SCIENCE

GOAL: **Management decisions for the snapper grouper fishery are based upon robust, defensible science that considers qualitative and quantitative data analyzed in a timely, clear, and transparent manner that builds stakeholder confidence.**

			FL			GA			SC			NC			TOTAL		
			X	√	Ø	X	√	Ø	X	√	Ø	X	√	Ø	X	√	Ø
Objective 1.	**Strategy 1.1**	**Evaluate existing data collection, monitoring, and reporting programs affecting fisheries managed by the Council.**															
Promote collection of quality data to support management plans and programs considered by the Council.	**Actions:**	**A.** Evaluate fishery dependent and independent data programs.			0			0		1				0	0	1	0
		B. Evaluate SEDAR.		3				0		2			1		0	6	0
		C. Validate data collection programs.			0		1			1				0	0	2	0
		D. Identify sampling resources needed to support data programs.		1				0		1				0	0	2	0
		E. Improve the timeliness of SAFE reports.			0			0		1				0	0	1	0
		F. Consider utilizing third party analysis and assessments using a standard stock assessment process.		2				0		2				0	0	4	0
	Strategy 1.2	**Encourage consistency in data collection programs that incorporates standardized methods, reporting requirements and formats across the South Atlantic region.**															
	Actions:	**A.** Utilize ACCSP standards for data collection.			0		2			1				0	0	3	0
		B. Support efforts to create a uniform, efficient reporting mechanism for trip tickets and logbooks (C,FH).			0		2	0		1				0	0	3	0
	Strategy 1.3	**Support improvement and expansion of fishery independent programs.**															
	Actions:	**A.** Identify alternative sources of funding to support expansion of fishery independent surveys.			0		1			1			1		0	3	0
		B. Work with management partners to secure long-term funding for the MARMAP survey.			0		1			1				0	0	2	0
		C. Support creation of a comprehensive data portal that provides access to all fishery independent data.			0		1			1				0	0	2	0

			FL-X	√	Ø	GA-X	√	Ø	SC-X	√	Ø	NC-X	√	Ø	T-X	√	Ø
Objective 2. **Encourage development of mechanisms to effectively engage and collaborate with stakeholders on cooperative research, data collection and analysis.**	**Strategy 2.1**	**Promote and expand opportunities for cooperative research and surveys in the South Atlantic region.**															
	Actions:	**A.** Identify sources of funding (both traditional and non-traditional) for cooperative research and surveys.		1				0		1			1		0	3	0
		B. Improve partnerships between potential researchers and fishermen. (ALL)		1				0		2			1		0	4	0
		C. Support partnerships to enhance habitat and ecosystem mapping in the region.			0		1	0		1				0	0	2	0
		D. Support a multi-disciplinary body to oversee and guide cooperative fishery independent surveys, monitoring, and research.			0			0		1				0	0	1	0
		E. Consider use of an industry research set-aside funding program to support fishery research and monitoring needs. (C)			0			0		1			2		0	3	0
		F. Utilize fishing vessels and captains as alternative observer platforms. (ALL)			0			0		1				0	0	1	0
	Strategy 2.2	**Support development of citizen science programs for data collection needs in the snapper grouper fishery.**															
	Actions:	**A.** Support a volunteer angler training program to collect specific data to address a science or management need. (ALL)			0		2			1			4		0	7	0
		B. Develop methods to incorporate volunteer data for use in stock assessments, and other management measures. (ALL)			0		1			2				0	0	3	0
		C. Consider the use of volunteer angler tagging programs and partnerships with fishing clubs and others to train and promote programs (traditional catch and release, etc.).			0		2			1			5		0	8	0
		D. Utilize fishing vessels and captains as alternative data collection platforms.			0		2			1			1		0	4	0
Objective 3. **Improve knowledge about the social and economic elements of the snapper grouper fishery in the South Atlantic.**	**Strategy 3.1**	**Support collection of relevant economic and social data to produce analyses that allows Council to consider effects of management on fishing communities.**															
	Actions:	**A.** Support data collection that considers economics when determining allocation strategies.			0		1			1			1		0	3	0
		B. Evaluate broad cumulative social and economic impacts of proposed and existing management measures and alternatives to assess how management actions affect other fisheries.		4			1			1		1			1	6	0
		C. Develop partnerships with research institutions, agencies and other organizations with appropriate expertise to collect relevant and timely social and economic data to support the data needs of the Council.			0		1			1			1		0	3	0

