

August, 2020

***Groundfishing
in New England***

New Truths.

New Rules.

New Game.

Gloucester has one of the strongest international brand names in fisheries. In 2023, we will be celebrating 400 years as America's oldest fishing port. Its future as a thriving fishing community, however, requires new vision, new behaviors, and new thinking.

As we all rethink risks, vulnerabilities, community, and global interconnectedness in the year 2020, now is an opportune time to take a fresh look at how Gloucester can be a leader in fisheries and a leading port in the sustainable use of the ocean's vast, but limited and ever changing, resources. The pandemic has shined a spotlight on both key vulnerabilities—complex and global supply chains, inadequate demand; and visible opportunities—direct boat to consumer seafood sales and alternative and available protein sources in lieu of meat products requiring significant plant processing.

The insights presented in this document don't come from just one source. They are derived from: observations, conversations, the development of fisheries programs and exhibits from 2012–2017 when I was Executive Director of Maritime Gloucester; and stakeholder discussions with diverse fishing interests, most recently focus group meetings in 2019 sponsored by the Gloucester Fishing Community Preservation Fund and the National Fish and Wildlife Foundation. And data, including fishery landing data, both historical and current, and marketplace trend and seafood consumption information. While many of these observations are relevant broadly to fisheries management everywhere, they are fundamentally focused on groundfishing in the Northeast—the Gulf of Maine and Georges Bank. This document is solely the responsibility of Oceanvest, LLC who welcomes comments, discussion, and leadership. None of this is easy.

Thomas Balf
Oceanvest, LLC
August 2020

■ NEW TRUTHS.

Have you ever presented facts to someone who then doubles down on their beliefs that run counter to the evidence? We all have. This is certainly true when talking about the state of commercial fishing in the northeast. Everyone has an opinion. Everyone has a world view. Here's 8 evidence-based findings about what's going on in one port.

Truth #1 Groundfish are Abundant in the Gulf of Maine and Georges Bank

Groundfish spawning stock biomass in the Gulf of Maine is at its highest in ten years, and has more than doubled since 1985.

Groundfish quota (what a fishermen is allowed to catch based on conservative estimates of fish abundance) for 13 species of groundfish has increased three-fold in the last 7 years.

Truth #2 We Have Both an Aging Fleet and Aging Fishermen

A decade ago, there were 64 vessels in the Gloucester Groundfishing "Sector" and a few others who fished for groundfish on their own. Today, there are less than half of that. The average age of a fishermen (we will call them fishers throughout this document) is approaching 60.

Most current and retired fishers discouraged their children from pursuing a fishing career, so we missed a generation. There are only two active groundfish captains in the port younger than 40, and only a handful of millennials who fish and aspire to be a captain and fishing boat owner.

The average age of a Gloucester groundfish trawler (original construction date) isn't much younger. In the last 30 years, only two brand new fishing vessels have been built and added to the Gloucester fleet. That's typical for most northeast fishing ports.

Truth #3 Getting Started in Fishing is Now an Expensive Venture

Unlike the past, it's not just about hard work, skills, and entrepreneurship to become a fishing boat owner/captain.

Today, one needs a commercial fishing boat, a permit, and the "quota," which is generally specific to a fish species, to land fish. This all takes financial resources in order to gain access to the opportunity. For an older, small vessel, with limited permit/quota, you're probably talking mid-six figures. For a larger vessel, you're talking high six figures. Minimum. Probably seven.

Luckily, Gloucester has access. Present and past Gloucester fishing owners and the Gloucester Fishing Community Preservation Fund still ensure access to the fisheries through the ownership of a significant number of permits collectively holding significant quota for select groundfish in the Gulf of Maine and Georges Bank. Fishers—with a vessel and a permit—can participate in the Gloucester Groundfish Sector and access this quota at subsidized pricing. Permit banks are an essential way to support and sustain community fishing ports.

Truth #4 The Costs of Doing Business Are Changing, but Fish Prices at the Dock are Not

While costs of fuel, materials, bait, supplies, crew, technology, monitoring, and reporting have increased, the average price paid for fish at the dock has barely changed in the last 25 years, when adjusted for inflation.

In 1918, the average price paid for haddock was about five cents. Adjusted for 2020 value, that's 85 cents. According to NOAA landing data, the value of haddock/pound in Massachusetts was 91 cents in 2019. The "average" price paid last year at the dock for haddock, pollock, redfish, cusk, hake, cod ranged from \$.53 cents for redfish to \$2.26 for codfish, with an average price for these groundfish of \$1.05/pound.

