Fisherman Feedback: Red Snapper - Response Summary

Gulf of Mexico Fishery Council Staff

SEDAR74-DW-33

4 May 2022

This information is distributed solely for the purpose of pre-dissemination peer review. It does not represent and should not be construed to represent any agency determination or policy.

Please cite this document as:

Gulf of Mexico Fishery Council Staff. 2022. Fisherman Feedback: Red Snapper - Response Summary. SEDAR74-DW-33. SEDAR, North Charleston, SC. 8 pp.

Fisherman Feedback: Red Snapper
Response Summary
April 2022

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

Comments were collected using a web-based tool that was advertised via press release, social media, and on the Council's website. 893 unique responses were received between February 17 and March 21, 2022. 13 comments were dropped because they were unrelated to red snapper in the Gulf of Mexico. The remaining 880 comments were analyzed.

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

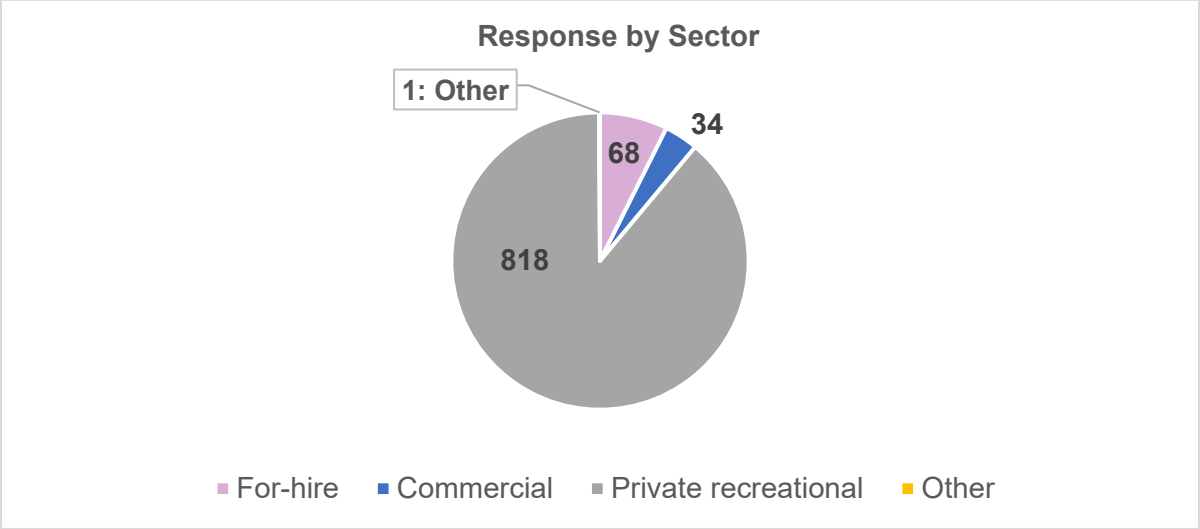

***Figure 1**: Self-identified number of responses to the survey tool from each sector (n=921). Respondents (n=880) were not limited to a singular response and some identified with more than one sector of the fishery.*

Respondents were provided a grid of 21 areas in the Gulf of Mexico where they were able to self-identify the general location(s) where their observation was made (Figure 2). Respondents were not limited to a single area, and many identified multiple areas. At least one response was gathered for each location. A majority of responses originated off the eastern coast of Mississippi, Alabama, and the Florida Panhandle. The greatest number of responses were

received from the area offshore of the Florida/Alabama state line. The fewest comments were received in or near the Florida Keys.

