



# **RHODE ISLAND**

## **STATE BRIEF**

**2023**





**As more frequent and intense climate change disasters imperil food supplies around the world, where our food comes from matters more than ever.**

A [regional approach to food system resilience](#) is both an *investment* in our shared future and an *insurance policy* against future risks. A regional approach to food system resilience means that we work collectively to adapt, expand, and fortify New England’s food production and distribution systems to ensure the availability of adequate, affordable, and culturally appropriate food for all who call New England home.

**Can the six New England states provide 30% of their food from regional farms and fisheries by 2030?**

New England Feeding New England explores this question and what it will really take to grow, raise, produce, harvest, and catch more regional food and move it through a complex supply chain to our homes and other places where we eat. Our research presents an opportunity for the region: [significant changes in diet](#) (e.g., dramatically reducing consumption of ultra-processed foods and increasing fruit and vegetable consumption), a [significant increase in land in agriculture](#), [stopping the decrease in farmers and fishermen](#), and finding a way to [actually get local/regional food in the places people shop](#) are daunting challenges, but addressing them will leave our food system stronger and more resilient.








Through 7 research Volumes, New England Feeding New England lays out the case for a regional approach to food system resilience.

» <https://nefoodsystemplanners.org/>

## How self-reliant is our region?

[New England Feeding New England Volume 2](#) estimates regional food self-reliance (RSR)—how much food we produce compared to how much food we consume—for the five major food groups. RSR percentages varied widely from food product to food product, showing a rather lopsided capacity for self-reliance. A small number of foods were produced in large quantities relative to consumption and had self-reliance ratios near or exceeding 100% (e.g., dairy, maple syrup, potatoes, lobster, clams). Most foods, however, had self-reliance ratios of less than 10% (e.g., beef, lettuce, wheat).

### » New England Regional Self-Reliance for Major Food Groups

	 GRAINS	 VEGETABLES	 FRUITS	 DAIRY	 PROTEINS
Servings	1.6%	28.3%	8.7%	50.0%	3.2%
Calories	1.7%	41.0%	6.9%	47.4%	2.6%

Source: [Volume 2: Estimating Production for 30% Regional Self-Reliance](#). Note: vegetables consists of a significant amount of calorie-dense potatoes grown in Maine; dairy includes a significant amount of production in Vermont.

## What can each New England state do to increase food security and access while building resilience for the whole region?

**What strengths does Rhode Island’s food system possess and what opportunities can be pursued? What weaknesses persist and what threats loom?**

**This State Brief contextualizes important characteristics of Rhode Island’s food system for consideration.**

For example, unlike many other places, Rhode Island has a [statewide food system plan](#) and a strong and growing support system. Rhode Island has a strong network of food system, agriculture and seafood partners working collaboratively across the state to drive investments and policies that strengthen the local food economy. Rhode Island’s model of cross-agency communication, planning and coordination that also includes robust engagement with nonprofit and community-based organizations, can be a model for neighboring states to follow.

As the smallest state with the highest cost of agricultural land, Rhode Island may have limited land for agricultural production, but the crops it does produce are primarily consumed within the state, Rhode Island farmers enjoy one of the highest rates of direct selling in the country, and Rhode Island’s emergency food system has successfully incorporated local food into its distribution system. For these reasons, Rhode Island needs to continue to protect and support its small but impactful agricultural lands.

Dollar stores are by far the most common type of major grocery chain in Rhode Island, but the state also has a significant number of independent grocery stores, like [Dave’s Fresh Marketplace](#), and many Hispanic/Latino owned markets. These smaller stores have the ability to facilitate access to regional food.





# Rhode Island Food Strategy

The [Relish Rhody](#) food strategy was established in 2017 to create a vision and roadmap for a more equitable, accessible, economically vibrant, and environmentally sustainable food system. Relish Rhody has five focus areas, with many strategies attached to each step:

- » Preserve and Grow Agriculture, Fisheries Industries in Rhode Island
- » Enhance the Climate for Food and Beverage Businesses
- » Sustain and Create Markets for Rhode Island Food and Beverage Products
- » Ensure Food Security for All Rhode Islanders
- » Minimize Food Waste and Divert it from the Waste Stream

An update to Relish Rhody is underway, supported by strong state collaboration and community engagement.

## State Snapshot

### » Top Agricultural Products by Sales, 2017

**46.2%** (\$25,301,009) of the value of agricultural sales was generated by floriculture, bedding, and nursery products (i.e., non-food crops), including a limited amount of greenhouse vegetable production.



NURSERY CROPS  
**19.1%**

includes ornamentals, shrubs, shade trees, flowering trees, evergreens, live Christmas trees, fruit and nut trees and plants, vines, etc.



SOD  
**14.9%**



BEDDING/GARDEN PLANTS  
**12.2%**

includes bedding/garden plants, cut flowers, florist greens, foliage plants, potted flowering plants, etc.

### » Top Seafood and Aquaculture Products by Sales, 2022

In 2022, squid accounted for 32.1% (\$37,035,668) of the combined value of seafood and aquaculture sales, followed by sea scallops (15.9%, \$18,307,749), and lobster (7.0%, \$8,099,716).



LONGFIN + SHORTFIN SQUID  
**32.1%**



SEA SCALLOPS  
**15.9%**



AMERICAN LOBSTER  
**7.0%**

### Top Manufactured Products by Sales, 2017



ANIMAL PROCESSING  
**31.1%**



OTHER PRODUCTS  
**26.2%**



BAKERIES  
**24.1%**

### » Top Retail Food Sales by Market Channel, 2017



GROCERY STORES  
**41.3%**



RESTAURANTS/  
FAST FOOD  
**40.8%**

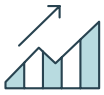


LIQUOR STORES  
**7.6%**



DIRECT SALES  
**0.2%**





# Food System Economy

## How big is Rhode Island’s food system? What sectors are growing? What sectors are contracting?

Rhode Island’s food system employs over **66,000** people and generates over **\$11.9 billion** in sales. Agriculture and fisheries employment and sales were flat or declined from 2007 to 2017. Employment and sales at grocery stores decreased slightly. Food manufacturing employment decreased slightly, while sales were up. The reverse was true in beverage manufacturing, where employment increased and sales decreased. Employment and sales in wholesaling and distribution and food services all increased.

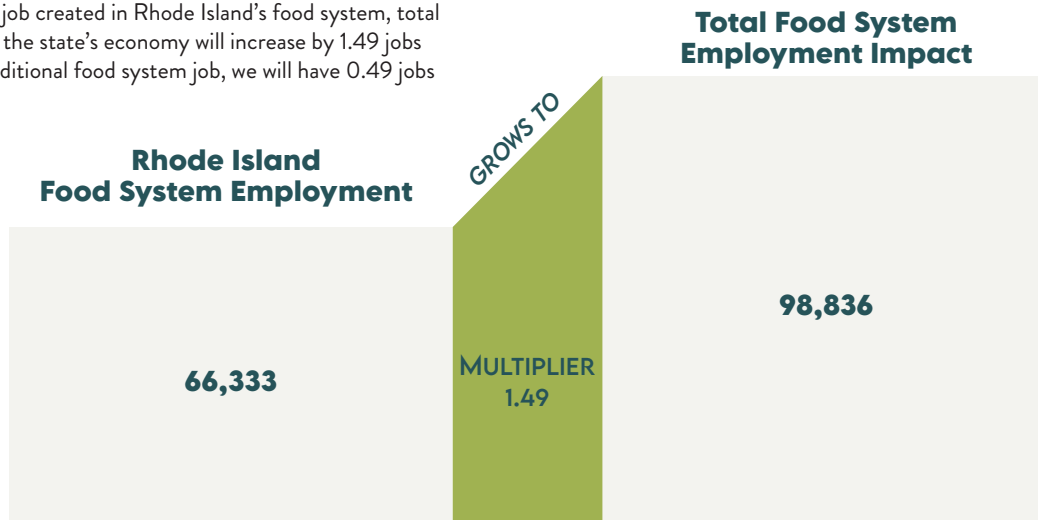
### » Economic Impact of Rhode Island’s Food System, 2017

