



Illinois-Indiana Sea Grant; Purdue University; USDA: National Institute of Food and Agriculture

EXPERT REVIEWED

A DEEP DIVE INTO ONLINE SEAFOOD BUZZ

The United States relies heavily on imported seafood, with 70–85% of the seafood consumed domestically coming from abroad. This includes both wild-caught and farm-raised products, with over 50% originating from aquacultureⁱ. These figures underscore the importance of understanding public perceptions of seafood for a better sense of seafood's role in science, the economy, the environment, and public health. As efforts grow to boost domestic seafood production, this study explored online public opinions to identify preferred types of seafood, factors influencing consumer choices, and concerns related to seafood consumption. Insights from public opinion can help shape policies and guide stakeholder engagement to support domestic seafood initiatives that align with consumer values and concerns.

STUDY OVERVIEW

A recent research project led by Illinois-Indiana Sea Grant analyzed seafood-related online posts to better understand public attitudes toward seafood, including both fish and shellfish. The study examined online posts from the United States and its territories, posted between January 2019 and December 2022. Sources included blogs, comment sections, microblogs (such as X, formerly , news articles, and videosⁱⁱ.

Using advanced social science analytical tools, the study assessed public sentiment by assigning scores that reflected the tone of the content. For example, words considered positive tone include "good," "love," "delicious," "great," and "like" while negative words include "nasty," "hate," "bad," "filthy," and "not eat." Sentiment scores ranged from -100 to -1% for negative opinions (values approaching -100 indicate increasing concerns), and from +1 to +100% for positive opinions (values approaching +100 indicate increasing interest or approval). A score of zero (0) indicated neutral or no opinion. Therefore, net sentiment score is bounded between +100% and -100%.

The study then analyzed trends in positive and negative sentiment over time and across geographic regions, comparing attitudes toward farmed and wild-caught seafood.

METHODOLOGY

The analysis involved several key components: Measuring the volume of seafood-related online mentions; calculating net sentiment (positive minus negative); comparing sentiment across categories such as farmed and wild and shellfish and finfish; identifying regional and temporal patterns; and breaking down sentiment by specific seafood types and species.

STUDY HIGHLIGHTS

- Q The analysis revealed a wide range of overall net sentiment toward seafood in the United States across most regions and fish categories.
- Q A notable upward trend in positive sentiment was observed, particularly during the COVID-19 pandemic, suggesting increased public appreciation for seafood during that time.
- Q The term "catfish" was infrequently associated with food due to its overlap with the slang term "catfishing," which led to ambiguity in online discussions.
- Q Fluctuations in sentiment were closely linked to environmental news and broader public discourse, indicating that external events significantly influenced public perceptions of seafood.



Overall online
sentiment about
seafood is good

Average Net Sentiment Score by US Region (%)