Truth #5 Vertically Integrated Seafood Companies are Coming (Back)

The East Coast groundfish fishery—traditionally dominated by small, independently owned and operated fishers, now has its first large, well-financed, vertically integrated company—Blue Harvest Fisheries—in the fin fish business. We have not seen this business model for some time, but Gloucester's own Gorton's and Frank E. Davis companies dominated the fishery at the turn of the 19th and 20th century when they owned their own boats, did their own processing, and marketed their products world wide. Such large vertically integrated companies dominate the U.S. west coast and European fisheries because they control the entire supply chain, from harvest to sales, and have extensive capital to apply to fishing operations, including building markets and meeting large customer demands for volume and quality.

Truth #6 Fisheries Management is Driven by Science

Science has always been critically important in fisheries management, but the advent of the catch share regulatory management approach has placed science front and center. Stock assessments (How many fish are in the ocean?) are the fulcrum which dictates whether stocks, of a particular species, are going up or down on the fishing lever. Other key strategies, according to the New England Mid-Atlantic Geographic Strategic Plan 2020–2023, include the promotion of ecosystem-based fisheries management; the assessment of all prioritized stocks; modernization of the fishery information collection systems; and protection of critical habitats.

Science informing policy is a good thing. Who can dispute that? And the use of the precautionary principal is understandable given the uncertainty of the science. But two things should be recognized: (1) there will be no holy grail—science will never get it exactly right, there are too many complex and changing variables, so relying solely on the science to get it perfectly right is a false hope; and (2) science has a crucial role to play in providing, within its limits, risk assurances that supports private/public sector investment rather than doing what science can also do, which is to answer one question with more questions and sustain uncertainty which will limit institutional and community investment and reduce consumer purchasing confidence.

Truth #7 Domestic Seafood Consumption Continues to be Flat

Americans eat an average of 16 pounds of fish/year and that number has stayed generally flat for a decade. Compare that with 93 pounds of chicken per year.

Most seafood caught in the Northeast—and the United States—is exported, and Boston/Logan Airport is one of our nation's top seafood exporters. A majority of lobsters, fish, and shellfish end up in another country to be processed or eaten. Some is returned, value-added. Export value is roughly $\frac{2}{3}$ that of the value of imported seafood.

And a majority of the seafood eaten in the Northeast—and the United States—is imported (It's not 90% as commonly reported, but it is likely around 60%). For comparison, only $\frac{1}{3}$ of our vegetables and $\frac{1}{2}$ of our fruit are imported.

Truth #8 Covid 19 Has Shown the Vulnerabilities with Complex, Global Supply Chains

The pandemic has exposed the vulnerabilities of our seafood supply system. In addition to logistical and demand challenges with a global supply system, the pandemic has cast a light on the fact that 90% of shellfish and 75% of all seafood in America is consumed in restaurants! The decline in seafood sales has led to dark times for many fishermen and dealers; however, this challenge has also spurred innovative direct-to-consumer sales models in fishing ports and towns across the country. It should also spark a renewed effort to build the U.S. domestic market for home consumption of U.S. seafood.

■ NEW RULES.

Regulations. It's easy to point fingers at federal and state regulations, and there is no doubt that these regulations are burdensome and imperfect, especially on small, independently owned and operated fishers who sought freedom on the water and a self-regulating business lifestyle. But regulations are not the only rules. Understanding relevant standards and principles –as evidenced by consuming habits and preferences–ARE the new rules. And they are every bit as important as the external regulations imposed on fishers.

Rule #1 Embrace Ocean Conservation and Stewardship, and Be Known for It

Sustainable fishing or regenerative fishing. Call it what you want, but fish harvesting and marine protection must go hand in hand in the eye of the consuming and investing public. While the devil is in the details, the fishing community should embrace this ethos and stand on this principle, even when disagreeing vigorously with a particular regulation.

From an economic standpoint, the fishing industry lacks economic clout on the grand scale of things (seafood harvesting is a small fraction of 1% of our nation's GDP), but people—consumers and politicians—want to support fishers and all that they stand for. Give them a value, a principle to support.

Compliance with some of the toughest and most stringent fishery regulations in the world—which is what we have in the northeast—is not leadership. Never will be.

Sustainable standards are here for the long haul. Meeting applicable market- and consumer-driven sustainable standards are now a cost of doing business. For example, Acadian redfish, haddock and pollock caught in the Gulf of Maine and Georges Bank meet Marine Stewardship Council (MSC) Fisheries Standards. With the new MSC certification, both consumers and fishermen can be confident that the catch is sustainable. While MSC is not the holy grail, third-party sustainable fishing standards are here to stay.