	2017 Employment	% of Total	Growth from 2007- 2017	2017 Sales	% of Total	Growth from 2007- 2017
Agriculture	3,726	5.6%	0.1%	\$62,873,200	0.5%	-3.8%
Fisheries	988	1.5%	-2.0%	\$109,856,000	0.9%	-0.6%
Food Manufacturing	2,359	3.6%	-0.5%	\$645,825,000	5.4%	1.9%
Beverage Manufacturing	367	0.6%	0.6%	\$83,628,900	0.7%	-16.1%
Wholesaling + Distributing	3,477	5.2%	2.5%	\$5,119,564,200	43.0%	8.4%
Stores	11,265	17.0%	-0.3%	\$3,118,531,100	26.2%	-0.8%
Food Services + Drinking Places	44,151	66.6%	0.9%	\$2,774,747,000	23.3%	1.5%
<b>TOTAL</b>	<b>66,333</b>	<b>100.0%</b>	<b>0.6%</b>	<b>\$11,915,025,300</b>	<b>100.0%</b>	<b>2.5%</b>

Source: Volume 3: Economic Impact of New England’s Food System. Note: Agriculture sales in this table includes support activities. Sales values are adjusted for inflation to 2020 dollars. Agricultural sales are adjusted using producer price indices for crops and livestock.

### » Food System Employment Multiplier

The employment multiplier calculated in Volume 3 shows that for each additional job created in Rhode Island’s food system, total employment in the state’s economy will increase by 1.49 jobs (i.e., to the 1 additional food system job, we will have 0.49 jobs spun-off those)



The additional one-half job (in aggregate) is actually a set of fractional jobs spread over the entire economy, the result of linked activity in other food system and nonfood system sectors. These include jobs in transportation, utilities, finance, trade, and government.

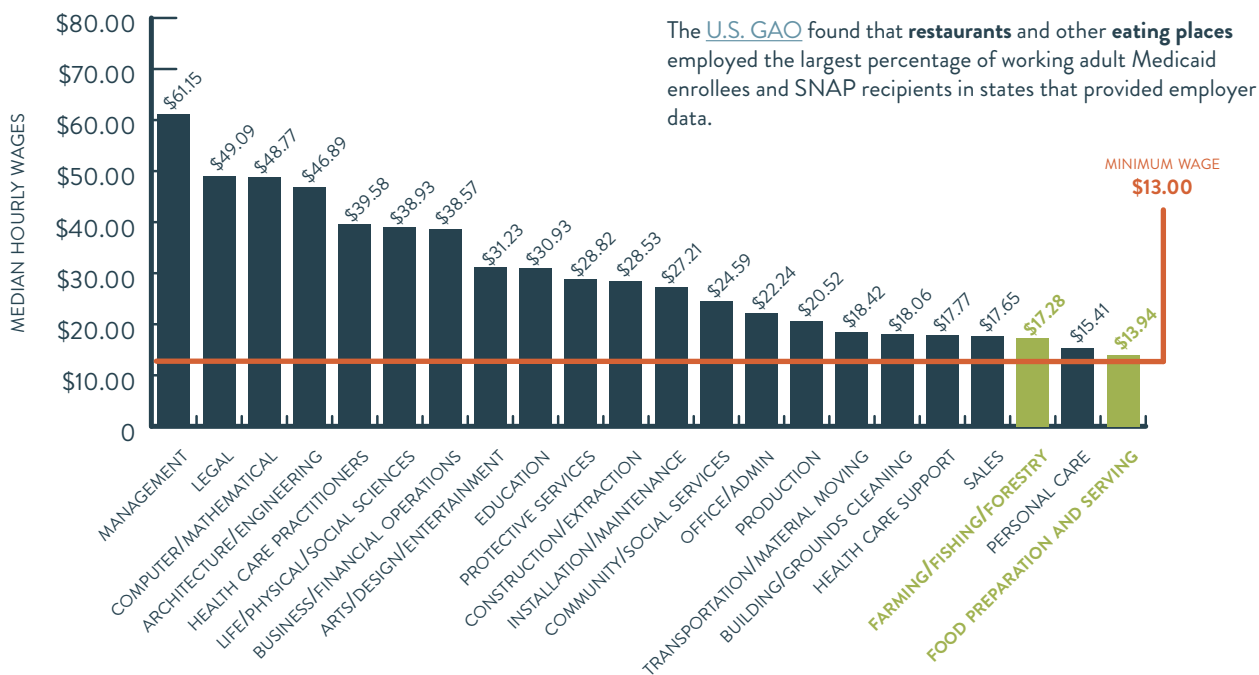


# Food System Wages

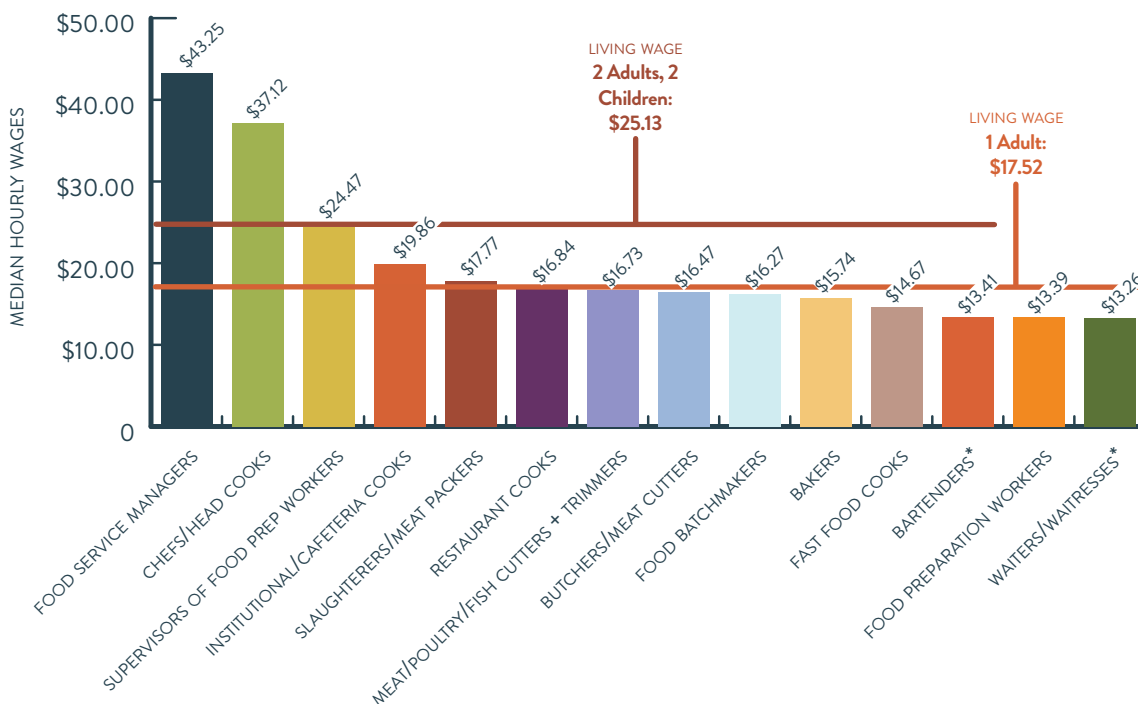
## How much do food system workers in Rhode Island earn?

