



## **Department of Agriculture**

**Bryan P. Hurlburt**, *Commissioner*

**Established:** 1925

**Statutory Authority:** CGS. Sec. 22.1

**Central Office:** 450 Columbus Boulevard, Hartford, CT 06103

**Number of Employees:** 55

**Recurring operating expenses:** \$6,308,080

**Organizational Structure:** Office of the Commissioner, Bureau of Agricultural Development and Resource Conservation, Bureau of Aquaculture, Bureau of Regulatory Services, with Business Office and Human Resource Support from the Department of Administrative Services, and legal services provided by the Office of the Attorney General.

### **Mission**

The Department of Agriculture's mission is to foster a healthy economic, environmental, and social climate for agriculture by developing, promoting, and regulating agricultural businesses; protecting agricultural and aquacultural resources; enforcing laws pertaining to public health, animal health and animal care; and promoting an understanding among the state's citizens of the diversity of Connecticut's agriculture, its cultural heritage, and its contribution to the state's economy.

### **Statutory Authority**

Statutory authority for the Department of Agriculture is found in Sections 12, 22, 26 and other sections of the Connecticut General Statutes.

### **Public Service**

The Department of Agriculture provides public benefits by empowering its three bureaus to promote and protect Connecticut Agriculture. Through the agency's Bureau of Regulatory Services; inspectors ensure domestic animals' health and wellbeing, the safety of produce and dairy products, and that local agricultural businesses are properly trained to meet food safety requirements. The Bureau of Agricultural Development and Resource Conservation provides direct assistance and programs to farm operations entering, diversifying, or expanding their agricultural businesses. It makes direct positive impacts on communities through the Farmland Preservation Program, the Senior and WIC Farmers Market Nutrition Program, Farm to Chef, and Farm to School programs. The Bureau of Aquaculture oversees marine and inland aquaculture production activities, administers the state Shellfish Sanitation Program, and operates the laboratory in Milford, leasing and restoration of shellfish beds, and licensing of persons engaged in commercial harvesting of shellfish.

The Connecticut Department of Agriculture continues to inform the public with direct engagement of media representatives; and local, state, and federal government officials about various aspects of Connecticut agriculture through its Connecticut Weekly Agricultural Report, news releases, social media, small group or one-on-one meetings, and radio and television appearances.

## **2021 Legislative Changes:**

During the 2021 Legislative session, several key changes were made to the statutes under the Department of Agriculture's authority.

Following Executive Orders put in place during the COVID-19 public health emergency and through Public Act 21-155, those participating in the state-run Farmers Market Nutrition Program are authorized to utilize a proxy to redeem program voucher items, legislation also removed the on-site signatory requirements for FMNP redemption and added chicken eggs as an eligible item for program vouchers. State funded FMNP booklets were increased from \$15 to \$21; and additional funding for these programs was allocated through the American Rescue Plan Act.

Public Act 21-24 extended Connecticut's PA-490 program to certain aquaculture operations and extends the tax relief program to aquaculture operations. PA-490 allows farm, forest, open space, and maritime heritage land to be assessed for property tax purposes based on current use value rather than fair market value. This legislation also reconstituted and renamed the Seafood Development Council and allowed the Department of Agriculture to expand the shellfish restoration program.

Public Act 21-90 made a number of animal welfare updates, including allowing municipalities and regional animal control facilities to appoint a temporary ACO, requires regional animal control facilities to meet the same construction, sanitation, and maintenance standards as municipal pounds, and requires animal shelters to have dogs and cats examined regularly by a licensed veterinarian, this has been current practice for animal importers and is being extended to include animal shelters. This legislation also increased the reimbursement rate for the Animal Population Control Program (APCP), a program which provided 3,960 vouchers to low-income residents or those who have adopted from municipal pounds in FY 2021- this necessary increase will retain veterinarians in the program and allow access to more individuals who seek assistance in vaccinating or spay/neutering their animals.

Public Act 21-89 makes changes to the state's hemp program statute to comply with the federal U.S. Department of Agriculture's (USDA) final rules for hemp production, which were released in March 2021. Compliance was necessary in order for the state to receive federal approval of its state hemp production plan.

In addition to agency-led legislation, the Department of Agriculture contributed and testified on a variety of legislative concepts, including farm to school programming, solar siting, municipal zoning restrictions, and climate change initiatives in conjunction with fellow agencies and partner organizations.

## **BUREAU OF AGRICULTURAL DEVELOPMENT AND RESOURCE CONSERVATION**

The Bureau of Agricultural Development and Resource Conservation is comprised of two units; the Agricultural Development Unit and the Resource Conservation Unit. The bureau offers programs and services that assist farms with entering, diversifying and expanding their agricultural businesses and administers the Farmland Preservation Program, among many others.

### **AGRICULTURAL DEVELOPMENT UNIT**

In addition to many other functions, the Agricultural Development Unit conducts marketing and outreach to both farmers and consumers. It provides business development services in cooperation with state, federal, and private partners for both direct-to-consumer and wholesale market opportunities through a diverse portfolio of 25 different programs and services.

#### **State & Federal Grant Opportunities**

- Assisted coordination and promotion of 126 independently operated certified Connecticut Grown farmers' markets, farm stands and mobile markets featuring 312 certified farmers.
- Administered Connecticut's Farmers' Market Nutrition Programs (FMNPs) to provide \$1,404,600 in checks for the purchase of Connecticut Grown fruits and vegetables at authorized farmers' markets to 41,048 nutritionally at-risk women, infants, and children and 24,971 low-income seniors.
- Successfully applied for and received \$441,555.45 from the United States Department of Agriculture's Specialty Crop Block Grant program to fund three (3) projects to enhance the competitiveness of Connecticut specialty crops.
- Provided \$24,085 in federal funds to 94 certified organic producer and processors to reimburse up to 50%, not exceeding \$500, of their annual USDA organic certification.
- Funded \$509,011 in matching Farm Transition Grants to twenty six (26) Connecticut farms for projects with a cost of \$,1368,400 using Community Investment Account funds. The grant program was restructured into four grant categories:
  - New Farmer Microgrants
  - Infrastructure Investment Grant
  - Research and Development Grant
  - Innovation and Diversification Grant
- Funded \$592,766 in matching Farm Viability Grants to one (1) municipality, seven (7) non-profits and one (1) Council of Government for projects with a total cost of \$2,745,974 using Community Investment. Funding questions of focus centered around:
  - Diversity, equity, and inclusion in CT agriculture
  - Urban agriculture
  - Food supply chain
  - Farmland accessibility

#### **Export Assistance & Wholesale Collaboration**

- Partnered with Food Export Northeast to increase Connecticut value added food and agricultural exports to domestic and international markets.
- Provided 268 certificates of free sale to eligible Connecticut food companies which needed this necessary documentation to export their products.
- Offered training for producers and wholesale buyers within the domestic and international food industry through in-person events and a library of webinars on export education
- Conducted "New England and Delaware Go Global" - an educational training with Food Export Northeast and regional partners, to introduce new companies to exporting opportunities domestically and internationally

- Provided sales opportunities with Food Export Northeast through coordination of one-on-one meetings with buyers, wholesale distributors, and brokers.
- In FY 2021, due to COVID-19 travel restrictions, buyer’s missions and trade shows were conducted virtually, offering CT suppliers the opportunity to showcase their products to international buyers from their Connecticut based facilities. These activities included:
  - Virtual Trade Event to Korea
  - Virtual Trade Mission to Guatemala
  - Virtual Trade Mission to Canada
  - Virtual Trade Mission to Taiwan
  - Virtual Trade Mission to Mexico
  - Virtual Trade Mission to the Dominican Republic
  - Virtual Trade Mission to Peru
  - Virtual Trade Mission to Chile
  - SIAL China
  - Virtual Trade Event to Costa Rica

During these events, buyer/producer networking opportunities, one-on-one meetings between producers and buyers, and translation services for exhibitors were provided.

#### “Farm-to” Programs

- Continued the state’s Farm-to-Chef Program to connect Connecticut farms with foodservice professionals and markets. Through radio ads, email blasts, and Facebook interaction, the Farm-to-Chef program has highlighted connections between producers and culinary professionals.
- The COVID-19 pandemic had a significant impact on the program in 2020. With nearly all restaurants closed for a period of time in March and April and reduced capacity throughout the remainder of the year, participation in traditional events like Farm to Chef Week had limited participation and impact.
- A virtual Farm to Chef Week kickoff event was held in partnership with the Market Place Restaurant in Avon, CT. This was broadcast through Facebook live and viewed by 1,600 people. The event shared details of Farm-to Chef Week and promoted the CT Grown menu available to Market Place diners during Farm-to-Chef Week 2020.
- Eight restaurants participated in the 2020 Farm Chef Week, serving a total of 1,345 meals with \$7,939 spent on Connecticut grown product from Connecticut farms.
- Farm-to-Chef Week was sponsored by Highland Park Market and Skyline Studios, both longtime supporters of the Farm-to-Chef program.
- DoAg promoted Farm-to-Chef Week and its sponsors on WNPR with a total of 20 sponsor IDs on promos and two sponsor IDs before the 2021 *Seasoned* show. This included 24, :15-second spots and a digital banner on the Seasoned webpage and WNPR.org as well as in the WNPR weekly e-newsletter at a total cost of \$3,000, generating 398,000 digital ad impressions.
- Continued to strengthen the Department of Agriculture’s collaboration with the state Department of Education and its involvement in Connecticut’s Farm-to-School program. The agency actively participates in the Connecticut Farm-to-School Collaborative and UCONN’s Put Local on Your Tray Program, including, co-leading an action team focused on school food procurement and data collection, providing input on strategic planning, and attending all group meetings.
- Developing a pilot state Farm to School grant program passed through legislation in the 2021 session. Current funding is for two years at \$250,000 per year.
- Applied for and received a two-year \$82,336 USDA Farm to School grant with UConn Extension and FoodCorps CT as partners. Meetings with the CT Farm-to-School Collaborative included open discussions between the Department of Agriculture the Connecticut State Department of Education, School Nutrition Association of Connecticut, and UCONN Extension, among others to better inform our decisions regarding farm to school objectives and plans of action.

