

# Impacts of COVID-19 on U.S. aquaculture, aquaponics, and allied businesses located in the USDA Northeastern Aquaculture Region:

## Quarter 1 Results

*March 23, 2020 to April 10, 2020*

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### Introduction

On March 23<sup>rd</sup>, 2020 Virginia Tech Seafood AREC and The Ohio State University Extension initiated an online survey of the U.S. aquaculture, aquaponics, and allied businesses. This survey was designed to capture and quantify the effects of the coronavirus disease (COVID-19) on the aquaculture, aquaponics, and allied industries. The survey closed April 10<sup>th</sup>, 2020 at 11:59 pm. The survey will be distributed at the conclusion of every quarter for 2020, to attempt to capture the evolving impacts of COVID-19 over time.

Survey methods are detailed in the Virginia Cooperative Extension Fact Sheet VCE-AAEC-218, available at: [https://www.arec.vaes.vt.edu/arec/virginia-seafood/research/Impacts\\_of\\_COVID19.html](https://www.arec.vaes.vt.edu/arec/virginia-seafood/research/Impacts_of_COVID19.html). This report is a supplemental report to the overall survey that summarizes results of the USDA **Northeastern Aquaculture Region** respondents.

The USDA Northeastern Aquaculture Region is comprised of the following states and the capital city: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island, Vermont, Washington D.C., and West Virginia.

### Results

#### Characterization of Northeastern Aquaculture Region Respondents

Quarter 1 survey results showed that there were **117 participants from the Northeastern Aquaculture Region** as defined by USDA. Fifty-five percent of Northeastern respondents sold their products to distributors, 15% sold to restaurants, 14% sold direct to customers, 6% to other, un-categorized channels, 5% to other aquaculture/aquaponic farms, 2% to grocery stores/supermarkets, and 2% to processors (Table 1). Three percent did not respond to the question.

*Table 1. Primary marketing channel for Northeastern respondents.*

Category	Percentage
Distributors	55%
Restaurants	15%
Direct to customers	14%
Other	6%

Other aquaculture/aquaponic farms	5%
No response	3%
Grocery stores/supermarkets	2%
Processors	2%

Respondents in the Northeastern region varied in terms of their reported scale of production. Respondents to the survey included those with scales of production from sales of \$1 to \$1,000 year up to as much as \$40 million (Table 2). The greatest percentage (20%) of respondents had sales >\$1 million, followed by those with sales of \$250,001 to \$500,000 (17%), \$100,001 to \$250,000 (15%), \$50,001 to \$100,000 (12%), \$500,001 to \$1 million (8%), \$25,001 to \$50,000 (6%), \$10,001 to \$25,000 (5%), \$5,001 to \$10,000 (4%), \$1,001 to \$5,000 (1%), and \$1 to \$1,000 (1%). Eleven percent did not respond to this question.

*Table 2. Scale of Northeastern respondent farms/businesses.*

Category	Percentage
> \$1 million	20%
\$250,001 - \$500,000	17%
\$100,001 - \$250,000	15%
\$50,001 - \$100,000	12%
No response	11%
\$500,001 - \$1 million	8%
\$25,001 - \$50,000	6%
\$10,001 - \$25,000	5%
\$5,001 - \$10,000	4%
\$1,001 - \$5,000	1%
\$1 - \$1,000	1%

### Key Findings

Ninety-three (93%) percent of survey respondents from the Northeastern Aquaculture Region reported that their farm or business had been impacted by the COVID-19 pandemic. Three percent said that their farm or business had not been impacted, and another 3% were uncertain or unsure whether their farm or business had been impacted. Those who reported that their farm or business had not been impacted, were asked if their farm or business expected to be impacted in 2020; 38% said “definitely yes” and 50% said “probably yes”, while another 13% said “probably not”. No respondents said that their business would “definitely not” be impacted.