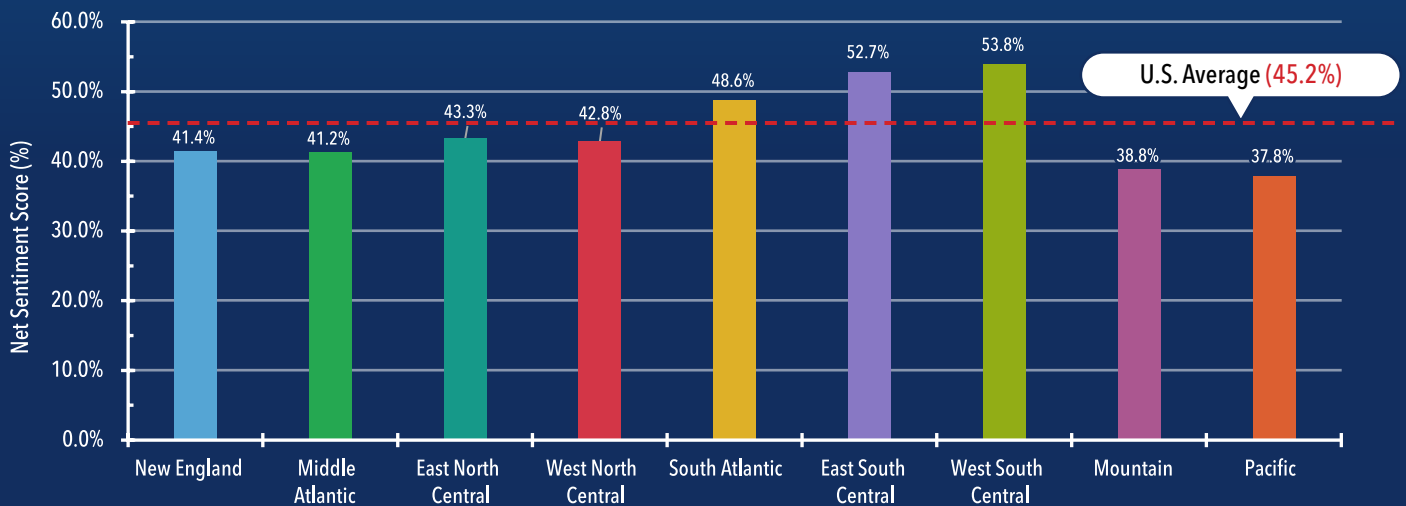
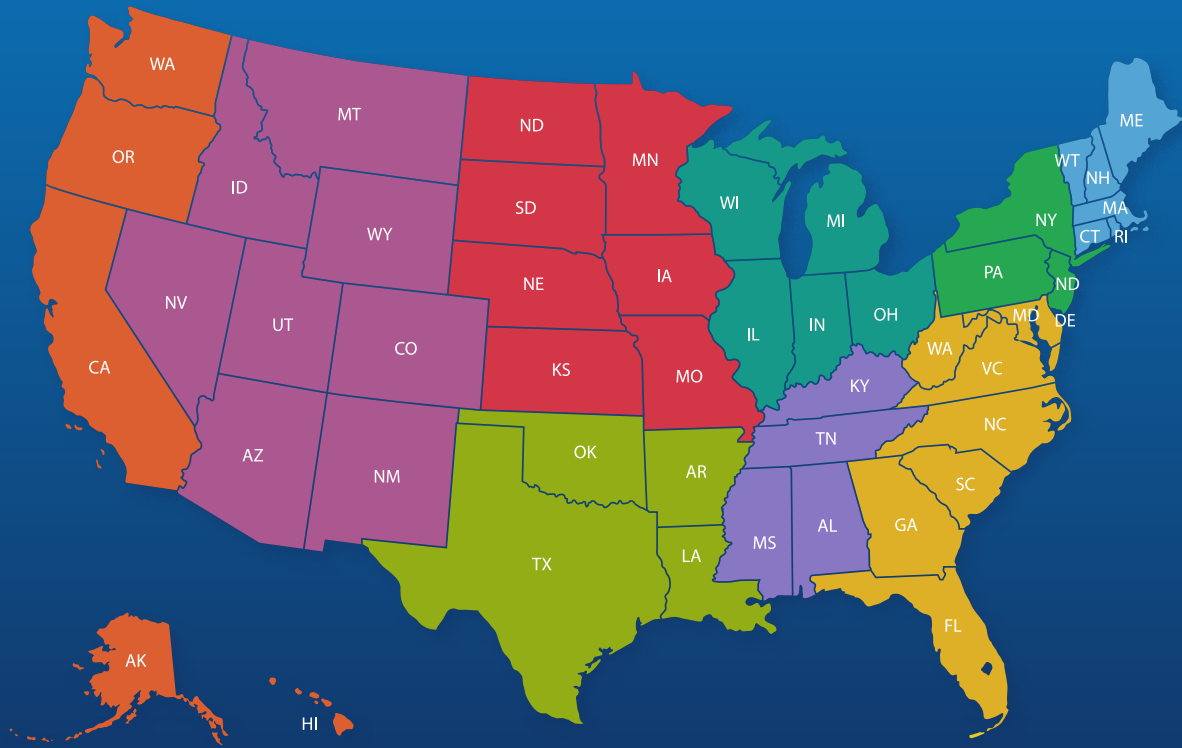


Figure 1. Average Net Sentiment Score by US Region

REGIONAL COMPARISON

From Figure 1, the average net sentiment scores across U.S. regions were: New England (41.4%), Middle Atlantic (41.2%), East North Central (43.3%), West North Central (42.8%), South Atlantic (48.6%), East South Central (52.7%), West South Central (53.8%), Mountain (38.8%), and Pacific (37.8%). Among these, South Atlantic, East South Central, and West South Central exceeded the national average of 45.2%, with East South Central and West South Central being the only regions to surpass 50% positive net sentiment during the study period. In contrast, the Mountain and Pacific regions recorded the lowest net sentiment scores, though they also exhibited the greatest variability.

