

ECSGA UPDATES

ISSC

Markets

Salmonella



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Aquatic Bird Risk Assessment Committee

- One of several committees I sit on for the ISSC
- We need more grower engagement!
- 20+ committees – one hour a month!
- If you don't have a seat at the table – you are probably what's for dinner!



Representing the needs of aquaculture and the environment

- Buying Shellfish
- Calendar
- Grower Resources
- Health and Safety
- Library
- Marketing
- Newsletters
- Recipes
- Regulations & Permitting
- Shucking
- Training and Education
- Vibrio Resources
- Cool Videos
- What's New

Listserve

Join



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Bird Interactions with Shellfish Gear

Our bird interaction resources are listed below as links to callouts for pages, videos or documents. Each callout has a brief description of the resource and a title or photo that links to the resource.

- Shellfish Sanitation and Birds (Power Point video)
- Seasonal Patterns of Distribution and Abundance of Waterbirds in Relation to Oyster Aquaculture in Coastal Rhode Island (pdf of Power Point)
- Birds and Shellfish Sanitation session of 115th NSA meeting (notes on 11 presentations)
- Detering Coastal birds from Roosting on Oyster Culture gear in Eastern New Brunswick, Canada (article in Aquacultural Engineering)
- Birds on Floating Culture, Oh My! (pdf of Power Point from 115th NSA meeting)
- Detering Birds (SEMAC pdf of Power Point)
- Are We Overestimating Risk of Enteric Pathogen Spillover From Wild Birds To Humans? (highlighted pdf from Biological Reviews)
- Genetic Markers for Rapid PCR-Based Identification of Gull, Canada Goose, Duck, and Chicken Fecal Contamination in Water
- Campylobacter jejuni in Black-Headed Gulls: Prevalence, Genotypes, and Influence on C. jejuni Epidemiology (highlighted pdf from 2002 Journal of Clinical Microbiology)
- EPA Technical Support Materials: Developing Alternative Recreational Criteria for Waters Contaminated by Predominantly Non-Human Fecal Sources (highlighted pdf)
- Fact sheet on Potential for Food-borne Illness Caused by Bird Waste (pdf)
- Birds on Floating Gear Could Present Problems (ECSGA newsletter article pdf)

Also over 120 articles on ecsga.org website



~2006 Floating gear!
Solves some problems
Creates some new ones...



2019 rewrite of the aquaculture chapter of the NSSP

“Each aquaculture site that the Authority determines may attract sufficient birds and/or mammals that their waste presents a human health risk shall have a written operational plan.”



2019 rewrite of the Aquaculture chapter of the NSSP

OP Shall Include:

A description of the mitigation or deterrent measures to minimize the potential pollution impact of birds and/or mammals....



Illness outbreak in RI in 2021

- Growing area was shallow with low tidal amplitude ~1-2'
- Gower sank cages, birds dispersed
- Oysters tested clean after 18 days (probably less)
- Closure for two more weeks following clean tests
- FC levels were non-detect 75' from the farm!



2023 Aquaculture Guidance

- 12 pages of guidance
- Authority required to evaluate risk
- Consider flushing and hydrodynamics
- Consider bird seasonality
- Consider nursery gear
- Consider re-submergence /purging

Guano Can impact Water Quality

Photos courtesy of NYDEC

- WQ status determined by measuring Coliforms
- Indicator bacteria assoc. with warm blooded animals
- 30 samples over 3yrs
- If the arithmetic mean exceeds limits then the harvest area must **close!**



Regulatory Considerations

- Food Code dictates it is illegal to have filth (waste of fecal material) in food.
- **99% of Campy is benign!**
- FDA maintains zero tolerance for Campylobacter or Salmonella
- We lack the tools to properly evaluate risk.

Deterrents can be tricky

- Don't want to harm or disturb protected resources or critical habitat.
- Birds tend to acclimate to certain tactics.
- Probably need multiple approaches
- Many approaches interfere with maintenance or worker safety or create marine debris.

