

THE TIDE IS TURNING ON AQUACULTURE PERCEPTIONS

IN THE SPOTLIGHT: AQUACULTURE AS A SUSTAINABLE PROTEIN

MARCH 2020



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Tide Turns for Aquaculture

The next alternative protein to take center stage could likely be farmed fish.

The aquaculture industry has sought for years to establish farmed fish as a positive alternative to wild caught seafood and its message is finally taking hold with consumers looking for sustainably sourced products. These consumers perceive farmed fish as a win-win – a way to include natural, nutritious food in their diet, while still honoring their commitment to the environment.



The industry had been criticized in the past about fish farming practices such as feeding “fish meal,” escaped species, coastal habitat destruction and polluted waterways. Innovative production models have been developed and adopted, positioning farmed fish to be the largest source of fish and seafood in 2020. In its October 2019 edition, *Eating Well* magazine calls aquaculture the “Fish for the Next Generation.” And in a recent *Time* article, farmed salmon is referred to as, “the world’s most sustainable salmon.”



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But can farmed fish register on the radar of consumers overwhelmed by the plant-based protein revolution? *In this Illuminate report, which details real-time digital social ethnography research, CFI explores the latest trends.*

With Illuminate, CFI can analyze millions of consumer interactions online to:

- Understand why people care about aquaculture, along with the dominant attitudes, motivations, values and fears that drive perceptions
- Identify the socio-demographics of consumers driving conversations about aquaculture, including age, education, gender, and socioeconomic status
- Determine the current core market size of consumers engaged in online conversations about aquaculture topics as well as the potential growth in the number of people discussing these issues
- Analyze trends to determine effective engagement strategies that build trust



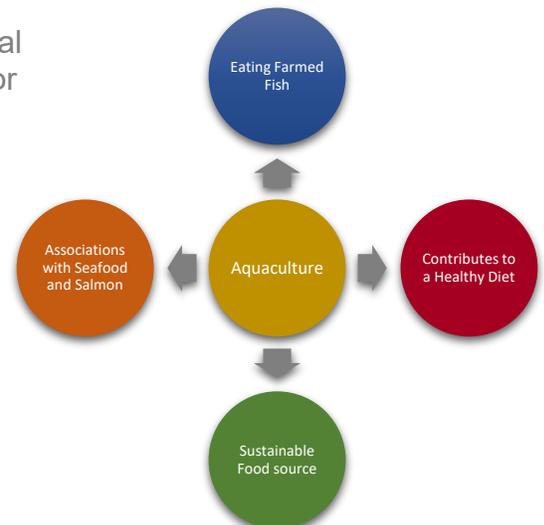
Aquaculture Topics

- 388,143 people analyzed
- 102,073 connections found
- 32,599 topics matched by the algorithm
- Analyzed data from March 2019 to February 2020

Aquaculture is a Complex Topic for Consumers

Illuminate identified unique keywords within the global aquaculture topic. Conversations about aquaculture or farmed fish centered around these subtopics:

- Eating farmed fish
- Farmed fish contributes to a healthy diet
- Farmed fish as a sustainable food source
- Association of farmed fish with seafood and salmon



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Illuminate analyzes full conversations and essentially catalogs these discussions, noting every key term in the conversations. Examining the other key terms discussed in a conversation provides insight into the cultural context of a topic.

As shown below, aquaculture or farmed fish is perceived to **contribute to a healthy diet** (essential nutrients, nutritional requirements, varied diet, balanced diet, natural diet). Additionally, farmed fish has some perceptions as a **sustainable food source**, as evidenced by terms that relate to the benefits of aquaculture such as a solution to overfishing of wild fish. Aquaculture also has general association with both seafood and salmon.

| Cultural Context of Aquaculture Conversations | | | | |
|---|-------------------------------|-------------------------|---------------------------|--------------------------|
| Eating Farmed Fish | Contributes to a Healthy Diet | Sustainable Food Source | Associations with Seafood | Associations with Salmon |
| Eating fish | Animal protein | Raise livestock | Fish farming | Fresh water fish |
| Natural fish | Varied diet | Overfishing | Farmed fish | Fish farming |
| Wild salmon | Essential nutrients | Wild fish | Organic farms | Lot of fish |
| Farmed salmon | Fed meat | Produce meat | Wild salmon | Wild fish |
| Raised animals | Plant protein | Wild caught fish | Farmed salmon | Freshwater |
| Fed meat | Nutritional requirements | Bycatch | Wild caught fish | Tilapia |
| Fish farming | Natural diet | Industrial farms | Tilapia | Farmed fish |
| Animal consumption | Balanced diet | Fish farms | Large scale agriculture | Wild salmon |

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Who's Talking About Aquaculture Online?

- About half female and half male
- About half between 25 and 44 years old
- Technical school or college educated (about one-third each)
- About one-third singles, additional one-third couples with or without children (depending on topic)
- Majority is white
- About half are middle class
- About half earn \$50K-\$100K annually



Demographics by aquaculture subtopic are in the appendix

While the demographic profile of consumers engaged in online conversations about these aquaculture subtopics is very similar, there are striking differences in their psychographics.

