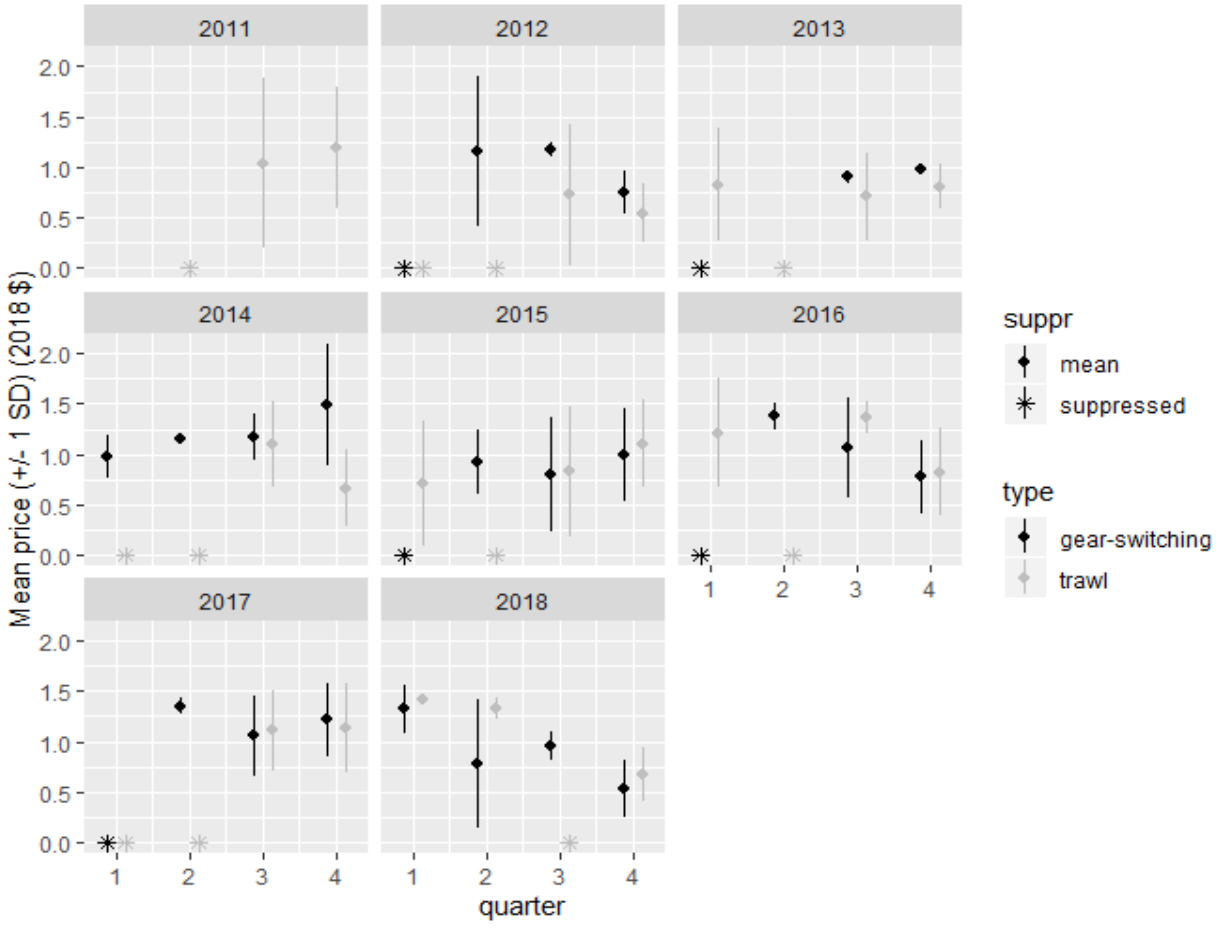

Figure 3. QP prices for purchases by trawl and by gear switching vessels by year (Source: Erin Steiner, NWFSC, Sept 27, 2019).