



A FISHERY FOR THE FUTURE

How a community of fishermen is collaborating to preserve their heritage and restore the fishery



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Jen Litteral

IN MEMORY OF

Jason Lee Morris

Member of the Midcoast Fishermen's Association and crew on the F/V *Skipper*



INTRODUCTION

If you drive to the very tip of the St. George peninsula in midcoast Maine you will find the small village of Port Clyde.

BEST KNOWN to the outside world for its ferry service to Monhegan Island, and as the setting for many paintings by the Wyeths, Port Clyde is—for those who live there year-round—all about fishing. It sits at the confluence of Muscongus and Penobscot bays, and provides key access to myriad fishing grounds.

The village is steeped in the fishing industry, going back some 200 years, and was originally named Herring Gut after the area's plentiful herring runs. When the fish were running, the church bells would ring, calling all the women in the community to the fish factory where they would clean and package the fresh catch.

On a much smaller scale, this heritage continues today with lobster as well as groundfish such as haddock, flounder, cod, pollock and hake. Port Clyde's small fleet of roughly a dozen groundfishing vessels makes it—next to Portland—the state's second largest groundfishing port, and its fishermen have formed a unique alliance bridging the gap between the lobster and groundfish fisheries. Working together, the fishermen of Port Clyde are determined to preserve their heritage, their community and the resources they depend on.

In 2006, the Port Clyde groundfishing fleet formed the Midcoast Fishermen's Association (MFA) as a nonprofit advocacy group for area fishermen. Their intent was to communicate more effectively with regulatory entities, participate in collaborative research, raise public awareness, convene discussions, create strategic alliances and find positive solutions for the fishery.

A year later, MFA members launched the Midcoast Fishermen's Cooperative to market their catch and to provide a direct link between the fishermen and the consumer. With the help of a Senior Island Fellow on loan from the Island Institute, co-op members developed an innovative way to market their seafood: the state's first Community Supported Fishery, based on the nationally known, highly successful Community Supported Agriculture concept. The cooperative also created a business model that gives the fishermen the most value for their catch while connecting local consumers with fresh, high-quality seafood that is sustainably caught. The result is a win/win: financial stability for the fishermen combined with a meaningful (and delicious) way for people throughout midcoast Maine to help protect the fishery

and sustain the region's traditional fishing communities.

At the core of all these efforts is the fishermen's strong conservation ethic, placing the protection of the ocean's resources at the forefront. And it is this sense of environmental responsibility that brought about the collaboration between the MFA and the Island Institute. This report provides a compilation of the work to date as well as the next steps in advocacy, marketing, research and technology to create positive changes in the fishery.

The Sustainable Fisheries Act of 1996 is a federal mandate that recognizes the importance of fishing communities and the need for their participation in the fisheries-management process. Centered in a tiny fishing village at the end of a remote Maine peninsula, there is already an effective, replicable model of fishermen, researchers, and conservation organizations working together to rebuild a fishery that will last for generations to come.

*Jennifer Litteral
Marine Programs Director
Island Institute*

EXCERPTS

from 2008 and 2009 *Island Journals* on the formation of the Midcoast Fishermen's Association

1 | Glen Libby recalls riding back from Montville with his brother Gary, “we started talking fisheries management,” Glen says. **“I know how we can fix this fishery.** Let’s shut it down for five, six months in the winter and open it up in the summer.” Gary replied, “Wouldn’t that be great if we could get that . . . I think we can do it.” They agreed to start working toward that goal. Their vision, according to Gary, was “to catch fish in a more sustainable manner, create new markets to keep Port Clyde in the fishing business.”

2 | “Gerry Cushman, Gary and I met and decided to get organized,” recalls Glen Libby. “This was all leading up to Amendment 16 when we were having meetings in Augusta with the Department of Marine Resources, so I rallied the troops in Port Clyde and said, ‘Hey, boys, we’re all sick of days-at-sea management [the federal resource allocation scheme restricting a boat’s time fishing], we’re sick of no fish. **We need to sit down and form an organization so that we can have a face politically.**”

3 | “These guys were strong,” says Craig Pendleton, former coordinating director of the Northwest Atlantic Marine Alliance (NAMA). “What was different with the Port Clyde group was that it was still holding out to be an active fishing fleet. **We brought the emphasis on fishermen adopting an environmental ethic** and it became clear to them that the fish needed to come first.”

4 | Glen Libby tells of how the MFA’s name was picked and how its purpose was established. “We picked the name Midcoast Fishermen’s Association because we wanted it to include people from around the area. **By getting more people involved, we started to build a vision for a restored fishery,**” says Libby.

5 | “When you are organized you are more approachable to all the people who share your interests,” observed Jen Levin, of NAMA, anticipating what would come next. Since April 2006, the MFA has inspired a long list of groups interested in partnering with them to turn its vision into action through collaborative research, marketing, business planning and policy.

6 | Two preconditions are generally agreed upon as necessary for people to “self-organize” as the Midcoast Fishermen’s Association (MFA) did: an abundant resource, and a system of governance that provides opportunities for people’s voices to be heard. Makes perfect sense, but many would agree that this couldn’t be further from the reality of the current New England fisheries management paradigm. The Port Clyde fishermen and their families have organized despite evidence that stocks of groundfish remain significantly depleted. **They have organized in the face of a federal fisheries management process that has a history of not responding to their concerns.**

7 | Because there is now a Midcoast Fishermen’s Association, the rest of “the boys” can fish knowing that they have a voice for change representing them when it matters—a voice focused on their vision of a restored, community-based fishery in Port Clyde that will remain vibrant long into the future.

*Rob Snyder
Vice-President of Programs
Island Institute*



Peter Ralston

"The Boys" of Port Clyde , from left: Mathew Thomson, Justin Libby, Roger Libby, Edward Thorbjornsen Sr., Gary Libby, Randy Cushman, Jim Frank, Gerry Cushman, Glen Libby and Glenn Hall.

CHAPTER 1

A legal framework for community-based fisheries

THE MAGNUSON-STEVENS ACT is our nation's federal fisheries law.¹ The Magnuson-Stevens Act (MSA) reflects the tension between conservation and the social and economic benefits that can come from fishing. If skillfully managed, this tension can lead to actions that fulfill the MSA's goals of conserving fish and sustaining fishing communities. The mutual dependence of these two statutory goals is increasingly being recognized as fishermen seek more responsibility for ensuring healthy fish populations, and regulators, scientists, and environmentalists gain a greater understanding of the critical role fishing communities can play in developing innovative solutions to mounting conservation challenges.

When passed in 1976, the Magnuson-Stevens Act ushered in a new era of federal fishery management. Driven in part by alarm over depleted fish stocks from foreign fishing off New England's shores and in part by a desire to capture the economic and social benefits of those fisheries for Americans, the MSA specified seven "national standards" for managing fisheries in the 200-mile offshore "fishery conserva-

tion zone." These standards reflected the multiple, and sometimes competing, interests inherent in the long-term management of this economically valuable public resource.

Federal fishery policy, after the passage of the Magnuson-Stevens Act, struggled to strike the proper balance between conservation and economic development. The act created regional fisheries management councils, composed primarily of state fisheries officials and commercial and recreational fishermen, to develop fishery management plans designed to implement the Magnuson-Stevens Act's provisions. The regional councils and the National Marine Fisheries Service, the federal agency ultimately responsible for implementing and enforcing the requirements of the act, often foundered on the various policy choices identified by U.S. Congress. This resulted in widely different strategies, practices, and consequences for the nation's marine resources and fishing communities.