[Wages/salaries](#) are the most common source of income for the majority of Americans. Unfortunately, Rhode Island's food system workers, particularly food service workers, receive some of the *lowest* wages of any occupational category in the state. Rhode Island has the second lowest minimum wage of the New England states, and median hourly wages for many food system jobs are below living wage levels.

### » Median Hourly Wages by Major Occupational Category, 2022



### » Median Hourly Wages by Selected Food System Occupations, 2022



Source: U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics, MIT, Living Wage Calculator. \* wage data includes tips.

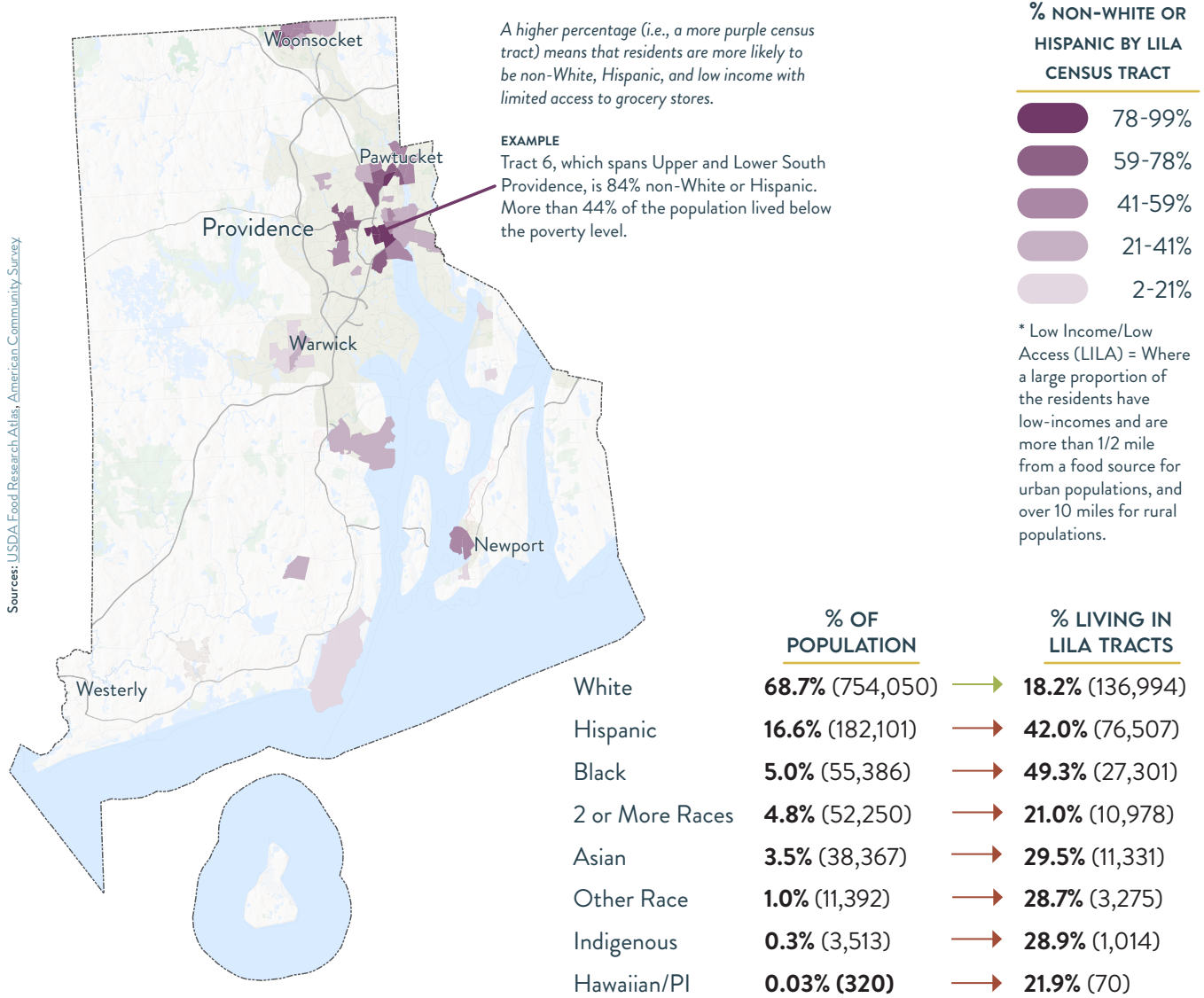




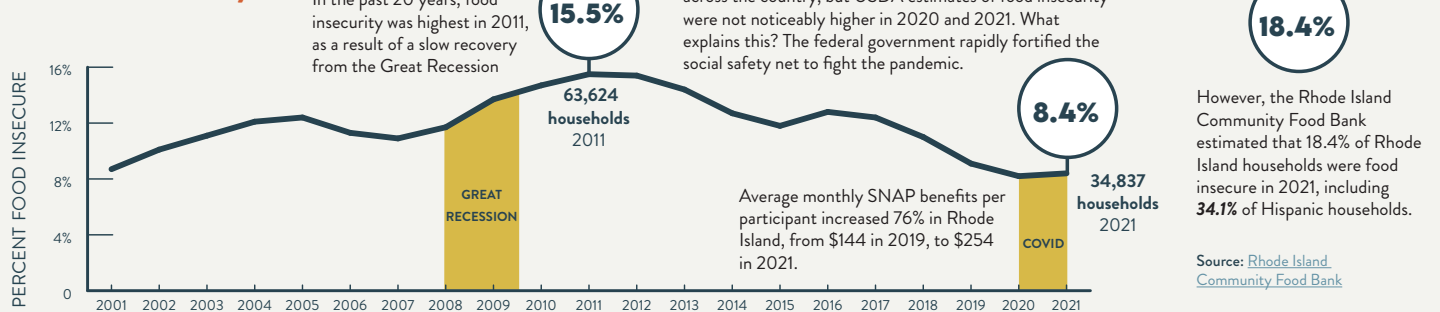
# Food Access

## Do Rhode Islanders have equitable access to food stores?

Hispanic/Latino, Black, Asian, Indigenous, Native Hawaiian/Pacific Islander, and Rhode Islanders of two or more races or some “other” race—made up **31.3%** of the state’s population, but **50.7%** of its population living in low income/low access (LILA)\* census tracts.



