Recreational Survey Data for Yellowfin Grouper and Mutton Snapper in Puerto Rico and the US Virgin Islands

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INTRODUCTION

Data for yellowfin grouper and mutton snapper in Puerto Rico and the USVI from the Marine Recreational Fishery Statistics Survey (MRFSS) are presented, including summaries of catch estimates, sampling fractions, and size data. There is currently no recreational data for queen conch available from the MRFSS.

OVERVIEW OF THE MRFSS in the Caribbean

The Marine Recreational Fishery Statistics Survey (MRFSS) is a sample-based survey that provides information on participation, effort, and species-specific catch. Data are collected to provide catch and effort estimates in two-month periods ("waves") for each recreational fishing mode (shore fishing, private/rental boat, or charterboat) and area of fishing (inshore, state Territorial Seas, U.S. Exclusive Economic Zone). Catch estimates are made for strata used in the intercepts: fish landed whole and observed by the samplers ("Type A"), fish reported as killed by the fishers ("Type B1") and fish reported as released alive by the fishers ("Type B2"). The traditional MRFSS design, used in the Caribbean is based on an intercept survey of anglers and telephone survey of coastal households.

Estimates of recreational catch for marine fish species in the Caribbean are available for Puerto Rico for 2000-2005 while they are available for The USVI only for 2000.

Recreational Survey available for Puerto Rico and the USVI: MRFSS

Survey	Area	Timeframe	Mode*
MRFSS	1. USVI 2. PR	1. 2000 2. 2000-present	1. SH, CH, PR 2. SH, CH, PR

*mode abbreviations (SH=shore, CH=charterboat, PR=private/rental)

Tables 1-3 show the MRFSS catch estimates and CVs by territory and by mode.

Tables 4-6 show the sampling proportions by mode. Sampling proportions are presented three ways: the proportion of the estimated landed catch that was actually seen by the sampler (Table 4), the proportion of the estimated landed catch that was measured by the sampler (Table 5), and the proportion of the landed catch observed by the sampler which was actually measured (table 6). The estimated landed catch was defined as Type A+B1 (type A is landed catch observed by sampler, type B1 is dead fish reported by the angler but not observed by the sampler and may include some fish discarded dead at sea which is usually a small proportion of the total B1 catch). Sampling proportions use the number observed (tspclaim = type A catch sampled) and number measured for length (tsp_lex) contained on the catch estimates records.

In the tables, estimated A+B1 is the catch that was killed and B2 is the catch that was released alive. In the intercepts, Type A is the catch that was seen and identified by the interviewer, thus is the "observed catch" in the sampling proportions. Type A estimates are the expansion of the observed catch.

Tables 7-8 show the size data available for yellowfin grouper and mutton snapper in Puerto Rico (2000-2005) and the USVI (2000 only) from the MRFSS. A summary table is shown along with the individual measurements. Fork length is shown in mm and whole weight in kg.

CATCH ESTIMATES

Table 1. Estimated number of fish killed (A+B1) in the recreational fishery and number released alive (B2) by US territory for yellowfin grouper and mutton snapper in Puerto Rico (2000-2005) and the USVI (2000). Source: MRFSS.

Yellowfin grouper	PR		All Territories	
YEAR	A+B1	B2	A+B1	B2
2001	250	0	250	0
2003	935	0	935	0

Mutton Snapper	PR		VI		All Territories	
YEAR	A+B1	B2	A+B1	B2	A+B1	B2
2000	25,381	2,674	0	0	25,381	2,674
2001	8,291	657	-	-	8,291	657
2002	5,723	2,081	-	-	5,723	2,081
2003	19,556	4,339	-	-	19,556	4,339
2004	10,198	6,497	-	-	10,198	6,497
2005	23,460	4,867	-	-	23,460	4,867

Table 2. Estimated number of fish killed (A+B1) and coefficients of variations (CV) by fishing mode for yellowfin grouper and mutton snapper caught in the recreational fishery in Puerto Rico (2000-2005) and the USVI (2000 only). Source: MRFSS.

