Final Report on the Survey of Participants in the Gulf of Mexico (GOM) Grouper-Tilefish (G-T) Individual Fishing (IFQ) Program

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For:
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Table of Contents

1.0 Introduction

2.0 Sampling design and methodology

2.1 Outcomes of the pre-test of the questionnaire and recommendations

2.2 Methods and protocols

2.3 Modified Dillman Method

3.0 Survey outcomes

3.1 Problems encountered and solutions offered

4.0 Results - summary data and statistics

5.0 Lessons learned/recommendations for improving future data collection projects

Tables

Table 1. Results of telephone follow-up calls

Table 2: The number of surveys completed online, returned paper questionnaires, online submissions from respondents who could not be matched to the sample frame, and cumulative total of completed surveys.

Table 3: The response rates for the survey including the number of IFQ accounts with completed surveys, number of refusals, mail packages returned with no new address, deceased IFQ account holders, ineligible respondents contacted, and non-responses.

Table 4: Summary statistics on the year respondents first became involved in the commercial GOM reef fish fishery.

Table 5: The number of respondents who indicated they did or did not vote in the GT-IFQ Referendum.

Table 6: The number of respondents that supported or did not support the GT-IFQ Program at the time of its implementation on January 1, 2010.

Table 7: The number of respondents that indicated they support or do not support the GT-IFQ Program now.

Table 8: Current satisfaction with the G-T Program.

Table 9: A table showing the number of respondents that indicated their opinion in regards to their opinions of potential outcomes of the G-T IFQ Program.

Table 10: The number of respondents who, since the implementation of the GT-IFQ Program, indicated they made changes in purchased capital (i.e., vessels, harvesting equipment, permits, shares) as a result of the program, with statistics on amounts spent.

Table 11: The number of respondents who, since the implementation of the GT-IFQ Program, indicated they made any in sold capital (i.e., vessels, harvesting equipment, permits, shares) as a result of the program, with statistics on amounts spent.

Table 12: The number of respondents who indicated how difficult or easy maintaining skilled crew and hiring skilled replacement crew was before and after IFQ implementation.

Table 13: The number of respondents who indicated they generally hired a captain to fish some/all of their annual GT-IFQ allocation.

Table 14: The number of responses indicating a change in how the captain was generally paid before and after G-T IFQ implementation.

Table 15: The number of responses indicating a change in the expenses deducted from total revenues (by expense category) before paying the captain before and after G-T IFQ implementation.

Table 16: The number of respondents who indicated they generally employed a crew when fishing their annual G-T IFQ allocation.

Table 17: The number of responses indicating a change in how the crew was generally paid before and after G-T IFQ implementation.

Table 18: The number of responses indicating a change in the expenses deducted from total revenues (by expense category) before paying the captain before and after G-T IFQ implementation.

Table 19: The number of responses indicating the distribution of payments to the vessel owner, captain, and crew, before and after implementation of the G-T IFQ Program.

Table 20: The number of responses indicating the respondents' primary business plan with respect to their activities in the GT-IFQ Program over the next five years.

Table 21: The number of responses, minimum, 25th percentile, median, 75th percentile, maximum, and mean dollar amount considered a fair allocation price, and the number of missing responses, by G-T IFQ category species.

Table 22: The number of responses, minimum, 25th percentile, median, 75th percentile, maximum, and mean dollar amount considered a fair share price, and the number of missing responses, by G-T IFQ category species.

Table 23: The number of respondents that received transferred allocation FROM another IFQ account.

Table 24: The number of respondents who indicated, by importance, reasons they received (e.g., leased, gifted) transferred GT-IFQ allocation FROM another IFQ account.

Table 25: The number of respondents that transferred allocation TO another IFQ account.

Table 26: The number of respondents who indicated, by importance, reasons they transferred (e.g., leased, gifted) transferred GT-IFQ allocation TO another IFQ account.

Table 27: The number of respondents that purchased G-T IFQ shares.

Table 28: The number of respondents who indicated, by importance, reasons they purchased GT-IFQ shares.

Table 29: The number of respondents that sold G-T IFQ shares.

Table 30: The number of respondents who indicated, by importance, reasons they sold GT-IFQ shares.

Table 31: The number of responses, minimum, 25th percentile, median, 75th percentile, maximum, and mean dollar amount estimated to be the current market value of respondents' vessels, gear, and equipment (excluding permits and shares) used to harvest grouper and tilefishes, and the number of missing responses.

Table 32: The number of responses, minimum, 25th percentile, median, 75th percentile, maximum, and mean dollar amount provided by respondents that indicated either an increase or a decrease in the current market value of their vessels, gear, and equipment, and the number of missing responses.

Table 33: A table showing the number of respondents that indicated they "Strongly Disagree", "Disagree", were "Neutral", "Agree", "Strongly Agree", have "No Opinion" by well-being statement.

Table 34: The number of respondents who indicated the age groups living in their household, the minimum, 25th percentile, median, 75th percentile, maximum, and mean of people living in respondents' households who are under 18 years old, 18 to 35 years old, 36 to 60 years old, and over 60 years old by age group.

Table 35: The number of respondents that indicated their race, by races indicated.

Table 36: The number of respondents that indicated their highest level of education, by category.

Table 37: The number of respondents that indicated their 2013 household income (before taxes), by income range.

Table 38: The number of respondents that indicated their level of satisfaction with the IFQ Online System for managing share and allocation and completing landing transactions, and the number with no opinion.

Table 39: The number of respondents that indicated their level of satisfaction with the customer service they receive when contacting NOAA Fisheries Service regarding questions about the IFQ Program, and the number with no opinion.

Table 40: The number of respondents that indicated their level of satisfaction with the customer service they receive when making a landing notification via phone, and the number with no opinion.

Table 41: The number of respondents that indicated their level of satisfaction with enforcement of the IFQ Program, and the number with no opinion.

