SUMMARY OF EXPERT WORKGROUP RECOMMENDATIONS ON MPAs for SPECKLED HIND & WARSAW GROUPER IN THE U.S. SOUTH ATLANTIC

Expert MPA Workgroup Charleston, South Carolina February 4-6, 2013

SOUTH ATLANTIC FISHERY MANAGMENT COUNCIL

MPA EXPERT WORKGROUP



Meeting Overview

May 16-17, 2012 Mighty Eighth Air Force Museum Pooler, GA

Version: 6-1-2012

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

MPA EXPERT WORKGROUP



Meeting II Overview

February 4-6, 2013 Crowne Plaza North Charleston, SC

Draft: 2-26-13



Data Source	Years	Resolution	Discards?	Depth Info
Commercial Log	2001-2011	1° X 1° area	20% of records	2005-present
Headboat Log	1973-2011	Some 0.17 $^\circ$ X 0.17 $^\circ$	2004-present	No
Reef Fish Obs.*	2006-2011	Lat/Long	Yes	Yes
MARMAP	1977-2011	Lat/Long	Yes	Yes
ALS	1962-2009	State Sub-Regions	No	No
FL Trip Ticket	1986-1992	State Sub-Regions	No	No
GA & SC T. Ticket	1989-2009	State Sub-Regions	No	No
NC Trip Ticket	1994-2010	State Sub-Regions	No	No
DW ROV Survey	2004-2011	Lat/Long	Yes	Not provided
Fisher Reports	1960s-2011	Loran Lat/Long	Yes	Some
SEFIS	2010-2011	Lat/Long	Yes	Yes
REEF	1980s-2011	State Sub-Regions	Yes	No
Oculina ROV	2003-2005	Lat/Long	Yes	Yes
Manooch (FRG)	1972-1977	Lat/Long	Yes	Yes
Sedberry Sub	1985, 2002	Lat/Long	Yes	Yes
Rudershausen et al.	2007	Lat/Long	Yes	Yes
Museum Collections	1884-1991	Lat/Long	Yes	Yes