Yellowfin Grouper	Priv		All Modes	
YEAR	A+B1	CV	A+B1	CV
2001	250	100%	250	100%
2003	935	71%	935	71%

Mutton Snapper	Cbt		Priv		Shore		All Modes	
YEAR	A+B1	CV	A+B1	CV	A+B1	CV	A+B1	CV
2000			5,743	46%	19,637	39%	25,381	32%
2001	19	100%	4,395	40%	3,878	47%	8,291	31%
2002			2,515	48%	3,209	51%	5,723	36%
2003	7	100%	10,480	35%	9,069	30%	19,556	23%
2004	386	43%	7,709	32%	2,103	52%	10,198	26%
2005	388	54%	7,524	88%	15,549	45%	23,460	41%

Table 3. Estimated number of fish released alive (B2) and coefficients of variations (CV) by fishing mode for yellowfin grouper and mutton snapper caught in the recreational fishery in Puerto Rico (2000-2005) and the USVI (2000 only). Source: MRFSS.

Yellowfin Grouper	Priv		All Modes	
YEAR	B2	CV	B2	CV
2001	0	0%	0	0%
2003	0	0%	0	0%

Mutton Snapper	Cbt		Priv		Shore		All Modes	
YEAR	B2	CV	B2	CV	B2	CV	B2	CV
2000			0	0%	2,674	51%	2,674	51%
2001	0	0%	0	0%	657	100%	657	100%
2002			0	0%	2,081	60%	2,081	60%
2003	41	75%	587	73%	3,711	76%	4,339	66%
2004	190	65%	4,679	64%	1,627	64%	6,497	49%
2005	317	52%	2,163	52%	2,387	59%	4,867	37%

SAMPLING PROPORTIONS

Table 4. Percent of **estimated landed recreational catch** (numbers of fish, A+B1) **that was observed** (Type A) by fishing mode for yellowfin grouper and mutton snapper in Puerto Rico (2000-2005) and the USVI (2000 only). Source: MRFSS.

Yellowfin Grouper	Priv		All Modes		
YEAR	A+B1 est.	pct. obs.	A+B1 est.	Pct. Obs.	TypA obs.
2001	250	0.40%	250	0.40%	1
2003	935	0.43%	935	0.43%	4

Mutton Snapper	Cbt		Priv		Shore		All Mode		
YEAR	A+B1 est.	pct. obs.	A+B1 est.	pct. obs.	A+B1 est.	pct. obs.	A+B1 est.	Pct. Obs.	TypA obs.
2000			5,743	0.12%	19,637	0.12%	25,381	0.12%	30
2001	19	0.00%	4,395	0.23%	3,878	0.21%	8,291	0.22%	18
2002			2,515	0.24%	3,209	0.09%	5,723	0.16%	9
2003	7	15.04%	10,480	0.20%	9,069	0.15%	19,556	0.18%	36
2004	386	3.37%	7,709	0.31%	2,103	0.24%	10,198	0.41%	42
2005	388	1.29%	7,524	0.17%	15,549	0.14%	23,460	0.17%	40

Table 5. Percent of **estimated landed recreational catch** (numbers of fish, A+B1) **that was measured** by fishing mode for yellowfin grouper and mutton snapper in Puerto Rico (2000-2005) and the USVI (2000 only). Source: MRFSS.

Yellowfin Grouper	Priv		All Modes		
YEAR	A+B1 est.	pct. meas.	A+B1 est.	Pct. meas.	No. meas.
2001	250	0.40%	250	0.40%	1
2003	935	0.43%	935	0.43%	4

Mutton Snapper	Cbt		Priv		Shore		All Modes		
YEAR	A+B1 est.	pct. meas.	A+B1 est.	pct. meas.	A+B1 est.	pct. meas.	A+B1 est.	Pct. meas.	No. meas.
2000		0.00%	5,743	0.09%	19,637	0.07%	25,381	0.07%	19
2001	19	0.00%	4,395	0.14%	3,878	0.10%	8,291	0.12%	10
2002		0.00%	2,515	0.24%	3,209	0.09%	5,723	0.16%	9
2003	7	15.04%	10,480	0.18%	9,069	0.13%	19,556	0.16%	32
2004	386	2.85%	7,709	0.25%	2,103	0.24%	10,198	0.34%	35
2005	388	0.77%	7,524	0.12%	15,549	0.14%	23,460	0.14%	33

Table 6. Percent of **observed recreational catch** (numbers of fish, type A) **that was measured** by fishing mode for yellowfin grouper and mutton snapper in Puerto Rico (2000-2005) and the USVI (2000 only). Source: MRFSS.