- Organized group discussions with State Department of Education, UConn, FoodCorps, SNACT, and other partners around events such as CT Grown for CT Kids Week.
- Printed 4,000 *Rooting for Winter* educational placemats from Put Local on Your Tray which were distributed to Elementary public-school students in New Haven, Hartford, Southington, Colchester, Plainfield, Bridgeport, Norwalk, and Wilton.

#### COVID Response & Emergency Feeding

- The Department of Agriculture was instrumental in defining ‘food and agriculture’ as essential in March 2020. Farms and farmer’s markets, including urban farms and community gardens, food manufacturing, processing, storage, and distribution facilities, nurseries, garden centers, and agriculture supply stores were deemed essential alongside restaurants/bars (provided compliance with all applicable executive orders was maintained.)
- Partnered with NOFA CT on searchable map for farms, farm stands, and markets on CTGrown.org.
- Helped to facilitate connections and coordinate delivery of over 1.2 million perishable and non-perishable food boxes to local food pantries, community organizations and COVID 19 testing sites through the USDA Farmers to Families Food Box Program and Salvation Army boxes.
- Hosted 11 Town Halls with various partner organizations to update the industry on different programs, challenges, guidance and opportunities throughout the pandemic.
- Issued 12 guidance documents with multiple iterations/updates to keep the agricultural industry informed on Covid response measures and Executive Orders.
- Created social media tool kit for the industry.
- Coordinated and held weekly meetings of the ESF 6 Food Working Group.
- Created [www.ctpantryresources.com](http://www.ctpantryresources.com), a website to support food pantries throughout the state and encourage/facilitate collaboration and collective purchasing.
- Developed GIS heat mapping to evaluate the infection and food insecurity rates which was used to identify areas of need.

#### Agency Marketing & Outreach

- *Industry Outreach Events:* The bureau frequently engages in a number of industry related events to engage with the industry and make them aware of the programs and services provided through the Ag Development Unit and agency as a whole. COVID-19 continued to provide a number of disruptions to in-person events, however, many transitioned to a virtual format. These events in FY2021 included:
  - CT Maple Syrup Producers Annual Meeting (October 2020)
  - New England Dairy Virtual Annual Meeting (November 2020)
  - Connecticut Greenhouse Growers Association Meeting (January 2021)
  - Harvest New England Virtual Ag Marketing Conference & Trade Show (February 2021)
  - Farm Transition Grant Virtual Writing Workshop (March 2021)
  - Enfield Ag Summit (February 2020)
  - Farm Viability Grant Virtual Writing Workshop (May 2021)
- *Agency Website:* The importance of an updated, relevant website as the agency’s information source to the industry and consumers is critical. In FY2021 the following occurred to ensure this effort was adequately maintained:
  - Expanded the number of content and system administrators to improve website maintenance and relevancy.
  - Continued to utilize the website to improve customer service; develop and expand agricultural markets; preserve Connecticut farmland, and expand the use of working lands; protect populations from getting or spreading agricultural diseases; and protect and inspect animal health and well-being.
- *Other Agency Supported Websites:* To support Connecticut agriculture and make the availability of Connecticut Grown farm products known, the agency also:

- Renewed the user-friendly website redirect of [www.CTGrown.gov](http://www.CTGrown.gov);
- Maintained additional consumer-friendly website alias including: [www.PassporttoCTFarmWine.com](http://www.PassporttoCTFarmWine.com); [www.GrowCTFarms.com](http://www.GrowCTFarms.com);
- Maintained standalone websites including: [CTDairy.org](http://CTDairy.org); [ConnecticutGrownStore.com](http://ConnecticutGrownStore.com); [CTApples.org](http://CTApples.org)
- [ConnecticutGrownStore.com](http://ConnecticutGrownStore.com): Operated an online marketplace for Connecticut Grown merchandise and apparel, earning a gross sales revenue of \$6,499.83 in merchandise, helping to strengthen the Connecticut Grown brand, including updating inventory to include items with new CT Grown brand logo and messaging.
- Added additional websites including: [ctpantryresources.com](http://ctpantryresources.com) to connect food pantries with data and state-wide resources and [ctfoodpolicy.com](http://ctfoodpolicy.com) to provide a platform for resources and education around the council and its work.
- Launched a standalone consumer-facing website, [CTGrown.org](http://CTGrown.org), as part of the rebranded CT Grown campaign.
- *Boards Councils and Commissions:* The bureau works with four statutorily authorized boards and councils to have industry representations to the agency and to advance the industries of focus. These include:
  - Farm Wine Development Council: Provided staffing/administrative support to the Connecticut Farm Wine Development Council to deliver \$47,500 in programming for industry members and consumers, including development of an updated electronic application of the wine passport and multimedia marketing campaign to promote Connecticut's farm wineries.
  - Connecticut Milk Promotion Board: Provided staffing/administrative support to the Connecticut Milk Promotion Board to deliver more than \$350,000 in programming, including farm to school grants; Fuel Up to Play 60 grants; farmer engagement grants, and pantry cooler grants to support food insecurity during the COVID-19 pandemic.
  - Connecticut Food Policy Council: Provided staffing/ administrative support to the CT Food Policy Council, bringing together council members representing state agencies, agricultural organizations, anti-hunger organizations appointees from the general assembly, and members of the general public. The council convened to discuss food policy and practices, available resources, current initiatives, and information sharing. In 2020, the council approved \$10,000 in funding to Hartford Food Systems for development of a State Food Action Plan and developed and maintained [CTFoodPolicy.com](http://CTFoodPolicy.com).
  - Connecticut Apple Marketing Board: Provided staffing/ administrative support to the Connecticut Apple Marketing Board, promoting Connecticut Apple Producers through marketing efforts. These efforts included: Maintaining [www.CTApples.org](http://www.CTApples.org), the CTApples App, CTApples Facebook page, Instagram page, and Pinterest page.
- *Consumer Outreach Events:* The bureau frequently engages in consumer facing events to promote the availability and accessibility of CT Grown farms and farm products. Events included:
  - [Celebrating Agriculture Kickoff \(September 2020\) -](#)
  - Agriculture Day at the Capitol Virtual Showcase. Due to COVID-19, the 2021 Ag Day was held virtually to recognize the Outstanding Young Farmer and Century Farm of the Year recipients.
- *Consumer-Focused Marketing Efforts:*
  - Selected a state approved media marketing agency to conduct research on consumer awareness and response to the Connecticut Grown logo and Connecticut agriculture and aquaculture followed by a strategic twelve-month marketing campaign with the intention of increasing purchases of Connecticut Grown farm products, farmer endorsement of the campaign, and sustainability into the future to continue marketing efforts.



Agency Icon



Agency Seal



DEPARTMENT  
OF AGRICULTURE  
CTGrown.gov

Agency Horizontal w/ Website



Brand Icon

*A Way of Life*

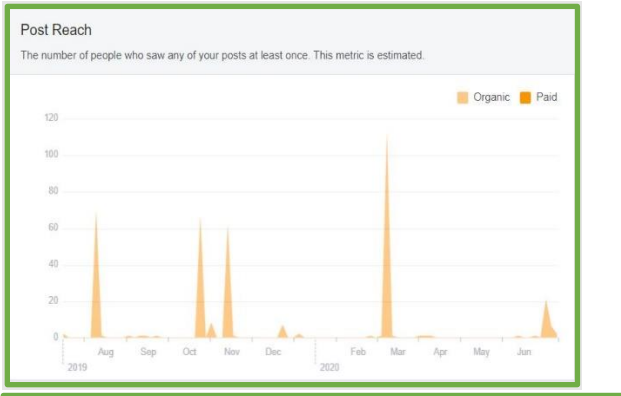
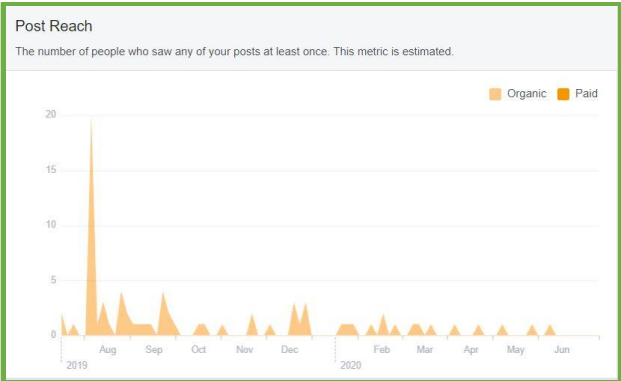
Brand Tagline