Rule #2 **Change the Arc of History: In Cod We Can No Longer Trust**

The science around the abundance and behavior of the iconic cod in the Gulf of Maine is disputable and uncertain. So move away from codfish. Literally.

Fishers must (and they are) avoid harvesting cod using better gear technology, different fishing techniques, and by focusing on harvesting the abundant groundfish. It's called precision fishing—catching the targeted species and avoiding the species or age groups you seek to avoid—and it's the future.

Of course, the challenge with cod is that even if fishermen move away from cod, the government's quota and biomass modeling estimates for cod are so low (and the fishermen say so wrong) that the low quota (only 2% of the total allowable catch for all groundfish) continues to play a critical role in driving the management of the 12 other groundfish species, including potential for across the board additional monitoring requirements.

Recreational fishers, consumers, and tourists must be part of this story. Let's declare that the allure of cod is over. There's plenty of fish in the sea. Eat haddock! In fact, in 2020–2020, including during the pandemic, it is "in haddock we trust" that has maintained strong landings and a solid price.

Rule #3 **Support the Advancement of Fishing Science, Data, and Technology**

Fishermen that understand and invest in technology will be better positioned in this marketplace. This includes precision fishing, "storied" fish, collaboration with researchers, and real time communication with supply chain partners.

Vessels need to be smart—safety, fuel efficiency, fish handling, ergonomics, replaceable gear, monitoring—and they need to be designed into the vessel's core architecture and operating systems.

Stock assessments will likely be imperfect, but science-based fisheries data coupled with adaptive management frameworks has to be the future. With more and better data generated by fishermen (called fishery dependent data), better predictive models of fish populations, biomass, distribution, and migratory behaviors should emerge. This is especially important given that the ocean is changing (temperature, salinity, currents), based on studies of the Gulf of Maine and Georges Bank. Under changing ocean conditions, fisheries data regarding spatial and temporal coverage in the vast areas of the northern Atlantic Ocean is even more important. Government does not have the resources to do it alone, and nor should they rely principally on annual surveys or historical data. The new rules must usher in a new era of data integration to support accountability, stock assessments, precision fishing, and adaptive management.

That said, monitoring is here to stay if you're a fisher. The key question is how can, and will, the data be used.

Rule #4 It's All About the Fish

In a global marketplace, and Logan International Airport 30 miles away, dealers, restaurant chefs, and consumers demand reliable, high quality, and available fish. If not from Gloucester, fresh, quality groundfish comes in daily from Iceland, Norway and other countries.

It's not enough to say locally caught; the fish quality needs to be as good or better than the fish coming in from other fishing communities and nations. So, how the fish is handled by fishermen and at the dock is essential to demonstrating that locally caught fish is the highest quality fish. And new technologies at the market will likely, in the future, confirm freshness and quality with new imaging technologies.

Rule #5 **It's Not All About the Fish: The Story Matters**

Who caught it? Where did they catch it? How did they catch it? When did they catch it? How was it handled? "Storied Fish."

The technology is available to provide this information across the supply chain, although we need to streamline and integrate the many traceability systems that are currently used.

Will a part of the seafood future be laboratory grown fish protein fillets? An "alternative" tuna already exists! What then? Support lab to table? Create a story with a fisher, a boat, captain and crew, a community.

Rule #6 **Larger Boats are the Future**

It's already happening , but only larger boats (>65 feet but don't get hung up on the exact length) can harvest the volume, generate the margins, pay a good salary to crew, and access capital to invest in their business. For example, a new, state-of-the art vessel is likely to cost \$3-5 million.

From Alaska to Britain, and all ports in-between, larger boats harvest 60-80% of the available quota.

The 80/20 rule will apply with 20% of the boats capturing 80% of the fish. It's already true in New England if you look at groundfish landings from the past few years.

Rule #7 Its' Not All About Big Boats— Small Boats Matter

For every larger boat, there can and should be 3–4 small, day boats. They contribute to the 20% not caught by the large boats. Yet, they are more important than the 20% would suggest. First, there's the numbers. If one assumes as much as a \$300 million groundfish fishery out there—\$60 million in landing revenue from small boats? 60+ boats catching groundfish? 180+ jobs? Small boat captains will have to work hard as hell, but a good living can currently be made. Second, it is the smaller boats that build the brand, sustain the heritage, and connect to the community through the independent ownership of many vessels. Without the smaller boats, a fishing port is just another efficiently exploited resource that pursues maximum economic yield. A fishing community should be more than that. Everyone agrees, including large boat owners.