1.0 Introduction

QuanTech, Inc. was hired to conducted the Survey of Participants in the GOM G-T IFQ Program under a NMFS contract to collect social and economic data related to fisheries and their communities in the GOM region. These data are needed to support fishery performance measures required by the Magnuson-Stevens Fishery Conservation and Management Act as amended through January 12, 2007 (MSA) (16 U.S.C. 1853a et seq.) because the IFQ programs are Limited Access Privilege Programs (LAPPs). The voluntary survey was used to collect data on financial viability, distributional outcomes, stewardship, governance and well-being. This final report was preceded by three interim reports. The first interim report described pretesting of the questionnaire. The second described survey progress from the submission of the first interim report through 50% completion of survey fielding (project component III). The third described the outcomes of the survey, including problems encountered and solutions. In this report, we discuss:

- the survey's sampling design and methodology:
- outcomes of the pre-test of the questionnaire and recommendations:
- survey methods and protocols;
- survey outcomes paying particular attention to non-response, problems encountered and solutions offered;
- summary statistics of all the variables collected (e.g., mean, quartiles, min, max, missing observations); and,
- lessons learned/recommendations to improve the various aspects and components of the overall data collection as a means for improving future data collection projects.

2.0 Sampling design and methodology

In consultation with NMFS, QuanTech refined the sampling design and methodology with the objective of increasing the number of survey responses. Originally, a random sample was to have been drawn with the goal of obtaining at least 100 in-person interviews. Instead of randomly sampling the population, NMFS asked QuanTech to attempt a census of all GOM G-T IFQ Program participants. Since an attempted census using only in-person data methods was not feasible within project funding, QuanTech worked with NMFS to develop a multi-mode approach to data collection. The final design and methodology QuanTech implemented allowed program participants to complete the survey using a NMFS-developed internet tool, by mail, or by telephone. The mail survey followed a modified Dillman (2000) method proven to maximize response.

2.1 Outcomes of the pre-test of the questionnaire and recommendations

The draft survey instrument was developed in 2013 by NMFS and Dr. Walter Keithly, a consultant hired by QuanTech. Dr. Keithly and QuanTech staff worked together with NMFS to prepare a near-final version of the questionnaire. QuanTech followed the Office of Management and Budget (OMB) guidelines for survey pre-testing. Nine in-person interview pre-tests were conducted with G-T IFQ Participants by QuanTech's PM, Mr. Schreiber. One pretest was conducted in Montgomery County, MD and the rest in FL. Seven pretests were completed in Pinellas County, with one in Manatee County. All pretests were conducted from September 23-26, 2013. The goal of pre-testing was to identify any survey questions that required

modification and record any recommendations for change. A detailed description of the pre-tests and an item-by-item discussion of the questionnaire was provided in the first interim report. Following the first interim report, QuanTech finalized the questionnaire in consultation with NMFS.

2.2 Methods and protocols

QuanTech reviewed the internet tool designed by NMFS to conduct the survey online. QuanTech's Program Manager and other staff members with internet data collection experience collaborated to prepare written comments and suggest changes to the online survey to ensure consistency with the final version of the questionnaire. NMFS approved the internet data collection tool for survey fielding on Friday, March 21, 2014. In consultation with NMFS, QuanTech set up web forwarding from gtifq.fishingsurvey.com to the online tool so this URL could be included on the pre-notification letters. In consultation with NMFS, QuanTech prepared the pre-notification letter mailing to the 997 potential respondents listed on the survey frame called "Final_GT_List.xlsx", received January 22, 2014. QuanTech developed the pre-notification letter (and all other materials for the survey mailings) in consultation with NMFS and printed the materials.

All letters encouraged survey participation and included 1) the online survey URL or web address, and 2) QuanTech's toll-free telephone number. A business reply mail (no postage necessary) post card printed with a unique identifier for each potential respondent was included with the pre-notification letter. The pre-notification letter invited potential respondents to participate in the survey online or, if they preferred, to request a hard copy of the questionnaire to participate in the survey by mail, either by returning the post card or calling QuanTech's toll-free number.

On April 9, 2014, QuanTech proposed a revised strategy using a modified Dillman method for conducting the G-T IFQ survey with the goal of achieving the highest possible response rate. Our previous strategy was based on several assumptions, including higher online response rates than actually achieved and many more requests for hard copy questionnaires than received following the mailing of the first pre-notification letters. In the previous strategy, QuanTech would have sent a second pre-notification letter and then contacted the larger operators to recruit them to participate in the survey. If we did not change our strategy, we anticipated only a 10%-15% response rate for the study. NMFS agreed to the approach, and the revised strategy to implement the modified Dillman method resulted in a 33.6% response rate from IFQ UserIDs included in the sample frame of 997 records. An additional 2% of respondents completed the online survey without providing any identifying information, making the total response rate 35.6%.

2.3 Modified Dillman Method

There were 824 potential respondents who did not request a hard copy questionnaire or participate in the survey online as of April 24, 2014, and whose pre-notification letter was not returned undeliverable without a forwarding address. QuanTech mailed a questionnaire package to each of these 824 potential respondents by April 28, 2014. Each package contained a cover letter (developed in consultation with NMFS), questionnaire, and business-reply return envelope (no postage necessary). Five business days after mailing the questionnaire packages, we followed up with thank you/reminder post cards. The purpose of the post card was twofold. First, it served as a thank you for participating if the IFQ program participant had already responded. Second, if the IFQ program participant had not yet responded, it served as a

reminder to participate. The post card was also developed in consultation with NMFS. QuanTech attempted to contact respondents over the phone to obtain a new address if mail was returned undeliverable.

We monitored online submissions and questionnaire returns until May 29th. QuanTech then removed respondents (those who completed the survey online or by mail) from the sample frame and mailed a second questionnaire package to the remaining potential 679 respondents.