When asked whether their farm or business would survive the next 3 months without external intervention (such as government assistance), 28% said, “yes”. Fifty-eight percent reported that their farm or business would “maybe” survive 3 months without external assistance, and 13% said that their farm or business would not survive 3 months without external assistance. When asked the same question, but for the next 6 months, only 13% said that their farm or business would survive, 50% said “maybe,” and **36% said that their farm/business would not survive the next 6 months without external assistance.** Increasing the term to 12 months without

external assistance, **55% of respondents in the Northeastern Aquaculture Region indicated that they would not survive**, 36% said that their farm or business would “maybe” survive, and only 9% said that they would survive.

#### *Lost Sales*

**Ninety-five percent of Northeastern Aquaculture Region farm or businesses indicated that they had lost sales due to the COVID-19 pandemic.** Fifteen percent of survey respondents indicated that they had lost sales to international or export markets outside the U.S. In terms of the volume of sales that had been lost in the first quarter of 2020, 18% indicated they had lost between \$10,001 and \$25,000. A two-way tie exists at 14% of respondents that reported losses between \$25,001 and \$50,000 and \$50,001 and \$100,000. Thirteen percent reported losses between \$100,001 and \$250,000. Eleven percent reported losses between \$1,001 and \$5,000. Another 6% reported losses of \$5,001 to \$10,000, followed by 5% of respondents with losses between \$250,001 and \$500,000; and 3% of respondents losing sales of greater than \$1 million. Two percent of respondents reported between \$500,001 and \$1 million. One percent indicated their lost sales were between \$1 and \$1,000. Fourteen percent of respondents could not estimate at the time of this time.

Reported lost sales included canceled private and government contracts; **88% percent of survey respondents reported losing private contracts** for sales and 7% reported losing government (state or federal) contracts for sales.

Survey participants were asked what challenges they expected to experience on their farms or businesses as a result of the coronavirus pandemic in 2020. **Ninety-seven (97%) percent of responding Northeastern Aquaculture Region farms or businesses indicated that they expected to lose sales in 2020**, with 17% expecting to lose sales to international markets. Seventeen (17%) percent of respondents could not estimate the value of expected lost sales at the time of the survey. Of the respondents that could estimate expected lost sales, 20% indicated they expected to lose between \$50,001 and \$100,000, and another 18% indicated they expect losses between \$100,001 and \$250,000. Twelve percent expect losses between \$10,001 and \$25,000. A two-way tie exists at 10% for expected losses between \$25,001 and \$50,000 and \$250,001 and \$500,000. A three-way tie exists at 4% for those who expect to lose greater than \$1 million, between \$5,001 and \$10,000, and between \$1,001 and \$5,000. Three percent expect to lose between \$500,001 and \$1 million. Zero percent of respondents expect lost sales of \$1,000 or less. One respondent reported they expected to lose \$15 million due to COVID-19’s impact.

When asked how long their farm or business could survive without sales before suffering longer term cash flow effects, 44% said 1 to 3 months, 16% said 4 to 6 months, 15% said less than one month, 5% said 7 to 10 months, and another 5% stated more than 10 months. Fourteen percent did not respond to the question. **It should be noted that data collection through the survey was open for a period of 3 weeks (March 23<sup>rd</sup> to April 10<sup>th</sup>), meaning that more than 1 month had already eclipsed between respondent participation and the preparation of this report.**

## *Labor*

**Forty-one percent of respondents reported that they had laid off employees as a result of the COVID-19 pandemic**, and 28% of respondents indicated that they “will have to soon”. Thirty-one percent of responding farms and businesses had not laid off employees at the time of the Quarter 1 survey. Sixty-two percent of Northeastern region farm or business respondents indicated that they had laid off between 1 and 3 employees. Twenty-two percent of respondents had laid off between 4 and 6 employees. Nine percent of respondents had laid off between 11 and 15 employees. A three-way tie exists at 2% of respondents who had laid off between 7 and 10 employees, 16 and 20 employees, and more than 20 employees. Of those employees who had been laid off, 35% of Northeastern region respondents indicated that these were “Short-Time” or “Shared-Work” employees. Fifty-one percent stated that none of the workers laid off were in this category. Fifteen percent chose not to respond to this question.