MPA Alternatives



HABITAT Not Hardbottom Possible Hardbottom Hardbottom

MPAs



Existing MPA

MPA Alternative

POINT OBSERVATIONS



Warsaw Grouper



Speckled Hind

WATER DEPTH



Qualitative Habitat Determination



Quantitative Habitat Determination

SCORES, BY STATE			25-100		5N	SPECKLED	D HIND HA	ABITAT	WARS	AW GROU	JPER			POTE	NTIAL RI	EDUCED L/	NDINGS							RANKINGS, BY STATE					SPECKLE	D HIND	WAR	AW GROUP	PER			POTEN	TIAL REI	DUCED LA	NDINGS				
			tathoms		N	SU	ITABILITY		HABITA	T SUITAB		Red Porgy	Vermilio	on Sc	amp	Amberjac	k Blueli	ine	Gag	Red Gpr								HA	BITAT SU	JITABILIT	IYHABIT	AT SUITABI	LITY Rec	Porgy	Vermilio	on Sca	amp A	mberjack	Blueline	Gag	Rec	Gpr	
NAME	STATUS	AREA (mi2)	AREA (mi2)	STATE	SPAV	YES	YES & MAYBE	Prob	YES	YES & Maybe	Prob	Com Hbt	Com H	bt Com	Hbt	Com Hb	t Com	Hbt C	om Hbt	Com Hbt	EV	G		NAME	STATUS	AREA A (mi2) (AREA mi2) ST	ATE	ES MAY	& Proi	b YES	YES & PI MAYBE	rob Cor	n Hbt	Com Hb	bt Com	Hbt	Com Hbt	Com Hb	t Com I	Hbt Corr	h Hbt	
NORTH CAROLINA																					RECOM	NENDED		NORTH CAROLINA																		S	ELECTED
780 BOTTOM	Proposed	56.9	22.0	NC	Likely	0.0%	0.6%	0.5%	0.0%	0.6%	0.1% 0).0% 0.0%	0.0% 0.0	0% 0.0%	6 0.0%	0.0% 0.0	6 0.0% 0	0.0%	.0% 0.0%	0.0% 0.09	6 1	L	Г	780 BOTTOM	Proposed	3	4 M	NC 6	5 5	5	3	5	68	7	78	3 8	8	67	63	8	7 8	6	
MANUELA WRECK	Proposed	25.5	0.2	NC	No	0.0%	0.0%	0.0%	0.0%	0.0%	0.0% 0).0% 0.0%	0.0% 0.0	0% 0.0%	6 0.0%	0.0% 0.0	6 0.0% 0	0.0%	.0% 0.0%	0.0% 0.09	6 (MANUELA WRECK	Proposed	2	1 1	NC 6	5 8	8	3	8	8 7	6	67	7 6	7	8 6	7 3	5	6 5	5	
MALCHACE WRECK	Proposed	6.4	2.5	NC	Maybe	0.0%	0.1%	0.1%	0.0%	0.1%	0.0% 0	0.0% 0.0%	0.0% 0.1	1% 0.0%	6 0.0%	0.0% 0.0	6 0.0% 0	0.0% 0	.0% 0.0%	0.0% 0.09	6 1	ι		MALCHACE WRECK	Proposed	1	2 1	NC 6	5 7	7	3	7	7 5	7	4 4	1 7	4	77	8 3	6	4 7	6	
N CAPE LOOKOUT 2	Proposed	114.8	37.9	NC	S-G	2.6%	0.7%	0.8%	2.4%	0.7%	0.2% 0	0.1% 0.0%	0.1% 0.0	0% 0.0%	6 0.0%	0.0% 0.0	6 0.1% 0	0.0%	.0% 0.0%	0.2% 0.09	6 (N CAPE LOOKOUT 2	Proposed	6	5 M	VC 1	L 4	4	1	4	3 3	5	3 6	5 3	6	2 5	3 3	2	5 2	4	
N CAPE LOOKOUT NC	Proposed	110.9	39.2	NC	S-G	2.3%	1.0%	0.9%	0.0%	1.0%	0.1% 0).1% 0.2%	0.1% 0.	5% 0.0%	6 0.0%	0.0% 0.0	6 0.1% 0	0.7% 0	.0% 0.2%	0.2% 0.59	6 (N CAPE LOOKOUT NC	Proposed	5	6 1	VC 2	2 2	3	3	2	4 2	3	2 1	1 2	3	32	2 1	3	2 3	3	
NORTH CAPE LOOKOUT 3	Proposed	68.4	20.5	NC	S-G	0.7%	0.2%	0.3%	0.4%	0.2%	0.1% 0	0.0% 0.7%	0.0% 0.3	3% 0.0%	6 0.0%	0.0% 0.0	6 0.0% 0	0.1% 0	.0% 0.1%	0.0% 0.99	6 0			NORTH CAPE LOOKOUT 3	Proposed	4	3 1	VC S	56	6	2	6	5 6	1	5 3	8 5	5	4 4	4 2	7	3 6	1	
S CAPE LOOKOUT NC	Proposed	187.5	58.9	NC	S-G	1.8%	0.9%	1.1%	0.0%	0.9%	0.3% 0	0.0% 0.6%	0.0% 0.4	4% 0.0%	6 0.2%	0.0% 0.1	6 0.0% 0	0.0%	.0% 0.3%	0.0% 0.79	6			S CAPE LOOKOUT NC	Proposed	7	7 1	NC 3	3	2	3	3	2 4	2	8 2	2 4	1	5 1	5 3	4	1 4	2	
