

Appendix 3. Comments on Amendment 13 by the Community Panels Project

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October 15, 2003

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I. Introduction

The Panels Project is a cooperative research project funded by the Northeast Consortium and the Saltonstall-Kennedy program. The project is focusing on 6 communities in the region, Beals Island/Jonesport and Portland (Maine), Gloucester, Scituate (actually, South Shore), and New Bedford (Massachusetts) and Pt. Judith (Rhode Island). These six communities are representative of the variety of characteristics of the fishing industry in the region including inshore/offshore, large/small, urban/rural, fish/shellfish, mobile/fixed gear, auction/entrepreneur-dealer, etc.

The primary objective of this project is to develop a community-based process for gathering and assessing social science data relevant to the fishing industry. We believe the information gathered and kept current will help communities protect their needs and interests in the fisheries management, coastal zone management, and economic development arenas.

The methodology being used and information gathered by each panel is slightly different, driven by the interests of the panelists and preferences of the panel coordinators. However, Amendment 13 has been a topic of discussion in both panel meetings and individual interviews. Certain themes relating to the potential impacts of Amendment 13 resonate throughout the region. Comments made at the New Bedford public hearing identified some of these. Additional comments by project participants were offered in Gloucester and in Portland.

The first portion of this written comment will briefly summarize the issues that have been identified throughout the region. Some of these address the likely impacts of Amendment 13, others indicate vulnerabilities, and a few address a vision of the future for which participants hope.

Following this summary is a document from the Gloucester Community Panel that elaborates on fisheries infrastructure. A report from Portland discusses in some detail market, crew and flexibility impacts. New Bedford's report was presented at the Fairhaven hearing, but is included here. Comments on Amendment 13 from Scituate and Point Judith have been incorporated into the theme summary. The Panels Project's comments on the economic analysis of Amendment 13 was presented at the Fairhaven public hearing, but will also be appended here to keep the Panels Project's documents together. Finally, a section on methodology is included for purposes of considering the project's data quality.

II. Themes

Cumulative regulatory impacts

It is difficult to separate the likely impacts of Amendment 13 from the effects of the series of management measures that have been implemented since 1994 commencing with Amendment 5 to the Multispecies Fishery Management Plan.

Some fear that Amendment 13 will be the proverbial straw that broke the fishing industry's back. Some of the impacts noted below began with Amendment 5, but are likely to be more severe under Amendment 13, possibly pushing the vulnerable over the tipping point.

Whereas some have been able to stay in the business by shifting target species, taking on more personal debt, finding niche markets with higher prices, etc., the added constraints of the new regulations are likely to push businesses on the edge over the line of sustainability. "We lost 75 percent of our time since 1994." This same concern was voiced by shoreside businesses, with parallel estimates of the extent of cuts. One small but essential support service business owner noted that he has had to fire 6 employees in the last 3 years.

On families

Anxiety about the reliability of income from fishing has become more acute as regulations have increasingly limited fishermen's options.

Spouses commonly began working soon after Amendment 5. Some chose to work because of a change in expectations regarding women's work, but others felt compelled to work because of the uncertainty regarding family income from fishing. Many admit that they started working in order to obtain health care for their families.

Health care tends to be the first expense eliminated when fishing income goes down.

Anxiety about the regulations has taken a toll on social networks and social capital. Some families have reconsidered their children's choices of college.

On crew

Quality of the crew: Vessel owners and captains complain that it is more difficult to find hard-working, skilled and motivated crew members because of the DAS limitations and other regulations that limit fishing options, making provision of a regular income uncertain.

Size of the crew: In order to assure their crew a reasonable income, many are fishing short-handed, or sharing one crew with two vessels.

Crewmembers shoulder a large portion of the burden of new regulations, but rarely benefit from government assistance. Vessel buybacks, for example, did not provide any compensation to crewmembers. Maintenance costs of the VTR systems are taken out of the crew share. Some crew have noted income reductions of 30 to 35 percent.

On the fleet

Both crew members and vessels are getting older. The average age of fishermen in the six ports is estimated as 40 years old. Due to the uncertainty associated with the frequently changing regulations, young people are being steered away from fishing as a career. Panelists note the importance of the passing of traditional knowledge from generation to generation. “We teach each other on deck of the boat, you can’t teach them that in the schoolroom...that’s a hands-on industry...You’re going to lose this industry.”

Furthermore, the start-up costs for entry into fishing (for both fishing vessels and permits) has sky-rocketed. Also because of the uncertainty, old vessels are being repaired rather than replaced.

Shore business owners also noted the difficulty of attracting and keeping employees. “We have to compete [like] everyone else. We have to go out and find people to come into this industry and we have to be able to keep them...we just don’t have anything left to cut.”

On planning

The frequent changes in regulations limits the ability of vessel owners and shoreside companies to establish a multi-year business plan. This, in turn, limits their ability to leverage funds by obtaining business loans or lines of credit.

Fishermen generally seek a balance of quantity, quality and price, however, with the frequent changes in the regulations, some are afraid to experiment, search for new grounds or try different species, or even change the timing of their fishing for fear that they will lose the DAS available. The

businesses dependent on the harvesters also suffer from the inability to plan ahead or change due to the threat of new regulations instantly applied. “Every two minutes there’s a change.”

On other species

The restrictions on groundfish have caused some fishermen to shift to other species, driving up effort on those. Lobster fishing has grown exponentially since the implementation of Amendment 5.

Lack of flexibility

Availability of a diversity of species and a willingness to switch to whatever species is most plentiful has traditionally worked to the advantage of inshore fishermen. Now, panelists complain that every fisherman is “being put in a box.”

Single species management has negative economic and ecological consequences since fishermen, who in the past diverted to more plentiful species if their target species was unavailable, now continue fishing for whatever species for which they have permits. The lack of flexibility also keeps fishermen from being able to recuperate from trips with poor catches, poor prices, or equipment failures.

The allocation of days-at-sea (DAS) relies on “history,” that is, a record of the days associated with fishing for and landing managed species. Those who traditionally fished a variety of species sometimes have not garnered sufficient history during the qualifying period to retain a sufficient number of DAS for each of the species to be able to continue fishing flexibly.

The limitations on entry into each of the managed species have resulted in a developing market for permits. The increasing costs of the permits noted above are constraining the entry of young people into the industry.

Impacts on vessel condition/safety

Costs of vessel maintenance and repair have gone up due to the decrease in the numbers of active fishing vessels, increase in technology, and competition with leisure vessels. As one panelist noted, the high cost of repairs cuts into profitability, but it also has serious safety implications, “[we’re] playing musical chairs with Davy Jones locker.”

Closed areas force the fleet to fish farther out. This is particularly problematic given the numbers of older boats in the fleet.

Fishing with smaller crews results in fatigue and an over-reliance on the autopilot.

Impacts on shoreside businesses (Infrastructure)

A report on infrastructure in Gloucester is included in these comments. Many of the issues thoroughly explored in Gloucester have been raised in the other six communities of this project. Portland, New Bedford and, to a lesser extent, Point Judith, all provide essential services to surrounding fishing communities. Each community, however, feels that their role as a fishing industry hub is threatened by the likely impacts of Amendment 13. All of these communities have lost a plethora of businesses, leaving only a minimum number.

Threats to the remaining businesses include the increasing level of debt. Long established businesses have extended credit to loyal customers for as long as six months, but question the feasibility of continuing to do so.

Gentrification, particularly in the form of tourism interests, creates a high demand for waterfront property. For example, Pt. Judith now serves as a staging area for the ferry to Block Island. The areas where fishermen used to park or work on gear, are “filled with tar and [ice cream] cones.” The demand has led to increases in property taxes (or the costs of leases) in some communities, further eroding the viability of fishing dependent businesses.

As the Gloucester report points out and other panels noted, the high costs of waterfront property and its transformation to residential structures or other gentrified businesses will also limit the ability of fishing businesses to regain access after stocks rebuild.

Impacts on supply and prices

The regulations may cut supply, but it is unlikely that the prices for fish will rise sufficiently to compensate. Processors are forced to import fish to maintain a steady supply of raw material for their product. Much of the imported fish, however, is caught by fishermen unconstrained by the strict regulations that New England’s fishermen face.

