

REEL INSIGHTS

[INTERNAL]



19 March 2026

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1. Data

Data Set

- Fishery performance reports from South Atlantic Fishery Management Council advisory panels

Cleaning the Data

Steps:

1. Paste the fishery performance report transcript into excel
2. Delineate name, location, sector and quotes into separate columns
3. Use the membership directory for the location and sector of advisory panel members
4. Delete all punctuation (e.g. commas, periods, apostrophes)
5. Delete all council staff commentary
6. Delete any text irrelevant to the fishery performance report questions

2. Analyses

Responses

Purpose: Assess number of responses and individuals per sector contributing to the fishery performance report text analysis.

Software: Excel

Packages: N/A

Instructions:

- Members of the Snapper Grouper Advisory Panel (SGAP) self-selected which fishing sector they were in at the time of application for the advisory panel.

Figures:

- Pie charts
 - Response by sector
 - Individuals by sector

Figure 1a. Response by Sector

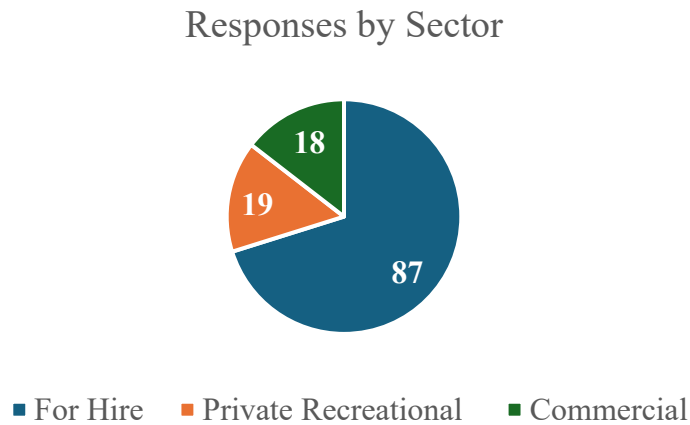
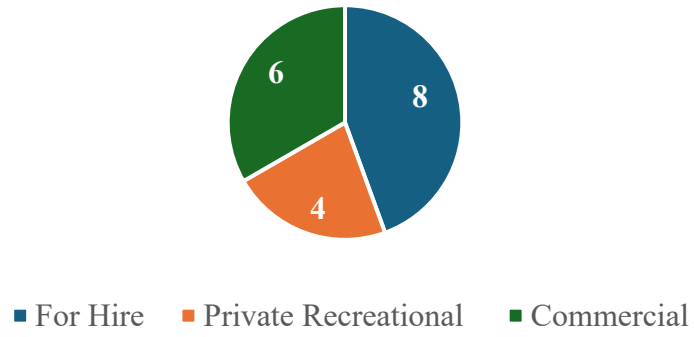


Figure 1b. Individuals by Sector

Individuals by Sector



Word Frequency

Analysis Purpose:

Identifies the most used words in the fishery performance report transcript.

Software: R studio

Packages:

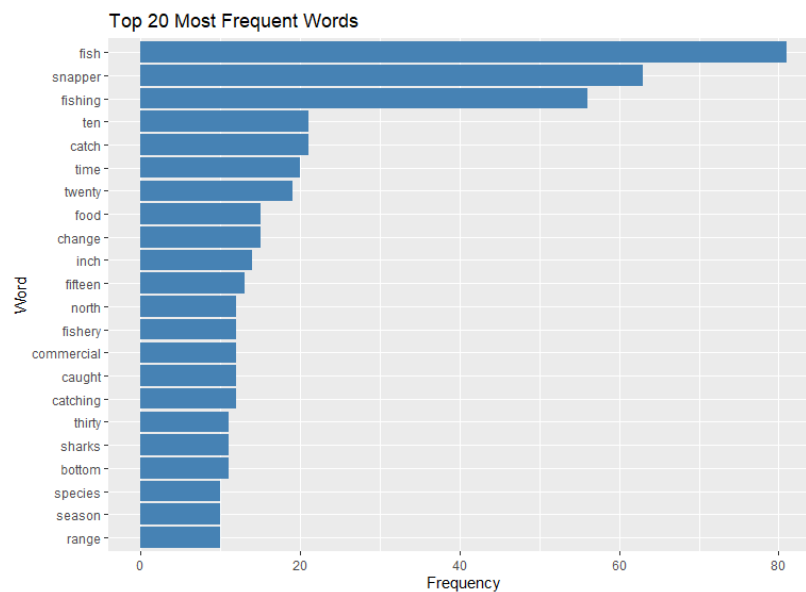
```
library(tidyverse)
library(tidytext)
library(quanteda)
library(igraph)
library(ggraph)
library(widyr)
```

Instructions:

- Install packages/ load libraries
- Read in csv file
- Remove stop words
- View top 20 words
- Create visualization

Figures:

- Bar chart with top 20 most frequent words



Dendrogram of Text Clustering and Multidimensional Scaling (MDS) plots

Analysis Purpose:

Dendrogram-Groups similar quotes into clusters based on word content, helping identify latent themes.

