

THE SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL AND SOUTHEAST
DATA ASSESSMENT AND REVIEW

Fishery Performance Report Text Analysis

Social and Economic Panel Meeting – April 2026



Presentation Overview

Background

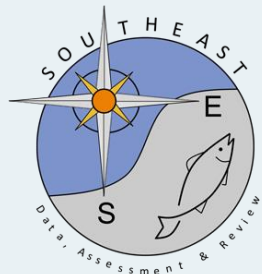
- Another opportunity to incorporate fishermen knowledge into stock assessments

Text Analysis Products

- Reel Insights-Internal (Attachment 9a)
- Reel Insights-External (Attachment 9b)

Next Steps

- Need to categorize lexicon
- Potential future utility for public comments





Background

- Expand utility of an existing resource (FPR)

**Snapper Grouper Advisory Panel
Fishery Performance Report for Red Snapper
November 2020**



On November 4, 2020, the South Atlantic Fishery Management Council's (Council) Snapper Grouper Advisory Panel (AP) reviewed fishery information for Red Snapper and developed this fishery performance report (FPR). The purpose of the FPR is to assemble information from AP members' experience and observations on the water and in the marketplace to complement scientific and landings data. The FPR for Red Snapper will be provided to the Scientific and Statistical Committee (SSC) and the Socio-Economic Panel (SEP) to complement material being used in the standard assessment (SEDAR 73) scheduled for completion in spring 2021 and to inform future management.

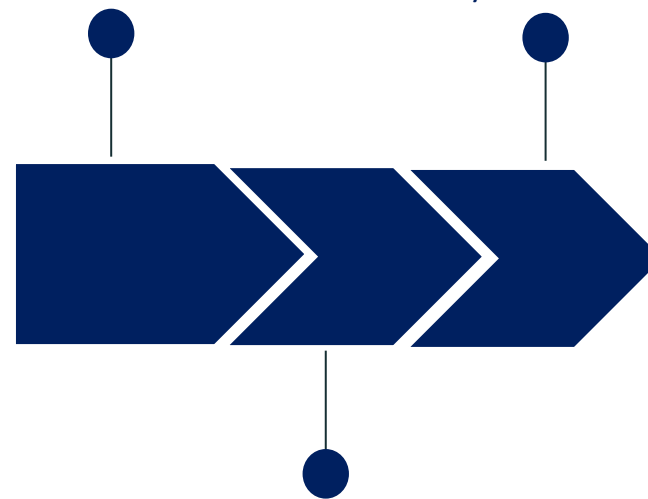
Advisory Panel Members:

James Hull Jr., Chair (FL/commercial)	Randy McKinley (NC/commercial)
Robert Lorenz, Vice-Chair (NC/recreational)	Andrew Fish (FL/commercial)
Vincent Bonura (FL/commercial)	Andrew Mahoney (SC/commercial)
Richen "Dick" Brame (NC/NGO)	Tony Constant (SC/recreational and charter)
Randall Beardsley (FL/recreational)	David Moss (FL/recreational)
Jack Cox Jr. (NC/commercial)	Fentress "Red" Munden (NC/conservation)
Chris Militello (FL/recreational)	James Paskiewicz (FL/commercial)
Robert Freeman (NC/charter)	Andy Piland (NC/charter)*
Richard Gomez (FL/charter)	Cameron Sebastian (SC commercial/charter)*
Lawton Howard (GA/recreational)	David Snyder (GA/consumer rep)

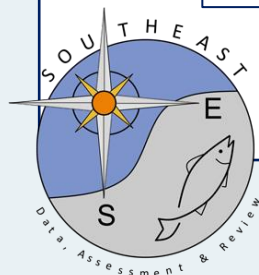
- Provide additional opportunities to incorporate fishermen knowledge into stock assessments

Current avenues below:

Public Comment Fishery Performance Report



Appointed Role in SEDAR process





Text Analysis Products

Reel Insights - Internal

Purpose

Methods

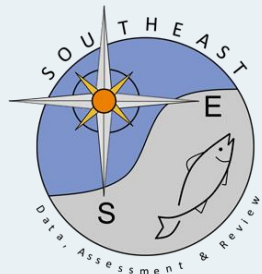
Limitations

Reel Insights - External

Purpose

Results

Application





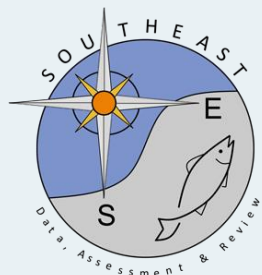
Reel Insight : Internal

- For text analysis code users
- Provide quick, repeatable methodology and standardization



Table of Contents

1. Data	3
Data Set	3
Cleaning the Data	3
2. Analyses.....	3
Responses.....	3
Word Frequency.....	5
Dendrogram of Text Clustering and Multidimensional Scaling (MDS) plots	6
Sentiment Analysis	8
Thematic table.....	11
Correlation Matrix of Word Co-Occurrences	12
3. Appendix	14



Purpose

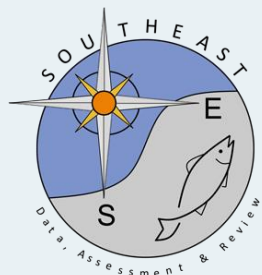
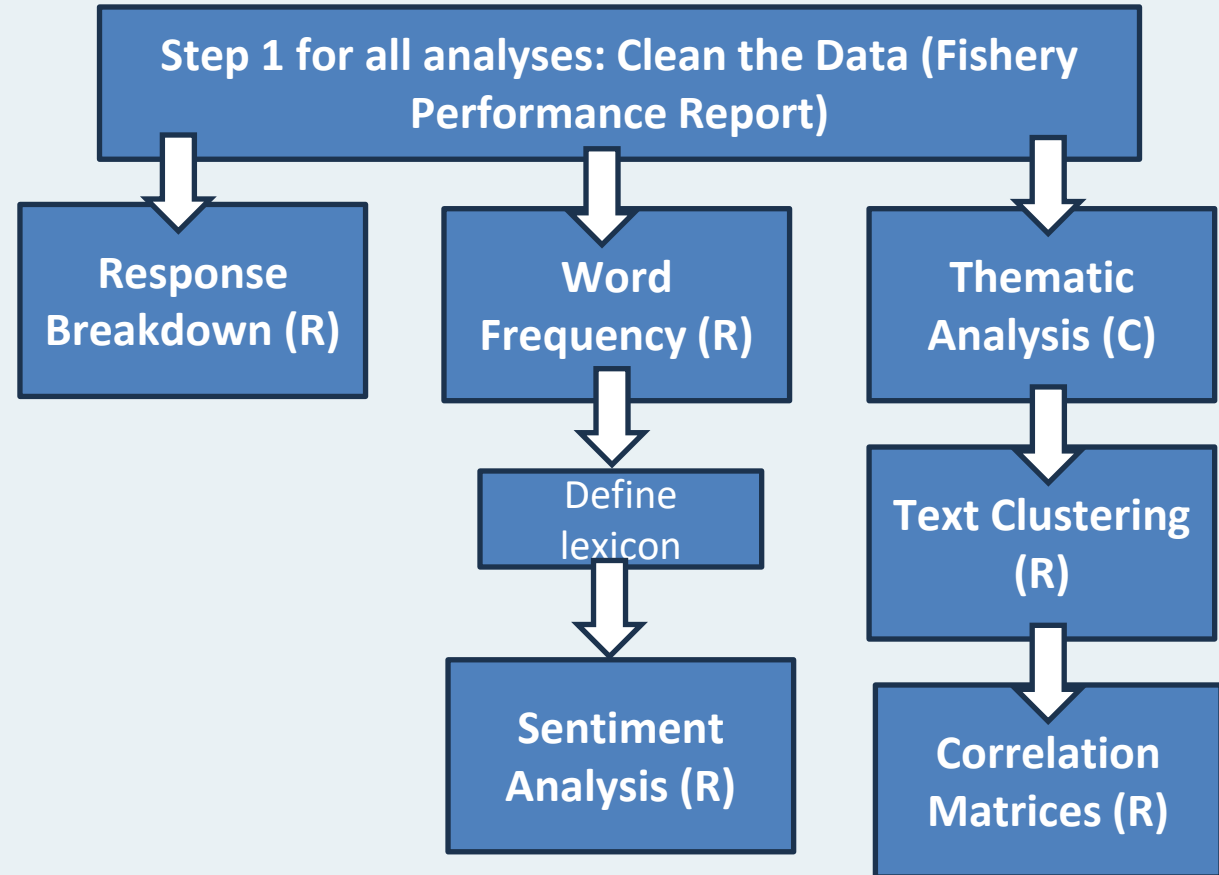
Methods