Brand Primary w/Website

- To date the following has been undertaken as part of this initiative:
  - Surveyed more than 1,700 consumers, providers, and wholesale partners
  - Expanded our creative assets of more than 750 images and/or videos during five days of farm visits throughout the state
  - Redesigned the CT Grown logo and developed a new tagline launched in March 2021
  - Designed and launched a standalone consumer facing website, CTGrown.org, to integrate the interactive map, upcoming events, farmer collateral and more.
  - Created a 30-second highlight video promoting CT agriculture and aquaculture
  - Created a CT Grown Instagram account
  - Placed paid CT Grown campaign ads on billboards, radio, digital and social media.
  - Completed four days of onsite creative resulting in more than 500 images and videos captured; and hosted focus groups to review initial Connecticut Grown logo redesigns and marketing images.
- Through a USDA Specialty Crop Block Grant (SCBG), DoAg conducted a radio, billboard, and digital advertising promotion on Bomba and WINY 1350, specifically targeting qualified WIC participants eligible for Farmers' Market Nutrition Program (FMNP) checks. This effort was undertaken to promote the accessibility of Connecticut Grown fruits and vegetables at certified farmers' markets, targeting increased consumer awareness of fresh Connecticut Grown produce available at farmers' markets and increasing redemption of checks. This outreach utilized professional graphic design services available to selected urban farmers' markets from state vendor, Camelo Communications. The 2020 Urban FMNP promotion included the creation of graphics for social media, posters, and billboards. A billboard was placed on I-91 for 8 weeks with LaMar Outdoors reaching 1.8 million impressions at a cost of \$2,500. In addition, there were a total of 64 radio spots and weekly social media posts aired on Bomba 97.1 at an investment of \$1,600; and 120 radio spots plus event listing and social media posts with WINY Radio at a cost of \$1,500 over eight weeks.







## RESOURCE CONSERVATION UNIT

Agriculture is one of Connecticut's most vital economic sectors, and at its heart is the state's extraordinary prime and important farmland. The Department of Agriculture preserves working farmlands by acquiring development rights to agricultural properties through its Farmland Preservation Program, ensuring that the land remains available only for agricultural use in perpetuity. In addition to the Farmland Preservation Program, the Resource Conservation Unit also provides:

- Farmland Restoration Grant Program
- Community Farms Preservation Program
- Connecticut FarmLink Program

The main objective of the Farmland Preservation Program is to establish a farmland resource base, consisting mainly of prime and important farmland soils that will ensure local availability of fresh farm products and help agriculture remain as an important part of the state's economy.

As of June 30, 2021, the program has preserved 46,180 acres on 387 farms since 1980. The long-term goal is to preserve 130,000 acres, with at least 85,000 of prime, statewide, or locally-important farmland soils.

- Acquired the permanent development rights on 8 farms totaling 490 acres at a total cost of 3,106,800, while leveraging \$1,258,750 in federal USDA Agricultural Land Easement funds and \$536,510 in municipal cost-sharing (58% cost share), bringing the Farmland Preservation Program's total to 387 protected farms covering 46,180 acres.
- Managed and made farmland restoration improvements for 10 agricultural use permits which include dairy, hay, diversified vegetables, and small fruit production.
- Entered into 24 new purchase-of-development rights (PDR) offer agreements to preserve approximately 2,000 acres, encumbering \$11,800,000.
- Advanced an additional 42 other PDR projects, totaling approximately 3,100 acres at an estimated \$16,470,000 in preservation costs.
- Successfully secured \$2,440,300 in federal FY 2020 USDA federal obligated funds from an Agricultural Lands Easement (ALE) Cooperative Agreement for 12 PDR projects covering 980 acres, in partnership with two land conservation organizations.

Successfully secured, much earlier in the federal contracting process, \$2,800,000 in FY 2021 USDA obligated funds for 13 PDR projects covering 690 acres, in partnership with Connecticut Farmland Trust and several municipalities.

- Continued advancing partnerships with 11 municipalities, on a total of 27 ongoing joint farmland preservation projects. These partnerships occur in all eight counties, in rural, suburban and urbanized areas, including Bolton, Easton, Ellington, Lebanon, New Milford, Rocky Hill, Southington, Simsbury, Stonington, Suffield, and Woodstock.
- Also collaborated with multiple land conservation trusts on ongoing farmland preservation project partnerships, including the Bolton Land Trust, Connecticut Farmland Trust, Northwest Connecticut Land Conservancy (formerly Weantinoge Heritage Land Trust), Southbury Land Trust, and Winchester Land Trust.
- Preserved three additional Community Farms Preservation Program farms comprising 126 acres at a total cost of \$1,700,200 permanently protecting the farmland for food production in partnership with the City of Middletown (who contributed \$89,906), Town of Southington (contributed \$397,993), and with the Town of Easton (contributed \$24,305).
- Increased PDR stewardship, with goal of visiting and conducting onsite monitoring and reporting for all PDR farmland properties by the end of 2021.

- Assisted municipalities in applying for and receiving locally important soils designation from the USDA Natural Resources Conservation Service (NRCS), which enables farms in their respective towns become eligible for the Community Farms Preservation Program and for USDA NRCS Agricultural Lands Easement funding. The total number of municipalities with USDA locally-important soils is now up to 94, now representing more than half of the state's 169 towns.
- Provided over \$347,188 in funding through the Farmland Restoration Grant to 23 projects with \$660,500 in total project costs, bringing more than 135 acres back into active agricultural production, for a total of more than 344 applications with an estimated 3,080 acres since the program's 2012 inception.
- Continued improving and enhancing the Connecticut Farmlink website, which averages more than 1,900 visits per month and 3,000 page views per month, helping connect new and beginning farmers to owners with available farmland. Hosted two virtual "Farmlink Mixers" facilitating contact and relationships between farmland owners and farmland seekers. Continued providing technical assistance on evaluating suitability of farmland property, lease or sale agreements, and farmland succession planning. Continued to update and provide an extensive list of resources on the CTFarmlink.org web page. There were 41 farmland owner profiles created or updated in 2021 (87 total on the site). There are currently over 340 farmland seeker profiles on the web site.

## Protected Farms: CT Farmland Preservation Program and Connecticut Farmland Trust

430 Farms and 48,840 acres  
as of June 2021

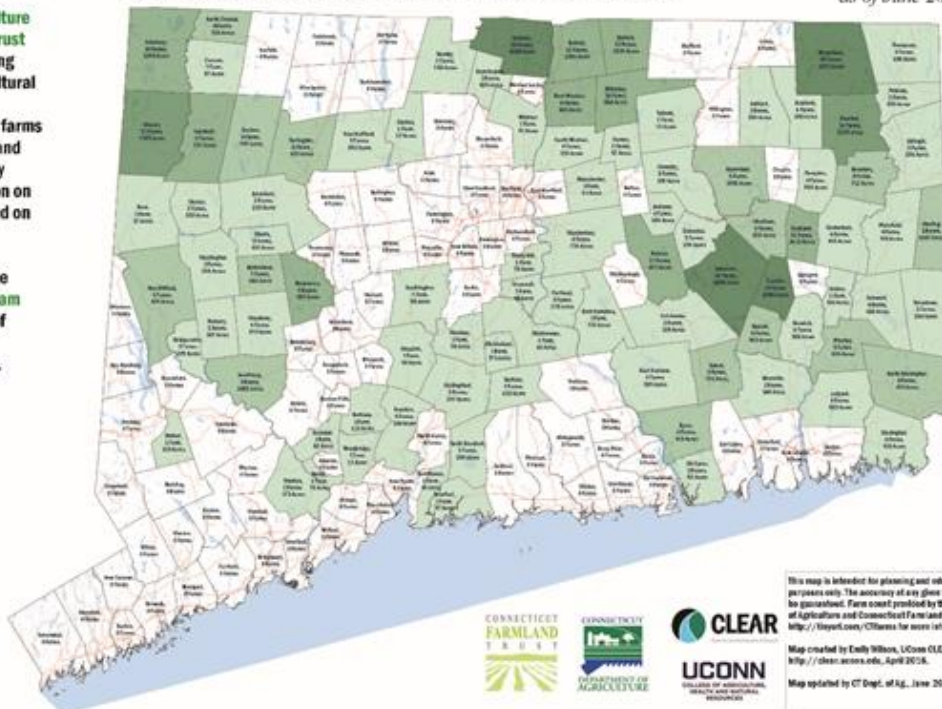
The CT Department of Agriculture and Connecticut Farmland Trust preserve farmland by acquiring development rights to agricultural properties in communities throughout Connecticut. The farms remain in private ownership and continue to pay local property taxes. A permanent restriction on nonagricultural uses is placed on these properties.

For more information, visit the Farmland Preservation Program page on the CT Department of Agriculture's website <http://tinyurl.com/CTfarms>.

### Legend

0
1 - 4
5 - 8
9 - 12
13 - 16
More than 16 farms

Many farms are in areas that are too small to be shown on this map.



This map is intended for planning and educational purposes only. The accuracy of any given location cannot be guaranteed. Farm count provided by the CT Department of Agriculture and Connecticut Farmland Trust. Visit <http://tinyurl.com/CTfarms> for more information.

Map created by Emily Wilson, UConn CLEAR, <http://clear.uconn.edu>, April 2020.

Map updated by CT Dept. of Ag., June 2021

## **BUREAU OF REGULATORY SERVICES**

The Bureau of Regulatory Services is responsible for enforcing state laws and regulations and certain federal laws in fulfilling the Department's mission relative to protecting public health and safety; ensuring the safety of both plant and animal derived food products; ensuring the general health and welfare of all domestic animals including livestock and poultry; and managing emergency preparedness and response activities for animal disease outbreaks and natural disasters.

