



Aquaculture in Rhode Island 2021



Oyster farmers in Dutch Island Harbor. Photograph: CRMC

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CRMC

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*An oyster farmer shows off new biodegradable harvest bags.
Photograph: Jules Opton-Himmel*

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Rhode Island Aquaculture Industry - 2021

At a Glance

- The overall number of individual aquaculture sites in Rhode Island increased by one to 84.
- The total area now under cultivation increased 19.68 acres for a total of 368.18 acres.
- Oysters remained the number one aquaculture product with 10,187,262 sold for consumption.
- The farm gate value of aquaculture products for consumption was \$6,945,038.00.
- Oyster seed sales from RI aquaculturists was valued at \$597,045.00.
- Combined value of aquaculture products for consumption and seed sales was \$7,542,583.00.
- USDA Natural Resource Conservation Service worked with RI growers to purchase and deploy approximately 4,724,680 oysters to restoration sites throughout the coastal ponds and Narragansett Bay.
- The number of aquaculture farm workers slightly increased to 222.



Figure 2. Farm workers in Ninigret Pond tend to oyster seed in a floating upweller nursery system. *Photograph: Jules Opton-Himmel*

Introduction

The year 2021 was a banner year for the Rhode Island aquaculture industry. With the widespread rollout of COVID vaccines early in the year and the return to in-person dining, the market for Rhode Island aquaculture products saw an impressive increase in demand beyond pre-pandemic levels of 2019 and an increase in value of over 75% from 2020. Despite these gains, the overall number of farms in 2021 only increased by one. Due to this one new farm and a few existing farms expanding, the overall acreage in production saw an increase of 19.68 acres. Farmers also continued to work on raising new crops such as: sugar kelp, soft shell clams, surf clams, and bay scallops. RI aquaculturists are inventive, efficient, and working to diversify their crops and markets using the latest technology.



Figure 3. Sugar kelp, Pt. Judith *Photograph: CRMC*

How the figures were derived

Harvest figures came from the yearly CRMC aquaculture questionnaire distributed to all leaseholders. All reports are taken as an accurate value. Monetary figures for this report were calculated by averaging an estimated yearly average wholesale price from multiple sources. This figure was then multiplied by the numbers reported by growers in the yearly CRMC report to arrive at the figures used in this report. Figures from the aquaculture-associated industries came from the principals involved in these privately held companies. Seven operations sold oyster seed in 2021. The figures cited are for gross sales of aquaculture-related products including seed sales. A number of shellfish growers are also shellfish dealers. The sales that are direct to end users are at a higher value than wholesale price used in the averaging. Using a wholesale price results in a lower value determined for the aquaculture products but also results in a consistency of format over the years of reporting.

Farm Production

The 2021 farm gate value of Rhode Island grown products was \$7,542,583 which was an increase of 75.8 percent from the 2020 farm gate value. Oyster seed sales for 2021 also greatly increased 257 percent to \$597,045 while sugar kelp sales declined by 18.57 percent to \$5,700.

The number of farms active in Rhode Island aquaculture at the end of 2021 was 84, with cultivation of 367.18 acres. Eastern oysters, *Crassostrea virginica*, continue to be the most valuable cultivated species in Rhode Island waters and represent approximately 99% of all Rhode Island aquaculture production.

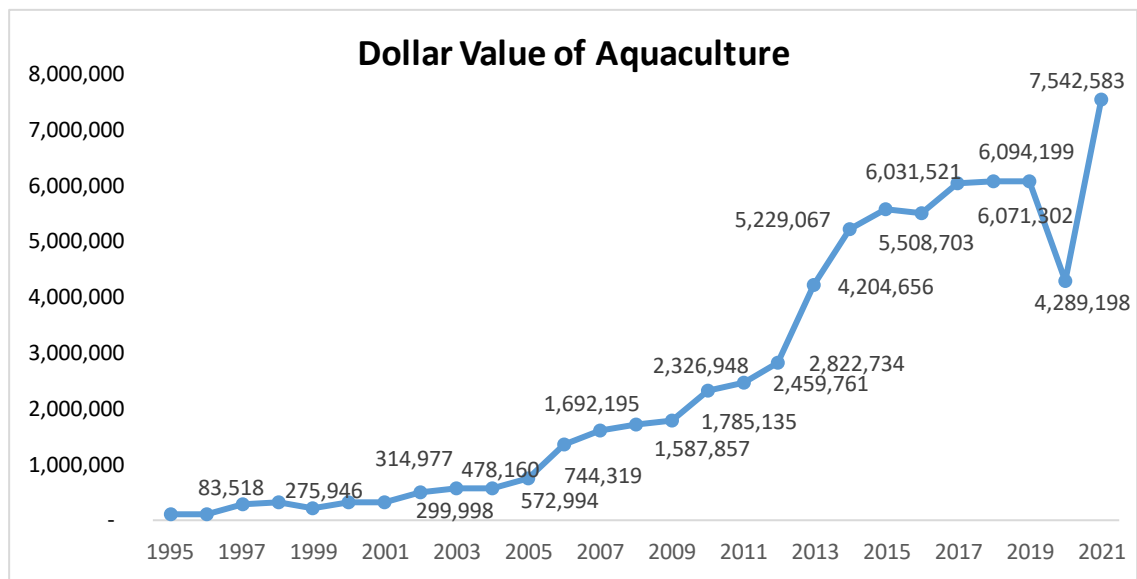


Figure 4. Total dollar value of all aquaculture products

Aquaculture Employment					
Year	Full Time Year	Full Time Season	Part Time Year	Part Time Season	Total
2006	17	8	17	15	57
2007	14	2	28	15	61
2008	12	1	25	24	62
2009	14	3	25	20	62
2010	17	4	30	28	79
2011	23	3	26	32	84
2012	32	9	32	32	105
2013	35	13	37	42	127
2014	47	17	35	43	142
2015	47	26	39	59	171
2016	49	30	49	49	177
2017	62	27	41	64	194
2018	62	31	38	69	200
2019	59	47	46	67	219
2020	69	20	52	75	216
2021	69	36	52	65	222

