

Fisherman Feedback: Yellowedge Grouper Response Summary February 2024

The Gulf of Mexico Fishery Management Council (Council) asked fishermen, divers, and other federal fishery stakeholders what they've noticed about yellowedge grouper and yellowedge grouper fishing in recent years. Active fishermen are a rich source of information and may notice trends or phenomena that scientists and managers may not observe. This initiative expands the types of information gathered by fisheries scientists and managers to gain a better, more contemporary understanding of what is happening on the water.

Comments were collected using the Fisherman Feedback tool that was advertised via [press release](#), social media, and on the [Council's website](#). Sixty-four unique responses were received between September 15 – October 13, 2023. One response was not relevant to yellowedge grouper and was subsequently dropped from analysis resulting in an analyzed sample size of 63.

Respondents self-selected their association with the fishery (Figure 1). Respondents were not limited to a single category, and some identified with more than one sector. A majority of responses were received from anglers who identified with the private angling component of the recreational fishing sector.

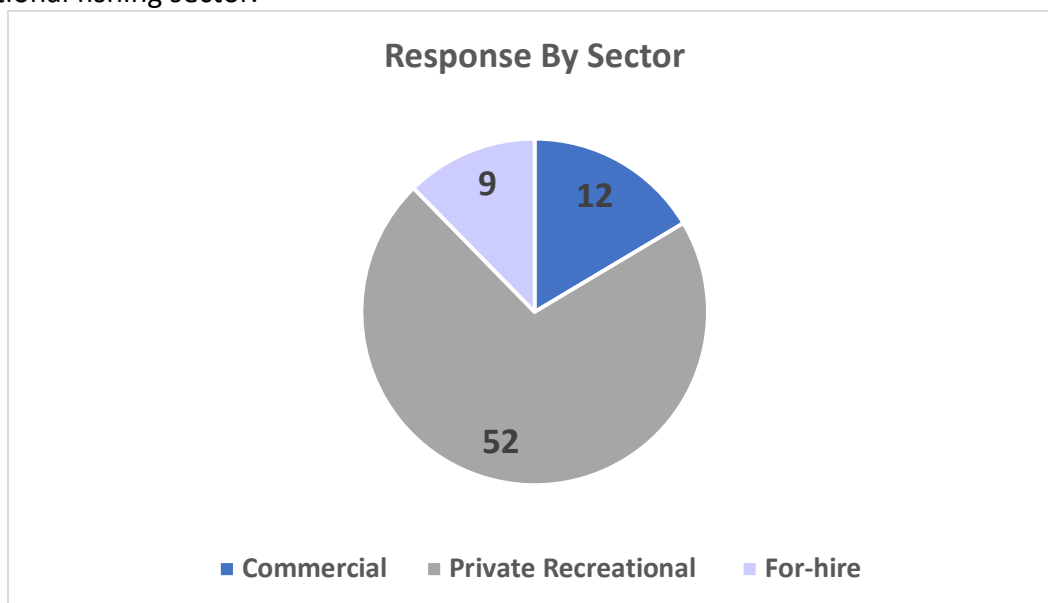


Figure 1: Results collected from the tool asking individuals to self-identify their fishing sector association. While 63 individuals answered the survey question, they were not limited to a singular response and some identified with more than one sector of the fishery, resulting in a total of 73 responses.

Respondents were provided a grid of 21 areas in the Gulf of Mexico (Gulf) where they were able to self-identify the general location(s) of their observation (Figure 2). Respondents were not limited to a single area, and many identified multiple areas. The areas off the coast of central

Louisiana and the central West Coast of Florida received the greatest concentration of responses. The least number of responses were gathered from southern Texas.