Prices also falter when processors go out of business, so there are not sufficient numbers of processors to create demand. Furthermore, as the New Bedford report points out, the large size of the fish being landed defeats the ability of the automatic cutting machines to function properly and there are insufficient numbers of skilled (human) cutters in many of the communities.

Once product has been replaced, it is much harder to regain market position, particularly if the supply is inconsistent due to closures and other regulations.

Economic costs

Landing of fish is said by some to “create new money for the state,” so to the extent that the regulations decrease landings in any state, there will be economic losses.

Insurance costs have increased, despite the cuts in DAS per vessel. *Variable costs are significant though they differ according to age and condition of vessel; crew size; etc.

See below for a critique of the economic analysis in the DSEIS for Amendment 13.

Concerns and vision for the future

Anticipated problems with hard TACs

Hard TACs tend to lead to “fishing derbies” or the “race to fish” because everyone wants to be certain that they are able to catch a portion of the managed species before the TAC is reached. In consequence, the landings tend to be too high for processors to handle immediately and the prices diminish. If the catch is frozen by dealers or processors to avoid overloading the market, the frozen inventory ties up cash that might otherwise have been used for new product lines or additional workers. The “only ones who benefit are the cold storage companies and the bank,” noted a Pt. Judith business owner.

Other panelists have pointed out that managing through hard TACs could lead to transferable quotas, a management method that most of our panelists oppose.

Fleet structure

With only one or two exceptions, participants in all six panels would like to see the New England fleet retain its diversity of vessel size, gear, and fishing strategies.

Environment

No one argues against the need for regulations to rebuild stocks. According to one panelist, it is the “knee jerk fisheries management” in reaction to lawsuits to which the industry objects. Equity is a major concern, but in general sustainability of both fish stocks and fishing communities is desired.

Economic analysis of the DSEIS

By David Terkla, Economist, UMASS Boston

Presented at the Fairhaven Public Hearing by David Martins

While the DSEIS for Amendment 13 is a long complicated document, this memo highlights some key points that emerge from the economic analysis of the alternatives as presented in the 8/21/03 draft of the DSEIS. The analysis is conducted based on the rebuilding time frames and strategies, as opposed to particular alternatives. However, each alternative falls under one of these strategies and/or time frames.

The major point that arises from these analyses is that retaining the 2001 rules (labeled No Action) is almost as beneficial in terms of net economic benefits over the study period (2003-2026) as any of the proposed rebuilding plans. In fact, it is not until the year 2014 that one of the rebuilding plans would result in higher landings than No Action and 2015 that the other rebuilding plans would achieve higher landings.

Thus it takes almost to the end of the period (2021-2023) for the discounted net benefits of any of the rebuilding plans to exceed the discounted net benefits associated with the No Action plan. By the year 2026, the rebuilding plans are generating net benefits [value of projected landings minus assumed fixed costs and some operating costs (labor costs are not included due to the complications of the share payment system)] of \$310 - \$327 million per year as opposed to the No Action alternative, which is estimated to be generating \$280 million per year.

Given the considerable uncertainty associated with forecasting trends in technology, biological stocks, and changes in fishing behavior in response to regulatory changes, it is hard to conclude that being able to produce added net benefits of \$30-\$47 million per year over twenty years from now is a sufficient basis to justify adoption of any of the rebuilding strategies over the No Action alternative if net economic benefits were to be the sole criteria used. The DSEIS does test some of these benefit streams with a sensitivity analysis that concludes that there is only a 17% chance that one of the rebuilding alternatives will result in greater than \$100 million in additional discounted net benefits over the No Action plan and only a 50-55% chance that the other rebuilding alternatives will achieve this result.

Moreover, it appears that while this sensitivity analysis takes account of possible uncertainty in projecting landings, it does not account for behavioral or technological changes.

Consequently, it is important to examine the level of disruptions to the communities and industries involved in the alternative plans quite closely since dramatic distributional changes or infrastructure costs are not included in the figures for calculating net benefits. This is particularly the case in choosing among rebuilding strategies (assuming the legal

requirements for biomass goals cannot be met with the No Action plan), since the differences among them are even smaller than the differences cited above. Thus, equity considerations may dominate any efficiency (net benefit) savings.

Portland's Comments on Amendment 13

By the Portland Community Panel
Massachusetts Fishermen's Partnership Community Panel Project

Jennifer F. Brewer, Maine Panels Coordinator

Introduction: Complexity and Mixed Methods

A Portland panel was convened in October 2002 with funding from Saltonstall-Kennedy. A separate panel was convened in Jonesport in January of 2002 with funding from Northeast Consortium. Partly because of project staffing changes, and partly because of diverse priorities among project participants in different communities, the present document primarily reflects findings from the Portland portion of the Community Panels project.

Datasets

The analysis below relies primarily on the following sources:

- 1) One focus group in Portland including 7 individuals. Their range of experience included: four fishing boat owners, two shoreside business owners or managers, four members of fishing industry organizations, and two staff or advisory committee members of fisheries related agencies or public projects.
- 2) 20 standardized survey interviews in and around Portland, conducted with boat owners, boat captains, crewmembers, and owners and managers of shoreside businesses.
- 3) Eleven key informant interviews in and around Portland, conducted with boat owners, fishing family members, and owners and managers of shoreside businesses.
- 4) Four key informant interviews elsewhere in the state, conducted with boat owners, crew, and an economist.
- 5) A statewide mail survey to commercial marine harvest license holders.
- 6) Participant observation at one Council meeting, two Maine DMR A13 informational meetings, three buyback informational meetings, and three industry organization meetings.
- 7) Six meetings with Community Panels project Principal Investigators and Field Coordinators.
- 8) Review of published materials, including regulatory, academic, and gray literatures. These include the “Draft Amendment 13 to the Northeast Multispecies Fishery Management Plan” prepared by Council and NEFSC staff, the “Social Impacts Assessment for Framework 36 to the Northeast Multispecies Fisheries Management Plan” prepared by Council staff, a report on "The Effects of Reduced Groundfish Landings on New England Fresh Fish Processors" prepared by Dr. Daniel Georgianna et al. for NMFS, the “DMR Ground Fish Regulation Impact Survey” published by Market Decisions for Maine DMR, “Economic Impacts of Maine's Fisheries” prepared by Dr. Jim Wilson for Maine DMR, and "Preserving Commercial Fishing Access: A Study of Working Waterfronts in 25 Maine Communities" prepared by Coastal Enterprises staff.

9) Data collected in downeast Maine is used as background information to the present document. This included four focus groups in Jonesport. These involved nine individuals in total. Their range of relevant experience included: two fishing boat owners, one part time crew member, a fisherman's wife, two shoreside business owners, one school administrator, one natural scientist and community development worker, one minister, four current or previous town officers, five members of fishing industry organizations, and four prior fisheries management staff and/or advisory committee members. Downeast sources also included eight key informant interviews in Jonesport and Stonington, conducted with boat owners, shoreside business owners, fishing family members, town officers, and former fisheries management agency staff.

10) Additional data collection external to the primary goals of the current project but providing essential background information. This includes over 70 interviews, 37 survey responses, and attendance at over two dozen public meetings concerning the management of New England fisheries. These data collection efforts were originally directed toward completion of the Maine Panel Coordinator's doctoral dissertation and other contract work, initiated prior to her involvement in the Panels project.

Caveats

Despite reliance on careful data collection and analysis, we concede that it can be difficult to distinguish between impacts of a particular regulatory change, impacts of previous regulatory changes, and impacts induced by other factors. Most real world events, unlike the theoretical models of those events, are embedded in causal chains that are multiple and interlinked. As in any field science (as distinguished from laboratory sciences), it is virtually impossible to isolate a single phenomenon and its driving causes. For that reason, the present document can merely hope to suggest ongoing directions of socioeconomic change, and their likely relationship to the regulatory alternatives under consideration.¹⁴⁶

Further, our study was driven by collaboratively identified research priorities, as per the parameters of our funding sources. This document integrates standards of proof identified by social scientists and standards of policy relevance identified by members of fishing communities.¹⁴⁷ Admittedly, we were able to contact only a limited number of people in a limited number of Maine's fishing communities. We cannot claim that the topics outlined here are necessarily the most urgent or pressing for every harvester or community in the

¹⁴⁶ The most honest of economists and natural scientists make similar caveats about their more quantitative, purportedly predictive and causally specific models. They concede that the clearest models are the most abstracted from reality, incorporating the greatest number of assumptions (substantiated or not) about factors external to available datasets. Although such models offer convenient quantitative thresholds for decision-makers, they may or may not be accurate with respect to existing human or ecological systems.