Limitations



Reel Insight : Internal

- Modeled off Gulf Council's Fisherman Feedback tool code
- Software used: R studio (R) and ChatGPT (C)





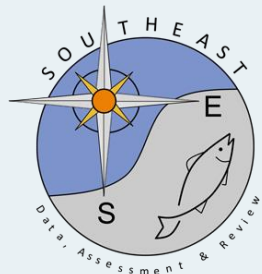
Reel Insight : Internal

OBSTACLE 1

- Fishery Performance Reports (FPR) have standardized questions
Results will be a product of those questions

OBSTACLE 2

- AI algorithms learn from user
This may introduce user bias for ChatGPT generated **thematic analyses**
Solution: Validate ChatGPT **thematic analyses** by hand and compare results



Purpose

Methods

Limitations



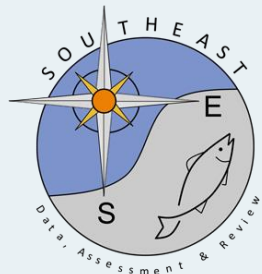
Reel Insights : External

- For external/public facing use



Table of Contents

1. Executive Summary.....	3
2. Methods.....	3
3. Results.....	3
<i>Responses</i>	3
<i>Sentiment around Red Snapper</i>	4
<i>Themes</i>	7
<i>Correlated Words</i>	7
4. Discussion	8
5. Additional Resources	8
Appendix	10





Reel Insights : External

Response Breakdown

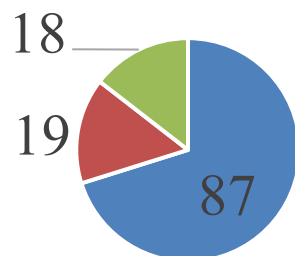
Methods

Step 1: Clean the Data (Fishery Performance Report)



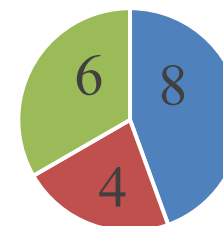
Step 2: Response Breakdown (R)

