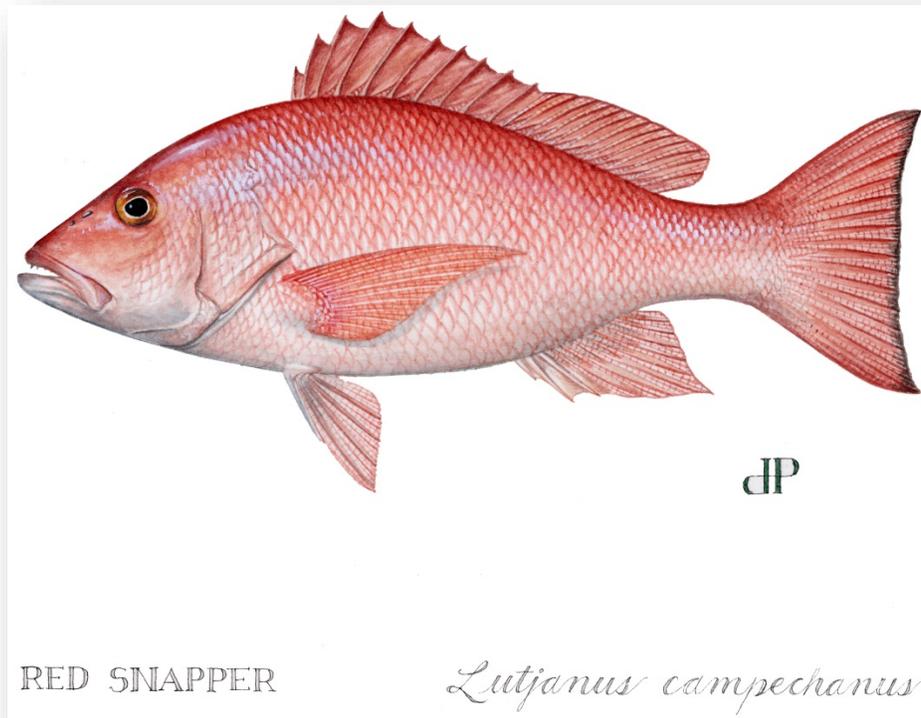


# *Gulf of Mexico Red Snapper Individual Fishing Quota Report (2019 update)*



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## *Message from the Assistant Regional Administrator*

The Red Snapper Individual Fishing Quota Program (RS-IFQ) Annual Report is a living document that builds upon the past summarized information and provides a current overview of the RS-IFQ program. This report is not intended to be a full comprehensive assessment of the program. Comprehensive assessments are completed every 5 to 7 years.<sup>1</sup> The first 5-year (2007- 2011) assessment was completed in 2013 and can be found on the Catch Share website,<sup>2</sup> under Additional Information. A joint 5-year assessment of both the RS-IFQ and Grouper-Tilefish IFQ programs has been started and will cover the years 2012-2018.

Outreach effort for the Individual Fishing Quota (IFQ) programs in 2019 included the *Catch Up on Catch Shares Newsletter*, face-to-face dealer outreach, and an in-person shareholder outreach session. IFQ support met with more than 29 IFQ dealers in the Florida panhandle, Florida Keys, Louisiana/Alabama, and Texas regions. The 2019 shareholder workshop took place in Galveston, Texas, in conjunction with a Gulf of Mexico Fishery Management Council meeting.

In April of 2019, the red snapper commercial quota increased from 6.31 million pounds (lb) gutted weight (gw) to 6.94 million lb gw. At the end of the year, fishermen had landed 99.4% of the quota. The percentage of IFQ accounts landing red snapper (63%) remained similar to last few years, with the majority of landings associated with accounts with shares (58%). The average ex-vessel price of red snapper increased slightly to \$5.28/lb.

The proportion of shareholders without Gulf of Mexico commercial reef fish permits and the amount of shares held within these accounts steadily increased during the early years of the program, but has remained steady in recent years. In 2019, these accounts represented 30% of all accounts and hold 30% of all shares. The average 2019 share price (\$41/equivalent lb) increased from 2018, as did the average 2019 allocation price (\$3.69/lb). Share and allocation price reporting improved slightly, but continued to be an area of concern. Average ex-vessel price (\$5.28/lb) slightly increased from previous years, and remains considerably greater than pre-IFQ average prices reported.

The National Marine Fisheries Service (NMFS) is committed to the continued improvement of RS-IFQ management. Stakeholders have provided feedback and suggestions on how to improve the RS-IFQ program and online system. This information has been helpful for improving the program since it began. NMFS thanks everyone for their input and encourages them to continue to share their concerns and ideas.

Sincerely,



John C. McGovern, Ph.D.

Assistant Regional Administrator for Sustainable Fisheries

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<sup>1</sup> The Guidance For Conducting Review of Catch Share Programs can be found here: <https://www.fisheries.noaa.gov/national/laws-and-policies/catch-shares>

<sup>2</sup> <https://portal.southeast.fisheries.noaa.gov/cs/>.

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## ABBREVIATIONS

<b>Abbreviation</b>	<b>Description</b>
ABC	Acceptable biological catch
ALS	Accumulated landings system
BFT	Bluefin Tuna Individual Bycatch Quota program
FOIA	Freedom of information act
FMP	Fishery management plan
GDP	Gross domestic product
GSAD	Gulf and South Atlantic Dealer permit
GT-IFQ	Grouper-Tilefish Individual Fishing Quota
Gulf Council	Gulf of Mexico Fishery Management Council
Gulf	Gulf of Mexico
gw	Gutted weight
HBC	Headboat Collaborative pilot program
HMS	Highly migratory species
IFQ	Individual Fishing Quota
JEA	Joint enforcement agreement
lb	Pounds
LL	Longline gear
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
mp	Million pounds
NMFS	National Marine Fisheries Service
OLE	Office of Law Enforcement
RA	Regional Administrator
Reef Fish FMP	Reef Fish Fishery Management Plan
Reef fish permit	Gulf of Mexico commercial reef fish harvesting permit
RFOP	Reef fish observer program
RS-IFQ	Red snapper Individual Fishing Quota
SEDAR	Southeast Data, Assessment, and Review
SEFSC	Southeast Fisheries Science Center, NMFS
SERO	Southeast Regional Office, NMFS
TL	Total length
USCG	United States Coast Guard
VL	Vertical line gear
VMS	Vessel Monitoring system

## *Program Overview and Regulations*

### **Program Overview**

The Red Snapper (RS) Individual Fishing Quota (IFQ) program is a single-species, single-share category program, where participants use an online account for all transactions (share and allocation transfers, landings, and cost recovery fees). For the first five years of the program (2007-2011), anyone who possessed a valid Gulf of Mexico (Gulf) federal dealer permit or a Gulf commercial federal reef fish permit (reef fish permit) was eligible to participate in the program. Beginning January 1, 2012, all U.S. citizens and permanent resident aliens were eligible to obtain a RS-IFQ shareholder account to purchase shares and allocation. Shares are a percentage of the red snapper commercial quota, while allocation refers to the poundage that is used to possess, land, or transfer during a given calendar year. Allocation is annual and expires on December 31. Only accounts with allocation and a valid Gulf reef fish permit can legally harvest red snapper. Appendices 1 and 2 contain a history of red snapper management and implementation of the RS-IFQ program.

There are three main account types in the RS-IFQ system: shareholder, vessel, and dealer accounts. Each shareholder and dealer account is composed of a unique set of entities (single or combination of individuals and/or business) and no two accounts are composed of the same set of entities. Shareholder accounts may hold shares and allocation or just hold allocation. A list of all shareholder accounts and the amount of shares held by each account is available through the National Marine Fisheries Service (NMFS) Southeast Regional Office's (SERO) Frequent Freedom of Information Act Requests website<sup>3</sup>. This page can be sorted by any of the column headings. An X in the Initial column indicates that the account has never been accessed in the new system.

Vessel accounts belong to shareholder accounts based on the reef fish permit for that vessel. Vessel accounts only hold allocation for landings. There may be multiple vessel accounts associated with one shareholder account. Sufficient allocation must be in the vessel account prior to the landing transaction. Upon completion of a landing transaction, the system deducts the allocation from the vessel account.

Dealer accounts are associated with federal dealer permit holders. Prior to August 7, 2014, the federal dealer permit was the Gulf reef fish dealer permit; afterwards the federal permit became the Gulf and South Atlantic Dealer (GSAD) permit. Dealers are limited to completing landing transactions, collecting the cost recovery fee from the fishermen, and paying that fee to NMFS. All RS-IFQ dealers are required to have a Gulf IFQ dealer endorsement, which can be printed through their IFQ account. A printed copy of the IFQ dealer endorsement must accompany vehicles used to transport IFQ species on land. Endorsements are valid when a dealer's permit is active and they do not have any outstanding cost recovery fees. The RS-IFQ program and the Grouper-Tilefish Individual Fishing Quota (GT-IFQ) program are contained within the same system and are jointly referred to as the Gulf Reef Fish IFQ programs. Therefore, there is one dealer endorsement for both programs.

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<sup>3</sup> <https://www.fisheries.noaa.gov/southeast/frequent-freedom-information-act-requests-southeast-region> or <https://portal.southeast.fisheries.noaa.gov/reports/foia/IFQShareholders.htm>

The RS-IFQ program records allocation, landings and quota in pounds (lb) of gutted weight (gw); therefore, throughout this report, allocation, landings, and quotas are in lb gw. At the beginning of each year, NMFS distributes allocation to shareholder accounts based on the annual quota and the share percentage associated with that account. Allocation can be used to account for red snapper landings or can be transferred to another shareholder. Adjustments (increases or decreases) in the red snapper commercial quota occur due to new information (e.g., stock assessment, calibration, reallocation between fishing sectors). Quota increases are distributed proportionately among shareholder accounts based on the percentage of shares held in each account at the time of the adjustment.

The RS-IFQ program has a built-in flexibility measure to allow a once-per-year landing overage for any RS-IFQ shareholder account that holds shares. For shareholder accounts with shares, a vessel can land once during the year 10% more than their remaining allocation on the vessel. NMFS deducts this overage from the shareholder's allocation in the following fishing year. Because overages need to be deducted in the following year, RS-IFQ accounts without shares cannot land an excess of their remaining allocation and RS-IFQ accounts with shares are prohibited from selling shares that would reduce the account's shares to less than the amount needed to repay the overage in the following year.

## **Program Objectives**

The primary objectives of the program, as defined in Amendment 26 to Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (Reef Fish FMP), are to reduce overcapacity and mitigate derby fishing conditions. Anticipated benefits of the program include: increased market stability; elimination of fishing season closures; increased flexibility for fishing operations; cost-effective and enforceable management of the red snapper commercial sector; improved safety at sea; and balancing social, economic, and biological benefits from the red snapper commercial sector. Additionally, the program is intended to provide direct and indirect biological benefits to red snapper and other marine resources by eliminating quota overages and reducing bycatch and discard mortality. The social, economic, and biological benefits collectively are intended to assist NMFS and the Gulf of Mexico Fishery Management Council (Gulf Council) in preventing overfishing and rebuilding the Gulf red snapper population through the stewardship aspects of the RS-IFQ program.

## **Program Regulations**

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires fishery managers to ensure that no individual, business, or other entity acquires an excessive share of the quota. The RS-IFQ program is monitored to prevent any entity from obtaining shares in excess of the established share cap of 6.0203%. The share cap was based on the maximum RS-IFQ share issued to a person, business, or other entity at the time of initial apportionment. There is no allocation or usage cap for red snapper. As of January 1, 2012, any RS-IFQ account may transfer (increase or decrease holdings) red snapper shares and allocation, regardless of reef fish permit status. There are no program fees associated with share or allocation transfers.

All vessels with a reef fish permit are required to hail-out prior to leaving port. As of January 1, 2019, all vessels are also required to hail-in 3 to 24 hours prior to landing fish and must land only at approved landing locations. While at-sea, vessels are monitored using the satellite-based real-time vessel monitoring systems (VMS). Each vessel is required to have an operational NMFS type-approved VMS transmitter. The transmitter automatically determines the vessel's position and transmits that position to NMFS through a NMFS-approved communication service provider. When returning to port, vessels landing red snapper must provide a landing notification indicating the time and location of landing, the intended dealer, and the estimated pounds landed. At the time of landing, sufficient RS-IFQ allocation at least equal to the pounds landed must be in the vessel account or the linked IFQ shareholder account. Landing may occur at any time, but red snapper may only be offloaded between 6 a.m. and 6 p.m. A landing transaction report is completed by the IFQ dealer and validated by the allocation holder through a vessel account password. The landing transaction includes the date, time, and location of transaction; weight (lb gw) and actual ex-vessel value of fish landed; and the identities of the shareholder account, vessel, and dealer. All landings data are processed in real-time. Current GT-IFQ landings can be accessed at the SERO Catch Share Website: <https://portal.southeast.fisheries.noaa.gov/cs>, through the Additional Information view and listed under the document Commercial Quotas/Catch Allowances (all years).

NMFS monitors the economic performance of the fleet by collecting share, allocation, and ex-vessel prices. Both the transferor and transferee submit total share prices, while just the transferor submits the allocation price per pound. Ex-vessel prices are the prices paid by a dealer per pound of fish before any deductions are made for transferred (leased) allocation and goods and/or services (bait, ice, fuel, repairs, machinery replacement, etc.). The Magnuson-Stevens Act, in section 304(d)(2)(A)(i), requires a fee to recover the actual costs required to directly administer, manage, and enforce the RS-IFQ program. This fee may not exceed 3% of the actual ex-vessel value. The current cost recovery fee is set at 3%. The Regional Administrator (RA) may review and adjust this fee annually. The IFQ allocation holder specified in the landing transaction is responsible for the payment of the cost recovery fees, while the dealer who receives the fish is responsible for collecting the cost recovery fee and submitting the fee to NMFS on a quarterly basis.

Complete regulations governing the RS-IFQ program can be found at 50 CFR § 622.16 ([www.ecfr.gov](http://www.ecfr.gov)) and the program can be accessed through SERO website: <https://portal.southeast.fisheries.noaa.gov/cs>. Important information regarding the RS-IFQ program is available for download on the website under Additional Information.

## *Program Performance*

### **Program Participants**

#### **Shareholders**

Shareholders are any shareholder account that holds shares. Shareholder accounts without shares may still participate in the program by obtaining allocation from another IFQ shareholder account. Allocation holders are any shareholder account that holds allocation, and these shareholder accounts may or may not also hold shares. Through share transfers, each year there are new shareholders (accounts that obtain shares for the first time during that year). Likewise, a shareholder may divest themselves of some or all of their shares throughout the year. A shareholder may divest their account of shares (i.e., transfer all shares) for a variety of reasons: to exit the IFQ program; to transfer to a new IFQ account after a reef fish permit change;<sup>4</sup> or to manage related IFQ accounts from one account.<sup>5</sup>

In the first eight years of the program (2007 – 2014) the number of shareholders decreased each year. In 2015, there was an increase in shareholders (+8 from 2014). This increase may be due to the opening of the GT-IFQ program to public participation (i.e., allowing any U.S. citizen of permanent resident alien to obtain shares or allocation) and discussions of modifications to the IFQ program (e.g., Amendments 36A and 36B to the Reef Fish FMP). Gulf Council discussion about modifications to the IFQ programs began in 2015 with Amendment 36A. In the final rule for Amendment 36A, shares from accounts that had not been activated were reverted to NMFS. Gulf Council discussion about potential changes to the IFQ programs continues in Amendment 36B to the Reef Fish FMP. With the exception of 2015 and 2017, the number of shareholder accounts have generally decreased each year (Table 1).

Shareholders are categorized by share volume: small shareholders hold < 0.05% shares, medium shareholders hold between 0.05-1.4999% shares, and large shareholders hold  $\geq$  1.5% shares. From the beginning of the program, the medium and large shareholders held the majority of shares, while the small and medium shareholders accounted for the greatest number of accounts (Table 1). Since the start of the program, changes in the number of shareholders primarily occurred among small shareholders. For example, at the start of the program small shareholders comprised of 75% of all shareholders, while in 2019 they comprised 57%. Concurrently, the proportion of medium shareholders increased from 26% at the start of the program to 38% in recent years.

