Report of the Scientific and Statistical Committee

Caribbean Fishery Management Council

172nd Meeting

December 8, 2020

Topics Addressed

- Ecosystem Conceptual Model
- Spiny Lobster Constant OFL/ABC
- Executive Order 13921: Promoting American Seafood Competitiveness and Economic Growth

SSC Ecosystem Conceptual Model

Model has 8 Submodels
Submodels have variable number of components

- **Marine Ecosystem Components (12)**
- **Competing Use of Resources (15)**
- **Socio-economic and Cultural Drivers (16)**
- **Land-Based Uses (8)**
- **Fishing (10)**
- **Water Quality** (6)
- **Habitat (5)**
- **Abiotic Factors (9)**

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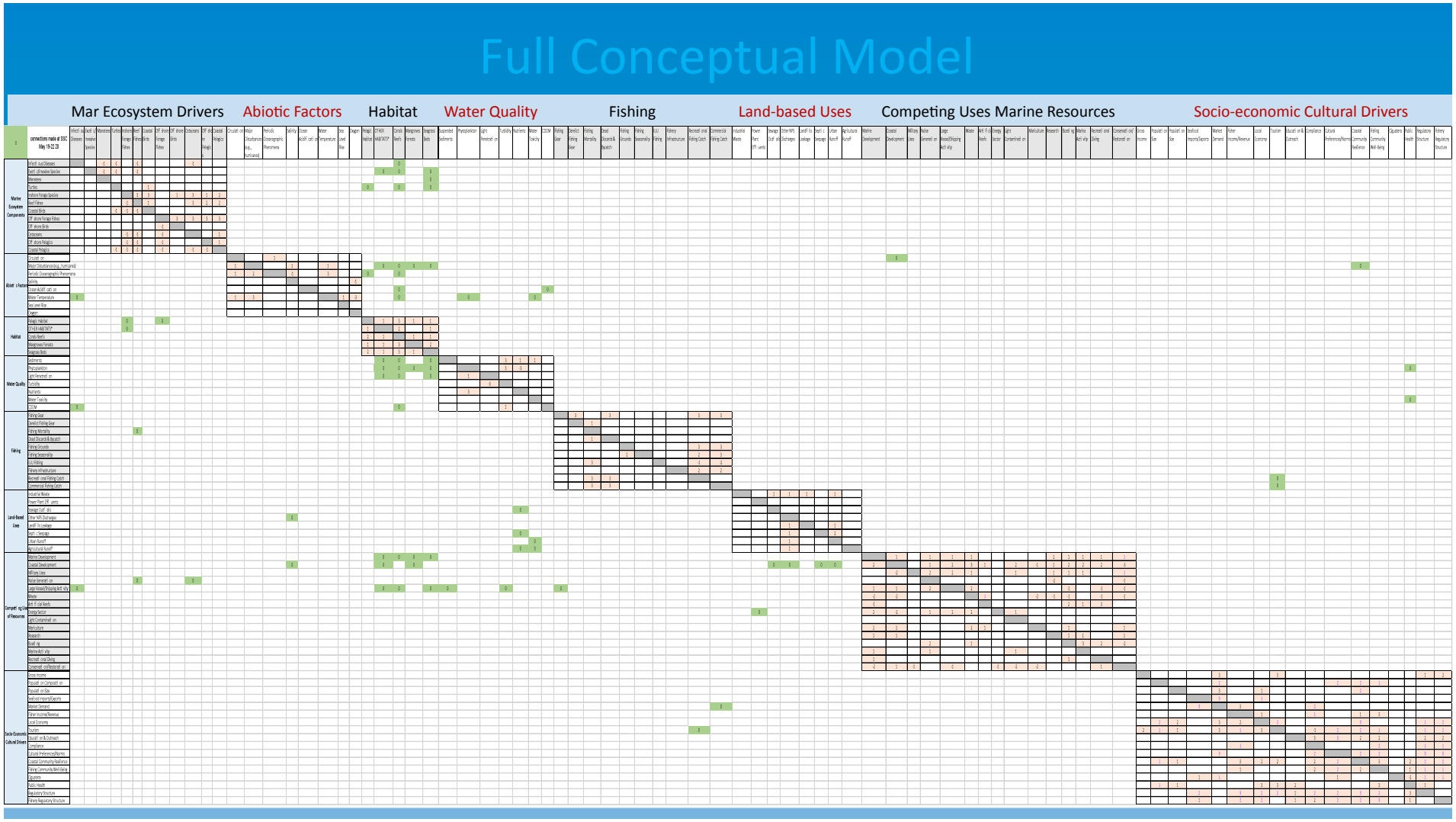
Over 64,000 potential connections!

