

FISHING COMMUNITY CAPITALS & REGULATORY GHOSTS: PLANNING FOR
SUSTAINABILITY IN EUREKA, CALIFORNIA

By

Robert James Dumouchel II

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Committee Membership

Dr. Laurie Richmond, Committee Chair

Dr. Yvonne Everett, Committee Member

Dr. Erin Kelly, Committee Member

Dr. Andrew Stubblefield, Graduate Coordinator

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ABSTRACT

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The Port of Eureka, a fishing community set in a rural micropolitan city, is planning for a sustainable future by participating in a proactive strategic planning process. This thesis draws from a mixed-methods approach that included semi-structured interviews; public meetings and workshops; document review and secondary data analysis; and participant observation to evaluate sustainability and regulatory relationships in the port.

This thesis finds that fishing community planning data can be effectively analyzed using the Community Capitals Framework (CCF) which uses a set of interdependent capitals (social, cultural, political, human, financial, built and natural) to assess the sustainability of a community and produce recommendations for future actions. Further, the thesis investigates the regulatory environment of the port and perceptions of the relationships between port stakeholders and regulators. Research shows that port stakeholders view themselves as largely powerless and disconnected from non-local regulatory agencies. These challenges are further explored through the metaphor of a “regulatory ghost.”

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INTRODUCTION

Fishing communities throughout America are facing challenges on social, economic and environmental fronts. Fishing, while a big part of community identity and sense of place in many coastal communities, is under pressure from regulations, competing land uses, work force succession challenges, and ecological change. In order to remain relevant and prosperous in the future, fishing communities need to plan with a focus on sustainability that balances many different factors in a complex regulatory and economic environment.

The Port of Eureka, also referred to as the Port of Humboldt Bay, is a deep-water port on the North Coast of California. The port takes advantage of Humboldt Bay which provides both valuable ecosystem services and a platform for coastal dependent industrial uses related to lumber, fishing, and shipping. The urban center of the port is the City of Eureka, a micropolitan city of under 30,000 residents which is also the biggest city for hours in any direction by automobile. Fishing-related infrastructure including marinas, a processing plant, and gear storage are found along Eureka's shoreline as well as other stretches in towns like Samoa, Fairhaven, and Fields Landing. The port is also a very important location for oyster mariculture with an estimated 70% of all oysters in California having a Humboldt Bay connection (HBHRCD, 2016).

Humboldt Bay was originally fished by the Wiyot people since time immemorial and tribal members still fish and gather resources from the Bay. The commercial development of the Port of Eureka was initially driven by European settlers who were

shipping supplies to gold mines in California's interior in the 1850s, this activity was later followed by development for logging and fishing (Scofield, 1954). In 1857, the original commercial fishermen of Humboldt Bay were Chinese fishermen who used seine nets and shipped dried fish to San Francisco by steam ship (Scofield, 1954). Over time, the industry expanded to European settlers who trolled for salmon and trapped crabs which they would ship to San Francisco via rail (Scofield, 1954). An economic survey in 1947 found that commercial fishing was Humboldt County's third largest industry at that time and was rapidly growing with five hundred participants and eleven processing plants (Humboldt County Chamber of Commerce, 1947). A similar report in 1962 showed that both the commercial and recreational fishing industries continued to grow and prosper in the Humboldt Bay Area (Eureka Chamber of Commerce, 1962). Fishing continued to expand into the 1980s but the growth and level of take by the fishing industry wasn't sustainable and a large decline was seen throughout the North Coast of California in the 1990s and 2000s as economic and regulatory environments changed (Select Committee on Rural Economic Development, 1998; Pomeroy et al., 2010). Today, the fleet fishes for many different species including salmon, rockfish, halibut, hagfish, sablefish and tuna, however the main focus is on Dungeness crab. Fishing remains an important contributor to Humboldt County's economic health bringing in an average of \$12 million per year in landings (LWC, 2018), but it plays a reduced role in the overall economic health of the region.

The Port of Eureka lays beneath a great many jurisdictional overlays representing federal, state, and local government agencies. This complex regulatory environment

creates challenges and confusion, a sentiment echoed by a 1973 report by the California Department of Fish and Game which noted that “there has never been a single administrative entity charged with overall responsibility for development of Humboldt Bay” (pg. 140). This remains true today as multiple agencies at each echelon of government continue to have an interest in the port. Having a large number of regulatory stakeholders increases the importance of planning and the region has seen a great many plans and planning processes. Some agencies have a very specific planning focus. For instance, the US Army Corps of Engineers has been working on dredging and jetty-related planning projects for Humboldt Bay since 1881 (USACE, 2012). Others, like the City of Eureka, have a broader jurisdiction which includes topics such as land use, transportation, natural resources management, and recreation as found in general plans adopted as recently as 2018 (City of Eureka, 2018) and going back as far as 1966 (City of Eureka, 1966).