The Bureau is organized into five operational units: (1) Food Safety and Agricultural Commodities; (2) Dairy/Milk Safety; (3) Office of the State Veterinarian and Animal Health; (4) State Animal Control; and (5) Licensing and Animal Population Control Program. Although each unit has separate and distinct responsibilities, certain situations and conditions necessitate collaboration and cooperation between staff of the various units.

The Bureau continues to secure non-state funding to enhance and support programmatic activities. The Bureau has multi-year cooperative agreements with the United States Food and Drug Administration (FDA) to implement state programs to enforce (1) the Produce Safety Rule of the Food Safety and Modernization Act (FSMA) and (2) the FDA's American Feed Program Regulatory Standards (AFRPS). The Bureau continued its yearly cooperative agreements with the USDA's Animal Plant and Health Inspection Service, Veterinary Services (APHIS, VS) fund activities (1) relative to reportable poultry and livestock disease surveillance and (2) animal disease traceability.

The Bureau administers the Department's Dairy Sustainability Grants program pursuant to the provisions of Public Act No. 09-229. Dairy Sustainability Grants during FY 2021 totaling \$6,294,368.52 were issued to 82 eligible dairy farms.

It should be noted that for FY 2021 all Bureau of Regulatory Services programs were and continue to be challenged with the Covid-19 Pandemic.

## **HEMP RESEARCH PROGRAM**

On May 9th, 2019, the Department of Agriculture launched a hemp program that was unanimously supported by the General Assembly and the Governor. Changes to the statute CGS 22-611 were signed into law on October 2, 2020, (effective October 31, 2020) amending our hemp law to conform to federal regulatory requirements issued by the United States Department of Agriculture (USDA).

Since the enactment on May 9th, 2019 of Public Act No. 19-3, An Act Concerning A Pilot Program for Hemp Production, the Department has experienced continued participation from the hemp agricultural community within the state. In its administration of the Program, the Bureau conducts a thorough review of each producer license application for compliance with requirements prior to the issuance of a license; on-site inspections are conducted; samples are collected for submission for laboratory analysis; and laboratory test results are reviewed for to ensure that THC levels are within allowable limits.

### **Current Status**

- 101 active hemp growers/producers
- 183 acres registered to grow hemp
- 2 active hemp processors

On March 22, 2021, USDA issued their Final Rules for hemp production, which necessitated additional revisions to Sex. 22-611 of the Connecticut General Statutes. During the 2021 legislative session, revisions were made to allow remediation of noncompliant crops done in accordance with federal law as

an alternative to disposal, specifications on federal controlled substance felonies and licensure criteria, and the addition of the requirement for hemp producer licensees to submit their employee identification number (EIN) or social security number to the state Department of Agriculture. These revisions were supported unanimously in the legislature.

## **DAIRY UNIT**

- Collected and analyzed 950 samples of processed/manufactured milk, milk products and cheese, 275 samples of raw milk for pasteurization and 140 samples of retail raw milk for compliance with milk safety regulations and the presence of animal drug residues. The retail raw milk samples are also tested for the presence of human pathogens. Staff collected 100 water samples for testing from dairy production and processing facilities and 30 milk samples for vitamin analysis.
- Conducted 160 routine Grade A Dairy Farm inspections, 40 Retail Raw Milk Farm inspections, 75 routine Milk/ Cheese Plant inspections, 80 Pasteurizer Equipment tests, 40 Bulk Milk Tanker inspections, evaluated 20 milk plant samplers, evaluated 30 milk hauler samplers, conducted 140 Special inspections of dairy producers and manufacturers, 5 Milk Plant listing audits, 6 Farm bulk tank unit (BTU) audits and 2 Single Service manufacturer audits.
- Orders/Warnings issued: Five (5) stop sale orders to milk processors for product quality violations; Four (4) stop sale orders for retail raw milk producers for product quality violations; One (1) stop sale violations to producers of milk for pasteurization due to product quality violations; Twenty-One (21) warning letters were issued for violations of milk quality standards.

## **OFFICE OF THE STATE VETERINARIAN AND ANIMAL HEALTH UNIT**

With USDA cooperative agreement funding support, the Bureau continued animal disease surveillance and outreach activities for Avian Influenza, Scrapie and other reportable animal diseases; continued implementation of the National Animal Disease Traceability Program; and partially funded two positions associated with the cooperative agreement programs. The Bureau provided funding to the Connecticut Veterinary Medical Diagnostic Laboratory (CVMDL) at the University of Connecticut to conduct essential diagnostic services; to meet animal disease program surveillance goals; to assist in animal disease investigations; and to provide test data to support disease-free status certifications such as the National Poultry Improvement Plan (NPIP). State animal health surveillance information is coordinated by the State Veterinarian and shared with USDA, APHIS, Veterinary Services through quarterly accomplishment reports and participation in the National Animal Health Reporting System (NAHRS) and the National Animal Health Laboratory Network (NAHLN).

Also, with USDA Veterinary Services cooperative agreement funding support, the Bureau continued its activities with Animal Disease Traceability, Official Animal Identification requirements and monitoring and enforcing compliance with state and federal laws relative to livestock and poultry interstate movement:

- Companion and Small Animal Interstate Movement – processed 6,911 Interstate Certificates of Veterinary Inspection.
- Livestock and Equine Interstate Movement- processed 1,997 Interstate Certificates of Veterinary Inspection for livestock and equine animals moving into and out of this state representing a total of 9,777 total animals.
- Issued 241 livestock import permits representing 2,959 animals imported into Connecticut.

- Issued 79 livestock exhibition permits representing 663 animals.
- Issued 2,344 poultry import permits representing 2,443,508 domestic poultry, upland gamebirds and pet birds imported into this state.
- Official Animal Identification devices issued (pursuant to USDA Animal Disease Traceability Rule): 2144 RFID (radio frequency identification devices), 2000 NUES (metal) ear tags issued directly to CT licensed livestock producers and licensed, accredited, category II veterinarians; and 16,000 back tags issued to CT licensed livestock dealers.
- Issued 8,602 Scrapie program ear tags to goat and sheep producers (pursuant to RCSA §§22-278-A1 through 22-278-A14 and the USDA Scrapie Eradication Rule).
- Received 321 Brucellosis tests performed on cattle, goats and swine, 200 Brucellosis vaccination certificates for cattle, 246 Tuberculosis Tests of cattle and goats, and 20 Porcine Pseudorabies Test charts.
- Equine Infectious Anemia (EIA) Tests- processed 1,883
- 116 flocks and 3,021 birds tested under Avian Influenza surveillance program

## **FOOD SAFETY & AGRICULTURAL COMMODITIES UNIT**

### Produce Safety Rule of the Food Safety Modernization Act (FSMA)

The Produce Safety team completed year five of the cooperative agreement with the U.S. Food and Drug Administration (FDA). Year five activities included inspecting fruit and vegetable growers, continuing to collect farm inventory data, and development of the farm registration system and mobile inspection system. The registration process was streamlined by utilizing the states E-license system. Over 120 fruit and vegetable farms in Connecticut have registered through the state's E-License system which is also linked to the newly developed mobile inspection program. We expect this number to continue to grow as we promote this program and continue to work with the states fruit and vegetable growers. Now all farms in Connecticut with over \$25,000 in produce sales are subject to provisions of the federal rule adopted by DoAg. Year five did not reveal any egregious conditions during inspections that were able to take place in lieu of COVID. In addition to inspections, DoAg provides funding to the University of Connecticut Cooperative Extension through a Memorandum of Understanding to educate the states farmers and offer the nationally accredited Produce Safety Alliance Grower Training Course. Additionally, DoAg is planning on continuing the partnership with FDA and work on the fruit and grower inspection program. In 2020, 40 industry stakeholders took part in this course.

#### Produce Safety Inspections

- 28 registered fruit and vegetable growers
- 25 inspections

### Animal Feed Regulatory Program Standards (AFRPS)

The Agricultural Commodities team continues to make progress towards full implementation of the 11 Animal Feed Regulatory Program Standards (AFRPS), and will achieve full implementation once the final FDA 60-month audit is passed. Due to COVID-19 outbreak, the 60 month audit was rescheduled from 2020 to a date yet to be determined by FDA.

The AFRPS focus is on a regulatory foundation that includes standardized training, standardized inspection program, auditing, animal feed related illnesses or death and emergency response, enforcement program, outreach activities, planning and resources, assessment and improvement, laboratory services and a product/ingredient sampling program.