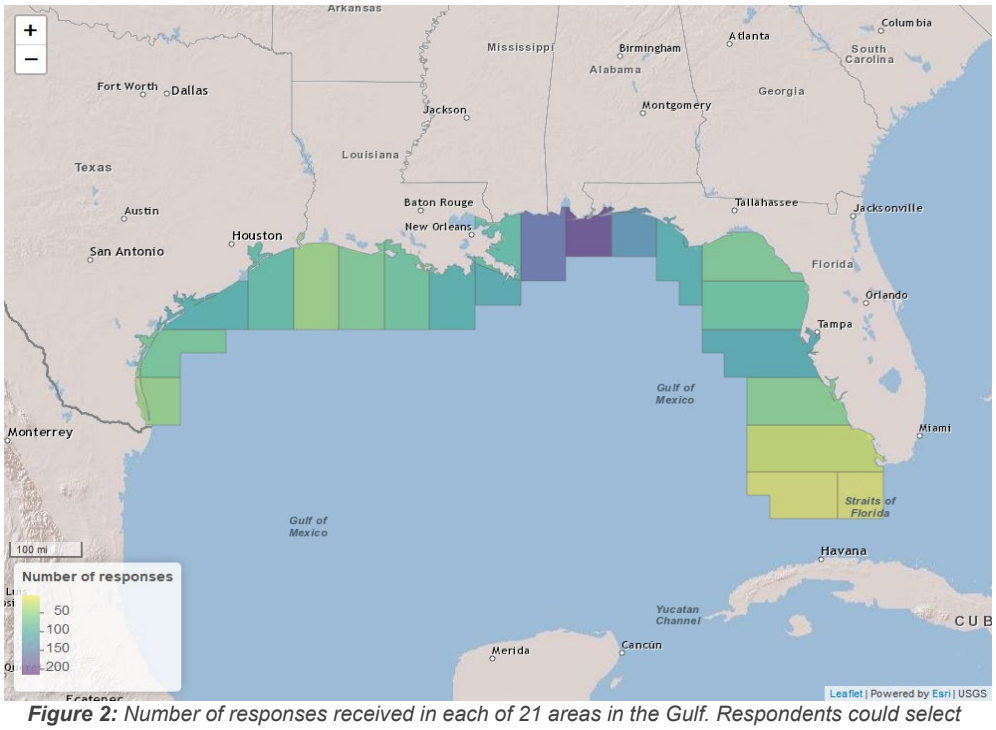

Figure 2: *Number of responses received in each of 21 areas in the Gulf. Respondents could select more than one area so the total number illustrated in the map (n=1594) exceeds the number of individual responses.*

The overall sentiment of each response was classified as positive, negative, or neutral. The analysis showed that the greatest proportion of comments were negative in nature, followed by neutral, and then positive. The majority of the negative comments were not related to the condition of red snapper itself but focused on other issues including management, depredation, and competition with other species. Comments containing an equal number of positive and negative sentiments were considered neutral. Neutral comments mostly expressed satisfaction with the stock itself but dissatisfaction with other aforementioned factors. Finally, positive sentiment was usually based on anglers' perception of the stock condition.

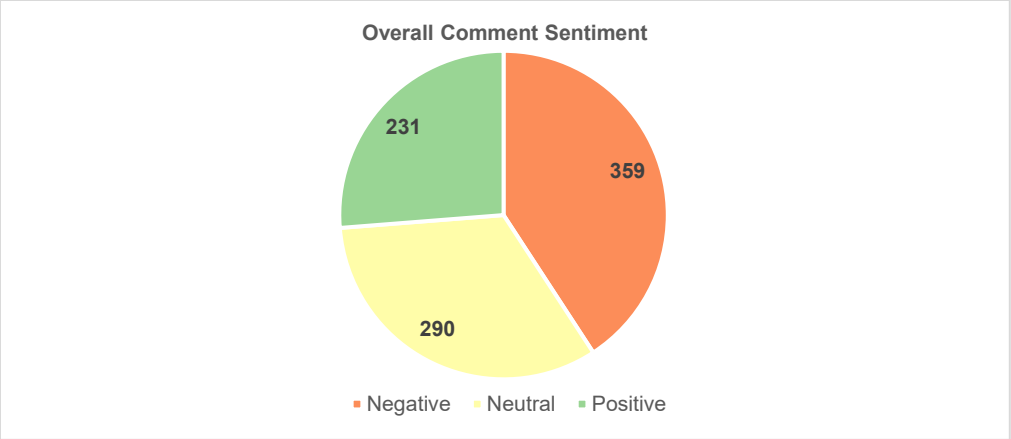

Figure 3: *Number of responses indicating positive, neutral, or negative sentiment (n=880).*

Overall sentiment was also analyzed by fishing sector (Figure 4). Respondents self-selected their fishing sector and were not limited to a singular response. Customers on for-hire vessels and state charter vessel operators were classified as private anglers. One comment was dropped from this analysis because the respondent identified as a researcher and was not associated with a fishing sector. Overall sentiment was comparable across sectors. Each sector most commonly expressed negative sentiment. Neutral sentiment was the next most prevalent for each sector and positive sentiment was least common for all sectors.