Some planning projects don't start with local, state, or federal governments, instead these projects have more of a “bottom-up” process. The Fishing Community Sustainability Planning (FCSP) project for the Port of Eureka started in 2017 with grassroots support from the fishing community and a research/planning partner in Humboldt State University. This planning process took a proactive approach to planning for the fishing community by asking them to help envision what a sustainable future looks like according to their perspectives and values as opposed to forcing the community to react to actions or mandates from a government agency. A team of researchers used various methods to engage the fishing community and collect data on

perceptions of the port as well as ideas as to how to improve the sustainability of the community (Richmond et al., 2019).

This thesis examines questions related to the fishing community located in the Port of Eureka on California's North Coast. I spent 2017 and 2018 engaging with the port as a planner and researcher through a strategic planning process focused on fishing community sustainability. I was part of a team that conducted semi-structured stakeholder interviews; hosted public meetings and workshops; and performed document review and secondary data analysis. Besides this thesis, the research team will also be publishing a Fishing Community Sustainability Plan for the Port of Eureka.

This thesis is split into two chapters which are written as stand-alone articles. Chapter One takes a high-level view of the current state of the port. It takes data collected by the fishing community sustainability project and analyzes it with the Community Capitals Framework (CCF). The CCF, common in rural economic development literature, breaks down a community into a set of interdependent community capitals for analysis. This chapter examines capital broken into the following categories: cultural, social, political, human, financial, built, and natural. Chapter Two narrows its focus to regulatory relationships within the port which are heavily influenced by the social and political factors discussed in the first chapter. It looks at regulatory-related challenges identified in the port; perceptions of powerlessness and disconnectedness felt by fishing community members; and considers the concept of "regulatory ghosts," a metaphor used to understand the state of the relationship between port stakeholders and non-local regulatory agencies.

CHAPTER 1 – ASSESSING FISHING COMMUNITY SUSTAINABILITY WITH THE COMMUNITY CAPITALS FRAMEWORK: AN EXAMPLE FROM EUREKA, CALIFORNIA

1.0 Introduction

Many coastal cities and towns, even some of the largest, started with fishing as a core component of their economic and social composition. As ports have grown and industrialized over time, fishing communities have become intertwined in a more complicated web of social, economic, and environmental relationships that extend well past local shorelines into global markets. While cities, towns, and ports attempt to manage themselves with an eye towards sustainability, it is important for the fishing communities within them to proactively protect their own sustainability interests and plan strategically for the future. A sustainable fishing community can have an impact on community character, sense of place, local livelihoods, and the health of fish resources.

The sustainability of a fishing community can't be judged on catch alone. Fishing communities are complicated socio-economic-ecological systems that are frequently embedded in larger social systems (Holling, 1973; Walker et al. 2004). A sustainable fishery requires a sustainable fishing community (Jentoft, 2000). Fishing communities in the U.S. face many threats to their sustainability such as environmental changes like climate change and sea level rise; reductions in participation and a lack of new entrants to fishing fleets known as “the graying of the fleet”; the financial pressures of global

markets; and encroachment from other waterfront land uses (Clay & Olson, 2008; Donkersloot & Carothers, 2016; Gale, 1991; Robards & Greenberg, 2007). Assessing the sustainability of a fishing community is an important first step in planning for the future which requires tools and methods that allow for an interdisciplinary approach integrating social sciences, environmental sciences, and economics.

This paper explores how the Community Capitals Framework (CCF), a tool used by researchers and practitioners interested in rural economic development (Flora et al., 2015), could be used to assess fishing community sustainability. While the CCF is frequently applied to a whole community (Emery & Flora, 2006; Sseguya et al., 2009; Pitzer et al., 2015), this paper will attempt to target a fishing community which is a subcommunity within a larger micropolitan area in Northern California. The CCF breaks a community down into a series of seven interdependent capitals (natural, cultural, human, social, political, financial, and built) and uses that collection of lenses to view and analyze a community (Flora et al., 2015). By combining data collected in a strategic planning process with the CCF, this paper seeks to address whether the CCF can be successfully transferred from agricultural and upland resource extraction communities to U.S. fishing communities which are typically embedded in coastal communities with broader economic bases than towns which focus on farming, timber, or mining.