Scare Kites

Expensive

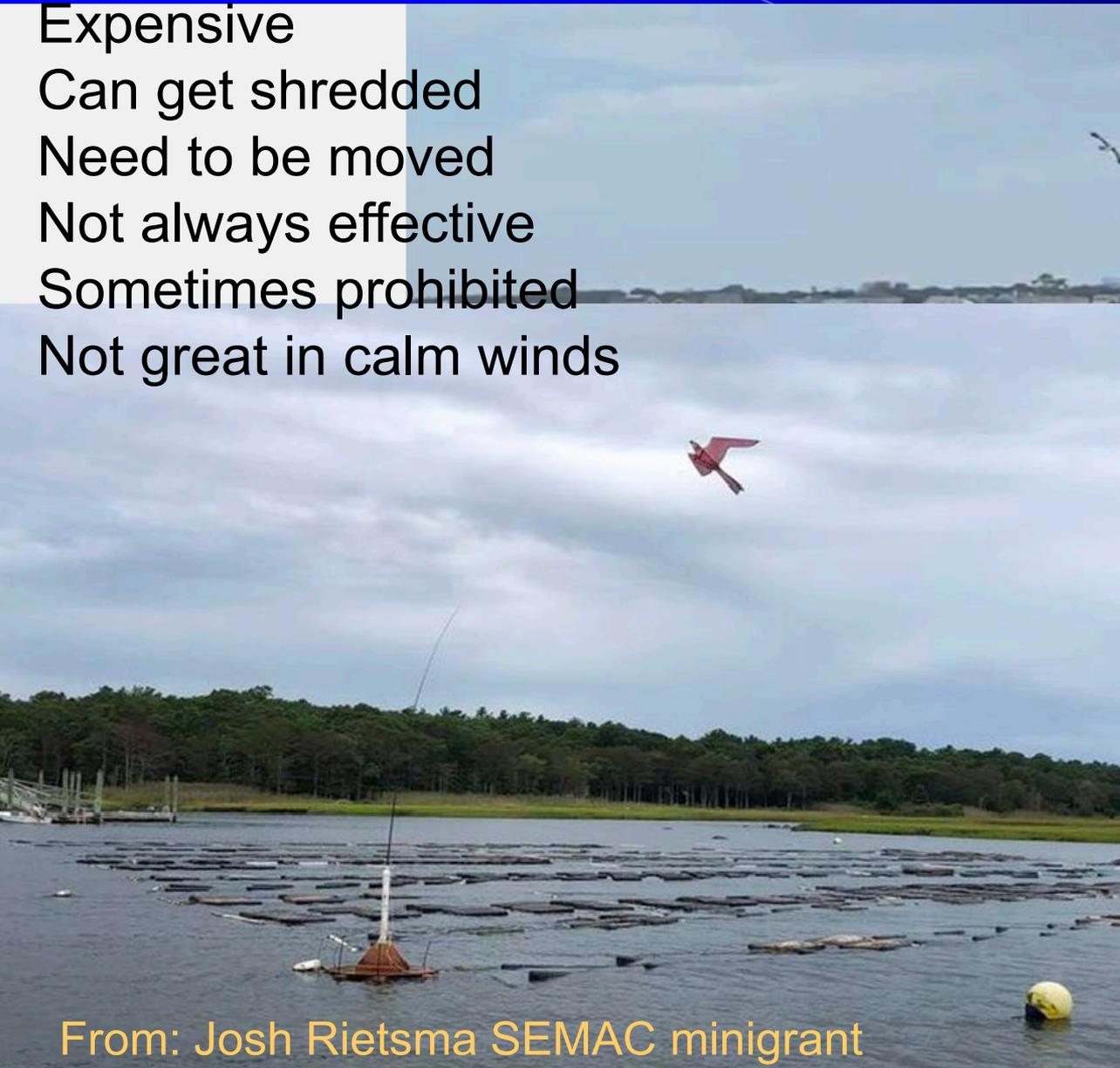
Can get shredded

Need to be moved

Not always effective

Sometimes prohibited

Not great in calm winds



From: Josh Rietsma SEMAC minigrant

Perching deterrents

- Seem to keep birds off to varying degrees but handling gear, longevity, and cost are issues
- Stainless spikes seemed to work well



From Josh Reitsma, SEMAC mini-grant

Zip Tie Ticklers

- Mixed results
- Need lots of them
- Terns sit between
- Some sag
- Collect fouling debris



From: Josh Rietsma SEMAC minigrant

Perching deterrent for floating bags needed!