MDS- Reduces high-dimensional text data into two dimensions to visualize similarity between quotes.

Software: R studio

Packages:

```
library(readxl)
```

```
library(tm)
```

```
library(proxy)
```

```
library(cluster)
```

```
library(ggplot2)
```

```
library(dplyr)
```

Instructions:

- Install packages/ load libraries
- Load and prepare text
- Create document term matrix
- Calculate dissimilarity
- Hierarchical clustering
- Choose # of clusters
- Plot dendrogram with topic labels
- Draw colored boxes around clusters
- Assign cluster topic labels (pull from thematic analyses)
- Add a legend for cluster labels
- Assign topic names to each cluster
- MDS plot with descriptive topic labels

Figures:

- Dendrogram of quotes by topic
- Multidimensional scaling plot of quotes by topic

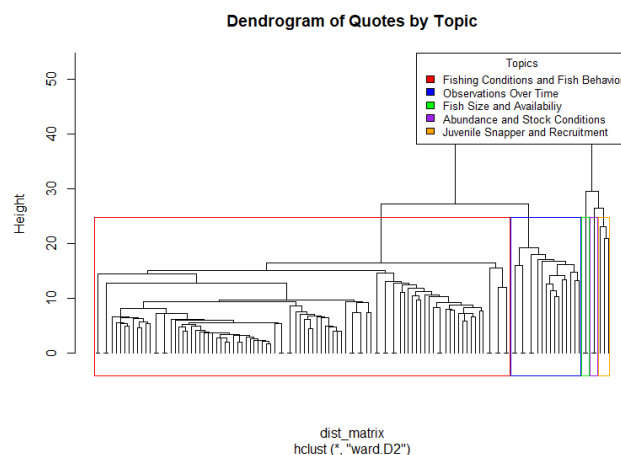


Figure 3a: Dendrogram of Quote Clusters

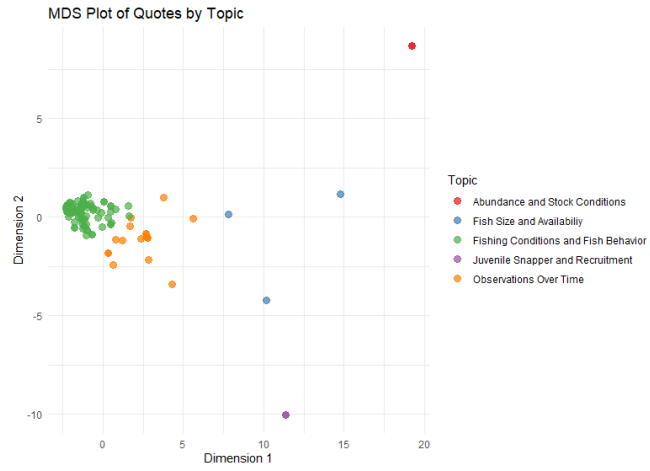


Figure 3b: MDS Scatterplot

Sentiment Analysis

Analysis Purpose:

Applies sentiment to frequently used words. Sentiment contextualized around Red Snapper.

Software: R studio

Packages:

Overall

```
library(gsheet)
library(devtools)
library(stringr)
library(reshape2)
library(dplyr)
library(readr)
library(leaflet)
library(htmlwidgets)
library(webshot)
library(tidyverse)
library(ggplot2)
library(tidytext)
```

By Sector

```
library(tidyverse)
library(tidytext)
```

By Location

```
library(tibble)
library(maps)
library(gsheet)
library(devtools)
library(stringr)
library(reshape2)
library(dplyr)
library(readr)
library(leaflet)
library(htmlwidgets)
library(webshot)
library(tidyverse)
library(ggplot2)
library(tidytext)
library(wordcloud)
library(tidygeocoder)
library(scatterpie)
```

Instructions:

Overall

- Upload packages / load libraries
- Extract fishermen comments
- Convert to UTF-8
- Define target terms and customize sentiment lexicon
- Contextualize sentiment

- Plot sentiment
- By Sector*
- Upload packages / load libraries
 - Define target terms and customize sentiment lexicon
 - Contextualize sentiment
 - Plot sentiment by sector
- By Location*
- Upload packages / load libraries
 - Clean and rename columns
 - Define target terms and customize sentiment lexicon
 - Bigram sentiment
 - Map sentiment by sector and location