Online and mail submissions were tracked until July 7, 2014, and then QuanTech removed respondents (those who completed the survey online or by mail) from the sample frame once more, and, with permission from NMFS, called all of the remaining 548 potential respondents to recruit them to participate in the survey. If we had called only the "larger" participants there would have been a potential bias because, from the responses we had seen so far, larger participants were more likely to be happy with the IFQ program but the "smaller" participants were not. We documented the call attempts, spoke with participants, scheduled callbacks with "gatekeepers", left voice mails, and made an additional call attempt if the first call resulted in no answer or a busy signal. Follow-up calling was completed by July 10, 2014. Table 1 shows the results of the 548 calls.

Table 1. Results of telephone follow-up calls

Final Disposition of Telephone Follow-Up Call	Number of Respondents
Respondent Completed Survey (on Phone or Previously)	6
Respondent Promised to Complete the Survey (by Mail or Online)	49
New Questionnaire Requested	29
Ineligible	4
Refusal	57
No Contact (Answering Machine, Busy or No Answer)	305
Bad or Wrong Number	67
Other (Language Barrier, Left Message with Person Answering)	31

Of the 145 respondents we spoke to, 84 (58%) either completed the survey, promised to do so or requested a new copy of the questionnaire (which was promptly sent), while 57 (39%) refused the survey. Excluding the bad or wrong phone numbers, the contact rate for the telephone follow-up was 37%.

Throughout the survey period, QuanTech followed up with respondents with incomplete surveys or misunderstandings about the study to improve response rate and quality of the data. We recorded completed surveys submitted online and received by mail in a custom-built tracking database, linked IFQ User IDs when applicable, and ensured they were not contacted again for the study. Returned questionnaires were logged and key-entered for double-key-comparison to capture responses for the survey database.

3.0 Survey outcomes

Table 2 below shows the number of completed surveys received from the time of data collection implementation through August 20, 2014. A few additional completed surveys were returned after the planned end of data collection on August 1. 2014. Two hundred ninety-one responses to the survey were received. Online submissions from 19 respondents either gave IFQs that were not included in the sample frame or did not provide any identifying information using the online survey tool*. A total of at most 25 responses were received subsequent to the telephone follow-up, 32% of the 78 respondents either promised to complete the questionnaire or requested a third copy.

Table 2: The number of surveys completed online, returned paper questionnaires, online submissions from respondents who could not be matched to the sample frame, and cumulative total of completed surveys.

Completed Online Surveys	Completed Paper Surveys	Total Completed Surveys from All Respondents	Online Surveys from Respondents that Could Not be Matched to the Sample Frame*	Total Completed Surveys from Respondents Matched to the Sample Frame
119	172	291	19	272

Table 3 shows the response rate for the survey for all 997 IFQ user accounts. The 272 completed surveys from respondents matched to the sample frame represent 331 IFQ user accounts. Of the 19 respondents that could not be matched to the sample frame, all were completed online, eight left the IFQ User ID blank, eight are legitimate IFQ User Accounts, but were not on our list, 1 was a dealer account, and two were invalid IFQ User ID's. The completed surveys accounted for 33.2% of the IFQ user accounts. Over half the refusals (56 out of 93) were obtained during follow-up telephone calling.

Table 3: The response rates for the survey including the number of IFQ accounts with completed surveys, number of refusals, mail packages returned with no new address, deceased IFQ account holders, ineligible respondents contacted, and non-responses.

Survey Status	N	%
Paper Survey Complete	199	*19.96*
Web Survey Complete	132	*13.24*
Deceased	4	*0.40*
Returned Mail No New Address	40	*4.01*
Ineligible	7	*0.70*
No Response	522	*52.36*
Refused	93	*9.33*
All	997	*100.00*

3.1 Problems encountered and solutions offered

QuanTech worked with NMFS to modify the original plan to conduct the survey in-person to efficiently increase responses through conduct of a mail survey with telephone follow-up. NMFS created the online survey tool. There were no problems encountered.

4.0 Results - summary data and statistics

The results in this section include data from respondents who were on the sample frame of 997 IFQ User IDs provided to QuanTech by NMFS. QuanTech received paper surveys representing 199 IFQ User IDs and surveys were submitted online representing 132 IFQ User IDs from the sample frame. There were 81 refusals matched to the sample frame. There were 7 individuals on the sample frame who claimed they never participated in the program despite having an IFQ User ID (i.e. they purchased a vessel and permit but never participated in the fishery). The number of potential respondents on the sample frame who did not return a completed questionnaire or participate online was 666. Tables 4-41 show summary data and statistics for the data collected on the survey from respondents on the sample frame and respondents who were not on the sample frame.

Table 4: Summary statistics on the year respondents first became involved in the commercial GOM reef fish fishery.

Analysis Variable: q2 In which year did you first become involved in the commercial GOM reef fish fishery?							
N	Minimum	25th Pctl	Median	75th Pctl	Maximum	Mean	N Miss
249	1946.0	1982.0	1998.0	2007.0	2014.0	1994.6	42

Table 5: The number of respondents who indicated they did or did not vote in the GT-IFQ Referendum.

Did you vote in the GT-IFQ referendum?	N	%
Yes	112	*42.42*
No	152	*57.58*
All	264	*100.00*

Table 6: The number of respondents that supported or did not support the GT-IFQ Program at the time of its implementation on January 1, 2010.

Did you support the GT-IFQ Program at the time of its implementation on January 1, 2010?	N	%
Yes	101	*37.83*
No	117	*43.82*
Undecided	32	*11.99*
Not Applicable	17	*6.37*
All	267	*100.00*

Table 7: The number of respondents that indicated they support or do not support the GT-IFQ Program now.

Do you support the GT-IFQ Program NOW?	N	%
Yes	121	*45.32*
No	107	*40.07*
Undecided	39	*14.61*
All	267	*100.00*

Table 8: Current satisfaction with the G-T Program.