1.1 Fishing communities

Fishing communities are found along bays, rivers, lakes, and oceans all over the world. It can be easy to spot a fishing community, but it can be a struggle to define a fishing community because they exist along a broad spectrum of sizes and levels of

fishing dependence (Clay & Olson, 2007; Jacob et al., 2001). Fishing communities range from small fishing villages that are heavily dependent on fishing to large urban centers which are minimally dependent on fishing but have strands of fishing infrastructure woven throughout their waterfronts and a sense of place that celebrates a historical or cultural connection to the fishing fleet.

This paper grounds its idea of a fishing community in the Magnuson-Stevens Act's (MSA) definition. The MSA uses a place-based definition of a fishing community and further defines it as being "a community which is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such a community" (50 CFR § 600.345(b)(3)).

1.2 Challenges for fishing communities

Fishing communities exist in a state of uncertainty (Acheson, 1981; Cochrane, 2000), and just because a fishing community presently exists does not guarantee that it will persist into the future. Fishing communities, like other resource extraction communities, can be vulnerable to impacts from external forces such as regulation, climate change, economic markets, and encroachment of competing uses through waterfront redevelopment (Colburn & Jepson, 2012; McKnight et al., 2017). On the waterfront, fishermen have also seen impacts from changes in technology, waterfront redevelopment trends (Hoyle, 2000), environmental change, and workforce succession challenges (Donkersloot & Carothers, 2016).

1.3 Community Capitals Framework

The Community Capitals Framework (CCF) is a tool which can be used to investigate a community's sustainability by considering a set of seven interdependent community capitals (Table 1) (Emery & Flora, 2006; Flora et al., 2015; Pigg et al., 2013; Sseguya et al., 2009). Capital is frequently associated with financial or built assets, however, in the CCF context, capital can be any kind of asset that fits into one of the following categories: natural, cultural, human, social, political, financial, and built. CCF takes a systems approach to the analysis of a community's interdependent stocks and flows for the seven community capitals (Emery & Flora, 2006; Stofferahn, 2012). The CCF can be used to inventory a community's capital stocks and assess their vitality (Gutierrez-Montes, 2009; Crowe & Smith, 2012). The CCF model is useful for organizing information (Pigg et al., 2013) and investigating community changes (Emery & Flora, 2006). The general goal of CCF analysis in a planning context is to determine the balance of the seven capitals and determine which may be over- or undercapitalized and then prioritize planning decisions to focus on those capitals (Gutierrez-Montes et al., 2009).

Table 1: Community capitals defined

Capital	Definition	Fishing Community Context
Social	Social capital facilitates cooperation and consists of the connections between individuals and groups; social capital comes in three variants: bonding, bridging, and linking (Pretty et al., 2003; Emery & Flora, 2006)	Because of the dangerous nature of fishing and the interdependence of fishing community members on each other as well as outside economic and political influencers, social capital is a key element to a prosperous fishing community. Ability to self-organize and connect with others to achieve development/progress.
Cultural	Cultural capital is defined by a group's worldview, is shaped by language and traditions, and can be expressed through art, customs, clothing, etc. (Emery & Flora, 2006; Fey et al., 2006; Flora et al., 2015)	Culture is based in a community sharing knowledge and practices in a way that maintains a connection to fishing as a way of life. In many communities the cultural value of fishing exceeds the direct economic value. Fishing is deeply embedded in community character and sense of place for many ports.
Political	Political capital encapsulates a community's ability to wield political power locally through the creation and enforcement of rules and regulations as well as its ability to influence other communities, agencies, and organizations (Emery & Flora, 2006; Stofferahn, 2012; Flora et al., 2015).	Fishing communities can be vulnerable to the actions of governments and regulatory bodies, they must find appropriate ways to organize in order to influence political decisions that could impact their livelihoods and their access to the resource.
Human	Human capital includes a wide range of individual attributes belonging to those who live in a community which include skills and abilities, intelligence, health, leadership, and access to resources and knowledge from local and nonlocal sources (Emery & Flora, 2006; Magis, 2010; Crowe & Smith, 2012)	Human capital deals with the supply of individuals willing and able to enter the fishing-connected labor force. Fishing communities are having a difficult time maintaining a steady flow of captains, crew, vessel owners, and workers for marine-related businesses with the right skills and abilities to maintain existing fishing fleets. This well-documented phenomenon is known as