Distribution of Monthly Net Sentiment Scores by Seafood Category (%)

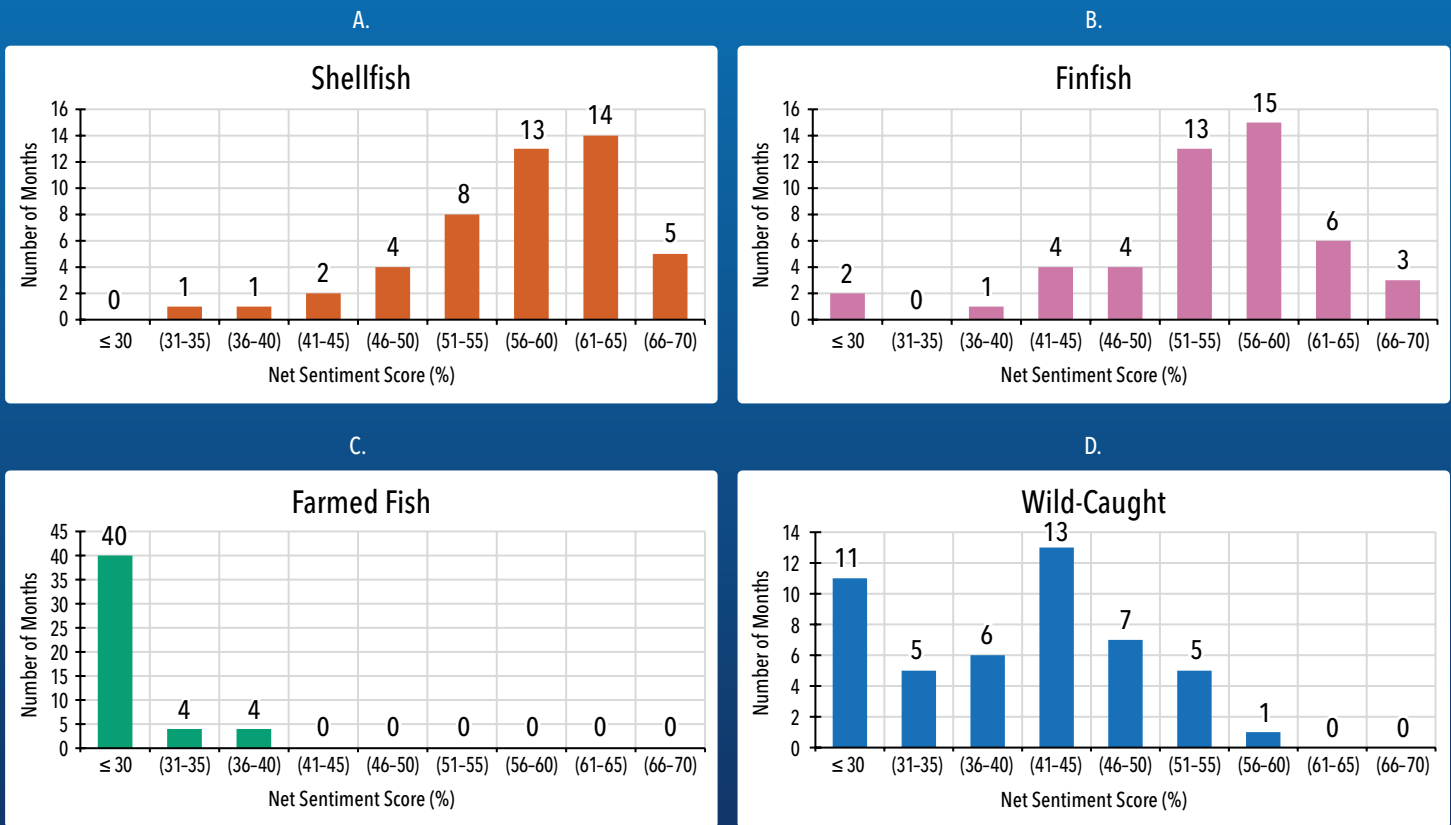


Figure 2. Distribution of Monthly Net Sentiment Scores by Seafood Category

SEAFOOD CATEGORY COMPARISON

For 40 months out of the 48-month study period, shellfish received a more favorable net sentiment of above 50% compared to finfish, which had net sentiment of above 50% from 37 months (Figure 2 A & B). The public's perception of shellfish and finfish is notably more positive with sentiment scores skewed toward higher ratings.