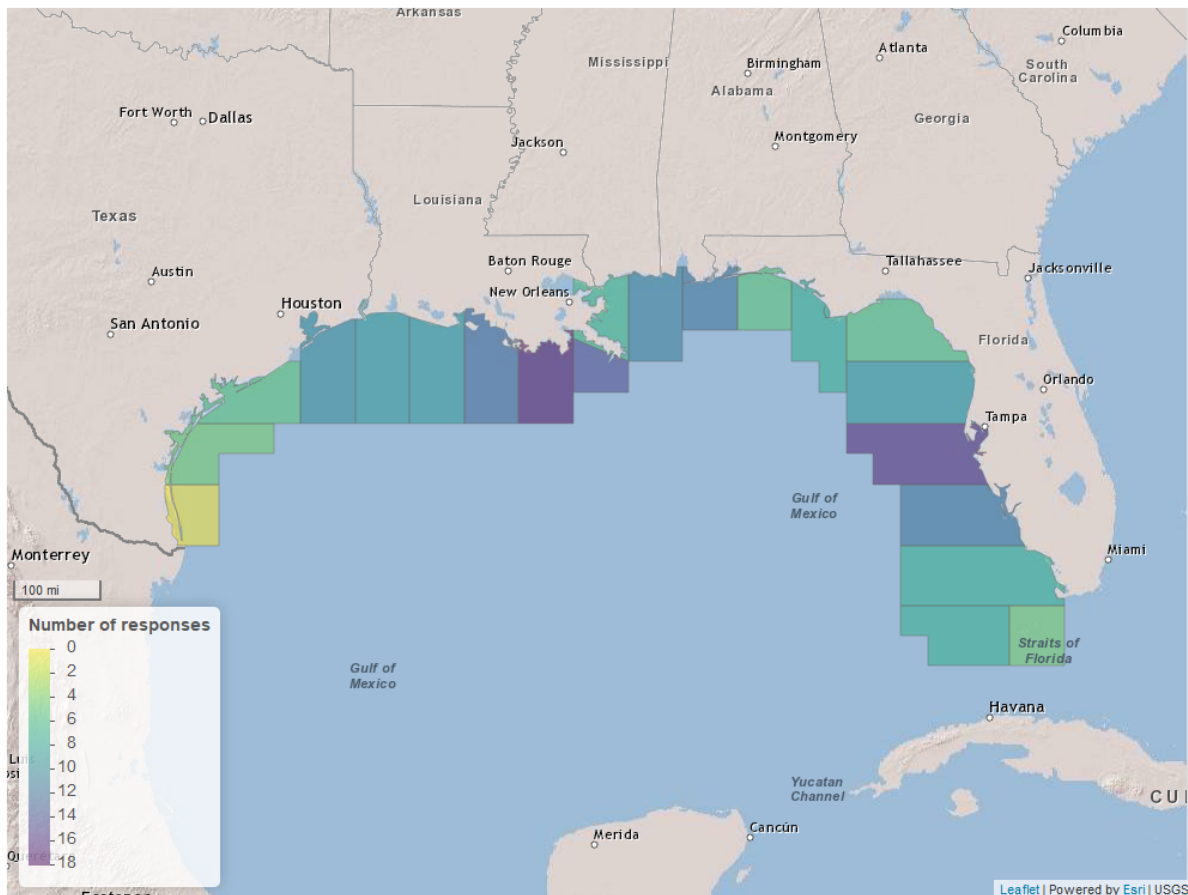


Figure 2: Number of responses received in each of 21 areas in the Gulf. Respondents could select more than one area so, the total number illustrated in the map ($n=185$) exceeds the number of individual responses.

The overall sentiment of each response was classified as positive, negative, or neutral through manual analysis. The analysis showed that a majority of comments were neutral in nature. The neutral comments were often observational, and sentiment was absent or hard to discern. For example, a respondent indicated they are ‘caught deep dropping south of Alabama.’ Additionally, when performing the manual analysis, any comments that contained an equal mix of positive and negative sentiments were considered to have an overall neutral sentiment. The expression of negative sentiment was nearly as common as the expression of neutral sentiment (Figure 3). Comments associated with negative sentiment frequently indicated that the stock was in decline. Negative comments often indicated that declines in yellowedge grouper were associated with increased efficiencies due to technology or were associated with concern about the magnitude of mortality occurring from other sectors or shark depredation. Comments associated with positive sentiment often indicated that yellowedge grouper are plentiful and have not experienced recent changes in size or abundance.