Overall, how satisfied are you with the GT-IFQ Program?	N	%
Highly Unsatisfied	89	*33.21*
Unsatisfied	41	*15.30*
Neutral	22	*8.21*

Satisfied	54	*20.15*
Highly Satisfied	51	*19.03*
N/A	11	*4.10*
All	268	*100.00*

Table 9: A table showing the number of respondents that indicated their opinion in regards to their opinions of potential outcomes of the G-T IFQ Program.

For each potential GT-IFQ outcome below, please indicate your opinion by checking the appropriate box.	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		No Opinion		All	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Improved the profitability of the grouper-tilefish (G-T) component of my business by increasing ex-vessel prices	59	*22.61*	30	*11.49*	48	*18.39*	51	*19.54*	53	*20.31*	20	*7.66*	261	*100.00*
Improved the profitability of the grouper-tilefish (G-T) component of my business by reducing operating expenses	86	*33.86*	60	*23.62*	32	*12.60*	28	*11.02*	32	*12.60*	16	*6.30*	254	*100.00*
More flexible timing for conducting commercial fishing trips	48	*18.53*	32	*12.36*	27	*10.42*	62	*23.94*	80	*30.89*	10	*3.86*	259	*100.00*
Reduced regulatory discards of G-T species	59	*22.78*	55	*21.24*	46	*17.76*	44	*16.99*	41	*15.83*	14	*5.41*	259	*100.00*
Reduced incidental catch of non-targeted species	66	*25.48*	56	*21.62*	56	*21.62*	35	*13.51*	35	*13.51*	11	*4.25*	259	*100.00*
Reduced the loss of gear	49	*18.85*	66	*25.38*	77	*29.62*	24	*9.23*	24	*9.23*	20	*7.69*	260	*100.00*
Reduced derby-fishing conditions	32	*12.36*	13	*5.02*	28	*10.81*	68	*26.25*	105	*40.54*	13	*5.02*	259	*100.00*
Decreased crowding on fishing grounds	35	*13.41*	38	*14.56*	40	*15.33*	78	*29.89*	57	*21.84*	13	*4.98*	261	*100.00*

Improved safety at sea	42	*16.22*	40	*15.44*	45	*17.37*	48	*18.53*	66	*25.48*	18	*6.95*	259	*100.00*
Increased consolidation in the G-T sector	16	*6.30*	26	*10.24*	67	*26.38*	67	*26.38*	49	*19.29*	29	*11.42*	254	*100.00*
Made it harder for people to enter the G-T sector	22	*8.46*	18	*6.92*	31	*11.92*	73	*28.08*	99	*38.08*	17	*6.54*	260	*100.00*
Improved compliance with regulations associated with G-T species	32	*12.26*	36	*13.79*	56	*21.46*	66	*25.29*	56	*21.46*	15	*5.75*	261	*100.00*

Table 10: The number of respondents who, since the implementation of the GT-IFQ Program, indicated they made changes in purchased capital (i.e., vessels, harvesting equipment, permits, shares) as a result of the program, with statistics on amounts spent.

Type of Major Change	Was this major change a result of the GT-IFQ Program?	# responses	Minimum	25%	Median	75%	Maximum	Mean	Missing
Vessel	Missing	1	450000	450000	450000	450000	450000	450000.00	174
Vessel	Yes	40	3000	50000	77500	140000	1000000	139325.00	22
Vessel	No	11	0	0	55000	65000	102500	47500.00	44
Equipment	Missing	4	1200	2100	5000	7000	7000	4550.00	181
Equipment	Yes	35	4000	14000	25000	40000	400000	39414.29	8
Equipment	No	19	0	0	11000	27500	120000	22121.05	45
Permits	Missing	2	8500	8500	19250	30000	30000	19250.00	166

Permits	Yes	49	0	5000	10000	25000	320000	24603.06	28
Permits	No	11	0	0	0	10000	25000	4272.73	36
Shares	Missing	5	7000	20000	20000	20000	25000	18400.00	150
Shares	Yes	76	0	20000	50000	154500	1700000	162686.84	27
Shares	No	5	0	0	0	5000	40000	9000.00	29

Table 11: The number of respondents who, since the implementation of the GT-IFQ Program, indicated they made any in sold capital (i.e., vessels, harvesting equipment, permits, shares) as a result of the program, with statistics on amounts spent.

Type of Major Change	Was this major change a result of the GT-IFQ Program?	# responses	Minimum	25%	Median	75%	Maximum	Mean	Missing
Vessel	Missing	0	.	.	.	.	.	.	175
Vessel	Yes	36	0	15000	37500	60000	200000	45319.44	26
Vessel	No	8	0	0	20000	59000	325000	60375.00	47
Equipment	Missing	0	.	.	.	.	.	.	185
Equipment	Yes	10	0	0	3250	10000	20000	5600.00	33
Equipment	No	8	0	0	0	0	2500	312.50	56
Permits	Missing	0	.	.	.	.	.	.	168
Permits	Yes	29	0	4000	5000	9000	100000	13448.28	48
Permits	No	11	0	0	3500	6000	60000	7727.27	36
Shares	Missing	0	.	.	.	.	.	.	155
Shares	Yes	33	0	1250	8200	50000	400000	59816.67	70
Shares	No	4	0	0	0	11000	22000	5500.00	30

Table 12: The number of respondents who indicated how difficult or easy maintaining skilled crew and hiring skilled replacement crew was before and after IFQ implementation.

Please check the box on the scale below that best indicates your experience maintaining and hiring crew PRE- and POST- IFQ IMPLEMENTATION	Very Difficult		Difficult		Neutral		Easy		Very Easy		No Opinion		All	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Maintain Skilled Crew: Pre-IFQ	15	*5.75*	31	*11.88*	72	*27.59*	59	*22.61*	19	*7.28*	65	*24.90*	261	*100.00*
Maintain Skilled Crew: Post-IFQ	36	*14.06*	42	*16.41*	54	*21.09*	46	*17.97*	17	*6.64*	61	*23.83*	256	*100.00*
Hiring Skilled Replacement Crew: Pre-IFQ	19	*7.36*	35	*13.57*	68	*26.36*	56	*21.71*	14	*5.43*	66	*25.58*	258	*100.00*
Hiring Skilled Replacement Crew: Post-IFQ	40	*15.75*	39	*15.35*	61	*24.02*	33	*12.99*	18	*7.09*	63	*24.80*	254	*100.00*

Table 13: The number of respondents who indicated they generally hired a captain to fish some/all of their annual GT-IFQ allocation.

