Something's Fishy with Scamp
Response Summary
May 2020

The Gulf of Mexico Fishery Management Council (Council) asked fishermen, divers, and other stakeholders if they have noticed anything "fishy" about scamp fishing in the Gulf of Mexico in recent years. Recognizing that active fishermen may notice trends or unusual occurrences that scientists and managers may not have observed, this initiative expands the type of information gathered by the Council to gain a better 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. Thirty-two unique responses were received between February 25th and March 25th, 2020.

Respondents self-selected their association with the fishery (Figure 1). Respondents were not limited to a singular category and many identified with more than one sector in the fishery. Most respondents identified as private anglers. The four respondents that chose more than one sector identified as both private recreational and federally permitted for-hire. Two responses were categorized as 'other' and originated from the same person.

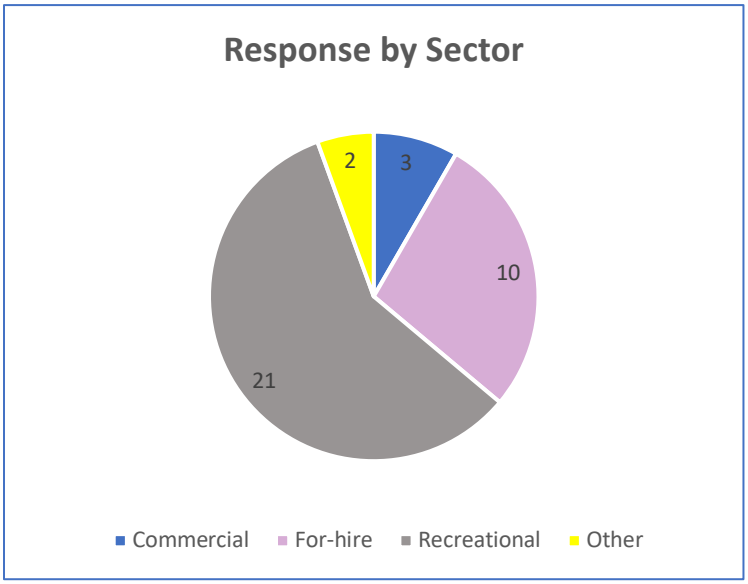

Figure 1: Self-identified number of responses to the survey tool from each sector (n=36). Respondents (n=32) were not limited to a singular response and many identified with more than one sector of the fishery.

Respondents also self-selected the general location where their observation was made. Respondents were not limited to a single area and many identified multiple locations. Responses were gathered for each location and a majority of responses originated from the areas off the central coast of Florida (Figure 2). Few responses were gathered from the western Gulf and southern tip of Florida.

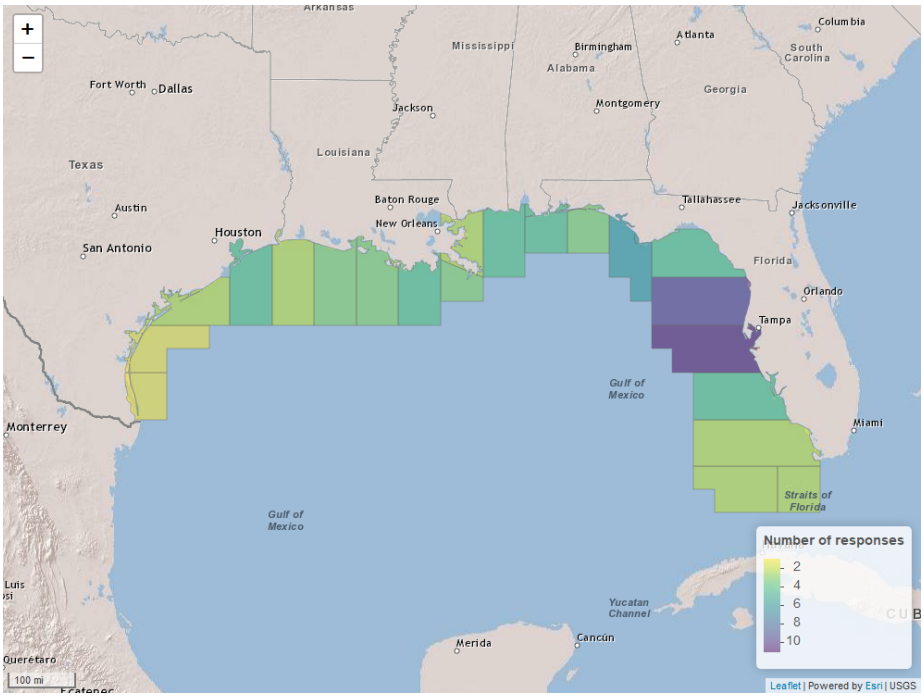

Figure 2: Self-Identified number of responses to the survey tool identifying location where observations were made (n=126). Respondents (n=32) were able to report observations for one or more grids, thus the number of responses is greater than the number of respondents.