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<sup>4</sup> IFQ accounts are established based on the name(s) of the Gulf commercial reef fish permit holder. If the name(s) of the permit holder change (e.g., adding/removing a spouse), a new IFQ account must be established to link to the permit.

<sup>5</sup> Some IFQ participants are associated with more than one IFQ account (e.g., John Smith vs. John and Jane Smith, incorporating each vessel under a different company name), and therefore may shift all their shareholding to one account for ease of management.

Table 1: Shareholders by share volume

Year	Small (<0.05%)		Medium (0.05-1.4999%)		Large (≥ 1.5%)		Total
	Accounts	Share %	Accounts	Share %	Accounts	Share %	Accts
Initial	415	4.55	125	58.52	14	36.94	554
2007	368	4.09	112	49.74	17	46.18	497
2008	346	3.80	111	48.72	17	47.49	474
2009	313	3.34	108	48.02	18	48.66	439
2010	297	3.10	109	47.04	19	49.87	425
2011	284	2.97	116	48.58	18	48.46	418
2012	273	2.91	117	49.94	17	47.16	407
2013	261	2.69	120	48.01	18	49.30	399
2014	236	2.55	125	49.71	17	47.74	378
2015	238	2.67	131	50.30	17	47.04	386
2016	230	2.64	125	47.39	19	49.98	374
2017	233	2.62	126	47.62	19	49.76	378
2018	199	2.47	125	51.50	17	45.96	341
2019	193	2.45	129	50.14	18	47.33	340

Note: All values were based on the last day of the year, except Initial, which was the program’s start date (1/1/2007).

Table 2: Shareholders by permit status

Year	Permit		No Permit	
	Account	Share	Account	Share
2007	421	85.71	76	14.29
2008	354	87.25	120	12.75
2009	319	86.17	120	13.83
2010	304	84.77	121	15.24
2011	298	81.87	120	18.14
2012	288	78.94	119	21.07
2013	273	75.65	126	24.36
2014	258	72.05	120	27.96
2015	252	69.71	134	30.30
2016	247	69.84	127	30.17
2017	246	69.53	132	30.47
2018	240	68.23	101	31.70
2019	237	70.05	103	29.88

Note: Shares in 2018 and 2019 do not equal 100% as the reverted shares are held in an administrative account and not part of these calculations.

Accounts that are not associated with a reef fish permit are termed public participant accounts, and may include accounts that are related to other shareholder accounts or dealer accounts, accounts that previously held shares, and/or accounts held by any U.S. citizen or permanent resident alien. Even in the first year of the program, a small percentage (15%) of shareholders no longer held a reef fish permit (Table 2). The number of shareholders without reef fish permits increased considerably by 2008 (+44), but thereafter remained similar until 2018. In 2018, the number of shareholders without a permit decreased considerably due to Amendment 36A which reverted shares in 28 accounts back to NMFS. The shares held in these accounts was nominal (0.0788%). The amount of shares held by shareholders without a reef fish permit began

increasing since 2008. In 2015, the volume of shares held by non-permitted accounts reached 30% and has remained stable ever since. This information should be interpreted with a degree of caution as many related accounts hold the shares in a separate account from the account linked to the permit and vessel.

## Allocation Holders

In the RS-IFQ program, accounts may obtain allocation through shares (distributed at the beginning of the year or from any in-season quota increase) or from the transfer of allocation from another account holder. The number of accounts holding allocation does not necessarily equal the number of accounts that land allocation, as not all accounts that hold allocation also hold a reef fish permit, and some accounts may only transfer allocation. Accounts that hold allocation are termed allocation holders. The number of allocation holders is typically greater than the number of shareholders. While the number of allocation accounts originally decreased from 2007 through 2009, there was a large increase in 2010 (Table 3). This increase can be attributed to the start of the GT-IFQ program, where many participants also obtained RS-IFQ allocation. The number of allocation holders began increasing again in 2015 through 2018. In 2018, there were 650 accounts, which is the largest number of allocation holder accounts since the program began. Since 2018, the total number of allocation holders began decreasing again.

Table 3: Allocation holders by share status

Year	Total	With Shares	Without Shares
2007	596	554 (93%)	42 (7%)
2008	547	497 (91%)	50 (9%)
2009	530	474 (89%)	56 (11%)
2010	598	461 (77%)	137 (23%)
2011	589	439 (75%)	150 (25%)
2012	599	438 (73%)	161 (27%)
2013	598	421 (70%)	177 (30%)
2014	606	399 (66%)	207 (34%)
2015	635	397 (63%)	238 (37%)
2016	639	385 (60%)	254 (40%)
2017	639	388 (61%)	251 (39%)
2018	650	377 (58%)	273 (42%)
2019	624	347 (56%)	277 (44%)

Allocation holders can be classified as those holding shares and those without shares (Table 3). Allocation holders without shares obtained allocation through an allocation transfer from another account. Allocation holders with shares may also increase or decrease the amount of allocation within the account through an allocation transfer from or to another account. At the start of the program, 93% of allocation holders also held shares. This percentage has been gradually declining over time, but the proportion has remained close to 60% with shares and 40% without shares from 2015 through 2017. Since 2018, there have been further decreases in the number of allocation holders with shares. The

decreases in allocation holders with shares may have resulted from a variety of factors. For example, a shareholder may manage shares in related accounts,<sup>2</sup> be unable to buy shares (e.g., availability or price), change their harvesting behavior, and/or may be influenced by the GT-IFQ program. The RS-IFQ and GT-IFQ programs have a large amount of overlap, and in 2019, 81% of the vessels that landed at least one pound of red snapper also landed at least one pound of GT-IFQ species. Discussions with industry representatives indicate that not all fishermen who harvest red snapper target red snapper for that fishing trip. Some fishermen indicated that red snapper catch is a supplemental catch used to increase the profitability of a low yield trip. Other fishermen catch red snapper incidentally when targeting species that are located in similar habitat, and therefore obtain red snapper allocation to reduce discards. The number of allocation holders may increase as fishermen seek to obtain allocation for supplemental or incidental catch. Since these fishermen do not target red snapper, they may not wish to obtain red snapper shares, and therefore may obtain allocation only as needed. Quota increases may also allow

allocation to be indirectly distributed among more participants through transfers. As the quota increases, those with shares receive a larger amount of allocation than under a smaller quota (e.g., 5% of 100 lb = 5 lb, while 5% of 200 lb is 10 lb). If the allocation received by the fisherman is more than needed to land red snapper, they might transfer out the allocation to another account that does not have shares, rather than land the allocation themselves.

## Dealers

Since 2014, the number of dealers, and especially small dealers who process 15% of the landings or less, have been steadily increasing (Table 4). Small dealers (receive <1% of landings) comprise the majority of dealers, even though they purchase only a small proportion of the overall catch. Some small-sized dealers are likely fishermen who have obtained a GSAD dealer permit to eliminate the need for a seafood wholesaler, and therefore reduce costs and increase profits. Currently it is not possible to link ownership of a shareholder account to ownership of a dealer account, as accounts may be held under different names (e.g., business vs. individual name(s) vs. different business name). Personal communication with industry representatives indicated that there were fishermen who also owned dealer permits, but these were not limited to just small-sized dealers.

Table 4: Dealer accounts with landings by volume

Year	Total Accounts	Small <1% of quota		Medium 1-3% of quota		Large >3% of quota	
		Accounts	% landings processed	Accounts	% landings processed	Accounts	% landings processed
2007	75	56	9.86	8	14.85	11	75.29
2008	67	48	9.44	9	17.96	10	72.60
2009	66	44	9.91	11	17.53	11	72.56
2010	77	57	12.99	13	25.70	7	61.31
2011	82	64	15.05	10	17.50	8	67.45
2012	82	67	13.48	7	15.75	8	70.77
2013	81	66	14.16	7	15.87	8	69.97
2014	96	77	10.29	11	19.74	8	69.97
2015	105	88	11.68	8	16.85	9	71.47
2016	96	79	11.13	7	12.88	10	75.99
2017	109	91	14.07	7	12.31	11	73.62
2018	111	93	16.00	8	16.82	10	67.18
2019	114	92	14.10	13	25.65	9	60.25

Dealer size is determined by percentage of annual red snapper landings landed with each dealer and may include multiple facilities.

## Vessels

The number of vessels landing red snapper has originally decreased from 2007 through 2009 (Table 5). The large increase in 2010 (+90 vessels) was attributed to the start of the GT-IFQ program and the ability for vessels to participate in both IFQ programs. Vessels that primarily target GT-IFQ species may obtain red snapper allocation to account for any incidental catch of red snapper. Since the start of the GT-IFQ program, there has been a high degree of overlap between the two programs, with 81% to 94% of the RS-IFQ vessels also harvesting GT-IFQ species. Since 2013, the number of vessels were steadily increasing, until 2019 when the number of vessels landing RS decreased to 437 vessels. The number of vessels continues to remain below the average number of vessels harvesting red snapper prior to the IFQ program. Since the start of the program, vessels primarily landed their catch at Florida facilities. Compared to the first year, there has been an overall increase in vessels landing in the Alabama/Mississippi region and a decrease in the vessels landing in Louisiana and Texas. Changes in the number of vessels landing in each state may be influenced by factors outside of the RS-IFQ program, and these changes may include, but are not limited to, changes in markets or fishing behavior, availability of facilities, and/or catastrophic events (i.e., hurricanes, red tide events, oil spills). The expansion of the red snapper stock into the eastern Gulf has most likely also contributed to the increase in vessels over time harvesting red snapper. These vessels obtain allocation to harvest rather than discard the incidental catch of red snapper.

Table 5: Number of vessels harvesting red snapper by state

Year	Total <sup>1</sup>	FL	AL/MS	LA	TX	% vessel overlap with GT-IFQ program <sup>3</sup>
2002 -06 <sup>2</sup>	485	-	-	-	-	NA
2007	309	224	8	42	60	NA
2008	300	219	16	37	49	NA
2009	294	221	14	27	40	NA
2010	384	309	30	27	34	<b>91%</b>
2011	362	290	27	20	31	<b>91%</b>
2012	371	304	23	23	28	<b>94%</b>
2013	368	295	20	27	35	<b>91%</b>
2014	401	320	23	26	36	<b>90%</b>
2015	415	341	24	28	40	<b>91%</b>
2016	430	346	30	31	40	<b>89%</b>
2017	449	354	36	30	42	<b>87%</b>
2018	450	360	32	30	41	<b>91%</b>
2019	437	334	31	34	44	<b>81%</b>

<sup>1</sup> The total number of vessels is less than the sum of vessels across states because some vessels land in multiple states. States are determined by the facility that received the fish.

<sup>2</sup> Values for 2002-2006 are average values across this time period from the Coastal logbook records.

<sup>3</sup> Percentage of vessels that landed red snapper that also landed GT-IFQ species.

## Account Activity

Account activity (active versus inactive) can be determined through analyzing allocation transactions during a year. An active account is defined as an account that has landed or transferred allocation during the fishing year, while inactive accounts neither landed nor transferred allocation during the year. Accounts may be inactive due to several reasons: non-activated accounts (never accessed), shares resulting in negligible pounds for harvest or transfer (e.g., 1-5 lb), inability to harvest (e.g., vessel in dry

dock), or personal events (e.g., death, medical issues). Account status was determined annually based on an account’s activity. Active accounts can be grouped by their activity: only landing, only transferring, or landing and transferring. Some reasons why an account holder may only transfer allocation may be due to the limitation in harvest ability (e.g., no permit, vessel inoperative), related accounts (e.g., transfer allocation to related account), and/or insufficient allocation to harvest (e.g., shares resulted in only a few pounds of allocation).

Table 6: Allocation accounts by activity

Year	Total	Inactive	Landing	Only Transferring
2007	596	173 (29%)	279 (47%)	144 (24%)
2008	547	168 (31%)	269 (49%)	110 (20%)
2009	530	137 (26%)	262 (49%)	131 (25%)
2010	598	122 (20%)	337 (56%)	139 (23%)
2011	589	102 (17%)	328 (56%)	159 (27%)
2012	599	94 (16%)	333 (56%)	172 (29%)
2013	598	96 (16%)	337 (56%)	165 (28%)
2014	606	74 (12%)	369 (61%)	163 (27%)
2015	635	77 (12%)	378 (60%)	180 (28%)
2016	639	67 (10%)	388 (61%)	184 (29%)
2017	639	58 (9%)	399 (62%)	182 (28%)
2018	650	64 (10%)	410 (63%)	176 (27%)
2019	624	34 (5%)	392 (63%)	198 (32%)

Account activity (inactive, landing, and only transferring allocation) was examined each year (Table 6). Accounts with landings may or may not have also transferred allocation into or out of the account. Accounts that only transfer allocation may transfer in allocation, transfer out allocation, or do both. Inactive accounts had neither allocation transfers nor landings.

Throughout the entire program, the majority of accounts with allocation also land fish (47% - 63%), followed by accounts that only transfer allocation (20% - 32%), and finally a small percentage that are inactive (Table 6). The number of inactive accounts has decreased over

time. Gulf Council discussion about inactive accounts as well as the publically listed IFQ account statuses may have contributed to the continued decrease of inactive accounts. In turn, accounts landing allocation have slowly been increasing over time. In 2007, only 47% of the accounts with allocation were landing red snapper; whereas, for the last three years ~60% of the allocation accounts were landing red snapper. The percentage of accounts that are only transferring allocation has remained relatively consistent since 2011 ranging between 27 and 32%. The percentage of accounts that are only transferring allocation, however, might be confounded by the number of related accounts in the IFQ system. As mentioned before, participants might hold shares and the resultant allocation in one account, and transfer that to another account with a permit.

While the majority of accounts are landing red snapper, these accounts may or may not hold shares. Since the start of the program, the percentage of landings from accounts with shares has decreased (Table 7). In 2019, 53% of the landings came from accounts that held shares, compared to 91% in 2007. This decreasing percentage of accounts with shares does not directly indicate a disconnect between accounts with shares and those that land those shares, as there is a high percentage of related accounts contained within the RS-IFQ system.

Table 7: Landings by share status

Year	With Shares		Without Shares	
	Count	Percentage	Count	Percentage
2007	2,598,649	91%	265,738	9%
2008	1,958,999	88%	276,420	12%
2009	1,735,818	78%	498,196	22%
2010	2,220,185	73%	835,859	27%
2011	2,060,719	64%	1,177,616	36%
2012	2,522,817	69%	1,113,578	31%
2013	2,972,769	61%	1,935,829	39%
2014	3,035,667	61%	1,980,389	39%
2015	3,567,377	55%	2,904,884	45%
2016	3,302,781	55%	2,754,717	45%
2017	3,314,326	53%	2,972,757	47%
2018	3,355,481	53%	2,930,223	47%
2019	3,637,152	53%	3,262,073	47%

Accounts that only transfer allocation may or may not have shares or reef fish permits (Table 8). At the start of the program through 2015, the majority of accounts only transferring allocation held both shares and permits. The pattern changed from 2016 through 2019, when the majority of accounts only transferring allocation shifted to those with shares but without a permit. The majority of allocation transferred also typically occurred in accounts with shares and with permits for the first nine years of the program, with the only exception of 2008. Starting in 2016, there was more allocation being transferred from accounts with shares but without reef fish permits than any other category, which continued into 2019 and totaled 3.1 million lb (mp) being transferred. The number of accounts that do not hold shares and the amount of

allocation being transferred have been minimal each year. Accounts without shares could not obtain allocation in the first five years due to program regulations; however, beginning in 2012, the program allowed account holders without a permit to obtain both shares or allocation. Public participant accounts without shares may function as brokers by simply obtaining and transferring out allocation. The number of accounts and allocation transferred from public participant accounts without shares has been variable over time, but remain considerably lower than accounts with shares. In 2019, specifically, there were 37 accounts that only transferred allocation and did not hold shares.