Small boats also meet certain fishing port needs. They can help retain older fishing captains who wish to continue to fish but may no longer wish to go far off-shore. They offer new entrants a cost-effective way to get into the game. Smaller vessels are also in a good position to create “storied fish” and to differentiate themselves, their vessel, and their fishing technique for high quality, fresh fish or new artisanal products. And, finally, the volume of smaller vessels adds significantly to the fishing port economy multiplier effect by supporting enterprises providing boat repair, dockage, marine and fishing equipment, gas, ice, and other supply chain needs.

Smaller vessels will need to collaborate and cooperate with each other and with dealers in new ways, however, to financially survive and access capital to re-invest in their boats and crew. The New Game may require new behaviors and new rules for engagement and collaboration among these small boats.

■ NEW GAME.

The Fishing System—from harvest to consumer's table—is a human-centered ecosystem all its own. Some elements show little change, like the first boat into port sets the price. Other elements—a truly global seafood system—are all 21st century. At the risk of minimizing fisheries' economic, community, or cultural importance by calling this section "New Game," we simply wish to suggest that the sum of the New Truths + New Rules cannot succeed, in the long term, unless there are structural changes and investment in a new system. A new game, with new approaches, new feedback loops, new behaviors, and new goals. Maybe we should call the following suggestions Game Changers.

1. We Need to Focus on the Opportunity

Based on the current groundfish quotas for what's called the Northeast Multispecies Fishery (e.g., groundfish), we are only harvesting 4% of Eastern Georges Bank haddock, 10% of Georges Bank Haddock, 42% of Gulf of Maine Haddock, and 10% of the pollock quota according to 2019 data. The quotas for many fish have increased in 2020, and represent tens of thousands of metric tons of fish.

Experts estimate that more than \$200 million of groundfish is left in the ocean, each year. That's an opportunity.

2. We need to Invest in New Boats

That opportunity cannot be seized, nor can precision or sustainable fishing truly occur, without significant investment in state-of-the-art 21st century fishing boats.

While boats must be built in the United States, in accordance with the Jones Act, we should look to other leading fishing nations for benchmark information and guidance where new boats are being designed and used, and work with lenders and investors so they understand the opportunities and return on investment.

3. We need to Convince a Doubting Public that there is a Future Career for the Next Generation

Young men and women have been told, for at least a generation, to avoid a ground fishing career (Not so true for lobstering or scalloping). Yet, crew aboard the larger trawlers can make a six figure annual income. A captain can make much more.

But the Future of Work must look different. Changes must be made to the act of fishing to attract the next generation. Few—if any—young people are willing to work on a large, multi-day trawler under the current conditions. Issues of ergonomics, safety, fish handling systems, and work culture must be addressed to attract 20 somethings to a punishing, but rewarding on-the-water career.

The cost of entry must be lowered or subsidized to ensure that young people that are ready and able to captain their own boat can successfully acquire a boat, permit and the capital to fish.

We must welcome young, skilled fishermen from other lands—as we did years ago—so that a young man or woman fisher from Iceland, Norway, Canada, Finland, Britain, Ireland, Scotland, or elsewhere—may find their way to our shore and contribute to our sustainable fishery. Their knowledge, skills, experience and work ethic are needed at this juncture of our decline.

And just as Kendall Square in Cambridge Massachusetts is home to a diversity of researchers, computer professionals, technicians, financiers, and construction workers, a thriving fishing port should reflect diverse skills, competencies, and interests of young professionals who are attracted to a “blue economy” career. Imagine a young fishermen, marine biotechnology researcher, fisheries policy analyst, IT expert, diesel mechanic, and educator all contributing equally to a thriving fishing port.

4. Think About The Whole Fish

What comes around, goes around. Literally and figuratively. Back in the early 90s, the concept of “eco-industrial” models was developed and promoted by Massachusetts-based consulting giant Arthur D. Little and a group of Europeans led by Austrian Fritjof Capra. The systems concept was simple. One person’s industrial waste could be another’s raw material. Save money. Make money. Minimize environmental impact. American eco entrepreneur Paul Hawken further promoted it in his transformative 1993 book “The Ecology of Commerce.” Today, the concept has caught hold in the fisheries and seafood industry—in Iceland—which is promoting it and implementing it as the “Ocean Cluster” model. The concept has boots on the ground in Portland, Maine and New Bedford, among other fishing ports.

