

## Executive Summary

### **Fish Preference Analytics Using Social Media and Sentiment Analysis**

This project provides insights into perceptions about NCR species allowing producers, industry, researchers and policy makers to gauge public opinion and attitudes. This information then can help industry make appropriate, feasible, and accurate strategic choices.

## Progress Report

### **Project Title: Fish Preference Analytics Using Social Media and Sentiment Analysis [Progress Report]**

**Initial Project Schedule:** January 1, 2024-December 31, 2025 [Extended to October 31, 2026]

**Total Funds Committed:** \$193,452

**Current Project Year:** September 1, 2024-August 31, 2025

**Participants:** Kwamena Quagraine, Purdue University; Amy Shambach, Purdue University; Margaret Lawrence, Purdue University

**Extension Liaison:** Nicole Wright, The Ohio State University

**Industry Liaison:** Amy Shambach, TIPPCO Fish, Inc.

**Relevance:** The U.S. aquaculture industry strives to supply healthy and quality fish products that meet required health and environmental regulations, food safety standards, as well as social and customer acceptability of aquaculture. However, unlike other animal protein production where farming is the norm, fish and seafood in general continues to face public comparisons between wild-caught fish and farmed-fish production. That is why the aquaculture industry continues to address public acceptability challenges through marketing attributes such as sustainability, hormone-free production, animal welfare, eco-labeling, 3rd party certifications, e.g., best aquaculture production practices, etc., to assure quality. Largemouth bass, yellow perch, walleye, bluegill, tilapia and rainbow trout are major aquaculture species in the NCR and every effort should be harnessed to grow production, acceptability and reputation as valuable aquaculture species.

**Response:** This project applied sentiment analysis to assess online sentiments on select fish species from the Internet of Things (IoT) perspective and quantify positive / negative sentiments associated with the species (farmed and wild-caught) for the U.S. and census regions. We focused on largemouth bass, yellow perch, walleye, bluegill, tilapia and rainbow trout. The analysis has implications for the aquaculture industry in the North Central Region (NCR) because these are major species produced in the region and online chatter would provide valuable insights into consumer mood, perceptions and potential demand signals for these fishes.

**Results:** Five distinct objectives were pursued in this project. Objectives 1.-4. have been completed. Further data analysis is ongoing. The outreach brochure is being developed for

stakeholders and planning workshops for 2025 Fall in Indiana and 2026 Spring in Ohio.

1. Apply sentiment analysis to assess sentiments on major NCR farmed fishes from the Internet of Things (IoT) perspective utilizing online listening tools including social media. Online data collection is completed for largemouth bass, yellow perch, walleye, bluegill, tilapia, and rainbow trout. Data is being collected and examined for trends over time.
2. Quantify online sentiments of consumers in terms of positivity and negativity associated with food and sport fishes over time-farmed and wild-caught in the U.S. and various census regions.  
Analysis is ongoing.
3. Categorize online contents and highlight patterns of how people perceive farmed versus wild fish in the food fish and sport fish industries; the change over time, and identifying shocks and relevant events that are associated with the change in sentiments for the U.S. and various census regions.  
Statistical summaries have been completed. The rest of the research is ongoing.
4. Assess implications of online media chatter data for the U.S. aquaculture industry.  
Analysis is ongoing.
2. Develop outreach materials based on results to improve the understanding of Americans' perceptions of farmed fish online chatter. This will be done in Year 2.

**Outreach Overview:** Once the outreach brochure is completed, the information will be disseminated to stakeholders by print as well as posting the materials online. The in-person and virtual programs will be done in collaboration with the aquaculture associations in Illinois, Indiana, and Ohio when possible.

**Targeted Audience:** Producers, industry, researchers and policy makers.

**Outcomes/Impacts:** Mentions of NCR fish species were generally positive in sentiment. A key finding is that farmed fish consistently received high net sentiment scores just as their wild counterparts, suggesting a favorable public perception of controlled aquaculture practices. Public sentiment toward the fishes is predominantly positive.

### **Partnerships**

Purdue University's Online Sentiment Analysis Group for data collections and analytics.