Table 8: Number and volume of accounts only transferring allocation

Year	N	With Shares				Without Shares			
		With Permit		No Permit		With Permit		No Permit	
		Accts	lb	Accts	lb	Accts	lb	Accts	lb
2007	144	117	321,285	21	216,531	6	18,890	N/A	N/A
2008	110	63	192,382	36	267,159	11	15,124	N/A	N/A
2009	131	75	385,237	49	238,140	7	4,430	N/A	N/A
2010	139	75	948,205	48	497,648	16	51,315	N/A	N/A
2011	159	92	1,161,253	47	580,099	20	19,523	N/A	N/A
2012	172	101	1,410,115	52	819,592	19	24,812	0	0
2013	165	89	2,016,673	52	1,170,137	21	36,964	3	109,899
2014	163	76	1,651,320	66	1,445,864	17	107,529	4	92,331
2015	180	80	2,499,546	68	2,162,768	22	57,437	10	193,225
2016	184	65	1,849,357	90	2,166,730	14	65,624	15	870,818
2017	182	66	1,897,585	94	2,760,697	14	68,949	8	234,806
2018	176	68	1,477,044	85	2,898,918	12	82,792	11	310,520
2019	198	78	1,967,740	83	3,099,771	17	48,629	20	758,443

Note: The pounds are the amount of pounds transferred out from these accounts and not the sum of pounds transferred in and out, which would double count the pounds.

## *Program Evaluation*

### **Transactions and Landings**

#### **Share Transfers**

A share is the percentage of the commercial quota assigned to a shareholder account that results in allocation (pounds) equivalent to the share percentage of the quota. Shares were distributed at the start of the program to participants based on landings history. Shares can only be increased or decreased through share transfers. During the first five years of the program, a recipient account was required to have a reef fish permit to receive shares. Thereafter, the only restrictions on a share transfer was if it exceeded the share cap. Share transfers are a two-step process with the transferor initiating the transfer, but the completion does not occur until the transferee accepts the transfer. There may be a delay between initiation of the transfer and final acceptance of the transfer.

Table 9: Number and volume of share transfers

Year	N	%	Avg. %
2007	108	10.7428	0.0995
2008	42	4.8150	0.1146
2009	75	6.0233	0.0803
2010	79	8.4748	0.1073
2011	78	5.0979	0.0654
2012	81	7.5608	0.0933
2013	76	4.7401	0.0624
2014	91	5.5619	0.0611
2015	120	15.3071	0.1276
2016	93	5.8512	0.0148
2017	116	8.6779	0.0167
2018	98	6.4183	0.0130
2019	111	4.6183	0.0144

The number and volume of share transfers that occur annually are variable and show no strong pattern over time (Table 9). Since the start of the program, around 5% or more of the shares have been transferred each year. Share transfers were highest in 2015 with 120 transfers equaling 15% of the shares being transferred, but typically the amount of shares transfers does not exceed 10%. The average amount of shares transferred per transaction are typically less than 0.1%. Share transfers may be between any participant including exiting participants, new participants, or related accounts.

### Allocation Transfers

Annual RS-IFQ allocation is the actual poundage of red snapper each IFQ account can use or transfer to possess or land red snapper during a given calendar year. Individual units of allocation cannot be tracked in the system (e.g., the same pounds may be transferred multiple times). Only allocation transfers between shareholder accounts were analyzed in this report, and not transfers within accounts (e.g., shareholder account to vessel account). During the first five years of the program, a recipient account must have had a reef fish permit to receive allocation. After the first five years of the program, there were no restrictions on allocation transfers. A new system was created in 2010 to accommodate the GT-IFQ program. The previous system allowed for an under-representation of allocation transfers, as there were no vessel accounts and a single vessel could land under multiple shareholder accounts, thereby bypassing an allocation transfer. The current system precludes this from occurring. The increase in allocation transfers and volume in 2010 was most likely due to the change in system structure and the ability of GT-IFQ participants to receive red snapper allocation.

The number of allocation transfers has been increasing since the program began in 2007, which is a trend that has continued into 2019 (Table 10). The continued increase in the number of transfers is partially due to a gradual increase in accounts without shares landing red snapper. Since 2011, the total amount of allocation transferred has exceeded the quota released, and has ranged between 110% and 141%. Throughout the program’s history, the value of allocation per transfer has been near 500 lb. Previous input from industry representatives has indicated that around 500 lb of allocation were often transferred to vessels that do not target red snapper to allow for any incidental or supplemental catch of red snapper on a trip.

Table 10: Number and volume of allocation transfers

Year	N	lb	Avg. lb	Median lb	% Quota
2007	808	1,686,218	2,087	671	56.5%
2008	683	1,371,100	2,007	600	59.7%
2009	843	1,539,479	1,826	500	67.0%
2010	1,719	3,065,736	1,783	500	96.1%
2011	2,155	3,639,394	1,689	500	110.3%
2012	2,551	3,741,966	1,467	400	100.8%
2013	2,752	5,762,456	2,094	500	114.0%
2014	2,860	5,549,553	1,940	500	110.0%
2015	3,387	9,254,534	2,732	700	140.9%
2016	3,682	8,537,474	2,319	500	140.0%
2017	3,701	8,297,809	2,242	500	138.2%
2018	3,702	7,966,526	2,152	500	126.2%
2019	4,542	9,666,992	2,128	600	139.3%

## Quota and Landings

Changes in the red snapper quota can occur at any point during the year. At the start of the RS-IFQ program, the red snapper commercial quota dropped from 4.189 mp gw to 2.297 mp gw due to a revised rebuilding plan (Table 11). The quota remained near this value for 3 years. Quota increases have occurred in recent years due to the results red snapper stock assessments that showed increased spawning stock biomass. By the end of 2013, the quota had increased above the pre-IFQ value to 5.054 mp gw. In 2015, the Gulf Council adjusted the red snapper quotas for the next three years (2015-2017). The total red snapper quota was set equal to the acceptable biological catch (ABC) for each year. The ABC was projected to decrease over the three years, and therefore the commercial quota decreased each year from 2015 through 2017. The final rule for Amendment 28 to the Reef Fish FMP (79 FR 57830), which was effective in September 2014, adjusted the allocation of red snapper between commercial and recreational sectors, which resulted in a decrease in quota for the commercial sector. The quota for 2017 began at 6.003 mp and had a mid-year quota increase of 0.309 mp in June. The mid-year quota increase was a direct result of the court order that vacated Amendment 28’s reallocation of quota to the recreational sector. This quota adjustment resulted in the end of the year quota of 2017 being greater than 2016. In 2018, the quota remained where it had been adjusted to in 2017. In 2019, a red snapper stock assessment determined that the total available yield of red snapper had increased. The red snapper quota was subsequently increased to 6.937 mp gw in April of that year.

Since the beginning of the RS-IFQ program, more than 95% of the quota was landed each year (Table 11). Since 2016, more than 99% of the quota has been landed. Landings fluctuate monthly with peak landings typically occurring February through April (Table 12), which coincides with the Lenten season. Both 2013 and 2015 did not follow this pattern, as there were large quota increases that occurred after this time period. Typically, a slight increase in landings occurs in December as fishermen seek to use their remaining allocation. Red snapper landings by state are determined based on the facility that first processed the fish. Since the start of the program, the majority of landings occur in either Florida (35-

49%) or Texas (27-42%; Table 13). The smallest percentage of landings typically occur in the Alabama/Mississippi region (3-9%).

Table 11: Red snapper quota (lb gw)

Year	Jan 1 Quota	Quota Increase	Increase Date	Dec 31 Quota	Landings	Landings % of Quota
2006	4,189,189	N/A	N/A	4,189,189	4,188,290	99.9%
2007	2,297,297	689,189	June 1	2,986,486	2,867,326	96.0%
2008	2,297,297	N/A	N/A	2,297,297	2,237,480	97.4%
2009	2,297,297	N/A	N/A	2,297,297	2,237,446	97.4%
2010	2,297,297	893,694	June 2	3,190,991	3,056,044	95.8%
2011	3,190,991	109,910	May 31	3,300,901	3,238,335	98.1%
2012	3,300,901	411,712	June 29	3,712,613	3,636,395	97.9%
2013	3,712,613	174,774 1,166,667	May 29 Sept 30	5,054,054	4,908,598	97.1%
2014	5,054,054	N/A	N/A	5,054,054	5,016,056	99.2%
2015	5,054,054	1,516,216	June 1	6,570,270	6,472,261	98.5%
2016	6,097,297	N/A	N/A	6,097,297	6,057,498	99.4%
2017	6,003,604	309,009	June 7	6,312,613	6,287,083	99.6%
2018	6,312,613	N/A	N/A	6,312,613	6,285,704	99.6%
2019	6,312,613	625,225	April 4	6,937,838	6,899,225	99.4%

At the end of each year, on December 31, any remaining allocation in an account expires. The number of accounts with remaining allocation, and the proportion of the quota that expired each year, has generally declined annually since the beginning of the program. In more recent years, roughly 30% of the accounts had unused allocation that represented less than 1% of the total quota (Table 14). This decrease in remaining allocation occurred in both active and inactive accounts. Both Gulf Council meeting discussions and the FOIA page that shows IFQ account holders may have led to current participants contacting individuals who had never activated their account, which could have resulted in the transfer of shares and allocation to active accounts. The final rule for Amendment 36A to the Reef Fish FMP (June 12, 2018; 83 FR 27297) revoked shares on July 12, 2018, from accounts that were never activated. Some, but not all, of the inactive accounts are accounts that were never activated. As these accounts had allocation at the start of the year, they are included in the number of inactive accounts with allocation for 2018.

Table 12: Landings by month and year

Month	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jan	103,309	241,905	226,559	276,099	239,103	305,284	356,544	375,560	429,044	488,073	434,970	437,267	526,400
Feb	330,625	317,871	189,520	258,807	322,078	290,652	279,295	500,551	419,257	682,187	581,363	564,231	531,875
Mar	278,021	290,336	268,819	361,969	380,667	447,846	424,268	615,490	639,870	600,304	715,346	713,281	657,711
Apr	281,551	204,701	220,336	267,700	265,942	311,624	299,044	577,759	426,335	608,045	572,068	657,794	673,761
May	181,798	185,313	212,850	269,711	296,991	321,705	312,069	461,025	516,018	535,883	517,730	528,504	615,515
Jun	233,376	134,448	181,401	208,869	229,569	185,931	271,257	371,266	545,247	575,857	542,505	517,226	495,282
Jul	225,536	152,134	165,968	137,283	205,363	293,151	380,482	382,815	509,457	508,057	502,241	536,069	521,285
Aug	198,141	135,030	183,851	162,232	263,077	256,486	369,519	347,230	616,951	498,894	452,744	538,681	581,352
Sept	219,284	91,287	138,731	162,257	251,718	260,268	388,064	328,171	502,257	505,384	433,030	480,431	519,892
Oct	187,371	135,361	143,212	196,725	229,625	298,116	565,583	404,256	526,516	386,738	384,331	396,124	492,749
Nov	296,230	120,797	144,406	246,878	195,741	296,205	452,067	265,232	560,901	329,567	570,959	444,644	561,262
Dec	332,084	228,297	161,793	507,514	358,461	368,897	810,406	386,701	780,408	338,509	579,796	471,452	722,141

Table 13: Landings by state

Year	FL		AL/MS		LA		TX	
2007	1,122,379	39%	80,288	3%	447,055	16%	1,217,604	42%
2008	921,927	41%	88,058	4%	381,075	17%	846,420	38%
2009	930,630	42%	78,536	4%	415,203	19%	813,077	36%
2010	1,378,733	45%	159,967	5%	571,449	19%	945,895	31%
2011	1,594,317	49%	149,480	5%	606,804	19%	887,734	27%
2012	1,725,555	47%	166,429	5%	711,339	20%	1,033,072	28%
2013	2,001,334	41%	244,697	5%	1,060,017	22%	1,602,550	33%
2014	1,958,498	39%	261,762	5%	674,096	13%	2,121,700	42%
2015	2,610,215	40%	378,117	6%	1,028,943	16%	2,454,986	38%
2016	2,143,740	35%	437,146	7%	1,014,576	17%	2,462,036	41%
2017	2,330,192	37%	575,322	9%	1,140,368	18%	2,241,201	36%
2018	2,351,337	37%	479,842	8%	1,262,806	20%	2,191,719	35%
2019	2,676,566	39%	527,516	8%	1,287,011	19%	2,408,132	35%

Table 14: Number of accounts with remaining allocation and volume by activity status

Year	Accounts	lb	% Quota	Active Acct	Active lb	Inactive Acct	Inactive lb
2007	327 (55%)	122,311	4.1%	154	43,768	173	78,543
2008	292 (53%)	59,515	2.7%	124	9,177	168	50,338
2009	242 (46%)	61,318	2.8%	105	19,638	137	41,680
2010	306 (51%)	133,104	4.2%	184	79,953	122	53,151
2011	236 (40%)	65,406	2.0%	134	14,663	102	50,743
2012	216 (36%)	75,626	2.0%	122	20,352	94	55,274
2013	257 (43%)	148,767	2.9%	161	68,957	96	79,810
2014	178 (29%)	37,223	0.7%	104	9,242	74	27,981
2015	267 (42%)	97,625	1.5%	190	59,831	77	37,794
2016	194 (30%)	39,447	0.6%	127	24,733	67	14,717
2017	220 (34%)	27,733	0.5%	162	15,930	58	11,803
2018	193 (30%)	25,681	0.4%	129	13,824	64	11,857
2019	165 (26%)	34,803	0.5%	131	26,326	34	8,477

A flexibility overage measure allows accounts that hold shares to land in excess of their remaining allocation once per year. This overage measure allows one of the shareholder’s vessels to land 10% more allocation than was on the vessel at that point in time. Such overages are anticipated to occur because it is difficult to accurately estimate the weight of fish at sea. The total amount of overage is minimal compared to the total red snapper harvest. Overage typically occur late in the year, as there must be no allocation in the shareholder account for the overage measure to take effect, but can occur at any point in time. All overages are deducted from the shareholder’s allocation in the following year and the shareholder account is prevented from transferring shares equal to the allocation overage. Each year, a small number of accounts ( $\leq 40$  accounts) have overages (Table 15). The low number of accounts with overages and the low overage amounts indicate that this provision is functioning as expected.

Table 15: Number of accounts with overages and associated volume

Year	Acct.	Total (lb)	Average (lb)	Median (lb)
2007	35 (6%)	2,939 (0.10%)	84	11
2008	41 (7%)	2,061 (0.09%)	50	14
2009	40 (8%)	3,432 (0.15%)	86	19
2010	14 (2%)	655 (0.02%)	47	26
2011	29 (5%)	3,262 (0.10%)	112	14
2012	29 (5%)	1,715 (0.05%)	59	18
2013	36 (6%)	4,741 (0.09%)	132	26
2014	23 (4%)	2,828 (0.06%)	123	33
2015	18 (3%)	2,279 (0.03%)	127	33
2016	29 (5%)	1,532 (0.03%)	53	18
2017	25 (4%)	3,222 (0.05%)	129	33
2018	24 (4%)	1,146 (0.02%)	48	25
2019	16 (3%)	1,708 (0.02%)	107	47

## Effort and Discards

Effort for all trips landing red snapper was determined using the Southeast Fisheries Science Center's (SEFSC) coastal logbook records for 2002-2019.<sup>6</sup> The number of trips, average trip length, the average red snapper landings per trip, and average total landings per trip are analyzed by gear (Table 16). Vertical line (VL) gear includes all types of vertical gear (e.g., hand lines, bandit reels, hook and line, trolling), as well as miscellaneous gear (e.g., spearfishing), while the longline gear (LL) does not include any other gear. Differences in effort may be influenced by gear and region.

Throughout the program, more red snapper trips have been taken by vessels using VL gear than vessels using LL gear (Table 16). This is in part due to the longer trips typically taken by LL vessels and differences in target species. A slow and gradual increase in the number of VL trips has been observed, as has the number of pounds of red snapper landed per trip. These increases coincide with overall increases in red snapper quota available for harvest. Average days per trip and total landings per trip has remained consistent for VL trips. Vessels landing red snapper with LL typically have longer trips but smaller average landings of red snapper per trip. Similar to VL trips, the number of LL trips, and average red snapper landed per trip have increased over time, especially in the more recent years (2015-2019), and is also likely influenced by the increased quota during those years. The length of LL trips remained similar to past years with lengths averaging 12 days.