In response to growing evidence that U.S. fisheries management increasingly failed to achieve the potential national benefits associated with a well-managed resource, Congress made substantial changes to the Mag-

nuson-Stevens Act in the Sustainable Fisheries Act of 1996.² The Sustainable Fisheries Act amendments were designed to cure a number of structural deficiencies and gaps in the original legislation. The new provisions revised the original national standards and other provisions to require the councils and National Marine Fisheries Service to end overfishing, rebuild all overfished populations within a strict timeframe, monitor and minimize the bycatch of non-targeted marine species, and protect essential fish habitat.

Importantly, the Sustainable Fisheries Act also added National Standard 8, which mandates that fishery management plans identify and consider the social and economic consequences of management actions on fishing communities in order to assure their sustained participation in the fishery and to minimize any adverse economic impacts.³

This mandate is based on the recognition that conservation and management efforts can have expansive social and economic impacts in fishing communities, affecting not just the individual harvester or processor, but also

¹ Magnuson Fishery Conservation and Management Act, Pub. L. No. 94-265, 90 Stat. 331 (1976), (codified as amended at 16 U.S.C. §§ 1801-1884 (2007)).

² Sustainable Fisheries Act, Pub. L. No. 104-297, 110 Stat. 3559 (1996).

³ 16 U.S.C. §1851(a)(8).

“If interpreted consistently with the legislative history, regional fishery associations, will allow for voluntary, mutually beneficial relationships between fishermen, processors, or fishing organizations that promote community and resource health as defined by the sustained participation of independent, community-based fishermen in harvesting marine resources. If misinterpreted, regional fishery associations could undermine the goals of the MSA and the communities they serve by allowing absentee ownership, resource control through market manipulation, a sharecropper relationship between fishermen and processors and the bankrupting of coastal economies.”

LINDA BEHNKEN, ALASKA LONGLINE FISHERMEN’S ASSOCIATION

impacting “directly related fisheries-dependent services and industries.”⁴ Councils, when writing fishery management plans must analyze and consider the impact to communities and, where the conservation benefits of alternatives are similar, must choose alternatives that will minimize impacts to communities.⁵

Though the Sustainable Fisheries Act received overwhelming bipartisan Congressional support it still failed to clear up some earlier policy ambiguities and set federal policy firmly on the path to achieving maximum long-term economic benefits for all U.S. fisheries. Thirteen years after the Sustainable Fisheries Act established requirements for 10-year rebuilding plans for most depleted fish populations, roughly one-in-four of those surveyed remain depleted. In New England, the continued depletion of our legendary groundfish has been coupled with re-

sistance by managers to replace the failed approach to management with more innovative approaches, and as a result dozens of fishing communities have been lost or teeter on the brink of extinction.

In 2006 Congress again amended the Magnuson-Stevens Act seeking to fill additional conservation gaps.⁶ It also sought to address the needs of fishing communities for those fisheries electing to transition to quota-based approaches to management. In such fisheries, Congress provided for the participation of fishing communities that develop community sustainability plans and the formation of regional fishery association, which may be composed of harvesters, processors, or other fishery dependent businesses organized for the mutual benefit of their members to meet the social and economic needs in a region or subregion.⁷ Specific regulations interpreting the new fishing community and regional fishery association provi-

sions have not been issued and much hangs in the balance.

National Standard 8 provides a regulatory foothold for fishing communities that, if appropriately implemented in conjunction with the MSA’s conservation mandates, can be a powerful tool to both conserve fish and sustain fishing communities.

NEXT STEPS

IMPORTANT WORK REMAINS to be done, however, in order to ensure that the most recent amendments to the MSA are appropriately interpreted and implemented in order to advance fishing community interests in fisheries that transition to quota-based management approaches. Together, these regulatory tools, if implemented successfully, provide a framework for the MFA to achieve its vision of a restored, community-based fishery that will remain vibrant long into the future.

*Roger Fleming, Esq.
Earthjustice*

⁴ 63 Fed. Reg. 84, 24235 (May 1, 1998).

⁵ 50 C.F.R. § 600.345(b)(1)(2008); *Natural Resources Defense Council v. Daley*, 209 F.3d 747, 753 (D.C. Cir. 2000).

⁶ Magnuson-Stevens Fishery Conservation and Management Reauthorization Act, Pub. L. No. 109-479, 120 Stat. 3575 (2006).

⁷ 16 U.S.C. 1802(14).

CHAPTER 2

Port Clyde fishermen collaborate to develop sustainable fisheries model

NEW ENGLAND'S ECONOMY was built on cod, yet today, marine fisheries in New England are among the most depleted and poorly managed fisheries in the nation. Overfishing continues annually on 13 depleted fish stocks, including signature species such as Atlantic cod and all flounders, a restaurant favorite. For 15 years the National Marine Fisheries Service has tried to manage the groundfish fishery based on how much time the fishermen can spend at sea, called days-at-sea. Unfortunately, this has led to fewer fish, fewer fishermen and less revenue.

There is one boat left that is actively fishing between Port Clyde and the Canadian border, where at one time there were hundreds. According to the Maine Department of Marine Resources, only 70 boats actually landed their catch in Maine in 2007. Maine fishermen cannot continue to lose access to this industry or they may never regain the rights to fish off their own coast. It is essential that we keep this critical food source and industry here now and for future generations.

The groundfish fishermen in Port Clyde were not alone in their view that the days-at-sea management system was broken and has fallen short of its

original intent to meet the requirements of the Magnuson-Stevens Act. Over the past decade, they had seen a steady decline of fish in the near-shore areas along the coast of Maine. This decline has led to a loss of fishing opportunity and continual cuts in days-at-sea that fail to restore the resource.



This landscape, coupled with historically low prices for wholesale fish, and the continued increasing costs of running a business, is a recipe for disaster to an industry that has been integral to this state long before the country was founded. In the face of this adversity the Midcoast Fishermen's Association (MFA) was formed.

Those with a vested interest in healthy stocks and sustainable fishing communities saw an opportunity to attain this vision with new alternatives to New England's fisheries management. An unprecedented event occurred: fishermen, non-governmental organizations, conservation and fishing advocacy groups forged collaborations in support of a new form of fisheries management. Moving to a system based on catch limits set to sustainable levels—that rebuild fish stocks—will ultimately restore profitability to fishermen and maintain our traditional New England fishing communities.

The Midcoast Fishermen's Association is a forward-thinking commercial groundfishing organization made up of active fishermen. The MFA's mission, based on conservation, is to identify and foster ways to restore groundfish stocks and sustain fishing communi-

“Through their vision and message for the future, the Midcoast Fishermen’s Association has found a way to ensure that the time honored traditions of fishing in coastal communities will endure”.

JOHN PAPPALARDO, DIRECTOR OF POLICY
FOR THE CAPE COD COMMERCIAL HOOK FISHERMEN’S ASSOCIATION
AND CURRENTLY SEATED CHAIRMAN FOR THE NEW ENGLAND FISHERY MANAGEMENT COUNCIL

ties. The policy agenda of the Midcoast Fishermen’s Association is based on the following principles:

- **the desire to have this fishery return to a viable state;**
- **the need to sustain fishing communities;**
- **a vision to have access to this fishery for generations;**
- **a commitment to building a coalition of like-minded fishermen;**
- **and, the recognition that a local food supply was a missing link in policy.**

These principles are advanced along a two-pronged track. One track is within the federal process in which the MFA is a collective voice advocating for policies that support conservation of the resource and viability of fishing communities.

The second track created a business-marketing model, through the fishing cooperative, that allows the public to participate in the recovery and sustainability of this fundamental public resource.



Kim Libby

Through the federal track, the MFA supports two alternative management systems, area or community based management and sectors. Area management assigns fishing opportunity to fishermen as well as allocating a portion of fish to a specific area. Each area is recognized as unique and is man-

aged accordingly. This form of management also advocates for changes in fishing technology that reduce bycatch and impact to habitats. This concept is radically different from the way that the groundfish fishery has been managed in the northern Gulf of Maine, but is strikingly similar to how Maine’s lobster fishery is managed.

