Vessel and Gear Characterization of Gulf of Mexico Shrimp Self-Reported Survey 2005-2020

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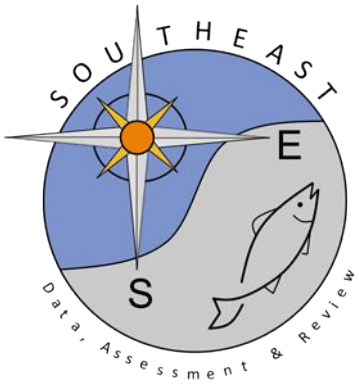

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Introduction

Vessel and gear characterization statistics are the description and quantities of gear used to catch seafood products caught by fishermen in the U.S. and sold to established (licensed) wholesale and retail seafood dealers. These data have been collected via an annual self-reported survey starting in 2005 to present for data collection associated with possession of a Gulf of Mexico Shrimp (SPGM) permit. Currently, there is a moratorium on commercial vessel permits for Gulf shrimp and applicable through October 26, 2026. The only valid commercial vessel permits for Gulf shrimp are commercial vessel moratorium permits for Gulf shrimp. In accordance with the procedures specified in the Fishery Management Plan for the Shrimp Fishery of the Gulf of Mexico (Gulf Shrimp FMP), all commercial vessel moratorium permits for Gulf shrimp have been issued. No additional permits will be issued. Vessels that want to fish and sell Gulf of Mexico Shrimp caught in the Gulf of Mexico federal waters must have this permit on board 50 CFR 622.50(a). Renewal of a commercial vessel moratorium permit for Gulf shrimp is contingent upon compliance with the recordkeeping and reporting requirements for Gulf shrimp specified in § 622.51(a)(3).

> (3) ***Vessel and Gear Characterization Form.*** All owners or operators of vessels applying for or renewing a commercial vessel moratorium permit for Gulf shrimp must complete an annual Gulf Shrimp Vessel and Gear Characterization Form. Compliance with this reporting requirement is required for permit issuance and renewal.

Annually, these data are collected by NMFS Galveston Office by mailing the Vessel and Gear Characterization survey to each valid and renewable SPGM permit holder to collect the previous year's gear used to catch all commercial shrimp landed in Gulf of Mexico. The information collected by the vessel and gear characterization survey is used by NMFS economists, social scientists, and biologists to help evaluate the performance of existing regulations (e.g., bycatch reduction devices (BRDs), turtle exclusion devices (TEDs), time or area closures, etc.), and the impacts that changes to those regulations may have on individual fishermen, the shrimp fishing industry as a whole, and fishing communities. In addition, the vessel and gear characterization data are further linked to various biological, social, and economic data collected by other means.

In addition to the vessel and gear characterization, basic information on the gear used to catch the shrimp, the total commercial annual landings of shrimp are collected in a separate self-reported survey mailed to the same respondents. The Annual Landings Survey is discussed in a separate working paper.

> (4) ***Landings report.*** The owner or operator of a vessel for which a Federal commercial vessel permit for Gulf shrimp has been issued must annually report the permitted vessel's total annual landings of shrimp and value, by species, on a form provided by the SRD. Compliance with this reporting requirement is required for permit renewal.

Methods

These self-reported vessel and gear characterizations for Gulf of Mexico Shrimp, from now referred to as Shrimp gear, were compiled and accessed from an Oracle database housed at the Southeast Fisheries Science Center (SEFSC) in Miami, Florida. A materialized view in the

database provides standardized and aggregated effort and gear data (hereafter referred to as Shrimp gear). This is the first SEDAR to examine data from the self-reported shrimp effort and gear survey.

In April of each year, NMFS Galveston Office mails the Vessel and Gear Characterization survey to the full census of valid and renewable SPGM permits: a list provided to NMFS by the Southeast Regional Permit Office (SERO). Each permit holder is required to return the completed survey prior to the expiration of the permit. The survey is reviewed under OMB Control No. 0648-0542.

The Vessel and Gear Characterization Survey collects basic information on the types of gear used, the area where the fishing occurred and the total days at sea and total number trips made to catch commercial shrimp in Gulf of Mexico from the previous year. The questions contained on the vessel and gear survey form are needed to collect data as required by regulations implementing Amendment 13. All but Question 1 on the form are focused on activity in the past year. Questions 1-4 ask for year of vessel purchase, by whom the vessel was operated in the past year, number of days at sea and trips taken in the past year and in what areas and fisheries the vessel was operated. Questions 5-11 pertain to the most frequent type of gear used. Questions 12-13 pertain to the most frequently used Bycatch Reduction Device (BRD). Questions 14-26 pertain to the most frequently used Turtle Excluder Device (TED). Question 27 asks for a list of all electronic equipment used on the vessel.

These annually collected data are required to assess the fishery, and to aid in the informed management decision-making process. These data allow economists to estimate vessel profitability and aggregate economic impacts associated with the vessel and local shrimp fishing industry. Additionally, economic theory suggests that organizational structure can impact who makes decisions within the fishing business, how those decisions are made, and what the goals or objectives of the fishing business might be which in turn will affect the vessel's productivity and economic performance. These data provide information about the average length of trips and how many days of fishing occurred during a calendar year. This information helps to determine which fishermen are full time participants, who are part-time, the level of dependency that each has on this fishery, and the potential impacts that federal regulations may have on them.

The questions contained in this form will also collect information which will help to assess the relative performance of different BRDs with respect to bycatch reduction and shrimp loss, and thus the socioeconomic and environmental impacts of potential changes in BRD regulations on individual fishing enterprises, fishing communities, and the environment. In addition, information about the types of TEDs in use will help to assess the socioeconomic impacts of federally mandated TED regulations on individual fishing enterprises and fishing communities, especially considering recent changes to the TED regulations. Information on the relative performance of alternative TEDs and BRDs will be useful to both managers and fishermen.

Stock Boundary

Commercial landings for Gulf of Mexico Shrimp were compiled from Texas through West Florida (Figure 1). This boundary follows the Gulf of Mexico Fisheries Management Council (GMFMC) boundary which is a line from Riley's Hump, the Tortugas and US 1, where the North of US1 is assigned to the GMFMC and South of US 1 is considered outside of the GMFMC region and is assigned to the South Atlantic FMC region.

Gear Groups

Gear characteristics for the primary gear type (Table 2), main net (Table 3) and try net type, length of head rope or width of frame (mouth of net), and net mesh type and size are collected.

Bycatch Reduction Device characteristics and type used are provided in Table 4. Characterization of measurement and placement of specific BRD types are also collected.

Turtle Excluder Device characteristics and type used are provided in Table 5. Further measurement, opening size and placement of specific TED types are also collected.

Electronic equipment (either in wheelhouse or mounted on the gear) on-board vessel are collected. A summary is provided in Table 6. Types of equipment that may not be presently used in the Gulf of Mexico shrimp fishery, but are used in other fisheries for which this type of information is being collected.

Annual commercial landings of shrimp for these data are collected in a separate self-reported survey and discussed in a separate working paper.

Data Compilation

The Southeast Fisheries Science Center (SEFSC) maintains a view in ORACLE of all data based on best practices. All data housed within ORACLE are self-reported landings from 2005-2020.