Responses were analyzed in two ways: manually and by an automated analysis. Responses were classified into three categories: positive, negative, or neutral. Both manual and automated sentiment analysis showed that a small majority of respondents reported a negative sentiment (Figures 3 and 4). However, the manual analysis showed a greater proportion of negative comments than automated analysis. It is important to note that six of the 32 responses analyzed using automated analysis did not contain words that were recognized by the lexicon library, so those comments were not included in the automated sentiment analysis.

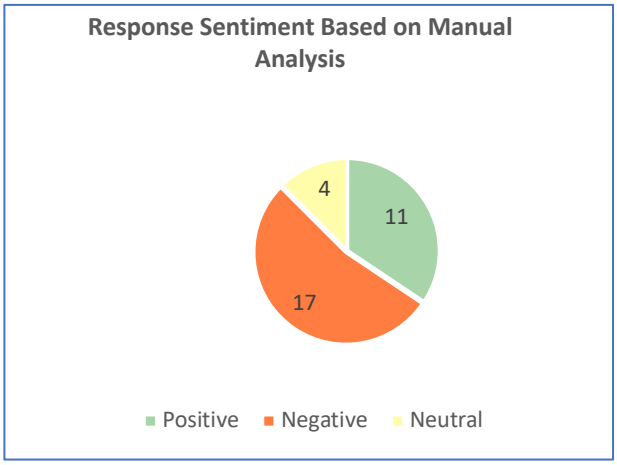

Figure 3: Number of responses indicating positive, negative, or neutral sentiment classified using manual analysis (n=32).

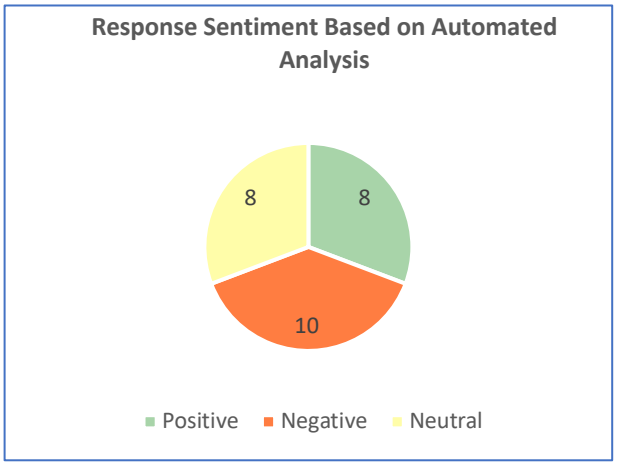

Figure 4: Number of responses indicating positive, negative, or neutral sentiment classified using automated analysis (n=26).

Results from both automated and manual analysis were sorted by location (Figures 5 and 6). Respondents were allowed to choose more than one location, and the sentiment of a singular comment can be reflected in more than one area. Few responses were received for each location, overall. Areas in the western Gulf and in areas off the Florida Keys (Figure 2) only received one response, thus the sentiment analysis results should be interpreted with caution in those areas.