Full Conceptual Model



Connections between Submodels

Priority Connections between Components within Each Pair of Submodels

Identify the 3 most important connections, their direction, and their strength

- A way to start and focus the SSC as it evaluates the over 64,000 potential component-to-component connections within the ECM
- Interim Results for the Council and its EBFM TAP
- Results should also be made available to other interested user groups
  - Caribbean Lenfest project/team
  - SEFSC's Ecosystem Status Report

Priority Assessment Form

56 Sets of Comparisons

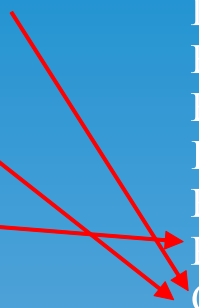
	Fishing				S-E-C Drivers				Mar Eco Comp				Habitat				Land Base Sources				Abiotic				Water Quality				Competing Uses			
	Driver Component	Response Component	Direction (+/-)	Strength (L/M/H)	Driver Component	Response Component	Direction (+/-)	Strength (L/M/H)	Driver Component	Response Component	Direction (+/-)	Strength (L/M/H)	Driver Component	Response Component	Direction (+/-)	Strength (L/M/H)	Driver Component	Response Component	Direction (+/-)	Strength (L/M/H)	Driver Component	Response Component	Direction (+/-)	Strength (L/M/H)	Driver Component	Response Component	Direction (+/-)	Strength (L/M/H)	Driver Component	Response Component	Direction (+/-)	Strength (L/M/H)
Fishing																																
S-E																																
Mar Eco Comp																																
Habitat																																
Land Base Source																																
Abiotic																																
Water Quality																																
Competing Uses																																