Results

Total self-reported shrimp effort of commercial Shrimp landed each year (2005 – 2020) are provided in Table 1. Table 1 shows the sum of days at sea and the number of trips shrimping; the sum of days at sea for non-shrimping activity (some other fishery or industry); and the sum of sea days specific to activity as a Vessel of Opportunity (VOO) in the Deepwater Horizon (DWH) British Petroleum (BP) Oil Spill cleanup.

Summarization of the self-reported most frequently used Gear and Net Types each year (2005 – 2020) are provided in Tables 2 and 3 respectively. Summarization of self-reported BRD and TED types each year (2005 – 2020) are provided in Tables 4 and 5 respectively. Electronic equipment self-reported to be onboard federally permitted commercial vessels each year

(2005 – 2020) is summarized in Table 6.

The data collected from these self-reported Vessel and Gear Characterization survey provided here remain the same with the exception of certain years which have been impacted by changes to the data compilation methodology detailed below.

Changes made to the Vessel and Gear Characterization Survey:

- The SPGM permit came into effect in 2006. Prior to the shrimp moratorium, vessels were permitted to shrimp in the Gulf of Mexico exclusive economic zone (EEZ) were issued an Open Access permit. Southeast Regional Office (SERO) started the Vessel and Gear Characterization survey collection in 2005. After the implantation of the shrimp moratorium, NFMS started collecting the annual gear survey in 2008. Therefore, NMFS collected the years of 2006 and 2007 at the same time during the year of 2008. Thereafter, each year's mailing of the survey was for the previous year's effort and gear.
- For the years 2005, 2006, 2007, 2008, 2009 and 2010, the annual gear survey collected both shrimping and non-shrimping effort. Starting in 2011, the non-shrimping effort variables were no longer collected.
- Starting in 2006 to present, the annual gear survey began asking for unique electronics (either in wheelhouse or mounted on the gear) on-board vessel.
- For the years 2009 and 2010, the annual gear survey asked for trawl door type material and construction.
- For the year of 2010, the annual gear survey asked for days at sea in relation to the permitted vessel participating in BP Oil Spill related activities (clean-up, monitoring, etc).
- Starting in the year 2011 to present, the annual gear survey began asking for the total number of nets most frequently used, not including the try net.
- Starting in the year 2020 to present, the annual gear survey began asking for the specific type of Plotter used on the vessel if other than P-Sea Windplot.

Tables

Table 1. Summarization of self-reported shrimp effort each year (2005 – 2020) in the Gulf of Mexico EEZ including days at sea and number of trips shrimping; days at sea for non-shrimping activity (some other fishery or industry); and sea days specific to activity as a Vessel of Opportunity in BP Oil Spill cleanup.

	Number of vessels reported shrimping at least once in federal waters	number of vessels reported shrimping	total days at sea (inshore, nearshore and offshore)	total trips (inshore, nearshore and offshore)	total days at sea (non-shrimp)	total days at sea as VOO for DWH
Year	**Sum of FISHED_EEZ_ Value**	**Sum of Is_Fishing_Value**	**Sum of NO_DAYS_AT_SEA**	**Sum of NO_TRIPS**	**Sum of NO_DAYS_AT_SEA _NON_SHRIMP**	**Sum of BP_OIL_SPILL_NO _DAYS_AT_SEA**
2005	1565	1628	244906	27718	15119	0
2006	1068	1113	177589	17644	12814	0
2007	1072	1136	175342	18657	12999	0
2008	974	1029	143922	17478	14636	0
2009	1068	1175	188327	22747	16014	0
2010	1000	1100	139398	16742	11150	36141
2011	961	1047	161335	16626	0	0
2012	952	1041	166879	17438	0	0
2013	925	1011	163126	17651	0	0
2014	967	1061	176424	17775	0	0
2015	1012	1098	183804	18822	0	0
2016	1015	1094	186229	18551	0	0
2017	1009	1105	184837	18620	0	0
2018	963	1042	172754	18458	0	0
2019	911	987	163231	15816	0	0
2020	887	972	153575	15638	0	0

Table 2. Summarization of self-reported gear types used each year (2005 – 2020) to catch commercial shrimp in the Gulf of Mexico EEZ.

ANY_GEAR_CODES	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
:Beam Trawl:	1											1				
:Butterfly Net:	12	3	1	9	12	7	5	3	4	6	5	5	7	3	3	1
:Butterfly Net:Roller Frame:															1	
:Butterfly Net:Skimmer Net:							1		1							
:Cast Net:	2	1	1	2	1	1		1	1	2	2	2	2		2	2
:Cast Net:Roller Frame:						1										
:Dip:	1															
:Double Rigger:	1															
:Not Applicable:	39	106	103	117	176	196	146	146	160	152	203	178	177	184	210	166
:Not Applicable:Unknown:		1														
:Other:		1	1													
:Other:Scallop Dredge:																1
:Roller Frame:	62	36	40	36	44	36	34	34	35	36	36	37	38	39	29	34
:Scallop Dredge:	10	2	1	3	6	4	5	3	7						2	
:Shrimp Net:	1															
:Skimmer Net:	47	35	39	48	55	54	56	57	62	44	57	52	55	53	48	47
:Trawl (aka Otter Trawl):	1600	1144	1192	1111	1194	1133	1032	1015	980	1012	1057	1062	1051	995	946	953
:Trawl (aka Otter Trawl):Butterfly Net:		6	5	7	4	3	1	1	3	3	3	2	2	2	1	
:Trawl (aka Otter Trawl):Cast Net:													1	2	1	
:Trawl (aka Otter Trawl):Roller Frame:		2	1	2	5	6	1	3	1			1	1			1
:Trawl (aka Otter Trawl):Skimmer Net:		6	6	11	10	7	6	9	7	12	7	7	8	7	13	10
:Trawl (aka Otter Trawl):Wing Net:											1	1	1	1		
:Unknown:	137	34	36	24	2	3	1	1		1					1	42
:Wing Net:	7	2	3	1		1										

Table 3. Summarization of self-reported net types used each year (2005 – 2020) to catch commercial shrimp in the Gulf of Mexico EEZ.