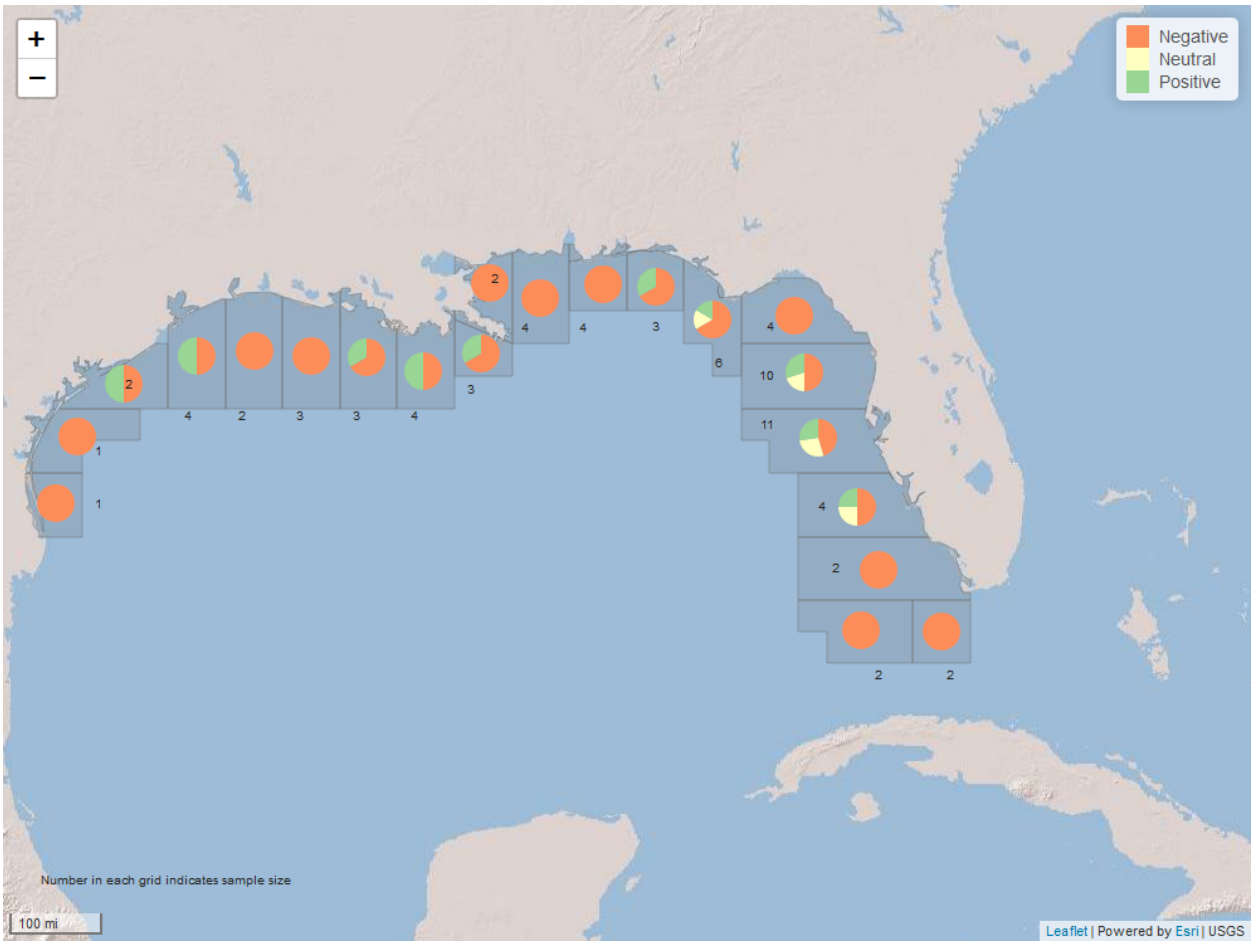

Figure 5: Manual analysis of response sentiment by location. Each comment (n=32) from respondents was characterized into one of three categories based on independent review of each comment by two reviewers. Each comment was linked to one or more grids based on the self-reported locations from the respondent that was part of the survey.