Figure 5. Aquaculture farm jobs increased by 2.7% in 2021

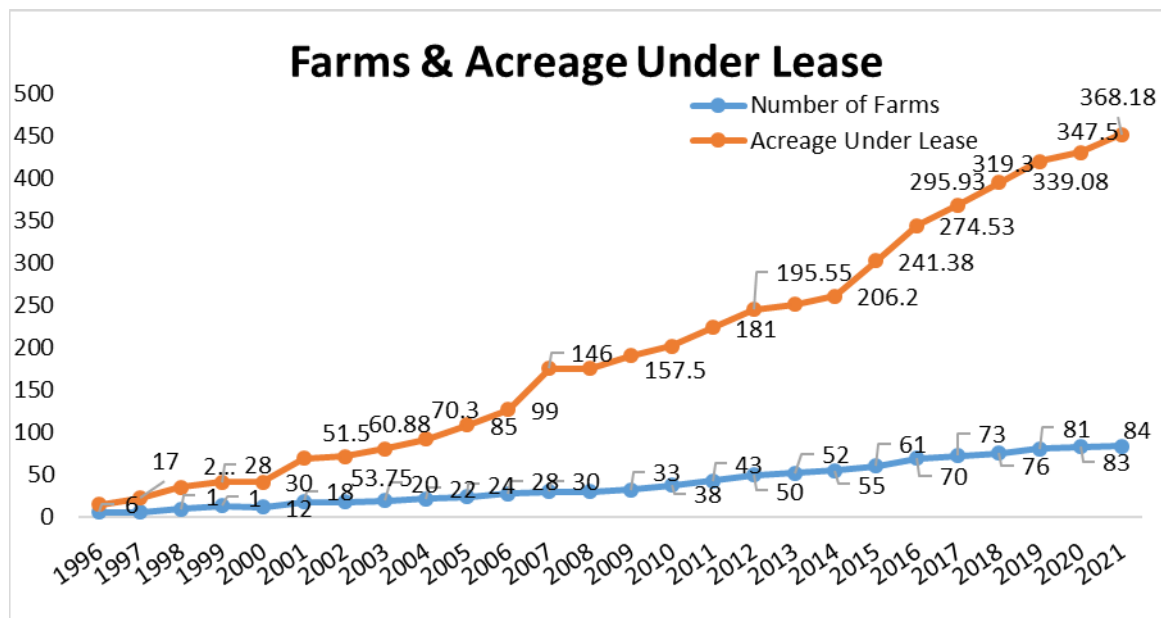


Figure 6. Acreage for the 84 farms is 368.18



Figure 7. Oysters harvested from Pt. Judith Pond are put on ice on their way to market to ensure product freshness and safety.

Photograph: Moonstone Oysters

Universities, Environmental Organizations, State and Federal Agencies

Two educational institutions conduct aquaculture research activities, extension programs, and academic programs in Rhode Island. Both Roger Williams University (RWU) and the University of Rhode Island (URI) are centers of excellence in the field of aquaculture. Both universities have pathology testing capabilities and are assets to the shellfish aquaculture and wild harvest industries. They each have projects concerning the nascent kelp industry in RI. URI has research projects growing urchins and King Fish. Extension projects at RWU include oyster restoration, the practical shellfish farming course, and a public enhancement project for quahogs and oysters partnering with the RI Shellfishermen's Association and the Town of Warren. Rhode Island Sea Grant continues to provide aquaculture education opportunities for interested constituents. The RI Department of Environmental Management (DEM) partners with The Nature Conservancy, the United States Department of Agriculture (USDA) Natural Resources Conservation Service, and the aquaculture industry on oyster reefs restoration projects. In 2021, USDA Natural Resource Conservation Service worked with growers to purchase and deploy approximately 4,724,680 oysters to restoration sites around the state. Most of these animals are deployed as juvenile spat on shell. However, recently the program has also been purchasing reproductively mature large single oysters in order to enhance

future recruitment at these sites. In 2021, approximately 777,000 large single oysters were deployed throughout the state for this reason. The RIDEM and the RI Department of Health continue to monitor harmful algal concentrations and the program has successfully protected human health. The USDA continues to fund the shellfish sentinel program looking at shellfish disease levels in the different biosecurity zones throughout the state.



Figure 8. Pallets of bagged shell destined for oyster restoration projects in Ninigret Pond.
Photograph: CRMC



Figure 9. Offloading oysters into a refrigerated truck in Ninigret Pond.
Photograph: Behan Family Farms

Outlook for 2021

While aquaculture businesses were challenged by the COVID-19 shutdowns of 2020, many farmers experienced a huge rebound in demand with the return of indoor dining and increased at home consumption in 2021. Rhode Island aquaculturists are resilient and continue to work on and invest in their farms to meet this growing demand for high quality shellfish. Many farmers remain optimistic that the trend in increased demand for RI aquaculture products, both locally and throughout the country, will continue into 2022 and beyond.