## Food Insecurity



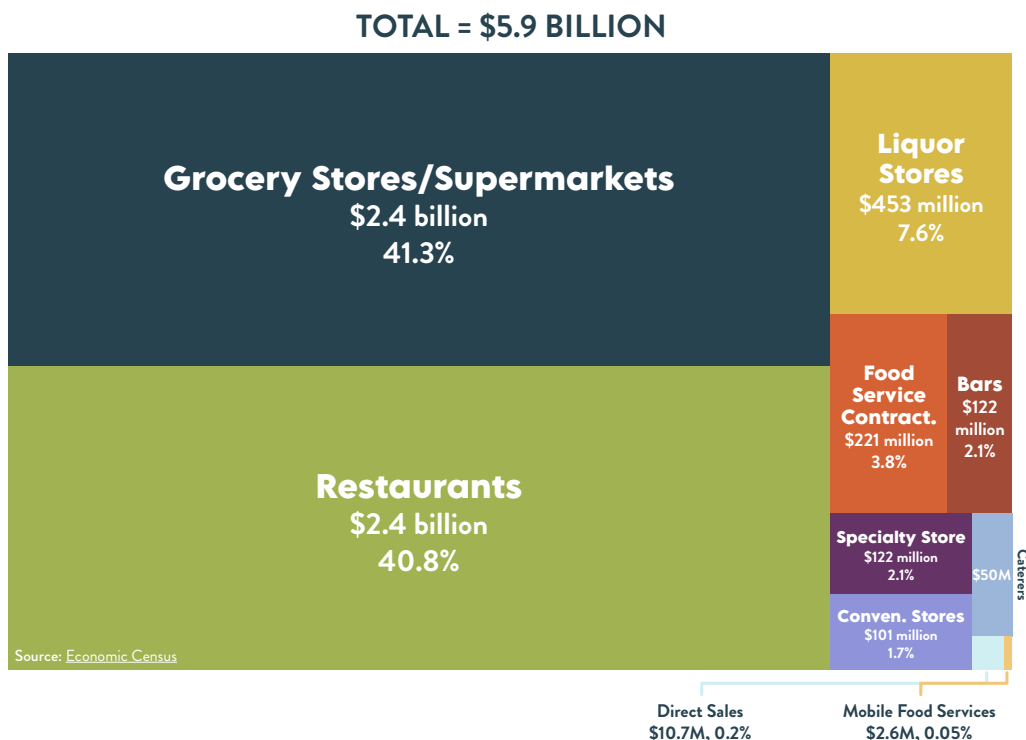


# Food Expenditures

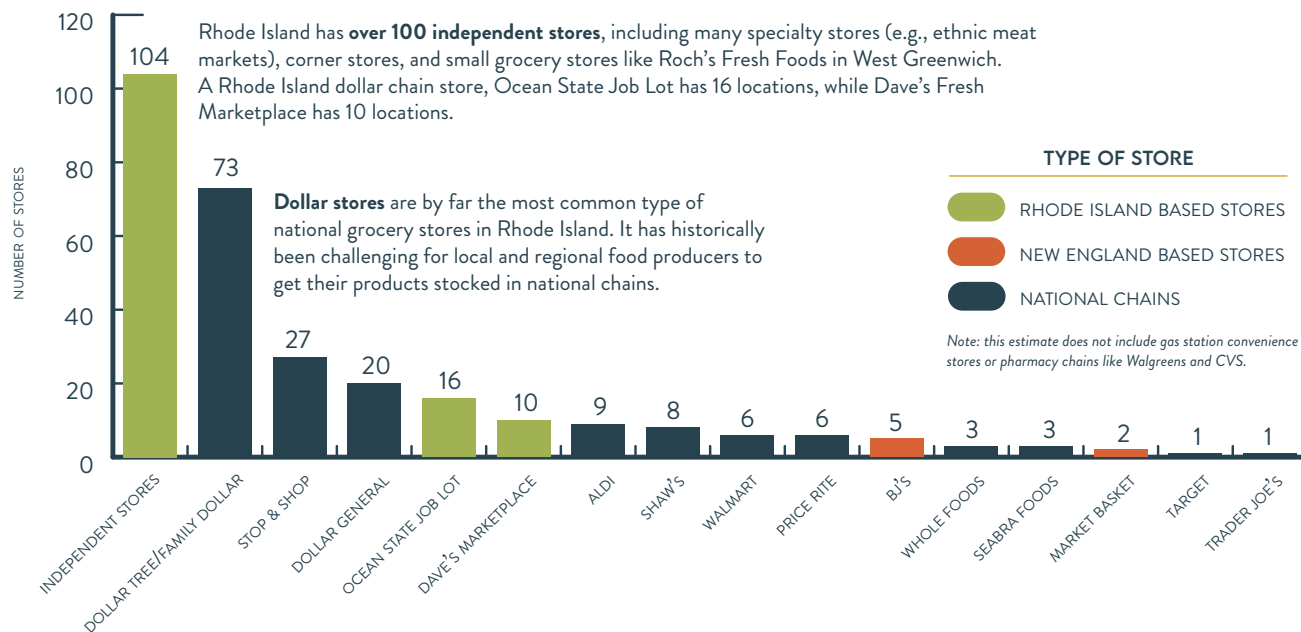
## How much do Rhode Islanders spend on food? Where do they shop?

Rhode Islanders spent over **\$5.9 billion** at stores and restaurants in 2017. Grocery stores (41.3%) and restaurants (40.8%)—which includes full-service and fast food restaurants—accounted for 82.1% of total sales, followed by liquor stores (7.6%). Direct sales from farmer to customer made up only 0.2% of total retail sales.

### Food Stores and Services Sales, 2017



### Count of Food Stores in Rhode Island

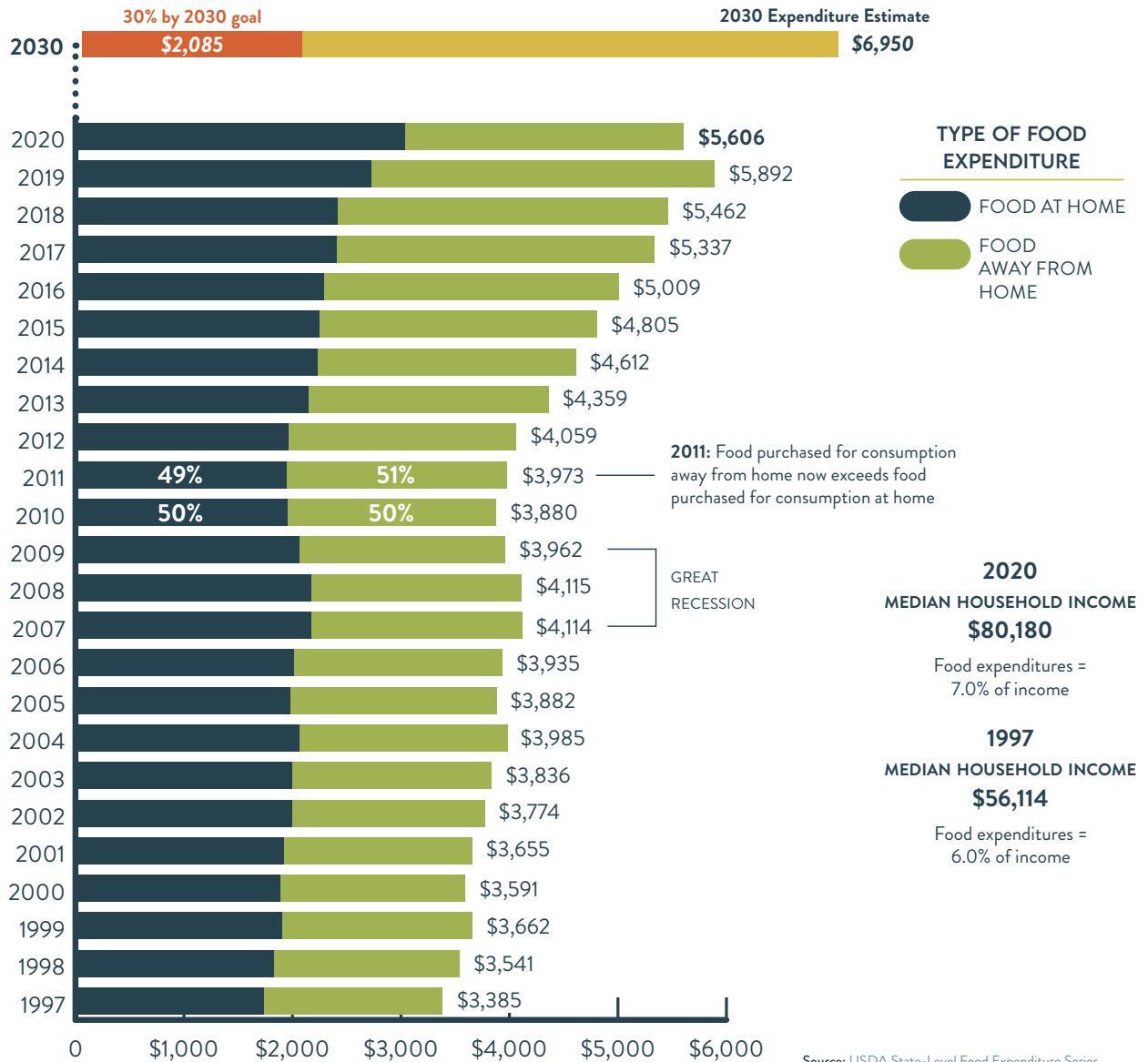




## What would it take to meet a 30% food expenditure goal?

#5

Rhode Island had the fifth highest per capita food expenditures (**\$5,606**) of any state in the country in 2020. With an average annual food expenditure growth rate of 2.7% from 1997 to 2020—and population decrease to 1,152,940 by 2030—per capita food expenditures may reach **\$6,950** by 2030. About **\$2,085** per capita would then have to be spent on regional food to meet our 30% goal.