From: Josh Rietsma SEMAC minigrant

Others in Development

- Green lasers (don't harm the birds! – just startle them)
 - Effective on land – expensive
- Sprinklers
- Drones
- Farm activity
- Animatronic coyote on float
- Distress calls

Everything changed this summer

- State epidemiologists started asking patients if they had consumed oysters.
- 5 *Campylobacter* outbreaks and 19 illnesses.
- MA DMF now requires effective deterrents.

Resubmergence

- Purge studies indicate that pathogenic *Campylobacter* purges in 2 days – maybe longer at lower temps...
- If your product has been exposed to guano it makes sense to hold it away from the source for a few days to a week.



U.S. Oyster Market Outlook: Trends and Opportunities

Bob Rheault
ECSGA

Coauthors:
Bobbi Hudson, Pacific
Shellfish Institute
Matt Parker, UMD
Michael Rubino, NOAA

Outline

- Regional U.S. Oyster Production
- U.S. Oyster Supply Estimate
- Oyster Markets
- Exports and Imports
- Expert Interview Highlights
 - Preferred Size
 - Value Added Products
 - Marketing Research
- Recommendations

U.S. Oyster Aquaculture Market Outlook

U.S. Oyster Industry Insight (continued)

Siting & Regulatory Issues

Inconsistent enforcement for sanitation and harvest closures are challenges. Access to new or expanding leases for oyster farming is a significant challenge.

Food Safety & Press

Bad press related to consumer advisories and illnesses (i.e. "Flesh-eating bacteria," Norovirus) and harmful algal blooms pose significant threats, damaging markets for weeks or longer.

Marketing Needs

There is a widely recognized need for market research, targeting new consumers, sharing the "farm story," and a national marketing effort to promote a consistent message about sustainability, health, and co-benefits of aquatic farming with clean water and as habitat for marine life, including recreational and commercially important fisheries. Public education is needed to dispel myths and provide context for public concerns about oyster safety. Government investment in public education can dispel myths and improve public acceptance (e.g. social license).

Opportunities

Exploring international markets with government assistance. Public education and marketing that emphasizes quality, sustainability, and culinary experiences. Developing value-added products. Wet storage to manage supply and market interruptions. Genetic selection for disease resistance and production traits. Mechanization to cut production costs and labor.

Threats

Increasing temperatures and storm intensity and frequency all pose threats to producers. Changes in the range and severity of harmful algal blooms, predators and parasites, and declines in water quality also threaten oyster production. Pathologists continue to struggle to define the causes of periodic unexplained mortality events that can cause devastating losses.

Negative press linking oysters to illness or contaminants (i.e. microplastics, PFAS) reduce restaurant demand, despite minimal human health risk and limited evidence of risk. Economic downturns and events like the COVID-19 pandemic can decimate restaurant demand.

Declining consumer confidence and economic uncertainty have an oversized impact on demand for half-shell oysters. Increased imports from foreign countries with lower production and labor costs, and massive economies of scale or government subsidies pose a threat by undercutting U.S. prices.