Have you generally hired a captain to fish some/all of your annual GT-IFQ allocation?	N	%
Yes	68	*27.20*
No	182	*72.80*
All	250	*100.00*

Table 14: The number of responses indicating a change in how the captain was generally paid before and after G-T IFQ implementation.

If you answered yes to hiring a captain to fish some/all of your annual allocation, how was the captain generally paid?	Share of total revenues without any deductions		Share of total revenues after deductions		Flat rate per day, trip, or season		Other		All	
	#	%	#	%	#	%	#	%	#	%
Before GT-IFQ	9	*14.52*	51	*82.26*	0	*0.00*	2	*3.23*	62	*100.00*
After GT-IFQ	4	*6.45*	54	*87.10*	2	*3.23*	2	*3.23*	62	*100.00*

Table 15: The number of responses indicating a change in the expenses deducted from total revenues (by expense category) before paying the captain before and after G-T IFQ implementation.

If you deduct expenses from total revenues before paying the captain, which of the following expenses have you normally deducted?	Before GT-IFQ	After GT-IFQ
IFQ allocation	5	47
Fuel expenses	41	42
Bait expenses	39	41
Grocery expenses	45	45
Payments to crew	20	20
Other expenses	17	22

Table 16: The number of respondents who indicated they generally employed a crew when fishing their annual G-T IFQ allocation.

Have you generally employed crew when fishing your annual GT-IFQ allocation?	N	%
Yes	145	*58.70*
No	102	*41.30*
All	247	*100.00*

Table 17: The number of responses indicating a change in how the crew was generally paid before and after G-T IFQ implementation.

If you answered yes to employing crew, how were crew generally paid?	Share of total revenues without any deductions		Share of total revenues after deductions		Flat rate per day, trip, or season		Other		All	
	#	%	#	%	#	%	#	%	#	%
Before GT-IFQ	10	*7.63*	108	*82.44*	10	*7.63*	3	*2.29*	131	*100.00*
After GT-IFQ	6	*4.29*	118	*84.29*	14	*10.00*	2	*1.43*	140	*100.00*

Table 18: The number of responses indicating a change in the expenses deducted from total revenues (by expense category) before paying the captain before and after G-T IFQ implementation.

If you deduct expenses from total revenues before paying crew, which of the following expenses have you normally deducted?	Before GT-IFQ	After GT-IFQ
IFQ allocation	14	92
Fuel expenses	104	107
Bait expenses	103	105
Grocery expenses	104	106
Payment to a captain	0	0
Other expenses	33	32

Table 19: The number of responses indicating the distribution of payments to the vessel owner, captain, and crew, before and after implementation of the G-T IFQ Program.

Distribution of Payments	N	Minimum	25th Pctl	Median	75th Pctl	Maximum	Mean	N Miss
Pre-IFQ Vessel Owner %	193	0.0	40.0	50.0	65.0	100.0	54.4	99
Post-IFQ Vessel Owner %	188	0.0	40.0	50.0	70.0	100.0	54.8	104
Pre-IFQ Captain %	148	0.0	25.0	30.0	40.0	100.0	34.5	144
Post-IFQ Captain %	143	0.0	25.0	30.0	40.0	100.0	34.3	149
Pre-IFQ Crew %	162	0.0	20.0	25.0	35.0	100.0	29.5	130
Post-IFQ Crew %	155	0.0	20.0	25.0	35.0	100.0	28.6	137

Table 20: The number of responses indicating the respondents' primary business plan with respect to their activities in the GT-IFQ Program over the next five years.

I plan to sell (or give away) my shares TO others.	I plan to sell (or give away) my allocation TO others.	I plan to keep my activities at approximately the same level.	I plan to obtain (e.g., buy) shares FROM others.	I plan to obtain (e.g., lease) allocation FROM others.	Other
28	27	105	70	86	54

Table 21: The number of responses, minimum, 25th percentile, median, 75th percentile, maximum, and mean dollar amount considered a fair allocation price, and the number of missing responses, by G-T IFQ category species.

Allocation Price Opinion	N	Minimum	25th Pctl	Median	75th Pctl	Maximum	Mean	N Miss
Deep-Water Grouper GT-IFQ category allocation price per lb $	113	0.00	1.00	1.10	2.00	15.00	1.75	179
Gag/Gag-Multi GT-IFQ category allocation price per lb $	137	0.00	1.00	2.00	3.00	100.00	3.89	155
Red Grouper GT-IFQ category allocation price per lb $	136	0.00	0.50	1.00	1.00	100.00	2.34	156
Shallow-Water Grouper GT-IFQ category allocation price per lb $	120	0.00	0.50	1.00	1.50	100.00	2.37	172
Tilefish GT-IFQ category allocation price per lb $	95	0.00	0.50	0.75	1.00	14.00	1.37	197

Table 22: The number of responses, minimum, 25th percentile, median, 75th percentile, maximum, and mean dollar amount considered a fair share price, and the number of missing responses, by G-T IFQ category species.