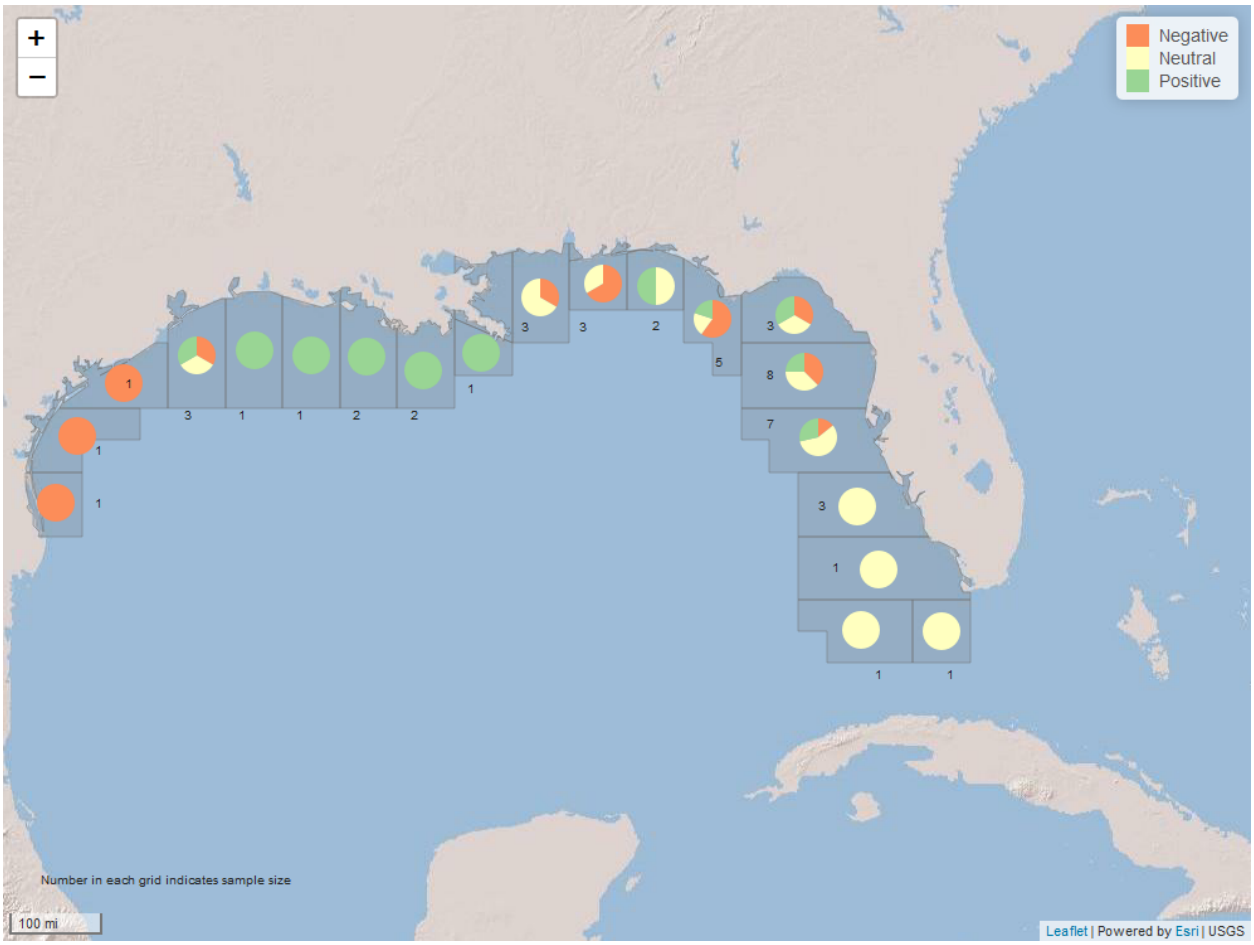

Figure 6: Automated analysis of response sentiment by location. Each comment (n=26) from respondents was characterized into one of three categories based on an automated sentiment analysis of the text in each comment. Each comment was linked to one or more grids based on the self-reported locations from the respondent that was part of the survey.

Manual analysis was conducted by two independent readers and sentiment was broadly characterized as positive, neutral, or negative. Readers then compared characterizations and resolved any disagreements in interpretation so that both readers were in agreement as to comment sentiment. Manual analysis results identified many comments that indicated that the scamp population is not, and has never been, as prolific as some other reef fish. This was not intended to be negative commentary; it was simply an observation of the relative frequency of scamp as compared to other reef fishes. Comments that indicated a negative trend in scamp abundance speculated that recent red tide events had ruined spawning and nursery grounds thereby negatively impacting the population. It was also noted that scamp observed by divers near shore are often smaller than the 16-inch minimum size limit. It was said that scamp further offshore, in deeper waters, occur less frequently but are much larger on average. Finally, it was implied that scamp may be more 'hook shy' than other reef fish, making it harder for hook and line anglers to judge their prevalence.

The automated sentiment analysis characterized responses using the 'tidytext' library in R. Words in each comment were compared to a revised version of the 'Bing' lexicon library. This library categorizes words into positive, negative, or neutral sentiment. Positive words get a

score of +1, negative words get a score of -1, and neutral words get a score of zero. The analysis scores every word in each comment and then averages those word scores for the individual comment to standardize the score by comment length. This revised library amends characterizations for words commonly used in reporting fishery information. Comments that have an average sentiment above 0.33 were considered a positive comment, neutral comments were between -0.33 and 0.33, and negative comments had sentiment score less than -0.33. If a comment did not include any words contained in the lexicon library the comment was not assigned a sentiment characterization and dropped. Therefore, the sample size of comments differs between analysis methods (Figures 3-6). The negative words that occurred most frequently were small, problem, and less. The positive words that occurred most frequently were like, good, plentiful, luck, incredible, easy, better. (Figures 7 and 8). This could indicate that anglers with negative perceptions of the scamp stock were seeing fewer fish and that the fish they were seeing were smaller.