Capital	Definition	Fishing Community Context
		“greying of the fleet” (Donkersloot & Carothers, 2016)
Financial	Financial capital consists of the community’s financial resources which can include income, savings, taxes, and loans; financial capital is invested in community development, business development, entrepreneurship, and accumulated as wealth (Magis, 2010; Stofferahn, 2012; Flora et al., 2015)	Deals with the availability of funds and capital to invest in the fishing fleet and related working waterfront. Includes investment in infrastructure such as marinas, docks, fuel stations, processing plants, ice facilities, repair stations, and dredging. Includes the availability of low interest loans for fishermen to purchase boats, permits, and gear. Also considers the financial solvency of industry participants – participation in multiple fisheries, ability to weather bad years, ability to pool money for lobbying and other community investments.
Built	Built capital consists of the physical assets and human-constructed infrastructure which supports a community’s activities (Emery & Flora, 2006; Magis, 2010; Stofferahn, 2012; Flora et al., 2015).	There is a relationship between the availability of fishing infrastructure and how productive a fishing community can be. A community without docks, processing facilities, or access to high quality transportation networks is at a disadvantage on the global market.
Natural	Natural capital makes up the foundation of a community; it includes a community’s location, geology, soil, water systems, wildlife, weather, ecosystem services, and presence of commodifiable natural resources (Fey et al., 2006; Stofferahn, 2012; Magis, 2010; Flora et al., 2015)	State of the resource, ability of regulations to protect the resources, water quality, habitat, oceanographic conditions, reducing threats, etc.

The CCF is a flexible framework that has been used to investigate diverse problems in diverse settings to include food insecurity in the United States (Crowe & Smith, 2012), livelihoods in the Kamuli district of Uganda (Sseguya et al., 2009), and post-disaster recovery in Northwood, North Dakota (Stofferahn, 2012). The CCF is a valuable tool to focus decision-making and economic development efforts in a community. Because of the many ways the CCF is used, researchers have found it efficient to group, combine, or exclude capitals from their analysis. Gutierrez-Montes et al. (2009) found it logical to cluster the capitals into two “factors”: human (social, human, cultural, and political capitals) and material (natural, financial, and built capitals). Pigg et al. (2013) agree with the clustering concept, however they disagree with the inclusion of cultural capital, finding that its relationship to the other capitals is not strong enough for including into either cluster. Other authors found it most efficient to combine or remove capitals completely, for instance, Fey et al. (2006) combined built and financial capital, while Crowe and Smith (2012) only considered social, cultural, and human capitals in their analysis of food insecurity. The analysis in this paper will discuss cultural capital but with the understanding that elements of culture factor into all the remaining capitals.

Community capitals can be difficult to tease apart and measure because they can be so heavily interdependent, it can be even more difficult to determine how one capital impacts a community’s overall sustainability (Fey et al., 2006). This interdependence means that a change in one type of capital can have cascading impacts across other capitals, some researchers have referred to this phenomenon as either “spiraling up” or

“spiraling down” (Emery & Flora, 2006) Using a systems perspective, researchers have made connections between the flows of capitals and either positive or negative feedbacks in the stocks of other capitals (Emery & Flora, 2006). While some scholars agree with the concept of “spiraling up” (Gutierrez-Montes, 2009; Magis, 2010; Stofferahn, 2012), there are detractors. Pigg et al. (2013) argue that “spiraling up” is an oversimplification of the relationships between community capitals which are not all equal.

The CCF has been used especially in rural communities and agricultural settings but does not appear to have been extensively used in U.S. fishing communities or a working-waterfront setting. Much like farming, fishing is a resource dependent activity that provides both sustenance and livelihood for skilled laborers. Bringing the CCF to the waterfront has the potential to improve economic development activities by local governments and nongovernmental organizations. The CCF can help highlight and identify linkages between capitals and communities. The challenge in applying the CCF in a coastal, fishing community setting is that the fishing community is often nested within a greater community with many non-fishing uses.

2.0 Methods

2.1 Port of Eureka context

The Port of Eureka is located on the North Coast of California adjacent to Humboldt Bay. Eureka is the only deep-water port between San Francisco, CA and Coos Bay, Oregon (CalTrans, 2017). Eureka is a micropolitan port city tucked into a remote part of Northern California. Fishing is an important part of Eureka's character and sense of place. The port's urban waterfront boasts two working marinas, a modern fish processing plant, a fisherman's terminal building, and many other fishing-related amenities.

Despite well-documented declines in participation (Hackett et al., 2017; Pomeroy et al., 2010), Eureka's fishing fleet is still a significant contributor to the regional economy in Humboldt County. Fueled by a strong Dungeness crab fleet, Eureka is one of the top earning fishing ports in the State of California (LWC, 2018). Beyond crab, Eureka's fishermen target other catch including sablefish, sole, tuna, salmon, rockfish, halibut, hagfish, and many others (LWC, 2018; stakeholder interviews). Eureka's fleet averages \$12 million per year in landings (LWC, 2018) and in 2014 directly supported approximately 147 active vessels (Hackett et al., 2017). Eureka is also a major port for oyster mariculture operations with an estimated 70% of all oysters farmed in California coming from Humboldt Bay (HBHRCD, 2016).