The second management alternative, called sectors, consists of a self-selecting group of fishermen that form harvesting cooperatives. They are given an allocation of fish, and in exchange for staying within annual catch limits, fishermen are given more flexibility to make their business profitable. Sectors is a management tool with strong accountability measures and holds great promise as a way to get away from of the failing days-at-sea system. Both of these management systems are essential to the health of the stocks and to the viability of the communities that depend on them.

The Midcoast Fishermen’s Cooperative (MFC) was created to address marketing and branding of Port Clyde Fresh Catch™ products. Through the business-marketing track, the MFC

fishermen are changing the current marketing structure. The MFC's goal is to enhance the ecological and financial sustainability of Maine's groundfish fishery and the coastal businesses that support it. They have voluntarily adopted stricter gear restrictions than federally mandated. These changes are backed by scientific research that was found to significantly reduce bycatch of untargeted species. These gear changes were coupled with an innovative marketing structure to move from the antiquated model of catching high volumes of low-quality fish for a low price to their model, in which they catch low volumes of high-quality fish for a price that reflects a more accurate cost of doing business. By increasing profits, this model achieves conservation of the resource by reducing the fishing effort.

Our fishermen have been pioneers by starting the first Community Supported Fishery (CSF) in New England. This was modeled after the highly successful Community Supported Agriculture concept. Using this model, we

have established a way to keep Maine's fishermen fishing as well as creating a connection with our customers. **MFC's customers are helping to preserve one of Maine's last remaining traditional fishing communities while supporting sustainable fishing that will restore the resource and strengthen Maine's local economy.** Putting control back in the hands of the consumer in this participatory manner provides a fundamental base to advocate on behalf of our mutual principles.

MFA fishermen acknowledge that there have been mistakes in managing this fishery in the past and they do not hold themselves blameless. They willingly take responsibly for their mistakes and now consider themselves stewards of the resource. They are emerging as leaders, working in partnership with other fishing and conservation groups that share their vision of a future where there is balance of thriving resources and prosperous fishing communities.

NEXT STEPS

WHILE THE MFA FISHERMEN are trying to be innovative in the face of adversity, they fear that they will not be able to keep this model successful while operating under the days-at-sea system. They continue to work within the federal arena, advocating for policies and management systems that rely on science-based annual catch limits to end overfishing and allow the fishing fleet to remain solvent. Moving to a system that limits catch to sustainable levels and rebuilds fish stocks will ultimately restore profitability to fishermen and maintain the traditional New England fishing communities. The MFA also continues to expand its base of support through the CSF model.

Glen Libby

Chairman

Midcoast Fishermen's Association

President

Midcoast Fishermen's Cooperative

CHAPTER 3

Developing the Port Clyde brand helps fishermen and fishery

ONE YEAR AFTER the Midcoast Fishermen's Association was created, the Midcoast Fishermen's Cooperative (MFC) was started to address marketing and branding of its fish.

Since its conception, the MFC has been leading the way in innovative marketing models. The current marketing structure dominating this fishery is based exclusively on volume. The MFC is moving away from this antiquated model of catching high volumes of low-quality fish for a low price. Instead, its model focuses on catching low volumes of high-quality fish, which is then sold for a premium price directly to local markets.

The MFC has also voluntarily adopted stricter gear restrictions than federally mandated and implemented rigorous quality assurance standards. These factors, along with the distinctiveness of the Port Clyde fishing community, provided the foundation to create the unique brand Port Clyde Fresh Catch™ for the MFC.

Using the Port Clyde Fresh Catch™ name in marketing and branding raises consumer awareness of the Port Clyde fishermen's work and creates a demand for their fresh, wild-caught seafood. As consumers enthusiastically seek out

Port Clyde Fresh Catch™ seafood, the cooperative's fishermen have strong incentives to adhere to the innovative gear changes and the rigorous quality assurance standards as well as stewardship over the resources. Customers then know they are getting a premium-quality product that is harvested in a manner that conserves the fishery.

While the Midcoast Fishermen's Cooperative may harvest fewer fish than other fishermen, they are paid more for their harvest because it is sold as a high-quality, branded product that customers value. This is a cycle in which the customer, the fishermen and the resource benefit. The consumer creates the demand for access to local, fresh, high-quality fish; the fishermen are paid a premium price so they supply only that demand, which achieves conservation of the resource by reducing fishing; this in turn allows the public to participate in the recovery and sustainability of this fundamental resource.

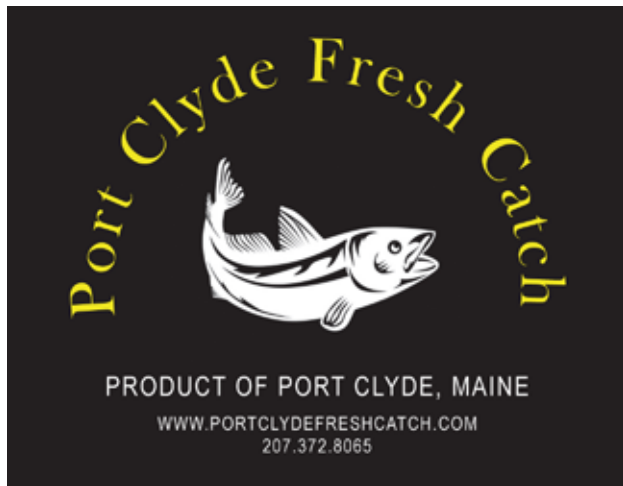
Purchasers of Port Clyde Fresh Catch™ seafood also know that they are helping preserve one of Maine's few remaining traditional fishing communities, supporting environmentally sustainable fishing, and strengthening



Laura Kramer

“Fresh wild-caught fish, harvested in a sustainable manner by local fishermen and sold at a very reasonable price. I’m not sure how it could get any better.”

DAVE SCHMANSKA, CSF CUSTOMER



the local economy.

Research that quantifies the effects of the fishermen's gear modifications is one of the tools that make this cycle successful. It provides clear, scientific evidence as to how these changes reduce impacts. Identifying new markets using the Port Clyde Fresh Catch™ branded name is the other tool that is fundamental to sustaining this cycle. These markets provide fishermen with the economic incentives to leave the archaic, high-volume marketing model behind and will ultimately sustain the traditional fishing community of Port Clyde for future generations.

Most seafood consumed in the United States travels up to 1,800 miles and changes hands several times. Because the Port Clyde Fresh Catch™ brand centers on quality, it raises the value of the product in the eyes of consumers. Customers know exactly where their seafood comes from—

the icy waters off the coast of Maine. The locally harvested, wild-caught fish they purchase has traveled only a few miles before reaching area restaurants and other outlets. It's a fresh, preservative-free product of the highest quality, caught in an environmentally conscious manner and handled with extreme care.

One novel and highly successful market that was created by the MFC was the Community Supported Fishery (CSF). This was the first of its kind in New England and was modeled after the highly successful Community Supported Agriculture (CSA) movement.

In both the CSA and CSF, members pay in advance for shares of produce or fish and then pick them up at a specific time and place each week. Consumer demand for the CSF generated considerable press coverage, which has spurred the creation of a rapidly growing mail-order business through which Port Clyde Fresh Catch™ will be sold through the website and shipped by mail. This program also gives back to the community by donating fish to "Share to Spare," a program through which CSF shares are donated weekly to the local Meals on Wheels and Food Pantry programs.

Consumer demand for fresh, lo-

cal, environmentally harvested fish is strong. Innovative marketing allows the MFC to harness this demand to help sustain the fisheries and fishing communities that depend on this resource.

NEXT STEPS

THE NEXT STEPS are to expand the CSF and restaurant markets. In addition, other alternative marketing channels will be developed with distributors and food retailers, and the volume of seafood will be expanded and sold through these channels. It will be crucial to have a processing facility, as this will allow products to be tailored to the customer's needs. Additional public outreach will be needed using Port Clyde Fresh Catch™ to increase consumer awareness and grow the client base.