Respondents were also asked how many weeks before they would have to decide whether to lay off employees. **Fifty-three percent (53%) of survey respondents indicated that they would have to decide within 1 to 3 weeks whether to lay off employees.** Twenty percent said they had less than a week to make a decision, and another 20% of respondents stated they had between 4 and 6 weeks to make a decision. Seven percent said they had 7 to 10 weeks to decide. Zero percent said they could wait more than 10 weeks to make a decision about laying off employees. **Again, it should be noted that the data collection period was open for 3 weeks, which means that some respondents completed the survey more than a month before the preparation of this report.** Northeastern Aquaculture Region respondents were further asked how many employees they would need to lay off at that time. Eighty percent said that they will have to lay off from 1 to 3 employees. Ten percent of respondents stated they will need to lay off between 4 and 6 employees, 7% will need to lay off between 7 and 10 employees, and 3% will need to lay off between 11 and 15 employees.

Forty-five percent of respondents had experienced some type of labor challenge. A quarter of respondents reported employees to have missed work due to the COVID-19 pandemic. Those who missed work included those who were instructed to self-quarantine at home due to symptoms exhibited by themselves or family members. **Thirty-three percent of responding farms or businesses indicated that employees had missed work between 11 and 14 days, followed by 30% missed between 7 and 10 days, 22% who reported more than 14 days, 7% reported between 1 and 3 days, and another 7% reported between 4 and 6 days.**

Many respondents commented on labor challenges. For example, many businesses are reporting that they have employees who are self-quarantined for fear of being exposed by other workers. Respondents discussed either self-illness or the illness of their employees, which has halted or slowed work. Respondents are also stating that markets are shut down and as such cash flow has stopped. Without cash flow, respondents are stating they do not have the income to pay workers. A fee fishing operation noted their labor challenges being that their workers are scared of being exposed to COVID-19 from customers who visit. Some respondents have stated that they have a labor shortage but are unable to hire help either because of fear of being exposed or there are financial difficulties. According to one respondent, temporary workers are difficult to find and even if they could obtain the temporary workers, they could not guarantee social distancing could be in place due to the method of transportation used. One farm or business has indicated

their inability to get work completed due to furloughs. Another respondent indicated that they had to lay off all employees, leaving all work to be done by the respondent. In turn, this respondent will only be able to fill smaller orders. One respondent indicated that they normally share boats for part of the year; which is not happening due to COVID-19. One farm coordinates with lobster fisherman to look after and help harvest their operation. The farm expects difficulties during May's harvest due to the impact that COVID-19 has also had on the lobster industry.

### *Challenges to the Farm or Business*

Thirty-eight percent of respondents had experienced production challenges not related to labor. Production challenges include challenges with repair, construction, consultant, or engineering services (32%), challenges with financial services (32%), and production input challenges (30%). Thirty-two percent stated there were "other" production challenges that did not relate to labor. Sixteen percent responded that they could not identify specific production challenges at this time. Respondents noted production input difficulties (e.g. feed and seed), including inability to coordinate with those who provide seed, inability to receive seed, or the uncertainty of whether they will be able to receive seed once they attempt to purchase. Several respondents indicated that feed is a problem either because of cash flow issues or backordering issues. Multiple respondents indicated difficulty obtaining raw materials; which is slowing their production and distribution and is also likely to drive the price up as materials will need to be shipped in from other locations. One respondent discussed that because of cash flow issues due to the COVID-19 pandemic, they are unable to purchase necessary broodstock. The respondent also stated that even if cash flow was not an issue, it is still difficult to travel in their state. Multiple respondents indicated that since they are unable to move their product to their markets there are fish health concerns as their systems may be pushed being their carrying capacity. The cost to feed animals for longer than necessary is also taken into consideration by the respondents.