The Port of Eureka falls under the regulatory jurisdiction of many different agencies at different levels of government. A project along or within Humboldt Bay

could fall under the jurisdiction of the City of Eureka, Humboldt County, and/or the Humboldt Bay Harbor, Conservation & Recreation District. State and federal jurisdictions are layered over the top of the local governments with the California Coastal Commission, the Army Corps of Engineers, Pacific Fishery Management Council, California Fish and Game Commission, California Department of Fish & Wildlife, and others all having a stake in managing the Bay. This regulatory overlap creates challenges for fishermen and local governments in developing and maintaining port infrastructure to include dredging and ecological restoration projects. Because of the complexity of completing coastal projects, it is much more efficient to engage in programmatic planning and permitting than to repeat ad hoc planning and environmental review processes for each individual project as it is proposed.

2.2 Fishing Community Sustainability Planning process

Data for this paper were collected in connection with a strategic planning effort conducted in the port of Eureka called Fishing Community Sustainability Planning (FCSP). The FCSP process, outlined by Richmond et al. (2019), is a method which can be used to gather data to assess the strengths and weaknesses of a fishing community. FCSPs allow planners and researchers to gain insights into the fishing community and build recommendations for future action which can be supported by a wide swath of the fishing community and other working-waterfront stakeholders.

2.2.1 Semi-structured interviews

Our research team conducted semi-structured interviews with 61 individuals across 47 total interview sessions. In the course of each interview, every interview

subject was asked the same series of questions: 1) What is going well in the port? 2) What are the biggest challenges in the port? 3) What have you seen work well in other ports? 4) If you had \$5 million to invest in the port, what would you spend it on? Additional questions and topics of discussion branched from that base depending on the interview subject's expertise and interests.

The research team contacted a wide range of stakeholders including commercial and recreational fishermen, government staff, elected officials, oyster growers, and fish processors (Table 2). Initial interview subjects were identified through pre-existing relationships, referrals from key informants, and review of documents related to the waterfront. From that first group, the project team used snowball sampling to get the names of other individuals to interview.

Interviews were mainly conducted in the field by two-person teams. Researchers, as much as practicable, would meet interview subjects at the marina, on their boats, in their offices, at local bars/restaurants, or at their homes. If an in-person interview wasn't feasible, a phone interview was conducted instead.

Table 2: Classification of individuals interviewed for Eureka's FCSP

Primary Classification of Interviewee	Number of Interviewees
Commercial Fisherman – COMMFISH	22
Government Staff – GOV	11
Recreational Fisherman – RECFISH	7
Oyster Grower – OYST	5
Elected Official – ELECT	5
Fish Processor – PROCESS	4
Consultant – CONSULT	2
Environmental NGO/Advocate – NGO	2
Marine Services Operator – MARSERV	1
Charter Operator – CPFV	1

2.2.2 Community meetings and workshops

The project team hosted three different meetings where community members could contribute their visions for the port in a group setting. The FCSP research team created an advisory committee of local stakeholders to help guide and promote the process. The committee met two times, once to kick off the project and brainstorm strengths and weaknesses of the port, and again to review potential recommendations for the final strategic plan. The team also held an open house style public meeting in Eureka inviting the general public as well as waterfront stakeholders to share feedback at various stations with the following themes: economics/markets, place/infrastructure, community, and targeted investment.

2.2.3 Document review & secondary data analysis

Extensive document review and archival research was integral in building foundational knowledge about the port and its history. Researchers reviewed past general plans, strategic plans, feasibility studies, environmental review documents, permits, contracts, reports, and many other items generated by local governments and waterfront stakeholders.

The team also analyzed secondary data sources to develop a better picture of the economic impact of the fleet, the amounts and species of fish caught, and the demographics of the fishing community. Data were sourced from agencies such as the California Department of Fish and Wildlife, National Oceanic and Atmospheric Administration, and US Department of Agriculture. These data were integrated into

informational posters at the public meetings, presentations to local governments, and the final plan.

2.2.4 Participant observation

The FCSP research team spent a great deal of time in the port, along the waterfront, and in other places where fishermen and waterfront stakeholders are located. Team members attended numerous Eureka City Council meetings, Humboldt Bay Harbor District meetings, a meeting of the California Senate's Joint Committee on Fisheries and Aquaculture, and a special meeting focused on fishing communities held by California Fish and Game Commission staff in nearby Del Norte County. The team attended social events hosted by coastal regulatory agencies and local mariculture businesses.