*Laura Kramar
Marketing Cooperative Coordinator
Island Institute and Midcoast
Fishermen's Cooperative*

CHAPTER 4

Research supports MFA gear change to reduce bycatch

IN THE SUMMER OF 2008 the Gulf of Maine Research Institute (GMRI), the Island Institute and the Midcoast Fishermen's Association (MFA) set out to verify that gear modifications adopted by the MFA fleet reduces the capture of non-commercial or non-targeted species as well as juvenile commercial species.

The mission of the MFA is one based on conservation. Its members have set out to identify and foster ways to restore groundfish stocks and to sustain their fishing community. Their goal is to enhance the ecological and financial sustainability of Maine's groundfish fishery and the coastal businesses that support it. These fishermen have voluntarily adopted stricter gear restrictions than what is federally mandated. These changes had yet to be scientifically validated and quantified. The parameters tested within this research were the first of their kind to be studied within the New England Groundfish Fishery. These gear changes are coupled with the MFA's innovative marketing structure and business plan to restore groundfish stocks, reduce environmental impact and sell high-quality seafood to local consum-

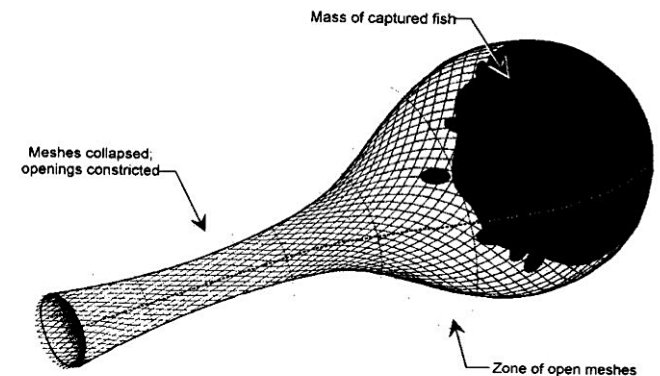
ers and this research was the foundation needed to articulate these goals.

Two weeks of at-sea research was conducted onboard the fishing vessel *Skipper*, owned and operated by Glen Libby, chairman of the MFA. The 54-foot-long *Skipper* is traditionally rigged to trawl for groundfish, such as haddock, flounder, codfish, hake, monkfish, sole, halibut and pollock. The common trawl net used to catch groundfish typically has a codend or netting bag to retain fish that enter the trawl. The codend is usually made with diamond mesh netting with a 6 ½-inch opening, which is a minimum size mandated in the fishery. A problem with these codends is that the meshes collapse at the front and impedes juvenile and non-commercial fish from escaping.

Fig. 4.1. Diamond mesh codend with collapsed meshes due the full weight of the catch. Small, non-targeted species and juvenile fish are unable to escape through the collapsed meshes, and can only escape through a narrow band of meshes immediately ahead of the catch.

(Source: Freeman, 1992)

Square mesh netting, while used in other fisheries around the world, has not been widely tested in New England in the trawl fishery. The conservation effects of square mesh netting dates as far back as the late 1800's. Square mesh netting does not collapse at the front under the full weight of the catch so juvenile and non-commercial fish are able to escape.



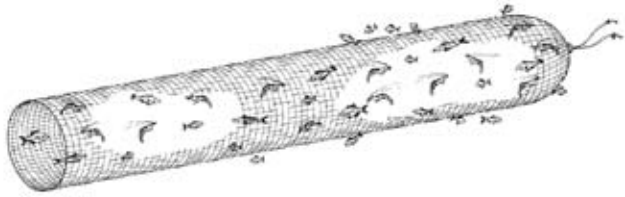


Fig. 4.2. Square mesh codend. The meshes of this codend remain open even under the full weight of the catch, and small, non-targeted species and juvenile fish are able to more easily escape. (Source: Eayrs, 2006)

During the at sea trials both a diamond mesh codend (6 ½-inch) and two square-mesh codends (6 ½-inch and a larger 7-inch) were tested.

SUMMARY

OVERALL, THE STANDARD 6 ½-inch diamond mesh codend allowed the escapement of at least 43 percent of fish and other animals that entered the net. This is an important result given that claims by various interest groups regarding the poor selectivity of this type of commercial fishing gear. However, the square mesh codends not only retained more legal-sized targeted species but they also allowed more non-targeted species and juvenile fish to escape; in fact the 7-inch square mesh codends allowed more than 50 percent of these animals to escape compared to the diamond mesh codend. Many fishermen from Port Clyde are already using square-mesh and the results of this study confirm that it is the right choice.

	Commercially Targeted Species	Non-Targeted Species
Net	Percent Retained	Percent Retained
6 ½" ◇	36 percent	90 percent
6 ½" □	42 percent	59 percent
7" □	34 percent	47 percent

Table. 4.1. Table shows that either the 6 ½-inch or 7-inch square mesh net retains roughly the same amount of commercially targeted species as the 6 ½-inch diamond mesh, however the 6 ½-inch or 7-inch square mesh only retains half the amount of non-targeted species.

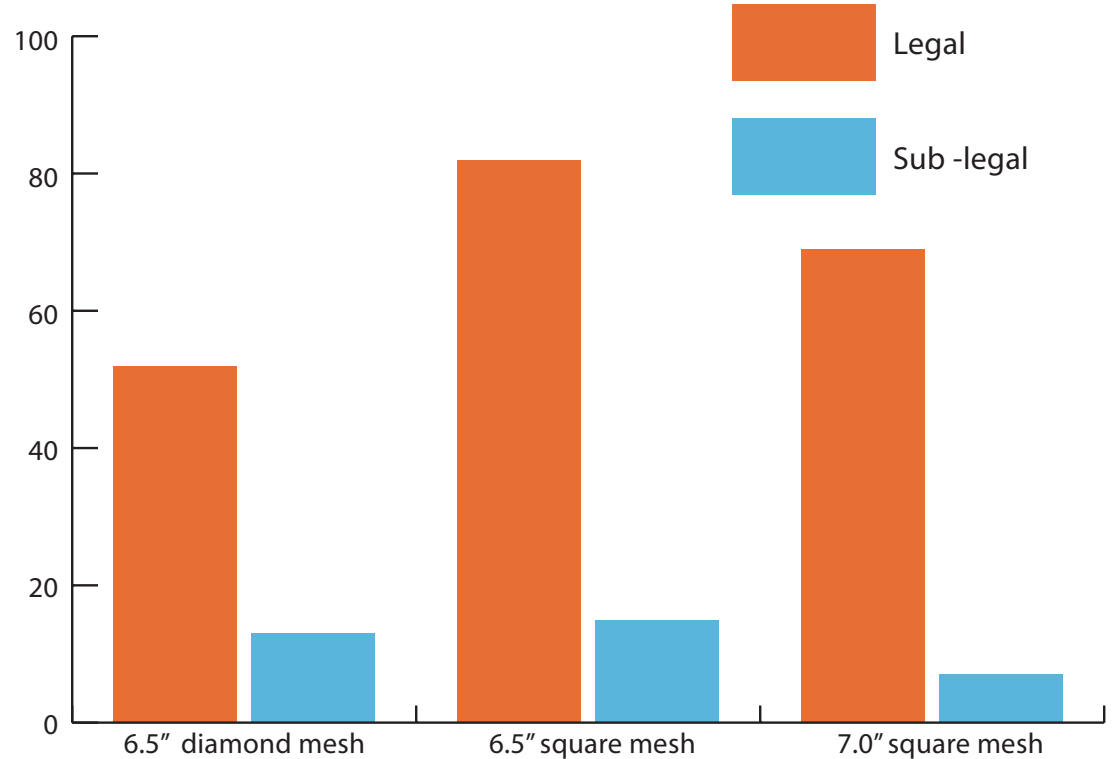


Fig. 4.4. Graph shows the proportion of a targeted flounder species—dabs—that were retained by each codend type. Diamond mesh codends retained no more than 69 percent of legal sized dabs, but also retained up to 18 percent of juvenile dabs. In contrast, square mesh codends retained up to 82 percent of legal sized dabs and 15 percent or less of juvenile dabs.