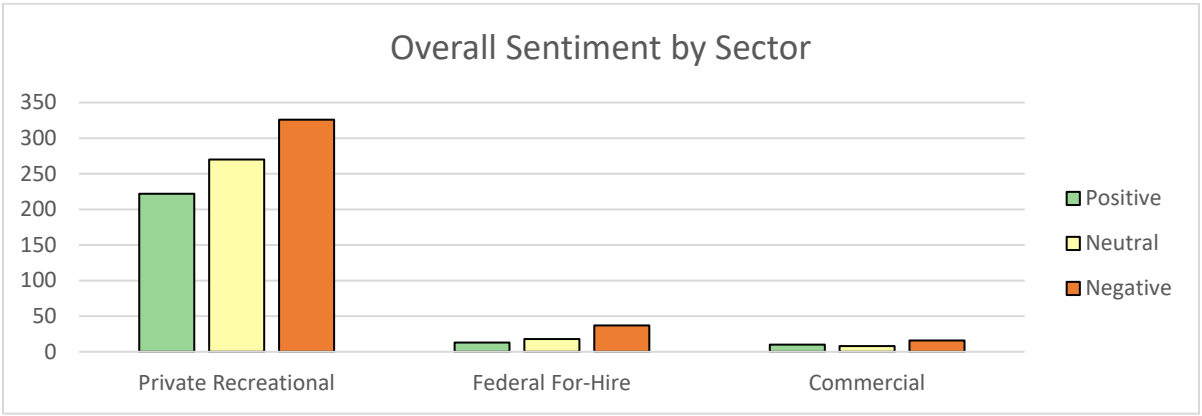

Figure 4*: Number of responses indicating positive, neutral, or negative sentiment sorted by fishing sector. Sentiment was classified and sector was self-selected by each respondent. Respondents were not limited to a singular sector declaration in their response (n=920).*

Overall comment sentiment was also sorted by location (Figure 5). A majority of negative sentiment was located off central and southern Texas. Respondents fishing off eastern Texas and Louisiana expressed the least amount of negative sentiment. East of Louisiana, about half of respondents expressed negative sentiment.