Responses by Sector



- For Hire
- Private Recreational
- Commercial

Individuals by Sector



- For Hire
- Private Recreational
- Commercial



Purpose

Results

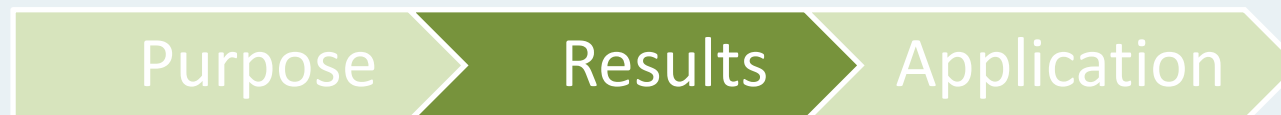
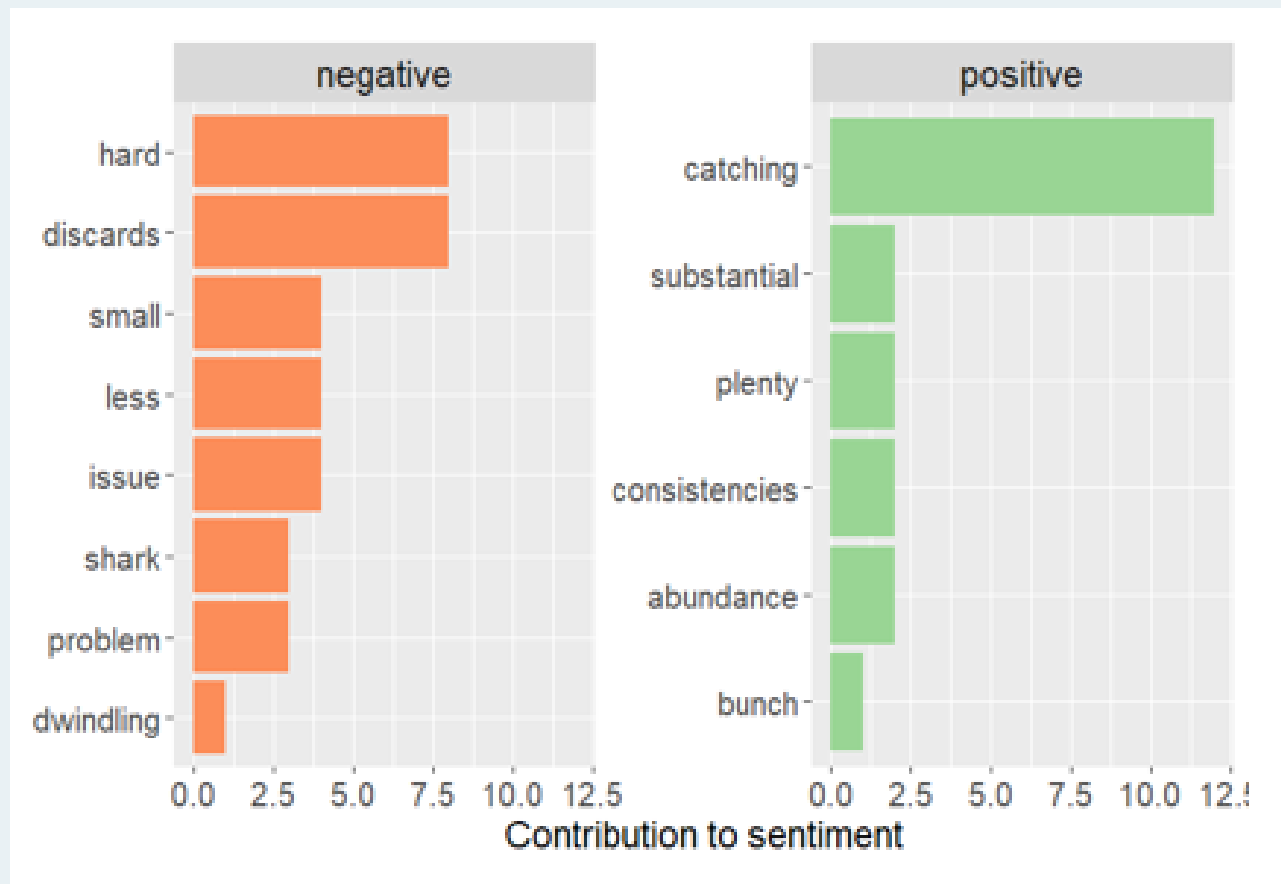
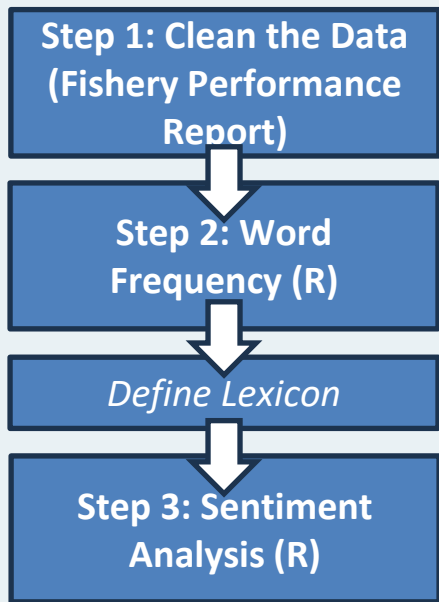
Application