ANY_GEAR_NET_CODES	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
:1 Seam Flat:						1										
:2 Seam Balloon:	315	179	184	201	243	240	182	211	184	203	205	193	215	178	151	170
:2 Seam Balloon:4 Seam Balloon:		5	4	2	2	1	3	1	3	6	2	2	2	1	2	
:2 Seam Balloon:4 Seam Balloon:Add-on Bib:				1							1					
:2 Seam Balloon:4 Seam Balloon:Built-in Bib (e.g.										1						
:2 Seam Balloon:4 Seam Balloon:Flat:Built-in Bib (e.g.				1												
:2 Seam Balloon:Add-on Bib:		4	4	2	7	4	4	7	14	5	7	6	3	2	3	3
:2 Seam Balloon:Box:		1	1							1						
:2 Seam Balloon:Built-in Bib (e.g. mongoose, cobra, etc.):		3	3	3	4	2	1	4	3		2	5	3	4	4	2
:2 Seam Balloon:Flat:				1	1			1			1	2	2	2		
:2 Seam Balloon:Flat:Add-on Bib:		1	1	1	1											
:2 Seam Balloon:Flat:Built-in Bib (e.g. mongoose, cobra,					1											
:2 Seam Balloon:Skimmer:											1				1	
:2 Seam Balloon:Western Jib:		1	1	2	1		1		1	1			2		1	
:2 Seam Balloon:Western Jib:Add-on Bib:Built-in Bib (e.g. mongoose, cobra, etc.):															1	
:2 Seam Balloon:Western Jib:Built-in Bib (e.g. mongoose,		1	1	1	1		1	2	1	1			1	1	1	
:2 Seam Cone:					2											
:2 Seam Flat:	1						1							1		
:4 Seam Balloon:	500	331	351	309	304	320	292	255	274	269	268	264	252	240	232	230
:4 Seam Balloon:2 Seam Turbo:															1	
:4 Seam Balloon:Add-on Bib:		9	15	16	9	9	5	12	16	21	28	22	24	22	21	16
:4 Seam Balloon:Add-on Bib:Built-in Bib (e.g. mongoose,		1	1	1												
:4 Seam Balloon:Box:		1						1	1	1	1	1	1	1	2	1
:4 Seam Balloon:Box:Built-in Bib (e.g. mongoose, cobra,						1										
:4 Seam Balloon:Box:Flat:Add-on Bib:				1												
:4 Seam Balloon:Built-in Bib (e.g. mongoose, cobra, etc.):		16	15	6	10	10	7	12	11	5	3	9	10	5	3	1
:4 Seam Balloon:Flat:		3	1				1	2	1	2					1	
:4 Seam Balloon:Flat:Add-on Bib:													2	1	1	1
:4 Seam Balloon:Flat:Built-in Bib (e.g. mongoose, cobra,								1		1				1		
:4 Seam Balloon:Skimmer:														1		
:4 Seam Balloon:Western Jib:				1				1						2		
:4 Seam Net:	1															
:4 Seam Skimmer:		2	2	2						1	1	2	2			
:4 Seam Square Front:	1															
:Add-on Bib:	29	30	37	25	29	22	17	24	14	20	20	25	26	23	22	24
:Add-on Bib:Built-in Bib (e.g. mongoose, cobra, etc.):					1	1	2	2		1	1			1		
:Balloon:																1
:Box:	29	8	9	18	24	22	22	18	18	22	25	24	10	20	15	17
:Box:Add-on Bib:		1			2					5	1	2	4	1	5	1
:Box:Built-in Bib (e.g. mongoose, cobra, etc.):					1			1		1				1	1	1
:Box:Flat:				1				1				1	1			1
:Box:Flat:Add-on Bib:											1	1	3	2	9	7
:Box:Western Jib:												1				
:Built-in Bib (e.g. mongoose, cobra, etc.):	159	92	95	108	132	122	117	109	98	91	114	118	117	112	119	116
:Built-in Bib (e.g. mongoose, cobra, etc.):Other:Siamese:															1	
:Built-in Bib (e.g. mongoose, cobra, etc.):Skimmer:														1		
:Butterfly:						1			1	1	1	2	2	1	1	
:Cone shape nets w/tail sacks:	16															
:Cone Shape:		2	2	2	2				9	2	1	2	2	1		1
:Double Twin rigged with (2):	1															
:Easter Jib:																2
:Flat:	567	419	427	362	421	401	372	364	338	353	361	358	353	350	339	328
:Flat:Add-on Bib:		18	17	13	13	1	5	5	17	8	16	12	15	20	8	2
:Flat:Add-on Bib:Built-in Bib (e.g. mongoose, cobra, etc.):					2							1	1	1		
:Flat:Built-in Bib (e.g. mongoose, cobra, etc.):			1	3	1	4		3	1	2	4	2	4	2	3	
:Flat:Western Jib:		1			2		1	1				1	1	1	1	
:Flat:Western Jib:Built-in Bib (e.g. mongoose, cobra, etc.):					1									1		
:Frame net:	1					1										
:Home made:	1	1	1		3		1	1	1	1	1	1			1	
:Live bait net:	1				1											
:Net Sewn On Frame:		1	1	1												
:No Answer:	149	93	101	122	5	4	4	1	1	1				1	4	57
:No Answer:Skimmer:			1													
:Not Applicable:	50	113	108	122	225	247	210	192	196	162	217	196	184	183	214	185
:Nylon Mesh:		1	1													
:Other:	4				1	2		1					1	2	3	3
:Other:4 Seam Butterfly Net:															1	
:Other:Net Sewn On Frame:																1
:Other:Roller Frame:																6
:Other:Skimmer Nets:																3
:Other:Skimmer:																11
:Other:Skimmer:2 Seam Turbo:															1	
:Other:Taper For Roller Frame:															1	
:Roller Frame:															16	12
:Roller:					3		2	4	16	24	24	20	22	27	1	
:Set-Back:		1	1												1	
:Skimmer Nets:																3
:Skimmer:	2		1		6	2	1	3	15	16	23	25	27	27	20	2
:Trawl:					3			1					1			2
:Western Jib:	93	38	39	41	44	31	34	31	26	40	40	50	50	45	45	46
:Western Jib:Add-on Bib:		1	1	1												1
:Western Jib:Built-in Bib (e.g. mongoose, cobra, etc.):		1	2	1	1	3	2	1	1		1			1		

Table 4. Summarization of self-reported Bycatch Reduction Device types used each year (2005 – 2020) to catch commercial shrimp in the Gulf of Mexico EEZ.

BYCATCH_REDUCTION_DEVICES	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
:Composite Panel with Cone:																
:Composite Panel with Cone:Fisheye:																1
:Composite Panel with Square Mesh:																6
:Composite Panel with Square Mesh:Fisheye:																2
:Composite Panel:					48	70	38	12	28	35	19	46	38	29	31	34
:Composite Panel:Composite Panel with							20	17	9	9	4	7	7	4	6	5
:Composite Panel:Composite Panel with Square Mesh:							7	42	36	50	40	42	42	50	36	22
:Composite Panel:Modified Jones Davis:																1
:Expanded_Mesh:	11	5	4	5	7	2										
:Extended Funnel:	27	5	5	1	4	7	4	1	3	1	3					
:Fisheye:	990	1076	1109	1080	1065	971	900	890	878	900	962	937	954	919	874	859
:Fisheye:Composite Panel with Square Mesh:																2
:Fisheye:Composite Panel:					4	3	1	2	2				1		1	
:Fisheye:Composite Panel:Composite Panel with Cone:								2				1			1	
:Fisheye:Composite Panel:Composite Panel with Square Mesh:								3	4	2	3	5	4	4	4	1
:Fisheye:Expanded_Mesh:					2											
:Fisheye:Extended Funnel:						1	1	1		2	1					
:Fisheye:Modified Jones Davis:								1								
:Fisheye:None:		1			1	6										
:Gulf Fisheye:	542															
:Jones-Davis:	42	7	15	9	19	33	14	23	21	24	17	17	14	8	5	12
:Jones-Davis:Composite Panel:											1					
:Jones-Davis:Composite Panel:Composite Panel with Square Mesh:								1								
:Jones-Davis:Fisheye:		1		1		2	4	2	1	1	2		1		1	2
:Jones-Davis:Modified Jones Davis:									1				1			
:Jones-Davis:Modified Jones Davis:Composite Panel:Composite Panel with Cone:Composite Panel with Square Mesh:								1								
:Jones-Davis:None:						1										
:Modified Jones Davis:					8	9	13	10	6	5	5	1	2	1	2	
:Modified Jones Davis:Composite Panel:						2	14	4			15	22	16	18	18	15
:Modified Jones Davis:Composite Panel:Composite Panel with Cone:													1		1	
:Modified Jones Davis:Composite Panel:Composite Panel with Square Mesh:								5								1
:None/Unknown/NA:																99
:None:	155	218	225	226	165	153										
:NOT ANSWERED/UNKNOWN:	153	66	71	49	176	173	271	256	272	238	299	270	262	253	277	195

Table 5. Summarization of self-reported Turtle Excluder Device types used each year (2005 – 2020) to catch commercial shrimp in the Gulf of Mexico EEZ.