Yellowfin Grouper	Priv		All Modes		
YEAR	typA obs.	pct. meas.	TypA obs.	Pct. meas.	No. meas.
2001	1	100%	1	100%	1
2003	4	100%	4	100%	4

Mutton Snapper	Cbt		Priv		Shore		All Modes		
YEAR	typA obs.	pct. meas.	typA obs.	pct. meas.	typA obs.	pct. meas.	TypA obs.	Pct. meas.	No. meas.
2000		0%	7	71%	23	61%	30	63%	19
2001	0	0%	10	60%	8	50%	18	56%	10
2002		0%	6	100%	3	100%	9	100%	9
2003	1	100%	21	90%	14	86%	36	89%	32
2004	13	85%	24	79%	5	100%	42	83%	35
2005	5	60%	13	69%	22	95%	40	82%	33

SIZE DATA

Table 7. Size data (summary table and individual measurements) for yellowfin grouper in Puerto Rico (2000-2005) and the USVI (2000 only). Source: MRFSS. Fork length in mm and whole weight in kg.

Yellowfin Grouper

	Length			Weight		
	Min	**Max**	**N**	**Min**	**Max**	**N**
2001	591	591	1	3.60	3.60	1
2003	829	846	4	8.00	8.75	4

YEAR	WAVE	month	state	mode	area	LNGTH	WGT
2001	4	7	PR	Priv	Ocean<=10mi	591	3.6
2003	1	1	PR	Priv	Ocean<=10mi	830	8
2003	1	1	PR	Priv	Ocean<=10mi	836	8.25
2003	1	1	PR	Priv	Ocean>10mi	829	8
2003	1	1	PR	Priv	Ocean>10mi	846	8.75

Table 8. Size data (summary table and individual measurements) for mutton snapper in Puerto Rico (2000-2005) and the USVI (2000 only). Source: MRFSS. Fork length in mm and whole weight in kg.

Mutton Snapper

	Length			Weight		
	Min	**Max**	**N**	**Min**	**Max**	**N**
2000	120	700	19	0.10	6.40	12
2001	225	625	10	0.30	4.30	8
2002	224	641	9	0.25	4.10	8
2003	140	725	32	0.05	7.00	32
2004	135	760	35	0.05	7.50	34
2005	81	591	33	0.05	5.60	17

YEAR	WAVE	month	state	mode	area	LNGTH	WGT
2000	2	4	PR	Shore	Inshore	470	2.5
2000	2	4	PR	Shore	Inshore	640	
2000	3	5	PR	Priv	Inshore	275	0.5
2000	5	9	PR	Priv	Ocean<=10mi	700	6.4
2000	3	5	PR	Priv	Ocean<=10mi	245	0.4
2000	5	10	PR	Shore	Ocean<=10mi	285	0.45
2000	6	12	PR	Shore	Inshore	325	0.6
2000	2	4	PR	Shore	Inshore	128	
2000	5	10	PR	Shore	Inshore	260	0.25
2000	6	11	PR	Priv	Inshore	270	
2000	6	11	PR	Shore	Inshore	180	
2000	6	11	PR	Shore	Inshore	200	
2000	2	3	PR	Priv	Ocean<=10mi	698	4.55
2000	2	3	PR	Shore	Inshore	250	0.4