“Fishing gear research is a premier way to combine fishing industry expertise within a scientific framework, and many advances have been made through such collaborative work. The results have included improvements in selectivity, reduced bycatch mortality, improved product quality, reduced environmental impact, and a revitalized relationship between industry and science. The work at the MFA continues this tradition, and should play its part in the economic survival of the Port Clyde fishing community.”

DANA MORSE, MAINE SEA GRANT

NEXT STEPS

THE MIDCOAST FISHERMEN'S ASSOCIATION is planning further research, where modifications to the front of the trawl net are planned as well as changes to lighter, more modern netting overall, which will further reduce the non-targeted catch but will also reduce the amount of fuel required to tow the trawl which will additionally reduce the impact on habitat. The goal of the MFA is to move to being the greenest and most conservation oriented trawl-fishing group in the region backed by collaborative scientific research.

*Steve Eayrs Research Scientist
Fish Behavior & Gear Technology
The Gulf of Maine Research Institute*

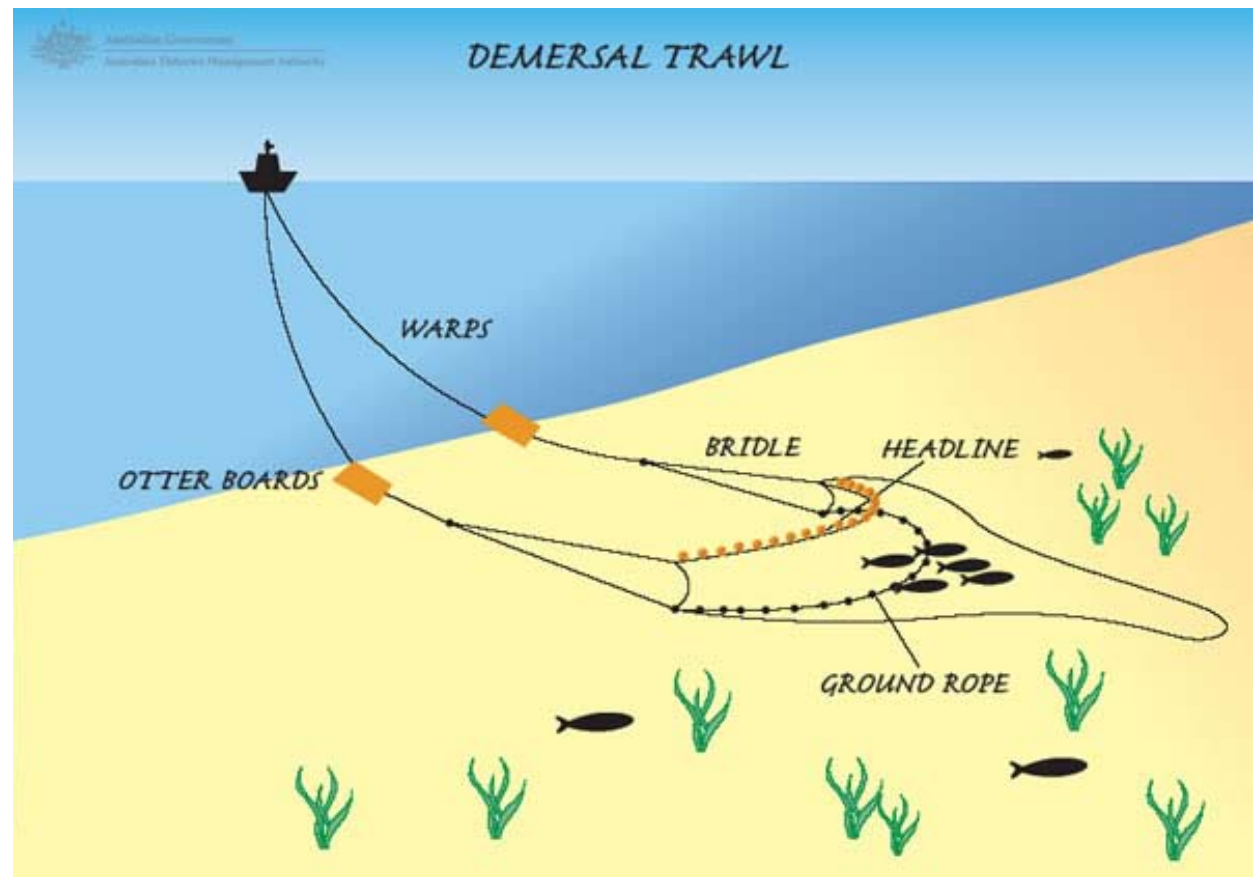


Fig. 4.3. A demersal fish trawl with major components indicated. The codend is the bag-like trailing section of the trawl that retains fish. (Source: AFMA)

CHAPTER 5

Using maps to break down communication barriers

MAPS ARE OFTEN AN EFFECTIVE tool to break down communication barriers between fishermen, scientists and policy makers. Projects such as that of the Midcoast Fishermen's Association (MFA), and of Dr. Kevin St. Martin, a geographer at Rutgers University, use maps to provide a model for incorporating local fishing knowledge as a platform to convey their fishing community.

Today, Port Clyde has the second-highest landings of groundfish in Maine. It is a community fighting to keep its local fishing fleet viable. Talk with members of the MFA and, while they are primarily a community of fishermen based in Port Clyde, they clearly understand the need for communication amongst their neighbors on the water.

As a way to better communicate the dynamics between fisheries on the water, Randy Cushman, groundfisherman and member of the MFA, has drawn detailed maps of MFA fishing territories and how they have changed over time. At least once a year, fishermen from Port Clyde meet at the town office to discuss the upcoming fishing season—and these maps become a point of reference.