TED_TYPES	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
:Hooped Hard TED:	17	7	6	4	11	7	1	4	2	2	4	2	1		1	1
:No Answer:	157	218	238	238	1	1	135	129	152	117	174	159	160	157	71	138
:No Answer:Parker Soft TED:											2					
:No Answer:Single Grid Hard TED:										1			2	26	4	
:None (NA):		1														76
:None/Unknown/NA:					136	134	124	124	124	114	115	109	103	108	216	3
:None/Unknown/NA:No Answer:										5	7	8	7	5		
:None/Unknown/NA:Not Applicable:						1										
:None/Unknown/NA:Single Grid Hard TED:									1	1	5	3	2	2	2	1
:Not Applicable:	137	10	7	14	179	188								1	2	88
:Parker Soft TED:	4	4	4	1		2	1	2	2		1	2	2	2	1	2
:Parker Soft TED:Hooped Hard TED:		1		2												
:Single Grid Hard TED:	1605	1090	1128	1044	1168	1105	1019	1010	978	1023	1059	1059	1061	979	953	945
:Single Grid Hard TED:Hooped Hard TED:		22	21	23	6	4	2	1		1	1	4	2	1	3	
:Single Grid Hard TED:None/Unknown/NA:										1						
:Single Grid Hard TED:Parker Soft TED:		8	6	22	5	6	6	2	2	2	3	2	3	5	3	1
:Single Grid Hard TED:Parker Soft TED:Hooped Hard TED:		18	19	23	3	4		1		1					1	2

Table 6. Summarization of self-reported Electronic Equipment used each year (2005 – 2020) on-board commercial shrimp vessels in the Gulf of Mexico EEZ.

Electronics_Used	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sum of CELL_PHONE	0	1077	1133	1095	1238	1210	1046	1071	1049	1077	1102	1113	1080	1063	1017	1047
Sum of VHF_RADIO	0	584	621	1251	1359	1323	1163	1144	1136	1153	1211	1206	1192	1140	1085	1088
Sum of CB_RADIO	0	350	371	741	822	772	670	672	624	629	667	629	652	615	573	561
Sum of SATELLITE_PHONE	0	36	37	86	121	178	188	260	296	333	382	405	438	448	439	472
Sum of FAX	0	14	14	15	25	13	19	11	17	17	17	23	13	20	17	18
Sum of PLOTTER	0	472	494	947	1012	1051	904	891	870	872	926	933	895	859	810	709
Sum of P_SEA_WINDPLOT	0	1	1	1	0	0	1	2	1	0	0	1	1	1	4	541
Sum of COMPUTER_INCLUDING_SOFTWARE	0	339	379	816	927	936	873	893	879	914	990	967	955	922	890	847
Sum of PRINTER	0	28	33	56	74	71	64	54	53	59	60	60	45	56	49	57
Sum of HAILER	0	296	311	670	725	691	628	604	566	607	671	653	666	616	607	620
Sum of LORAN	0	487	517	1052	982	799	685	657	623	613	663	647	639	619	598	580
Sum of VESSEL_TRACKING_SYSTEM	0	155	161	355	406	446	453	441	480	525	617	667	684	654	652	634
Sum of RADAR	0	522	554	1189	1292	1273	1133	1123	1086	1108	1167	1156	1142	1085	1037	1039
Sum of GPS	0	464	494	999	1124	1121	1027	986	965	976	1045	1050	1057	1017	960	953
Sum of AUTO_PILOT	0	447	477	967	1069	1038	935	934	900	927	989	997	985	954	920	935
Sum of EPIRB	0	505	531	1061	1174	1142	1032	1025	1005	1023	1090	1077	1064	1018	969	970
Sum of ECHO_SOUNDER_PAPER	0	31	30	43	32	30	23	10	19	23	25	21	17	19	14	16
Sum of ECHO_SOUNDER_VIDEO	0	260	275	535	494	527	464	384	415	394	416	390	383	320	299	322
Sum of ECHO_SOUNDER_DIGITAL	0	118	132	230	246	260	245	246	216	267	302	276	267	268	264	253
Sum of SATELLITE_NAVIGATION_SYSTEM	0	67	69	135	147	155	157	140	133	159	182	174	163	174	171	161
Sum of ELECTRONIC_COMPASS	0	177	194	416	425	406	384	398	373	402	436	397	418	411	399	416
Sum of RADIO_DIRECTION_FINDER	0	37	34	52	63	70	63	53	57	59	81	46	42	41	46	46
Sum of WEATHER_SATELLITE_RECEIVER	0	87	88	108	131	144	139	128	128	149	176	135	146	143	136	125
Sum of WIND_METER	0	44	43	86	90	97	101	89	86	100	104	106	101	95	86	79
Sum of NET_PINGERS	0	10	11	21	15	14	13	13	8	11	19	13	13	9	13	10
Sum of TEMPERATURE_PROFILING_SYSTEM	0	19	22	39	47	40	38	38	31	52	58	47	48	36	43	43
Sum of WATER_TEMPERATURE_SENSOR	0	84	95	172	188	194	178	183	173	186	188	173	179	166	184	162
Sum of SINGLE_DIRECTION_SONAR	0	15	17	31	52	53	41	48	40	52	65	67	69	66	75	57
Sum of MULTIPLE_DIRECTION_SONAR	0	9	9	19	21	31	27	26	19	18	28	20	42	44	42	38
Sum of WATER_SALINITY_SENSOR	0	7	7	25	29	31	23	28	23	30	36	27	30	25	26	29
Sum of AIS	0	0	0	0	2	3	4	5	6	11	23	400	524	527	516	563
Sum of CELB	0	0	0	0	0	0	0	0	0	1	13	242	333	337	323	354