SOUTHERN NC	Proposed	229.9	/5.1	NC	5-6	0.7%	1.0%	1.0%	0.0%	1.5%	0.7%	0.0%	0.3% 0.0	0% 0.7%	0.0%	0.1% 0.0	6 0.2% C	J.U% U	.2% 0.0%	1.2% 0.09	6 1			SOUTHERN NC	Proposed	δ	8 1	NC 4	1	1	3	1	1 1	4	1 5		2	1 3	1 3	1	/ 1	6	
			158.5			2.5%	3.1%	5.5%	0.0%	3.1%	1.0% 0	1.5% 0.6%	0.3% 0.3	5% 0.7%	6 0.2%	0.1% 0.1	6 U.2% U	J.U% U	.2% 0.3%	1.2% 0.75	6 6																						
SOUTH CAROLINA																					RECOM	VENDED	- H	SOUTH CAROLINA																		S	ELECTED
Charleston Deep	Existing	66.0	25.5	SC	No	0.0%	0.0%	0.3%	0.0%	0.0%	0.4%						· ·				()	- F	Charleston Deep	Existing	3	4 5	SC 1	0 10) 9	8	10	7	_		-					_	-	
CHARLESTON SHELF MPA	Proposed	34.8	13.4	SC	S-G	3.6%	0.4%	0.5%	0.0%	0.3%	0.2% 0	.1% 0.0%	0.2% 0.0	0% 0.2%	6 0.0%	0.1% 0.0	6 0.1% 0	0.0%	.1% 0.0%	0.1% 0.09	6 (CHARLESTON SHELF MPA	Proposed	2	2 5	sc s	5 8	8	8	8	9 7	7	67	7 7	7	77	5 1	7	7 5	5	
DEVILS HOLE 2	Proposed	208.3	69.1	SC	WG?	5.5%	1.4%	1.6%	1.7%	1.3%	1.1% 0	.5% 0.4%	0.5% 0.4	4% 0.9%	5 2.8%	0.2% 0.3	6 0.3% 0	0.0%	.3% 0.8%	0.4% 0.19	6 (DEVILS HOLE 2	Proposed	9	8 5	SC 4	1 3	3	4	3	3 2	2	3 1	1 2	1	2 1	1 1	3	1 2	1	
Edisto	Existing	191.4	71.6	SC	SH	8.1%	1.6%	1.8%	1.2%	1.4%	1.2%				•		•				(Edisto	Existing	8	9 9	SC 3	3 2	2	5	2	2										
EDISTO RECONFIG 3	Proposed	208.7	80.4	SC	SH	17.9%	2.3%	2.5%	2.4%	1.9%	1.4% 0	.5% 0.4%	0.6% 0.3	1% 0.9%	0.5%	0.3% 0.2	6 0.2% 0	0.0%	.3% 0.3%	0.2% 0.09	6 1	ι		EDISTO RECONFIG 3	Proposed	10	10 9	SC 1	1	1	3	1	1 3	1	2 3	3 1	3	1 2	2 1	2	3 3	3	
EDISTO S EXT	Proposed	130.6	50.3	SC	SH	9.8%	0.9%	1.3%	8.8%	0.7%	1.0% 0	0.3% 0.0%	0.3% 0.0	0% 0.6%	0.1%	0.2% 0.0	6 0.1% C	0.0%	.2% 0.0%	0.1% 0.09	6 ()		EDISTO S EXT	Proposed	5	6 5	SC 2	2 5	5	1	6	4 5	4	56	5 5	5	3 6	3 1	4	5 7	6	
DEVILS HOLE 3	Proposed	69.4	22.9	SC	WG?	2.5%	0.8%	0.7%	0.2%	0.8%	0.3%	0.1%	0.8% 0.3	1% 0.8%	1.1%	0.2% 0.1	6 0.0% 0	0.0% 0	.5% 0.3%	0.5% 0.09	6 1	L		DEVILS HOLE 3	Proposed	4	3 5	SC 8	6	7	6	5	8 1	3	1 2	2 3	2	4 3	7 1	1	2 1	2	
MID SC MPA	Proposed	138.7	33.7	SC	S-G	2.7%	0.7%	0.9%	0.1%	0.6%	0.4% 0).4% 0.0%	0.3% 0.0	0% 0.6%	0.5%	0.1% 0.1	6 0.1% 0	0.0% 0	.2% 0.1%	0.2% 0.09	6 (MID SC MPA	Proposed	6	5 5	SC 7	7 7	6	7	7	6 4	6	4 4	1 4	4	5 4	4 1	5	4 4	4	
Northern SC	Existing	173.2	66.3	SC	SH	3.2%	1.1%	1.3%	2.5%	1.1%	0.8%							-			1	ι		Northern SC	Existing	7	7 5	SC 6	5 4	4	2	4	5										
NORTHERN SC EXT	Proposed	32.5	4.8	SC	SH	2.3%	0.1%	0.2%	0.0%	0.1%	0.1% 0	0.0%	0.1% 0.0	0% 0.3%	6 0.0%	0.1% 0.1	6 0.1% 0	0.0%	.1% 0.0%	0.1% 0.09	6 1	l		NORTHERN SC EXT	Proposed	1	1 5	SC 9	99	10	8	9	10 6	5	75	5 6	6	65	6 1	6	6 6	6	