There is a significant difference in public sentiment between farmed and wild-caught fish. Farmed fish had a considerably low net sentiment of below 30% in most months, 40 months out of the 48-month study period and did not receive any score higher than 40% (Figure 2 C). Wild-caught fish received a score of 40% and above in 26 months out of the 48-month study period (Figure 2 D). The average sentiment score was 22% for farmed fish compared to wild-caught fish at 39% (Figure 4).

TRENDS OVER TIME

Shellfish maintained a slightly higher average sentiment at 57.2% compared to finfish at 54.3%. However, the sentiment trends for both shellfish and finfish remained relatively stable over the study period (see Figure 3 A & B).

Both farmed and wild-caught categories showed a positive upward trend

Both farmed and wild-caught fish showed a positive upward trend in sentiment, with farmed fish experiencing a much steeper increase

Trends in Net Sentiment Over Time by Seafood Category (%)

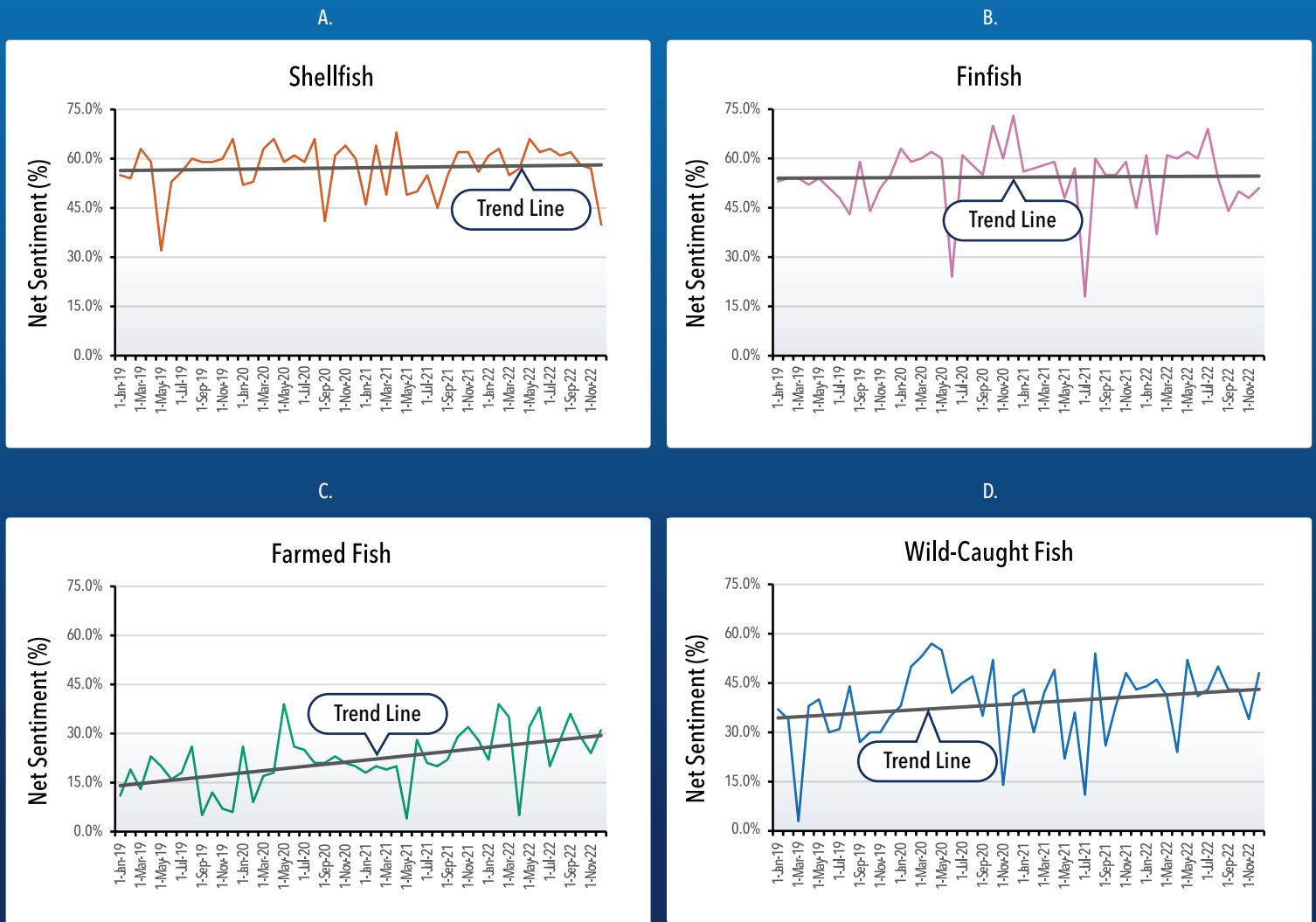


Figure 3. Trends in Net Sentiment Over Time by Seafood Category (Jan. 2019–Nov. 2022)

in sentiment over the study period, with farmed fish experiencing a much steeper increase (see Figure 3 C & D).

Americans consistently expressed concerns about the presence of mercury and microplastics in seafood. Negative sentiment toward seafood was particularly noticeable during several key periods. For finfish, dips in sentiment coincided with news stories highlighting environmental concerns in May 2020 (see Figure 3 B). A similar decline occurred from May to July 2021 for finfish and wild-caught fish, which aligned with increased media coverage of microplastics. Further drops in negative sentiment were observed in February and December 2022 for finfish, which corresponded to reports on declining salmon populations and articles related to seasonal depression.

Americans expressed concerns about mercury and microplastics in their seafood

Average Net Sentiment Scores by Seafood Species (%)