Waste or byproduct from fishing or seafood processing, which can be 50-70% of the primary product, can be used for—you name it, collagen chitin, enzymes, fish leather, oils, bait, animal feed. And the “value add” thinking has gone from fish gurry slop to utilization of these waste materials based on cellular analysis and understanding. Think vitamins, minerals, nutraceuticals. Assuming the fishery is worth \$300 million and 50% of it is waste and that waste can be refined further for new byproduct materials that generate revenue. . . . The new game is about the whole fish.

5. Fix the Seafood Supply Chain—Pricing System Must Change

The supply chain is broken. Seafood is among the highest priced proteins at the retail level, and yet the landed price has changed little over the last 25 years.

The ex-vessel (landing) pricing system must change to ensure that fishermen—especially the small, day boats that can’t generate the volume—get fair value for their efforts so that they can make a livable wage. The emerging field of behavioral economics may offer some innovative pricing solutions.

There is a need for the buyers to alter their ex-vessel pricing approach and to work with fishers who can provide high quality and reliable volumes of fish to develop forward-facing contracts that ensure a consistent, fair price for high quality, wild caught fish.

A new collaborative “community” seafood supply model will no doubt involve contracts and agreements, accountability measures, and trust that differs from the current system built on competition, mistrust, and daily landing price.

6. Support Derivative Values of Fishing

Fishermen as researchers. Fishermen as conservationists. We should “value” those behaviors and actions.

As we increasingly think about the parallels between locally harvested seafood and the growth of—and support for—locally produced agriculture, we should also think about how we support farmers with financial mechanisms like subsidies, crop insurance, and tax incentives. Similar financial mechanisms should be available to permitted fishers to support cash flow and revenue, and provide certainty to lenders and investors to provide capital to the fishing sectors.

We should also look to the timber industry and the land conservation movement to develop new rules and techniques for finding derivative values from fishing permits and rewarding fishers now for harvesting low carbon impact protein, protecting habitats, or sustaining other ecosystem values that can be supported by varied fishing approaches and techniques. Not only is this a good and appropriate idea, it beats the current model which is all about making your case for mitigation monies when someone proposes an alternative ocean use or hard times arrive. Let’s be innovative and proactive.

7. Domestic Consumers Need to Diversify Their Seafood Tastes and Eat More Seafood

We've already spoken about cod, but we need to diversify our culinary tastes—just as we have for artisanal beer, cheese, and distilled spirits—to purchase and prepare a much wider variety of seafood. The success of our re-emergent oyster industry in New England bodes well. We're not talking only about "underutilized species" like dogfish or redfish. We're talking about pollock or hake or whiting. Delicious white fish that can compete with cod or haddock for flavor and texture.

Along with the types of fish we eat, we also need to create more seafood products that contribute to the diversity of culinary experiences and can add value within the fishing community. Our favorite example is high quality tinned seafood. All the canning operations in New England closed many years ago, and yet tinned seafood is a delicacy in many countries and is experiencing a renaissance in this country. Yet 98% of canned seafood in this country is imported.

8. Finfish Isn't What You Think It Is, and We Need More of It!

The fishing industry needs financing—"finfish." Financing to build new boats. Financing to employ a crew to seize available opportunities. Financing to feed people and meet new market demands. Financing to support new training and apprentice programs. These are big ticket, structural changes that are especially challenging during these difficult economic times created by the Covid 19 pandemic and economic down-turn.

For a fishing cluster or vertically integrated community model (where all the elements of a vertically integrated company are in play, but the system is designed to promote collaboration and stability among small, independent business owners in a port) to work, we must have a supply and demand system with more certainty, and less risk, to meet lending and investment criteria. Otherwise, only large, vertically integrated companies with significant resources will fish.

We need new funds and innovative investment strategies to support this changing game. Investors need to see the opportunity. Fishers need to be willing to act and adapt. Lenders need certainty and risk controls to ensure future revenue. And the regulatory agencies need to recognize that while economic uncertainty is not their purview, their power and role in setting and controlling annual fishing limits must consider business risk and investment. Let's collectively attack this issue and come at developing a sustainable fisheries from a risk management perspective that truly supports the big picture.

Readers are welcome to share this PDF with all interested parties. It should be noted that while few examples were included in this document, there are many individuals, organizations, and enterprises doing great work that could have been used as examples. Perhaps that's the next piece—"stories" from the new rule writers and the new game changers. If you wish to comment on this document or add to the conversation, go to www.linkedin.com/in/oceanvest and share your opinion or contact me directly. We welcome comments that contribute to a rigorous discourse and the charting of new ocean paths.

*Tom Balf
OceanVest, LLC
tbalf@ocean-vest.com
978-204-1475*