May 2025

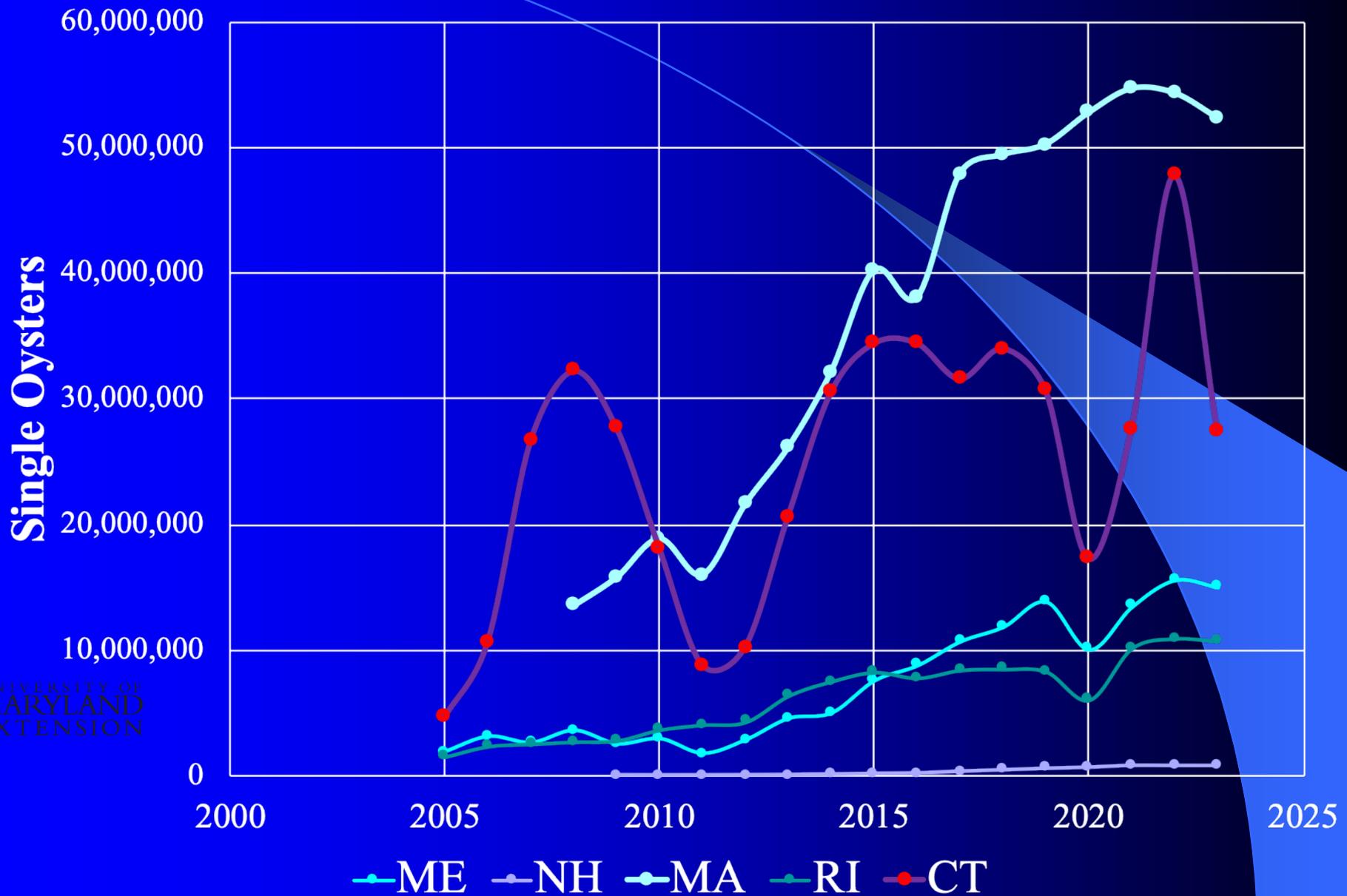


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New England



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Mid-Atlantic

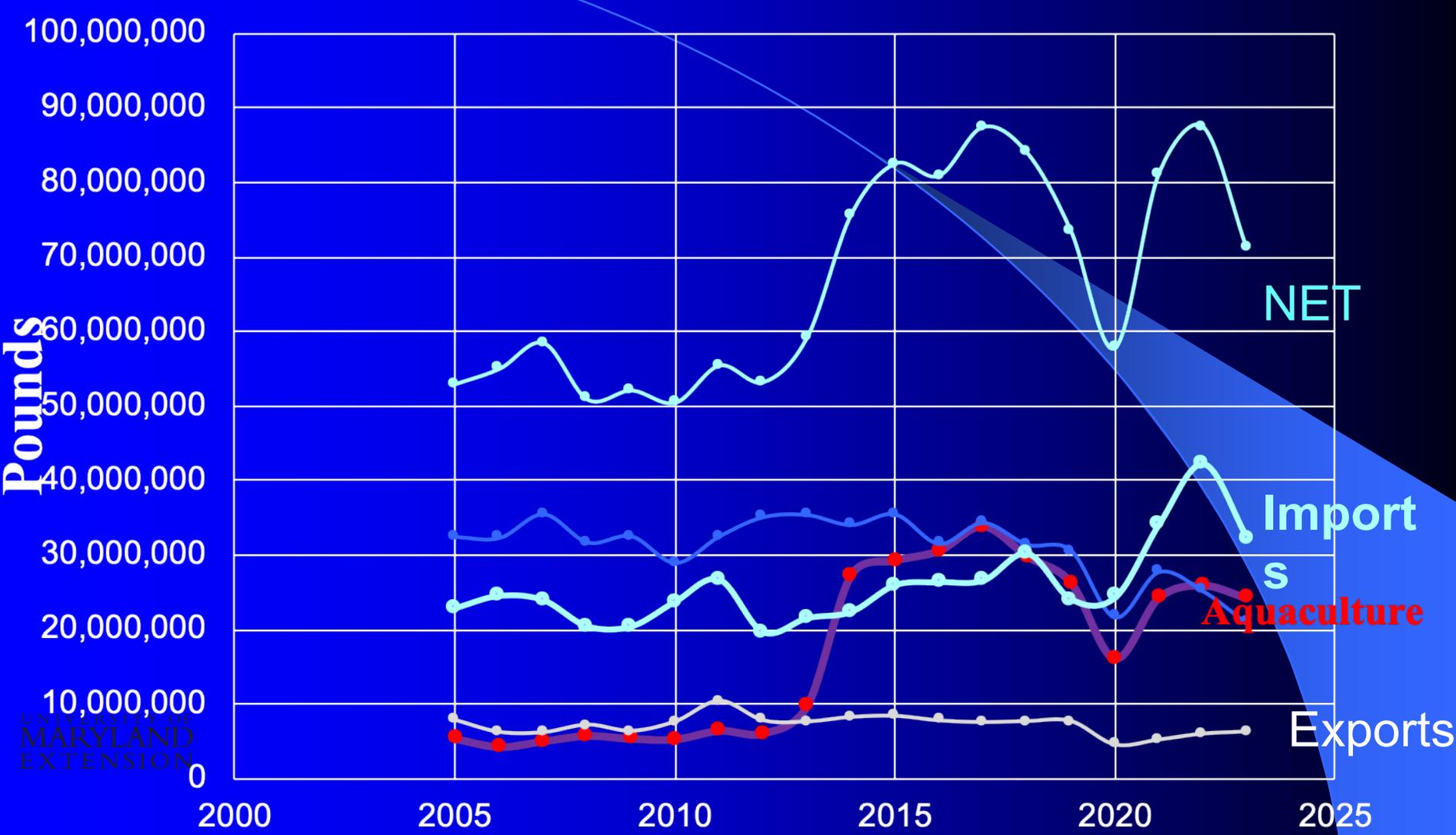


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West Coast



U.S. Oyster Supply Estimate



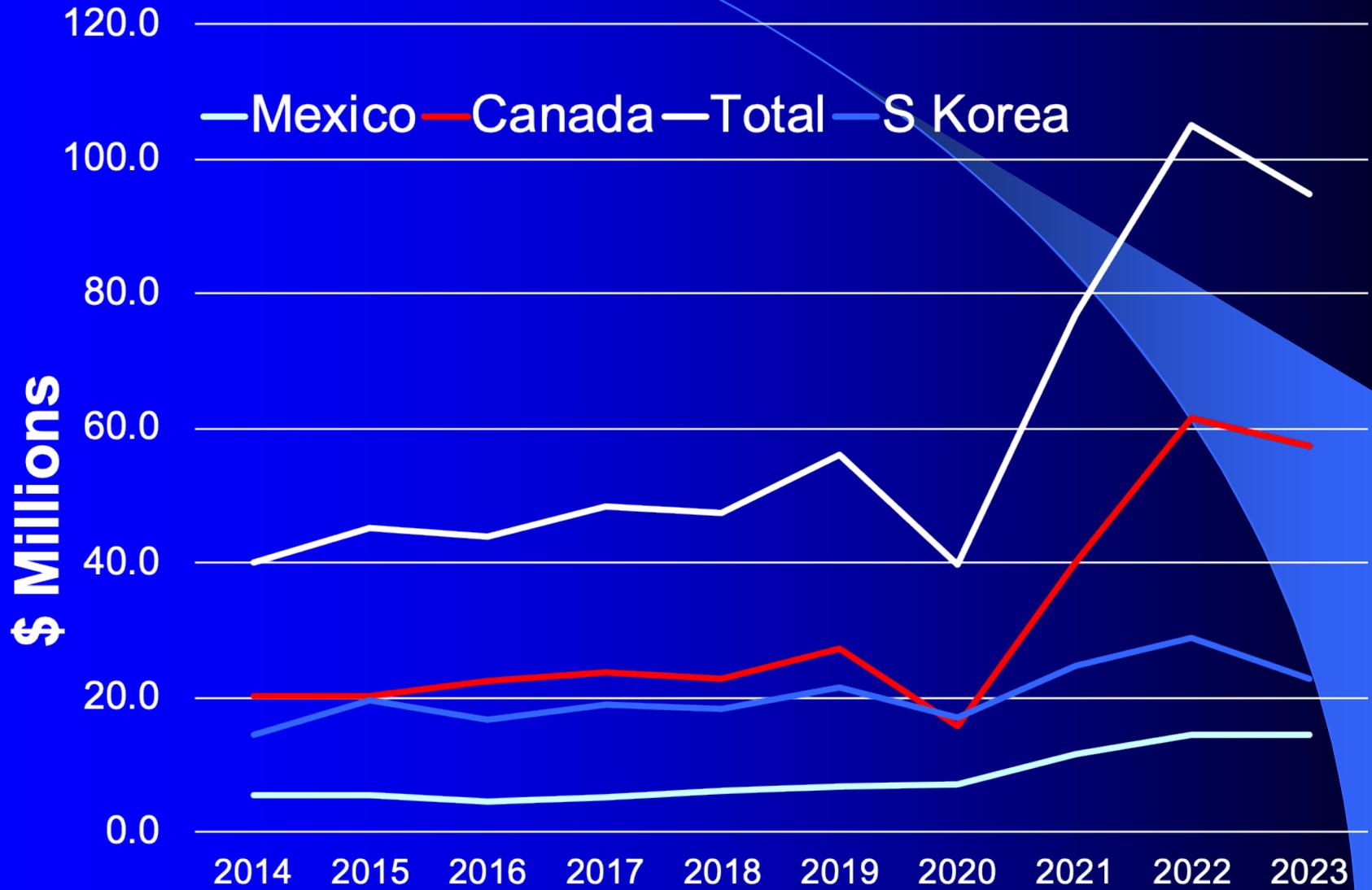
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● Aquaculture
 ● Wild Caught
 ● Imports
 ● Exports
 ● Net



OYSTER MARKETS: RESTAURANTS

Oyster imports from Canada, S. Korea and Mexico



Expert Interview Highlights

- Most consumers prefer a small oyster from 2.5" to 3.5".
- There are also consumers who prefer a larger 4" oyster
- Larger sizes of 4-5" are preferred in Asian markets and for grilling or roasting.
- There is a growing interest in value-added products, such as smoked or tinned oysters, and frozen, topped half-shell oysters.
- Consumers want an oven-ready pre-shucked product.
- Tinned oyster demand is up 50%

Expert Interview Highlights: Marketing

- Targeted marketing to the Midwest.
- Share the "farm story" with consumers to avoid price competition.
- Need to target younger consumers.
- A national marketing effort to develop a consistent message.
- Focus on sustainability, health, and eco-benefits of oysters.
- Need investments in public education to improve social license for aquaculture.
- Educational campaigns to dispel myths surrounding environmental concerns (i.e. contaminants such as PFAS or microplastics.)