Reel Insights : External

General Sentiment Analyses

Methods





Reel Insights : External

Geographical Sentiment Analyses

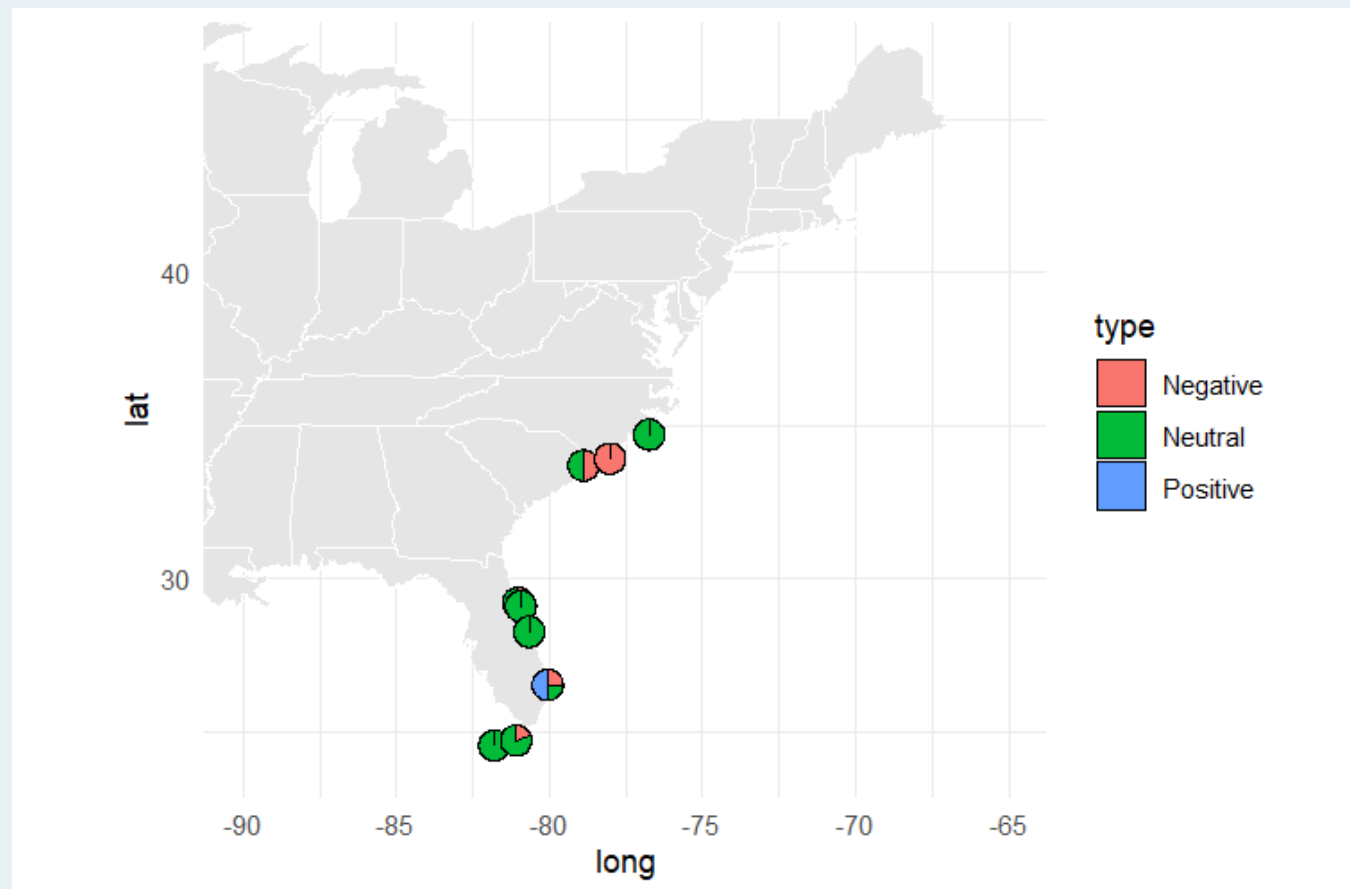
Methods

Step 1: Clean the Data
(Fishery Performance Report)

Step 2: Word Frequency (R)

Define Lexicon

Step 3: Sentiment Analysis (R)