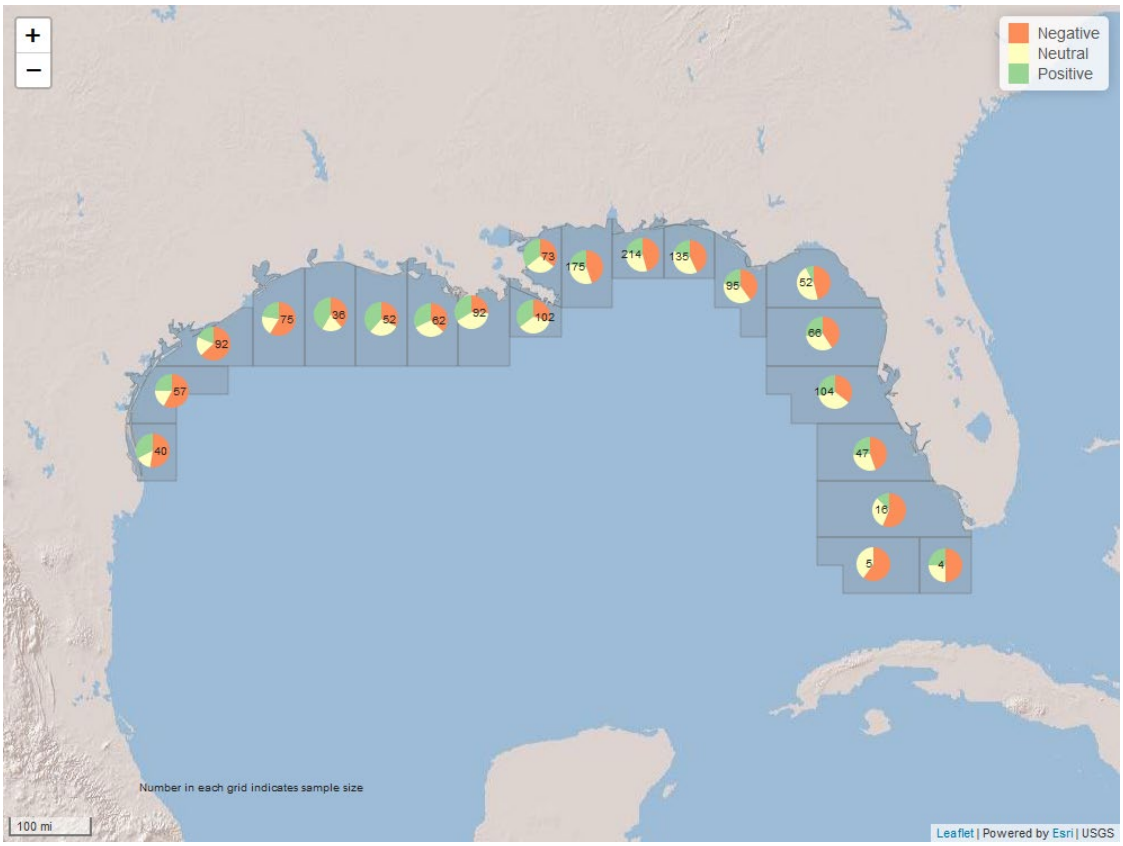

***Figure 5**: Sentiment analysis for each area. Each comment (n=880) was characterized as positive, neutral, or negative based on independent review of each comment by two reviewers. Each comment was then linked to one or more areas based on the self-reported locations (n=1594).*

Next, comments that were determined to be related to the condition, health, or abundance of the stock 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). A vast majority of comments related to abundance expressed a positive perception of the condition, health, or abundance of the stock. Results were also analyzed by sector (Figure 7). The perception of stock health was comparable across sectors. A large majority of each sector indicated that the stock was in good condition.

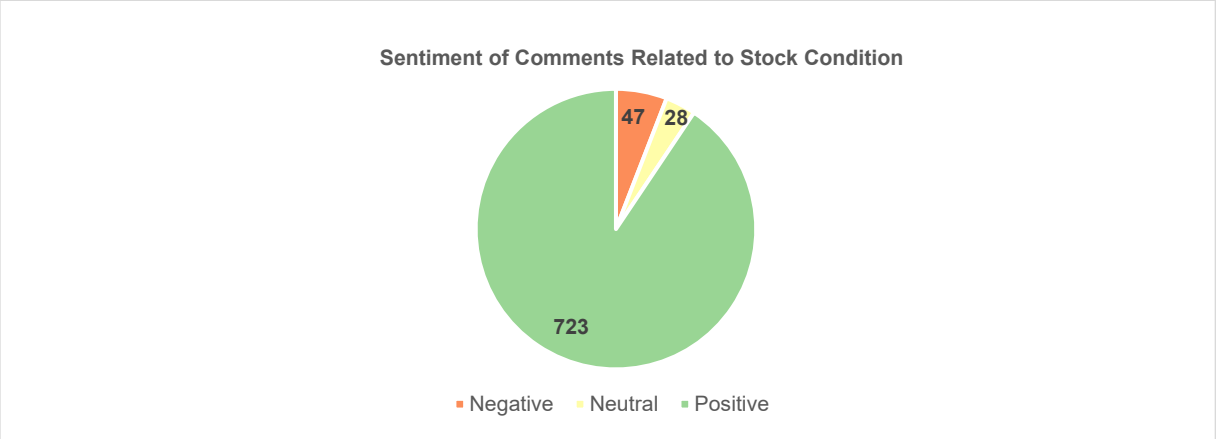

***Figure 6**: Number of comments indicating positive, neutral, or negative sentiment regarding stock condition, determined through manual analysis (n=798)*