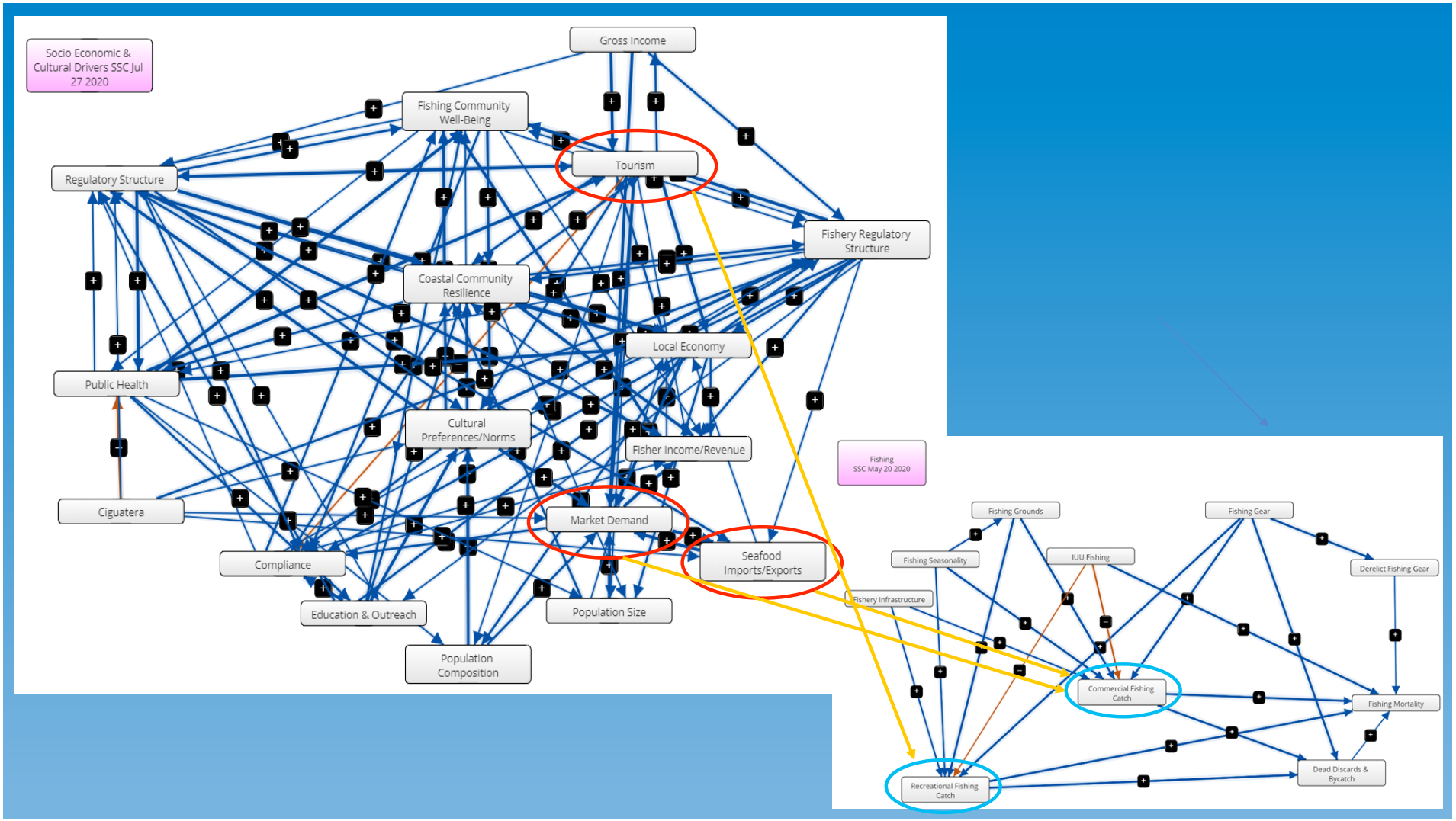
Example: The three most important component connections from the *Socio-Economic and Cultural Drivers (S-E-C)* submodel affecting the *Fishing* submodel could be:

- Seafood Imports/Exports affecting Commercial Fishing Catch
- Market Demand affecting Commercial Fishing Catch
- Tourism affecting Recreational Fishing Catch

In this case, two of the driver components affect the same target component.

S-E-C Submodel Components	Fishing Submodel Components
Gross Income	Fishing Gear
Population Composition	Derelict Fishing Gear
Population Size	Fishing Mortality
Seafood Imports/Exports	Dead Discards & Bycatch
Market Demand	Fishing Grounds
Fisher Income/Revenue	Fishing Seasonality
Local Economy	IUU Fishing
Tourism	Fishery Infrastructure
Education & Outreach	Recreational Fishing Catch
Compliance	Commercial Fishing Catch
Cultural Preferences/Norms	
Coastal Community Resilience	
Fishing Community Well-Being	
Ciguatera	
Public Health	
Regulatory Structure	
Fishery Regulatory Structure	




Socio Economic & Cultural Drivers SSC Jul 27 2020
Gross Income
Fishing Community Well-Being
Tourism
Regulatory Structure
Fishery Regulatory Structure
Coastal Community Resilience
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Fishing SSC May 20 2020
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Fishing Mortality
Dead Discards & Bycatch
Recreational Fishing Catch

	Fishing (response submodel)			
	Driver Component	Response Component	Direction (+/-)	Strength (L/M/H)
S-E-C (driver submodel)	Seafood Imports/ Exports	Commercial Fishing Catch	0	M
	Market Demand	Commercial Fishing Catch	+	H
	Tourism	Recreational Fishing Catch	+	H