¹⁴⁷ Data collection techniques in the two primary field sites were not identical. They were influenced by the background and resources of two different research teams, and the interests of two demographically and geographically different communities.

state. They are, however, issues that have arisen with sufficient frequency and detail during the span of our study to enable some informed comment.

Field Techniques

Our field and analytical techniques emphasize qualitative over quantitative methods. This provides a deliberate contrast to the almost exclusively quantitative analyses provided in the A13 analysis of economic impacts. We do include descriptive statistical analysis of data from three distinct field surveys, one of which is part of the Community Panels project, and two of which are not. Key informant interviews and focus groups constitute our primary field techniques, however. Like any tools, these have specific strengths and weaknesses.

Strengths of qualitative techniques compared to quantitative ones include the following:

- Access to “insider” information that is normally not accessible through quantitative methods. This includes nuanced information about personal attitudes and opinions that may be held by a significant portion of the population, but are difficult to quantify or are not often revealed to investigators from outside the community. It also includes information held by small numbers of individuals with broad or otherwise unique perspectives, compared to the population as a whole.
- Flexibility to adapt and reframe research questions repeatedly, continually refining the details of field research design in response to new information.
- Critical consideration of contextual information to enable greater accuracy in the interpretation of both quantitative and qualitative information.
- Depending on project goals, community members can be actively involved in developing research questions and protocols.
- Researchers’ false assumptions can be identified and circumvented. Data collection can be tailored to individual informants’ varied levels of policy knowledge, literacy, topical interest, etc.
- Can provide greater depth of knowledge about a topic. Complex causal relations among multiple variables can be explored.
- Informants’ attitudes can be considered in their empirical (real world) context, acknowledging that these are inherently complex and situational.

Drawbacks to qualitative research include the following:

- Sample sizes are often small.

- Time and effort is required to build the professional relationships necessary to solicit useful information from informants.
- Obtaining representative coverage of a diverse population requires informed consideration of population subgroups. Without concerted efforts to solicit minority perspectives during data collection, analysis may represent these insufficiently. Conversely, vocal or otherwise influential minorities can skew representation. Melding qualitative and quantitative methods can help.
- Analysis must continually balance informant perceptions with broader and more distanced perspectives. Prior interviewer and analyst familiarity with the research topic can help.
- Collected data can be extensive, and difficult to categorize, standardize and structure during analysis.

With these considerations in mind, we selected key informants for interviews and focus groups who:

- Are long standing and respected members of fishing communities.
- Have some awareness of fisheries management issues.
- Are involved in their communities in ways additional to the harvest of marine resources, such as local government or other positions with public responsibility.
- Have an interest in the long-term sustainability of their coastal communities.
- Expressed an interest in participating.

Ideally, with more resources, quantitative methods would be used to further confirm and quantify the findings reported here, increasing the replicability of research outcomes.

The audience for this document includes not only voting members of the Northeast Fisheries Management Council, but also other actors engaged in other policy decision making arenas, including government, industry, and non-profit sectors. To some extent our aim here is to broaden, organize and clarify the range of public opinion on Amendment 13 (A13), presenting material that might be useful not only for Council decision making, but also for the many other actors who will shape public policy in the aftermath of A13.

Departing Vessels, Declining Infrastructure and Markets in Portland

The survival of fishing industry infrastructure is a major concern in many ports, and one that is not adequately investigated by existing documents on anticipated A13 impacts. Cuts

in fishing effort will not merely cause proportional cuts in profits to shoreside businesses. Rather, they are likely to trigger larger scale and cascading effects that may very well include permanent losses of working waterfront. This is partly due to the already precarious position of some shoreside businesses in changing real estate markets and food production networks. Anticipated emigration of some groundfishing vessels to more southerly ports following A13 would comprise another significant causal variable, potentially tipping the balance toward a more rapid elimination of fishing related waterfront use.

Possible Departures

Some interviewees estimate that over 20 vessels will move from Portland to Massachusetts immediately following the implementation of A13. Even in August of 2002, a random survey commissioned by Maine DMR found that over a third of the state's vessels and shoreside businesses were thinking about relocating. Of those considering relocation, over a third of each sector was considering a move to Massachusetts. 18% of vessels and 29% of shoreside businesses were considering a move to another Maine port. Others mentioned Alaska, Virginia, Florida and other locales. Among vessels over 70' in length, 72% were considering relocation (Market Decisions 2002). Of course, to consider moving is not to commit to moving, but such actions become more likely as implementation of A13's preferred alternatives nears.

Virtually everyone agrees that the scale of emigration is uncertain, but few on the Portland waterfront doubt that there will be departures. Particularly since some of Maine's largest boats may be among the first to leave, Maine's seafood markets and, potentially, infrastructure are likely to witness severe negative impacts.¹⁴⁸ Many Portland based vessels already land a significant amount of product in Massachusetts. A few also base some portion of their shoreside operations out of Massachusetts. These firms do so because: 1) Less time is spent steaming to and from Georges Bank and other grounds from Massachusetts compared to Maine. 2) Lobsters caught as bycatch can be landed in Massachusetts. 3) Crew residing in Massachusetts are eligible for group health insurance and state unemployment. Although these factors do precede A13, all become more salient in industry decision making as profits decline due to regulatory reductions in fishing effort. Even if immediate accounting losses are followed by profits a couple years later, this does not mean that profits will accrue to all boats. It does not mean that actual economic outcomes will comprise net benefits.

Despite the anticipated vessel departures, many shoreside businesses and processors wish to remain in business in their present locations and will make an effort to do so. Some, however, are likely to fail or move. Forty percent of the state's shoreside businesses rely on groundfish for 60% or more of their business (Market Decisions 2002). Larger vessels

1 One factor limiting vessel emigration from Maine may be the lack of sufficient dockage or moorings in more southerly ports.

supply markets during the stormiest seasons, enabling fairly constant product streams. They complement smaller boats that can make quick trips on short notice, particularly when demand is high. With any significant number of large vessel departures, a cascade of impacts emerges and endpoints become highly uncertain. If product flows fall too low to maintain Portland's display auction and markets for fresh processed product, "value added" activities could cease and dockside prices could drop statewide.

The Portland Fish Exchange and Related Markets

The Portland Fish Exchange (PFE) has anchored Maine's groundfishery and markets since its opening. Harvesters and shoreside interests recount that its display auction raised ex-vessel prices region wide, and raised standards of fairness and honesty in market relations. It even became a model for display auctions elsewhere in New England. At present, the auction offers buyers a relatively steady stream of quality product. It offers vessels reliable sales agreements and prompt payments. As a result, it has attracted boats, buyers, and processors from Maine and elsewhere in New England. It now handles up to 90% of the state's groundfish, some landed directly and some trucked from midcoast and downeast Maine.

The auction is now calculating anticipated impacts of vessel departures. Some believe it can remain open while handling greatly reduced volumes. Others believe the cascade of impacts induced by A13 will force it to close. If one assumes that groundfish stock assessments will continue to improve, and some fishing restrictions will be lifted, the auction may be able to cover its costs in the interim, through staff cuts, salary reductions, and support from the City of Portland, which owns the Exchange and its property.

Such a hopeful assessment, however, assumes that buyers will continue to attend the auction despite greatly reduced product availability. This is a major assumption that may very well prove false. Processors need certain volumes of product to stay in business. Some may choose to remain in Portland, trucking in fish from more southerly ports. Others may leave. Buyers from outside Maine are less likely to maintain auction seats, or to contract with the local buyers who presently represent them. Such departures of processors and buyers would affect not only Maine's groundfish markets, but also markets for the other species unloaded in Portland for local processing or sale through the auction. One of the non-groundfish products most commonly relied upon by Maine processors is northern shrimp. Shrimp stocks are particularly prone to short term ecological and geographic shifts, and corresponding regulatory changes. This species cannot provide the kind of economic stability necessary to sustain processing capacity. With the departure of processors primarily reliant on groundfish, Maine's dockside shrimp prices could plummet. The same could occur for other species now processed in the same facilities as groundfish.