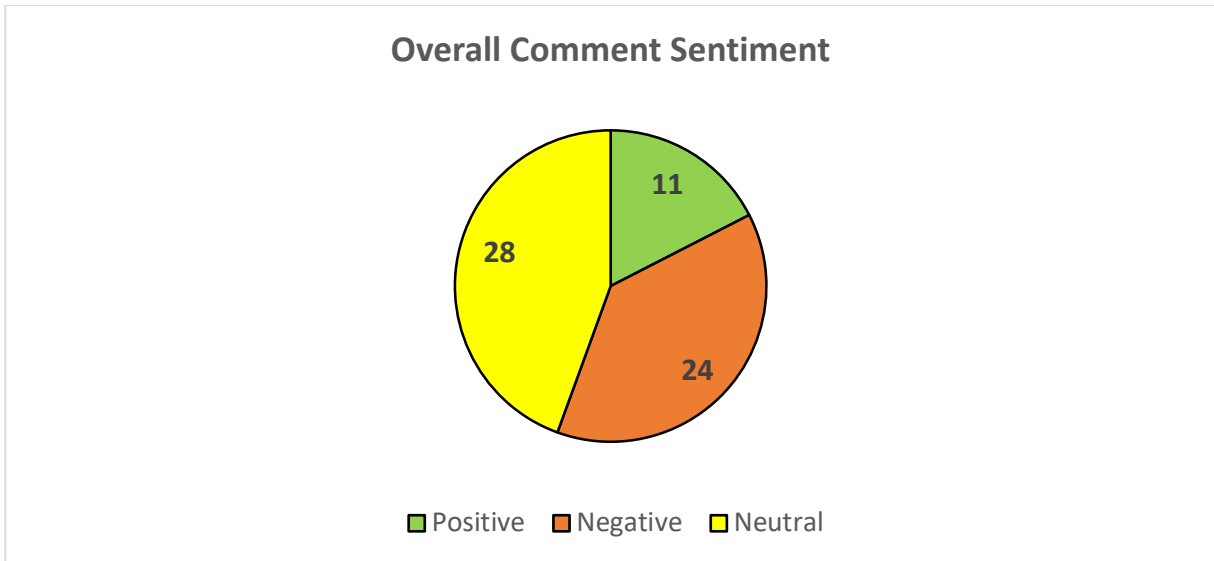


Figure 3: Number of responses indicating positive, negative, or neutral sentiment (n=63) classified by manual analysis.

Overall sentiment was also categorized by fishing sector (Figure 4). Respondents self-selected their fishing sector and were not limited to a singular response. The commercial sector expressed the greatest relative proportion of negative comments while the for-hire sector expressed the greatest relative proportion of positive comments. The private recreational sector responded in a neutral manner most often.

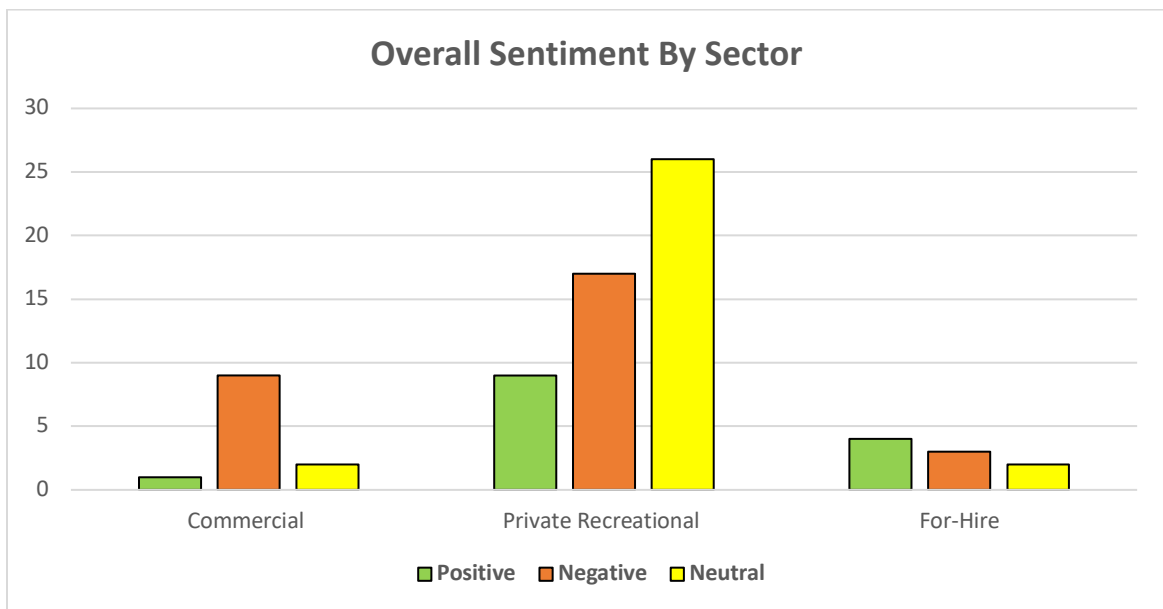


Figure 4: Number of responses indicating positive, negative, or neutral sentiment sorted by commercial, private recreational, and federal for-hire fishing sector. Sentiment was classified and sector was self-selected by each respondent. Respondents were not limited to a singular sector declaration in their response (n=73). Comments that were not associated with the three primary fishing sectors were not analyzed.