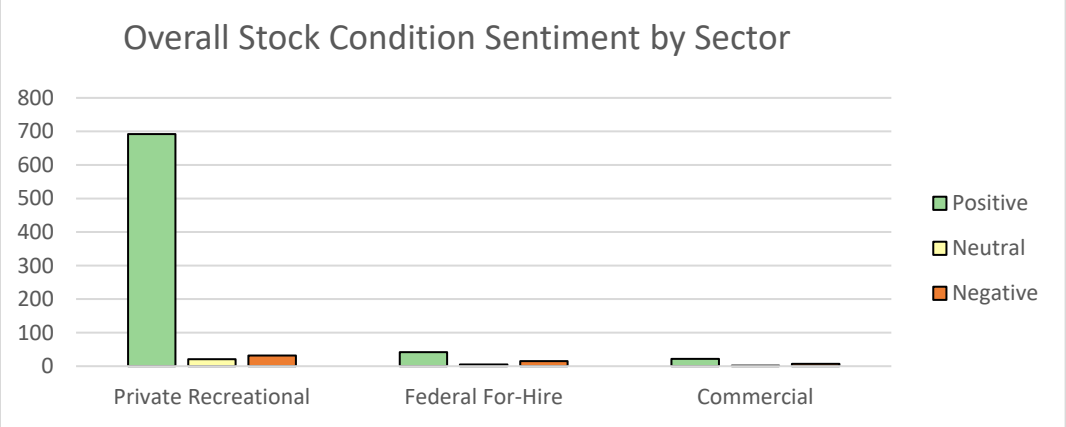

***Figure 7**: Number of responses related to stock condition that indicate positive, neutral, or negative sentiment and sorted by fishing sector. Sector was self-selected by each respondent. Respondents were not limited to a single area (n=838).*

The sentiment of comments related to the condition, health, or abundance of the stock were also sorted by location (Figure 8). A majority of comments in each location indicated that the stock was healthy. Proportionally, the comments that did express a negative perception of the stock condition were located mostly in the areas off the Florida Keys and to a lesser extent, off the Florida Panhandle and Alabama Coast.

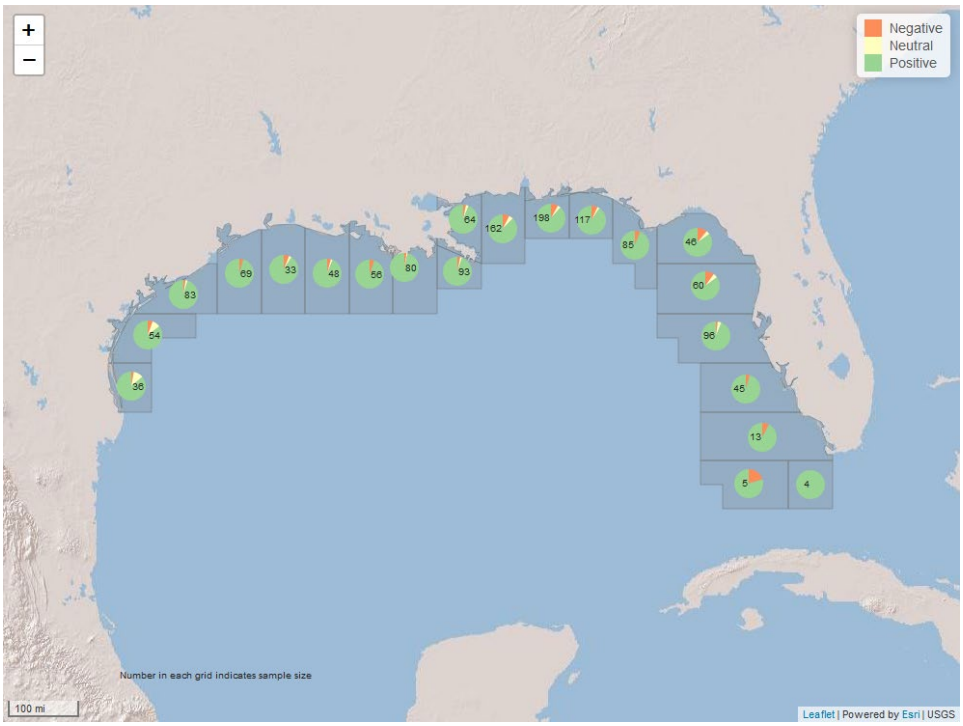

***Figure 8**: Sentiment analysis of the perception of stock condition by location. Each comment related to the health, condition, and/or abundance of the stock was characterized based on whether it indicated something positive, neutral, or negative about the stock (n =798). Each comment was then linked to one or more areas based on the self-reported locations (n=1447) from the respondent that was part of the survey.*