Northeast consumer expenditure data indicates that ultraprocessed food products make up the top 3 food expenditure categories, followed by fresh fruit.



MISCELLANEOUS FOODS  
**\$1,147 (18.7%)**

Frozen prepared meals, canned food, chips, desserts, etc.



BAKERY PRODUCTS  
**\$585 (9.5%)**

Bread, crackers, cookies, cakes, pies, doughnuts, etc.



NONALCOHOLIC BEVERAGES  
**\$576 (9.4%)**

Soda, coffee, tea, ice, sports drinks, etc.



FRESH FRUIT  
**\$467 (7.6%)**

Source: [Consumer Expenditure Survey](#)



# Climate Change

## How will climate change impact Rhode Island's food system?

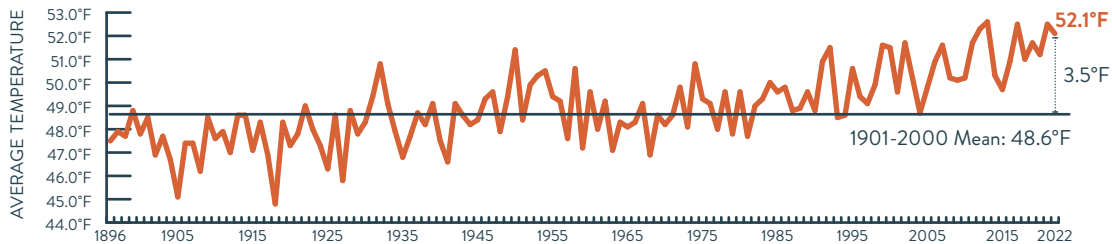
Food system activities like cultivating crops, raising livestock, and land use changes, are major drivers of climate change *and* food systems are particularly vulnerable to climate change. [July 2023](#) was the warmest month on record and major changes are already underway across Rhode Island and New England:

- » **Loss of Seasonality:** less distinct seasons, milder winters, earlier spring conditions, and more unpredictable weather are expected to impact agricultural production. For example, drought in 2022 harmed the yield and quality of crop production, leading to a [USDA natural disaster declaration](#) for the entire state. **Long term estimates suggest that the overall climate in Rhode Island will become wetter, in addition to warmer, in coming decades.**

3.5°

The average temperature in Rhode Island in 2022, 52.1°F, was 3.5°F higher than the average temperature during the previous century. **This was the largest temperature anomaly of any state in the country in 2022.**

### Temperature Anomaly



Source: NOAA [National Centers for Environmental Information](#)

- » **Threats to Health:** increases in heat and humidity, ground-level ozone pollution, air pollution from wildfires, mold, pollen season, vector-borne diseases (e.g., Lyme disease), and gastrointestinal illnesses from waterborne and foodborne contaminants can lead to more illness and death.

Source: Fourth National Climate Assessment, [Chapter 18: Northeast](#)

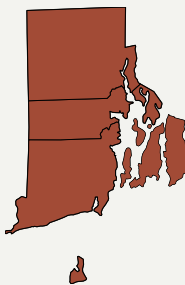
### Projected Climate Risks

HIGH 
  MEDIUM 
  LOW

#### HURRICANES



Hurricanes Ida (2021), Isaias (2020), Sandy (2012), Irene (2011), Floyd (1999), Bob (1991), Gloria (1985), and Tropical Storm Elsa (2021) were all [billion-dollar disasters](#) that impacted Rhode Island.



#### WATER STRESS



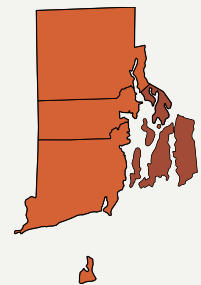
Rhode Island has experienced more [abnormally dry days](#) during the past 10 years than it did in the early 2000s. This includes an extreme drought in 2020 and 2022.



#### SEA LEVEL RISE



Sea level increased by [10.1 inches](#) over the last century in Newport. Sea level is likely to increase by more than [1 foot](#) in the Northeast by 2050.



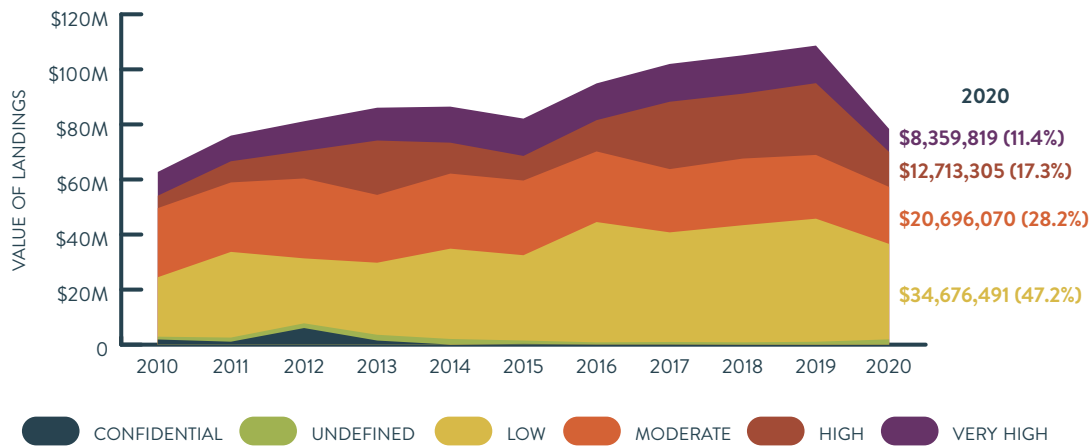


- » **Ocean Under Threat:** the Atlantic Ocean supports tourism, recreation, and economic activities, including fisheries. Warmer ocean temperatures—the [Northeast Continental Shelf](#) is warming much faster than the global average—sea level rise, acidification, and increased storm frequency and intensity all threaten marine ecosystems and the communities that depend on them. For example, some evidence shows that **cold-water iconic fishery species like cod, winter flounder, hake, and lobster are migrating out of Rhode Island waters, while warm-water species like scup, butterfish, black sea bass, and winter squid are moving in.**

29%

About 29% of Rhode Island’s seafood catch in 2020 was classified as having **very high** or **high** vulnerability to changes in abundance or distribution due to climate change.

» **Climate Vulnerability of Rhode Island Catch**



Source: NOAA Fisheries, [Northeast Vulnerability Assessment](#)

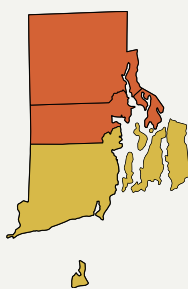
- » **Risks to Cities:** the Northeastern U.S. is home to densely populated cities, including [Providence](#), critical transportation corridors and infrastructure, and culturally and historically significant sites. Climate change impacts, including from sea level rise, flooding, and hurricanes damage infrastructure, displace populations, strain our emergency response system, and disproportionately affect historically marginalized and low-income communities.