Overall comment sentiment was also sorted by location (Figure 5). The highest proportion of negative comments was seen in areas off south Texas, off the coast of Mississippi, in parts of

the Florida Panhandle, and in South Florida. The most positive comments were collected off the coast of West Central Florida.

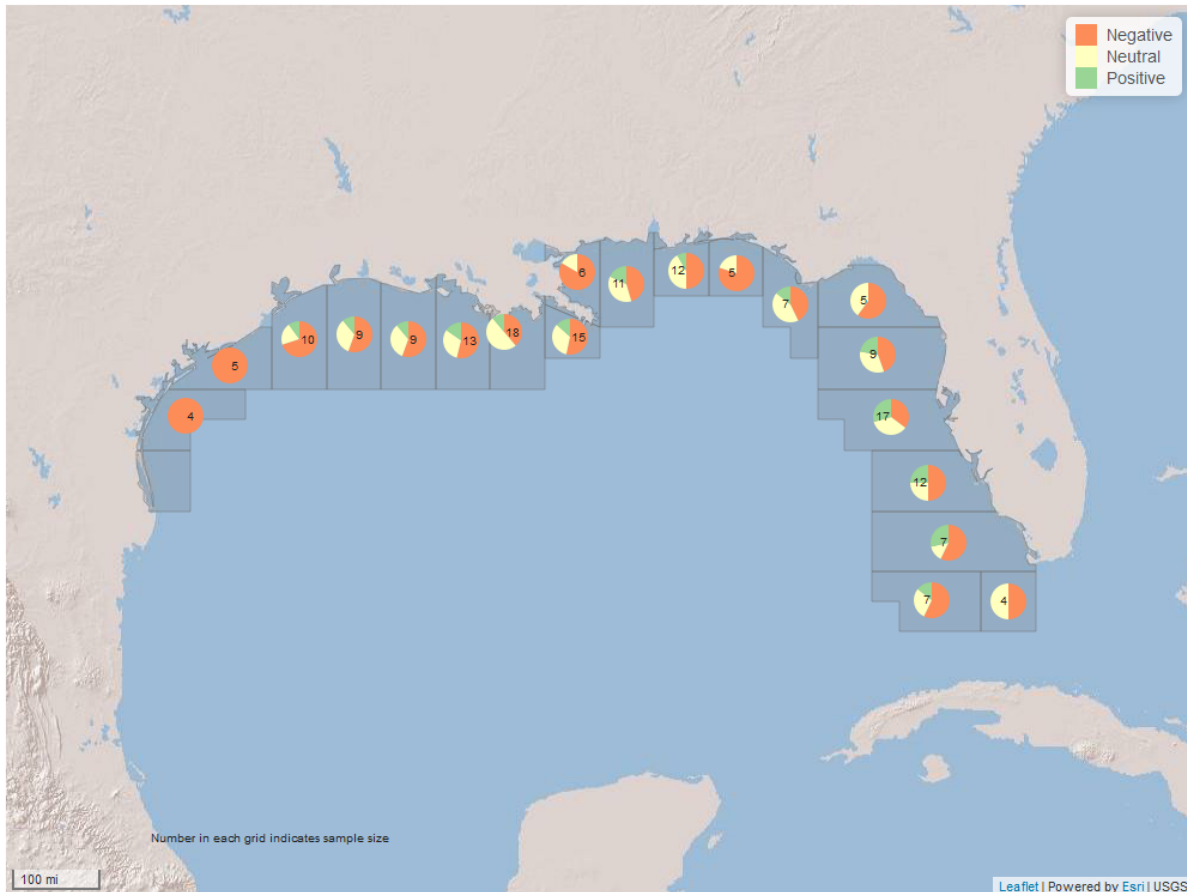


Figure 5: Sentiment analysis for each area. Each comment ($n=63$) was characterized as positive, negative, or neutral based on independent review of each comment by two reviewers. Each comment was then linked to one or more areas based on the self-reported locations. Respondents could select more than one area, so the total number illustrated in the map ($n=185$) exceeds the number of individual responses.