Figures:

- Histogram of overall sentiment
- Bar chart of sentiment by sector
- Map of sentiment by sector and location

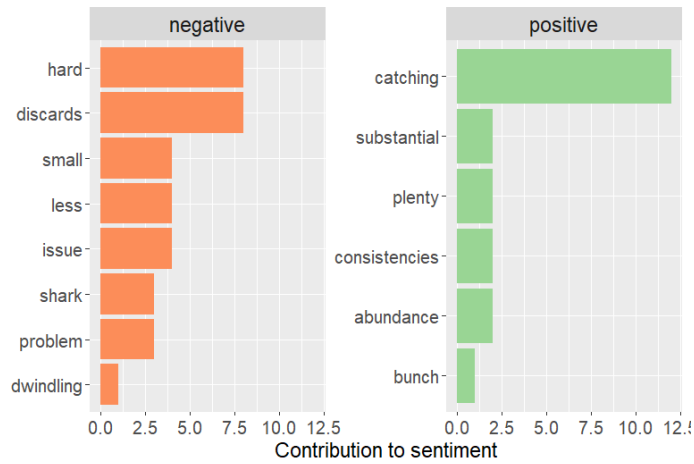


Figure 4A. Overall sentiment bar chart

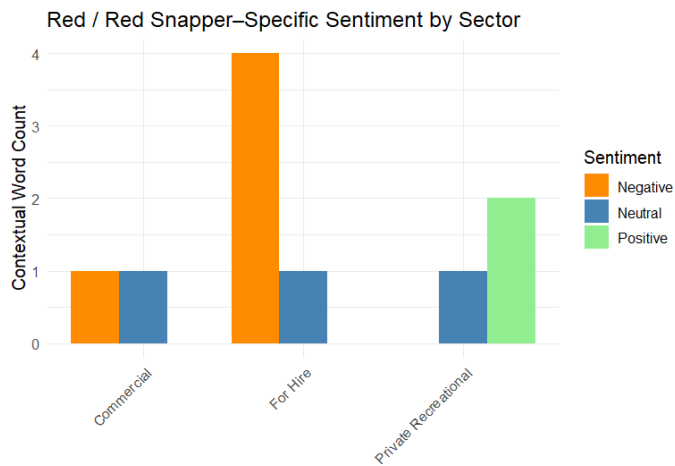


Figure 4B. Sentiment by sector

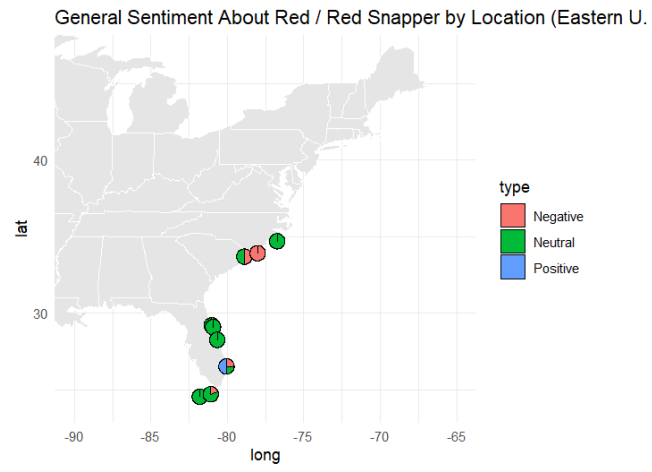


Figure 4C. Sentiment by Location.

Thematic table

Analysis Purpose:

Identifies commonly used words in the dataset to detect dominant key phrases, themes and subthemes.

Software: ChatGPT

Packages: N/A

Instructions:

- Pasted prompt
 - “create a thematic table using Topic modeling (LDA) applied to Quote column in the excel; top 4-6 keywords, themes and subthemes”
- Attached csv data file

Figures:

- Thematic table with latent Dirichlet allocations (LDA) based themes, subthemes and keywords

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

Figure 5. Thematic Analysis

Correlation Matrix of Word Co-Occurrences

Analysis Purpose:

Shows the strength of pairwise associations between words based on how often they appear together in the same document/quote.