» **Projected Climate Risks**      HIGH      MEDIUM      LOW

EXTREME RAIN



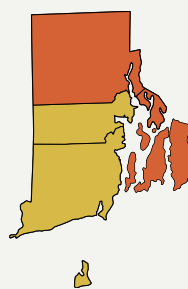
Annual precipitation and extreme precipitation events in Rhode Island have been [above average](#) in recent years.



WILDFIRE



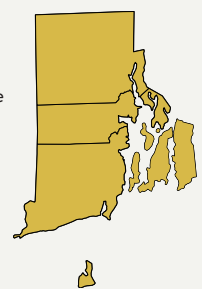
Wildfires are not very common in Rhode Island but several brush fires broke out in [April 2023](#) due to dry conditions.



HEAT STRESS



The observed number of [hot days](#) in Rhode Island has increased compared to the long-term average since the 1990s.





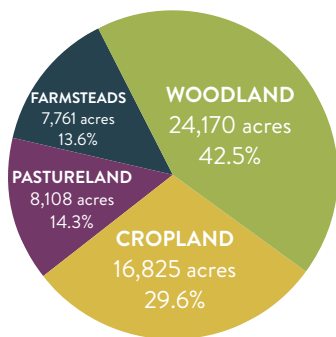
# Agriculture

## What kinds of agricultural products does Rhode Island grow/raise?

**#50** Due to its small size, Rhode Island had the lowest amount of land in agriculture and agricultural sales of any state in 2017.

### Land in Agriculture

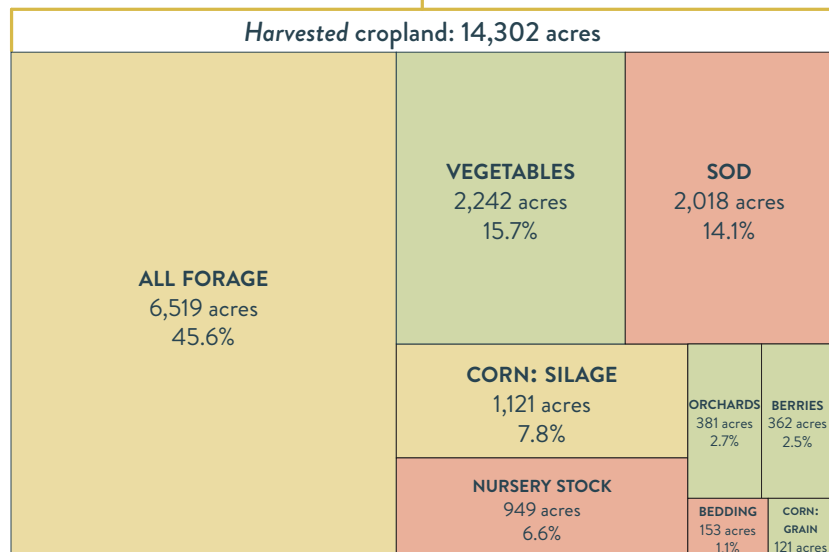
**TOTAL**  
**56,864 ACRES**



**-79%** Cropland decreased from 81,000 acres in 1945 to 17,000 acres in 2017

**-80%** Pastureland decreased from 41,000 acres in 1945 to 8,100 acres in 2017

Harvested cropland: 14,302 acres



#### END USES

- ANIMAL FEED
- EDIBLE
- LANDSCAPING

Acres for vegetables, fruits, berries, and corn for grain equaled **21.7% (3,106 acres)** of harvested cropland and 5.5% of total land in agriculture. Boosting produce production—whether in the open or indoors—is one way Rhode Island could help the region.

### Agricultural Sales, 2017

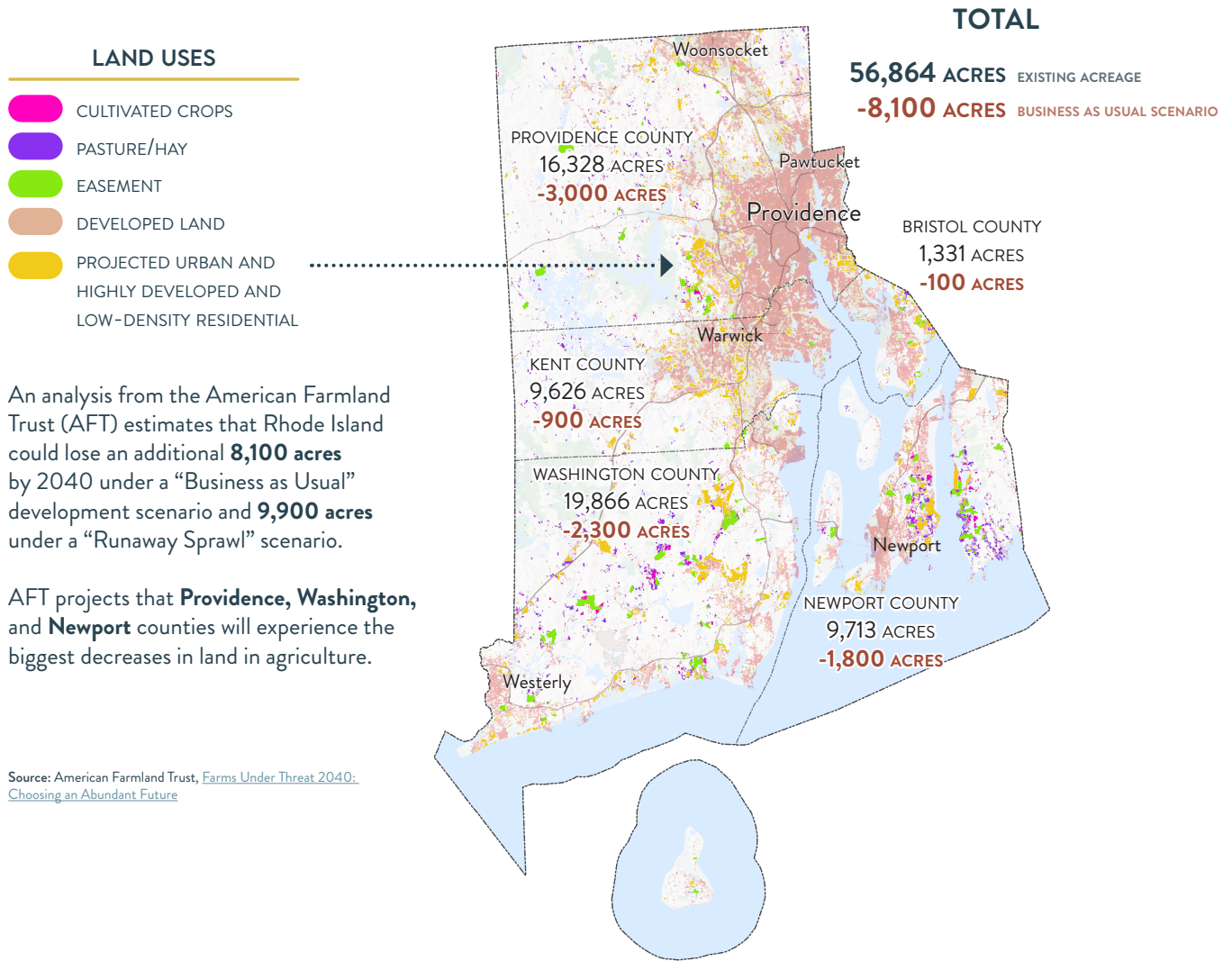
**TOTAL \$54,799,246**



Note: Agriculture sales in this figure do not include support activities. Sales values are adjusted for inflation to 2020 dollars using producer price indices for crops and livestock.