Some processors also fear that A13 could induce larger scale changes in groundfish markets, with long term repercussions. The fresh fish market is central to New England's ability to maintain a market niche for groundfish species in the face of global competition.

Key customers include supermarkets and restaurants, both of which markets have seen increased consolidation and vertical integration in recent years. Such firms vastly prefer products for which they can anticipate reliable deliveries and project solid quarterly profits. Should the cascading impacts of A13 cause interruptions in New England groundfish supplies, or should wholesalers supplying supermarkets and restaurants anticipate market interruptions (with or without empirical evidence), they could shift to other species. Once lost, markets can be hard to re-establish. Producers must often undercut market prices to woo back buyers who have developed new relationships with other firms.

Cascading Impacts on Industry Clusters and Networks

In addition to the auction, Portland serves as an industry cluster, or hub, for Maine fisheries in general. In 2002, 40% of the state's groundfish vessel owners reported landing most regularly in Portland. Over a third reported landing most regularly in a number of smaller midcoast ports, most of which truck product to the Exchange (Market Decisions 2002). The Exchange also handles high volumes of northern shrimp, as well as smaller volumes of other species. Portland is the home of several additional shoreside businesses crucial to the industry. These include gear supply, fuel, ice, trucking, cold storage, vessel maintenance, haul out facilities, engine sales and repair, electronics sales and repair, and others. Some of these support services are also available elsewhere on Maine's coast. Many, however, are not, or cannot accommodate boats over a certain size. Their situation compounded by this year's decline in lobster landings, some shoreside businesses in the Portland area will have difficulty staying in business after A13.

The closing of such businesses has significance far beyond that of lost profits and jobs. Dramatic changes in Maine's development patterns and real estate markets wield powerful pressures on Maine's marine industries. Shoreline property is increasingly at a premium. It often yields most immediate profits to owners when developed for luxury residences, retail, recreation, and tourism. Fishing can be a lucrative business, but waterfront property fallen into disuse and disrepair is vulnerable to turnover. With few fisheries open to young people due to entry barriers and accelerating regulatory uncertainties, fishing dependent families are aging. Multiple heirs often wish to sell shorefront properties and divide the inheritance. Once lost, working waterfronts are unlikely to be regained (Sheehan and Cowperthwaite 2002).

Although the PFE provided a boon to the industry in many ways, it also reduced the number of profit making fish buyers in southern Maine. With this, incentives fell for shorefront property owners to maintain a diversity of wharfage facilities, dockage, parking, and other kinds of access for marine harvesters. Thanks to creative and focused zoning, Portland still has a commercially viable waterfront, supplying most of the needs of a diverse fishing fleet. The number of businesses offering any particular service or product, however, is very limited. As suggested in A13 comments offered by Community Panel project participants in Gloucester, at least one business in each of several categories is needed to sustain a local industry cluster. Anticipated impacts of A13 throw doubt and concern on the survival of the industry's remaining core.

Although infrastructure data collected by this project has focused on Portland, the rest of the coast is experiencing related phenomena. Boats relying on Portland's auction and shoreside businesses range as far as midcoast and downeast Maine. If the auction closes, vessels unable to move south, or electing to remain in Maine, will have to establish relationships with new dealers and buyers. Prior to the opening of the PFE, this entailed trucking product out of state, to buyers in more urban areas of the northeastern US and Canada. Prices paid by distant buyers can be unreliable. Sellers have little protection from firms that turn trucks away upon arrival, or accept delivery but default on payment. Less incentive exists to deliver a fresh, quality product, and prices are correspondingly lower.

Crew, Safety, and Human Capital in Portland Harbor¹⁴⁹

While documentation of regulatory impacts on individual vessel owners is not extensive, documentation of regulatory impacts on crewmembers is virtually absent from the public record. Even in the academic arena, this industry group receives very little attention. Crewmembers rarely offer public comment on proposed regulations. They can expect even fewer rewards than can boat owners from engagement with public decision making processes. With more limited resources of financial capital, formal education, and social networks upon which to draw, they find it harder to command public attention, and more difficult to wield political leverage.

As the fishing fleet changes and contracts in response to increasing regulatory restrictions, crewmembers bear significant impacts. They are among the individuals most likely to be displaced by regulatory effort reductions. Although the uncertainties posed by industry adaptation to A13 make it difficult to predict the precise nature and scope of change within the crew labor pool, the kinds of changes observed in this sector over recent years are likely to be exacerbated by Amendment 13.

Fewer Sites and Less Flexibility

Reduced numbers of crew positions is an obvious impact of reduced days at sea and reduced numbers of fishing vessels. Even some crewmembers with a steady employment history on a single vessel report having difficulty getting enough sea time to maintain a livable income. Some vessels now operate with fewer crewmembers per trip in order to keep individual trip shares high enough to attract quality employees. Others shift a single crew between two boats.

Many crewmembers that formerly changed vessels fairly frequently now find it difficult to find a position at all. Those who have good sites tend to keep them. Those who have less profitable sites find it difficult to switch to more successful vessels. Because sites are

¹⁴⁹ This section incorporates contributions from project participant Gina LeDuc Kuntz. Some but not all of these conclusions may apply to other parts of the state.

harder to obtain, crewmembers are more directly dependent on individual skippers and owners. At least one source reports that whereas crew were formerly more collegial and familiar with one another, having taken trips aboard several vessels and working alongside a number of different crew members, they now compete for limited sites and are less likely to form the informal socio-economic networks that help define an occupational identity. They have less room to negotiate better pay or working conditions. They are less able to turn down trips for reasons of personal health, family commitments, or perceived danger. They are less able to leave groundfishing temporarily to do other fishing or non-fishing work with the expectation of being able to return to groundfishing. As some vessels maximize profits by fishing grounds farther from home and landing catch in more distant ports, crewmembers have less leverage with which to protest these longer periods away from home and family. Domestic relationships, already subject to extended absences in the best of times, are likely to be further attenuated, increasing levels of stress and instability among all family members.

Less Upward Mobility

In the past, crewing aboard a groundfish vessel offered a training ground for future skippers and boat owners, both in groundfish and other fisheries. Reliable and attentive groundfishing crew found opportunities to learn the skills necessary to become captains. Even many lobster fishermen who mainly fish inshore, took at least a trip or two on an offshore vessel in their youth.

For many vessels today, each allocated multispecies day at sea must yield a profit in order for the operation to survive. Few mistakes can be made on each trip. Skippers must be highly knowledgeable and skilled in order to maximize time on the clock. With these pressures, less experienced crew are unlikely to be given the opportunity to skipper vessels for fear they might return with a less full hold than would a more seasoned captain. Further, experienced captains are unlikely to give up a trip, needing as many days at sea as possible to maintain their incomes.

As days at sea decline, so will crew incomes. Crew are less likely than in the past to have opportunity to captain a boat owned by someone else. Many have insufficient funds or credit histories to purchase their own boats with multispecies permits. One who might obtain sufficient funds to purchase a smaller vessel suitable for lobstering or urchining may be unable to acquire the necessary licenses or permits to enter those or other fisheries, due to limited entry rules that require proof of previous licensure and/or landings. Although they may have harvested and landed many tons of fish, these individuals face considerable obstacles should they wish to obtain fishing rights of their own.

Fewer Reliable Crew Available

Lowered career expectations in terms of income, advancement and learning opportunities in turn affect the quality of the pool of crewmembers available for hire. Many vessel

owners report that good crew are hard to find. Those crew members who were reliable and experienced enough to make a good living on others' groundfishing boats are likely to have left the groundfishery to run their own boats (particularly lobstering) or seek other employment. Few non-fishing jobs allow former crewmembers sufficient flexibility to continue to groundfish on a part time basis. Fishing is such dangerous and physically demanding work that few boat owners or captains wish to take on green crewmembers.

Local Knowledge

Many crewmembers have multi-generational ties to fishing communities, learning to fish from family members and neighbors. Portland area interviews suggest that perhaps three quarters of groundfishing crewmembers come from fishing families and learned to fish from close relatives. This proportion may be higher in other parts of the state. The knowledge passed on from one generation to the next comprises more than just technological familiarity, such as navigation and gear handling. It also includes ecological subjects such as fish behavior, benthic structure, oceanographic movements, atmospheric observations, and trophic relationships among marine species.