			174.3			25.9%	4.4%	4.7%	5.1%	3.8%	2.6% 1	.4% 0.6%	1.5% 0.3	2% 2.0%	6 1.6%	0.6% 0.4	6 0.3% 0	0.0% 0	.9% 0.6%	0.8% 0.0%	6 4																						
GEORGIA																					RECOM	MENDED	h	GEORGIA				+														S	ELECTED
Georgia	Existing	262.9	59.8	GA	Tile?	0.0%	0.6%	0.8%	0.0%	0.6%	1.3%						· ·				1	l	- F	Georgia	Existing	6	3 (GA 4	1 5	5	5	5	4	_		-							
GEORGIA MPA RECONFIG	Proposed	204.7	79.0	GA	S-G	4.9%	1.9%	2.1%	11.2%	1.9%	1.7% 0	0.2% 0.0%	0.3% 0.0	0% 0.3%	6 0.0%	0.1% 0.0	6 0.1% 0	0.0%	.1% 0.0%	0.2% 0.09	6 1	ι		GEORGIA MPA RECONFIG	Proposed	4	5 6	GA 2	2 1	1	1	1	2 3	1	3 1	1 3	1	4 1	3 1	3	1 2	1	
GEORGIA EXT	Proposed	236.6	91.3	GA	Maybe	0.0%	1.4%	2.0%	1.1%	1.5%	1.9% 0	0.0%	0.6% 0.0	0% 0.6%	0.0%	0.1% 0.0	6 0.0% 0	0.0%	.3% 0.0%	0.5% 0.09	6 (GEORGIA EXT	Proposed	5	6 0	GA 4	2	2	3	2	1 1	3	1 3	3 1	3	2 3	4 1	1	3 1	1	
GEORGIA RECONFIG N2	Proposed	192.5	74.3	GA	Maybe	0.0%	1.0%	1.4%	0.0%	1.0%	1.5% 0	0.1% 0.0%	0.1% 0.0	0% 0.2%	6 0.0%	0.0% 0.0	6 0.0% 0	0.0% 0	.0% 0.0%	0.1% 0.09	6 1	ι		GEORGIA RECONFIG N2	Proposed	3	4 6	GA 4	4	3	5	3	3 5	2	5 2	2 5	2	52	5 1	5	2 5	1	
ST SIMONS 2	Proposed	58.6	21.4	GA	S-G	3.3%	0.2%	0.3%	0.5%	0.1%	0.4% 0	0.2% 0.0%	0.3% 0.0	0% 0.3%	6 0.0%	0.1% 0.0	6 0.1% 0	0.0% 0	.1% 0.0%	0.1% 0.09	6 (ST SIMONS 2	Proposed	1	1 0	GA 3	6	6	4	6	6 4	3	4 3	3 4	3	3 3	2 1	4	3 4	1	
ST SIMONS EXT2	Proposed	117.4	45.3	GA	S-G	5.3%	1.1%	1.0%	1.2%	0.9%	1.0% 0	0.0%	0.5% 0.0	0% 0.5%	0.0%	0.2% 0.0	6 0.2% 0	0.0%	.2% 0.0%	0.2% 0.09	6 1	l	L	ST SIMONS EXT2	Proposed	2	2 0	GA 1	3	4	2	4	5 2	3	2 3	3 2	3	1 3	1 1	2	3 3	1	
			258.5			10.1%	4.6%	5.3%	12.4%	4.4%	5.5% (1.7% 0.0%	0.9% 0.0	0% 1.0%	6 0.0%	0.3% 0.0	6 0.3% 0).0% 0	.3% 0.0%	0.4% 0.09	6 4	4									_											_	
								_			_			_	_			_			BE COLU		- H					_			-		_			-	_				_	-	
NORTHEAST FLORIDA	0	224.4	70.0	1000		4.407	2.25/	1.00	F 40/	2.407	2.00/ 0	20/ 0.00/	0.20/ 0.0		0.001	0.46/ 0.00	0.00	0.001/ 0	00/ 0.40/	0.00% 0.00	RECOMI	VIENDED	H	NORTHEAST FLORIDA	0		<i>c</i> 11			2	1.	2		2		-	-	2 4		1		5	LECIED
North Elorida	Evirting	221.1	79.0	NEFL	5-0	1.1%	2.3%	1.0%	0.1%	2.4%	2.0%	1.2% 0.0%	0.5% 0	176 0.176	0.0%	0.1% 0.2	6 U.1% U	J.0% 0	.0% 0.1%	0.0% 0.0%	b			FERNANDINA MPA	Proposed	2			, 3 5 E	2		5	3 1	2	1 1	. 2	1	2 1		2	1 1	1	
North Florida	Existing	752 7	270.2	NEEL	5.0	0.0%	2.0%	0.6%	-2.0%	1.270	2.7%			. .										NOTULFIOLING	Existing	, 0	0 N		, , ,	2		4	7										
ocume control of the control of the	LYIZTING	133.1	213.3	NETL	3.0	0.076	2.076	0.376	-2.070	1.5%	3.278											·		Usano toni Charc (ecolongeca)	Existing	,	5 14	LFL 3	4	4	1	4	-										