Purpose

Results

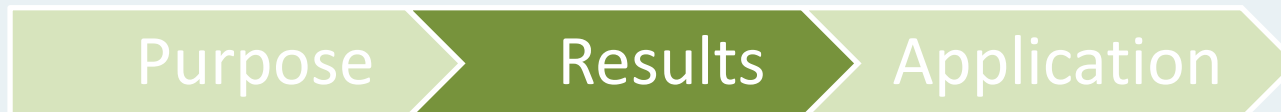
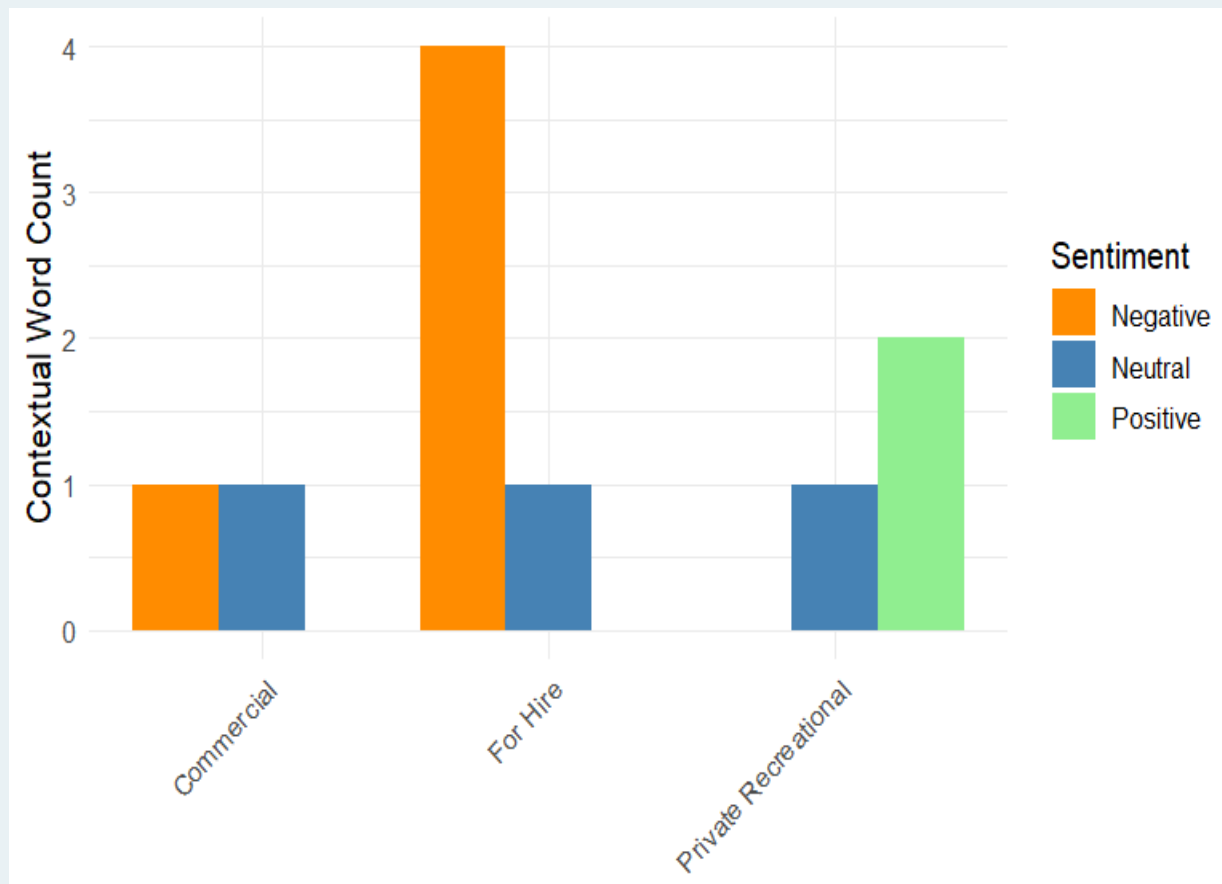
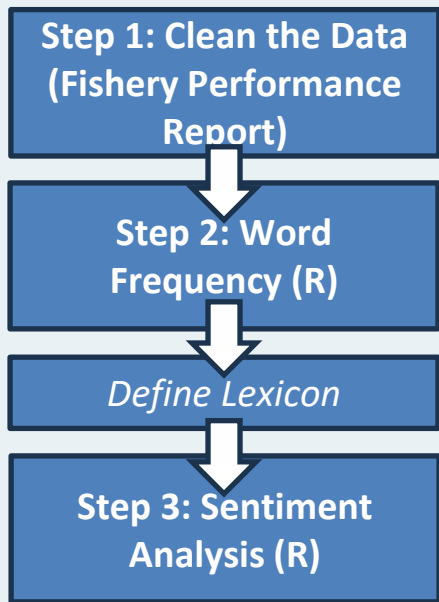
Application