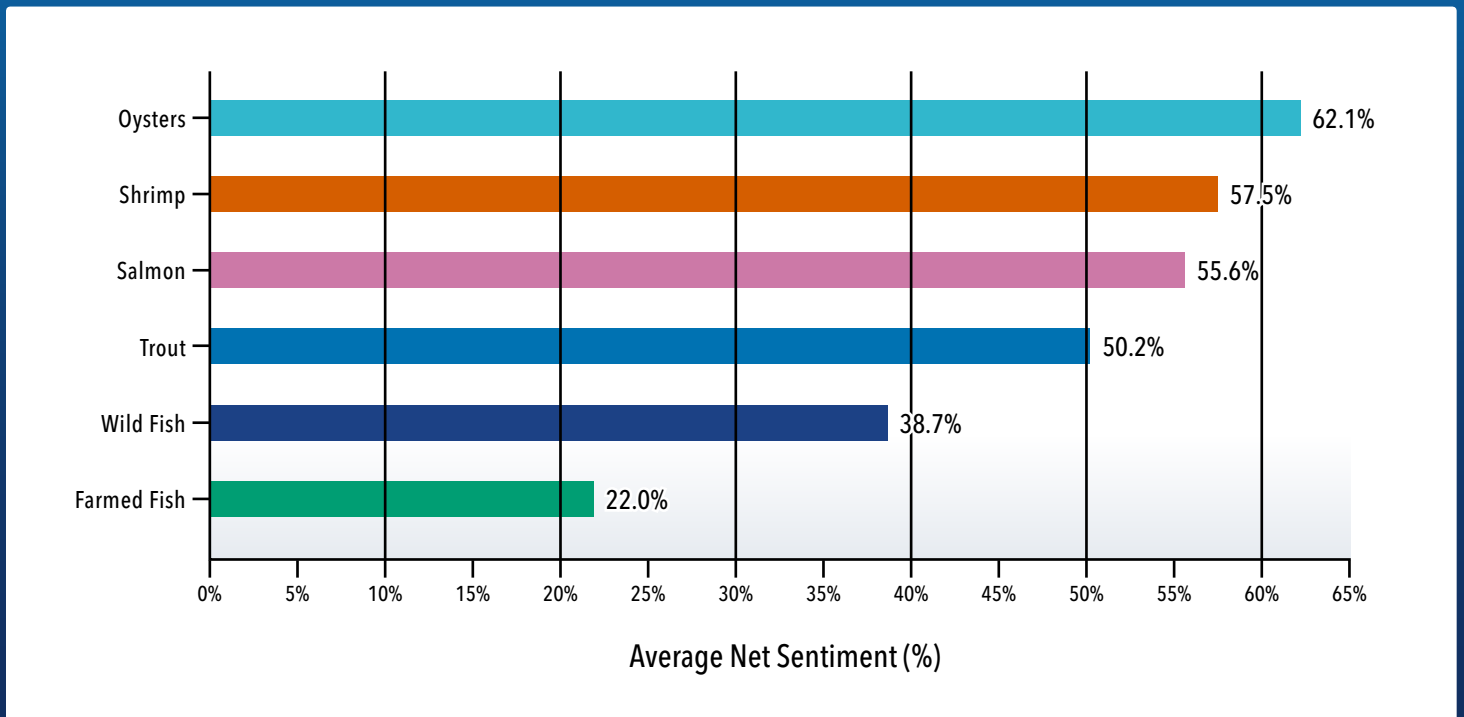


Figure 4. Average Net Sentiment Scores by Seafood Species

SPECIES CATEGORY COMPARISON (FIGURE 4)

- Q Oysters had the highest average sentiment among species (62.1%), followed by shrimp (57.5%), salmon (55.6%), and trout (50.2%).
- Q Net sentiment for salmon and shrimp appeared stable but the trend for oysters generally increased over the study period.
- Q Online mentions of oysters increased steadily from 2019–2022, reflecting growing consumer interest. Net sentiment for farmed oysters was 57.5% and wild oysters, 51.2%, indicating increasing awareness of farmed oysters.
- Q Net sentiment for wild shrimp was 60.2% and farmed shrimp, 29%.
- Q Net sentiment for wild salmon was 37.4% and farmed salmon, 9.2%.
- Q Net sentiment for wild trout was 47.1% and farmed trout, 39.7%.

TOP SENTIMENT DRIVERS FOR ALL SEAFOOD

- 🗨️ Positive terms: "good," "love," "delicious," "great," "like"
- 🗨️ Negative terms: "nasty," "hate," "bad," "filthy," "not eat"
- 🗨️ Farmed fish was often associated with terms like "fish farms," "raised," and "farmed salmon."
- 🗨️ Wild fish was linked to "caught," "wild salmon," and "natural."
- 🗨️ Wild-caught seafood was associated with "freshness," "sustainability," and "natural."
- 🗨️ Concerns about farmed seafood were related to environmental impact, food safety, and ethical issues.

Negative perceptions of farmed fish still persist

CONCLUSION