Comments were analyzed for the words most frequently used to contribute to either positive or negative sentiment (Figures 9 and 10). The words that occurred most frequently in comments with a positive sentiment were: like, large, abundance, and plentiful. This seems to indicate that most of the positive sentiment expressed was based on a positive perception of the health, condition, and abundance of red snapper. The words that occurred most frequently in comments with a negative sentiment were: limits, sharks, hard, and smaller. The word 'limit' may indicate that most of that negative sentiment was related to dissatisfaction with red snapper regulations. The occurrence of the word 'shark' may indicate that much of that negative sentiment was directed towards shark depredation. The appearance of the word 'hard' was mostly related to how the abundance of red snapper made it difficult to fish for other species. Finally, the word 'small' was either used to describe a comparatively positive number of recruits, or to indicate that the size of available red snapper diminishes as the recreational season progresses.

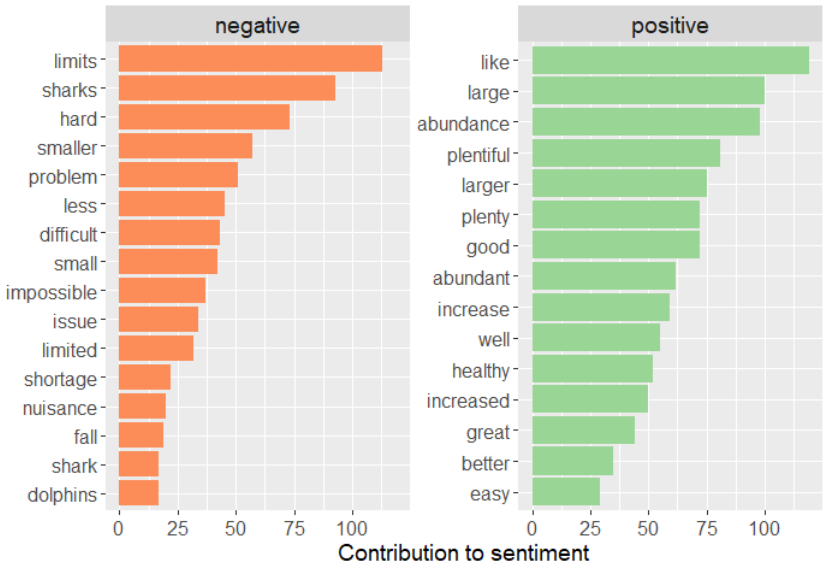

***Figure 9**: Most frequently used words contributing to comment sentiment identified using sentiment analysis.*

***Figure 10:** Most frequently used words contributing to comment sentiment identified by sentiment analysis.*

Many themes emerged in the comments received. It was obvious that a vast majority of respondents believe that the stock is abundant. In many cases, respondents noted that red snapper was overabundant. However, some respondents did indicate that fishing pressure is too high and that the recent loosening of catch limits and regulations have caused localized depletion. We also heard that commercial and charter fishing is negatively impacting the stock, and that inshore stocks are depleted but offshore populations are healthy.

The most prolific themes emerged from comments that were either negative or neutral in sentiment overall, but indicated that the stock was in good health. Most commonly, we heard that the red snapper regulations do not match the health of the stock and that recreational seasons and/or bag limits should be increased. We also heard that shark, and to a lesser extent,

dolphin (porpoise) depredation was increasing and that something needs to be done to mitigate that issue. We also heard that the red snapper stock is so prolific that it is becoming more difficult to target other species. We heard that the abundance of red snapper could be damaging the ecosystem and that both culling and regulatory discards are an issue.

The results of Fisherman Feedback: Red Snapper will be submitted to the NOAA Southeast Fisheries Science Center as it develops the SEDAR 74 Gulf of Mexico Red Snapper Stock Assessment during the Data Workshop. 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

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, 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. Comments that were determined through manual analysis to be unrelated to red snapper in the Gulf of Mexico were dropped from both manual and automated analysis.

Automated sentiment analysis characterized each response using the 'tidytext' package in R and was used to identify the most common words associated with a positive and negative sentiment. 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. The analysis then averages word scores across each entire comment and determines the degree to which each comment is positive, negative, or neutral overall.