### Agricultural Commodities

Sample collection for analysis by the Connecticut Agricultural Experiment Station

- 321 - seed samples
- 30 - animal feed samples
- 36 fertilizer samples

Products Registered

- 15,211 Commercial animal feeds, including pet foods
- 4,944 Fertilizers
- 886 Soil Amendments
- 113 Agricultural Liming Materials

Shell Egg Inspection Program (table egg producers with less than 3000 birds)

- 2 Registered producers
- 12 Inspections

Poultry (slaughter) Processor Inspection Program (producers with less than 3000 birds)

- 2 Registered producers
- 3 Inspections

Controlled Atmosphere Facility Storage (apples)

- 3 registered facilities
- 155 inspections
- 4 certifications

FDA Contract Inspections

- 14- BSE Inspections (for materials at risk of transmitting Bovine Spongiform Encephalopathy)
- 4 Veterinary Feed Directive Inspections (Medicated Feed)

Animal Feed Good Manufacturing Practice (cGMP) Inspections

- 2 inspections

### **STATE ANIMAL CONTROL UNIT**

During the FY21, the State Animal Control Unit experienced a reduction in staff by one officer. The senior state ACO retired on 12/1/20 and was not replaced. There is now a total of 7 sworn State Animal Control Officers (SACO) (1 supervisor and 6 SACO's). The unit is tasked with performing routine, as well as spot inspections, of Department of Agriculture licensed and regulated facilities. These facilities are comprised of Commercial Kennels, Grooming Facilities, Pet Shop Facilities, Dog Training Facilities and Municipal dog pounds. The unit is also responsible for conducting criminal investigations pertaining to animal cruelty. The state is broken down into six territories, each officer is assigned a territory of the state that encompass anywhere from 25-30 towns, and each officer resides in the area they are assigned.

During this fiscal year, the unit has conducted 502 formal investigations, which are defined as incidents that require being documented on a formal report form in the e-License investigative report module. The

unit handled 3,081 miscellaneous call for service/complaints, 2 livestock damage claims, issued 66 written warnings, 6 infractions, 4 misdemeanor summons, and had 6 arrests. There were 33 reports received from DCF reporting to the Department of Agriculture, reporting the Suspected Animal Harm, Neglect or Cruel Treatment. There were 141 suspected animal abuse reports received from various ACO's from all over Connecticut that were forwarded by DoAg to DCF under the current cross reporting statutes.

The unit conducted inspections of municipal dog pounds (70 inspections), pet shops (104), pet grooming facilities (447), commercial kennels (211), dog training facilities (144), and processed 39 rabies cases where humans or domestic animals were exposed to a rabid animal.

The Department of Agriculture continues to conduct the ACO Academy, an annual instructional training program, for animal control officers. Newly appointed municipal animal control officers must complete a minimum of 80 hours of instruction following a curriculum standard as mandated by C.G.S. §22-328. Due to the pandemic, the majority of the class was held virtually in both 2020 and 2021. Approximately 27 municipal animal control officers and 3 state animal control officer received certificates of completion in 2020 and the 2021 class is ongoing. Instructors include Department of Agriculture staff, State's Attorneys, police officers, veterinarians and other subject matter experts all of whom volunteer their time.

**LICENSING UNIT**

The Department has transitioned all licensing processes to the enterprise eLicense system. Most of the agency's licenses and permits are exclusively online. increasing productivity for office staff and convenience for the general public. The agency has eliminated paper renewals and certificates for all licenses, saving over \$11,000.00 in postage, which not only helps the environment but also speeds up the process. Total licensing fees collected for fiscal year 2021 were \$2,340,750.01. 65% of these payments were made online.

**DoAg Licenses for FY20**

<b>Credential Type</b>	<b>Active, and In-Renewal</b>
ANIMAL CONTROL OFFICER	261
ANIMAL IMPORTER	206
ANIMAL SHELTER FACILITY	12
BULK MILK TANKER	18
CERVIDAE HERDS	10
COMMERCIAL ANIMAL FEED MANUFACTURER	44
CHEESE MANUFACTURER	20
COMMERCIAL KENNEL	270
COMMERCIAL FEED	634

COMMERCIAL FERTILIZER	356
COMMISSION SALES STABLE	1
CONNECTICUT FARM WINERY, BREWERY AND CIDERY	1
EGG GRADING PLANT	5
EQUINE AUCTION	1
GROOMING FACILITY	421
FRUIT & VEGETABLE GROWER	123
HEMP GROWER	38
HEMP PROCESSOR	2
HEMP PRODUCER	62
LIMING MATERIALS	34
LIVE POULTRY DEALER	83
LIVESTOCK DEALER/BROKER	30
MAPLE SYRUP & HONEY PRODUCER	28
MILK DEALER	106
MILK EXAMINER	170
MILK LABORATORY	10
MILK PRODUCER	95
MILK SUB-DEALER	100
PET SHOP	87
POULTRY MORTALITY DISPOSAL	3
POULTRY SLAUGHTER FACILITY	1
RAW MILK CHEESE MANUFACTURER	5
RETAIL DAIRY STORE	2945
RETAIL RAW MILK PRODUCER	12
SOIL AMENDMENTS	258



SEED LABELER	96
TRAINING FACILITY	159
<b>TOTAL</b>	<b>6555</b>

## **ANIMAL POPULATION CONTROL PROGRAM**

The Department's Animal Population Control Program (APCP) continues to increase the level of immunization against infectious animal diseases by providing sterilization and vaccination benefits for dogs and cats to (1) Connecticut residents for dogs and cats adopted from municipal pounds; (2) to low-income residents for dogs and cats that they own; and (3) to non-profit organizations engaged in activities aimed at reducing the population of feral cats.

In Fiscal Year 2021, the APCP provided vouchers for 3,960 animals (1,318 dogs and 2,642 cats) from municipal impound facilities, pets owned by low-income CT residents and feral cats from non-profit organizations. 2,339 of the 3,960 vouchers issued were redeemed for a 59% overall sterilization rate for intact dogs and cats adopted from municipal impound facilities, issued to low-income residents and awarded to non-profit feral cat groups cats from non-profit organizations. 3,439 of the 5,072 vouchers issued were redeemed for a 68% overall sterilization rate for intact dogs and cats adopted from municipal impound facilities.

## **BUREAU OF AQUACULTURE**

The Department's Bureau of Aquaculture (DABA) is the designated State Shellfish Authority for the State of Connecticut, which participates in the National Shellfish Sanitation Program (NSSP) as a shellfish-producing State. The NSSP is the federal/state cooperative program recognized by the U.S. Food and Drug Administration (FDA) and the Interstate Shellfish Sanitation Conference (ISSC) for the sanitary control of shellfish produced and sold for human consumption. The purpose of the NSSP is to promote and improve the safety of shellfish (oysters, clams, mussels and scallops) moving in interstate commerce through federal/state cooperation and uniformity of State shellfish programs. Environmental Analysts working in the Shellfish Program participate in all aspects of the national program, including the Shellfish Growing Area and Shellfish Plant Standardization Programs.

The ISSC was formed in 1982 to foster and promote shellfish sanitation through the cooperation of state and federal control agencies, the shellfish industry, and the academic community. The ISSC adopts uniform procedures that are incorporated into an Interstate Shellfish Sanitation Program, and implemented by all shellfish control agencies; gives state shellfish programs current and comprehensive sanitation guidelines to regulate the harvesting, processing, and shipping of shellfish; provides a forum for shellfish control agencies, the shellfish industry, and academic community to resolve major issues concerning shellfish sanitation; informs all interested parties of recent developments in shellfish sanitation and other major issues of concern through the use of news media, publications, regional and national meetings, internet, and by working closely with academic institutions and trade associations. Bureau Director, David Carey, is the Region 2 Alternate Regulatory Representative on the ISSC Executive Board and member of the Model Ordinance Effectiveness Review committee. Bureau staff have been appointed to several important committees and workgroups involved in policymaking at the national level (Aquaculture, Communication, Recall Guidance, Vibrio Research, and Vibrio Illness Response).

### **Bureau of Aquaculture Accomplishments**

- The Bureau issued **159** Personal Seed Oyster Licenses and **62** Oyster Seed Boat Licenses.

- Staff performed sanitary and records inspections of the 95 shellfish harvest vessels, 45 harvest operations and 30 wholesale dealer/distributors, on a biennial basis as minimally required by the NSSP, along with necessary follow-up inspections throughout the year.
- Bureau staff collected and analyzed 4,757 seawater samples and 148 shellfish tissue samples for fecal coliform bacteria, 8 meat or wastewater samples for MSC (male-specific coliphage) to assess viral impacts, 225 phytoplankton samples for harmful algal blooms, 20 samples for paralytic shellfish poisoning (PSP), 6 samples for amnesic shellfish poisoning (ASP), 16 samples for cyanobacteria toxins, and 0 shellfish tissue samples for total *Vibrio parahaemolyticus* (*Vp*) and total *Vibrio vulnificus* (*Vv*).
- Ten Individuals have kelp aquaculture operation certificates and the necessary gear permits. Six individual producers were licensed by the Bureau to harvest and sell Kelp.
- The Bureau continues working with Ideal Fish to develop a direct marketing and farm market campaign for its products. Ideal Fish is the first indoor finfish Aquaculture facility permitted in Connecticut, Ideal Fish. Ideal Fish is a recirculating aquaculture systems company dedicated to bringing fresh seafood to local markets. As the only commercial scale facility of its kind in the Northeast, this state-of-the-art \$14 million dollar operation is producing sustainably-raised Branzino (European Seabass), Salmon and Rainbow Trout
- The Bureau issued ten aquaculture producer permits for finfish grown for stocking ponds, in addition to three permits for vocational schools growing finfish for educational purposes.
- The Bureau has enacted and continued to develop comprehensive harmful algal bloom (HAB) and biotoxin monitoring programs, and is the only state agency extensively monitoring HAB and biotoxin presence in real-time for regulatory response.

### **COVID Response Actions 2020 Objectives 1, 2, 3 Initiatives conclusion and 20/21 project phases.**

The Department of Agriculture Bureau of Aquaculture and Laboratory, with collaborating partner Connecticut Sea Grant (CTSG) Program at UCONN's Avery Point, completed implementing a three-phased shellfish Industry COVID-19 Response and Assistance Initiative In June of 2020.