In comparison to pre-IFQ years, there is a smaller number of trips and increases in average red snapper landed per trip for both LL and VL trips in post-IFQ years (Table 16). This change in the pace of fishing may be influenced by factors both directly and indirectly related to the RS-IFQ program, such as elimination of trip limits and short fishing seasons, increases in quota, extension of the red snapper into the eastern Gulf, changes in fishermen targeting behavior, and regulations on other reef fish species.

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<sup>6</sup> SEFSC Coastal Logbook accessed 5/26/2020

Table 16: Effort harvesting red snapper

Fleet	Year	Trips <sup>2</sup>	Avg. days/trip	Avg. RS lb/trip	Avg. Total Landing lb/trip
Vertical Line <sup>1</sup>	2002-2006 average	4,595	2.4	844	1,273
	2007	2,457	4.1	1,054	2,260
	2008	2,148	3.9	971	2,397
	2009	2,251	3.8	936	2,368
	2010	2,777	4.0	1,022	2,073
	2011	3,172	3.9	942	2,149
	2012	3,283	4.1	1,041	2,320
	2013	3,191	4.1	1,357	2,366
	2014	3,512	4.0	1,301	2,332
	2015	3,809	3.7	1,549	2,382
	2016	4,102	3.6	1,348	2,154
	2017	4,203	3.6	1,374	2,101
	2018	3,860	3.4	1,457	2,105
	2019	2,588	3.2	1,481	2,114
Longline	2002-2006 average	276	6.2	902	3,658
	2007	121	9.4	1,448	4,710
	2008	126	9.3	616	5,434
	2009	78	10.1	734	6,211
	2010	191	10.6	510	5,193
	2011	217	10.5	400	7,156
	2012	174	9.7	323	6,979
	2013	272	10.7	506	7,538
	2014	281	11.4	542	8,368
	2015	428	11.7	600	6,745
	2016	429	11.6	518	6,942
	2017	388	12.3	544	5,671
	2018	411	12.1	783	5,105
	2019	330	11.8	915	5,037

<sup>1</sup> Vertical line includes spearfishing, buoy, and other gear types.

<sup>2</sup> The total number of trips may be less than the sum across gear because some vessels may use multiple gear types.

Data from the SEFSC Coastal Logbook records as of 5/26/2020 and therefore may not contain the complete 2019 data.

Red snapper is part of the reef fish complex and vessels harvest both red snapper and other species on the same trip. The RS-IFQ program eliminated the mini-seasons and derby fishing conditions, as well as the trip limits for red snapper. This allowed for overall trip lengths to increase, which resulted in an increased amount of average landings per trip of both red snapper and other reef fish (Table 16). The ratio of the red snapper to other reef fish for VL trips changed after implementation of the RS-IFQ program (Table 17). Prior to the RS-IFQ program, red snapper dominated the catch (76-100%) of the VL trips that landed any red snapper, and was primarily driven by the red snapper season and trip limit regulations. After the RS-IFQ program began, only 26-42% of the VL trips had red snapper as the primary species landed, as fishermen spread out the landings of red snapper throughout the year. Since the initiation of the RS-IFQ program, there are more trips (21-45% of trips annually) that harvest a small ratio of red snapper to other reef fish (25% red snapper or less), indicating that for these trips red snapper is not a targeted species, or are targeted for only a small portion of the trip. The change in the

ratios over time indicates a change in catch composition and/or fishermen behavior due to the RS-IFQ program. This pattern also implies that there are different classes of fishermen harvesting red snapper: those that target red snapper ( $\geq 76\%$  of landings), those that supplement landings with red snapper (26-75% of landings), and those that incidentally land red snapper ( $\leq 25\%$  of landings). Likewise, there was a similar change in the ratio of red snapper to the other reef fish landed for LL trips. This change was even more dramatic in LL trips as prior to the beginning of the RS-IFQ program, 36% of the LL trips had red snapper compose 76-100% of their reef fish landings pre-IFQ, but post-IFQ the percentage of red snapper on LL trips decreased to  $<1\%$  of all reef fish landings.

Table 17: Percentage of trips by ratio of red snapper landed to total reef fish landed.

Fleet	Year	0-25%	26-50%	51-75%	76-100%
Vertical Line <sup>1</sup>	2002-2006 average	15.6	9.8	14.5	60.1
	2007	33.8	21.2	13.3	31.7
	2008	41.0	20.5	10.9	27.6
	2009	40.1	18.7	11.4	29.8
	2010	37.7	20.7	12.4	29.1
	2011	42.8	20.2	10.7	26.4
	2012	44.9	18.9	9.5	26.6
	2013	34.8	20.9	11.1	33.2
	2014	38.1	18.0	11.2	32.7
	2015	27.2	18.0	12.8	42.0
	2016	33.0	19.8	10.9	36.4
	2017	27.4	20.2	13.7	38.7
	2018	21.1	23.9	16.8	38.1
	2019	22.2	21.9	17.2	38.7
Longline	2002-2006 average	54.2	4.6	5.6	35.6
	2007	67.8	13.2	6.6	12.4
	2008	89.7	8.7	1.6	0.0
	2009	89.7	7.7	1.3	1.3
	2010	93.7	3.7	2.1	0.5
	2011	98.2	1.4	0.5	0.0
	2012	97.1	1.1	0.6	1.1
	2013	96.0	3.3	0.7	0.0
	2014	96.8	2.8	0.0	0.4
	2015	93.5	5.4	1.2	0.0
	2016	97.2	2.1	0.5	0.2
	2017	91.5	7.0	1.5	0.0
	2018	78.1	17.8	3.6	0.5
	2019	68.2	28.2	3.3	0.3

<sup>1</sup> Vertical line includes spearfishing, buoy, and other gear types.

Data from the SEFSC Coastal Logbook records as of 5/26/2020 and therefore may not contain the complete 2019 data.

Using the data from the SEFSC Coastal Logbook, the average pounds/trip of red snapper was calculated for each vessel. Vessels were then sorted into three categories based on each vessel's average landings

per trip:  $\leq 500$  lb/trip, between 500-2,000<sup>7</sup> lb/trip, and  $> 2,000$  lb/trip (Table 18). Prior to the start of the IFQ program, 74% of the vessels landed 500 lb/trip or less, while the remainder landed between 500 to 2,000 lb/trip. Vessels with a Class 1 license could not land more than 2,000 lb/trip and vessels with a Class 2 license could not land more than 200 lb/trip due to trip limit restrictions that began in 1992 (Appendix 2). This trip limit restriction was removed with the implementation of the RS-IFQ program. With the flexibility of an IFQ program, a small percentage of vessels (11-15%) began landing  $\geq 2,000$  lb/trip. The majority of vessels (53-72%) still landed  $\leq 500$  lb/trip. Vessels harvesting  $\leq 500$  lb of red snapper per trip may be operated by either small shareholders or those that do not target red snapper. Instead, these vessels may catch red snapper as supplement harvest when targeting other reef fishes or as the retention of incidentally caught red snapper. The vessels that land  $>2,000$  lb/trip are most likely targeting red snapper.

Table 18: Vessel percentage by average pounds/trip of red snapper

Year	$\leq 500$ lb/trip	501-2000 lb/trip	2001+ lb/trip
2002 -06 average	74%	26%	0%
2007	65%	22%	13%
2008	69%	21%	11%
2009	68%	21%	11%
2010	67%	21%	13%
2011	68%	20%	12%
2012	72%	16%	13%
2013	59%	26%	14%
2014	65%	22%	13%
2015	59%	27%	14%
2016	65%	22%	12%
2017	61%	27%	12%
2018	59%	28%	13%
2019	53%	32%	15%

Data from the SEFSC Coastal Logbook records as of 5/26/2020 and therefore may not contain the complete 2019 data.

Data from the SEFSC reef fish observer program (RFOP; accessed 6/2/20) were used to evaluate changes in red snapper discards. Data were used from only those trips selected as part of the normal observer selection process; therefore, no special project trips were included. Data from the RFOP were categorized by gear: longline (LL) and vertical line (VL; primarily hand lines and bandit reels, but also includes buoy and spearfishing effort). The number of RFOP trips sampled has been variable over time and generally has been decreasing in number in the more recent years of the program compared to the initial years (Table 19). A larger percentage of RFOP coverage shifted towards vessels using LL gear beginning in 2009 and coverage levels have fluctuated between gear every year since. Red snapper are caught on the majority (73% to 92%) of trips sampled each year by the RFOP. Most observed trips fished with VL gear rather than LL gear. In recent years, red snapper were typically caught on more than 80% of the LL observed trips and more than 70% of the VL observed trips. Despite the high

<sup>7</sup> This range was chosen to match the Class 1 licenses prior to the RS-IFQ program that had a trip limit of 2,000 lb. The 500 lb lower limit was chosen due to conversations with fishermen indicating that this is a minimum amount transferred for non-targeted red snapper trips.

number of trips that catch red snapper, typically 10% or less of sets on LL observed trips and less than 50% of sets on VL observed trips target red snapper (Appendix 3).

Table 19. Reef fish observer trips and trips catching red snapper <sup>1</sup>

Year	Combined		LL		VL <sup>2</sup>	
	Total	RS	Total	RS	Total	RS
2007	112	88%	11	73%	101	89%
2008	63	78%	5	80%	58	78%
2009	83	80%	33	79%	50	80%
2010	136	81%	54	80%	82	82%
2011	194	85%	81	93%	113	79%
2012	281	84%	19	89%	262	84%
2013	221	73%	84	85%	137	66%
2014	146	76%	27	85%	119	74%
2015	241	76%	26	88%	215	75%
2016	211	80%	55	91%	156	76%
2017	85	81%	14	86%	71	80%
2018	46	89%	4	100%	42	88%
2019	37	92%	5	80%	32	94%

<sup>1</sup> Data from the Reef Fish Observer Program accessed as of 6/2/2020.

<sup>2</sup> Vertical line includes buoy and spearfishing trips.

RFOP observers record disposition status as: landed/kept, discarded alive, discarded dead, and unknown. These disposition statuses were used to calculate discard ratios by gear and region. The discard ratio is the number of discarded fish for each fish landed. Values greater than one indicated that more fish are being discarded than kept. Discard ratios may be influenced by the amount of allocation available to the observed vessels. Discussions at several stock assessments indicated that fishermen behavior, particularly with regard to discards, varies with the amount of allocation available both during a trip, throughout the year, and the targeted species. From 1995

through May 1, 2007, the minimum size limit for red snapper was 15 inches total length (TL; Appendix 2). The current minimum size limit of 13 inches TL was established on May 2, 2007.

Table 20: Red snapper discard ratios (discarded:landed)

Year	Gear	
	LL	VL
2007	22.67	0.43
2008	0.41	0.36
2009	2.02	0.85
2010	1.45	0.54
2011	2.16	0.33
2012	3.62	0.28
2013	1.89	0.13
2014	1.21	0.10
2015	0.62	0.10
2016	0.70	0.12
2017	1.01	0.21
2018	0.45	0.14
2019	0.01	0.09

Data from the Reef Fish Observer Program accessed as of 6/2/2020.

The ratio of discarded to landed red snapper showed distinct differences between gear types (Table 20). The red snapper discard ratio is typically larger in the LL fleet (0.01 - 22.67) relative to the VL fleet (0.09 – 0.85). This greater discard ratio in the LL fleet may have resulted from insufficient allocation available to land red snapper as a bycatch species. Discard rates in LL fleets have generally decreased since 2007 when it was particularly high; these lower rates may be due to the increased amount of quota available in recent years. Discard rates for VL trips have remained low since 2013, indicating allocation is moving to needed vessels.

The length distributions of landed and discarded red snapper further reveal gear differences (Figure 1). Length information obtained by the RFOP was converted to maximum TL using conversion factors found in the SEDAR 31 update. Length frequencies were calculated by year and gear and aggregated

every two years into one inch bins (e.g., if  $1 \leq \text{length} < 2$  then  $\text{length} = 1$ ) for each disposition of discarded or landed. For VL gear, few red snapper were discarded above the minimum size limit except for 2009 through 2012. Discards in these years were most likely due to low or no allocation available to the vessel, and fall across a variety of sizes, not just those close to the minimum size limit. In more recent years, few VL discards were observed, most likely due to the increased red snapper quota. VL vessels target red snapper in the 14 to 18 inch TL size bins. Longline gear have had a large number of red snapper above the minimum size limit being discarded. Due to the gear type and location fished, LL gear does not often encounter red snapper below the minimum size limit, and therefore all discards are assumed to be due to a lack of allocation or price differentials based on size (e.g., retaining more valuable market sized categories). LL trips capture larger red snapper between the 20 to 30 inch TL size bins. In more recent years, this size bin has begun to expand to 32 inch TL.

Table 21: Discard mortality percent by gear and region

Year	Gear	
	LL	VL
2007	33%	28%
2008	74%	44%
2009	26%	16%
2010	23%	26%
2011	15%	28%
2012	15%	21%
2013	23%	24%
2014	22%	27%
2015	35%	31%
2016	33%	25%
2017	52%	21%
2018	43%	33%
2019	100%	22%

Data from the Reef Fish Observer Program accessed as of 6/2/2020.

The RFOP currently determines immediate discard mortality through surface observations of individual fish after discard. For the discarded fish, the alive or dead determination was based on surface observation of individual fish. Some fish were recorded with an unknown discarded disposition due to the difficulty in observing discards attributed to poor lighting, high seas, or other factors. Short-term survival was assumed if the fish rapidly or slowly was able to descend and immediate mortality was classified when the fish floated on the surface or floated on the surface then slowly descended (not swimming). Only individual fish that were discarded as either alive or dead were used to examine immediate mortality. Individual fish recorded as dead upon arrival were included in the analyses since the goal

was to examine total discard mortality. The immediate mortality percentage was determined using the number discarded dead out of those released as either alive or dead, and confidence intervals were calculated using the score interval with continuity correction. Longline gear had higher mortality rates compared to vertical line in 2008, but in the majority of more recent years, the confidence intervals overlapped (Table 21; Figure 2). Data from RFOP should be interpreted with caution, as it may not be reflective of the entire fleet due to the small sample sizes.