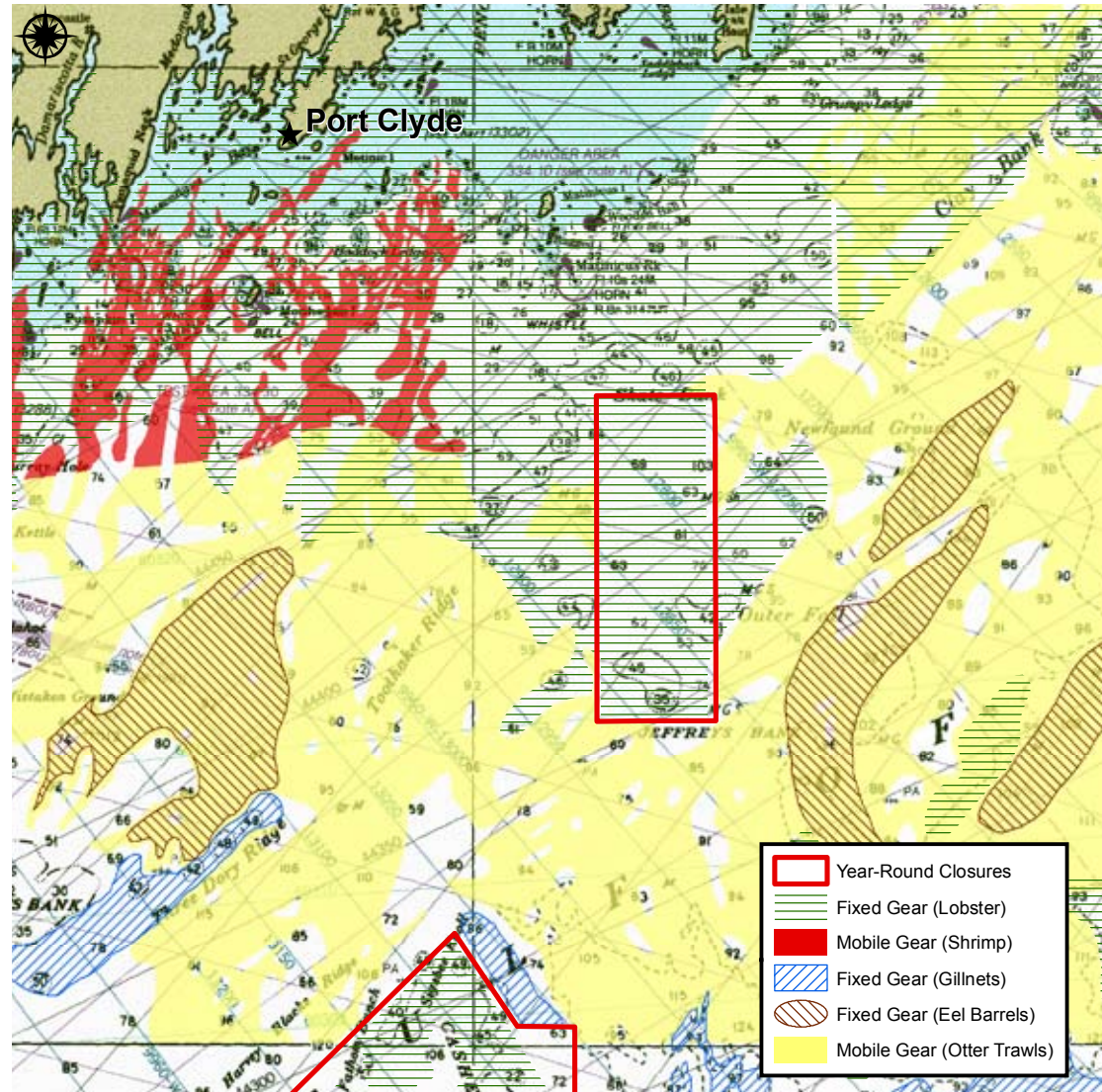


Fig. 5.1. A subset of the 2005 MFA fishing territories map illustrating the gear types and interactions on the water. MFA fishermen (primarily fishing otter trawls), use these maps as communication tools to avoid gear conflicts on the water. Data is based on hand-drawn maps from the MFA identifying local fishing territories.

Drawn on large-mounted nautical charts, the maps depict how and where different gear types are used and include information on gillnet, otter trawl, eel barrel, shrimp and lobster trap fisheries as well as provide a historical perspective with maps from the 1980, 2005 and 2008 seasons.

Recently, the MFA partnered with the Island Institute to digitize this local knowledge using Geographic Information System (GIS) technology to help communicate a broader message about local sustainable fishing practices. Overlaying local fisheries knowledge with Gulf of Maine substrate data, for example, shows very clearly the MFA fishermen fishing soft-bottom areas to minimize negative impacts to the ecosystem and prevent gear damage.

In 2008, MFA maps for otter trawl gear showed their fishing territory covering around 4,200 square miles out of a possible area of over 20,000 square miles within the Gulf of Maine

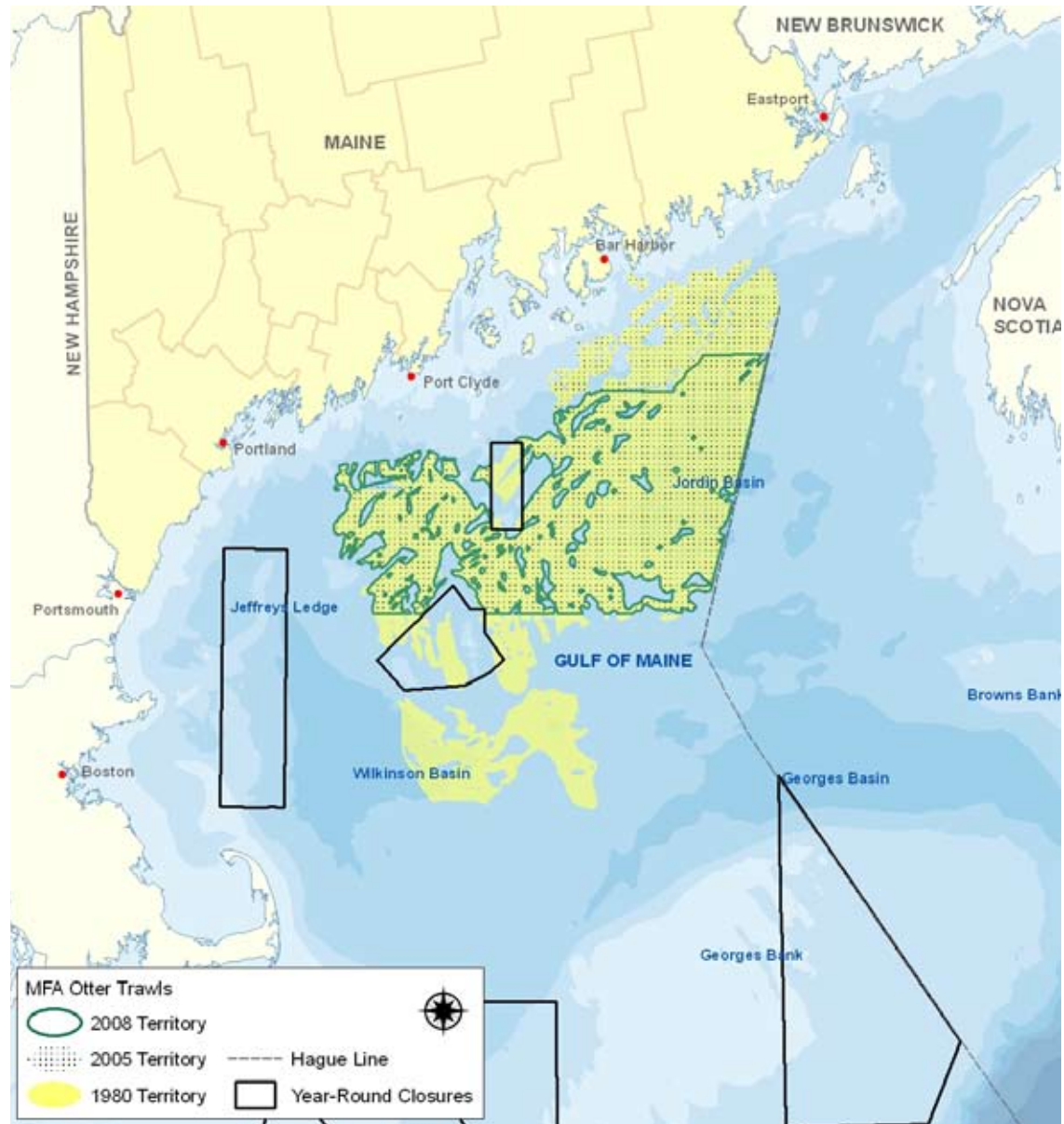


Fig. 5.2. Depicts the change in MFA otter trawl territory from 1980 to 2008—a 36 percent reduction in area over that 18-year period. The reduction has been caused by fisheries management decisions, economic factors, fish stocks, and pressure from competing fisheries. Data is based on hand-drawn maps from the MFA identifying local fishing territories.

“We are all using the same bottom to make a living, but it takes communication. The maps help us communicate, on a broad scale, our individual industry needs to ultimately avoid gear conflicts on the water. There is a lot more detail about the bottom we store in our heads—about local fishing spots, but its important to know the guys you are fishing around.”