(Phase 1) – To facilitate rehabilitation work on approximately 600 acres of shellfish beds located in the coastal waters of Darien, Norwalk, Fairfield, Bridgeport, Stratford and Milford, and associated compensation including the harvest, transplant, depuration and sale of northern quahogs in May 2020.

(Phase 2) - To facilitate rehabilitation work on approximately 1200 acres of shellfish beds located in the coastal waters of Greenwich, Stamford, Darien, Norwalk, Fairfield, Bridgeport and Stratford, and associated compensation in the form of cash payments in early June 2020

(Phase 3) – To facilitate the purchase and planting of broodstock oysters on up to three acres of shellfish beds in the coastal waters of Darien, Norwalk, Fairfield, Bridgeport and Stratford, and associated cash payment for oversized Eastern oysters in late June 2020.

In July 2020 less restrictive COVID-19 public health mitigation strategies including outdoor dining lessened the impact to Connecticut's shellfish companies. Restaurants play a significant role in the wholesale market consumption of shellfish via raw bar sales.

### NOAA CFAP:

The Bureau began developing the Aquaculture Sector for the Connecticut CARES Act Assistance to Fishery Participants Spend Plan in early July. The Coronavirus Aid, Relief, and Economic Security (CARES) Act signed into law on March 27, 2020 authorized the U.S. Secretary of Commerce to provide \$300 million of economic assistance to marine fishery participants impacted by the COVID-19 pandemic. On May 7, 2020, the Secretary of Commerce announced the planned allocations of the CARES Act

Assistance to Fishery Participants (CAAFP) aid to states, Tribes, and territories. Connecticut was notified that its allocation of CAAFP aid was \$1,835,424, disbursement of which is contingent upon approval of a “spend plan” by the National Oceanic and Atmospheric Administration (NOAA). The Connecticut Department of Energy and Environmental Protection (DEEP) and Connecticut Department of Agriculture (DOAG) propose to distribute the CT CAAFP aid funds to qualified applicants who participate in eligible marine fishery sectors. To qualify for CAAFP aid, applicants must participate in the commercial fishing, for-hire fishing, seafood dealing, or aquaculture sectors, and have suffered at least a 35% loss in revenue as compared to the prior 5-year average (2015-19). The spend plan was approved by NOAA. DEEP and DOAG sent CAAFP aid applications to sector participants. Applicants must have incurred economic revenue losses during the 2020 specified period of loss greater than 35% relative to my average fishery-related revenue during the same period in 2015-19 as defined in the Connecticut CAAFP spend plan.

Phase one of the NOAA CFAP payment program allocated a quarter of the federal assistance to the Aquaculture sector and 24 participants were paid a total of \$ 502,532.15

Phase Two distribution of the holdback funds of the NOAA CFAP payment program distributed another \$55,000 dollars to 17 of the 24 recipients.

#### USDA FSA CORONAVIRUS FOOD ASSISTANCE PROGRAM SUPPORT

The Department through Commissioner Hurlburt took a lead role in organizing and directing the national shellfish industry conversation with USDA to ensure that cultivated and planted shellfish were defined as eligible aquaculture. Several conversations were held with numerous State shellfish representatives and the USDA administrator’s and Secretary of Agriculture. All planted shellfish were defined eligible.

Staff provided list of industry contacts to USDA FSA and assisted with notifying industry members of the program parameters, essentially a payment based on a percentage payment of the 2019 planted shellfish production sales above any other assistance payments.

Twenty-four shellfish operations submitted applications and collected \$1,400,615 in assistance.

#### REJUVINATE NATURAL OYSTER BED Continued June 2021:

Hard Clam removal in order to facilitate rehabilitation work on approximately 500 acres of shellfish beds located in the coastal waters of Darien, Norwalk, Fairfield, Bridgeport, Stratford and Milford. and associated compensation including the harvest, transplant, depuration and sale of northern quahogs in May 2020. Industry vessels transplanted over 13,000 bushels of hard clams to their private beds for depuration valued at estimated \$600,000.

#### NOAA CARES Act, providing a “second round” of CFAP Aid:

The Consolidated Appropriations Act, signed into law on December 27, 2021, authorized the U.S. Secretary of Commerce to provide an additional \$255 million of economic assistance to marine fishery participants via aid programs previously authorized by the CARES Act, essentially providing a “second round” of CAAFP aid to states, Tribes, and territories. On March 29, 2021, Connecticut was notified that its allocation of second round CAAFP aid funding was \$3,000,000. Atlantic coastal states engaged in dialogue with ASMFC and NOAA throughout April 2021 to resolve uncertainties around administration of the second round of CAAFP aid funding.

June 2021 Submitted to NOAA for approval: second round Connecticut CAAFP spend plan \$750,000 Aquaculture Sector. NOAA is in the review for approval process.

## Step A: Direct Payments

A total of \$500,000 will be disbursed among all qualified aquaculture sector applicants in the form of a direct payment. The amount of each applicant's payment will be directly proportional to that applicant's proportional contribution to the aggregate loss reported among all qualified applicants.

## Step B: Reclamation of Public Natural Oyster Seed Beds

The remaining \$250,000 of aid funds allocated to the Aquaculture sector will be spent on a fishery-related project as described below. This infrastructure request spend plan focuses on needed investment in the designated natural beds through:

- 1: Contracting with industry members to remove silt with open oyster dredges

Contractor Project Cost Per Day \$839.74 or Cost per hr (\$) \$104.97

- 2: Reclaiming buried shell from the silt with open hydraulic clam dredges

Contractor Project Cost Per Day \$839.74 or Cost per hr (\$) \$104.97

3. Purchasing oyster shell removed from deep water private leases (\$ 5.00/bushel)

4. Purchasing mature oversized oyster to place within these cultivated beds as spawners. (\$0.55 apiece)

This investment in the infrastructure of the natural seed oyster public beds through the use of the contracted activities of the shellfish industry members is a known and proven best management practice reflective of large private company infrastructure investment in areas like the Quinnipiac River and the resulting annual seed oyster production.

## **SHELLFISH GROWING AREA PROGRAM**

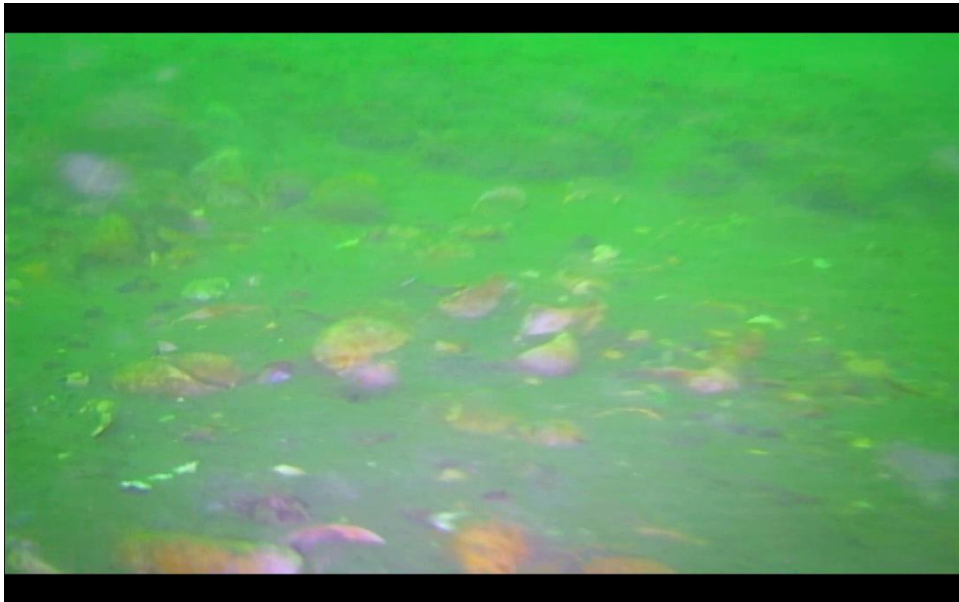
In 2020, the Bureau of Aquaculture revised water quality classifications in the Niantic River and Bay in conformance with the requirements of the ISSC-MO. Niantic Bay was upgraded from a 1' Conditionally Approved area to an Approved shellfish growing area. The Niantic River reclassification included increasing the rainfall trigger in the Conditionally Approved areas from 1" to 1.5". The Bureau expanded the open season of the Outer Clinton Harbor Conditionally Approved Seasonal area in Madison and Clinton to include the Months of May through August operating with a 1" rainfall trigger. This expansion benefitted both commercial and recreational harvesters. Additionally, a tissue sampling study of the Madison portion of the Outer Clinton Harbor growing area was begun. The purpose of this study is to determine if the limit on relay activity when waters are below 50 degrees can be eliminated in this area. The Bureau has been able to maintain minimum ISSC-MO sampling requirements in the majority of the State's growing areas.

## **VIDEO DOCUMENTATION**

During the Phase 1 Bridgeport Natural Bed Project in which harvesters disturbed sediment and biofouling from oyster shell on the Bridgeport Natural Bed, DABA staff documented the process with the SeaView underwater camera. The camera was attached to a sled and towed along the bottom in areas that had not been disturbed and areas known to have been disturbed. The disturbed areas were determined by mapping shellfish vessel tracks and towing the camera sled in areas of highest density of vessel tracks. As seen in the figures below, undisturbed areas of the natural bed are sedimented over and minimal shell is visible. Disturbed areas have clearly visible shell, which is essential for oyster recruitment.