To lose large numbers of traditionally trained fishermen, whether crew or boat owners, is to lose a significant store of cultural capital in local ecological knowledge. Collaborative research initiatives have only begun to launch meaningful information exchanges between marine scientists and harvesters. Losing harvesters' unique orientation toward marine resources, with their awareness of the complexity of human interactions with the marine environment, represents a significant social loss. With crew members' average age close to 50, few young people are entering the groundfishery. Most ambitious young fishermen in Maine now focus primarily on lobster. In part this can be attributed to some years of record lobster landings, but increasingly daunting economic and regulatory barriers to groundfishery entry also prevent interested young people from devoting the time to acquire groundfishing knowledge and skills as either boat owners or crew.

Limited Employment Alternatives

Some crewmembers have done little or no other paid work. Although most crew positions require considerable skills, these are not easily transferred to jobs on land, or even to non-fishing marine jobs. Many of the crewmembers remaining in the groundfish industry are those who have no attractive employment alternatives. It is likely that many would have difficulty adjusting to full time shore life. Many find it easier to adapt to shifts in weather and fish migrations than to adapt to the routine and hierarchical relationships of most entry level shore jobs. Few shore jobs pay as well or are as tolerant of personal eccentricities, as fishing. Despite the erratic work schedules, extreme physical demands, and economic uncertainties, many crewmembers identify closely with their chosen occupation.

Safety

Quantitative and qualitative data sources offer mixed information regarding vessel and crew safety. Some sources indicate that mandated safety equipment, and increased monitoring by Coast Guard and Marine Patrol, have improved vessel safety. Other sources indicate that regulations have had negative safety impacts. Decreases in vessel and crew safety have obvious social costs. Any increased risk of death at sea represents the most grievous loss to crewmembers, their families, and their communities. Moreover, rarely do crewmembers receive health insurance, disability, or workers compensation from the vessels they work aboard, due to their status as independent contractors. Many have no life or health insurance and must pay all medical costs out of pocket. In addition, rescue operations to vessels in distress present high costs to all taxpayers.

Some of the safety concerns identified by project participants include the following:

- 1) Because vessel owners cannot count on future profits, few new boats are being purchased and repairs are being delayed. The result is an older, more decrepit fleet. This is a serious safety concern in the harsh and unpredictable marine environment.
- 2) Boats are going out with fewer crew to reduce per trip costs. Fewer hands on deck means fewer resources to handle any potential emergency, whether it concern snarled gear, mechanical failure, or navigational tasks.
- 3) Fewer available crewmembers, particularly fewer young adults, can mean more crew fatigue and increased probability of human error.
- 4) Less experienced crew means greater risk of dangerous mistakes.
- 5) The need to maximize profit from each allocated day at sea means more trips taken at times when market prices are up due to bad weather that would normally keep most vessels at home. The result is more winter fishing and greater vulnerability of vessels and crew to “natural” disasters. Human error increases as well under extreme weather conditions.

Cumulative Impacts: Declining Fleet Diversity and Flexibility

At present, Maine finds itself on the geographic margins of New England’s groundfishery. This was not always the case, as virtually all Maine harbors were once supported by numerous and diversified groundfishing vessels (O’Leary 1996; Wilson 1999). Particularly since the 1984 implementation of the Hague Line, however, Maine based vessels operate with the handicap of greater distance from both the largest concentration of groundfish within US waters (on Georges Bank), and greater distance from major urban markets and transportation networks (which extend south and west from Boston).

Maine's Adaptive Fleet

Partly because of market and transport obstacles, Maine's inshore fisheries have been dominated for over a century by a flexible and diversified fleet of small to medium sized vessels. Further, diversified livelihood strategies have characterized northern New England households since colonial times (Vickers 1994; O'Leary 1996). Switching fishing effort among a variety of species in annual or multi-year cycles may make harvesters more aware of interspecies and habitat relationships.

One element of the Community Panels project included a survey mailed to a random sample of Maine 2002 commercial marine harvest license holders (including commercial lobster, crab, shrimp, scallop, urchin, general commercial fishing, shellfish, mussel, quahog, elver, worm and seaweed licensees with Maine mailing addresses) suggests that one third of Maine's licensees have groundfishing experience.¹⁵⁰ Extrapolated to the state's entire population of roughly 10,000 marine harvest licensees, this would comprise over 3,000 individuals. We can assume that these numbers under-sample an additional population of current and former crewmembers, who may have no boats or licenses of their own, but who work or have worked in the groundfishery. It also omits former groundfishermen who have left fishing altogether. Accounting for these groups would further raise the numbers of Maine harvesters who have groundfishing experience but who currently have little hope of ever obtaining groundfish permits.

According to a random telephone survey commissioned by Maine DMR, of the vessel owners holding active groundfish permits in 2002, over two thirds also had income from other fisheries or marine activities. Of those, 51% had income from lobster, 27% from shrimp, 12% from scallops, 9% from urchins, 4% from tuna, 3% from herring, and 11% from other species. Among hired captains and crew, 38% had income from other fisheries or marine activities. Of those, 63% had income from lobster, 38% from shrimp, 25% from scallops, and 13% from tuna (Market Decisions 2002).

Correspondingly, our mail survey suggests that Maine license holders with groundfishing experience have participated in an average of over 5 New England fisheries (including lobster, crab, shrimp, urchin, groundfish, scallop, tuna, herring, whiting, mackerel, pogie, clam, worm, winkle and others). Maine license holders in general have participated in an average of 4 New England fisheries. Removing the roughly half of licensees who have participated in only one fishery (comprising either lobster or worms in this sample), the remaining licensees have participated in an average of over 6 New England fisheries. This suggests that there are two common marine harvest strategies in Maine – one specialized and one diversified. A separate survey mailed to a random sample of 2001 commercial lobster licensees (funded by a National Science Foundation Dissertation Grant) showed

¹⁵⁰ N = 12. At a confidence level of 90% (commonly accepted in social science analyses), the confidence interval is +/- 26%. Standard error is 14%. Duplicate names due to multiple permit holdings were deleted from the total population before random sampling. Time constraints prevented additional sampling. Reliability is substantially increased, however, through corroboration by two additional sets of independent survey data.

that population to have participated in an average of three fisheries¹⁵¹, with 31% having groundfish experience¹⁵² (Brewer Forthcoming).

Regulated Away From Diversity

In recent years, a series of regulatory measures have encouraged boats to depart from a diversified flexible strategy, favoring single fishery operations that target groundfish or other species. Depending on the vessel size and gear and species involved, flexible, inter-species strategies can include switching target species during a single fishing trip, depending on immediately available stocks. In Maine, however, inter-species switches often require dockside gear changes and travel to different fishing grounds. For example, targeted harvests of groundfish, shrimp, lobster, urchins, scallops, tuna and herring all require very different gear and spatial strategies. For this reason, Maine harvesters often make their inter-species switches on seasonal or annual bases. In years when good shrimp catches and markets are anticipated, boats will gear up with shrimp trawls or traps to make the most of the limited winter shrimping season. In years when lobsters are plentiful, boats will remove trawls and set traps for summer, fall, and, more recently, winter. Some drag or dive for scallops when those are plentiful. In years when migrating tuna come close by, boats take on reels and spears. During the urchin boom, boats took on divers. They harvested herring when they could be caught inshore with stop or purse seines (or historically with beach seines and weirs). Until recent years when groundfish stocks declined and permits and DAS became severely restricted, many boats geared up with trawls or gillnets (or tub trawls in previous decades) for seasonal groundfishing. A number of other species round out the diversity of seasonal and multi-year cycles.

Such flexible switching strategies traditionally have allowed day boats and others to adjust their individual business plans to changing ecological and socioeconomic circumstances with relative ease. Like diversified farming practices, the ecological and economic burdens and risks are distributed more widely than in single-fishery fleets. Should a single fishery experience stock declines, or normal inter-annual fluctuations, harvesters can accommodate the ecological change by shifting to other species, easing stress on both fish stocks and harvester's own communities.