Example: Just 1 Out of 56 Sets of Comparisons

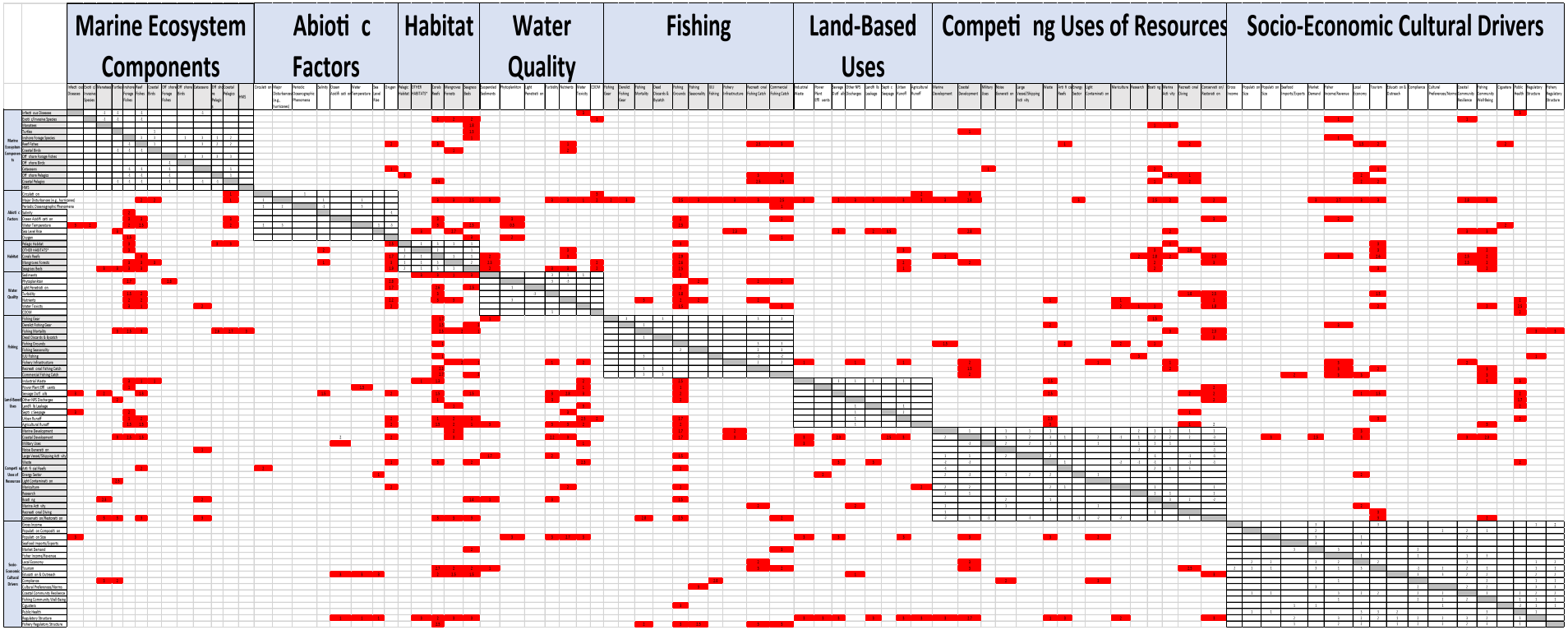
Quantitative Outputs

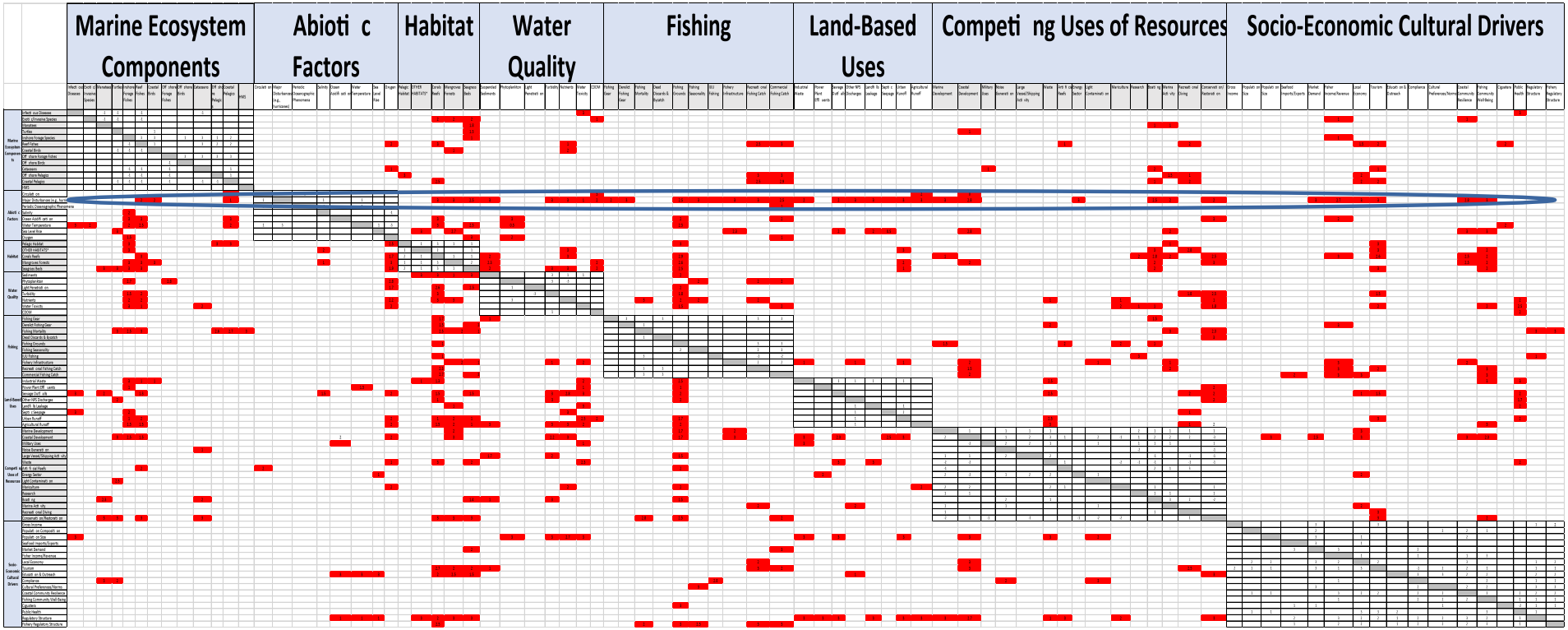
	(Driver)	(Target) Land Based Uses	SSC 1	SSC 2	SSC3	SSC 4	SSC 5	SSC 6	SSC 7	SSC 8	Mean	Tally	Sum
Competi ng Uses of Resources	Marine Development											0	0
	Coastal Develop	Urban Runoff	3	3	3	3	3	3	3		3.0	7	21
	Coastal Develop	Sewage Outf alls		3	1					3	2.3	3	7
	Coastal Develop	Septi c Seepage				3		2			2.5	2	5
	Coastal Develop	Industrial Waste								3	3.0	1	3
	Military Uses	Industrial Waste	3								3.0	1	3
	Noise Generati on											0	0
	Large Vessel/Shipping Acti vity											0	0
	Waste	Landfi lls Leakage				3					3.0	1	3
	Waste	Sewage Outf alls					3				3.0	1	3
	Arti fi cial Reefs											0	0
	Energy Sector	Power Plant Effl uents		2					2		2.0	2	4
	Light Contaminati on											0	0
	Mariculture	Agricultural Runoff	2								2.0	1	2
	Research											0	0
	Boati ng											0	0
	Marina Acti vity	Other NPS Discharges			2		2	2	2	2	2.0	5	10
	Recreati onal Diving											0	0
	Conservati on/Restorati on											0	0

10 Connections given priority across SSC members

Overall Resultant Connections

- 484 = Connections identified between components across submodels
- 788 = Total connections including within submodels