Next, comments that were related to the condition, health, and/or abundance of the stock ($n=34$) were analyzed again, in relation to how the comment characterized stock condition. Those comments were classified based on whether they indicated that the stock was in good, negative, or neutral health (Figure 6). An equal proportion of negative and positive perceptions of stock abundance were expressed. Results were also analyzed by sector (Figure 7). Respondents from both private recreational and federal for-hire sectors expressed more positive perceptions of the stock condition. Conversely, the commercial sector expressed a higher proportion of negative perceptions of stock condition.

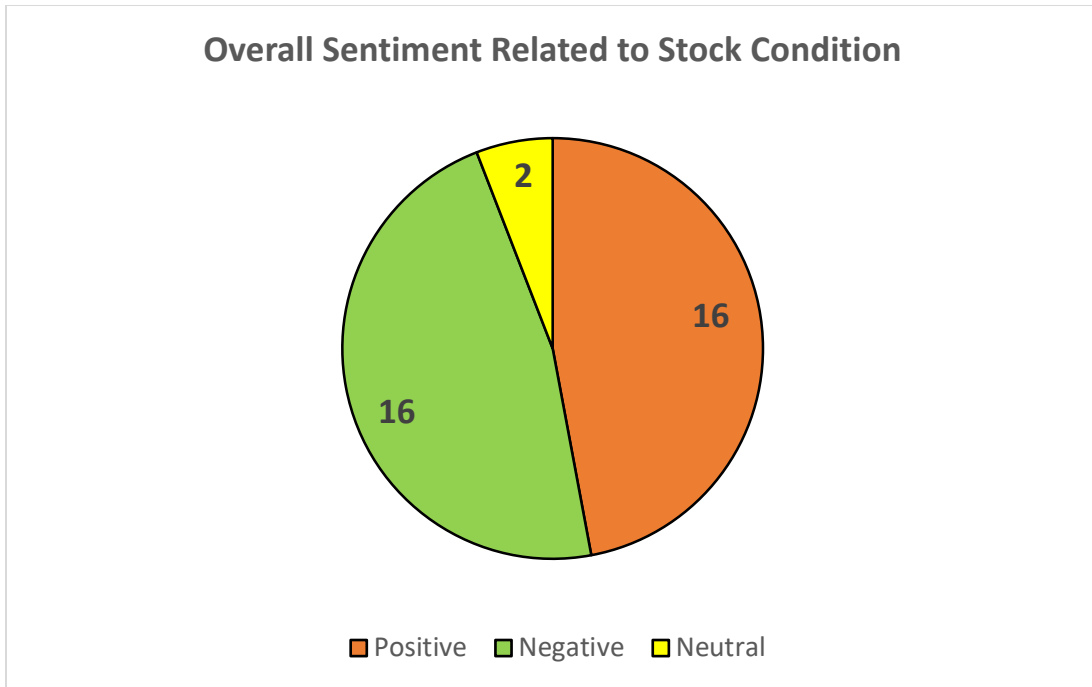


Figure 6: Number of comments indicating positive, negative, or neutral sentiment regarding stock condition (n=34)