By contrast, higher operating costs, and more specialized technological adaptations in vessel and gear design, constrain such flexibility in many larger vessels. Operators wholly dependent on groundfishing consider the DAS allocation that considered the landing of a single pound of groundfish sufficient to qualify for minimum DAS to be inequitable. Trip boats point out that their longer steam time and other expenses use considerably greater resources than those used by smaller, inshore vessels. The fact that they cannot easily shift to alternative species leaves them particularly vulnerable.

¹⁵¹ N = 29. At a confidence level of 90%, the confidence interval is +/- .57. Standard error is .33. This analysis combines lobster with crab, and all groundfish species, as single fisheries. Separating lobster from crab, or separating distinct groundfish species, would result in higher diversity statistics.

¹⁵² N = 29. At a confidence level of 90%, the confidence interval is +/- 14%. Standard error is 9%.

The increasingly single-species approach to US fisheries management contrasts unfavorably with the adaptive strategies of existing flexible fleets. Single species driven regulatory frameworks work against diversified vessels by using single fishery landings histories to allocate fishing effort on a per vessel basis in the form of quotas or days at sea. This has been a chronic problem for Maine harvesters. Many harvesters complain that they are increasingly “boxed in” to one or two fisheries.

Years used as baselines for the allocation of groundfish permits and DAS were years when lobstering was good, shrimping was good, and groundfishing was poor. There were also years when inshore porpoise closures prevented some small boats from groundfishing inshore, and when groundfishermen were actively encouraged by biologists and regulators to shift effort to other species in order to conserve depressed groundfish stocks. For these reasons, and others documented above, many Maine boats with decades of historical groundfish participation were eliminated from the groundfishery when their permits became latent, or their DAS were cut below useful levels.

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New Bedford's Comments on Amendment 13

By the New Bedford Community Panel
Massachusetts Fishermen's Partnership Community Panel Project

Presented at the Fairhaven Public Hearing

My name is Jim Kendall, and I am the owner of New Bedford Seafood Consulting, and I have been an advocate for the commercial fishing industry for the last 10 years. I am a former president of the Massachusetts Fishermen's Partnership, and I am currently a member of the Massachusetts Fishermen's Partnership board of directors and the executive committee. I am also a former member of the NEFMC, and I was a commercial fisherman for 34 years out of the port of New Bedford. I have been participating on the New Bedford Community Panel since its inception.

When we testify about the damaging social and economic impacts of each new regulation, there are some who say, ***"you said when the last set of regulations were imposed that you would be put out of business; but you are still here!"*** What is not made clear in the DSEIS is the cumulative effect of all the regulations. What uninformed observers do not see is that many, many people have been put out of business. For example, nearly 200 New Bedford fishing vessels are gone. Roughly 1000 crew sites were lost. They represent nearly 200 small businesses that are gone, and mostly forgotten by many of those ashore. Simply because when they are lost they disappear; they are generally sunk or destroyed. You won't find them looking like boarded-up businesses in a blighted neighborhood, but make no mistake about it, that's what they are. We are becoming a blighted neighborhood! Over fifty shoreside businesses that directly supported fishing in the Greater New Bedford Fishing Community e.g., fuel suppliers, ship chandlers, lumpers, welders, carpenters, ice houses, gear suppliers, electronics, processors, fish cutters, etc., and employed about 1300 people are no longer in business. Most times when they are lost, they are overtaken by speculators who are just waiting in line in order to gain a foothold on our valuable and irreplaceable shore-side properties and sites. Like Gloucester, New Bedford is close to the tipping point; there is little redundancy in the shoreside services available to the industry. When the essential services are no longer available, what will the industry do? When the young people no longer look to the fishing industry as an opportunity to earn a decent wage, and live a valued lifestyle, what will they do? What will the industry do? What will our nation do? We will buy our fish from those nations that are not as well managed, regulated, and enforced as we are.

Insurance costs are skyrocketing, increasing anywhere from 15% to 50%, when you are able to find a provider. (For those unfamiliar with the cost of vessel insurance, you should know that the increases are \$15,000 and up.) Losses in the stock market have made insurance companies limit coverage to only the most secure investments. It doesn't matter that vessels are tied to the dock for months, the insurance companies' rates reflect their income needs. Vessels no longer have the option of purchasing less expensive "port risk insurance" when the vessels is tied to the docks for extended periods of time, which is often the case because of the restrictions on "Days at Sea" (total number of days a vessel is

allowed to fish each year). So, even though the insurance companies enjoy less risk because the boats are spending less time at sea, where it's more dangerous; they are charging considerably more for insurance protection! Maintenance and repair costs have also been going up, driven up in part by the loss of shoreside infrastructure and the demand for the remaining services by the recreational or yachting industries.

But, the prices of fish are lower than ever. Lemon sole was selling for 6 to 8 cents per pound this summer! One reason the prices are lower is because there are so few processors left in the city. At least 30 processors have disappeared in the decade since Amendment 5 was implemented (see attached list). Another reason is that the mechanical cutters in the existing plants can't handle the abundance of large sized flounders that are being landed and there is a shortage of skilled cutters. (The sheer abundance of these very large flounders is another sign of the health, and rebuilding of many of the Georges stocks.) And of course, fish is also being trucked in from Canada where the industry is subsidized.

It is true that New Bedford was ranked number one in revenue from fish landings again this year. Most of that value however is attributable to the scallop landings, and their high dollar value. (The 2002 landing value for New Bedford was 169 million dollars, but the Atlantic sea scallop accounted for nearly 100 million dollars of that value.) There also is additional revenue from clam, lobster, and now thanks to the "NORPEL" pelagic plant in New Bedford, herring landings. It is apparent from the increasing debt, bankruptcies, etc. that the groundfish revenues are not returning to the wide range of vessels and businesses that have made up New Bedford's valuable industry. Before the Council moves forward, an analysis on the micro-scale should be undertaken to understand where the money is going and why so few are benefiting.

Thank you for the opportunity to enter these factual comments into the public hearing document.

James M. (Jim) Kendall
New Bedford Seafood Consulting
Massachusetts Fishermen's Partnership
New Bedford Community Panel

Appendix: List of companies lost to New Bedford since 1994.

Fishing Related Companies that have gone out of business since 1994				
Company Name	City	State	Zip	Employee's
Acushnet Fish Corp.	Fairhaven	MA	02719	0
Sea View Fish Corp.	New Bedford	MA	02740	100
Night View	New Bedford	MA	02740	35
Safe Harbor	New Bedford	MA	02740	50
Harbor Fish	New Bedford	MA	02710	50
Pilgrim Fish Co.	New Bedford	MA	02740	50
M& B Fish Co.	New Bedford	MA	02740	6
Double T Fish Co.	New Bedford	MA		10
Golden Eye Fish	New Bedford	MA		100
Parrissi Fish Inc.	New Bedford	MA	02740	50
River Side Fish	New Bedford	MA	02740	30
Ell Vee Dee Fish Co.	New Bedford	MA	02740	40
Cape Way Fish	New Bedford	MA	02740	40
Atlantic Coast. Fish Co.	New Bedford	MA	02740	45
Multifoods LTD	New Bedford	MA	02740	40
Love Grove Fish	New Bedford	MA	02740	40
BaySide Fish	New Bedford	MA	02740	50
Salty Cod Fish	New Bedford	MA	02740	10
Teddy's Seafoods	New Bedford	MA	02740	60
LE Lobster	New Bedford	MA	02740	10
Ocean Obsessions	New Bedford	MA	02740	10
Cape Quality Seafood	New Bedford	MA	02740	40
RCC Seafoods	New Bedford	MA	02740	25
Imperial Fillet	New Bedford	MA	02740	25
D Fillet	New Bedford	MA	02740	40
U.S. Fresh	New Bedford	MA	02740	40
Channel Seafoods	New Bedford	MA	02740	30
D&G Seafoods	New Bedford	MA	02740	6
Allied Engineering Corp.	New Bedford	MA	02740	5
New Bedford Seafood Co-op	New Bedford	MA	02740	24
New Bedford Seafood Co-op	New Bedford	MA	02740	32
Big Turk's Seafood	Mattapoisett	MA		4
Lootto's Fish	Fall River	MA		5
Lobster Pond	Fairhaven	MA		6
Norlantic Inc.	Fairhaven	MA		35
Hathaway Ice	Fairhaven	MA		10

Hathaway Machine Shop	Fairhaven	MA		40
A1 Seafood Co.	New Bedford	MA	02740	25
A&J Fisheries	New Bedford	MA	02740	9
Beck's Fish Market	So. Dartmouth	MA	02748	7
Bradley & Halliwell	New Bedford	MA	02744	9
Buzzards Bay Marine Supply	New Bedford	MA		4
C&P Machine & Welding	New Bedford	MA		5
Dave's Seafood	New Bedford	MA	02740	3
Neptune Insurance Co	New Bedford	MA	02740	5
F& S Fisheries Inc.	New Bedford	MA	02740	7
F C Foods	New Bedford	MA	02740	5
Franco & Sons	New Bedford	MA	02740	4
Franklin Hatch Co	Fairhaven	MA		6
M & J Seafood	Fairhaven	MA		5
Norstar Foods Inc.	New Bedford	MA	02740	4
Offshore Mariners Assoc.	New Bedford	MA	02740	2

Methodology

Madeleine Hall-Arber and Bonnie McCay

Introduction

The primary objective for this project is to develop a community-based process for gathering and assessing social science data relevant to the fishing industry.