Production challenges, not including labor, noted by respondents also included maintenance and repairs concerns. Obtaining boat parts, new equipment for renovated/new buildings, and materials to make additional cages have all been reported as being difficult by respondents. Additionally, due to social distancing, outside crews have not been able to conduct necessary work at the operation. Even if outside crews are available, one respondent noted that certain professionals are in short supply and overworked, making it difficult to obtain them for work on the farm/business.

Respondents who responded that there were financial services challenges commented there have been difficulties with receiving and/or processing loans (SBA and PPP), and one respondent believes that they will go bankrupt. Another respondent noted they were in the first year of production and as such did not have sales records to reference and therefore, they did not believe they would be eligible for financial assistance.

"Other" production challenges, not including labor, commented by respondents included concerns for retaining aquatic animals in their system longer than necessary, creating both a cash flow problem and potential aquatic animal health problem. Several respondents noted that retaining oysters longer than necessary created operational challenges and gear shortages. One respondent noted that they will need to make a choice between either purchasing additional gear

or dumping oysters to make room for the next cohort as the demand is typically for smaller oysters. Several respondents indicated that they will likely need to dump oysters if they outgrow their markets. Respondents noted that regulatory agencies were difficult to work with during this time. Respondents have seen delays in approval of their leases; which has led to impacts on current and future production. Another respondent reported challenges after they sought out assistance from regulatory agencies to obtain approval to sell to different markets.

One respondent is expecting consumer behavior to be affected by at least two years past the pandemic and as such they are spending time focusing on a new marketing plan to prepare for this shift in behavior.

Survey participants were asked what challenges they expected to experience on their farms or businesses as a result of the coronavirus pandemic in 2020. Twenty-eight percent of farms expect production challenges (e.g. feed and seed), another 28% expect challenges with repair, construction, consultant or engineering services, 26% expect “other” challenges, and 24% expect challenges related to financial services. Twelve percent could not identify specific production challenges at this time. Some respondents noted that they expected a long-term loss in demand of products; whereas one respondent expected market distribution to change from regional to local. One respondent expected a market crash once social distancing is relaxed and demand of the product increases. One respondent expected high mortality for their crop as they have not been able to adequately care for their animals during the pandemic.

### *Marketing of Products*

Forty-two percent of respondents stated they could hold market ready product for 1 to 3 months before it becomes an issue for new crops or plants, 25% said 4 to 6 months, 13% said less than 1 month, 11% said more than 10 months, and 4% said 7 to 10 months. Four percent did not respond to the question.

Sixty-seven percent of respondents said “yes” holding market ready product would make it less marketable. Seventeen percent said “no” and 16% said “don’t know.” Seventy-five percent of respondents stated that holding market ready product would lead to reduced quantity sold, 71% stated that holding market ready product would lead to reduced price, and 24% stated that holding market ready product would lead to “other”. Most respondents indicated that once the product exceeds market size the product is likely either to die due to exceeding the system’s maximum biomass capacity or becoming too big to sell. Reasons for mortality reported by most respondents would be due to predation, biofouling, overcrowding, or dumping due to oversize. One finfish respondent indicated an over-sized product would lead to approximately 20% less volume sold to the market due to reduced demand for larger finfish. Another respondent has indicated that they have concerns regarding consumer taste preference once markets open back up.

**Most respondents indicated that when markets open back up that the rush of product will drop the price.**

One respondent who sells fish feed stated that although farmers require feed to tend to their animals, if demand for the farmer's products is not high enough, they both could lose significant business.

#### *Increased Demand for Products*

Four percent respondent they have experienced an increase in demand for their products. Of those who responded to have experienced an increase in demand, 40% stated between \$5,001 and \$10,000. Another 20% responded to have an increase between \$50,001 and \$100,000. Twenty percent did not respond to the question, and another 20% could not estimate at this time.

When asked if respondents expected to experience an increase in demand for their products, 17% said between \$5,001 and \$10,000, another 17% said between \$10,001 and \$25,000, and 17% said between \$50,001 and \$100,000. Thirty-three percent could not estimate at this time.