Objective 4.	Strategy 4.1	Consider a wide range of monitoring options for the snapper grouper fishery that will meet a specific management objective.	FL-X	√	Ø	GA-X	√	Ø	SC-X	√	Ø	NC-X	√	Ø	T-X	√	Ø
Support improved and expanded monitoring and reporting programs for the snapper grouper fishery.	Actions:	**A.** Consider the use of observers in the fishery to monitor for a specific management issue.	1	1			1		1					0	2	2	0
		B. Support the use of observer data to improve discard rate estimates.		1	0			0		1				0	0	2	0
		C. Consider development and use of appropriate electronic monitoring methods (scale, cost, approach, etc.)	87				1			7		9	1	0	96	9	0
		D. Support for law enforcement to enforce monitoring requirements.			0		1			1				0	0	2	0
	Strategy 4.2	**Support further development of reporting mechanisms for all sectors in the snapper grouper fishery.**															
	Actions:	Reporting mechanisms that could be improved and considered include:								1					0	1	0
		A. Development of a reporting program for the recreational sector.		2				0		2			3		0	7	0
		B. Use of electronic reporting mechanisms for all sectors of the fishery (mobile apps, cellphones, web-based, etc.)	2	2			2			1			2		2	7	0
		C. Consider the use of swipecards for the recreational sector.		2			2			1				0	0	5	0
		D. A recreational fishing stamp/permit/license for the snapper grouper fishery.		8				0		1				0	0	9	0
		E. Increase dockside biological sampling for the recreational sector.		1				0		1				0	0	2	0
		F. Catch card reporting program for specific species.		1		1	1			1				0	1	3	0
		G. Improvements to existing logbook programs (Better resolution on logbook grids, Vessel Trip Report in discard logbook, etc.)		1				0		1				0	0	2	0
		H. Incentives for reporting in all sectors.			0			0		1				0	0	1	0
		I. Consequences for lack of reporting.		1			1			1				0	0	3	0
		J. Support for law enforcement to enforce reporting requirements.			0	1	1			1				0	1	2	0
		K. Increase bycatch/discard reporting.		2			1	0		1				0	0	4	0
		L. Implement Standard Bycatch Reporting Methodology		2				0		1				0	0	3	0
		M. Develop a model to improve discard rate estimates for all sectors.		2			1			1		1			1	4	0

Objective 5.	Strategy 5.1	Consider assessment of ecosystem and habitat data needs for the snapper grouper fishery.	FL-X	√	Ø	GA-X	√	Ø	SC-X	√	Ø	NC-X	√	Ø	T-X	√	Ø
Promote data collection and analysis to support ecosystem and habitat considerations for the snapper grouper fishery.	Actions:	**A.** Improve understanding and consider species interaction with habitats and ecosystems.		1				0		1				0	0	2	0
		B. Study the non-fishing ecosystem drivers.		1			1			1				0	0	3	0
		C. Consider how to utilize ocean monitoring to support management decisions.		1				0		1				0	0	2	0
		D. Improve understanding of the effects of contaminants on habitats/ecosystems.		1				0		1				0	0	2	0
		E. Evaluate ocean dumping and impacts to habitat/ ecosystems.		1				0		1				0	0	2	0
		F. Improve timeliness, accuracy, and coverage of bottom mapping.		1			1			1				0	0	3	0
		G. Determine how habitats (naturally occurring and man-made) contribute to production of managed species and the distribution of different life stages.		1				0		1				0	0	2	0
		H. Evaluate the effectiveness of artificial reefs (both shallow water and deep water) as a management tool.		1				0		1			1		0	3	0
		I. Evaluate habitat/ecosystem damage from disturbance (anchors, gear, fishing activities, etc.)		1				0		1			1		0	3	0
		J. Improve understanding of the impacts of offshore energy development on habitats and ecosystems that support the snapper grouper fishery.		1				0		1				0	0	2	0
	Strategy 5.2	**Consider climate change impacts when developing management decisions for the snapper grouper fishery.**															
	Actions:	**A.** Support development of metrics to evaluate climate change.			0			0		1				0	0	1	0
		B. Evaluate the impact of sea level rise on the fishery.			0			0		1				0	0	1	0
		C. Evaluate impacts of cold water intrusion on the fishery.			0			0		1				0	0	1	0
		D. Evaluate impacts of ocean acidification on the fishery.			0			0		1				0	0	1	0
	Strategy 5.3	**Support modeling efforts that incorporate habitat and ecosystem considerations for management of the snapper grouper fishery.**															
	Actions:	**A.** Use climate change impacts on species in assessments.			0			0		1				0	0	1	0
		B. Support a simulation model showing ecosystem impacts between fisheries.			0			0		1				0	0	1	0
		C. Consider expanding the geographical boundary of the Snapper Grouper Fishery Management Unit as species spread.			0			0		1				0	0	1	0
		D. Monitor changes in species distribution and abundance (in conjunction with management partners).			0			0		1				0	0	1	0
		E. Address impacts of non-indigenous species on the fishery and habitats that support the fishery (in conjunction with management partners).			0		2			1			1		0	4	0
		F. Analyze the impacts of management on non-targeted species.			0			0		1				0	0	1	0
		G. Improve understanding of predator-prey interactions on snapper grouper species (in conjunction with management partners).			0			0		1				0	0	1	0
		H. Consider species habitat models.			0		1			1				0	0	2	0
		I. Consider external sources of recruitment.			0			0		1			1		0	2	0