2.3 Analysis

This analysis filters data generated by semi-structured interviews with waterfront stakeholders through the CCF. The community capitals were not explicitly addressed in the interviews, rather the subjects were asked a set of open-ended questions which were then analyzed for the presence of absence of answers related to each of the capitals. Interview data were coded to identify the port's strengths and weaknesses as well as priorities for investment.

3.0 Results & Discussion

3.1 Community capitals

The CCF was not part of the interviews and the interviewees were not aware that the CCF would be used in any analysis or their interviews. Interviewees were given open-ended questions about the port which resulted in answers covering all of the different community capitals. Out of the 47 interview events, 37 (78%) touched on four or more of the six community capitals tracked in this analysis (Figure 1), the frequency of community capital mentions is shown in Figure 2. Cultural capital was not counted as it is essentially embedded in all other capitals.

Figure 1 shows that the majority of interviewees had a more holistic view of the strengths and weaknesses of the port and weren't focused on just one type of capital. Without prompting, the vast majority of interviewees provided answers related to four or more of the six community capital groups used in this analysis. Figure 2 shows the frequency with which different capitals were referenced in interviews. Built capital was the most discussed community capital as it is perhaps the easiest capital to conceptualize as a port strength or weakness that can be augmented by financial investment. Built capital in the form of fishing-related infrastructure is also a key indicator of a fishing community (Clay & Olson, 2008).