RANDY CUSHMAN, FISHERMAN MIDCOAST FISHERMEN’S ASSOCIATION

area from Cape Cod to the Bay of Fundy out to the Hague Line (fishing approximately 20 percent of the Gulf of Maine). Within that territory, 99 percent of the Gulf of Maine substrate is identified as soft bottom, based on available data from the U.S. Fish and Wildlife's Gulf of Maine Program.

The series of maps incorporating local knowledge also plainly show the impact that fisheries management decisions, economics and changing fish stocks have had on the Port Clyde community’s groundfishing fleet and how that has changed their interactions on the water.

While the federal fishing mandates, economic and ecological factors continue to change, it remains important to have effective tools for communication to sustain the communities which rely on this Gulf of Maine resource. With its strong partnerships and effective communication tools, the MFA is a lead organization with a strong vision for a sustainable fishing future.

COMMUNITIES AT SEA

MAINE’S COAST WAS ONCE dotted with active groundfishing fleets but, throughout the past two decades, their boats have slowly disappeared from local harbors, leaving behind many stories of loss. Currently there remains one active groundfisherman between Port Clyde and the Canadian border.

The sadness and regret with which these stories are told all over New England—the loss of community, the lack of control over local economies, the degradation of the environment—pushed Dr. Kevin St. Martin, a geographer at Rutgers University, to think about how to provide fishermen with the opportunity to think about an alternative future and “create a place for community in New England fisheries”¹

In 2001, St. Martin began developing a research project that would allow fishermen to imagine a future filled with possibilities, rather than always longing for a distant and fraught past. He worked with Madeline Hall-Arbor at MIT Sea Grant to, as he said, “de-

velop a set of maps that showed, for the first time, the areas of the sea most important to fishing communities. The maps prompted fishermen to begin asking questions about how they might imagine the ocean as their collective place, an extension of their community rather than a place of individual competition and, increasingly, corporate greed...the mapped community areas suggested a place for community management and a place for hope.”

The research project used an aggregate of vessel trip-report data from the National Marine Fisheries Service (NMFS) to create initial maps identifying, by port, where fishermen fished. St. Martin and Hall-Arbor vetted the data through a participatory process, interviewing fishermen and having them respond to the initial maps to ground-truth areas of special significance to fishermen from different ports. These maps and interviews provided a forum where fishermen could voice a changing consciousness “from hiding where they fished, to claiming the areas where they fish” and linked to ideas of sharing and community that had long been silent along the waterfront.

¹ St. Martin, K. and M. Hall-Arber. 2008. “Creating a Place for ‘Community’ in New England Fisheries” *Human Ecology Review* 15(2): 161-170.

“The portal is a tool to inform projects that seek to solicit community-level participation in science and decision-making and account for community impacts.”

DR. KEVIN ST. MARTIN, A GEOGRAPHER AT RUTGERS UNIVERSITY

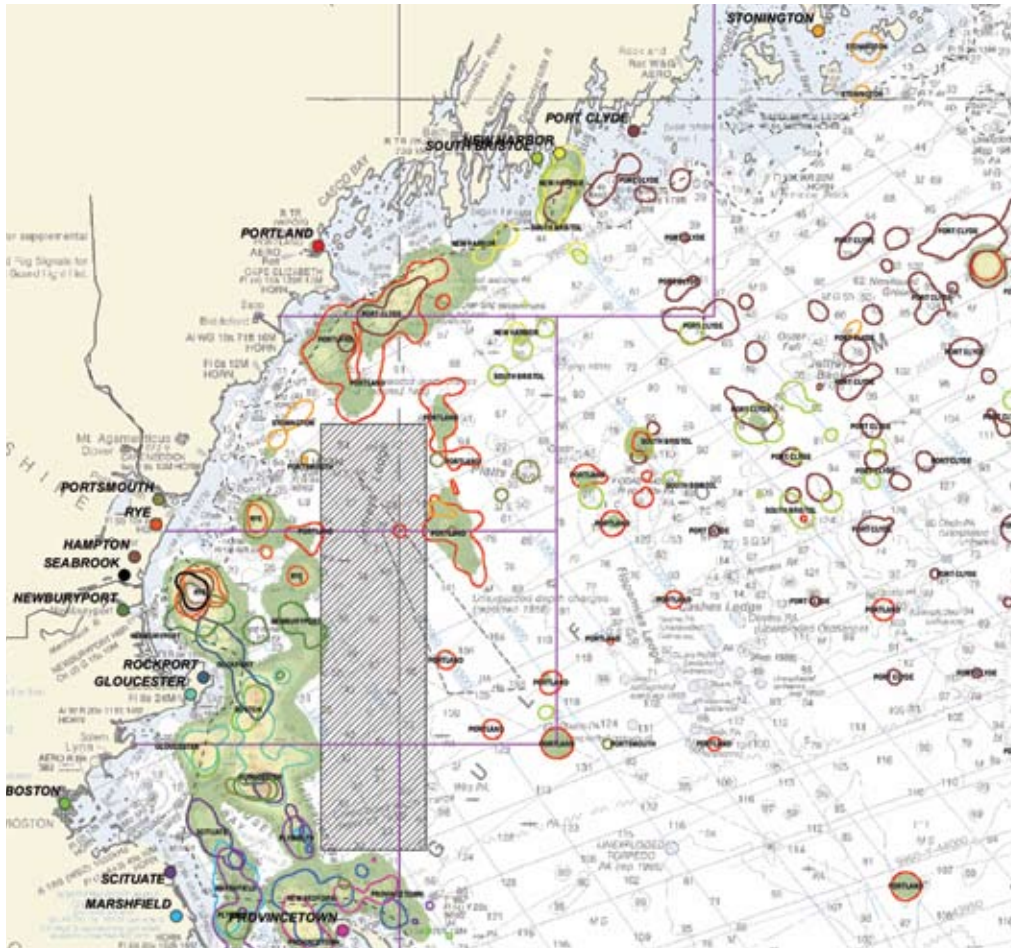


Fig. 5.3. An extract from one of the Gulf of Maine maps showing color-coded outlines superimposed upon a NOAA nautical chart. The outlines correspond to ports from which, in this case, vessels with otter or pair trawl gear originate. Areas outlined represent primary fishing grounds by principal port. The green and tan areas represent the areas important to the aggregate of all vessels across all ports (St. Martin and Hall-Arber 2008).

The project produced a series of maps showing areas within the marine environment frequented by fishermen grouped by gear types and by port within the Northeast. The stories found within these maps help describe community harvesting practices, and provide a new framework for linking fisheries management and community advocacy (St. Martin and Hall-Arber 2008).

NEXT STEPS

ST. MARTIN'S PROJECT is continuing through the development of an on-line site to disseminate the stories and data generated through his research mapping fishing communities at sea. This work is timely and important to help implement the mandates set forth through the Sustainable Fisheries Act to consider the fate of fishing communities in future federal management decisions.

*Shey Conover
GIS Specialist
Island Institute*

CHAPTER 6

Lobstermen partner with several groups to build new wharf, maintaining working waterfront



Jen Litteral

FOR A FISHING VILLAGE like Port Clyde, securing access to the water is as important as preserving access to the fish. At the center of community life is its historic wharf, from which men have set out to sea since the mid-1800s. The wharf originally served as a multi-use facility for both the groundfishing and lobster fleets, with a nearby haul-out railway for the repair of fishing boats

and schooners, then as a seafood-buying station. Purchased 20 years ago by the local lobstermen's cooperative, the wharf's deteriorating condition and limited berthing space restricted its use by the local groundfishing boats in the harbor. This small fleet of roughly a dozen boats makes Port Clyde the second-largest groundfishing port in Maine, and represents the last vestige

of the industry's heyday.