Reel Insights : External

Sector Specific Sentiment Analyses

Methods





Reel Insights : External Thematic Analysis

Methods

Step 1: Clean the Data
(Fishery Performance
Report)

Step 2: Thematic
Analysis (C)

LDA-Based Thematic Table (Quotes)

LDA Topic	Interpreted Theme	Subtheme / Description	Top Keywords (4–6)
Topic 1	Red Snapper Catch Abundance	Frequent encounters and high catch rates of red snapper	snapper, red, lot, catch, day, know
Topic 2	Long-Term Fishery Change	Perceptions of change over time in the fishery	years, point, cut, know, like, just
Topic 3	General Fishing Experience	Descriptions of routine fishing activity and expectations	fishing, going, mean, just, know, like
Topic 4	Trip Characteristics & Effort	Fishing trip details such as duration, numbers, and effort	trip, fishing, foot, numbers, mean, just
Topic 5	Fish Availability & Use	Observations about fish presence and use (e.g., food)	fish, seen, food, think, right, just
Topic 6	Size & Visibility of Fish	Noticing smaller or visible fish during trips	fish, seeing, little, like, know, just



Purpose

Results

Application



Reel Insights : External Correlation Matrices

Methods

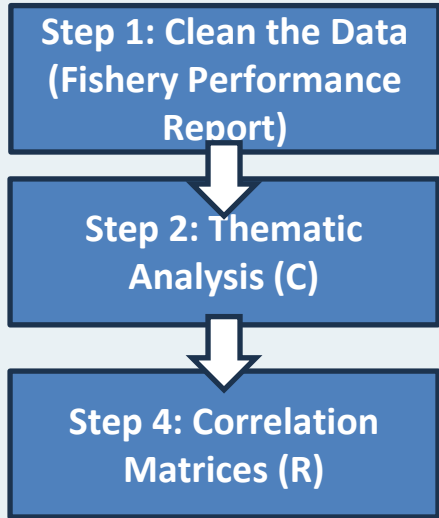


Figure 1a. Biological / Stock Theme Correlations