*Figure 1.* Bridgeport Natural Bed before mechanical disturbance. Note sediment and minimal exposed shell.



*Figure 2.* Bridgeport Natural Bed after mechanical disturbance. Note exposed shell, ready for oyster set.

### **COVID-19 DIRECT MARKETING GUIDANCE**

Connecticut's shellfish industry was severely impacted by the COVID-19 public health emergency beginning in early March of 2020. Much of Connecticut's shellfish industry is reliant upon wholesale distribution. Connecticut shellfish is typically shipped out-of-state to wholesale markets in New York and Boston, before being shipped back into CT for distribution to restaurants. During the COVID situation, many restaurants and retail markets stopped purchasing shellfish, and many businesses were forced to lay-off employees.

According to Governor Lamont's COVID-19 Response Executive Order 7H:

Essential workers in the 16 Critical Infrastructure Sectors, as defined by the federal Department of Homeland Security unless otherwise addressed in a prior or future executive order pertaining to the existing declared public health and civil preparedness emergency. Essential Food and Agriculture businesses include the following:

- farms and farmer's markets
- food banks
- food manufacturing, processing, storage, and distribution facilities
- restaurants/bars (provided compliance with all applicable executive orders is maintained)
- all manufacturing and corresponding supply chains, including agriculture

Licensed Shellstock Shippers I operations are considered an Essential Food and Agriculture business, and shellfish sold by these businesses are an approved food source. These operations may sell directly to the public from either their land-based facility or at a designated pickup location, provided they are selling from an approved conveyance that has been inspected and licensed by DoAG for temperature-controlled storage of shellfish. They may also deliver shellfish direct to the consumer from a DoAG licensed conveyance.

To support the industry during these challenging times, the Bureau worked closely with industry to assist them in developing new markets, and developed guidance specifically for direct marketing during COVID. This direct-to-consumer model helps to protect buyers and farmers from exposure to COVID-19 while allowing these critical agriculture producers to sustain their industry during this public health crisis. This model also allows the shellfish industry to benefit from businesses that have maintained foot traffic during the COVID19 crisis, by permitting them to designate pickup locations at breweries, wineries, land-based farms, restaurants offering take-out, etc. The partnerships that were developed helped to connect the consumer directly to a fresh and local source of food, while this new marketing model helped to sustain the industry while wholesale markets were virtually nonexistent.

The COVID-19 Direct Marketing Guidance for Shellfish can be found at:

<https://portal.ct.gov/-/media/DOAG/COVID/COVID19-Direct-Marketing-Guidance-for-Shellfish-Final-040220.pdf>

### **Enhanced biotoxin and harmful algal bloom (HAB) monitoring programs increase safety for CT shellfish consumers**

Connecticut has a thriving shellfish industry and has reliably produced safe clams and oysters for people to enjoy. Phytoplankton are microscopic organisms that act as the base of the marine food web; a small percentage of phytoplankton are Harmful Algal Bloom (HAB) species. HABs are harmful because they are associated with toxin production, and have detrimental effects on human health and the environment. The DABA monitors HABs in Long Island Sound because they can be filtered out of the water column by bivalve shellfish and their toxins can become concentrated in shellfish tissues.

The DABA published a comprehensive 2020 Harmful Algal Bloom report that is available on the Department website: <https://portal.ct.gov/DOAG/Aquaculture1/Aquaculture/Harmful-Algal-Blooms>

The major findings of the report include:

- Biotoxin and harmful algal bloom (HAB) monitoring has been conducted in CT since 1985 and 1997, respectively, by the DABA. In response to increasing HAB events around the world and regionally (but not in CT), the DABA enhanced the program in 2019 to collect

semi-quantitative data and survey widespread CT shellfish growing areas at an increased frequency.

- Improved documentation has revealed the presence of many HAB taxa in CT, but threats to human health and ecosystem function have been rare and localized because populations of HAB species remain modest and potentially toxigenic species seldom produce or only produce low concentrations of toxins. Actual impacts of HAB organisms around the world are presented to demonstrate their harmful effects, in relation to cell and toxin concentrations, outside of CT.
- The presence of HAB taxa with the potential to cause public health and/or ecological harm underscores the necessity for continued monitoring and surveillance. HAB monitoring provides an early warning system to guide management decisions and prevent shellfish recalls and illnesses, and also allows widespread surveillance of shellfish growing areas.
- • The downstream movement of freshwater cyanobacteria blooms to CT's estuarine environment represent a newly-recognized concern for shellfish safety in some nearshore locations, and is an emerging issue in many national and international coastal areas.

*Pseudo-nitzschia* is an FDA-regulated HAB organism because it produces the neurotoxin, domoic acid, which can accumulate in shellfish and planktivorous fish, and cause human and wildlife intoxications through the consumption of contaminated seafood. *Pseudo-nitzschia* is a naturally occurring genus in Long Island Sound (LIS), but domoic acid has never been detected in CT shellfish. However, a new highly-toxic species, *Pseudo-nitzschia australis*, moved into the New England region (Maine-Rhode Island) in 2016, caused rapid toxin accumulation in shellfish, widespread closures of shellfish beds, and recalls of contaminated shellfish. Subsequent annual closures have continued in Maine, and *Pseudo-nitzschia australis* is still periodically detected in Rhode Island, highlighting its continued presence in the region. In the absence of semi-quantitative data prior to 2019, DABA is diligently working to understand *Pseudo-nitzschia* bloom patterns and generate baseline data for LIS. There are multiple potentially toxic *Pseudo-nitzschia* species in LIS, and their blooms are influenced by genetic, seasonal, and environmental factors. The DABA has created a network of collaborators, including other state shellfish regulators, who notify DABA to *Pseudo-nitzschia* blooms in nearby waters, and Florida Fish and Wildlife (FFW), who provided the first *Pseudo-nitzschia* species-specific data from DABA samples. *Pseudo-nitzschia* species produce varying concentrations of domoic acid, as some are non-toxic, some produce low concentrations of domoic acid, and those like *Pseudo-nitzschia australis* produce high concentrations of domoic acid. *Pseudo-nitzschia* cannot be identified to the species-level using routine light microscopy, and requires expensive genetic or advanced microscopy techniques. The collaboration with FFW is critical because it allows DABA to correlate cell concentrations, species-level identifications, and domoic acid concentrations in shellfish. *Pseudo-nitzschia australis* was putatively identified in samples from 2020, highlighting the need to continue this collaboration. The ultimate goal is to acquire funding for consistent, widespread *Pseudo-nitzschia* species-level and domoic acid analyses to provide a risk assessment for LIS.

Cyanobacteria blooms are primarily a freshwater water quality issue, and can impact drinking water sources and recreational activities. There are many cyanobacteria genera and toxins, some of which can be lethal to humans and animals. However, evidence from around the country and world indicates that cyanobacteria and their toxins can move into estuarine and marine environments, and subsequently shellfish can accumulate these toxins. This is an emerging health issue with little available regulatory guidance. The cyanobacteria toxin, microcystin, was detected in Greenwich oysters for the first time in 2020, following a reported bloom in July. The most impacted area was closed for five months due to the persistence of microcystin, which caused substantial hardship on impacted shellfish harvesters. In a collaboration with DEEP, the DABA acquired funding through the Long Island Sound Study to evaluate microcystin accumulation, persistence, and depuration in Greenwich shellfish (2021-2023). The goal of

the study is to develop a comprehensive dataset over two years to directly impact management, protect public health, and aid in developing federal standards for emerging cyanobacteria toxins in shellfish.

### **GUIDE TO MARINE AQUACULTURE PERMITTING IN CONNECTICUT UPDATED**

The Connecticut Department of Agriculture, Bureau of Aquaculture is the lead state agency for aquaculture development. The DABA Director serves as the State Aquaculture Coordinator, and acts as a liaison among local, state and federal permitting officials which comprise the Connecticut Aquaculture Permitting Work Group. The key agencies include the Connecticut Department of Energy and Environmental Protection (DEEP), the U.S. Army Corps of Engineers (USACE) and municipal shellfish commissions. Shannon Kelly, of the Bureau, leads The Work Group coordination of the regulatory review process through the Guide to Marine Aquaculture Permitting with other local, state and federal agencies depending on the nature of the proposed aquaculture activity.

The Bureau issued two new certificates for aquaculture operations obtaining permits from the CT-DEEP and US ACOE for shellfish or seaweed gear deployment.

11 new applications were filed and processed through the joint Agency process, 1 coral, 2 kelp, 2 shellfish up-wellers for seed grow out, 1 down-weller for seed grow out, 5 oyster cage culture systems.

### **SHELLFISH GROWING AREA PROGRAM**

The Bureau of Aquaculture continues to expand the use of testing shellfish, seawater, and municipal wastewater effluent samples to determine levels of Male-Specific Coliphage (MSC). MSC is an indicator organism that has been accepted by the NSSP for detecting levels of enteric viruses that may be present in growing areas or shellfish tissues. Coliphages are bacterial viruses that infect and replicate in *Escherichia coli*, and are often found in high concentrations in municipal wastewater, and to a lesser degree in human and animal feces. Because traditional bacterial monitoring does not accurately indicate the presence of non-bacterial organisms such as human pathogenic viruses, coliphages are potentially important microorganisms for monitoring the microbial quality of waters and shellfish. This testing also provides a way for staff to assess public health impacts from pathogenic viruses, such as the Norovirus, by using MSC as an indicator organism.