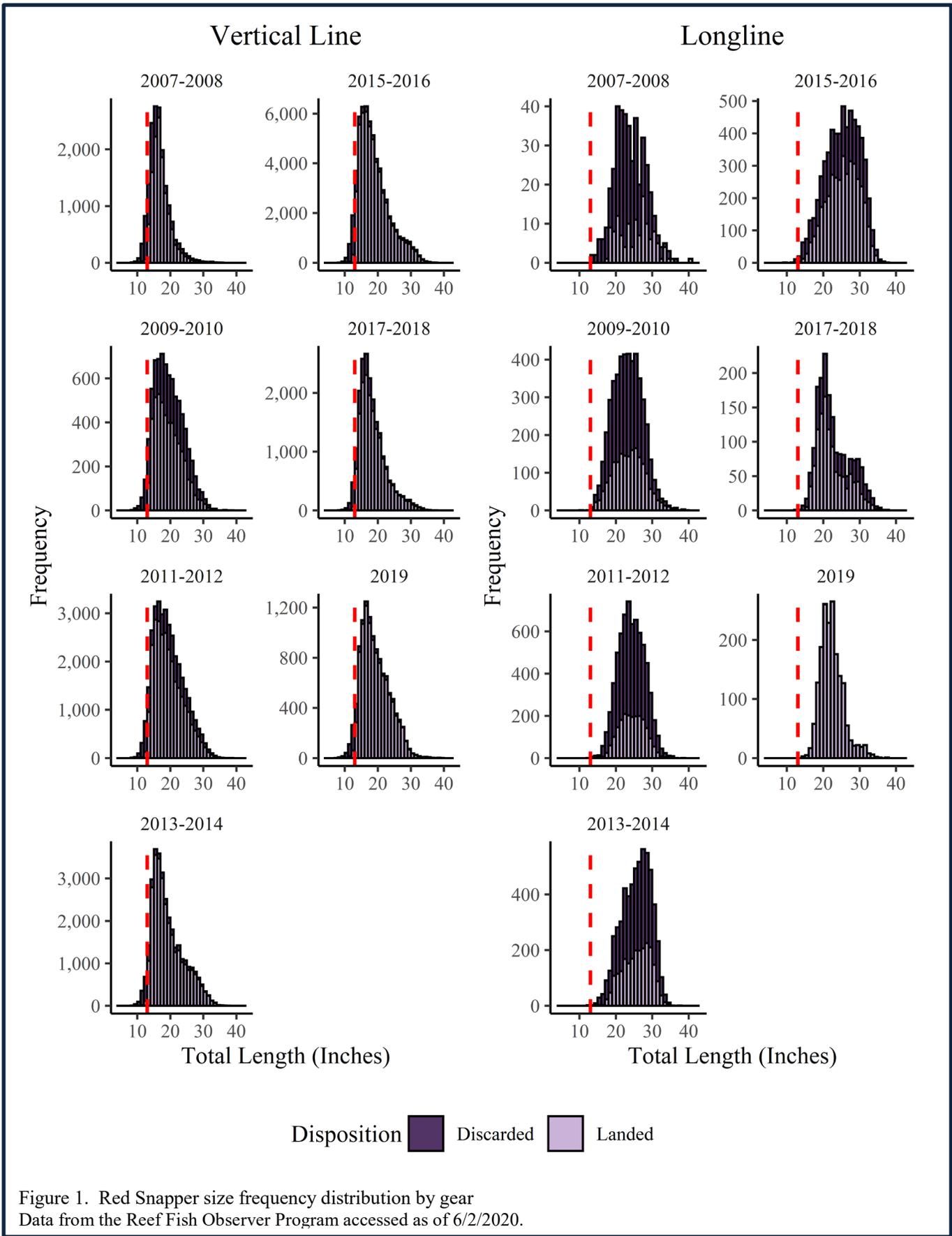
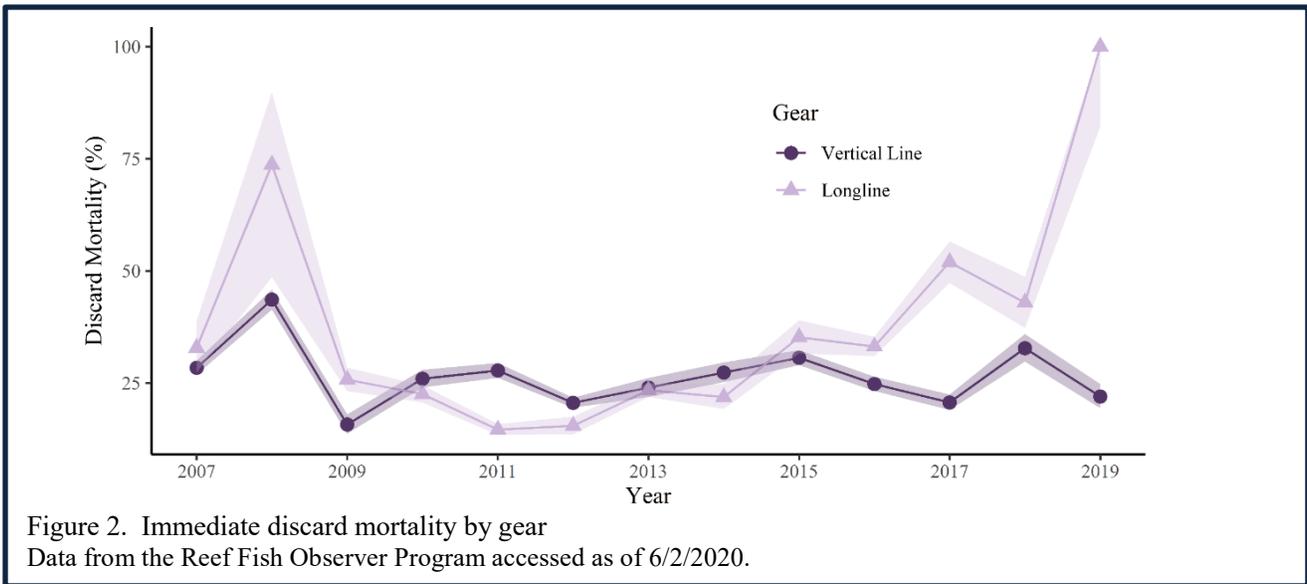


Figure 1. Red Snapper size frequency distribution by gear  
 Data from the Reef Fish Observer Program accessed as of 6/2/2020.



## Price Information

Share, allocation, and ex-vessel price information is important for evaluating the performance of catch share programs. Economic theory suggests that when fishermen no longer have to engage in a “race for fish,” their profits will likely increase as they adjust their operations to take advantage of weather and market conditions. The elimination of “derby” fishing is expected to increase market stability. As more efficient and profitable operators are willing to pay higher prices to purchase shares and allocation, share and allocation prices increase, which may result in increased profits. Theoretically, allocation prices should reflect the expected annual profit from harvesting one unit of quota; whereas, share prices should reflect the net present value of the expected profit from harvesting one unit of quota in the long-run. Dockside or ex-vessel prices are anticipated to increase as well because fishermen no longer have to race to fish, which in turn should reduce market gluts and generate higher quality products. All inflation-adjusted values in the analysis below were calculated based on the Gross Domestic Product (GDP) deflator.<sup>8</sup> The GDP deflator was chosen as the measure of inflation because it includes prices for all domestically produced goods and services and so is broader than other indexes.

## Share Transfer Prices

Reporting of share transfer price (total value for transfer) was not required until mid-2010, when a minimum transfer value of \$0.01 was required for all share transfers. Each year, there are share transactions that are either missing price information or have under-reported price information (e.g., \$0.01/lb). Transactions that had reported low or no value could be due to, but not limited to, any of the following: entering a price per pound equivalent<sup>9</sup> instead of transaction value, reluctance to enter transfer value, gifts, transferring to a related accounts, part of a package deal (e.g., sale of shares with a

<sup>8</sup> <http://www.bea.gov/national/index.htm#gdp>

<sup>9</sup> A price per pound equivalent is the share percentage that would equal one pound for that particular period. The exact share percentage that is equivalent to one pound depends on the total commercial quota and will change as the quota changes from year to year or within a year for any quota increases.

permit, vessel, and/or other equipment), and/or unrecorded bartering of shares within the GT-IFQ or RS-IFQ programs. This misreporting of prices led to a 2012-2013 mail survey to participants about share prices. The survey was mailed to both the transferor and transferee for all past transfers where information was incomplete or possibly incorrect. Participants were asked to verify or correct the price information and select one of seven share transfer reasons: “Barter trade for allocation,” “Barter trade for shares,” “Gift,” “Transfer to a related account,” “Sale to another shareholder,” “Package deal,” and “No comment.” Beginning in 2013, a submission of one of these share transfer reasons was required to complete every share transfer to better monitor the performance of the program (Appendix 4). The majority of the share transfers typically have either “Sale to another shareholder” or “No comment” as the transfer reason. The highest volume of shares are also generally associated with the transfer reason “Sale to another shareholder,” followed closely by “No comment” and “Transfer to a related account.”

For share price analysis, the data were limited to share transfers with representative price per pound equivalents (Appendix 5). From 2013 onward, when prices differed between the transferor and transferee, a final price was determined based on the more representative transfer value entered. For example, for a transfer equivalent to 33 lb, the total value \$1,000 was selected over the value of \$30, which was more likely the price per pound. For the share price analysis, the data were limited to share transfers with price per pound equivalents that were greater than \$9 (all years) and less than \$36 (2007-2011), less than \$50 (2012 – 2013), and less than \$60 (2014-2019). All values were weighted by the pounds instead of on a transactional basis.

Obtaining representative share prices continues to remain a problem, with typically only 72% or less of the transactions supplying representative share prices; however, the percentage of representative prices has been improving since the start of the program when only 45% of transactions had representative share prices in the program (Table 22). The number of prices that are not representative is typically similar to the number of transactions where no comment was entered as the transfer reason, indicating reluctance within the industry to report share prices. The average price per equivalent pound for shares has been between \$32/lb and \$42/lb (inflation-adjusted) since 2012. Share transfer prices peaked in 2013 and 2019 (~\$40/lb).

Table 22: Number of representative share transfers with prices

Year	N <sup>1</sup>	% of all transfers	Avg. price/lb <sup>1</sup>	Median price/lb <sup>1</sup>	Inflation-adj. avg. price/lb <sup>2</sup>
2007	21	19%	\$11.04	\$12.51	\$13.41
2008	22	52%	\$11.56	\$10.50	\$13.78
2009	38	51%	\$20.64	\$20.00	\$24.41
2010	36	46%	\$19.84	\$21.50	\$23.19
2011	28	36%	\$28.77	\$26.03	\$32.94
2012	36	44%	\$34.75	\$35.00	\$39.04
2013	47	62%	\$36.77	\$42.00	\$40.60
2014	47	52%	\$34.37	\$34.00	\$37.26
2015	62	52%	\$33.62	\$35.43	\$36.07
2016	58	62%	\$30.66	\$35.00	\$32.56
2017	84	72%	\$34.80	\$35.75	\$36.27
2018	53	54%	\$36.26	\$36.50	\$36.90
2019	80	72%	\$41.17	\$41.22	\$41.17

<sup>1</sup> Only used share transactions between \$9 and \$36/lb equivalent from 2007 - 2011, \$9 - \$50/lb equivalent from 2012 - 2013, and \$12 - \$60/lb for 2014 and onward.

<sup>2</sup> Inflation adjustments from: <http://www.bea.gov/> with 2019 as the base year using the GDP deflator.

## Allocation Transfer Prices

Allocation transfer prices are collected on a per pound basis but are not required to complete a transfer. Each year allocation transfers are either missing price information or have under-reported price information (e.g., \$0.01/lb). Transfers that had low or no price information may be due to, but not limited to, any of the following: reluctance to enter price information, gift, transferring to a related account, part of package deal, or bartering for shares and/or allocation in the GT-IFQ program. To better evaluate the program’s performance, the selection of one of seven allocation transfer reasons was required for every allocation transfer beginning in 2013. Allocation transfer reasons that could be selected were “Barter trade for allocation,” “Barter trade for shares,” “Gift,” “Transfer to a related account,” “Sale to another shareholder,” “Package Deal,” and “No comment” (Appendix 6).

The majority of allocation transfers most often select “No comment” (50 - 70%) as the allocation transfer reason, followed by “Sale to another shareholder” (15 – 30%) and “Transfer to a related account” (10 – 22%; Appendix 6). While not all transfers are of equal amounts, a similar pattern was found when looking at the total amount of allocation transferred.

For the allocation price analysis, the data were limited to representative prices, which were between \$1.20/lb and \$5.00/lb for 2007-2009, \$1.80/lb and \$5.00/lb for 2010-2014, and more recently, \$1.80/lb and \$5.50/lb (2015-2019; Appendix 5). The above price limits are not inflation-adjusted when the data outliers were being removed. Inflation-adjusted prices are used to compare across years. All statistics were computed using weighted lb and not on a transactional basis, as the lb per transactions were variable. Since 2014, roughly 50% of the allocation prices were representative prices, which has improved since the start of the program when only 20% of the allocation prices were deemed representative (Table 23). Average allocation price per pound has also been steadily increasing. The

median, the middle value in a distribution, in recent years has been slightly greater than the average value. When median values are greater than average values, this indicates that there are more values on the lower end of the distribution. These lower values may be due to fluctuations in allocation price across regions or during the year. Average allocation prices vary monthly, with the greatest prices typically seen during Lent (e.g., February through April), in the summer months (June and July), or the end of year (September through December; Appendix 7). Allocation prices are often tied to the amount of quota and the amount of remaining quota. Therefore, late releases of quota, such as the September 2013 release, tend to decrease allocation prices, while there is not as similar affect when quota is released in or near June. Typically, allocation prices tend to increase towards the end of the year as the majority of the allocation has been used earlier in the year.

Table 23: Number of representative allocation transfers and prices

Year	N <sup>1</sup>	% of all transfers	Avg. price/lb	Median price/lb	Inflation-adj. avg. price/lb <sup>2</sup>
2007	155	19%	\$1.97	\$2.00	\$2.39
2008	152	22%	\$2.31	\$2.25	\$2.75
2009	283	34%	\$2.69	\$2.75	\$3.18
2010	344	20%	\$2.88	\$3.00	\$3.37
2011	476	22%	\$2.96	\$3.00	\$3.39
2012	781	31%	\$3.00	\$3.00	\$3.37
2013	1,068	39%	\$2.98	\$3.00	\$3.29
2014	1,382	48%	\$3.03	\$3.00	\$3.28
2015	1,562	46%	\$3.09	\$3.25	\$3.31
2016	1,891	51%	\$3.21	\$3.25	\$3.41
2017	1,982	54%	\$3.32	\$3.35	\$3.46
2018	2,051	55%	\$3.40	\$3.50	\$3.46
2019	2,674	59%	\$3.69	\$3.75	\$3.69

<sup>1</sup> Number of allocation transactions that had prices between \$1.20/lb and \$5.00/lb for 2007-2009, \$1.80/lb and \$5.00/lb for 2010-2014, and \$1.80 - \$5.50 for 2015 and onward.

<sup>2</sup> Inflation adjustments from: <http://www.bea.gov/> with 2019 as the base year using the GDP deflator.

## Ex-vessel Prices

While ex-vessel prices are required to complete a landing transaction, prices have been variable, with prices as low as \$0.01/lb reported. Ex-vessel prices may differ depending on location and season. They may also be under-reported for a variety of reasons: to minimize cost recovery fees and/or capital gains, contractual arrangements between dealers and shareholders, and deductions for transferred allocation, goods (e.g., bait, ice, fuel), and/or services (e.g., repairs, machinery replacement). In June 2011, regulations modified the definition for ex-vessel price and explicitly prohibited the deduction of allocation, goods, and/or services when reporting the ex-vessel price. For ex-vessel price analysis, the data were limited to representative ex-vessel prices, which were landings with prices per pound that were between \$2.60/lb and \$10/lb (Appendix 5). All statistics were weighted by pounds rather than on a transactional basis. All ex-vessel prices prior to the start of the program were calculated using the

SEFSC Accumulated Landings System (ALS) database.<sup>10</sup> After the start of the RS-IFQ program, ex-vessel prices are reported to both the ALS and RS-IFQ systems, but IFQ prices are used in this analysis.

The majority (70 - 90%) of ex-vessel prices submitted were representative of the industry (Table 24). After adjusting for inflation, the average ex-vessel price has stayed around or just above \$5.00/lb since 2008, which has been roughly 1.5 times greater or more than the pre-RS-IFQ ex-vessel prices (Figure 3). Similar to the allocation prices, the median value was slightly greater than the average value indicating a higher distribution of lower ex-vessel prices. The lower ex-vessel prices are most likely influenced by time and space.

Table 24: Number of representative ex-vessel transactions and prices (\$/lb)

Year	N <sup>1</sup>	% of all trans.	Avg.	Median	Inflation-adj. avg. <sup>2</sup>
Pre-IFQ <sup>3</sup>	-	-	\$2.81	\$2.83	\$3.41
2007	2,455	92%	\$3.74	\$3.75	\$4.46
2008	2,023	85%	\$4.06	\$4.25	\$4.80
2009	1,963	79%	\$4.13	\$4.25	\$4.83
2010	2,319	71%	\$4.17	\$4.25	\$4.87
2011	2,985	77%	\$4.26	\$4.25	\$4.88
2012	3,319	84%	\$4.44	\$4.50	\$4.99
2013	3,716	90%	\$4.46	\$4.75	\$4.92
2014	3,660	84%	\$4.75	\$5.00	\$5.15
2015	4,045	84%	\$4.83	\$5.00	\$5.18
2016	4,428	84%	\$4.87	\$5.00	\$5.17
2017	4,518	86%	\$4.97	\$5.00	\$5.18
2018	4,242	84%	\$5.10	\$5.20	\$5.19
2019	4,397	82%	\$5.28	\$5.40	\$5.28

<sup>1</sup> Number of reasonable ex-vessel transactions (see Appendix 5).

<sup>2</sup> Inflation adjustments from: <http://www.bea.gov/> with 2019 as the base year using the GDP deflator.