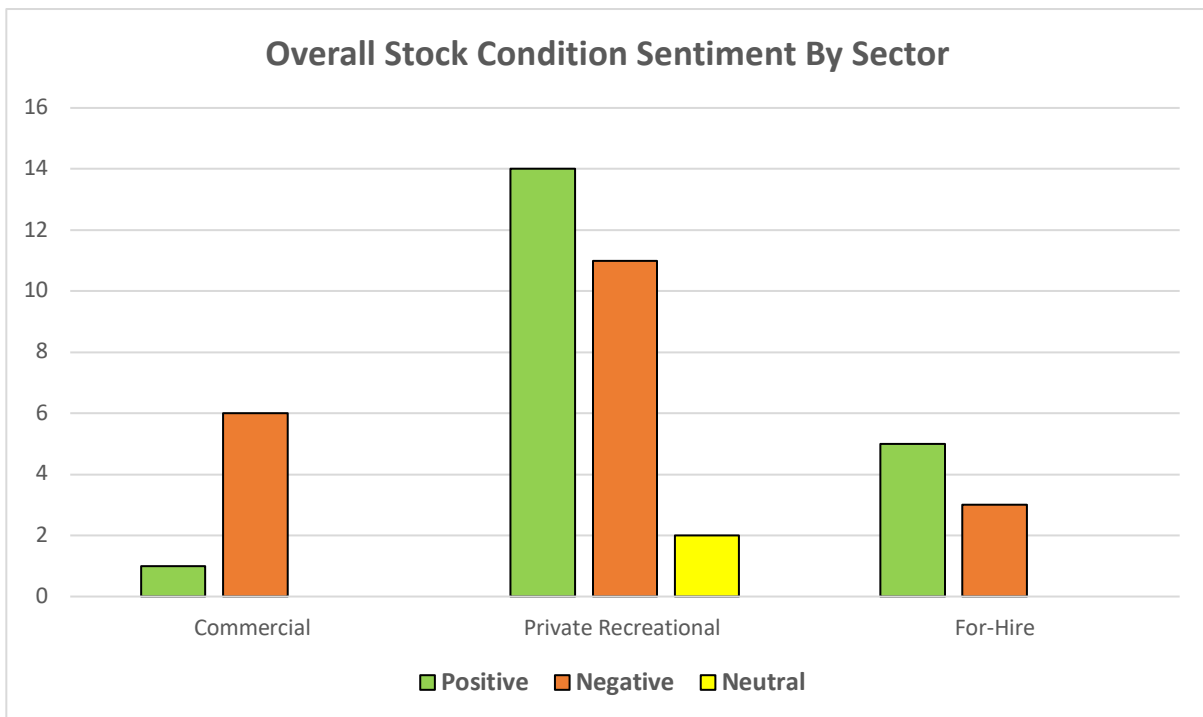


Figure 7: Number of responses related to stock condition (n=34) that indicate positive, negative, or neutral sentiment and sorted by commercial, private recreational, and federal for-hire fishing sector. Sector was self-selected by each respondent. Respondents were not limited to a single sector, so the total number of responses depicted in this figure (n=42) exceeds the number of responses related to stock condition that were received. Comments that were not associated with the three primary fishing sectors were not analyzed.

The sentiment of comments related to the condition, health, or abundance of the stock were also sorted by location (Figure 8). The area along the coast of peninsular Florida expressed primary positive indications of stock abundance. Negative indications of stock abundance were most concentrated off the coast of South Texas and throughout the central portion of the Northern Gulf.