We want to

- ground-truth an academic product intended as a baseline study
- identify what communities consider important
- locate new data sources
- offer communities the opportunity to define themselves and articulate their values.

Community-based panels are reviewing, adding to, and creating socio-economic profiles for their communities. Equally important, our project is beginning to provide fisheries managers with information that will enable them to more accurately anticipate social impacts. The communities selected for this project are Beals Island/Jonesport and Portland (Maine), Gloucester, South Shore and New Bedford (Massachusetts) and Pt. Judith, Rhode Island. These six were purposively chosen as representative of the variety of characteristics of the fishing industry in the region including inshore/offshore, large/small, urban/rural, fish/shellfish, mobile/fixed gear, auction/entrepreneur-dealer, etc.

Despite good intentions and legal requisites,¹⁵³ fisheries managers often find it difficult to weigh and/or incorporate social data in the analysis of management options. Sometimes this is simply due to an absence of data, but other times it is due to doubts about the reliability of the data that has been offered. This essay addresses the question of the reliability of the Panels Project data by describing a selection of the classic methods used by academic researchers in the social sciences, identifying the strengths and weaknesses of each, and noting which methods are being used by the project.

Representativeness

A bedrock principle of social science is that research results must represent the population being described. However, each of the social science disciplines of anthropology, sociology, cultural geography and economics has favorite methods for obtaining representative results. While each method has positive attributes, there are also potential sources of error in their representativeness.

¹⁵³ E.g. National Standard 8

The Panels Project adopted the approach to representativeness known as the “snowball” method, or networking through key individuals. This approach is appropriate because the project is founded on the principle of participatory and collaborative research, whereby some members of the community are themselves researchers.

The “*snowball*” method relies on interviewing key individuals who then introduce the researcher to, or at least offer contact information about, others in the community who are knowledgeable and willing to be interviewed or participate in the research. Although this method is a non-random way of selecting people to interview, it is often the most effective method for identifying a variety of people in a fishing community. The proliferation of meetings in fisheries management, competition among shoreside businesses, the long work days involved in fishing, the sheer volume of demands for data (e.g., log books), and anxiety about negative impacts of data collection, make it difficult to find volunteers via random sampling. Thus the “snowball” method is appropriate given the realities of working within fishing communities, where scheduling of visits for interviews is particularly difficult.

The “snowball” method is also appropriate in situations—such as most U.S. fisheries—where there are few available datasets and other conditions necessary for the better known and more demanding approach to representativeness: random sampling. Most people consider *random samples* the most appropriate way to select a portion of a population that will properly reflect the characteristics of the whole. The U.S. Census, for example, sends their long form to a random sample of one in six people. When the attributes of interest are widely distributed in the whole population, such a sample is probably a good representation of the whole. However, when the attribute of interest is found only among a small percentage of the whole population, the chance of randomly selecting a sufficiently large number of people with that attribute to make inferences about the whole is unlikely. For this reason, the Census data on fishing as an occupation is not a reliable indicator for either the total numbers of fishermen, or specific characteristics elicited by the Census’s long form.

One technique used to counter the problems associated with purely random samples is to use a “stratified” sample. This allows the researcher to choose a set of characteristics or “strata” from which the sample will be drawn. For fisheries social scientists interested in revenues, strata might include gear types, boat sizes or engine horsepower, and landing port, for example. Within each stratum, a sample is randomly selected. The choice of appropriate strata, however, is not necessarily obvious. Age, ethnicity, or education might also be significant, particularly if the topic of interest is employment rather than simply revenue.

Furthermore, because each characteristic must be considered with respect to each of the others, the numbers of strata can multiply exponentially. In the example of revenues, there might be 5 gear types (trawler, gillnet, longline, dredge, pot), three ranges of boat sizes (small, medium and large) and 6 ports of interest resulting in 90 strata! Depending on how many people fit each strata, the researcher may or may not have samples that are representative of the whole population. When the Atlantic Coast Cooperative Statistics

Program (ACCSP) designed a pilot program to study summer flounder, a variety of pertinent strata were identified. As the project progressed, however, and individuals dropped out of the study, the strata had to be collapsed to retain representativeness, albeit at a broader rather than detailed level.

Quota samples bear some similarity to stratified random samples. Again certain characteristics are identified as pertinent and the proportion of each characteristic that is represented in the population as a whole is estimated (or known), and the sample is specifically designed to reflect that proportion. So, if the sample size is 500 vessels, 20% of which should be from Portland, and the Portland fleet has 5% large trawlers, 10% medium trawlers and 3% small trawlers, 18 vessels should be studied in detail. The sample thus chosen will theoretically be representative of geographical area (i.e., port) and gear type and vessel size. However, the small size of the sample makes it virtually impossible to be sure that any other characteristic is representative. Random selection of the small sample, though, can help reduce error.

Both of these research designs require “a *sampling frame*, a list of the people that are available to be selected. But that list is almost never, in fact, compiled for the purposes of academic research.”¹⁵⁴ This is particularly true in fisheries research. National Marine Fisheries Service’s permit file has a fairly complete list of vessel owners, but since owners may be a corporation rather than an individual, even this list is not entirely reliable as a sampling frame for owners. Nowhere is there a reliable list of crewmembers. Nor is there a definitive list of fishing ports or fishing communities.

In addition, a bias can be introduced by the decisions of individuals to, or not to, participate. And, bias can be introduced by methods used to contact those being interviewed. In addition, characteristics used to set boundaries (gender is often used in social science) may or may not retain differences over time. Also individuals may change over time, so what have been considered relevant differences may disappear.

¹⁵⁴ Frank Bechhofer and Lindsay Paterson, *Principles of Research Design in the Social Sciences*. London: Routledge, 2000, pg. 37

Starting the snowball with an Advisory panel

The first step for the Panels Projects was to form an advisory panel of thoughtful and experienced fishing industry stakeholders. The projects relied on recommendations from fishing organizations in Maine, New Hampshire, Rhode Island, and Massachusetts to help us form the advisory panel.

The panel was asked to identify the kinds of people who would be representative of the fisheries and communities involved in fisheries-dependent communities of New England and then asked to identify individuals who would fit the categories articulated for the six communities in New England.

Once the selection of participants in the research, or at least the method to be used for selection, is known, decisions about the way data is to be obtained must be addressed. The Panels Project is drawing on a variety of techniques ranging from semi-structured interviews to focus groups to participant observation. As mentioned above, an overriding concern for the project, however, is that the approaches used for data collection and analysis are participatory.