<sup>3</sup> Pre-IFQ averages are from 2002-2006.

Ex-vessel price may be influenced by the amount of quota, demand (Gulf-wide and regional), landings, and regional economic differences. Prior to the RS-IFQ program, red snapper ex-vessel prices varied (Figure 3). After the start of the RS-IFQ program, there was less monthly variation in ex-vessel prices, with the greatest decrease in prices occurring late in 2013. This decrease was most likely due to the large quota increase of 1.16 mp late in the year. Ex-vessel prices typically decrease in November and December when fishermen seek to use their remaining allocation or when a large amount of quota is released during the season.

Average monthly ex-vessel prices remained consistently between \$5.00/lb and \$5.50/lb throughout the year, and have increased only slightly since the start of the program when prices were around \$4.50/lb (Table 25). The greatest average monthly ex-vessel prices typically occur between September through November. The lowest prices typically occur in December, as fishermen seek to use their remaining

<sup>10</sup> SEFSC Accumulated Landings System accessed on 6/12/2020.

allocation; thereby, creating a temporary excess supply of red snapper in the market and lowering the ex-vessel price. Ex-vessel prices vary only slightly within regions, with Texas having the lowest annual ex-vessel price (Table 26). The ex-vessel price increased considerably in the Alabama/Mississippi region, which in part may be due to an increase in pounds landed with representative prices. Regional differences in ex-vessel price occurred prior to the RS-IFQ program, but have been less pronounced in recent years (Table 26). One goal of the RS-IFQ program was to create greater market stability. The consistent prices in recent years shows progress towards this goal.

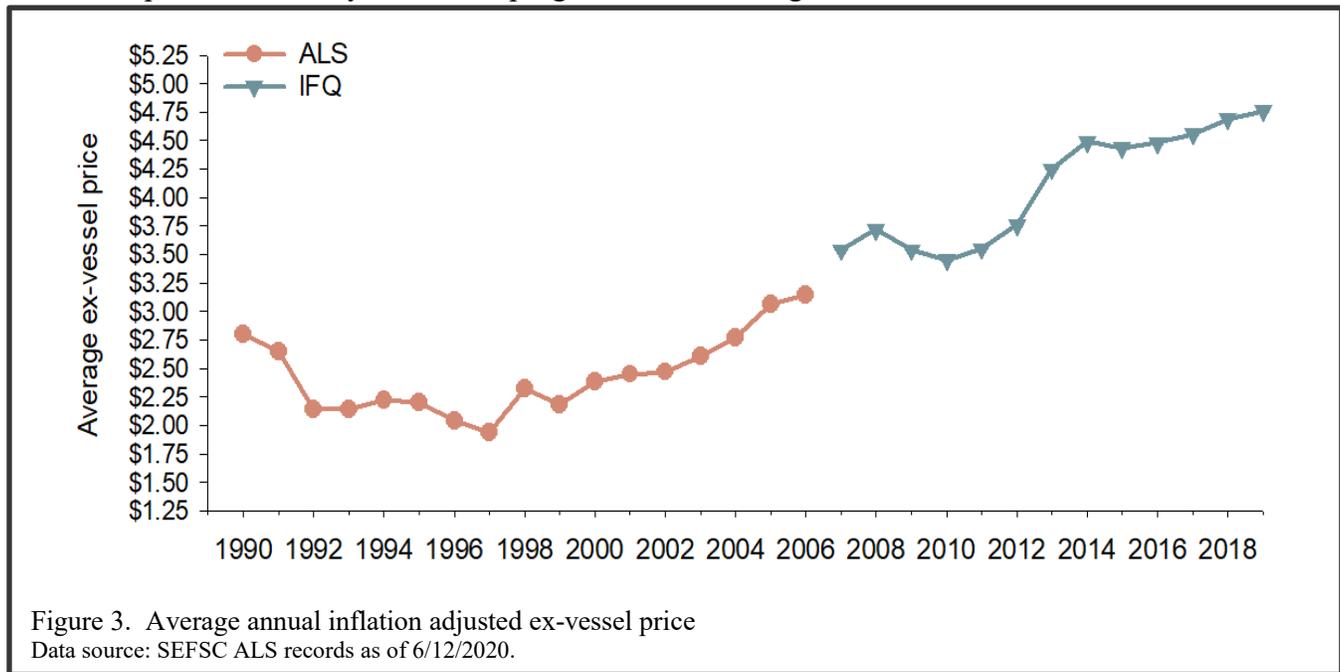


Table 25: Average monthly ex-vessel prices by year<sup>1</sup>

Month	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jan	\$4.49	\$4.70	\$4.81	\$4.91	\$4.58	\$4.81	\$5.16	\$4.93	\$5.18	\$5.20	\$5.18	\$5.20	\$5.31
Feb	\$4.43	\$4.73	\$4.78	\$4.90	\$4.90	\$4.78	\$5.02	\$5.12	\$5.28	\$5.11	\$5.14	\$5.18	\$5.25
Mar	\$4.47	\$4.79	\$4.85	\$4.97	\$4.75	\$4.90	\$5.07	\$5.14	\$5.29	\$5.13	\$5.18	\$5.08	\$5.20
Apr	\$4.59	\$4.93	\$4.80	\$5.09	\$4.78	\$4.97	\$5.19	\$5.08	\$5.26	\$5.13	\$5.16	\$5.13	\$5.22
May	\$4.60	\$4.93	\$4.74	\$4.98	\$4.86	\$5.03	\$5.24	\$5.08	\$5.27	\$5.15	\$5.11	\$5.06	\$5.20
Jun	\$4.59	\$4.97	\$4.91	\$4.77	\$4.75	\$5.09	\$5.23	\$5.20	\$5.27	\$5.18	\$5.20	\$5.16	\$5.14
Jul	\$4.52	\$4.92	\$4.86	\$4.98	\$4.99	\$5.13	\$5.33	\$5.24	\$5.29	\$5.20	\$5.20	\$5.27	\$5.33
Aug	\$4.64	\$5.02	\$4.88	\$5.04	\$5.07	\$5.18	\$5.34	\$5.20	\$5.26	\$5.19	\$5.19	\$5.29	\$5.38
Sept	\$4.58	\$4.97	\$5.05	\$5.03	\$4.94	\$5.12	\$5.32	\$5.23	\$5.12	\$5.24	\$5.23	\$5.26	\$5.35
Oct	\$4.65	\$4.95	\$4.98	\$4.96	\$4.97	\$5.10	\$4.91	\$5.24	\$5.20	\$5.22	\$5.23	\$5.26	\$5.35
Nov	\$4.65	\$4.83	\$5.05	\$4.97	\$5.11	\$5.00	\$4.23	\$5.34	\$5.08	\$5.22	\$5.24	\$5.29	\$5.38
Dec	\$4.43	\$4.68	\$5.01	\$4.40	\$4.90	\$4.93	\$4.14	\$5.14	\$4.84	\$5.12	\$5.16	\$5.29	\$5.25

<sup>1</sup>Inflation adjustments from: <http://www.bea.gov/> with 2019 as the base year using the GDP deflator.

Table 26: Average annual ex-vessel prices by region<sup>1</sup>

Year	FL	AL/MS	LA	TX
2007	\$4.65	\$3.91	\$4.63	\$4.43
2008	\$5.02	\$4.24	\$4.97	\$4.60
2009	\$4.98	\$5.14	\$4.85	\$4.73
2010	\$4.93	\$4.64	\$4.71	\$4.87
2011	\$4.94	\$4.76	\$5.02	\$4.75
2012	\$4.99	\$4.82	\$4.83	\$5.07
2013	\$4.88	\$4.70	\$4.92	\$4.97
2014	\$5.20	\$4.87	\$5.10	\$5.14
2015	\$5.32	\$4.60	\$5.05	\$5.16
2016	\$5.31	\$4.74	\$5.11	\$5.13
2017	\$5.28	\$5.12	\$5.28	\$5.06
2018	\$5.29	\$5.16	\$5.26	\$5.08
2019	\$5.37	\$5.25	\$5.28	\$5.19

<sup>1</sup>Inflation adjustments from: <http://www.bea.gov/> with 2019 as the base year using the GDP deflator.

## Price Ratios

Ratios of allocation prices to share prices and allocation prices to ex-vessel prices are commonly used as indicators of economic performance. These ratios provide information about the implicit discount rate of the quota market. Discount rates indicate the value of current dollars to future dollars. A high discount rate implies that current dollars may be worth more than future dollars. In general, decreasing discount rates indicate that fishermen have longer planning and investment horizons because the perceived uncertainty about future returns lessens. Allocation to share ratios have remained very similar since 2011, as have the allocation to ex-vessel price ratios (Table 27). The allocation to share discount rate was around 20% at the start of the program, but has since decreased to less than 10%, suggesting that fishermen are less uncertain about the RS-IFQ program with respect to share prices. The allocation to ex-vessel price ratio, on the other hand, has increased by more than 10% in recent years. The long-term change in allocation to ex-vessel ratio suggests that fishermen have been successful at maximizing profits from the commercial red snapper quota and have an increased confidence in the program.

Table 27: Price ratios

Average \$/lb <sup>1</sup>	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Allocation	\$2.39	\$2.75	\$3.18	\$3.37	\$3.39	\$3.37	\$3.29	\$3.28	\$3.31	\$3.41	\$3.46	\$3.46	\$3.69
Shares	\$11.04	\$11.56	\$20.64	\$23.19	\$32.94	\$39.04	\$40.60	\$37.26	\$36.07	\$32.56	\$36.27	\$36.90	\$41.17
Ex-vessel	\$4.46	\$4.80	\$4.83	\$4.87	\$4.88	\$4.99	\$4.92	\$5.15	\$5.18	\$5.17	\$5.18	\$5.19	\$5.28
<b>Ratios (allocation price/share or ex-vessel price)</b>													
Shares	21%	23%	15%	15%	10%	9%	8%	9%	9%	10%	10%	9%	9%
Ex-vessel	54%	57%	66%	69%	69%	68%	67%	64%	64%	66%	67%	67%	70%

<sup>1</sup>Averages are adjusted for inflation, and shares are based on the equivalent pound.

### Cost Recovery and Ex-vessel Value

The Magnuson-Stevens Act requires the Secretary of Commerce to adopt regulations implementing a cost recovery program to recover the actual incremental costs of managing and enforcing the RS-IFQ program. The cost recovery fee established for the RS-IFQ program is currently 3% of the actual ex-vessel value of Gulf red snapper. The amount of cost recovery is dependent on the ex-vessel prices and landings. RS-IFQ fishermen who completed a landing transaction were responsible for payment of the fee. The dealer who purchased red snapper was responsible for collecting and submitting the fee on a quarterly basis. Monies collected were used for administration of the program, maintenance, and upkeep of the online system and software, enforcement of the RS-IFQ program, and scientific research.

Total ex-vessel value has increased since 2009 and has been nearing \$30 million in recent years (Table 28). Ex-vessel value in each quarter has been between \$4-8.5 million, compared to \$2 million seen at the beginning of the program. The increase in ex-vessel is a consequence of an increased quota, subsequent increase in landings, and increase in ex-vessel price over time.

Table 28: Reported ex-vessel values by quarter

Year	Jan – Mar	Apr – Jun	Jul- Sept	Oct –Dec	Ex-vessel Annual Value	Cost Recovery
2007	\$2,576,222	\$2,577,170	\$2,208,242	\$2,775,369	\$10,137,003	\$304,043
2008	\$3,065,980	\$1,996,123	\$1,421,440	\$1,776,917	\$8,260,461	\$247,725
2009	\$2,412,869	\$2,212,748	\$1,686,223	\$1,693,520	\$8,005,360	\$240,157
2010	\$3,108,724	\$2,652,196	\$1,557,619	\$2,957,294	\$10,275,834	\$308,277
2011	\$3,145,224	\$2,827,857	\$2,612,696	\$2,976,664	\$11,562,441	\$346,877
2012	\$3,934,030	\$3,308,138	\$3,132,546	\$3,805,450	\$14,180,164	\$425,408
2013	\$4,723,278	\$4,036,831	\$5,323,814	\$7,024,875	\$21,108,798	\$633,276
2014	\$6,818,495	\$6,437,344	\$4,967,398	\$4,801,220	\$23,024,456	\$690,736
2015	\$7,063,974	\$7,073,027	\$7,554,015	\$8,076,309	\$29,767,325	\$893,021
2016	\$8,106,205	\$7,915,811	\$7,130,949	\$4,827,722	\$27,980,687	\$839,423
2017	\$8,292,006	\$7,516,640	\$6,508,225	\$7,190,916	\$29,507,787	\$885,236
2018	\$8,333,280	\$7,948,435	\$7,461,698	\$6,186,525	\$29,929,938	\$897,900
2019	\$8,314,879	\$8,419,647	\$7,876,753	\$8,475,389	\$33,086,668	\$992,603

## Enforcement and Administrative Actions

### Law Enforcement Activities

Law enforcement is a crucial component of the IFQ programs. Special agents and enforcement officers from NOAA/NMFS Office of Law Enforcement (OLE) Southeast Division, the U.S. Coast Guard (USCG) and participating Joint Enforcement Agreement (JEA) states enforce the regulated activities mandated under the Gulf IFQ programs. State wildlife officers and game wardens routinely contribute to the enforcement of the IFQ programs under the auspices of the Cooperative Enforcement Agreement, by patrolling the waterfront, meeting vessels upon landing, and monitoring offloads. OLE Special Agents conduct random monitoring of vessels, assist state wildlife officers and game wardens with violations requiring further investigation and conduct independent investigations, primarily those involving the undocumented landing and sale of IFQ species and the trafficking of illegally harvested red snapper and grouper-tilefish entered into interstate commerce. During offshore boardings, the USCG and JEA partners with long-range capabilities ensure that vessels harvesting red snapper have valid IFQ accounts. During patrol, action was taken by OLE agents to correct problems identified and educate fishermen on program requirements and regulations. In other instances, OLE agents took enforcement action by way of warnings (verbal and written), citations, and follow-up investigation by NOAA’s Special Agents. Major violations since implementation of the IFQ programs included the false reporting of species harvested and under reporting of total weights landed. Typical violations included landing prior to the three-hour minimum landing notice, landing at an unspecified or unapproved location, insufficient allocation, transporting IFQ species without an approval code, completing a landing transaction without a landing notification, and offloading after approved hours. Typical dealer violations included misreporting IFQ species, failure to provide a current dealer permit and/or IFQ dealer endorsement, and failure to report IFQ species landed. In 2019, OLE agents and officers in the Southeast Division conducted approximately 168 patrols. Included in those patrols was monitoring of the offloading of catch, and investigations involving IFQ program regulations. The number of incidents resulting in seizures has decreased since the start of the program, and OLE continues to work with

partners to proactively enforce IFQ regulations. In 2019, there were 51 IFQ investigations that resulted in the issuance of compliance assistance, written warnings, and violations.

## *Summary of the 2019 Fishing Year*

In the thirteenth year of the RS-IFQ program, the program has shown continued progress in achieving its main objectives of reducing overcapacity and mitigating the derby fishing conditions and auxiliary objectives such as increased market stability, fishing flexibility, and balancing social, economic, and biological benefits. During the 13 years of the program, there have been changes in participation and activity in the program. Participation can be seen in the status of accounts in relation to holding shares, permits, and allocation, while activity is determined in relation to accounts transferring shares or allocation or landing red snapper. The following tables provide a summary of the 2019 value and change from the previous year for changes in participation and activity (Table 29), Transfers and Landings (Table 30), Economic information (Table 31), and Effort and Discards (Table 32).