DAYTONA STEEPLES and DAYTONA (EDGE)	Proposed	627.7	242.4	NEFL	S-G	1.4%	4.0%	1.7%	0.5%	4.0%	4.5% 0	0.0% 0.0%	0.0% 0.0	0% 0.1%	6 0.0%	3.6% 0.0	6 0.0% 0	0.0% 0	.1% 0.0%	0.0% 0.09	6 1	ι		DAI/TOWA STEEPLES and DAI/TOWA LEDGE]	Proposed	8	8 N	EFL 5	5 1	1	6	1	1 4	1	4 2	2 1	2	1 2	4 1	1	2 3	2	
Oculina ECA	Existing	279.2	107.8	NEFL	S-G	3.8%	3.1%	0.5%	2.6%	3.1%	0.9%	· ·					•				1	ι		Oculina ECA	Existing	6	7 N	EFL 1	1 2	5	3	2	5										
DAYTONA STEEPLES	Proposed	68.9	26.6	NEFL	S-G	1.5%	0.4%	0.2%	0.0%	0.3%	0.6% 0).0% 0.0%	0.0% 0.0	0% 0.0%	6 0.0%	0.1% 0.0	6 0.0% 0	0.0% 0	.0% 0.0%	0.0% 0.09	6 1	ι		DAYTONA STEEPLES	Proposed	3	3 N	EFL 4	1 7	7	8	7	7 5	2	53	3 5	4	3 4	5 1	5	4 5	2	
DAYTONA LEDGE	Proposed	28.4	11.0	NEFL	S-G	1.3%	0.2%	0.1%	1.3%	0.2%	0.2% 0	0.0% 0.0%	0.0% 0.0	0% 0.0%	6 0.0%	0.0% 0.0	6 0.0% C	0.0%	.0% 0.0%	0.0% 0.09	6 1	ι		DAYTONA LEDGE	Proposed	1	1 N	EFL 6	5 8	9	5	8	9 6	2	64	1 6	3	63	6 1	6	3 6	2	
ST AUGUSTINE 2	Proposed	83.1	32.1	NEFL	S-G	1.9%	0.6%	0.4%	2.1%	0.6%	0.7% 0	0.1% 0.0%	0.1% 0.0	0% 0.0%	6 0.0%	0.1% 0.0	6 0.1% 0	0.0%	.0% 0.0%	0.0% 0.09	6 1	L		ST AUGUSTINE 2	Proposed	4	4 N	EFL 2	2 6	6	4	6	6 2	2	2 5	5 3	4	5 4	2 1	3	5 2	2	
ST AUGUSTINE EXT2	Proposed	35.6	13.8	NEFL	S-G	0.0%	0.1%	0.1%	0.2%	0.1%	0.4% 0).0% 0.0%	0.0% 0.0	0% 0.0%	6 0.0%	0.1% 0.0	6 0.0% 0	0.0%	.0% 0.0%	0.0% 0.09	6 ()		ST AUGUSTINE EXT2	Proposed	2	2 N	EFL 8	39	8	7	9	8 3	2	3 5	5 4	4	4 4	3 1	4	5 4	2	
			837.5			12.6%	13.6%	5.7%	14.1%	13.6%	14.0% 0	0.0%	0.4% 0.3	1% 0.3%	6 0.0%	3.9% 0.3	6 0.2% 0	0.0% 0	.2% 0.1%	0.0% 0.09	6 8	3																					
SOUTHEAST FLORIDA											-										RECOM	MENDED		SOUTHEAST FLORIDA									+									s	ELECTED
FKNMS SPAs & Ers	Proposed	246.7	246.7	SEFL	WG?																1	l	- F	FKNMS SPAs & Ers	Proposed			-															
JUNO BEACH MPA	Proposed	9.2	3.5	SEFL	S-G	0.0%	0.0%	0.0%	0.0%	0.0%	0.0% 0	.0% 0.0%	0.0% 0.0	0% 0.0%	6 0.0%	0.0% 0.0	6 0.0% 0	0.0%	.0% 0.0%	0.0% 0.09	6 1	1		JUNO BEACH MPA	Proposed	2	2 SI	EFL 1	13	3	4	3	3 1	1	3 1	1 2	1	2 1	1 1	2	1 1		
PUSH BUTTON HILL	Proposed	24.4	9.4	SEFL	S-G	0.0%	0.2%	0.0%	0.8%	0.2%	0.0% 0	0.0% 0.0%	0.0% 0.0	0% 0.0%	6 0.0%	0.0% 0.0	6 0.0% 0	0.0%	.0% 0.0%	0.0% 0.09	6 1	ι		PUSH BUTTON HILL	Proposed	3	3 SI	EFL 1	1 2	2	1	2	1 2	1	1 2	2 2	1	1 1	2 1	1	2 1	1	
St. Lucie Hump	Existing	24.4	9.4	SEFL	S-G	0.0%	0.2%	0.0%	0.0%	0.2%	0.0%										1	ι		St. Lucie Hump	Existing	4	4 SI	EFL 1	1	1	3	1	2										
WARSAW HOLE 4	Proposed	6.2	2.4	SEFL	WG?	0.0%	0.0%	0.0%	0.6%	0.0%	0.0% 0).0% 0.0%	0.0% 0.0	0% 0.0%	6 0.0%	0.0% 0.0	6 0.0% 0	0.0% 0	.0% 0.0%	0.0% 0.09	6 1	L	L	WARSAW HOLE 4	Proposed	1	1 Si	EFL 1	3	4	2	3	4 3	1	2 2	2 1	1	3 1	3 1	3	2 1	1	
						0.00/	0 407	0.01/	4 44/	0 107	0 10/ 0	001 0 001	0.00/ 0./	AN/ A AN/	0.01/	0.00/ 0.0	0.00/ 0	0.01/ 0	00/ 0.00/	0.01/ 0.01	_																						