Share Price Opinion	N	Minimum	25th Pctl	Median	75th Pctl	Maximum	Mean	N Miss
Deep-Water Grouper GT-IFQ category share price per lb $	94	0.00	2.00	10.00	12.00	30.00	8.27	198
Gag/Gag-Multi GT-IFQ category share price per lb $	124	0.00	3.63	12.00	25.00	100.00	15.50	168
Red Grouper GT-IFQ category share price per lb $	117	0.00	1.50	7.00	13.00	100.00	8.48	175
Shallow-Water Grouper GT-IFQ category share price per lb $	103	0.00	1.00	7.00	10.00	100.00	8.05	189
Tilefish GT-IFQ category share price per lb $	78	0.00	1.00	5.00	10.00	20.00	5.83	214

Table 23: The number of respondents that received transferred allocation FROM another IFQ account.

Have you received transferred allocation FROM another IFQ account?	N	%
Yes	164	*65.34*
No	87	*34.66*
All	251	*100.00*

Table 24: The number of respondents who indicated, by importance, reasons they received (e.g., leased, gifted) transferred GT-IFQ allocation FROM another IFQ account.

If you received (e.g., leased, gifted) transferred GT-IFQ allocation FROM another IFQ account, how important were the following reasons for doing so?	Not Important		Somewhat Important		Very Important		All	
	#	%	#	%	#	%	#	%
I did not have the financial resources at the time to purchase IFQ shares.	32	*20.51*	33	*21.15*	91	*58.33*	156	*100.00*
I only need (additional) allocation for a relatively short period of time (e.g., a single fishing year).	58	*38.16*	47	*30.92*	47	*30.92*	152	*100.00*
I want to be able to retain grouper-tilefish species which I would have otherwise discarded.	38	*24.84*	21	*13.73*	94	*61.44*	153	*100.00*
Over the long run, I believe that buying allocation on an annual basis will be less expensive than purchasing an equivalent amount of shares.	59	*40.41*	42	*28.77*	45	*30.82*	146	*100.00*
Purchasing annual allocation provides greater flexibility than owning IFQ shares.	75	*50.68*	44	*29.73*	29	*19.59*	148	*100.00*
I consider the buying of additional IFQ shares as too risky due to uncertainty in: future ex-vessel prices	56	*37.84*	37	*25.00*	55	*37.16*	148	*100.00*
I consider the buying of additional IFQ shares as too risky due to uncertainty in: future commercial quotas due to changes in stock assessments or modifications to the commercial/recreational allocation	21	*13.91*	32	*21.19*	98	*64.90*	151	*100.00*
I consider the buying of additional IFQ shares as too risky due to uncertainty in: future harvesting costs	41	*26.97*	36	*23.68*	75	*49.34*	152	*100.00*
I consider the buying of additional IFQ shares as too risky due to uncertainty in: the duration of the GT-IFQ Program	23	*14.94*	27	*17.53*	104	*67.53*	154	*100.00*

I consider the buying of additional IFQ shares as too risky due to uncertainty in: other (please specify)	14	*38.89*	3	*8.33*	19	*52.78*	36	*100.00*
I bought allocation to sell or give to other fishermen.	79	*66.39*	20	*16.81*	20	*16.81*	119	*100.00*
Other	9	*45.00*	1	*5.00*	10	*50.00*	20	*100.00*

Respondents who received allocation were asked to describe the arrangement with the IFQ account seller. There were 113 respondents who indicated they received allocation with no arrangements/restrictions being placed on the allocation received from the IFQ account seller. There were 48 respondents who indicated they received allocation with an arrangement that they sell their catch to a specified dealer. There were 15 respondents who indicated they received allocation with other arrangements.

Table 25: The number of respondents that transferred allocation TO another IFQ account.

Have you transferred allocation TO another IFQ account?	N	%
Yes	138	*56.79*
No	105	*43.21*
All	243	*100.00*

Table 26: The number of respondents who indicated, by importance, reasons they transferred (e.g., leased, gifted) transferred GT-IFQ allocation TO another IFQ account.

If you transferred (e.g., leased, gifted) GT-IFQ allocation TO another IFQ Account, how important were the following reasons for doing so?	Not Important		Somewhat Important		Very Important		All	
	#	%	#	%	#	%	#	%
I received a higher return from TRANSFERRING allocation than from fishing it.	72	*60.50*	21	*17.65*	26	*21.85*	119	*100.00*
Reduced financial uncertainty.	50	*43.10*	30	*25.86*	36	*31.03*	116	*100.00*
Illness or health issues prevented me from fishing.	79	*67.52*	11	*9.40*	27	*23.08*	117	*100.00*
Vessel repairs prevented me from fishing.	67	*58.26*	18	*15.65*	30	*26.09*	115	*100.00*
My allocation from shares is too small to be worth harvesting.	74	*63.25*	13	*11.11*	30	*25.64*	117	*100.00*
The vessel fishing capacity availability that I have is insufficient to allow for the harvest of my allocation.	95	*85.59*	11	*9.91*	5	*4.50*	111	*100.00*
The amount of labor (captain and crew) that I have is insufficient to allow for the harvest of my allocation.	84	*75.00*	14	*12.50*	14	*12.50*	112	*100.00*
I TRANSFERRED allocation as barter for red snapper or other species IFQ	51	*44.35*	26	*22.61*	38	*33.04*	115	*100.00*

allocation/shares.								
I no longer have a Gulf of Mexico reef fish permit.	93	*87.74*	3	*2.83*	10	*9.43*	106	*100.00*
I transferred allocation to my other IFQ account(s).	53	*50.96*	11	*10.58*	40	*38.46*	104	*100.00*
Other	16	*72.73*	1	*4.55*	5	*22.73*	22	*100.00*

Respondents who transferred allocation were asked to describe the arrangement with the IFQ account receiving the allocation. There were 106 respondents who indicated they transferred allocation with no arrangements/restrictions being placed on the transferred allocation. There were 19 respondents who indicated they transferred allocation with an arrangement that that the IFQ account to which the transfer was made would deliver the catch to a specified dealer. There were 14 respondents who indicated they transferred allocation with other arrangements.

Table 27: The number of respondents that purchased G-T IFQ shares.