Consumer Motivations, Fears, Attitudes and Values Drive Interest in Aquaculture

Illuminate identifies the predominant motivations, fears, attitudes and values associated with specific topics discussed online. Not only do these psychographics provide insight into why consumers are interested in aquaculture topics, they also provide the keys to engaging these consumers in meaningful, trust-building conversations.

Eating Farmed Fish

Currently, 56 million people are engaged in online conversations about eating farmed fish. The number of people discussing this topic is expected to grow by 21% in the next 12 to 24 months.

56M People Engaged, Predicted to Grow 21%

Consumers discussing farmed fish online are highly motivated to take control of their food consumption to ensure good health and wellness and not let societal pressures (government or corporations) influence them. They want to be seen as environmentally responsible, but they fear that despite their efforts, they are not making any difference in the world and may actually be causing harm to the earth and their own bodies.

When it comes to food, they believe “natural” and “organic” products are better for their health. They consider food a “creature comfort” and a contributor to healthy living for themselves and their families.

| Eating Farmed Fish | |
|--|--|
| <p>Motivations</p> <ul style="list-style-type: none"> • Have control over my consumption • Be seen as a good and moral person • Enhance their longevity | <p>Fears</p> <ul style="list-style-type: none"> • Not making any real difference • Harming their health and the environment • Losing control of their bodies |
| <p>Attitudes</p> <ul style="list-style-type: none"> • American food culture is toxic for the body • Unaltered or natural products are better for health • Large corporations only care about money | <p>Values</p> <ul style="list-style-type: none"> • Creature Comforts • Individualism • Healthy Living |

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Farmed Fish Contributes to a Healthy Diet

Currently, 48 million people are engaged in online conversations about farmed fish contributing to a healthy diet. The number of people discussing this topic is expected to grow by 22% in the next 12 to 24 months.

48M People Engaged, Predicted to Grow 22%

Consumers discussing the contribution of farmed fish to a healthy diet:

- Are driven by setting a good example through their actions and choices
- Have strong opinions and share them with anyone who will listen
- Are motivated to speak out about environmental issues, especially if these issues could impact their health and well being
- Are afraid they are not making a difference in the world and are inadvertently harming their health and the environment.

These consumers believe that natural products, preferably local, are better for their health. They have come to believe that the processed food widely available in America is unhealthy and toxic to their bodies. Farmed fish represents a way to include natural, nutritious food in their diet, while still honoring their commitment to the environment. They value being part of a greater movement, especially if they feel like their contributions benefit everyone.

| Farmed Fish Contributes to a Healthy Diet | |
|--|--|
| <p>Motivations</p> <ul style="list-style-type: none"> • Be seen as a good and moral person • Make a difference through responsible living • Enhance my longevity | <p>Fears</p> <ul style="list-style-type: none"> • Harming their health and the environment • Not making any real difference • Losing control of their bodies |
| <p>Attitudes</p> <ul style="list-style-type: none"> • Unaltered or natural products are better for health • Buying local is better for the environment • American food culture is toxic for the body | <p>Values</p> <ul style="list-style-type: none"> • Community Building • Individualism • Healthy Living |



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Farmed Fish as a Sustainable Food Source

Currently, 23 million people are engaged in online conversations about farmed fish as a sustainable food source. The number of people discussing this topic is expected to grow by 45% in the next 12 to 24 months.

23M People Engaged, Predicted to Grow 45%

While consumers discussing farmed fish as a sustainable food source are also concerned about harming their health and the environment and not making a difference, these consumers have a strong desire to prove they are not silent bystanders. When they see injustices, like industries that operate without regard to the environment, they feel compelled to speak out. They are future-oriented and have a firm belief that human limitations and social issues can be solved using technological innovations. Knowledge is power for these consumers – knowledge drives their actions, instead of uninformed passions for causes.

These consumers buy local because they believe it's better for their health and the environment. While they believe that innovation is the key to many of the world's problems, they tend to hang on to the belief that the way food was produced in the past is more sustainable and less adulterated than today's food. They tend to be activists for causes that contribute to helping and supporting others in their community.

Farmed Fish as a Sustainable Food Source

| | |
|--|---|
| <p>Motivations</p> <ul style="list-style-type: none"> • Prove they are not silent bystanders • Overcome human limitations through technological innovations • Shed light on corporate collusion | <p>Fears</p> <ul style="list-style-type: none"> • Harming their health and the environment • Ignorance about the world • Not making any real difference |
| <p>Attitudes</p> <ul style="list-style-type: none"> • Buying local is better for the environment • Unaltered or natural products are better for health • Old methods of food and beverage production were more sustainable | <p>Values</p> <ul style="list-style-type: none"> • Sense of Community • Activism • Healthy Living |



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Aquaculture Associations with Seafood and Salmon

Currently, **39 million** people are engaged in online conversations about aquaculture associations with **seafood**, with a predicted growth of 36%. Forty-seven million people are discussing aquaculture associations with **salmon**, with a predicted growth of 30% in the next 12 to 24 months.