	25-100 fathoms	SPECKLED	HIND HABITAT	I SUITABILITY	WARSA	W GROUPER H SUITABILITY	ABITAT	Red	Porgy	Verm	ilion	POTE) Sca	rtial rec mp	OUCED LA Ambe	NDINGS Irjack	Blue	line	Ga	u	Red	Gpr	21.1V
	AREA (mi2)	YES	YES & Maybe	Prob	YES	YES & MAYBE	Prob	Cam	Hbt	Com	Hbt	Com	Hbt	Com	Hbt	Com	Hbt	Com	Hbt	Com	Hbt	1010
STATUS QUO	925	17%	9%	6%	10%	9%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9
EWG RECOMMENDATIONS	1700	51%	26%	19%	33%	25%	23%	3%	1%	3%	1%	4%	2%	5%	1%	1%	0%	2%	1%	2%	1%	25
EWG RECOMMENDATIONS (CHAPC SCALAR)	1700	51%	23%	18%	34%	22%	19%	3%	1%	3%	1%	4%	2%	3%	1%	1%	0%	2%	1%	2%	1%	2



























IMPACTS on ASSOCIATED STOCKS

	With Spec	kled Hind	With Warsa	aw Grouper
Rank	Commercial	Headboat	Commercial	Headboat
1	red porgy	vermilion snapper	red porgy	gray triggerfish
2	scamp	gray triggerfish	scamp	black sea bass
3	vermilion snapper	scamp	vermilion snapper	red snapper
4	greater amberjack	red porgy	greater amberjack	gag
5	red snapper	tomtate	speckled hind	gray snapper
6	gag	white grunt	red snapper	lane snapper
7	red grouper	knobbed porgy	gag	vermilion snapper
8	gray triggerfish	greater amberjack	gray triggerfish	tomtate
9	warsaw grouper	gag	red grouper	scamp
10	rock sea bass	red snapper	red hind	whitebone porgy
11	snowy grouper	black sea bass		greater amberjack

Identifying Efficient Sites

Selection Criteria:

- 1. High Fishery-Dependent- and Fishery-Independent-Positive Observations / Gear Sample
- 2. High modeled percent stock
- 3. High percentage of 'Known & Probable' habitat
- 4. Low predicted impacts on harvest of associated stocks (but...must displace bycatch mortality)
- 5. Contain known spawning locations