Online sentiment toward seafood is generally positive and has been steadily increasing over time. While farmed fish continues to face some perception challenges, it is gradually gaining greater acceptance among consumers. To build on this momentum, ongoing online monitoring and the use of strategic communication efforts can play a key role in strengthening public trust and support for the seafood industry.

IMPLICATIONS FOR STAKEHOLDERS

To effectively build public trust in domestic seafood, this research suggest that the industry actively highlight the benefits of eating seafood. Social media serves as a powerful platform for shaping public perception and should be leveraged to counter false narratives while educating audiences about responsible seafood production. Collaborating with influencers and food bloggers can amplify positive messaging and broaden outreach. Additionally, using sentiment analysis tools to monitor evolving consumer opinions and market trends can help guide strategic planning and communication efforts, ensuring the seafood industry remains responsive and aligned with public concerns.

END NOTES

- i National Oceanic and Atmospheric Administration (NOAA). 2021. Fisheries of the United States, 2019 Report. U.S. Department of Commerce, National Oceanic and Atmospheric Administration. Available online: <https://www.fisheries.noaa.gov/resource/document/fisheries-united-states-2019-report>.
- ii Jung, J., Quagraine, K.K., & Widmar, N.O. (January, 2025). "Social Listening: Exploring Online Discourse About Seafood in the United States." (under review).

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