YEAR	WAVE	month	state	mode	area	LNGTH	WGT
2000	3	6	PR	Shore	Inshore	160	0.1
2000	5	10	PR	Shore	Inshore	200	0.15
2000	6	11	PR	Shore	Inshore	166	
2000	6	11	PR	Shore	Inshore	120	
2001	3	6	PR	Priv	Ocean<=10mi	439	
2001	5	9	PR	Shore	Inshore	230	
2001	5	10	PR	Shore	Inshore	298	0.5
2001	1	2	PR	Priv	Ocean<=10mi	575	4.3
2001	4	8	PR	Shore	Ocean<=10mi	450	2
2001	1	1	PR	Shore	Inshore	225	0.3
2001	3	5	PR	Priv	Ocean<=10mi	391	0.95
2001	3	5	PR	Priv	Ocean<=10mi	246	0.4
2001	4	7	PR	Priv	Ocean<=10mi	625	4.1
2001	1	1	PR	Priv	Inshore	341	0.7
2002	2	3	PR	Priv	Ocean<=10mi	566	3
2002	3	5	PR	Shore	Inshore	224	0.25
2002	3	5	PR	Shore	Inshore	314	
2002	5	10	PR	Priv	Ocean<=10mi	280	0.3
2002	6	11	PR	Priv	Ocean<=10mi	406	0.9
2002	6	11	PR	Priv	Ocean<=10mi	335	0.7
2002	6	11	PR	Priv	Ocean<=10mi	391	1.5
2002	2	3	PR	Shore	Inshore	248	0.25
2002	4	8	PR	Priv	Ocean<=10mi	641	4.1
2003	1	1	PR	Shore	Ocean<=10mi	218	0.1
2003	1	1	PR	Shore	Ocean<=10mi	333	0.6
2003	1	2	PR	Shore	Ocean<=10mi	153	0.05
2003	1	2	PR	Shore	Ocean<=10mi	146	0.05
2003	2	4	PR	Shore	Ocean<=10mi	279	0.2
2003	4	7	PR	Priv	Ocean<=10mi	675	6.4
2003	5	9	PR	Priv	Ocean<=10mi	493	2.1
2003	1	2	PR	Priv	Ocean<=10mi	631	4.7
2003	1	2	PR	Priv	Ocean<=10mi	618	4
2003	1	2	PR	Priv	Ocean<=10mi	700	6.1
2003	1	2	PR	Priv	Ocean<=10mi	340	0.55
2003	1	2	PR	Priv	Ocean<=10mi	398	0.95
2003	1	2	PR	Priv	Ocean<=10mi		0.55
2003	2	3	PR	Priv	Ocean<=10mi	590	4.5
2003	2	3	PR	Priv	Ocean<=10mi	725	7
2003	2	3	PR	Priv	Ocean<=10mi	614	4.5
2003	2	4	PR	Priv	Ocean<=10mi	691	6
2003	2	4	PR	Priv	Ocean<=10mi	570	3.5
2003	2	4	PR	Priv	Ocean<=10mi	536	3
2003	3	5	PR	Priv	Ocean<=10mi	583	3.5
2003	2	3	PR	Priv	Ocean>10mi	600	5.5
2003	2	3	PR	Priv	Ocean>10mi	610	3.4
2003	2	4	PR	Priv	Ocean<=10mi	665	
2003	5	10	PR	Cbt	Ocean<=10mi	315	0.7
2003	5	10	PR	Shore	Ocean<=10mi	185	0.15
2003	5	10	PR	Shore	Ocean<=10mi	230	0.2
2003	5	10	PR	Shore	Ocean<=10mi	175	0.1
2003	6	12	PR	Shore	Ocean<=10mi	140	0.1
2003	5	10	PR	Shore	Ocean<=10mi	364	0.7