Participatory approach

In participatory research, members of the community or other group being studied participate in aspects of the research—ideally, everything from study design to data collection and analysis. One of the arguments for participatory research is that “An outside researcher may be unlikely, or even unable, to collect the in-depth, inside data that a community member volunteer can elicit.”¹⁵⁵ In other words, community members may have both in-depth knowledge that improves the research and also better access to others in the community who have such knowledge. Indeed, the research process can be a learning process for both community members and outside researchers. Constructivist theory “point[s] to the powerful learning that can occur if people are engaged in a process that creates or constructs knowledge.”¹⁵⁶

There are also practical considerations. Through participatory research, community members are more likely to care about the results, especially if they become involved at every level of the study, helping develop the questions, collecting the data and analyzing the results.¹⁵⁷ In addition, through participatory research, community expertise and social

¹⁵⁵ Richard Krueger and Jean King. 1998. *Involving Community Members in Focus Groups*. London: Sage Publications, p.5

¹⁵⁶ Ibid, p.7

¹⁵⁷ Richard Krueger and Jean King. 1998. *Involving Community Members in Focus Groups*. London: Sage Publications, p.6

capital can be created: some gain sufficient confidence to continue research over time. Other benefits of a participatory approach include the fact that a variety of viewpoints are represented insuring credibility and relevance to the community. Furthermore, participation by community members usually helps generates support for the recommendations.

The negative aspect of a participatory approach can be summarized in one word: “time.” A collaborative research process takes much more time than do other forms of research. Identifying and recruiting the participants, finding a variety of talents and sufficient commitment to the study can be daunting and time consuming, even when it is possible to provide funds to compensate participants for their time and travel, as in this case.

Appointing Coordinators

Because of the time constraints, The Panels Project eventually hired coordinators for each panel. The coordinators are not necessarily members of the place-based communities involved, but they are knowledgeable about the industry and able and willing to devote time to scheduling and rescheduling meetings, discussing, debating, and facilitating meetings. The coordinators also find additional key community members who can help with the different forms of data collection.

Forming the panels

When 10 to 12 individuals had agreed to participate as panel members in each community, an orientation/training workshop was held to introduce them to the existing data on their communities and industry.¹⁵⁸ The need for long-term data collection was explained. The panels were offered the opportunity to identify what issues or data they considered most significant and worthy of recording. They were also asked which methods of data collection they would prefer.

- Each of the panels argued strongly that the most important outcome of the Panels Project must be the collection of data that is considered credible and reliable by fisheries managers and others. No one was interested in devoting time to a project that would result in more papers on a shelf. There was acute awareness that representations of the local communities would mean very little unless they were done in ways that fit into regional and national criteria for legitimacy in the fisheries management decision-making processes. Therefore the participatory nature of the project was re-directed: Although a goal was to offer communities the opportunity to define themselves and articulate their values, the community members themselves were more concerned about the values and definitions of the larger socio-political system, hoping through this project to find ways to influence an agenda driven by outside legislation and political processes.

¹⁵⁸ *New England's Fishing Communities* by Madeleine Hall-Arber, Chris Dyer, John Poggie, James McNally and Renee Gagne. 2001. Cambridge, MA: MIT Sea Grant College Program.

Data Collection Methods

The Panels Project has focused on semi-structured key informant interviews as a major source of data. Interviewees are purposively selected through the “snowball method,” based on recommendations of key respondents, to be representative of boat owners, crew and shoreside business owners. Before interviews begin, the researchers explain the project, goals, how data will be used, how it will be stored, confidentiality, and notes that the respondent does not have to answer any questions they did not wish to, following the federal government protocol set up for the Protection of Human Subjects.

Structured Interviews

Structured interviews in a survey are the most commonly used method in sociology and, to a lesser extent, anthropology. One advantage of structured interviews is that the responses to factual questions can often be analyzed to show how representative the sample is of the whole. A disadvantage is that the researcher has already decided on the questions, the order they should be asked and in some cases, what the choices are for answers.

Moreover, “when one asks people questions in an interview situation, it is a particular kind of social encounter with its own interactional rules.”¹⁵⁹ Whereas the information gathered might be readily summed up in numbers on a spreadsheet and statistically analyzed, that information has been shaped by how the interviewers designed the questions, how they were asked, and how the respondent interpreted them in a particular social situation—the interview. This may or may not provide information that is deemed credible and helpful by the community and by fishery managers. (A parallel problem is reliance on public hearings for information about the social and economic impacts of fisheries management regulations: the structure and culture of the public hearing situation strongly influences what is said, heard, and deemed worth acting upon).

Key respondent interviews (semi-structured)

The Panels Project is using a more open or ethnographic approach to interviewing. While protocols have been developed to collect information that can be systematically analyzed, there is room for the introduction of other questions and topics. The factual questions may be the same, but

¹⁵⁹ Ibid, p. 96

often the conversation extends beyond the specific questions included in the protocol. These often “provide[s] detailed personal accounts about unique experiences of particular people.”¹⁶⁰ Permission to record is also requested so that such details may be accurately recorded.

In order to address the need for accurate economic data in commercial fisheries, our project developed a protocol in consultation with settlement agents (accountants who specialize in maintaining the books for commercial fishing businesses) and an economist familiar with the fishing industry. The settlement agents then selected a group of vessels typical of large, medium and small trawlers and/or gillnetters and recorded their fixed and variable costs at several year intervals.

Participant observation (fieldwork)

In each of the six communities we selected for this project, at least one member of the team –principal investigator or coordinator—lives nearby and/or spends significant time in the community observing and participating in community life. This helps establish rapport and encourages those being observed to continue their daily routine as though being unobserved. The researcher, however, is sufficiently apart from the daily routine to be able to record and analyze what is observed. This is the fieldwork method of participant observation.

Anthropology has traditionally relied on participant observation to understand the population being studied. This method allows the researcher to gain “experiential knowledge...more directly, more naturally and in a less mediated way than does an interview programme or survey.”¹⁶¹ Because the researcher is actively engaged in the community and follows the patterns of the daily lives of some portion of the population, the information generated reflects what the portion of the population actually does, rather than just what they say. In addition, the fieldworker can double-check the representativeness of interviewees selected via the “snowball” method and make appropriate additions; enhance the participatory nature of the research by helping to articulate local concerns and ideas; and give feedback to the overall project about how it is perceived and faring in diverse communities.

Researchers conducting fieldwork do run the risk of losing their objectivity when closely participating in and observing a community. The Panels Project has addressed this problem by ensuring that the researchers meet

¹⁶⁰ Morgan, p33

¹⁶¹ Ibid. p. 95

regularly as a group to discuss methods and results. Comparison and contrast with the other panels helps researchers retain a neutral perspective.

Focus groups

Focus groups base their results on a “purposive sample” of participants who are likely to be knowledgeable about the subject under consideration. The goal of the researcher is to create an open, non-threatening environment for a meeting of people with shared interests who will respond to specific questions guided by a moderator. The research team selects the topic and who will attend. As “research-created situations,” focus groups are very different from participant observation.¹⁶² Nevertheless, the flow of discussion can be quite flexible and open-ended, generating information of great ethnographic and sociological value. Participants compare their opinions, observations and experiences with each other and this synergy can generate new questions or ideas.

Focus groups are excellent for identifying critical issues and raising awareness of the complexity surrounding specific topics. They may be used to form consensus within the specific group represented. However, the results of focus groups may or may not be appropriately generalized to the broader population.

The Panels Project has used the general approach of focus groups for topical discussions of critical importance to the community. Meetings in Gloucester on infrastructure were the closest to formal focus group meetings. Other communities have met to discuss economic needs in the face of Judge Kessler’s ruling on groundfish management in New England and are currently meeting to focus on potential impacts of Amendment 13 to the Multispecies Fisheries Management Plan. Because the Project complements the focus group approach with interviews and participant observation, some of the data collected in the focus groups may be generalized.

Analysis

The panels will be asked to discuss how managers should use or weigh the gathered data. Each of the coordinators will be looking for patterns, trends or themes that are characteristic of the communities they have been focused on. We anticipate that interpretation of the data will be an iterative process involving panel participants, coordinators and the principal investigators.

¹⁶² David Morgan. *The Focus Group Guidebook*. Thousand Oaks: Sage Publications, 1998, p. 31

The Panels Project offers communities the opportunity to clarify their long-term goals and objectives, participate in collaborative decision-making, and work towards the sustainability of their communities.

Guidance from professionals

Two of the principal investigators have their doctorates in anthropology and have spent many years studying the fishing industry. In addition, the investigators have consulted with an economist to facilitate analysis of the economic data that is being collected.

Their role is to provide outsiders' perspectives, provide crosscutting ties across the six sites of the project, offer technical expertise and specialized skills, organize and coordinate the on-going work.