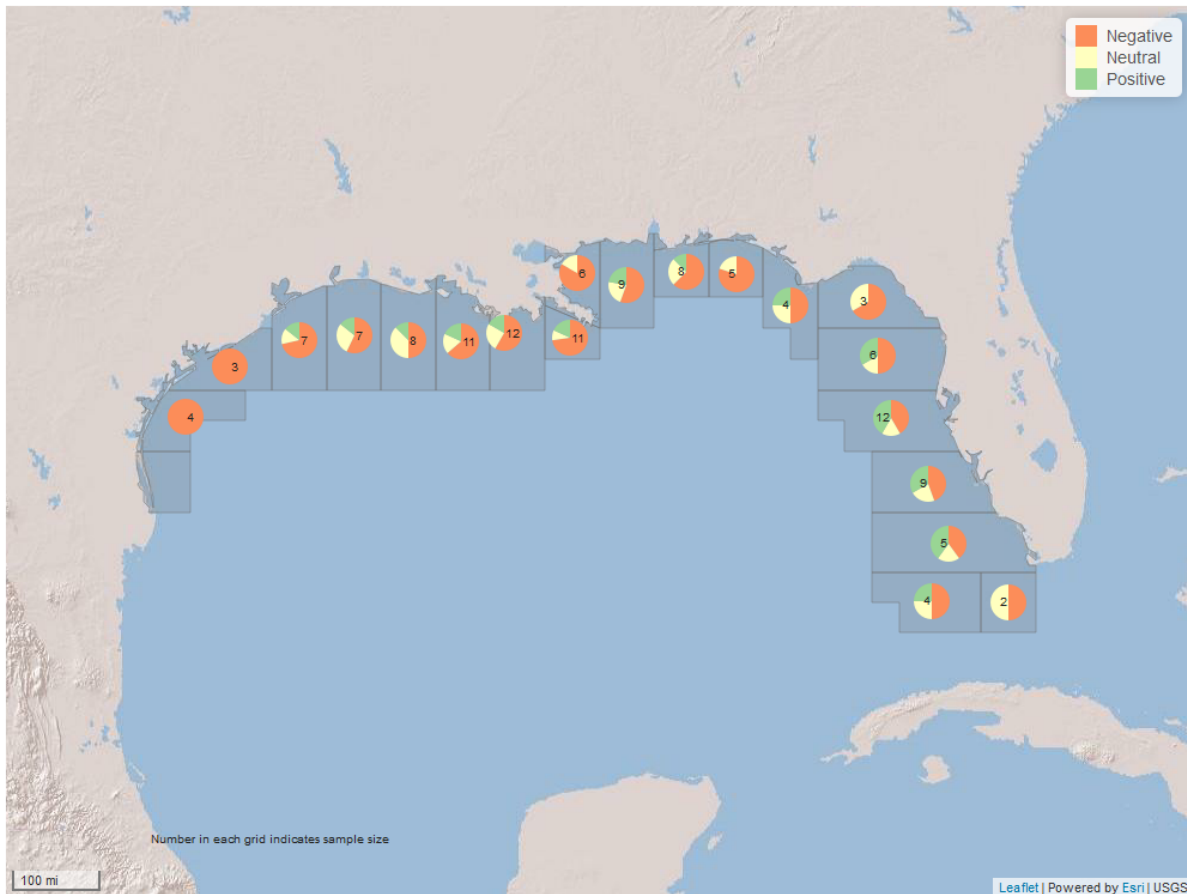


Figure 8: Sentiment analysis of the perception of stock condition by location. Each comment related to the health, condition, and/or abundance of the stock was characterized based on whether it indicated something positive, negative, or neutral about the stock ($n=34$). Each comment was then linked to one or more areas based on the self-reported locations. Respondents could select more than one area, so the total number illustrated in the map ($n=136$) exceeds the number of individual responses related to stock condition.

Comments were analyzed for the words most frequently used to contribute to either positive or negative sentiment through automated analysis (Figures 9 and 10). The words that occurred most frequently in comments with a positive sentiment were: healthy, plenty, like, large, and well. This seems to indicate that most of the positive sentiment expressed was based on a positive perception of the abundance or condition of yellowedge grouper. The words that occurred most frequently in comments with a negative sentiment were: less, limits, loss, hard, and smaller. This seems to indicate that most of the negative sentiment expressed was based

on the declining condition of the stock and displeasure with the regulations and possibly discards.