Figures

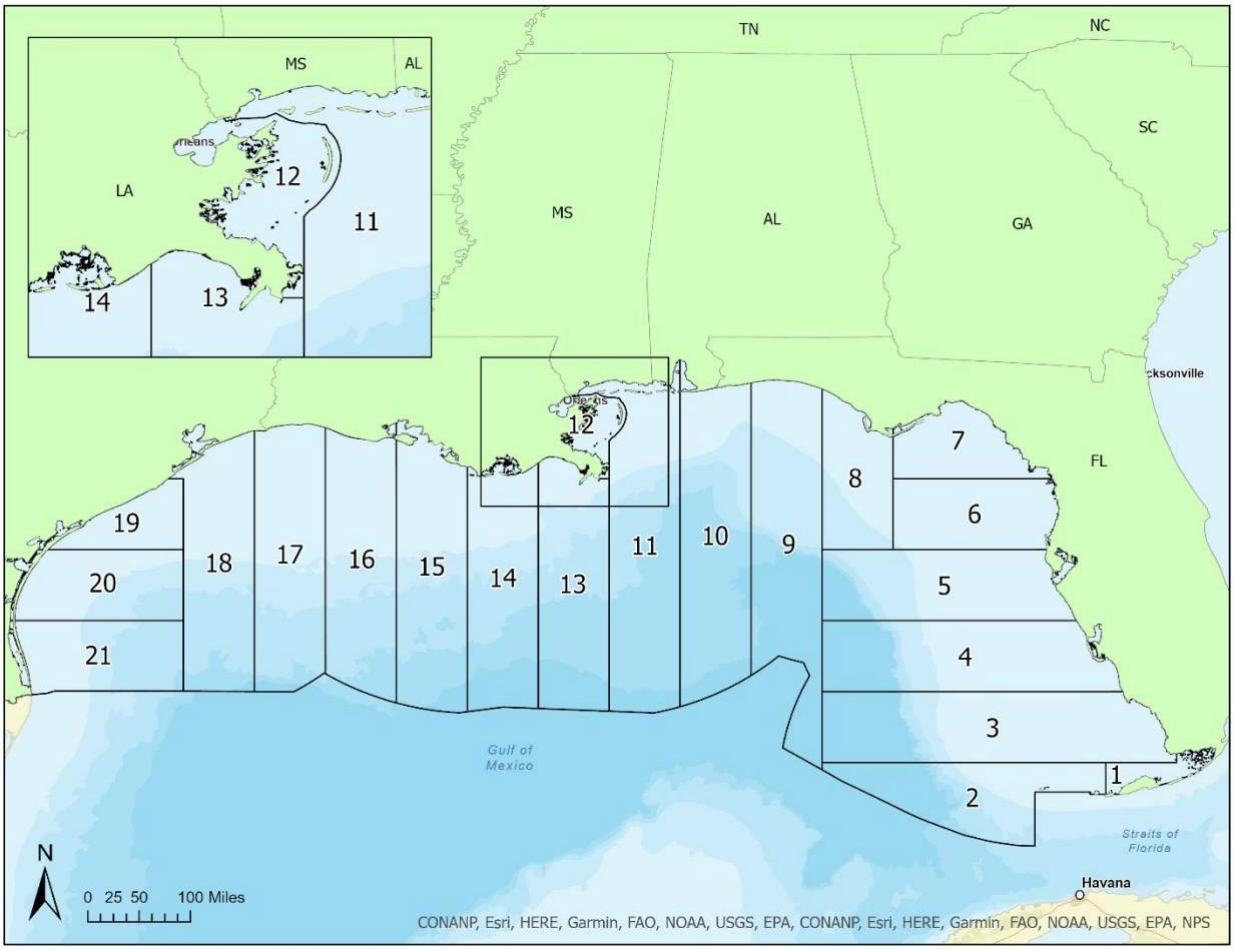


Figure 1. Gulf of Mexico commercial fishing areas

Appendix

Sample of current 2022 Vessel and Gear Characterization Survey Form including instruction page.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southeast Fisheries Science Center
4700 Avenue U
Galveston, TX 77551

OMB No. 0648-0542
Approval Expires: 3/31/2023

2022
GULF SHRIMP VESSEL & GEAR CHARACTERIZATION FORM

INSTRUCTIONS

(Incomplete or illegible forms will be returned.)

*Please Note: It is **REQUIRED** that the following form be returned in order to be eligible to renew your **FEDERAL PERMIT APPLICATION FOR VESSELS FISHING IN THE EXCLUSIVE ECONOMIC ZONE (EEZ)** to the following address: NOAA Fisheries Galveston Laboratory, Attention: Rebecca Smith, 4700 Avenue U, Galveston, TX 77551. If you have a question regarding the form, please email: Rebecca.Smith@noaa.gov.*

QUESTION 1 Enter the year that you purchased or leased the vessel, regardless of whether it was new or used at the time.

QUESTION 2 For part a, indicate whether the vessel was **most frequently** operated by the owner or someone other than the owner (a hired captain) in 2022. For part b, indicate the number of crewmembers **typically** on board during 2022, including the captain.

QUESTION 3 Answer 'yes' if the vessel was used to shrimp in Federal waters of the Gulf of Mexico even **one** time during 2022.

QUESTION 4 Indicate the **total** number of days at sea and the number of trips for this vessel in the Gulf of Mexico shrimp fishery during 2022 (including from bays, bayous, State inshore and offshore waters, or Federal waters). For example, if the vessel took 10 trips and each trip lasted 10 days, then the **total** days at sea for 2022 would be 100.

QUESTIONS 5 – 11 Indicate the characteristics for the **one** primary gear type **most frequently** used on this vessel in 2022. Also provide the characteristics of the try net used with this gear type.

QUESTIONS 12 - 13 Indicate the **one** BRD type **most frequently** used on this vessel in 2022.

QUESTIONS 14 - 26 Indicate and provide additional details for the **one** TED type **most frequently** used on this vessel in 2022.

QUESTION 27 Indicate **all** types of **ELECTRONIC** equipment that were on-board this vessel in 2022.

Through this form, NMFS is collecting information from all federally permitted shrimp vessel owners/operators on fishing vessel and gear characteristics in the Gulf of Mexico Exclusive Economic Zone (EEZ) shrimp fishery. The data collected are currently being analyzed by NMFS economists, gear specialists, and fishery biologists to improve fishery management decision-making in this fishery. This information is vital in assessing the economic, social and environmental effects of fishery management decisions and regulations on individual shrimp fishing enterprises, fishing communities, and the nation as a whole.

KNOWINGLY SUPPLYING FALSE INFORMATION IS A VIOLATION OF FEDERAL LAW PUNISHABLE BY A FINE AND/OR IMPRISONMENT.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other suggestions for reducing this burden to Rebecca Smith, NMFS, Fisheries Management Branch, 4700 Avenue U, Galveston, TX, 77551.

All data submitted will be handled as confidential material in accordance with **NOAA Administrative Order 216-100, Protection of Confidential Fishery Statistics**. Notwithstanding any other provisions of the law, no person is required to respond to, nor shall any person be subjected to a penalty for failure to comply with, a collection of information subject to the requirements of the Paperwork Reduction Act, unless that collection of information displays a currently valid OMB Control Number.

OMB No. – 0648-0542 2022 Approval Expires: 3/31/2023

GULF SHRIMP VESSEL AND GEAR CHARACTERIZATION FORM

Permit #:

Permit Holder Name: **Vessel Name:**

State Registration #: **USCG Vessel ID:**

Please provide any missing or incorrect information in the above heading.

1. What year did you purchase or lease this vessel?

   Purchase or Lease Year _____

2. a. In 2022, this vessel was **most frequently** operated by:
   (Check the appropriate box.)

   ☐ owner ☐ hired-captain
   ☐ BOTH (owner and captain) ☐ none (not shrimping)

   b. In 2022, what was the **typical** number of crew on the vessel, **including captain**?
   If not shrimping, write N/A.