39M People Engaged,
Predicted to Grow 36%

47M People Engaged,
Predicted to Grow 30%

The psychographics of those who are engaged in online discussions about aquaculture and seafood and aquaculture and salmon are the same. Like those who are talking about aquaculture and sustainability, these consumers tend to be activists who don't want to be seen as bystanders to the big issues of their time. While they may not be radical protestors, they do adjust their behavior to lead by example in bringing about social change. They are progressive in their thinking and strongly believe that technological innovations are key to solving problems. These consumers share the fear of harming their health and the environment with consumers discussing other aquaculture topics.

In addition, they:

- Actively include food in their diet that they believe promotes health and longevity
- Have abandoned food that is deemed "processed" and altered in an unhealthy way.
- Prefer to buy local since they believe these foods are more wholesome and have been produced with minimal impact on the environment

For these consumers, consuming farmed seafood and salmon means supporting a more environmentally sustainable food, produced using sound science and innovative production practices.



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Aquaculture Associations with Seafood and Salmon

| | |
|--|---|
| <p>Motivations</p> <ul style="list-style-type: none"> • Prove they are not silent bystanders • Overcome human limitations through technological innovations • Enhance my longevity | <p>Fears</p> <ul style="list-style-type: none"> • Harming their health and the environment • Ignorance about the world • Losing control of their bodies |
| <p>Attitudes</p> <ul style="list-style-type: none"> • Buying local is better for the environment • Unaltered or natural products are better for health • Old methods of food and beverage production were more sustainable | <p>Values</p> <ul style="list-style-type: none"> • Healthy Living • Activism • Individualism |

Exploration of several aquaculture topics indicates a change in perceptions among consumers. While aquaculture or farmed fish still has a strong environmentalism current, consumers have begun to associate aquaculture with sustainability, progressivism and science and innovation.

The motivations, fears, attitudes and values of consumers engaged in online conversations about aquaculture are complex. Their strong desire to protect the environment is woven together with the equally strong desire to protect their health.

These two overarching themes can provide the foundation for key messages and activities aimed at making an authentic connection with consumers. Food system organizations can also continue to communicate the strides the aquaculture industry has made in production practices, focusing on how the science and technology has improved the environmental sustainability as well as improved the “healthfulness” of farmed fish.

While *illuminate* did not detect a measurable number of conversations about farmed fish as a “protein source,” companies may be able to capitalize on the current consumer focus on alternative protein sources.

Organizations can establish public forums to listen to consumer concerns about aquaculture and to share the latest science and technology around production


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solutions. This approach will help promote shared values and build trust. Align with their values by:

- Educating them on the latest production practices and how they promote a sustainable source of nutrient-rich fish
- Share studies conducted by independent third parties, which document both the nutritional value of farmed fish and the improved sustainability of aquaculture
- Reporting specific practices used by your organization and your suppliers to deliver a sustainable protein source

Shedding Light on Important Food System Topics

Our analysis of aquaculture is one example from the millions of topics and trends we can now explore online in real time.

Illuminate represents an evolution of consumer research that can empower a new world of consumer engagement that is more precise, effective and affordable than traditional campaigns. The ability to identify the consumer influencers driving a topic or trend and then producing content we know will align with their values, beliefs and attitudes is a powerful capability and provides in-depth insight into trust-earning opportunities.



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Appendix

| Who's Talking About Aquaculture Online? | | | | |
|--|--|--|---|---|
| Farmed Fish (vs wild caught) | Contributes to a Healthy Diet | Sustainable Food Source | Associations with Seafood | Associations with Salmon |
| More likely female (56%) | More likely female (55%) | More likely female (51%) | More likely female (52%) | More likely female (52%) |
| More likely 25-34 (25%) or 35-44 (21%) years old | More likely 25-34 (26%) or 35-44 (23%) years old | More likely 25-34 (25%) or 35-44 (24%) years old | More likely 25-34 (24%) or 35-44 (22%) years old | More likely 25-34 (24%) or 35-44 (22%) years old |
| More likely technical school (31%) or college educated (29%) | More likely technical school (29%) or college educated (30%) | More likely technical school (28%) or college educated (30%) | More likely technical school (30%) or college educated (32%) | More likely technical school (30%) or college educated (32%) |
| More likely singles (34%) or couples without children (29%) | More likely singles (34%) or couples without children (29%) | More likely singles (36%) or couples without children (27%) | More likely singles (31%) or couples with children (29%) | More likely singles (31%) or couples with children (29%) |
| Predominantly white (70%) | Predominantly white (72%) | Predominantly white (70%) | Predominantly white (67%) | Predominantly white (67%) |
| More likely middle class (53%) | More likely middle class (55%) | More likely middle class (56%) | More likely middle class (56%) | More likely middle class (56%) |
| More likely to earn \$50K-\$100K (48%) | More likely to earn \$50K-\$100K (50%) | More likely to earn \$50K-\$100K (48%) | More likely to earn \$50K-\$100K (52%) | More likely to earn \$50K-\$100K (52%) |

Core Market Sizes of Aquaculture Topics

The Core Market is the number of people engaged in online discussions about the different aquaculture topics. The Illuminate system also calculates the number of people who are likely to be talking about these topics in the next 12 to 24 months.