Roughly half of the 400 people who live in Port Clyde depend directly on the fishing industries that the wharf supports; indeed, if fishing is the lifeblood of this community, then the wharf is the backbone that supports its vitality and economic health. Without restoration and expansion, however, the historic Port Clyde wharf—and the

“The State has secured a piece of vital commercial fisheries property in Port Clyde Maine for future generations of fishermen. In addition, these funds made it possible for a local co-op to expand and improve their existing facility and address the access needs of the struggling local ground fishing fleet. This is the only harbor North of Portland with an active dragger fleet, and securing improved access for them as well as other fisheries is a win for the community and for the State as a whole.”

GEORGE LAPOINTE, COMMISSIONER OF THE MAINE DEPARTMENT OF MARINE RESOURCES
AND THE CHAIR OF THE LAND FOR MAINE’S FUTURE BOARD

seafaring heritage it represents—might have become just one more casualty in the development trend that has reduced commercial working-waterfront property along Maine's 5,300-mile coastline to a mere 20 miles. In fact, the property is one of only 81 prime working-waterfront access points identified in the Island Institute's 2007 report, *The Last 20 Miles: Mapping Maine's Working Waterfront*. It consists of a wharf, a wooden building that serves as the co-op office, a cold-storage building, a small building that is rented to a bait supplier, another small shed and seasonal ramps and floats.

In 2007, the Port Clyde lobstermen's co-op applied to Maine's Working Waterfront Access Pilot Program (WWAPP), run by the Maine Department of Marine Resources and the Land for Maine's Future Program. This program provides funding to purchase the development rights—in perpetuity through a working-waterfront covenant—of key properties on the coast that provide access for commercial fishing. The lobstermen's co-op received \$250,000 in WWAPP funds,



and decided to build a new wharf that would also accommodate the local groundfishing boats. Designed as an expansion of the dock built in the 1850s, the new wharf cost just over \$500,000. Coming up with that additional expense required a tremendous, collaborative effort by several organizations. In the end, the Working Waterfront Access Pilot Program, the Island Institute's Affordable Coast Fund, the 1772 Foundation, the Up East Foundation, the fishermen's own investment and an in-kind donation by Prock Marine, the project's contractor, brought the project to a successful completion.

On a sunny Saturday afternoon in September 2008, more than 200 members of the Port Clyde community celebrated the wharf's renewal with music, laughter and, of course, plenty of

lobster stew. Lifelong fisherman and lay minister Doug Anderson offered a prayer of dedication, noting that, just hours earlier, his 12-year-old grandson had been out in the harbor hauling a lobster trap into his 16-foot open-hull boat—a sure sign of yet another generation of lobstermen on the way. **The new combined fishing facility now supports 28 lobster boats that land more than 600,000 pounds of lobster annually with an estimated value of over \$2 million, and about a dozen groundfishing boats that land 1.5 million pounds of shrimp and fish each year.** But the Port Clyde wharf restoration has accomplished far more than providing access to the water for a few small boats in a tiny village at the end of a remote Maine peninsula. It has also helped ensure a sustained future for New England's iconic, centuries-old tradition of working and living by the sea.

Jennifer Litteral
Marine Programs Director
Island Institute

CONCLUSION

FISHERMEN LEADING THE WAY

*Glen Libby
Chairman*

Midcoast Fishermen's Association

President

Midcoast Fishermen's Cooperative

NATIONAL STANDARD 8 was created to protect fishing communities. However, little has been done to stop the loss of fishermen, fishing communities and access to a critical food source right off our shores due to regulation. Our fishermen couldn't sit idly by and wait for government to change this course: that correction and direction had to come from our fishing community. Reflecting the original intent of National Standards 8, we formed the Midcoast Fishermen's Association (MFA) to protect our fishermen and our community by balancing conservation and economic viability. Through the vision of the Midcoast Fishermen's Association and the Midcoast Fishermen's Cooperative (MFC) we are taking the following innovative steps to conserve fish and sustain fishing communities:

- Advocating for fisheries management policies that will move us away from ineffective systems that have further depleted the stocks and consolidated the fishing fleet, and move us toward policies (such as sectors and area management) that limit catch to sustainable levels, consider fishing areas, and rebuild fish stocks. This will ultimately restore profitability to fishermen and maintain our traditional New England fishing communities.
- Implementing a new system of marketing that changes the antiquated model of catching high volumes of fish for a low price, to a model based on catching low volumes of high-quality fish sold directly to local markets such as Community Supported Fisheries. In this model, the price reflects the cost of actually catching the fish and allows our fishermen to prosper in a time of depletion. Our model achieves conservation by reducing fishing effort and allows the public to participate in the recovery and sustainability of this fundamental public resource and aid the economic viability of fishing communities. This is a key piece of fisheries management that has been overlooked.
- Conducting collaborative research with other organizations to identify and quantify fishing-gear improvements that reduce fuel consumption and habitat impact, and improve selectivity to reduce bycatch. These proven changes to our gear will speed in the recovery of this critical resource. Improving fishing technology will allow us to advocate for these changes to be adopted by fisheries managers in future management decisions.

We have found a solution for the short- and long-term sustainability of this fishery and the communities that depend on it. Our model has excited people and groups all over the country as a potential way to avoid consolidation of the fishery, to restore the resource, strengthen local communities and create a local food supply. This was pioneered in Maine and Maine can lead the way.

RECLAIMING OUR OCEANS

*Rob Snyder
Vice-President of Programs
Island Institute*

THE OPTIMISM among groundfish fishermen in Port Clyde inspires confidence. They have a vision and enthusiasm that is palpable, and they have made a shift in consciousness away from a focus on the past to a vision for the future. This is an important cultural shift to understand if we as a society hope to see the oceans rebound, and the communities that depend on the resources sustained. The routes and relationships, the synchronicities along the way, tell much about how people organize when livelihoods are tied to a diminished natural resource; in this case, the fish of the eastern Gulf of Maine.

We must reclaim our oceans by generating opportunities to reconnect: to fresh fish, to fishermen and their communities and to innovators in the marine realm who care. This process of reclaiming will rebuild our oceans with or without the management institutions that have brought us to the brink.

The role of organizations such as

the Island Institute is to coordinate parallel visions of like-minded groups to bridge the gap between fishermen, scientists and conservation organizations to help see these ideals through to fruition.

A NEW SYNERGY

*Peter Baker
New England Fisheries Campaign
Manager, Pew Environment Group*

THE TYPICAL NEW ENGLAND fisherman's problems have been long in developing. Initially, he traveled only a few miles offshore to harvest his catch of plentiful groundfish. As time progressed and the fish became scarce, he and thousands of other fishermen had to voyage further and further out to sea and invest in powerful technologies to find and catch fish. Thus began a downward spiral of overfishing—which occurs when too few fish are left in the water to sustain their populations. When the government stepped in to regulate, it focused on limiting a fisherman's effort, which dictated both the number of days he could fish (days-at-sea) and the quantity of fish that could be carried to port—not what he actually caught. These rules forced fishermen to take unaccept-

able risks and to throw overboard perfectly salable fish—much of it already dead. As it became harder to make a living, many fishermen gave up. Today, groundfish boats number in the hundreds, not thousands, and the remaining fishermen are walking a fine line between solvency and bankruptcy. Many traditional fishing communities have lost their fleet and with it part of the fabric of their community.

National Standard 8 was designed to protect fishing communities from policies that drive them out of the fishery and sever their connection to adjacent marine resources. The Midcoast Fishermen's Association is Maine's voice for stemming the tide, rebuilding fish stocks, and preserving our traditional fishing communities. By fostering approaches that protect our marine resources while allowing fishing businesses to be profitable, MFA has garnered the support of the region's conservation community. This new synergy between conservation groups (such as the Pew Environment Group), community organizations (such as the Island Institute), and fishermen's associations (such as the MFA), offers an opportunity to usher in a new paradigm of resource management that benefits fish, fishermen and coastal communities.



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