Table 29. 2019 participation and activity

		<b>2019 Value</b>	<b>Change from 2018</b>
Participation	Shareholders	340	-1
	Allocation Holders	624	-26
	Dealers	114	+3
	Vessels	437	-13
Activity	Shareholders without permits		
	Number of accounts	103	+2
	Percentage of accounts	30.3%	+0.7%
	Shares held	29.88%	-1.82%
	Allocation holders without shares		
	Number of accounts	277	+4
	Percentage of accounts	44%	+2%
	Accounts landing red snapper	392	+18
	Percentage landings from accounts with shares	53%	0%
	Accounts inactive	34	-30
	Accounts only transferring allocation	198	+22
	With permit and with shares	78	+10
	With permit and without shares	17	+5
	Without permit and with shares	83	-2
	Without permit and without shares	20	+9
	Accounts with remaining allocation	165	-28
	Number of Active accounts	131	+2
	Percentage of accounts with remaining allocation	26%	-4%
	Number of accounts with overages	16	-8
	Total overage amounts	1,708 lb	+562 lb

Table 30. 2019 transfers and landings

		2019 Value	Change from 2018
Transfers and Landings	Number of Share Transfers	111	+13
	Percentage of Shares Transferred	4.6183%	-1.8%
	Number of Allocation Transfers	4,542	+840
	Amount of allocation transferred	9,666,992 lb	+1,700,466 lb
	Percentage of quota transferred	139.3%	+13.1%
	Landings Percentage of Quota	99.4%	-0.2%

Table 31. 2019 economic information

		2019 Value	Change from 2018
Economic Information	Average Share Price per pound	\$41.17	+\$4.72
	Percent of Representative Share Transfer Prices	72%	+18%
	Average Allocation price per pound	\$3.69	+\$0.23
	Percent of Representative Allocation Transfer Prices	59%	+4%
	Average Ex-vessel price per pound	\$5.28	+\$0.18
	Percent of Representative Ex-vessel Prices	82%	-2%
	Ex-vessel Value	\$33,086,668	+\$3,156,730

Table 32. 2019 effort and discards

		2019 Value	Change from 2018
Effort and Discards	VL Trips	2,588	-1,272
	VL Days/Trip	3.2	-0.2
	VL Avg RS/Trip	1,481 lb	+36 lb
	LL Trips	330	-81
	LL Days/Trip	11.8	-0.3
	LL Avg RS/Trip	915 lb	+132 lb
	VL Discard Ratio D:L	0.01	-0.44
	VL Discard Mortality	22%	-11%
	LL Discard Ratio D:L	0.09	-0.05
	LL Discard Mortality	100%	+57%

## *Looking Ahead*

The final rule for Amendment 36A to the Reef Fish FMP was effective on July 12, 2018 (83 FR 27297), and revoked shares non-activated IFQ accounts and allowed NMFS to withhold a portion of the quota from distribution if a quota reduction is anticipated. A third component of Amendment 36A was made effective on January 1, 2019, and requires pre-landing notifications and landings only at approved landing locations for all reef fish permitted vessels landing federally managed reef fish species. The Gulf Council is currently considering additional changes to both the RS-IFQ and GT-IFQ programs through Amendment 36B and 36C to the Reef Fish FMP. Amendment 36B aims to improve the performance of the RS-IFQ and GT-IFQ programs based on suggestions from the Red Snapper 5-year review, an advisory panel, and Gulf Council discussions. Amendment 36B, which is under development by the Gulf Council, considers more complicated actions that deal with share and allocation caps, use requirements, program eligibility, and regulatory discards. Amendment 36C, which is also under development by the Gulf Council, aims to determine how to distribute the revoked shares from non-activated IFQ accounts, and also to develop a model for a quota bank.

On April 4, 2019, a red snapper mid-year quota increase occurred in response to a red snapper stock assessment that determined the total available yield of red snapper had increased. Also in 2019, a new joint red snapper and grouper tilefish 5-year review began to discuss topics such as whether the IFQ programs have continued to reduce overcapacity and achieve optimum yield as was determined in the red snapper 5-year review in 2013.

The Catch Share Online System has been transitioning to a new system with the hopes that the online system will be completely migrated onto a new platform by the end of 2020. This migration is necessary as the software that supports the system nears end of life. In preparation for the migration, NMFS will be requesting volunteers to beta test the new platform to ensure a smooth transition.

The SERO Catch Share staff are continuously looking for ways to improve the interaction with the online Website. If you have a suggestion on how the online system can be further improved, please call or e-mail SERO Catch Share customer support as listed on the cover page.

## *Appendices*

### **Appendix 1. History of the red snapper (RS) individual fishing quota (IFQ) program**

An IFQ program for red snapper was first proposed in Amendment 8 to the Fishery Management Plan (FMP) for Reef Fish Resources of the Gulf of Mexico (Reef Fish FMP) and approved by the National Marine Fisheries Service (NMFS) in 1995. The program was not implemented due to Congressional action that placed a moratorium on the development and implementation of new Individual Transferable Quota programs until October 1, 2000. Despite this moratorium, red snapper commercial fishermen and the Gulf of Mexico Fishery Management Council (Gulf Council) remained interested in developing an IFQ program, and in 2004 initiated the development of the current Red Snapper IFQ (RS-IFQ) program. A majority of eligible voters (based on a weighted majority of votes of red snapper Class 1 license holders) supported, through referendum, development of the RS-IFQ program. Persons eligible to vote in the 2004 referendum included red snapper Class 1 license holders and vessel captains harvesting red snapper during 1993-1996. License holders were defined as the entity that actually controlled the transfer of the license, and such person would be listed as the qualifier on the commercial reef fish permit. NMFS issued 157 referendum ballots, 145 of which were filed with the agency. The weighted vote resulted in 72% of respondents (representing 81% of the weighted votes) supporting the Gulf Council's development of an IFQ program. During 2004 and 2005, the Gulf Council, in collaboration with their Ad Hoc Red Snapper Advisory Panel, developed Amendment 26 to the Reef Fish FMP. This amendment outlined the key components of the RS-IFQ program. In 2006, a second referendum determined that a majority of eligible voters supported the submission of Amendment 26 to the Secretary of Commerce for approval. On January 17, 2006, NMFS issued 167 referendum ballots, 140 of which were filed with the agency; the weighted vote demonstrated 76% of respondents (representing 87% of the weighted vote) favored implementation of an IFQ program. The amendment was approved by the Gulf Council in March 2006 and implemented by the Secretary of Commerce on January 1, 2007.

Initial shares were issued to Gulf commercial reef fish permit holders with valid Class 1 or Class 2 red snapper licenses on November 22, 2006, based on the amount of red snapper landings reported under each entities qualifying license during the qualifying time period. For Class 1 license holders, RS-IFQ shares were based on the best ten consecutive years from 1990-2004. For Class 1 historical captain license holders, RS-IFQ shares were based on seven years of landings from 1998-2004. For Class 2 license holders, RS-IFQ shares were based on the best five years of landings from 1998-2004. Initial share distribution was based on landings history; therefore, Class 1 license holders received a majority of the RS-IFQ shares (91%) and corresponding allocation. Class 2 license holders and fishermen along the west Florida shelf received smaller amounts of shares and corresponding allocation, as red snapper were less plentiful there during the qualifying years of the RS-IFQ program.

In 2010, there were significant changes made to the RS-IFQ database and online system to align it with the new GT-IFQ program and enhance law enforcement. In 2010, the structure switched from a fisherman-assignee based system to a fisherman-vessel based system. In the old system, a unique entity could have multiple accounts (one for each vessel owned), but the new system switched to one account

per unique entity and allowed multiple vessels per shareholder account. Additional changes to the program included submission of share transfers electronically, estimation of gutted fish weights for landing notifications, requiring pre-approval of landing locations, and the elimination of vessel endorsements.

On June 1, 2011, actual ex-vessel price was redefined to ensure equivalent reporting among dealers. The definition now states that “actual ex-vessel price” represents the price paid per pound of fish before any deductions are made for transferred (leased) allocation (i.e., pounds of fish) and goods and/or services (e.g., bait, ice, fuel, repairs, machinery replacement).

On January 1, 2012, the RS-IFQ program opened to the general public. Prior to January 1, 2012, accounts could only be established in the RS-IFQ program if the account holder also held a Gulf commercial reef fish permit. After January 1, 2012, any U.S. citizen or permanent resident alien could establish a RS-IFQ account. Accounts without commercial Gulf reef fish permits, can transfer shares and allocation, but cannot harvest red snapper.

In 2012-2013, a five-year review of the RS-IFQ program was conducted to evaluate the progress towards achieving the stated goals of reducing overcapacity and eliminating the problems associated with derby fishing. To analyze the program’s progress data were obtained from a variety of sources: RS-IFQ database; Southeast Fisheries Science Center’s coastal logbooks accumulated landings system, and reef fish observer program; the National Institute of Occupational Safety and Health; and surveys of the RS-IFQ participants. In general, the review found that the program has been moderately to highly successful in achieving its stated goals, although there is still room for further achievement, particularly with respect to overcapacity, discard mortality, price reporting, and social and community analyses. In 2013, transfer reasons were added to both share and allocation transfers in order to capture more information about the types of transfer that occur and the reasons for the transfers, especially as how they related to price.

The IFQ website and database systems were modified in 2014 and 2015 to include the Gulf Headboat Collaborative (HBC) pilot program and the Highly Migratory Species (HMS) Bluefin Tuna Individual Bycatch Quota (BFT) program. With the additions of these programs, the homepage was retitled to “SERO Catch Shares Programs” and additional information was added for each program. Each program contains a separate tab on the Public home page with information specific to that program and the Log In dialogue box was changed to reflect the additional roles for each program. The public “View Landing Locations” page was changed to include both IFQ and HBC landing locations, with a drop down box to select by program. The Additional Information page was changed to allow for selection of documents by program: IFQ, HBC, or BFT.

In March of 2015, a Gulf Council webinar established a Reef Fish FMP framework amendment to adjust the red snapper quotas for the next three years (2015-2017) to be consistent with the red snapper rebuilding plan. The total red snapper quota was set equal to the acceptable biological catch (ABC) for each year. As the ABC was projected to decrease over the following three years, so will the commercial quota. The commercial quota was to be set at 6.567 million pounds gutted weight (mp gw) in 2015,

6.414 mp gw in 2016, and 6.315 mp gw in 2017. However, in August 2015, the Gulf Council evaluated and adjusted the allocation of red snapper between the commercial and recreational sectors to ensure the allowable catch and recovery benefits were fairly and equitably allocated between the commercial and recreational sectors (Amendment 28, Red Snapper Allocation). Amendment 28 resulted in an increase in red snapper allocation to the recreational sector and a decrease in the commercial sector's allocation. The allocation changed from 51% commercial: 49% recreational to 48.5% commercial: 51.5% recreational allocation. This allocation adjustment further decreased the commercial quotas to 6.097 mp gw in 2016, and 6.004 mp gw in 2017. In September 2015, the Gulf Council finalized a framework amendment to retain a portion of the red snapper commercial quota from distribution at the start of 2016, as Amendment 28 was not be finalized before the annual IFQ distribution of allocation in January of 2016. This framework action withheld 4.9% of the 2016 red snapper commercial quota, the exact amount that was later reallocated to the recreational sector.

In 2017, a court order vacated Amendment 28, which had shifted 2.5 percent of the red snapper quota from the commercial sector to the recreational sector. The court order required NOAA Fisheries to reinstate the sector allocations and resulting quotas that were in effect prior to Amendment 28. The rule became effective on June 6, 2017 and the resulting portion was distributed to the IFQ red snapper shareholders proportionally based on their shares.

Also in 2017, Amendment 36A to the Reef Fish FMP (Commercial IFQ Program Modifications) was approved by the Gulf Council. The final rule published on June 12, 2018 (83 FR 27297). Amendment 36A included three actions: 1) require that the owner or operator of a commercial reef fish permitted vessel landing commercially caught, federally managed reef fish from the Gulf provide a landing notification at least 3 hours, but no more than 24 hours, in advance of landing; 2) return permanently to NMFS any shares contained in IFQ accounts that have never been activated since January 1, 2010; and 3) allow NMFS to withhold the distribution of IFQ allocation equal the amount of an expected commercial quota reduction on January 1, for any IFQ species or multi-species quota, and redistribute the allocation back to fishermen should the expected quota reduction not be implemented by June 1. The effective date for the return of shares and the provision to withhold quota was effective July 11, 2018, but the effective date for the advance notification of landing was delayed until Jan 1, 2019. Additional information can be found on the Southeast Region webpage:

<https://www.fisheries.noaa.gov/action/reef-fish-amendment-36a-modifications-commercial-individual-fishing-quota-programs>.

Several updates were made in 2018 to improve the Gulf Reef Fish IFQ online systems. A new share and allocation calculator was added to the home page that can convert between share percentages and equivalent pounds for each share category. VMS lists for dealers and landing locations have been generated to assign a code to each unique dealer and landing location. These codes will replace the text lists that were formerly used to select form for each landing notification submitted via VMS. This change removes the need to update VMS units when new dealers and landing locations are added to the program. Additionally, a "Show PIN" feature to view what has been typed into the PIN field when logging into a user account was added to allow the user to see what they have entered.

Also in 2018, a stock assessment assessed a higher yield of RS available. This assessment resulted in a quota increase set to 6.937 mp gw that became effective April 4, 2019.

## Appendix 2: Red snapper management history

All weights are in million pounds gutted weight; all lengths are in inches total length; all days are calendar days. Data collected from Gulf of Mexico Fishery Management Plans and Amendments, stock assessments, and IFQ program. Landings through 2006 were from the SEFSC ACL dataset accessed 7/3/2012; landings 2007 onward were from the IFQ system.

### Appendix 2.1. Pre-IFQ Red snapper management history

Year	Days open	Quota (mp gw)	Harvest (mp gw)	Size Limit	Commercial Management Action
1990	365	2.79	2.39	13	
1991	236	1.84	1.99	13	
1992	95	1.84	2.80	13	<ul style="list-style-type: none"> <li>▪ Emergency rule: Apr 3- May 14 1,000 lb trip limit.</li> <li>▪ Moratorium on new commercial reef fish permits</li> <li>▪ 200 lb trip limit or 2,000 lb trip limit with endorsement</li> <li>▪ Closed fishery Dec 1</li> </ul>
1993	94	2.76	3.04	13	<ul style="list-style-type: none"> <li>▪ Opened Feb 10</li> <li>▪ One trip limit per day</li> <li>▪ Extended endorsements</li> </ul>
1994	77	2.76	2.90	14	<ul style="list-style-type: none"> <li>▪ Raised minimum size over next 5 years</li> <li>▪ Extended commercial reef fish permit moratorium</li> </ul>
1995	52	2.76	2.64	15	<ul style="list-style-type: none"> <li>▪ Opened Feb 28</li> </ul>
1996	87	4.19	3.89	15	<ul style="list-style-type: none"> <li>▪ Split quota into spring and fall seasons</li> <li>▪ Extended endorsement</li> </ul>
1997	73	4.19	4.33	15	<ul style="list-style-type: none"> <li>▪ Fall season started Sept 2 for 1<sup>st</sup> 15 days/month till quota met</li> </ul>
1998	72	4.19	4.22	15	<ul style="list-style-type: none"> <li>▪ Established Class 1 and Class 2 licenses</li> <li>▪ Allocated <math>\frac{2}{3}</math> quota to spring, starts Feb 1</li> <li>▪ Fall season started Sept 1, 1<sup>st</sup> 10 days /month</li> </ul>
1999	70	4.19	4.39	15	<ul style="list-style-type: none"> <li>▪ Spring season reduced from 15 to 10 days/month</li> </ul>
2000	66	4.19	4.36	15	<ul style="list-style-type: none"> <li>▪ Extended permit moratorium for 5 more years</li> </ul>
2001	79	4.19	4.17	15	
2002	91	4.19	4.31	15	
2003	94	4.19	3.97	15	
2004	105	4.19	4.19	15	
2005	131	4.19	3.69	15	<ul style="list-style-type: none"> <li>▪ Extended commercial reef fish permit moratorium indefinitely</li> </ul>
2006	126	4.19	4.19	15	

## Appendix 2.2. Post-IFQ Red snapper management history

Year	Days open	Quota (mp gw)	Harvest (mp gw)	Size Limit	Commercial Management Action
2007	365	2.99	2.87	13	<ul style="list-style-type: none"> <li>▪ Implemented commercial red snapper IFQ program</li> <li>▪ Reduced quota from 2006 level</li> <li>▪ Mid-year quota increase</li> <li>▪ Reduced size limit on May 2, 2007 to 13" TL</li> </ul>
2008	366	2.30	2.24	13	
2009	365	2.30	2.24	13	
2010	365	3.19	3.06	13	<ul style="list-style-type: none"> <li>▪ Mid-year quota increase in June; Area closures due to Deepwater Horizon oil spill event</li> </ul>
2011	365	3.30	3.24	13	<ul style="list-style-type: none"> <li>▪ Mid-year quota increase in May</li> </ul>
2012	366	3.71	3.64	13	<ul style="list-style-type: none"> <li>▪ Mid-year quota increase in June</li> </ul>
2013	365	5.05	4.91	13	<ul style="list-style-type: none"> <li>▪ Mid-year quota increases in May and September</li> </ul>
2014	365	5.05	5.02	13	
2015	365	6.57	6.47	13	<ul style="list-style-type: none"> <li>▪ Mid-year quota increase in June</li> <li>▪ Framework action to withhold a portion of the commercial red snapper quota for 2016</li> </ul>
2016	366	6.10	6.06	13	
2017	365	6.31	6.29	13	<ul style="list-style-type: none"> <li>▪ Mid-year quota increase in June to reclaim the allocation that had been given to the recreational sector by Amendment 28.</li> </ul>
2018	365	6.31	6.29	13	<ul style="list-style-type: none"> <li>▪</li> </ul>
2019	365	6.94	6.90	13	<ul style="list-style-type: none"> <li>▪ Mid-year quota increase in April</li> </ul>

### Appendix 3. Reef fish observer trips

Reef Fish Observer data comparing fishing sets targeting red snapper versus other reef fish species on trips using longline (LL) gear and vertical line (VL) gear. Very few observed LL sets typically target red snapper. Data from the Reef Fish Observer Program was accessed as of 6/2/2020.