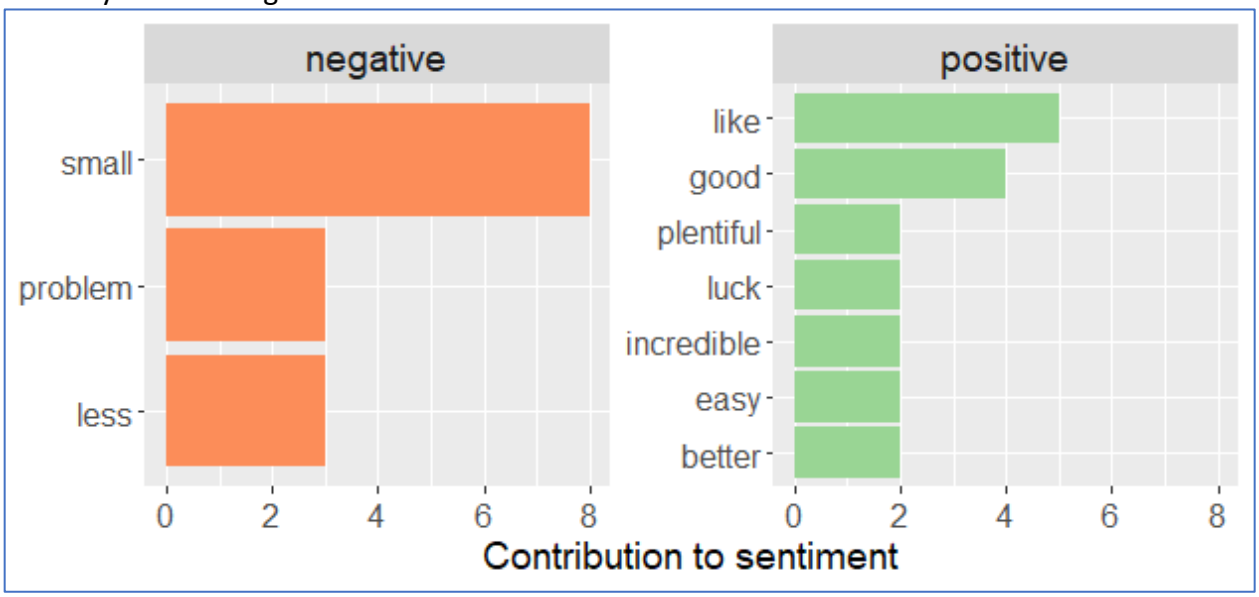

Figure 7: Most frequent words contributing to comment sentiment identified by automated sentiment analysis.

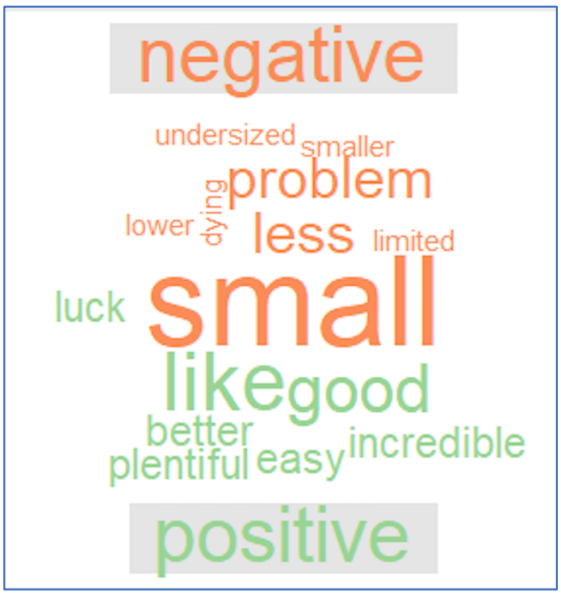

Figure 8: Most frequent words contributing to comment sentiment identified by automated sentiment analysis.

These results of Something's Fishy with Scamp will be submitted to the NOAA Southeastern Fishery Science Center as it develops SEDAR 68: Gulf and Atlantic Scamp Assessment. The information collected through the tool is not intended to be considered as an index of abundance for direct incorporation into a 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.