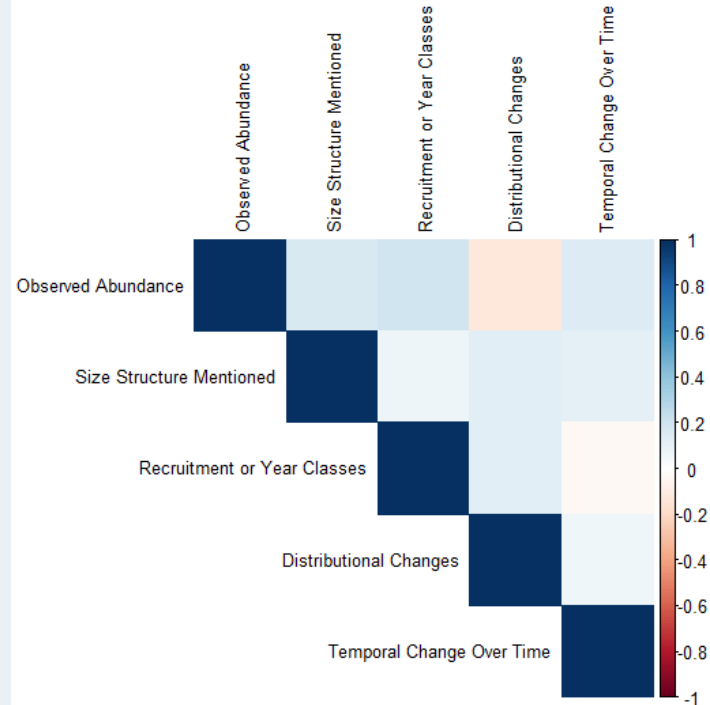
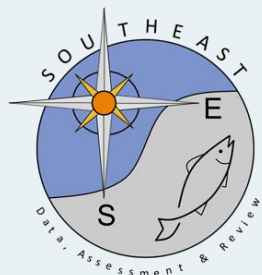
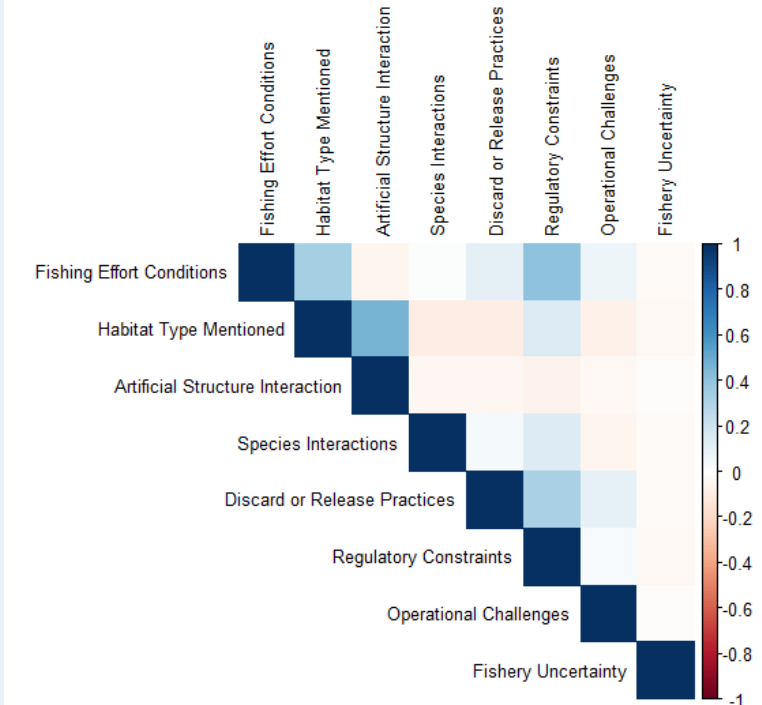


Figure 1b. Fishery / Habitat / Ecosystem Theme Correlations





Reel Insights : External

APPLICATION 1

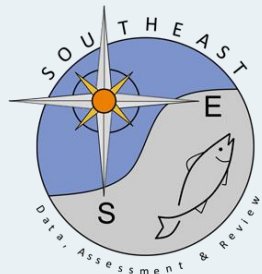
- SEDAR stock assessment working paper (current application of FPR)

APPLICATION 2

- Presented to SSC before review of stock assessment

APPLICATION 3

- Presented at during SEDAR stock assessment process (during data stage)



Purpose

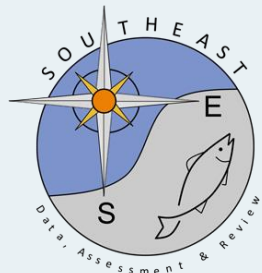
Results

Application



Next Steps

- **Investigate AI algorithms**
 - Determine user bias in AI algorithms
 - Specifically for topic modeling
- **Determine lexicon library sentiment**
 - Identify who approves this (SEP? Council?)
- **Future Utility**
 - Public comments, other?





Discussion Questions

- Who should determine lexicon?
Council? SEP?
- What additional text analyses should be explored?
- Where should these results be presented?
SSC? SEP? Council?
- When should these results be presented during the SEDAR process?
Data scoping? Data Workshop?
- What are some future uses for these text analyses?
Public comment?
- What are some solutions to obstacles mentioned (AI algorithm bias, FPR standardized questions)?