Year	Fishing Sets					
	LL			VL		
	Total	RS	RS Target	Total	RS	RS Target
2007	216	38%	NA	3,202	32%	NA
2008	128	23%	NA	1,715	33%	NA
2009	780	40%	1%	2,310	21%	4%
2010	1533	45%	1%	3,927	28%	12%
2011	2471	50%	4%	4,486	32%	22%
2012	563	57%	3%	11,490	31%	19%
2013	2246	47%	4%	5,113	27%	25%
2014	949	42%	0%	4,489	25%	18%
2015	774	44%	NA	8,402	27%	29%
2016	1912	50%	1%	5,918	31%	30%
2017	490	32%	6%	2,429	41%	32%
2018	140	64%	NA	1,337	42%	31%
2019	153	63%	47%	1,282	51%	51%

## Appendix 4. Share Transfer Reasons

Beginning in 2013, share transfers required the selection of one of seven allocation transfer reasons for every allocation transfer to better monitor the program's performance. The tables below contain the number of share transactions and percentage transferred by transfer reason between 2013 and 2019.

### Appendix 4.1. Count of Share Transfer Reasons

Share Transfer Reason	2013	2014	2015	2016	2017	2018	2019
Barter trade for shares or allocation	6	6	4	0	1	2	1
Gift	0	6	0	3	3	9	4
No comment	12	17	47	29	35	36	40
Package Deal	2	5	0	0	1	2	1
Transfer to a related account	14	9	19	13	15	9	6
Sale to another shareholder	42	48	50	32	61	40	59

### Appendix 4.2. Percent of Shares Transferred For Each Transfer Reason

Share Transfer Reason	2013	2014	2015	2016	2017	2018	2019
Barter trade for shares or allocation	1.92	0.33	0.07	0	0.02	0.02	0.03
Gift	0.00	1.08	0	0.08	0.35	0.14	0.09
No comment	0.38	1.94	6.1	2.22	3.86	0.93	1.72
Package Deal	0.01	0.95	0	0	0.01	0.01	0.0001
Transfer to a related account	1.37	0.18	4.24	0.72	1.55	1.65	0.25
Sale to another shareholder	1.05	1.09	4.82	0.85	2.89	3.68	2.53

## Appendix 5: Price Analysis Rationale

Price information is a crucial portion of the economic evaluation of the program, and yet the program continues to have price reporting challenges with respect to share transfers, allocation transfers, and ex-vessel prices. Share prices were not required from 2007-2009, but since mid-year 2010, a minimum transfer price of \$0.01 has been required for all share transfers. Despite requiring participants to enter a total price for share transfers, many share transactions had the minimum total value of \$0.01. Allocation transfer prices are currently not required by the online system (e.g., a zero value may be entered). Ex-vessel prices have varied considerably since the start of the RS-IFQ program, with values ranging widely. Extremely low prices have been attributed to dealers reporting ex-vessel prices after deducting for transferred or leased allocation, goods (e.g., bait, ice, fuel), and/or services (e.g., repairs, machinery replacement). The definition of actual ex-vessel price was changed through regulations in June 2011 and prohibits the cost of allocation transfers, goods, and /or services from being deducted from ex-vessel prices. Despite the new regulation in 2011, ex-vessel prices in many instances continue to be under-reported in the RS-IFQ online system.

An expected range of reasonable prices was calculated for each price variable but investigating the frequency of each price within a given year(s). Any price value outside the given range was excluded from analysis. Share prices were analyzed over multiple years, as any one given year had small number of prices with transactions. Allocation and ex-vessel prices were analyzed on a yearly basis. Both allocation and ex-vessel prices had bi-modal distributions that clearly displayed a subset of transactions with low price information. The minimum value was set as the valley between the bi-modal distributions. Share price ranges were set between \$9-\$36/lb for the first five years and greater than \$50/lb since 2012. For ex-vessel prices, the online system set a cap of \$10/lb for the first seven years, but increased the cap to \$15/lb in 2015. All minimum and maximum values can be seen in the table below. The above method for limiting price ranges was demonstrated to and endorsed by the Socioeconomic Scientific and Statistical Committee of the Gulf Council in 2013.

Year	Share		Allocation		Ex-vessel	
	Min	Max	Min	Max	Min	Max
2007	\$9	\$36	\$1.20	\$5.00	\$2.60	\$10
2008	\$9	\$36	\$1.20	\$5.00	\$2.60	\$10
2009	\$9	\$36	\$1.20	\$5.00	\$2.60	\$10
2010	\$9	\$36	\$1.80	\$5.00	\$2.60	\$10
2011	\$9	\$36	\$1.80	\$5.00	\$2.60	\$10
2012	\$9	\$50	\$1.80	\$5.00	\$2.60	\$10
2013	\$9	\$50	\$1.80	\$5.00	\$2.60	\$10
2014	\$9	\$60	\$1.80	\$5.00	\$2.60	\$10
2015	\$9	\$60	\$1.80	\$5.50	\$2.60	\$10
2016	\$9	\$60	\$1.80	\$5.50	\$2.60	\$10
2017	\$9	\$60	\$1.80	\$5.50	\$2.60	\$10
2018	\$9	\$60	\$1.80	\$5.50	\$2.60	\$10
2019	\$9	\$60	\$1.80	\$5.50	\$2.60	\$10

## Appendix 6. Allocation Transfer Reasons

Beginning in 2013, allocation transfers required the selection of one of seven allocation transfer reasons for every allocation transfer to better monitor the program's performance. The tables below contain the number of allocation transactions and percentage transferred by transfer reason between 2013 and 2019.

### Appendix 6.1. Count of Allocation Transfer Reasons

<b>Allocation Transfer Reason</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Barter trade for allocation	41	21	28	33	13	23	5
Barter trade for shares	3	4	8	6	2	3	3
Gift	38	28	37	20	31	41	62
No comment	1,374	1,560	1,854	2,305	2,227	2,112	2,603
Package deal	6	22	7	2	5	2	10
Transfer to a related account	411	323	485	468	551	640	829
Sale to another shareholder	878	902	968	846	872	881	1,030

### Appendix 6.2. Percent of Allocation Transferred For Each Transfer Reason

<b>Allocation Transfer Reason</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Barter trade for allocation	93,371	13,031	60,320	83,812	20,083	38,353	3,023
Barter trade for shares	6,854	9,950	63,794	16,692	784	4,051	6,539
Gift	91,734	16,887	39,124	15,891	22,248	23,483	149,815
No comment	2,802,597	3,088,708	5,638,898	5,809,143	5,448,860	4,831,546	5,691,791
Package deal	11,450	51,792	32,703	1,906	13,650	20,001	39,515
Transfer to a related account	1,281,863	823,707	1,321,814	856,367	1,021,521	1,409,156	1,247,188
Sale to another shareholder	1,473,599	1,545,478	2,097,881	1,745,663	1,770,663	1,639,936	2,529,121

## Appendix 7: Monthly Allocation Prices

The table below contains the average monthly allocation and ex-vessel price per pound for each year of the RS-IFQ program, after adjusting for inflation based on based on the Gross Domestic Product (GDP) deflator (<http://www.bea.gov/national/index.htm#gdp>).

Monthly Allocation Prices													
Month	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
January	\$2.13	\$2.54	\$3.22	\$3.40	\$3.38	\$3.34	\$3.40	\$3.22	\$3.41	\$3.36	\$3.40	\$3.30	\$3.49
February	\$2.34	\$2.82	\$3.22	\$3.80	\$3.32	\$3.46	\$3.58	\$3.31	\$3.39	\$3.45	\$3.48	\$3.46	\$3.77
March	\$2.04	\$2.77	\$3.12	\$3.58	\$3.46	\$3.33	\$3.38	\$3.37	\$3.44	\$3.26	\$3.58	\$3.49	\$3.83
April	\$2.18	\$2.72	\$3.07	\$3.51	\$3.42	\$3.33	\$3.47	\$3.36	\$3.53	\$3.52	\$3.47	\$3.52	\$3.75
May	\$2.47	\$2.77	\$3.19	\$3.57	\$3.36	\$3.45	\$3.38	\$3.37	\$3.44	\$3.44	\$3.47	\$3.64	\$3.74
June	\$2.40	\$2.71	\$3.35	\$3.38	\$3.41	\$3.28	\$3.48	\$3.27	\$3.49	\$3.49	\$3.53	\$3.50	\$3.81
July	\$2.30	\$2.98	\$3.50	\$3.19	\$3.38	\$3.52	\$3.50	\$3.41	\$3.47	\$3.52	\$3.48	\$3.37	\$3.70
August	\$2.47	\$2.95	\$3.14	\$3.30	\$3.27	\$3.27	\$3.28	\$3.13	\$3.45	\$3.50	\$3.40	\$3.64	\$3.79
September	\$2.63	\$2.87	\$3.20	\$3.26	\$3.41	\$3.52	\$3.49	\$3.46	\$3.15	\$3.60	\$3.62	\$3.58	\$3.80
October	\$2.43	\$2.92	\$2.99	\$3.26	\$3.36	\$3.04	\$3.33	\$2.94	\$2.94	\$3.36	\$3.55	\$3.56	\$3.73
November	\$2.59	\$3.10	\$3.28	\$3.47	\$3.44	\$3.43	\$2.74	\$3.36	\$3.04	\$3.44	\$3.48	\$3.58	\$3.81
December	\$2.66	\$2.78	\$2.82	\$2.79	\$3.41	\$3.45	\$2.58	\$3.45	\$2.75	\$3.52	\$3.55	\$3.52	\$3.60

## Appendix 8: Glossary

**10% Overage** – A provision in the IFQ program that allows IFQ accounts that hold shares to land 10% over their remaining allocation on the last fishing trip of the year. Any overage will be deducted from the shareholder's allocation for the next fishing year and the shareholder is restricted from selling shares that would prohibit this take back action.

**Active Account** – An account in which the allocation holder has landed, bought, and/or sold allocation within that year. Accounts activity status changes yearly based on the actions taken by the account.

**Allocation** – Allocation is the actual poundage of red snapper by which an account holder is ensured the opportunity to possess, land, or sell, during a given calendar year. IFQ allocation will be distributed to each IFQ shareholder at the beginning of each calendar year, and expire at the end of each calendar year. Annual IFQ allocation is determined by the amount of the shareholder's IFQ share and the amount of the annual commercial red snapper quota. Dealer accounts may not possess allocation.

**Allocation Holder** – An account that holds allocation and may or may not hold shares.

**Allocation Only Holder** – An account that only holds allocation and does not hold shares.

**Allocation Transfer** – A transfer of allocation (pounds) from one shareholder account to another shareholder account. Before January 1, 2012, allocation could be transferred only to an entity that held a valid Gulf commercial reef fish permit.

**Entity** – An individual, business, or association participating in the IFQ program. Each IFQ account is owned by a unique entity.

**Ex-vessel price** – The price paid to the vessel by a dealer per pound of fish before any deductions are made for transferred (leased) allocation and goods and/or services (e.g., bait, ice, fuel, repairs, machinery replacement, etc.).

**Ex-vessel value** - A measure of the dollar value of commercial landings, usually calculated as the price per pound at first purchase of the commercial landings multiplied by the total pounds landed.

**Gulf of Mexico Commercial Reef Fish Permit Holder** – An entity that possesses a valid Gulf commercial reef fish permit and therefore, is eligible to be exempt from bag limits, to fish under a quota, or to sell Gulf reef fish in or from the Gulf Exclusive Economic Zone.

**IFQ Dealer Endorsement** – The IFQ dealer endorsement is a document that a dealer must possess in order to receive Gulf of Mexico red snapper. The dealer endorsement can be downloaded free of charge from the IFQ dealer's online account.

**Inactive Account** – An account in which the allocation holder has neither landed, bought, nor sold allocation within that year, including those who never logged into their account. Accounts activity status changes yearly based on the actions taken by the account.

**Initial Account** - An account that was never logged into by the account's owner(s).

**Landing Notification** - A required 3-24 hour advanced landing notification stating the vessel identification, approved landing location, dealer's business name, time of arrival, and estimated pounds to be landed in each IFQ share category. Landing notifications can be submitted using either a vessel's VMS unit, through an IFQ entity's on-line account, or through the IFQ call service. The landing notification is intended to provide law enforcement

officers the opportunity to be present at the point of landing so they can monitor and enforce IFQ requirements dockside. For the purpose of these regulations, the term landing means to arrive at the dock, berth, beach, seawall, or ramp.

**Landing Transaction** – The dealer completes a landing transaction by entering the date, time, and location of transaction; weight and actual ex-vessel price of red snapper fish landed and sold; and information necessary to identify the fisherman, vessel, and dealer involved in the transaction into the IFQ online system. The fisherman landing IFQ species must validate the dealer transaction report by entering his vessel's unique personal identification number when the transaction report is submitted. After the dealer submits the report and the information has been verified, the website will send a transaction approval code to the dealer and the allocation holder.

**Median** - The middle value in a statistical distribution, above and below which lie an equal number of values.

**Participant** - An individual or corporation that is part of an IFQ entity. For example, John Smith the participant may belong to multiple entities such as John Smith, John and Jane Smith, and ABC Company. Share and allocation caps are tracked at the IFQ participant level and not the IFQ entity level.

**Pound Equivalent** – The share percentage that would equal one pound for that particular time period. The exact share percentage that is equivalent to one pound depends on the total commercial quota and will change as the quota changes from year to year or within a year from any quota increases.

**Public Participant** – Accounts that do not have an associated Gulf commercial reef fish permit. Public participants may hold and transfer shares and allocation, but cannot harvest red snapper.

**Share** – A share is the percentage of the commercial quota assigned to a shareholder account that results in allocation (pounds) equivalent to the share percentage of the quota. With limited exceptions, your percent share of the quota does not change unless shares are transferred into or out of an account. Dealer accounts may not possess shares.

**Share Cap** – The maximum share allowed to be held by a person, business, or other entity. The share cap prevents one or more IFQ shareholders from purchasing an excessive amount of IFQ shares and monopolizing the red snapper commercial sector.

**Share Transfer** – A transfer of shares from one shareholder account to another account. A shareholder must initiate the share transfer and the receiver must accept the transfer by using the online IFQ system. Before January 1, 2012, shares could be transferred only to an entity that held a valid Gulf commercial reef fish permit.

**Shareholder** – An account that holds a percentage of the commercial red snapper quota.

**Shareholder Account** – A type of IFQ account that may hold shares and/or allocation. This includes accounts that only hold allocation.