Software: R studio and ChatGPT

Packages:

```
library(tidyverse)
library(stringr)
library(readr)
library(corrplot)
```

Instructions:

- Used chatGPT to generate correlation themes
- Use prompt “define themes and keywords for 2 correlation matrices”
- Past csv data set into chatGPT
- Use themes from chatGPT in r studio for correlation matrixes
- Upload packages and load libraries
- Build theme by quote binary matrix
- Remove zero-variance themes
- Plot correlation matrices

Figures:

- Correlation matrix of biological and stock themes
- Correlation matrix of fishery / habitat / and ecosystem matrix

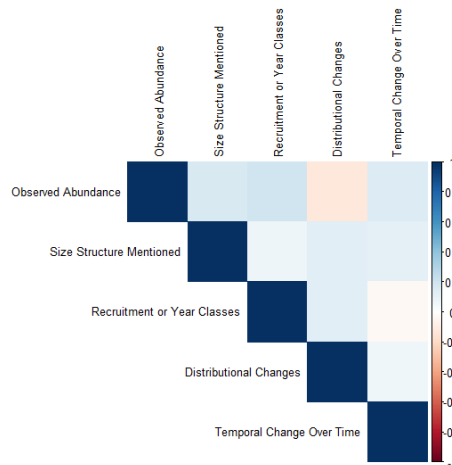


Figure 6a: Biological / Stock theme correlation matrix

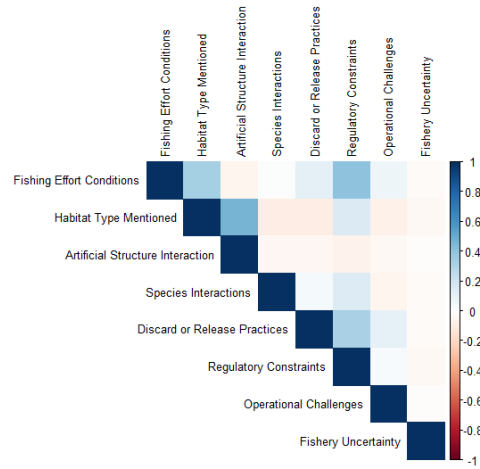


Figure 6b: Fishery / Habitat / Ecosystem theme correlation matrix

3. Appendix

Analysis	Data	Code File Location	Notes
Correlation Matrix of Co- Occurrences	RS_SA_FPR	"C:\Users\emily.ott\My SecuriSync\Tier 1\Office Share\Staff Folders\Emily\SEDAR\FPR analysis\Red Snapper\analyses\correaltion matrix\FPR SA Red snapper correaltion matrix chat gbt themes.R"	ChatGPT defined themes and keywords from this prompt “define themes and keywords for 2 correlation matrices”
Dendrogram of text clustering and multiple dimensional scaling	RS_SA_FPR	"C:\Users\emily.ott\My SecuriSync\Tier 1\Office Share\Staff Folders\Emily\SEDAR\FPR analysis\Red Snapper\analyses\dendrogram or MDS plot of quotes\dendrogram or MDS plot of quote.R"	Not as helpful for fishery performance reports but could be super helpful for public comments
Word Frequency	RS_SA_FPR	"C:\Users\emily.ott\My SecuriSync\Tier 1\Office Share\Staff Folders\Emily\SEDAR\FPR analysis\Red Snapper\analyses\word frequency and descriptive analysis\word frequency and decriptive analysis.R"	To be used for sentiment analysis
Sentiment Analysis overall (contextualized by Red Snapper)	RS_SA_FPR	"C:\Users\emily.ott\My SecuriSync\Tier 1\Office Share\Staff Folders\Emily\SEDAR\FPR analysis\Red Snapper\analyses\sentiment analysis\FPR SA Red snapper overall sentiment.R"	Subjective, need to ask staff or council members to give sentiment to words- use word frequency to determine words, then separate by positive vs negative sentiment
Sentiment Analysis by Sector (contextualized by Red Snapper)	RS_SA_FPR	"C:\Users\emily.ott\My SecuriSync\Tier 1\Office Share\Staff Folders\Emily\SEDAR\FPR analysis\Red Snapper\analyses\sentiment analysis\FPR SA Red snapper sector specific sentiment.R"	Subjective, need to ask staff or council members to give sentiment to words- use word frequency to determine words, then separate by positive vs negative sentiment and by sector
Sentiment Analysis by Location (contextualized by Red Snapepr)	RS_SA_FPR	"C:\Users\emily.ott\My SecuriSync\Tier 1\Office Share\Staff Folders\Emily\SEDAR\FPR analysis\Red Snapper\analyses\sentiment analysis\sentiment map analysis.R"	Subjective, need to ask staff or council members to give sentiment to words- use word frequency to determine words, then separate by positive vs negative sentiment and by location
Thematic analysis	RS_SA_FPR	Generated on chat GBT	Used artificial intelligence, chatGPT, prompt used to develop analysis “create a thematic table using Topic modeling (LDA) applied to Quote column in the excel; top 4-6 keywords, themes and subthemes”
Pie chart response by sector	RS_SA_FPR	Generated on excel	First do by # of responses then by individuals