   Total number of crew and captain _____

3. In 2022, did you shrimp in Federal waters (i.e. the EEZ[1]) of the Gulf of Mexico?
   (Check the appropriate box.)

   ☐ Yes ☐ No

4. In 2022, what was the **total number of days at sea and the total number of trips** this vessel took in the Gulf of Mexico shrimp fishery (**including State inshore and offshore & Federal offshore trips**)? *The total days at sea should not exceed 365 days.*

   Total Days at sea during the entire year _____

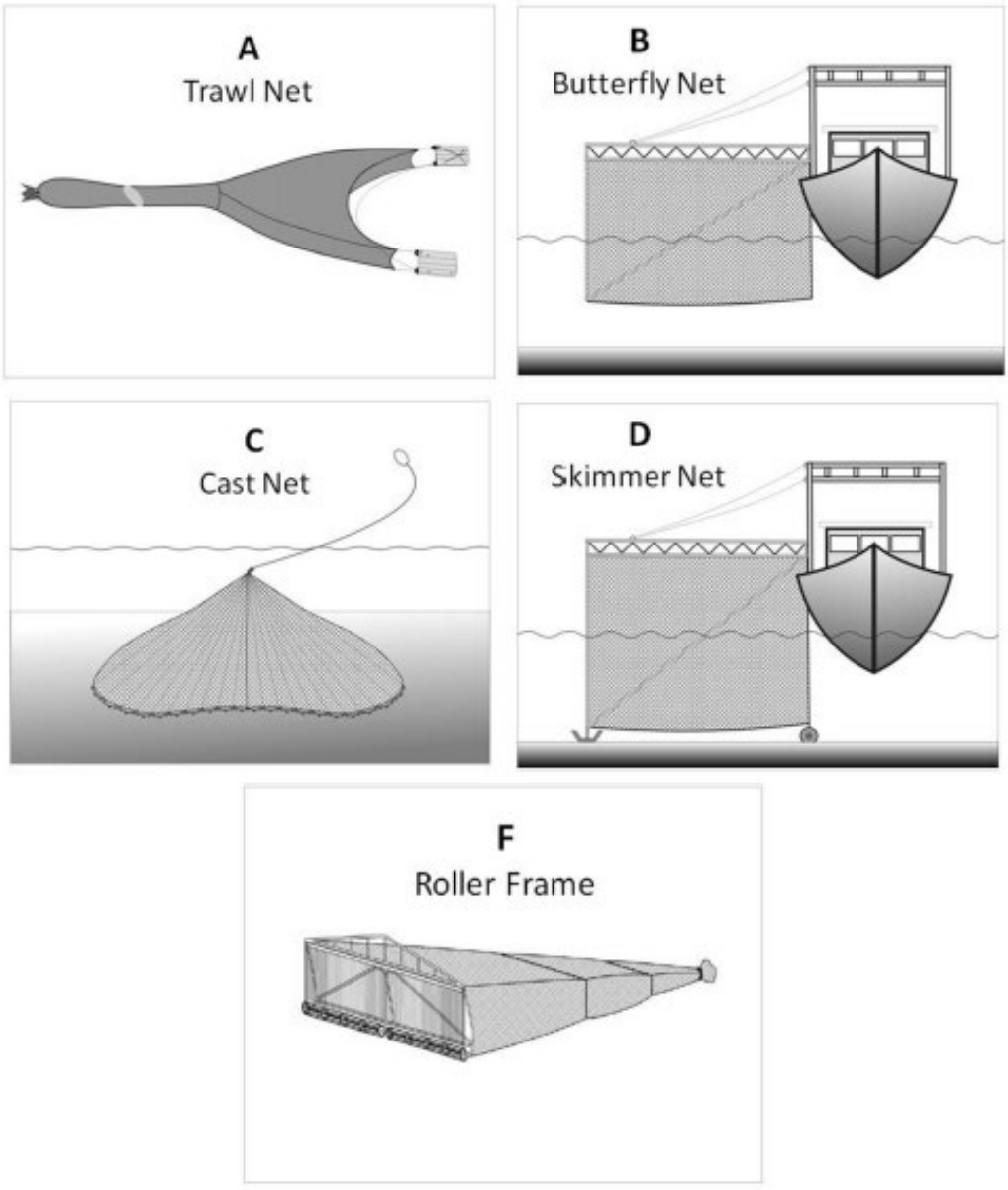
   Number of Trips taken during the entire year _____

5. What was the **most frequently** used **Gear Type** in 2022?
   Choose a code from the lists below. If other, please specify.
   (See Figure 1 on Page 3 for common gear types.)

Code	Gear Type	Code	Gear Type
☐ A	Trawl	☐ D	Skimmer Net
☐ B	Butterfly Net	☐ F	Roller Frame
☐ C	Cast Net	☐ G	Other (specify) _____

[1]The EEZ portion of the fishery is from nine (9) miles outward off of the Texas and West Florida coasts, and from three (3) miles outward off the coasts of Louisiana, Mississippi, and Alabama.

Figure 1. Common Gear Types. (Use for Question 5, use letters above picture.)



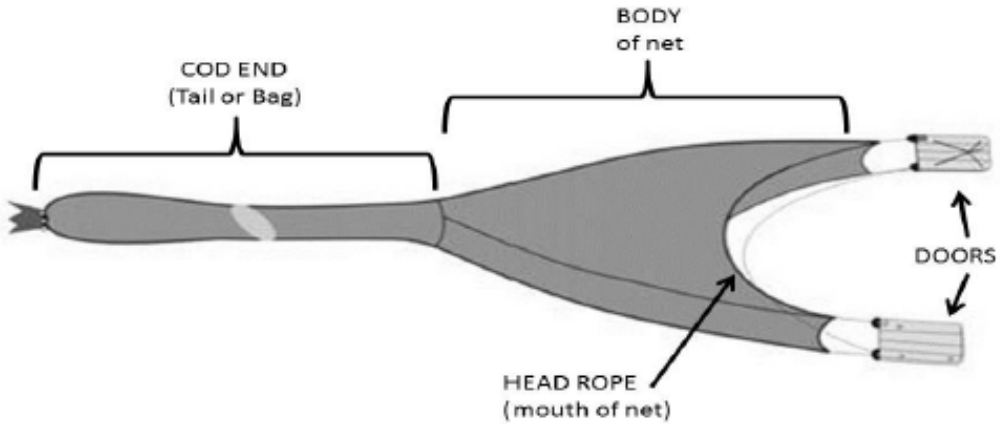
6. What was your **most frequently** used **Net Type** in 2022?
Choose a code from the lists below. If other, please specify.

Code	Net Type	Code	Net Type
☐ H	2 Seam Balloon	☐ M	Western Jib
☐ J	4 Seam Balloon	☐ N	Add-on Bib
☐ K	Box	☐ O	Built-in Bib (e.g. mongoose, cobra, etc.)
☐ L	Flat	☐ P	Other (specify)_____

7. What was the **number of nets** used at one time for your **most frequently** used gear type in 2022? **Do not include the try net in total number of nets used at one time.**

Number of Nets used at one time _____

Figure 2. Basic Trawl Diagram with parts identified. (Use for Questions 8 - 11).



8. What was the **Headrope Length or Frame Width** (in feet) for your **most frequently** used gear type in 2022? **(Note: Measurement is width of mouth of one net.)**

Headrope Length or Frame Width _____ feet

9. What was the **Headrope Length or Frame Width** (in feet) for your Try Net in 2022?
(If no Try Net was used, write "N/A" in the blank.)

Headrope Length or Frame Width of Try Net _____ feet

10. What was the **Mesh Type (net material)** for your **most frequently** used gear in 2022? **Choose a code from the lists below for each question.** If other, please specify.