YEAR	WAVE	month	state	mode	area	LNGTH	WGT
2003	6	11	PR	Shore	Ocean<=10mi	330	0.65
2003	5	10	PR	Priv	Ocean<=10mi	556	2.9
2003	5	10	PR	Priv	Ocean<=10mi	222	0.1
2004	3	5	PR	Priv	Ocean<=10mi	153	0.05
2004	3	5	PR	Priv	Ocean<=10mi	356	0.8
2004	3	6	PR	Shore	Ocean<=10mi	135	0.05
2004	2	4	PR	Priv	Ocean<=10mi	760	7
2004	2	4	PR	Priv	Ocean<=10mi	245	0.25
2004	3	5	PR	Priv	Ocean<=10mi	275	0.3
2004	1	1	PR	Shore	Ocean<=10mi	700	7.5
2004	2	4	PR	Cbt	Ocean<=10mi	220	0.5
2004	2	4	PR	Cbt	Ocean<=10mi	230	0.4
2004	2	4	PR	Cbt	Ocean<=10mi	210	0.4
2004	2	4	PR	Cbt	Ocean<=10mi	230	0.4
2004	2	4	PR	Cbt	Ocean<=10mi	200	0.3
2004	2	4	PR	Cbt	Ocean<=10mi	210	0.3
2004	1	1	PR	Cbt	Ocean<=10mi	666	5.1
2004	1	1	PR	Priv	Ocean<=10mi	714	6.4
2004	1	2	PR	Cbt	Ocean<=10mi	662	5
2004	3	5	PR	Shore	Ocean<=10mi	554	
2004	4	7	PR	Cbt	Ocean<=10mi	441	1.35
2004	4	8	PR	Priv	Ocean<=10mi	611	3.3
2004	5	10	PR	Cbt	Ocean<=10mi	582	3.2
2004	6	11	PR	Cbt	Ocean<=10mi	551	2.8
2004	1	1	PR	Priv	Ocean>10mi	592	4.1
2004	1	2	PR	Priv	Ocean<=10mi	231	0.15
2004	1	2	PR	Priv	Ocean<=10mi	292	0.4
2004	1	2	PR	Priv	Ocean<=10mi	226	0.1
2004	1	2	PR	Priv	Ocean<=10mi	218	0.1
2004	3	5	PR	Shore	Ocean<=10mi	492	2.3
2004	3	6	PR	Shore	Ocean<=10mi	436	1.5
2004	2	3	PR	Priv	Ocean<=10mi	460	1.7
2004	2	3	PR	Priv	Ocean<=10mi	380	0.9
2004	6	12	PR	Priv	Ocean<=10mi	683	4.7
2004	6	12	PR	Priv	Ocean<=10mi	659	4.2
2004	6	12	PR	Priv	Ocean<=10mi	661	4.5
2004	6	12	PR	Priv	Ocean<=10mi	608	3.4
2004	3	6	PR	Priv	Ocean<=10mi	614	3.9
2005	1	1	PR	Shore	Ocean<=10mi	381	1
2005	3	5	PR	Priv	Ocean>10mi	371	
2005	3	5	PR	Priv	Ocean>10mi	454	
2005	3	5	PR	Priv	Ocean>10mi	451	
2005	3	5	PR	Priv	Ocean>10mi	458	
2005	3	5	PR	Priv	Ocean>10mi	591	
2005	3	5	PR	Priv	Ocean>10mi	503	
2005	3	5	PR	Priv	Ocean>10mi	461	
2005	3	5	PR	Priv	Ocean>10mi	507	
2005	3	5	PR	Priv	Ocean>10mi	590	
2005	4	7	PR	Shore	Inshore	219	0.1
2005	4	7	PR	Shore	Inshore	222	0.1
2005	1	2	PR	Cbt	Ocean<=10mi		5.6
2005	1	2	PR	Cbt	Ocean<=10mi	501	2.2

YEAR	WAVE	month	state	mode	area	LNGTH	WGT
2005	6	11	PR	Cbt	Ocean<=10mi	549	4
2005	3	6	PR	Shore	Ocean<=10mi	101	
2005	3	6	PR	Shore	Ocean<=10mi	92	
2005	3	6	PR	Shore	Ocean<=10mi	94	
2005	3	6	PR	Shore	Ocean<=10mi	81	
2005	3	6	PR	Shore	Ocean<=10mi	83	
2005	3	6	PR	Shore	Ocean<=10mi	93	
2005	3	6	PR	Shore	Ocean<=10mi	180	0.1
2005	3	6	PR	Shore	Ocean<=10mi	103	
2005	3	6	PR	Shore	Ocean<=10mi	91	
2005	3	6	PR	Shore	Ocean<=10mi	105	0.05
2005	2	3	PR	Shore	Inshore	179	0.1
2005	2	4	PR	Shore	Ocean<=10mi	160	0.1
2005	2	4	PR	Shore	Ocean<=10mi	179	0.1
2005	6	12	PR	Shore	Ocean<=10mi	236	0.2
2005	6	12	PR	Shore	Ocean<=10mi	255	0.2
2005	1	2	PR	Shore	Ocean<=10mi	366	0.65
2005	1	2	PR	Shore	Ocean<=10mi	353	0.4
2005	5	10	PR	Shore	Ocean<=10mi	147	0.1