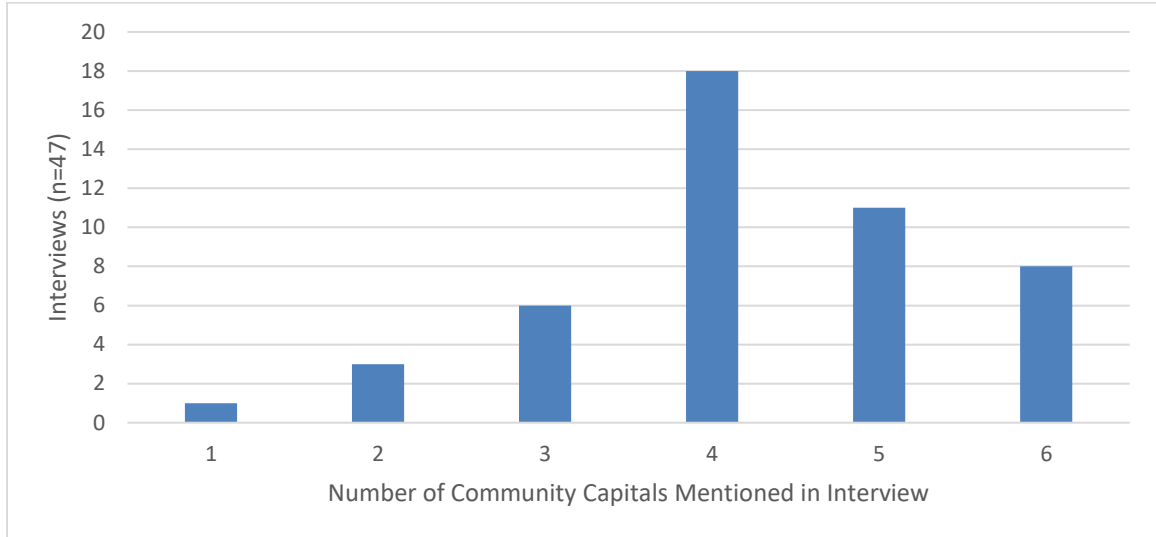


Figure 1: Number of community capitals mentioned in individual interviews

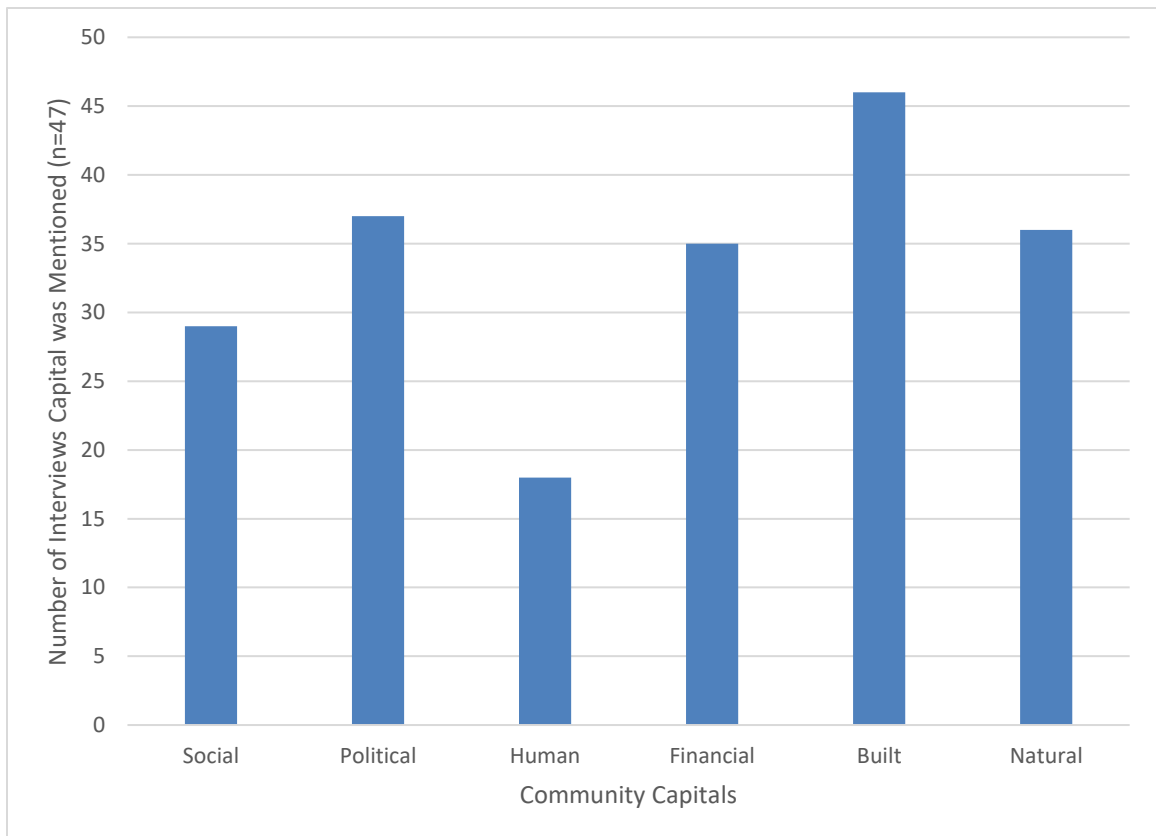


Figure 2: Number of interviews in which each community capital was mentioned

3.1.1 Cultural capital

Cultural capital is difficult to separate from other capitals, but it is still very important to discuss in this analysis. Evidence of fishing's influence on the surrounding metro area is easy to find with many nods to Eureka's maritime past spread throughout the Eureka metro-area. Posters proclaiming Eureka as a "Victorian seaport" and highlighting its status as a Coast Guard City can be found throughout Eureka's City Hall. Images of an iconic fisherman statue located near one of the port's marinas is incorporated into the logo of a bar/visitor center in Eureka's Old Town. A giant concrete and steel dolo, like those that make up the jetties which maintain the opening of Humboldt Bay, rests beside the former Eureka Chamber of Commerce building along the Broadway commercial corridor (Highway 101). Even if commercial activity on the waterfront has declined over time, the proximity to a working waterfront remains a part of Eureka's sense of place and Eureka's community character.

The cultural importance of the fishing community was evident in interviews with non-fishing stakeholders like one government official who said that "we need to preserve the fishing community regardless of what it adds to the economy. It's kinda what gives this place character" (GOV 1, 2017). A commercial fisherman echoed that sentiment noting that "having a working fleet here is part of people's sense of place. They like that they can buy tuna and crab at the dock. That's pretty intangible, but I'm glad people feel that way" (COMMFISH 1, 2017). The pervasiveness of the fishing community's impact on the greater community was best stated by a fish processing company employee who

said “these boats touch a lot of people, people don’t realize how many they touch. It’s not just a piece of fish” (PROCESS 1, 2017).

There is concern from both researchers and fishermen interviewed for the FCSP project that fishing culture is being coopted for tourism and marketing but not actual fishermen. In many cities, traditional port uses are retained largely to “lend color and an authentic robustness to waterfront life” (Petrillo, 1985, p. 96). One fisherman lamented that Eureka could end up like Morro Bay, CA, a popular tourist town on the Central Coast of California, where instead of fishing the waterfront is now “about selling fish sandwiches and taffy and shit” (COMMFISH 3, 2017).

3.1.2 Social capital

Social capital facilitates cooperation and consists of connections between individuals and groups (Pretty et al., 2003; Emery & Flora, 2006), it is said to “lubricate” cooperation (Pretty, 2003). The majority of interviewers indicated that there were issues with social capital, this is mirrored by a studies Hackett et al. (2018) and Ordonez-Gauger et al. (2018) which show high levels of distrust between fishermen and other waterfront stakeholder groups. This research uncovered a deep-rooted cynicism and feeling of defeat by many who have had long careers on the water. A fisherman told interviewers that she felt “there’s no social fabric in this fishing fleet anymore” (COMMFISH 2, 2017). Speaking with a marine services provider, he laid it out more colorfully saying that “if you want a friend on the waterfront, get yourself a fucking dog” (MARSERV 1, 2017). An erosion of social capital caused by infighting and distrust makes it extremely difficult

for the fishing community to advocate for itself and affect positive change on the waterfront.