Have you purchased GT-IFQ shares?	N	%
Yes	93	*38.75*
No	147	*61.25*
All	240	*100.00*

Table 28: The number of respondents who indicated, by importance, reasons they purchased GT-IFQ shares.

If you purchased GT-IFQ shares, how important were the following reasons for doing so?	Not Important		Somewhat Important		Very Important		All	
	#	%	#	%	#	%	#	%
The asking price for the purchased shares was reasonable compared to the financial return I anticipated from fishing the additional shares.	10	*10.75*	27	*29.03*	56	*60.22*	93	*100.00*
The asking price for the purchased shares was reasonable compared to what I anticipate I will be able to sell the shares.	32	*34.78*	29	*31.52*	31	*33.70*	92	*100.00*
The asking price for the purchased shares was reasonable relative to the return I anticipated from selling the related annual allocation.	34	*37.36*	25	*27.47*	32	*35.16*	91	*100.00*
I believed that the additional shares would allow me to fish at a more efficient level.	9	*9.68*	10	*10.75*	74	*79.57*	93	*100.00*

I needed additional shares because I wanted to retain the grouper-tilefish I land as bycatch.	37	*39.36*	21	*22.34*	36	*38.30*	94	*100.00*
I anticipated that Total Allowable Catch (TAC) will increase after the next stock assessment	27	*29.67*	29	*31.87*	35	*38.46*	91	*100.00*
Other	9	*50.00*	3	*16.67*	6	*33.33*	18	*100.00*

Table 29: The number of respondents that sold G-T IFQ shares.

Have you sold GT-IFQ shares?	N	%
Yes	64	*26.34*
No	179	*73.66*
All	243	*100.00*

Table 30: The number of respondents who indicated, by importance, reasons they sold GT-IFQ shares.

If you sold GT-IFQ shares, how important were the following reasons for doing so?	Not Important		Somewhat Important		Very Important		All	
	#	%	#	%	#	%	#	%
The selling price was high relative to the expected financial returns I anticipated from fishing the shares.	23	*42.59*	14	*25.93*	17	*31.48*	54	*100.00*
The selling price was higher than what I anticipated receiving for the shares in the future.	29	*55.77*	16	*30.77*	7	*13.46*	52	*100.00*

I had more shares than necessary for an efficient level of production.	35	*68.63*	9	*17.65*	7	*13.73*	51	*100.00*
I anticipated that the value of my shares would decrease after the next stock assessment.	36	*69.23*	7	*13.46*	9	*17.31*	52	*100.00*
I felt uncertain about the duration of the GT-IFQ Program.	28	*54.90*	9	*17.65*	14	*27.45*	51	*100.00*
I wanted to leave the fishery.	36	*70.59*	5	*9.80*	10	*19.61*	51	*100.00*
I TRANSFERRED shares as barter for red snapper or other species IFQ allocation/shares.	27	*51.92*	5	*9.62*	20	*38.46*	52	*100.00*
Other	6	*42.86*	.	.	8	*57.14*	14	*100.00*

There were 225 respondents who indicated if they experienced any changes in their relationship with dealers since the G-T IFQ Program began. Of the 225 respondents, 154 indicated they have not experienced any significant changes while 71 indicated they have experienced significant changes in their relationship with dealers.

Table 31: The number of responses, minimum, 25th percentile, median, 75th percentile, maximum, and mean dollar amount estimated to be the current market value of respondents' vessels, gear, and equipment (excluding permits and shares) used to harvest grouper and tilefishes, and the number of missing responses.

Analysis Variable: q27 Please estimate the current market value of your vessels, gear, and equipment (excluding permits and shares) used to harvest grouper and tilefishes? $							
N	Minimum	25th Pctl	Median	75th Pctl	Maximum	Mean	N Miss
221	0.00	50000.00	100000.00	150000.00	1700000.00	157655.88	71

Table 32: The number of responses, minimum, 25th percentile, median, 75th percentile, maximum, and mean dollar amount provided by respondents that indicated either an increase or a decrease in the current market value of their vessels, gear, and equipment, and the number of missing responses.

Does this change represent an increase or a decrease in the current market value of your vessels, gear, and equipment?	# responses	Minimum	25%	Median	75%	Maximum	Mean	Missing
Unknown	2	0	0	2500	5000	5000	2500.00	198
Increase	27	3000	25000	50000	100000	700000	104000.00	11
Decrease	38	10000	20000	35000	60000	1000000	80263.16	16

Respondents were asked a set of 8 questions designed to evaluate the well-being of fishermen who harvest grouper and tilefish species, including their views on fishing as a job and way of life. If they did not fish or if they hire a captain to fish their allocation in the GT-IFQ Program, they were asked to skip the set of questions. Table 32 shows the number of respondents that indicated they "Strongly Disagree", "Disagree", were "Neutral", "Agree", "Strongly Agree", have "No Opinion", or did not provide an answer for the 8 well-being statements.

Table 33: A table showing the number of respondents that indicated they "Strongly Disagree", "Disagree", were "Neutral", "Agree", "Strongly Agree", have "No Opinion" by well-being statement.

How much do you agree or disagree with the following statements	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree		No Opinion		All	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
'Fishing is hard work' is less true now than prior to the GT-IFQ Program.	81	*40.50*	43	*21.50*	25	*12.50*	28	*14.00*	18	*9.00*	5	*2.50*	200	*100.00*
It is easier for people to get started in fishing now than prior to the IFQ Program.	122	*61.00*	33	*16.50*	25	*12.50*	10	*5.00*	6	*3.00*	4	*2.00*	200	*100.00*
I enjoy fishing more now than prior to the IFQ Program.	75	*38.07*	23	*11.68*	24	*12.18*	29	*14.72*	39	*19.80*	7	*3.55*	197	*100.00*
Fishing is just one of many jobs I could be happy doing.	75	*38.07*	42	*21.32*	28	*14.21*	34	*17.26*	12	*6.09*	6	*3.05*	197	*100.00*
Young people should be encouraged to pursue a career in commercial fishing.	76	*38.38*	17	*8.59*	35	*17.68*	34	*17.17*	29	*14.65*	7	*3.54*	198	*100.00*
My primary motivation for fishing is financial.	33	*16.67*	39	*19.70*	33	*16.67*	44	*22.22*	44	*22.22*	5	*2.53*	198	*100.00*
I would choose to be a commercial fisherman if I had my life to live over again.	31	*15.82*	15	*7.65*	27	*13.78*	55	*28.06*	61	*31.12*	7	*3.57*	196	*100.00*
Overall, IFQ programs have made commercial fishing a better industry to be a part of.	81	*40.91*	16	*8.08*	15	*7.58*	23	*11.62*	59	*29.80*	4	*2.02*	198	*100.00*