Marine Ecosystem Components
Abiotic Factors
Habitat
Water Quality
Fishing
Land-Based Uses
Competing Uses of Resources
Socio-Economic Cultural Drivers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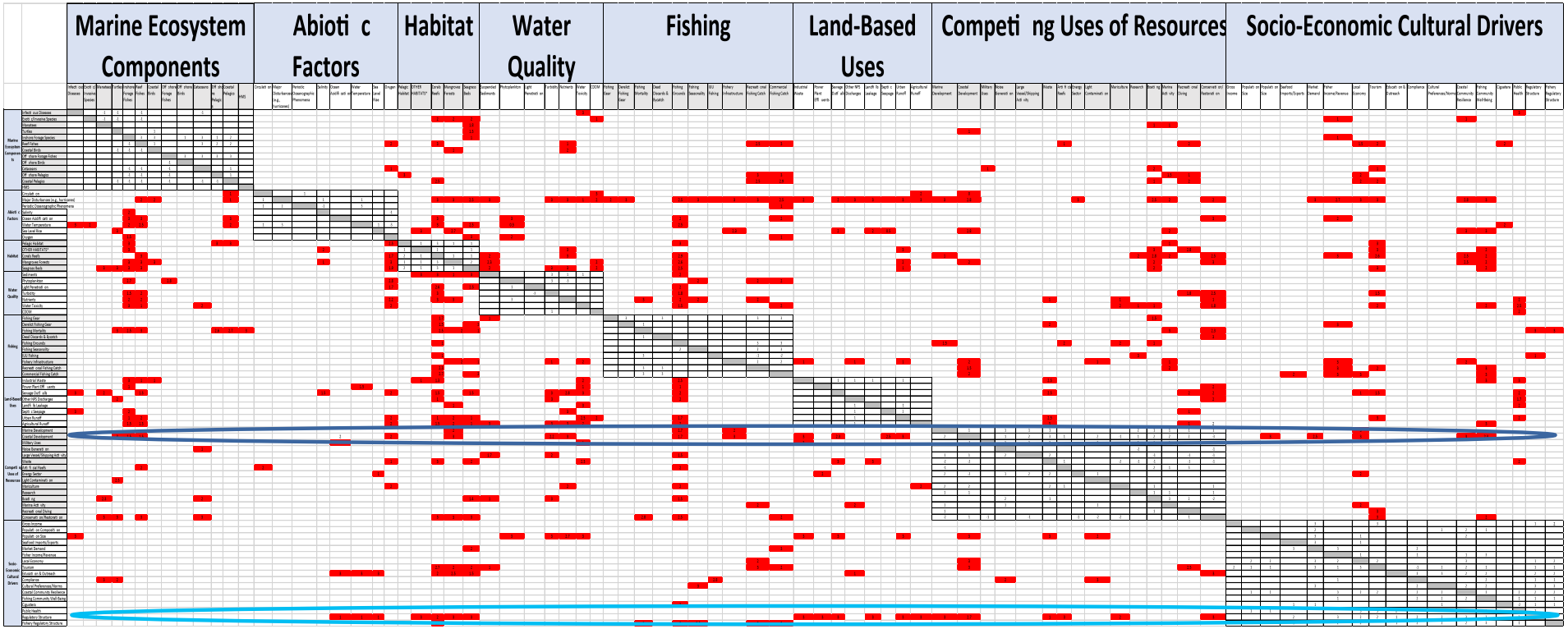
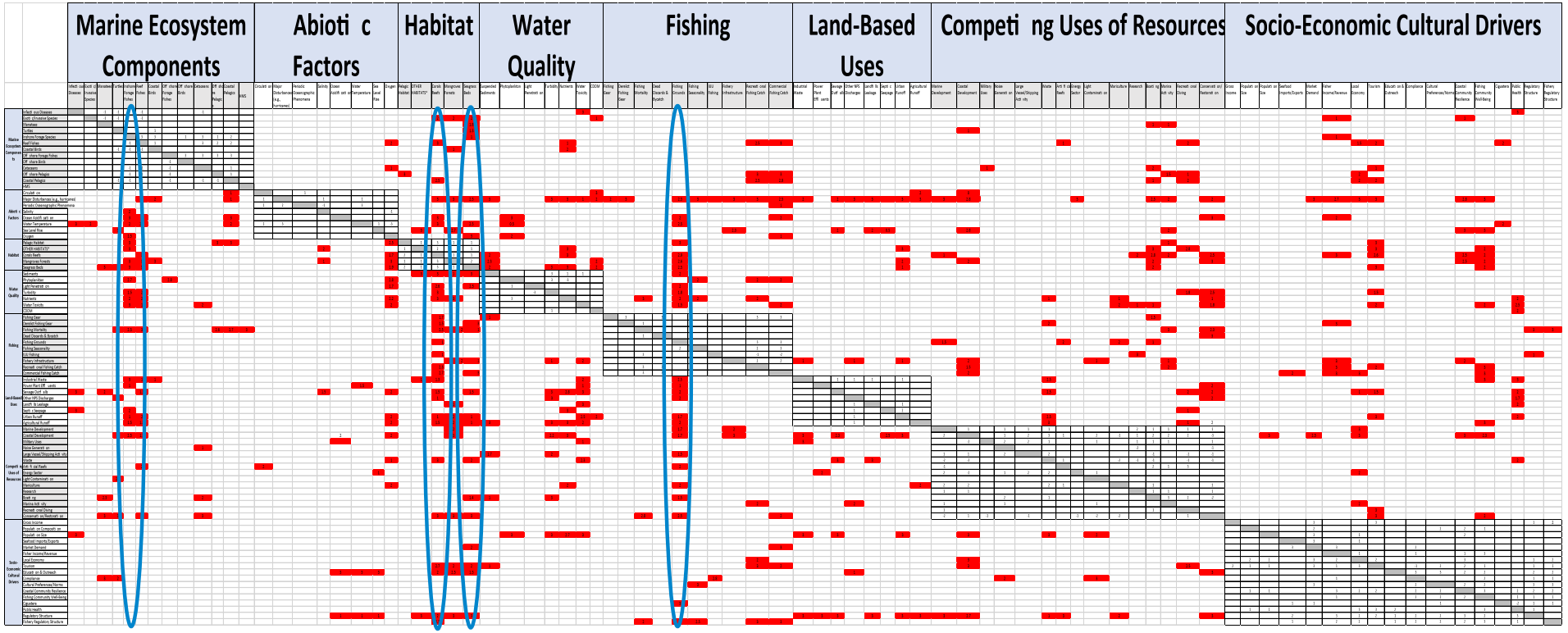