Recommendations

- 1) Increase collaboration between growers, marketers, and regulators to address industry challenges and promote sustainable growth.
- 2) Invest in public education campaigns to dispel myths about oyster safety and highlight their environmental benefits.
- 3) Develop marketing strategies that emphasize oyster quality, sustainability, and unique culinary experiences.
- 4) Explore new technologies and automation to improve oyster survival rates and address environmental threats.

U.S. Oyster Aquaculture Market Outlook

NOAA Fisheries Office of Aquaculture commissioned a report examining market potential for oysters produced in the United States. Highlights, as follow, provide insights to guide private businesses and public policy decisions towards supporting a thriving oyster industry.



Current Market Landscape

Current U.S. oyster supply is roughly balanced by weight, consisting of 26% wild harvest, 32% aquaculture, and 41% imports. In 2023, the estimated value was \$327 million for aquacultured oysters, \$240.5 million for wild harvest, and \$199.8 million for imported oysters (USDA Census of Aquaculture, NMFS). NMFS statistics show roughly 10% of U.S. farmed-oyster production is exported. Canada consumes about \$10 million worth of U.S. oysters. Hong Kong's imports have declined by half to about \$3 million since 2019. The rest of Asia imports about \$2.6 million, and Europe and South America report minor imports. Atlantic Canada is

Regional Oyster Production

Oyster aquaculture dominates in the Northeast and West Coast, where wild harvest is minimal. Intensively farmed, hatchery-reared oysters are less common in the Gulf and Southeast.

New England Dominated by small growers often limited by access to large leases, preventing economies of scale enjoyed by larger firms or importing countries.

Mid-Atlantic Historically major producers, production was decimated by diseases, but development of disease-resistant lines allowed a resurgence of farmed oysters. Virginia expanded

pre 2010 and has
Coast producer.
lease laws and

had significant
data suggests its
re East Coast.
rarer compared to

culture is being
introduced in Florida, Alabama, Mississippi and
Texas, allowing production in higher salinity



Recommendations

Value-added products

Wet Storage

Genetics for disease resistance and production traits

Consolidation for economies of scale

Mechanization for cutting production costs and labor

Marketing, esp. emphasize quality and sustainability of farming practices

Economic analyses & improved aquaculture data



Predictions are hard, especially about the future

- MSX is hammering Canadian growers, so there will be a \$60M hole to fill in the U.S. for at least the next 2-3 years. Once they develop lines that are resistant to MSX I expect them to come back strong.
- Once local markets are saturated there will be downward pressure on price. **We need to reach out to young consumers in the heartland and get them to try an oyster!**
- Over 90% of oysters are eaten in restaurants. How do we get people to learn how to shuck?
- You need to get involved in the ISSC and support your grower association.

- Bob Rheault
- Bob@ECSGA.org



U.S. Oyster Aquaculture Market Outlook

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May 2025



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Salmonella telekebir

- December 21 – CDC informs the ISSC that they are going public with a 6-month illness cluster investigation on 12/23.
- Rare strain (bearded dragon lizard and tropical reptiles) 65 illnesses (now 70)
- A high percentage reported oyster consumption.
- CDC says that is “definitive proof” of causation!

900 Articles “don’t eat oysters”

Millions in lost sales, cancelled orders, and reputational damage.

FDA not sharing information among states!

Only 19 tracebacks were successful.

No common source, 3 Canadian provinces, 9 states, and Mexico.

All (but one) multi-source.

Congressional Oversight

- Senate HELP committee, House Committee on Commerce and Energy, RFK Jr's science advisors.
- Multiple meetings with the FDA, CDC, and the ISSC.
- ECSGA Policy statement presented to the ISSC Executive Board

ECSGA Demands Action

- The CDC must adopt the NSSP definition of “outbreak” in matters relating to shellfish. Correlation does not prove causation.
- ISSC will re-evaluate the need for unique lot codes on tags to enhance traceback.
- Restaurants must do a better job of retaining tags.
- FDA must share illness data with the states to allow proper investigations.