### **CONNECTICUT'S *VIBRIO PARAHAEMOLYTICUS* CONTROL PLAN**

Connecticut shellfish growing waters in Westport, Norwalk and Darien were the source of at least 23 confirmed cases of *Vibrio parahaemolyticus* (*Vp*) during the summer of 2013, with another additional 15 cases potentially linked to Connecticut waters that year. This outbreak occurred with a *Vibrio parahaemolyticus* Control Plan (VPCP) in place which limited time from harvest to refrigeration to 5 hours, and required oysters to be cooled to  $\leq 50^{\circ}$  within 5 hours of refrigeration. The 5 hour limit was inadequate to prevent the 2013 outbreak from occurring, and a more stringent control plan has been required in the outbreak area in the years since the 2013 outbreak. Prior to 2013, only sporadic cases had been linked to Connecticut growing areas. This area now operates with a VPCP requirement that all oysters reach an internal temperature within one hour of harvest.

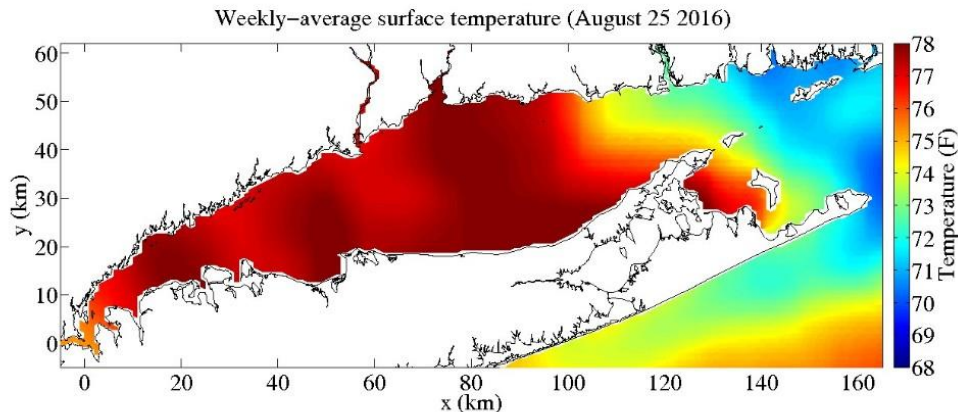
In 2015, the DABA was able to further refine the VPCP implementation triggers for the outbreak area from a date to a water temperature trigger. This new trigger was based upon new data developed using the Long Island Sound *Vp* Prediction System (Whitney, Ward, & DeRosia-Banick, 2016). In 2015, Connecticut's VPCP for the 2013 outbreak area was triggered when surface seawater temperatures reached 68°F (20°C) as measured using the NASA G1SST product [incorporated into the Long Island Sound hydrodynamic model] and the NOAA BRHC3 coastal buoy located in Bridgeport, CT. The use of a trigger based on environmental conditions rather than a pre-determined start date has proven effective.



### Vp Prediction System Development

We have begun development of a Vp prediction system for shellfish in LIS. **At this stage, the results below should be viewed as demonstrating prediction techniques. It is unclear whether these results are representative of actual conditions; further analysis and comparison with observations are needed. These demonstration results are not intended for use in management decisions or for informing shellfish-related issues.** This prediction system involves the following steps:

1) Daily sea-surface temperature (SST) data are acquired from the GISST product (from the NASA Jet Propulsion Laboratory) that includes observations from satellites. The prior week (7 days) of SST are averaged together to construct the weekly-averaged surface temperature field throughout LIS.

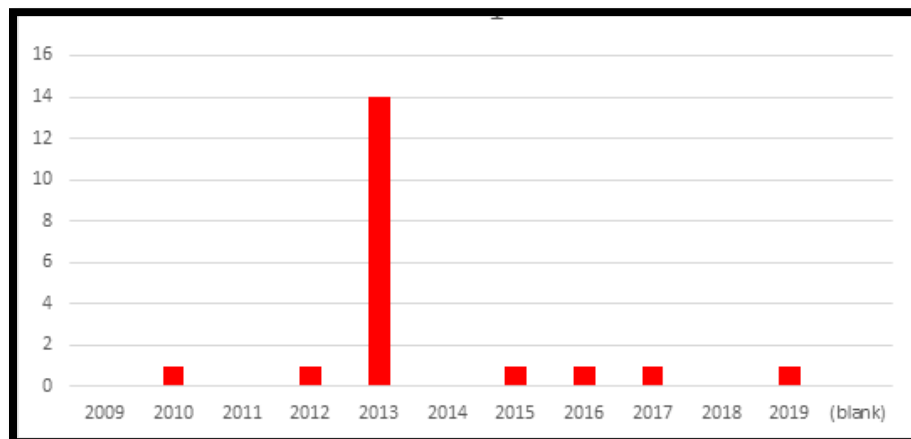


Surface temperatures from GISST satellite-observational product. Temperatures are averaged over the previous 7 days.

Figure 1. Long Island Sound Vp Prediction System, Whitney, Ward and DeRosia-Banick, 2016. 1) Daily sea-surface temperature (SST) data are acquired from the GISST product (from the NASA Jet Propulsion Laboratory) that includes observations from satellites. The prior week (7 days) of SST are averaged together to construct the weekly-averaged surface temperature field throughout LIS.

Oyster production areas not implicated in the 2013 outbreak operate under a general state-wide *Vibrio parahaemolyticus* control plan, which requires a five hour limit from time of harvest to temperature control (either mechanical refrigeration or icing), shading shellfish on the deck of harvest boats, spraying shellfish with water from approved growing areas to keep them cool, monitoring of shellstock temperatures once on board, and reducing internal temperatures of shellfish to less than 50°F within 5 hours of placing under temperature control.

CT oyster harvesters have not been implicated in an outbreak since the implementation of the state VPCP controls and implementation triggers.



*Figure 2. Confirmed number of V. parahaemolyticus cases linked to Connecticut shellfish each year, 2009 through 2019.*

### **AQUACULTURE DAIRY LABORATORY ACCOMPLISHMENTS**

Bureau of Aquaculture staff serve as the Dairy Laboratory Evaluation Officer (CT LEO) for the State of Connecticut and are responsible for evaluating all Appendix N Facilities and Certified Dairy Laboratories along with analysts performing milk laboratory test methods in accordance with the requirements of the Grade “A” Pasteurized Milk Ordinance.

On a bi-annual basis, the Connecticut Laboratory Evaluation Officer schedules and performs laboratory evaluations of both FDA certified appendix-n screening facilities and certified laboratories. There are a total of 2 certified laboratories and 10 screening facilities evaluated. Half of these facilities will be evaluated in 2020. In addition, the CT LEO continues to speak with both new farms and new dairy processing plants about becoming a FDA certified Grade A facility.

In addition to the evaluations, the CT LEO organizes proficiency testing for the labs, certifies all the analysts before coming online to perform the procedures; this includes providing written exams and practical’s they must pass in order to become certified in the state. The LEO also helps new labs and already certified facilities develop and fine-tune all quality control/quality assurance operating procedures at their facility. Connecticut as a total of 61 certified analysts that are evaluated every two years. In 2020, 12 new analysts became certified to process dairy samples in the laboratory so far. In 2020, a new antibiotic testing platform was purchased with the help of FDA funding. This will be used this year to replace a paid splits program with a free service provided by the CT LEO. This will be available for all Grade A facilities that are certified for antibiotic screening.

The CT LEO also visits intra-state farms to help educate the farms about the necessity of antibiotic screening. The LEO also makes and organizes split samples for these facilities to participate in to effectively measure their efficiency in processing samples for antibiotic detection. These split samples will be done in November.

The CT Laboratory Evaluation Officer was recertified in July of 2020 by the FDA through an online program. This is done every three years.

### **CONNECTICUT SHELLFISH RESTORATION PLANNING WORKGROUP**

A USDA NRCS Conservation Innovation Grant (CIG) called the *Conservation, Management, and Restoration Priorities and Practices for Connecticut Shellfish* was awarded to Connecticut Sea Grant.

The goal is to develop a comprehensive shellfish conservation, management and restoration plan to address barriers and recommend high priority projects and practices for funding (such as the USDA NRCS EQIP) in Connecticut.

Bureau staff are facilitating several committees charged with the development of regulatory guidance, habitat suitability analysis, and are participating in the development of GIS data to support the web-based mapping tool found at [Connecticut Shellfish Restoration Story Map \(arcgis.com\)](https://arcgis.com).

## Project Background

This map viewer was developed to aid in the decision-making process for shellfish restoration planning in the Connecticut waters of Long Island Sound (LIS). The majority of the spatial data was drawn from the LIS Blue Plan data portal. The tool includes data related to human uses (tab 1), species and habitats (tab 2), and shellfish production factors (tab 3). A comprehensive data list is available (tab 4). Tab 5 will include a map of the areas that have potential for shellfish restoration with a scale used to identify sites that are suitable or optimal for shellfish restoration.

This project is a collaborative effort of Connecticut Sea Grant, the Connecticut Department of Agriculture and Connecticut Department of Energy and Environmental Protection, and is funded by a USDA NRCS Conservation Innovation Grant and support from The Pew Charitable