Body of Net

Code	Mesh Type
☐ S	Nylon
☐ T	Spectra
☐ U	Poly
☐ V	Sapphire
☐ W	Other (specify) _____

Codend (Tail or Bag)

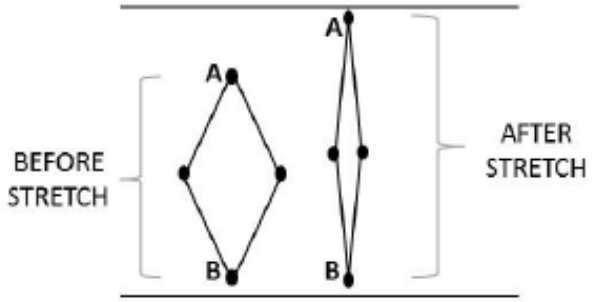
Code	Mesh Type
☐ S	Nylon
☐ T	Spectra
☐ U	Poly
☐ V	Sapphire
☐ W	Other (specify) _____

11. What was the **Mesh Size (in inches)** for your **most frequently** used gear type? (See Figure 3 for measurement illustration.)

Body of Net _____ inches

Codend (Tail or Bag) _____ inches

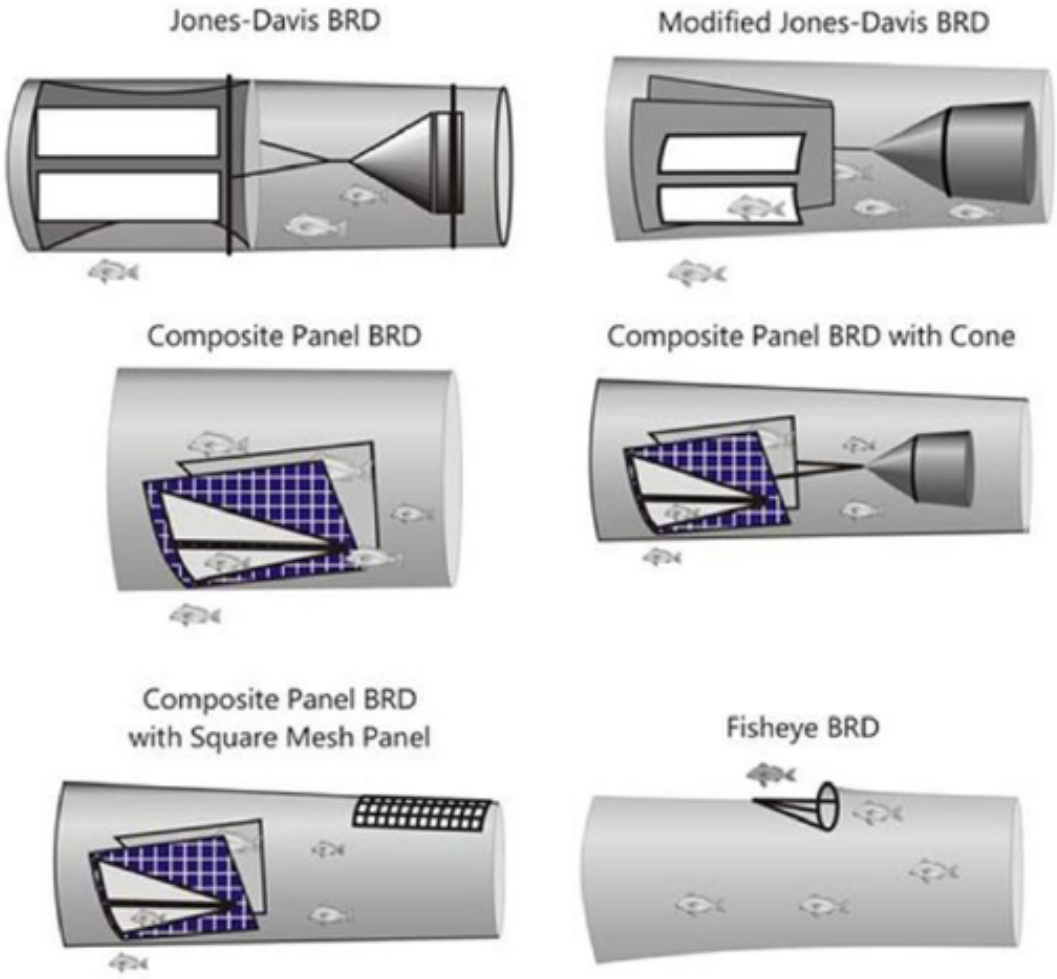
Figure 3. Illustration on how to measure Mesh Size. (Use for Question 11.)
Use the measurement of the distance between the centers of two opposite knots (points A & B) after the mesh has been stretched.



12. In 2022, what is the type of BRD (bycatch reduction device) you used **most frequently**? Check the appropriate box below. (See Figure 4.)

- ☐ Jones-Davis
- ☐ Composite Panel
- ☐ Composite Panel with Cone
- ☐ Modified Jones-Davis
- ☐ Composite Panel with Square Mesh
- ☐ **Fisheye**
- ☐ None (N/A)

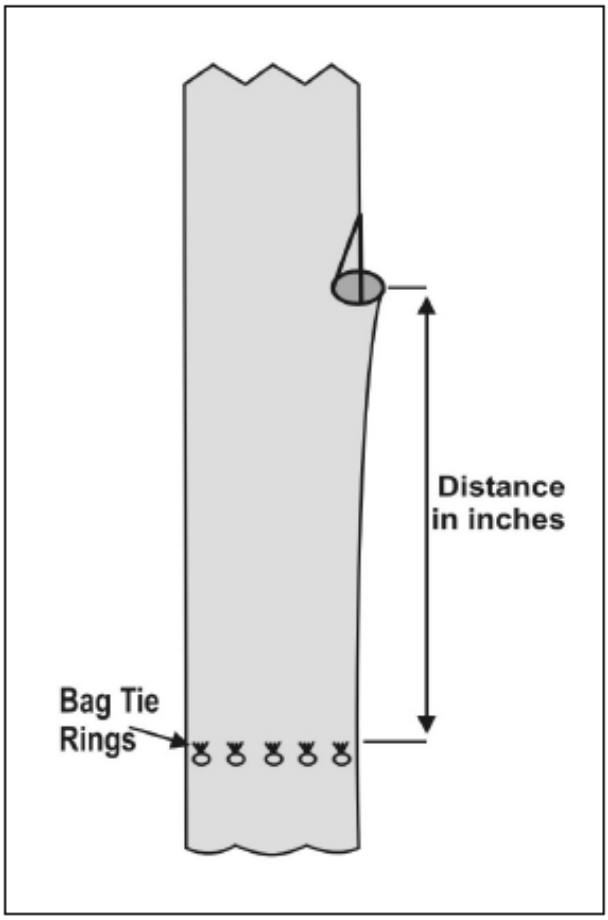
Figure 4. Common Bycatch Reduction Devices. (Use for Question 12.)



13. **If a Fisheye BRD was used**, what was the distance from the bag tie off rings to the BRD?
If you did not use a Fisheye BRD, write "N/A" in the blank.
(See Figure 5 for measurement illustration.)

Distance **in inches**: _____

Figure 5. Illustration on how to measure distance from BRD to tie off rings (Use for Question 13.)



14. In 2022, what Type of TED (turtle excluder device) did you use **most frequently**?
Please check only one code.

- ☐ Single Grid Hard TED →→→ (*Questions 15 - 19 and question 27*)
- ☐ Parker Soft TED →→→→→ (*Questions 20 - 21 and question 27*)
- ☐ Hooped Hard TED →→→→ (*Questions 22 - 26 and question 27*)
- ☐ None (N/A) →→→→→→→ (*Question 27*)

SINGLE GRID HARD TED

If you most frequently used a Single Grid Hard TED in 2022, answer questions 15 –

15. What was the **most frequently** used **Grid Style**? **Check only one code.**

- ☐ A = Bent Bar
- ☐ B = Matagorda
- ☐ C = Weedless
- ☐ D = Georgia
- ☐ E = Fixed Angle

16. What was the **Grid Size (width x height)** of your Single Grid Hard TED? The measurement is the measurement of the outside frame of the TED.