Of the 247 respondents that indicated their gender, there were 237 responses from males and 10 from females. There were 245 respondents that indicated their age by providing their year of birth. The youngest respondent was 26 years old and the oldest respondent was 88. The 25th percentile, median, 75th percentile, and mean age were 49, 56, 63, and 56, respectively. Table 34 shows the age groups living in respondents' households by providing the age groups in four categories (18 years old, 18 to 35 years old, 36 to 60 years old, and over 60 years old). The minimum, 25th percentile, median, 75th percentile, maximum, mean, and number of respondents who did not answer the question by age group are also shown in the table.

Table 34: The number of respondents who indicated the age groups living in their household, the minimum, 25th percentile, median, 75th percentile, maximum, and mean of people living in

respondents' households who are under 18 years old, 18 to 35 years old, 36 to 60 years old, and over 60 years old by age group.

How many people in the following age groups live in your household?	N	Minimum	25th Pctl	Median	75th Pctl	Maximum	Mean	N Miss
Under 18	94	0.0	0.0	1.0	2.0	4.0	1.2	198
18 to 35	84	0.0	0.0	1.0	2.0	4.0	1.1	208
36 to 60	178	0.0	1.0	2.0	2.0	3.0	1.5	114
Over 60	86	0.0	1.0	1.0	2.0	2.0	1.1	206

There were 240 respondents who indicated if they are of Hispanic, Latino or Spanish origin. Of the 240, 10 indicated they were and 230 indicated they were not of Hispanic, Latino or Spanish origin. Table 34 shows the number of respondents who indicated their race, by races indicated, and the number of respondents who did not indicate their race.

Table 35: The number of respondents that indicated their race, by races indicated.

American Indian or Alaska Native	Asian	Black or African American	Native Hawaiian or Other Pacific Islander	White	Some other race
4	2	0	0	229	10

Table 36: The number of respondents that indicated their highest level of education, by category.

What is the highest level of education that you have attained?	N	%
Not a high school graduate	29	*11.79*
High school graduate or Certificate of High School Equivalency	63	*25.61*
Some college or post-secondary training, but no degree	67	*27.24*
Associate or vocational degree	23	*9.35*
Bachelor degree	51	*20.73*
Advanced degree	13	*5.28*
All	246	*100.00*

Table 37: The number of respondents that indicated their 2013 household income (before taxes), by income range.

What was your household income in 2013 (before taxes)?	N	%
Under $15,000	15	*6.47*
$15,000 to $24,999	11	*4.74*
$25,000 to $34,999	16	*6.90*
$35,000 to $49,999	25	*10.78*
$50,000 to $74,999	42	*18.10*
$75,000 to $99,999	36	*15.52*
$100,000 and over	87	*37.50*
All	232	*100.00*

Table 38: The number of respondents that indicated their level of satisfaction with the IFQ Online System for managing share and allocation and completing landing transactions, and the number with no opinion.

How satisfied are you with the IFQ Online System for managing share and allocation and completing landing transactions?	N	%
Highly Unsatisfied	33	*13.75*
Unsatisfied	13	*5.42*
Neutral	44	*18.33*
Satisfied	82	*34.17*
Highly Satisfied	55	*22.92*
No opinion	13	*5.42*
All	240	*100.00*

Table 39: The number of respondents that indicated their level of satisfaction with the customer service they receive when contacting NOAA Fisheries Service regarding questions about the IFQ Program, and the number with no opinion.

How satisfied are you with the customer service you receive when contacting NOAA Fisheries Service regarding questions about the IFQ Program?	N	%
Highly Unsatisfied	23	*9.58*
Unsatisfied	15	*6.25*
Neutral	46	*19.17*
Satisfied	74	*30.83*
Highly Satisfied	66	*27.50*
No opinion	16	*6.67*
All	240	*100.00*

Table 40: The number of respondents that indicated their level of satisfaction with the customer service they receive when making a landing notification via phone, and the number with no opinion.

How satisfied are you with the customer service you receive when making a landing notification via phone?	N	%
Highly Unsatisfied	18	*7.32*
Unsatisfied	14	*5.69*
Neutral	51	*20.73*
Satisfied	101	*41.06*
Highly Satisfied	33	*13.41*
No opinion	29	*11.79*
All	246	*100.00*

Table 41: The number of respondents that indicated their level of satisfaction with enforcement of the IFQ Program, and the number with no opinion.

How satisfied are you with enforcement of the IFQ Program?	N	%
Highly Unsatisfied	25	*10.16*
Unsatisfied	22	*8.94*
Neutral	68	*27.64*
Satisfied	76	*30.89*
Highly Satisfied	37	*15.04*
No opinion	18	*7.32*
All	246	*100.00*

5.0 Lessons learned/recommendations for improving future data collection projects

The multimode approach adopted for the survey resulted in approximately three times as many responses as targeted by the original in-person methodology. While in-person data would be expected to be of higher quality, it is very expensive to collect. The quality of data in the multimode approach adopted could potentially be improved significantly by including controls and error checks in the online instrument to reduce erroneous or conflicting responses to questions and to ensure skip patterns in the questionnaire are followed.