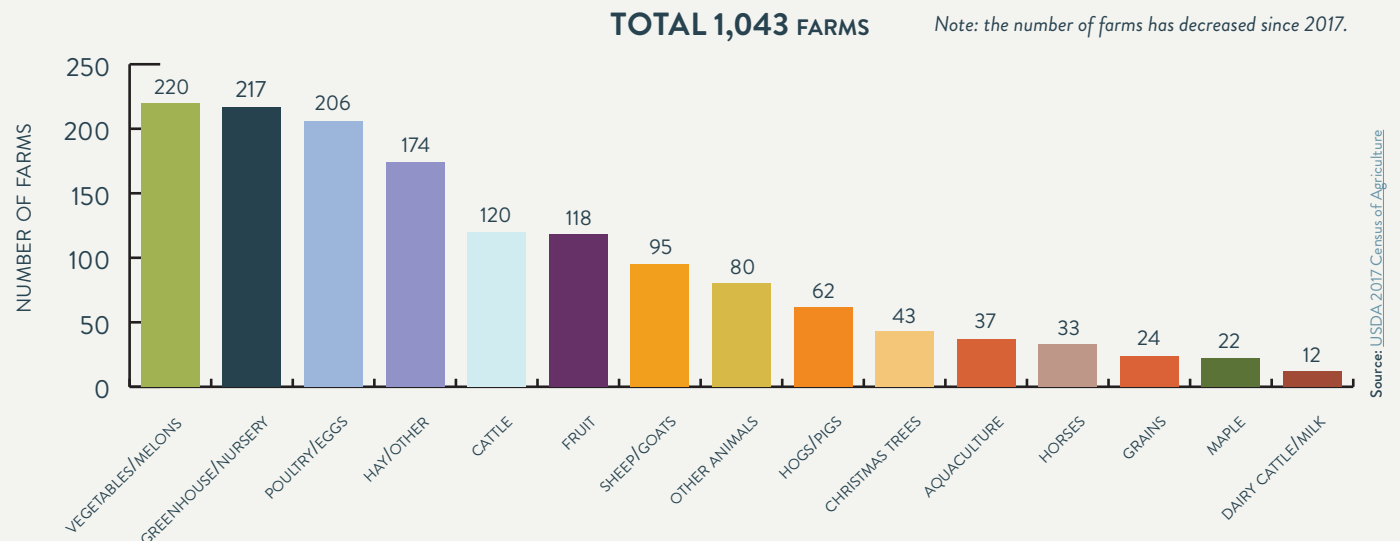
**17.5%** Rhode Island had 2nd highest direct sales as a percent of total ag sales of any state

## » Projected Changes in Land in Agriculture, Business as Usual Scenario



**#1** A consequence of Rhode Island’s relatively small land base coupled with intense development pressure is that it has the most expensive farm land in the country: **\$17,500 per acre**. Source: USDA [Land Values 2022 Summary](#)

## » Number of Farms Engaged in Each Category, 2017





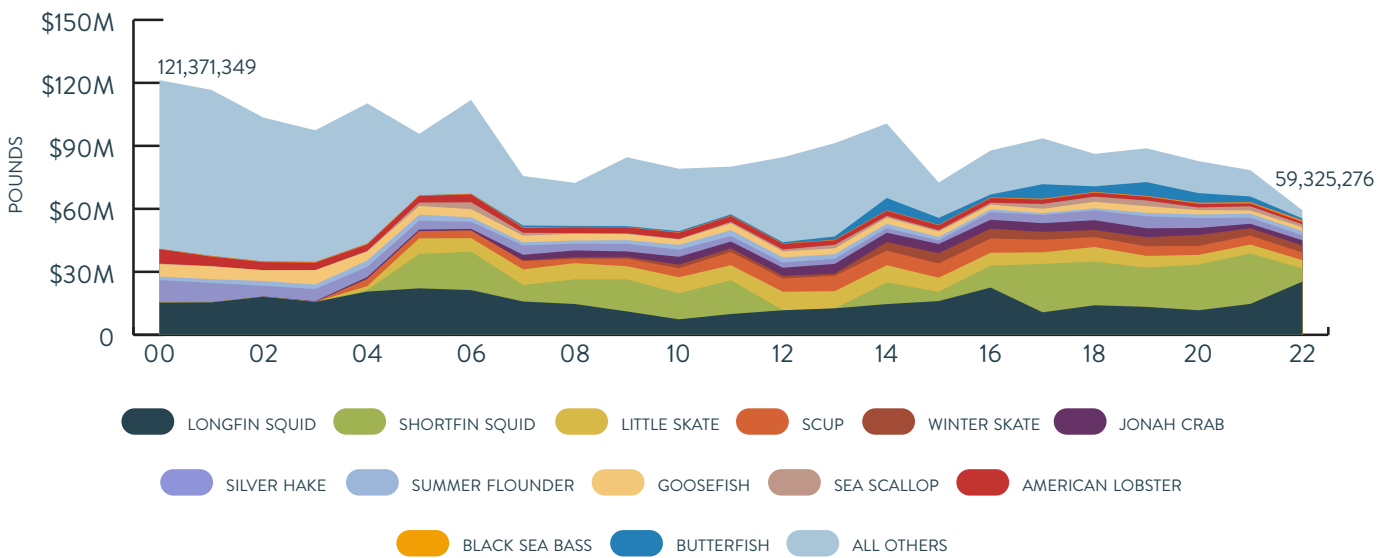
# Fisheries

## What kinds of seafood products does Rhode Island harvest?

More than 100 species are caught or harvested by Rhode Island fishermen, but **15 species** account for the majority of sales and **13 species** account for the majority of sales. RI has the second largest and most diversified fishing port in the region—Point Judith—supported by a state-owned port infrastructure that prioritizes the needs of the commercial fishing industry. Currently, most of RI’s catch is shipped overseas for processing, a situation that makes it difficult for New England consumers to access RI’s fresh local fish.