19 Coastal Development

19 Regulatory Structure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Land-Based Uses
Competi ng Uses of Resources
Socio-Economic Cultural Drivers
19 Inshore Forage Fishes
28 Coral Reefs
23 Sea Grass Beds
27 Fishing Grounds

SSC Ecosystem Conceptual Model

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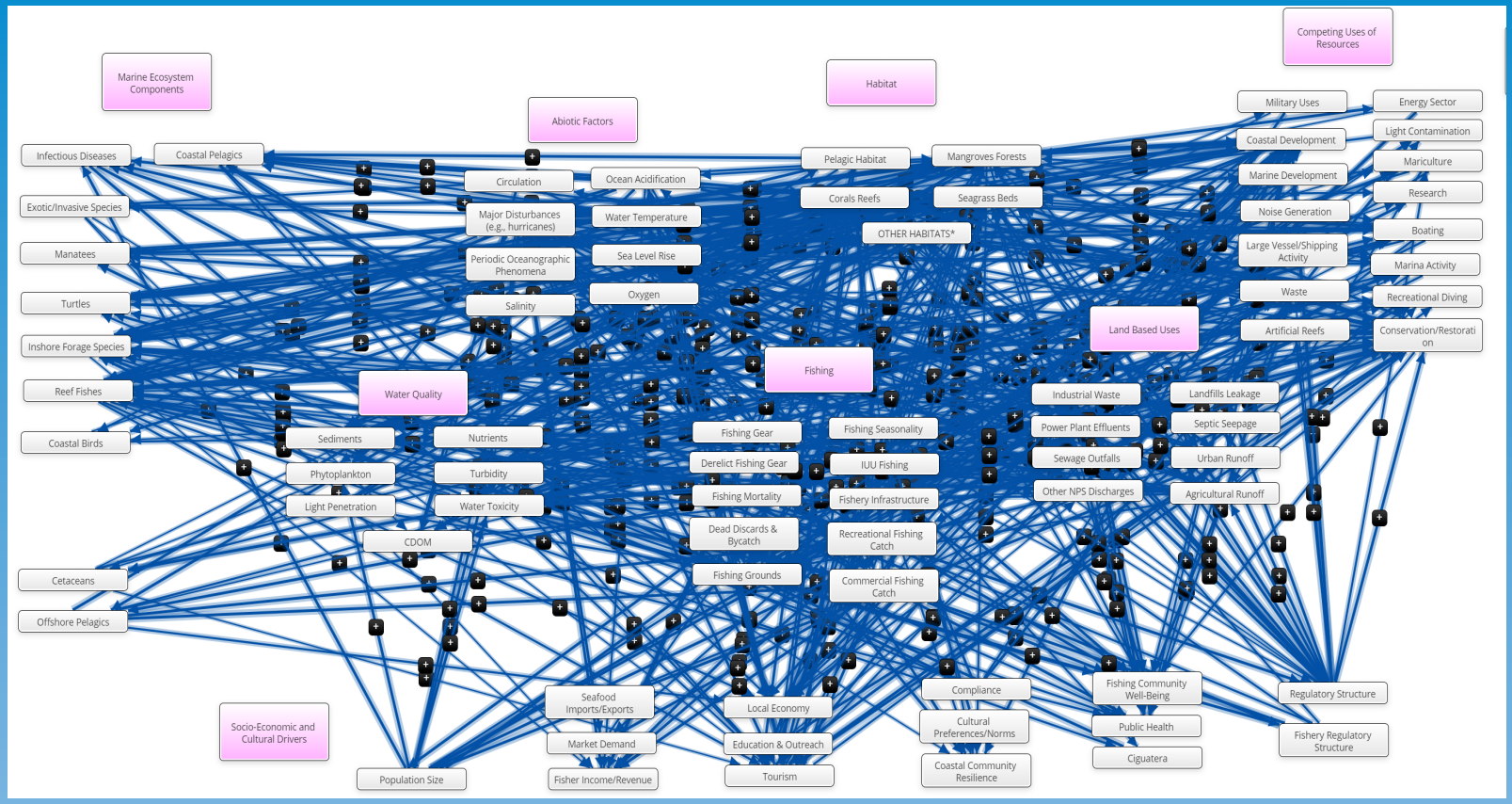
(Inter-Connections; September 2020)



Spiny Lobster 3-Year Constant ABC

Spiny Lobster 3-Year Constant ABC

- The SSC recommends that the approach to determining a 3-year constant ABC for spiny lobster is to determine a 3-year OFL and apply a constant buffer (P*).

- The constant OFL is determined by taking the 3-year average OFL.

- With the current data available, the resulting recommended values for the years 2021, 2022, and 2023 constant OFLs are
  - 420,510 lbs for PR,
  - 170,247 lbs for St Thomas, and
  - 167,897 lbs for St. Croix;
- and for the years 2021, 2022, and 2023 constant ABCs are
  - 370,853 lbs for PR,
  - 150,143 lbs for St. Thomas, and
  - 148,071 lbs for St. Croix.
- These values may change with new data.

Year	PR OFL	PR ABC	STT/STJ OFL	STT/STJ ABC	STX OFL	STX ABC
2021	406,257	358,283	195,223	172,170	200,020	176,400
2022	425,164	374,958	165,021	145,534	159,452	140,623
2023	430,109	379,319	150,497	132,725	144,219	127,189
Average	420,510	370,853	170,247	150,143	167,897	148,071

Executive Order 13921

Promoting American Seafood Competitiveness and Economic Growth

Executive Order 13921

Promoting American Seafood Competitiveness and Economic Growth

Sec. 2. *Policy.* It is the policy of the Federal Government to:

(a) identify and remove unnecessary regulatory barriers restricting American fishermen and aquaculture producers;

(b) combat illegal, unreported, and unregulated fishing;

(c) provide good stewardship of public funds and stakeholder time and resources, and avoid duplicative, wasteful, or inconclusive permitting processes;

(d) facilitate aquaculture projects through regulatory transparency and long-term strategic planning;

(e) safeguard our communities and maintain a healthy aquatic environment

In light of Executive Order 13921, the SSC recommends to the CFMC that the necessary resources be made available to (1) conduct resource surveys to determine the abundance of key marine resources in the U.S. Caribbean, and (2) conduct quantitative stock assessments that can provide guidance on OFL limits (i.e., Tiers 1-3 of the ABC Control Rule).