#### *Assistance to Farms/Businesses*

The survey also included questions on the types of assistance that might be helpful to the farm or business of respondents. Seventy-five percent of Northeastern Aquaculture Region respondents indicated that federal assistance would increase the likelihood of survival of their farm or business. Sixty percent of respondents said that state assistance would help, and 34% said local assistance would help. Twenty-two percent said assistance from associations would be helpful. Twelve percent said there were other steps or types of assistance that would increase the likelihood for the farm or business to survive. Seven percent said none.

When asked more specifically about the types of assistance that would be helpful to their farm or business, 44% said waiving or delaying of state fees would be helpful, 34% said loan guarantees, 32% said receiving assistance on identifying new markets, 25% said specialty crop insurance, and 10% said tariff relief. Sixteen percent of respondents suggested other assistance that would be helpful to their farm or business.

Amongst the comments regarding request for what type of assistance might be helpful to the Northeastern Aquaculture Region farm or business, respondents overwhelmingly requested federal assistance through grants or low interest/forgivable loans. Specifically, capital grants and grants to assist with payroll were mentioned by several respondents. FSA, SBA, and PPP loans were mentioned as helpful assistance. Cash assistance from the federal government was mentioned to assist with cash flow problems due to the federal shutdown. One respondent indicated the federal government should assist by purchasing their nutrient credits, and another respondent supported ecosystem enhancement programs. One respondent believed the federal government could support them by mandating there to be a stay-at-home order; whereas another respondent believed the federal government should encourage people to go fishing.

For state assistance, many respondents indicated state-level loans and grants would likely be helpful. Buy-out programs were mentioned by several respondents as product is backlogging on farms. Flexibility regarded state regulations were stated as likely being helpful; specifically eliminating permitting fees, assistance with Shellstock Shipper licensing, allowing processors to continue to work, assistance with mobile vendor licensing, and other assistance with new

navigating new markets. Local assistance comments included tax breaks, rent and utility assistance, and encouraging shopping at local businesses.

Respondents indicated that associations could help keep a united voice, lobbying for assistance, and partnering with foundations or organizations that have strategic goals geared towards buying product.

When asked if there were existing programs for which their farm or business does not currently qualify that would be of assistance during the pandemic, only 9% said “Yes”, with 8% saying “No”. Eighty-four percent did not respond to this question.

## **Discussion and Conclusion**

Responses by the Northeastern Aquaculture Region farms and businesses to the Quarter 1 survey show that the aquaculture, aquaponics, and allied businesses within the region have been severely impacted by the COVID-19 pandemic. Ninety-three percent of responding farms or businesses indicated that they had been affected by the pandemic. Ninety-five percent had experienced lost sales, and 88% have had orders from private companies canceled (7% had government orders canceled). While lost sales were the immediate challenge and concern for farms and businesses, other challenges related to production, financing, and other essential services that are critical to survival of the farm or business were also mentioned. Sixty-seven percent indicated that holding market ready product would make it less marketable in the future; with resulting consequences for the quantity of product sold (75%), and reduced prices for products (71%). Comments provided by respondents suggest strong concern for the market price of their products given the glut of product that is backlogged due to markets being shut down. Longer-term effects on the region’s aquaculture, aquaponics, and allied industry should be of concern. Seventy-one percent of Northeastern Aquaculture Region farm and business respondents indicated that their farm or business would maybe or would not survive the next 3 months without external assistance. Thirteen percent responded “Yes” when asked if they could survive six months without external assistance, and 9% said they could survive 12 months.

Key findings from Northeastern Aquaculture Region farm and business respondents include:

- 93% have been impacted by COVID-19
- 88% have had private orders/contracts canceled
- 69% have or will soon have to lay off employees
- 95% have experienced lost sales
- 28% can survive 3 months without external intervention

## **References**

United States Department of Agriculture. 2019. 2018 Census of Aquaculture. National Agricultural Statistics Service, USDA, Washington, District of Columbia, USA.