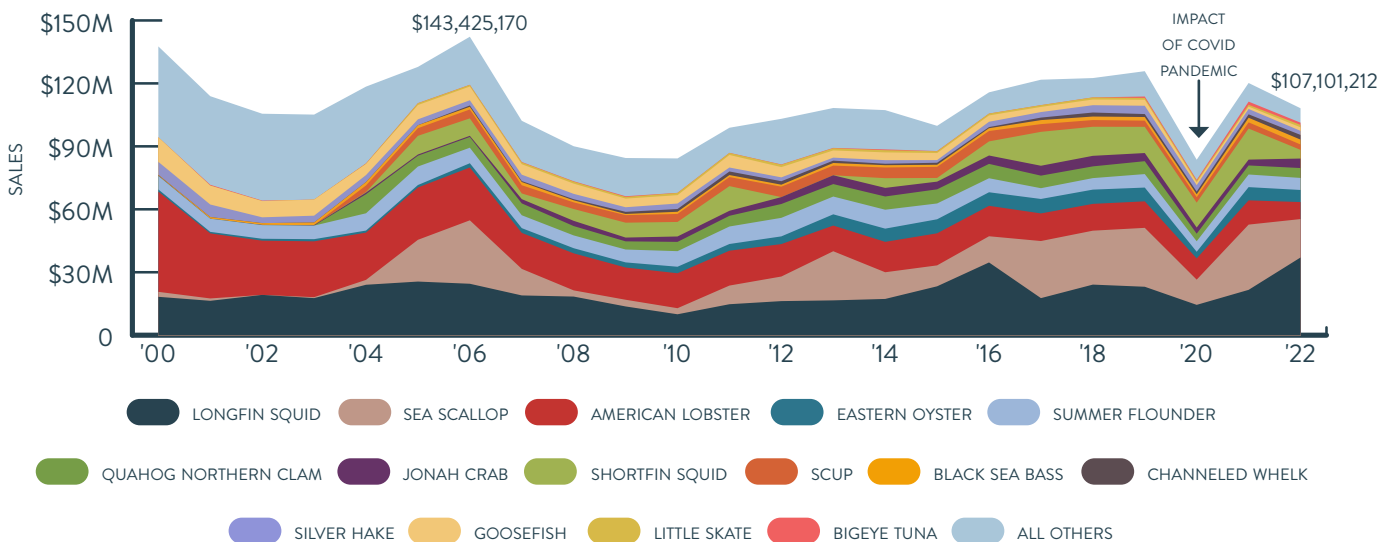


### » Pounds of Commercial Seafood Landings



Source: NOAA Fisheries and the Atlantic Coastal Cooperative Statistics Program

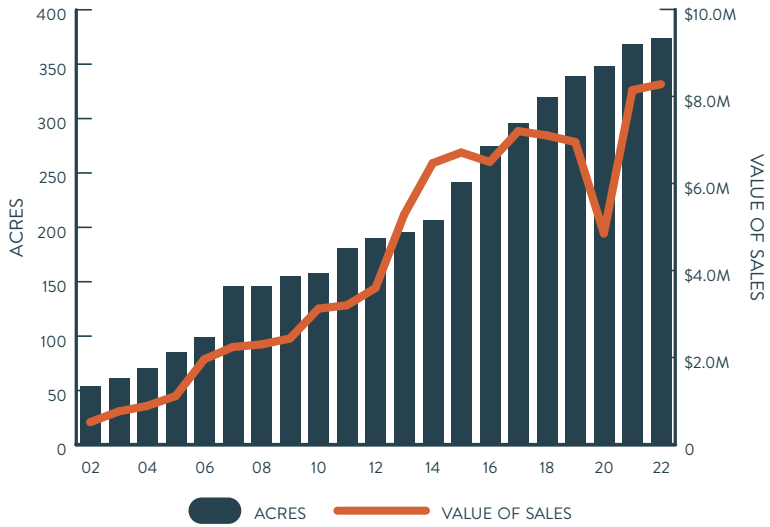
### » Value of Commercial Seafood Landings



Source: NOAA Fisheries and the Atlantic Coastal Cooperative Statistics Program. Depicted in 2022 dollars.



» Aquaculture Production



Source: Coastal Resources Management Council. Depicted in 2022 dollars.



# Aquaculture

In 2022, Rhode Island had **84** aquaculture sites covering **374 acres**. About **11 million oysters**—the top aquaculture product—were sold for consumption. Total sales equaled **\$8.3 million**.



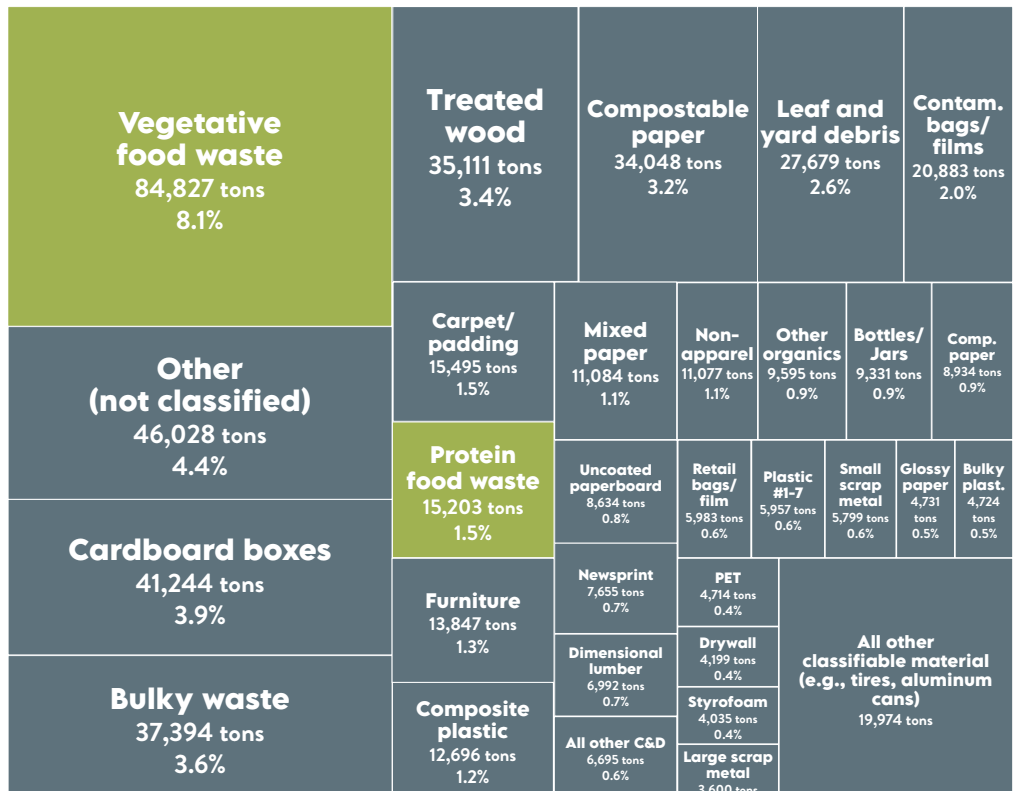
# Food Waste

## How much food waste is landfilled in Rhode Island?

A 2015 “Waste Characterization” study found that food waste (vegetative and protein) is the top single material in Rhode Island’s municipal waste stream at 100,000 tons (9.6%), or 2 million pounds.

» Landfilled Food Waste

**528,168 TONS** TOTAL MSW  
**100,030 TONS** FOOD WASTE  
**60,577 TONS** RESIDENTIAL FOOD WASTE  
**39,453 TONS** IND., COM., INST. FOOD WASTE



Source: DSM Environmental Services, 2015, Rhode Island Solid Waste Characterization Study

# Key Rhode Island Strengths, Weaknesses, Opportunities, and Threats

## STRENGTHS

- Strong collaboration and shared planning across the food system
- Experience with indoor food production
- Significant seafood and aquaculture production
- Growing food and beverage processing and manufacturing capacity
- Strong support system for urban and small-scale farmers
- Home to major food distributor (UNFI)
- High percentage of direct agricultural sales

## WEAKNESSES

- Smallest state by area in the country
- Significant decrease in land in agriculture
- Most expensive farm land in the country
- Relatively limited edible agriculture production
- Low minimum wage (\$13.00)
- Significant disparities in healthy food access based on race/ethnicity

## OPPORTUNITIES

- Invest in long-term food production: increase controlled environment agriculture at existing farms and new ventures; invest in food processing/manufacturing and distribution infrastructure for small and midsize operations
- Increase aquaculture production, including kelp
- Increase the viability of local farms, fisheries, and food businesses through increased state investment and business support
- Protect and preserve active agricultural land and working waterfronts

## THREATS

- Extreme weather—hurricanes and water stress/drought—will affect farms, fisheries, and infrastructure
- Warming ocean has already altered species composition in fisheries
- Aging population, including the population of fishermen and farmers
- Intense land development pressures

## Next Steps: What Can Rhode Island do to Meet the 30% by 2030 Goal?

To help meet the region's 30x2030 goal, Rhode Island is currently working to update the state's food strategy, Relish Rhody. Developing the next phase of Relish Rhody will include extensive data collection, listening sessions with Rhode Island food system stakeholders, and public forums for Rhode Islanders to share their perspectives and aspirations. Short-term next steps in Rhode Island include:

- » Identifying ways to align town plans with the 30% by 2030 regional food goal
- » Contacting the [Rhode Island Food Policy Council](#) and the Director of Food Strategy to ask us for data and presentations to support community planning processes
- » Joining a Rhode Island effort to conduct a 'local food count' in each New England state.

Funding for this project has been made possible by the **Henry P. Kendall Foundation** and the **Angell Foundation**.