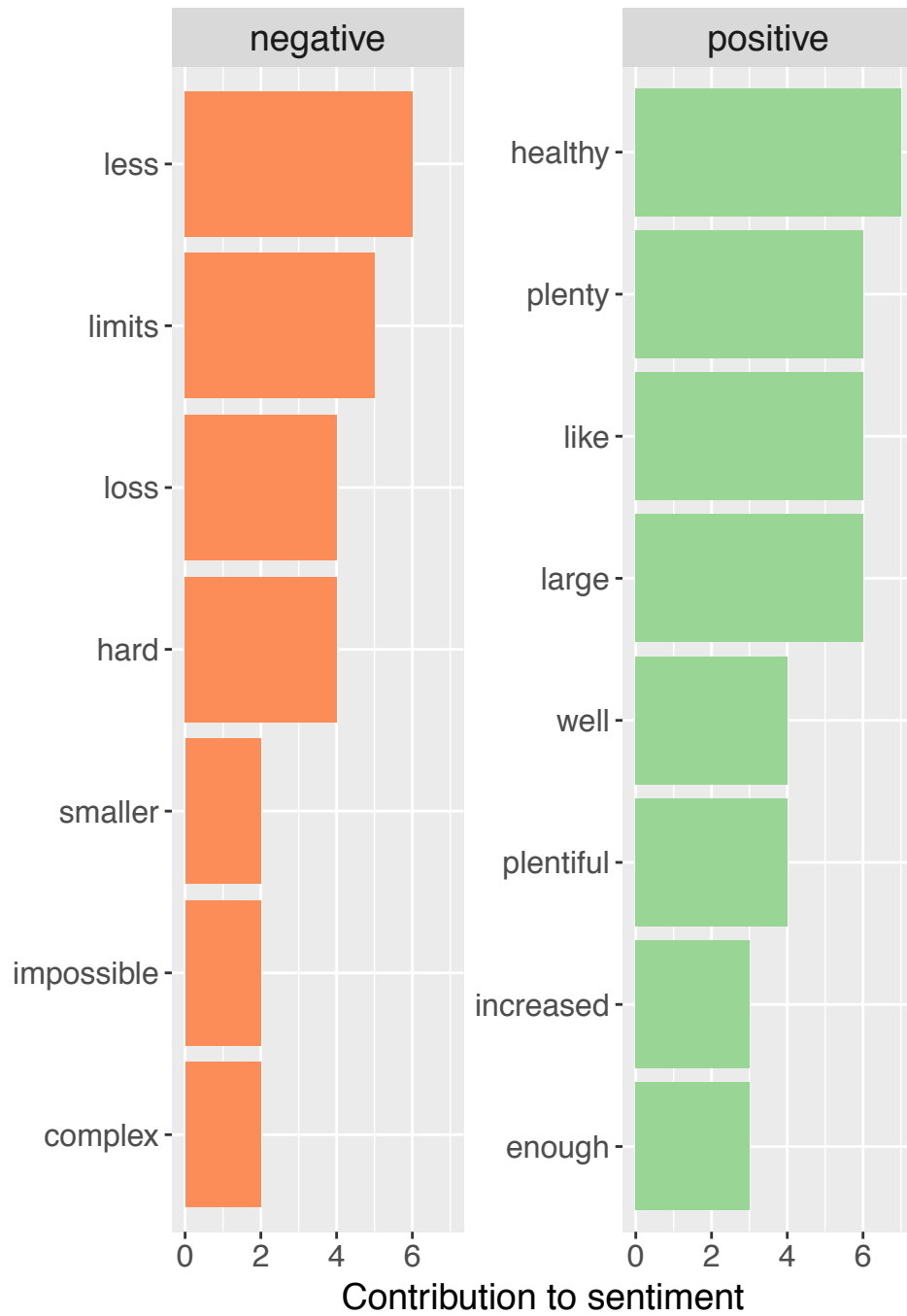


Figure 9: Most frequently used words contributing to comment sentiment identified using automated sentiment analysis.



Figure 10: Most frequently used words contributing to comment sentiment identified using automated sentiment analysis.

The comments that indicated something about the condition of the yellowedge grouper stock were bifurcated evenly between positive and negative perceptions of the stock condition (16 negative and 16 positive responses). The positive comments indicated that yellowedge are plentiful and that there is no change in size or abundance. The negative comments indicated that numerous factors were contributing to a decline in yellowedge abundance. This included the idea that technologies, including improved mapping, electric reels, and better, faster boats, are improving harvest efficiency and increasing mortality. Recreational and commercial sectors were both blamed for high levels of harvest and discards. Specifically, the increase in recreational pressure and the use of commercial longlines and deep-water shrimp trawls were blamed for excessive mortality.

The results of Fisherman Feedback for yellowedge grouper will be submitted to the NOAA Southeast Fisheries Science Center and shared with the Council and its Scientific and Statistical Committee as SEDAR 85: Gulf of Mexico Yellowedge Grouper Operational Stock Assessment is completed and reviewed. The information collected through the tool is not intended to be considered as an index of abundance for direct incorporation into the stock assessment model. Instead, results of this effort are meant to supplement the role played by fisheries observers to the stock assessment process. The on-the-water perspective offered by respondents to this tool should be used to ground-truth the science and enhance our understanding of the stock.

Methods

Manual sentiment analysis was conducted by two independent readers and overall comment sentiment was broadly characterized as positive, neutral, or negative. Readers also determined whether comments were related to the condition, health, and/or abundance of the stock. Those comments were analyzed again and classified based on whether they indicated that the stock was in good, negative, or neutral health. Readers then compared characterizations and resolved any disagreements in interpretation so that both readers agreed on a final sentiment score.

Automated sentiment analysis characterized each response using the 'tidytext' package in R. For this analysis, the words in each comment were compared to a revised version of the 'Bing' lexicon library, which has been amended with characterizations for words commonly used in reporting fishery information. The library categorizes words into positive, negative, or neutral sentiment and scores every word in each comment accordingly. This was used to identify the most common words associated with a positive and negative sentiment.