_____ inches x _____inches

17. What was the **Opening Size** of your Single Grid Hard TED?
Check the most frequently used Opening Size. If other, please specify size in inches.

- ☐ A = Double Cover (inshore & offshore)
- ☐ B = 71" (inshore & offshore)
- ☐ C = 44" (inshore only)
- ☐ D = Other size opening (please specify)_____ inches

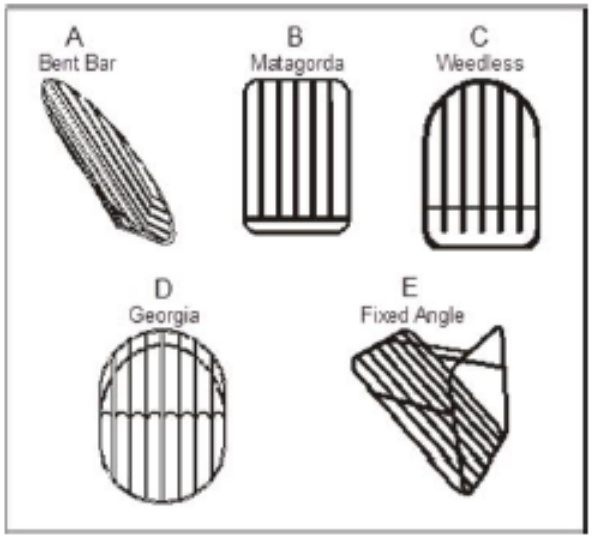
18. What was the **Opening Direction** of your Single Grid Hard TED?
Check the most frequently used direction.

- ☐ A = Top Opening
- ☐ B = Bottom Opening
- ☐ C = Both Top and Bottom Opening

19. Did you use an **Accelerator Funnel** on your Single Grid Hard TED? Check Yes or No.

- ☐ Yes
- ☐ No

Go to Question 27 (skip 20 - 26)



PARKER SOFT TED

If you most frequently used a Parker Soft TED in 2022, answer questions 20 and 21.

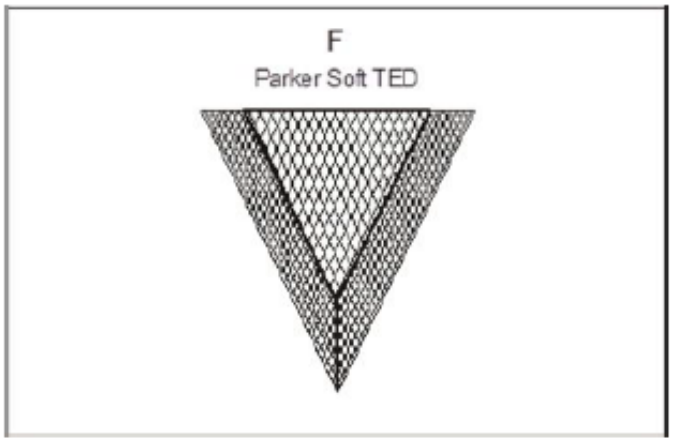
20. What was the **Opening Type/Size** of your Parker Soft TED? **Check the correct opening size.**

- ☐ 1 = 56" cut (inshore only)
- ☐ 2 = 96" cut (offshore / inshore)
- ☐ 0 = Other (Please specify) _____ inches

21. Did you use a **flap** on your Parker Soft TED (Offshore Only)? **Check Yes or No.**

- ☐ Yes
- ☐ No

Go to Question 27 (skip 22 - 26)



HOOPED HARD TED

If you most frequently used a Hooped Hard TED in 2022, answer questions 22 - 26.

22. Check your **most frequently** used **Grid Style. Check only one style.**

- ☐ G = Coulon
- ☐ H = NMFS

23. What was the **most frequently** used **Frame Size** of your Hooped Hard TED? **Check the minimum size you used.** If other, please specify measurement in inches.

- ☐ A = Inshore minimum
- ☐ B = Offshore minimum
- ☐ C = Other (**provide measurement**)_____ inches

24. What was the **most frequently** used **Opening Size** of your Hooped Hard TED? **Check only one size.** If other, please specify opening size in inches.

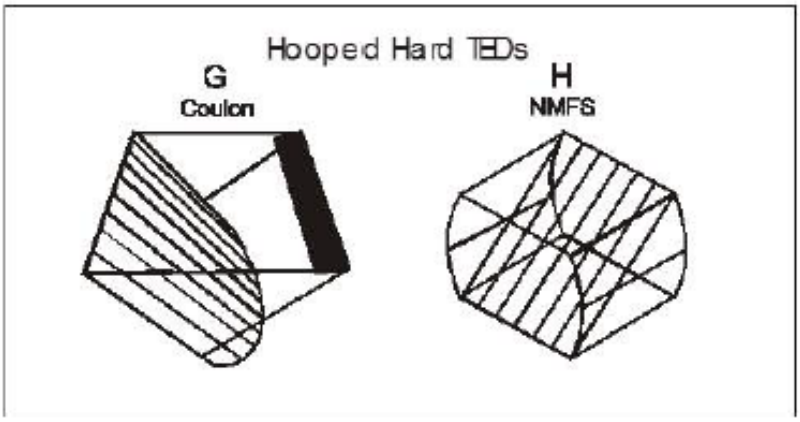
- ☐ A = Double Cover (inshore & offshore)
- ☐ B = 71" (inshore & offshore)
- ☐ C = 44" (inshore only)
- ☐ D = Other size opening (please specify) _____ inches

25. What was the **Opening Direction** of your Hooped Hard TED? **Check only one direction.**

- ☐ A = Top Opening
- ☐ B = Bottom Opening
- ☐ C = Both Top and Bottom Opening

26. Did you use an **Accelerator Funnel** on your Hooped Hard TED? **Check Yes or No.**

- ☐ Yes
- ☐ No



27. In the list below, please check off the types of **ELECTRONIC** equipment (either in the wheelhouse or mounted on the gear) that were on-board your vessel in 2022. Note that this list contains types of equipment that may not be presently used in the Gulf of Mexico shrimp fishery, but are used in other fisheries for which this type of information is being collected.

Please Check	Item
	Cell phone
	VHF radio
	CB Radio
	Single sideband radio
	Satellite phone
	Fax
	Plotter (please indicate type of plotter used, if any): ☐ P-Sea Windplot ☐ Other (please specify) _____
	Computer (including software)
	Printer
	Hailer (Boat intercom)
	Loran
	Vessel Tracking System
	Radar
	Global Positioning System (GPS)
	Auto Pilot
	EPIRB
	Echo Sounder/Depth Recorder (please check all which you have): ☐ Paper ☐ Video ☐ Digital
	Electronic Compass
	Satellite Navigation System (SatNav)
	Radio Direction Finder
	Weather Satellite Receiver
	Wind Meter
	Net Pingers
	Temperature Profiling System
	Water Temperature Sensor
	Single direction sonar
	Multiple direction sonar
	Water salinity Sensor
	NOAA/NMFS cELB (Cellular Electronic Logbook)
	US Coast Guard AIS (Automatic Identification System)
	Other (please specify)
	Other (please specify)

Authorized Signature: _____