Conflict on the waterfront is a common phenomenon around the world (Hoyle, 2000), and Eureka is not an exception as evidenced by interviews in which fishermen complained about other waterfront stakeholders and framed them as adversaries. Eureka's fishermen are feeling pressure from potential encroachment of other uses like recreation and tourism which trade on the fishing community's culture and presence of the fishing fleet while simultaneously competing for space on the waterfront. This has been observed in other coastal cities as well (Gale, 1991). Fishermen, based on public comments observed at a 2017 California Coastal Commission meeting, also appear to be concerned about competition and impacts from mariculture which is another seafood industry with similar challenges, pressures, and needs to the fishing industry.

The data gathered show that the fishing community is recognized by a diverse group of stakeholders as being socially important as well as being vulnerable to change. The community is under pressure from competing interests and declining participation which puts strain on relationships within the fishing community and between the fishing community and other waterfront stakeholders. Government agencies and regulators would benefit from seeking ways to reduce the vulnerability of the fishing fleet by creating or strengthening rules which protect fishing's place on the waterfront. Gale (1991) developed a series of defensive recommendations which could be used in a port like Eureka, according to Gale, local jurisdictions could: include protection for commercial fishing in zoning and planning updates; monitor the ownership of important

coastal properties; provide many different types of commercial facilities; keep fishermen involved in local politics; and try to keep the relationship between commercial and recreational fishermen balanced. Perhaps, most importantly, the fishermen themselves need to reevaluate their social networks and look for opportunities to improve relations amongst themselves (bonding) and among the rest of the community (bridging).

3.1.3 Political capital

Political capital consists of a fishing community's ability to affect change and exert their will within their community and throughout the agencies and businesses which comprise regional and global scales of the fishing industry. There are many entities that have political influence over Eureka's fishing community (

Table 3). Eureka's fishermen must expend political capital to maintain space on the waterfront; maximize access to marine resources to support fishing livelihoods; affect regulatory processes that can restrict access, movement, and use of resources; negotiate prices for fish; and advocate for infrastructure maintenance and upgrades.

Table 3: A selection of entities with political and regulatory influence over Eureka's fishing community

Local	State	Regional	National	International
City of Eureka	California Coastal Commission	Pacific States Marine Fisheries Commission	United States Army Corps of Engineers	Inter-American Tropical Tuna Commission (IATTC)
Humboldt Bay Harbor, Recreation and Conservation District	California Department of Fish & Wildlife	Pacific Fishery Management Council	United States Fish & Wildlife Service	
County of Humboldt	California Fish & Game Commission		Environmental Protection Agency	
North Coast Regional Water Quality Control Board	California State Lands Commission		National Marine Fisheries Service	
	California Coastal Conservancy			

My research identified many political capital-related barriers and roadblocks in the Port of Eureka. The fishing community has limited trust in other groups and those with the most political power over fishing regulations are not perceived to be easily accessible to the common fisherman. There is a sense of despair as stakeholders talk about how “the amount of bureaucracy has grown and grown” while the “[regulatory] agencies won’t come talk to us” (PROCESS 2, 2017). In an advisory committee workshop held in Eureka in May of 2017, one stakeholder called the out of town regulators “regulatory ghosts.” Regulations are seen as an existential problem with one commercial fisherman saying that “if we get any more regulations, we’re dead” (COMMFISH 4, 2017).

Several fishermen commented that they see their peers as a political liability. One noted that “commercial fishermen don’t speak up properly in meetings” (COMMFISH 5, 2017) referencing the occasional occurrence of aggressive and inappropriate outbursts at public meetings. While there is an existing group of older, politically active fishermen in Eureka, there is a palpable desire for new voices to advocate for the fishing community. One fisherman made it clear that “if you don’t stay politically active, you just get walked over,” (COMMFISH 6, 2017) however, “fishermen just don’t want to get involved sometimes” (COMMFISH 7, 2017). Being interested isn’t the only prerequisite for engagement, one former elected official likened it to “putting yourself through a college curriculum to get up to speed” (COMMFISH 8, 2017) when trying to be politically involved.

Eureka does have a small subset of politically-engaged fishermen. Commercial fishermen are not uncommon at local government meetings, and some travel across the state to California Fish & Game Commission meetings to gain access to State-level decision makers. The port also has an active fisherman's marketing association which advocates for the fleet. The association has had numerous successes in advancing the interests of the fleet, such as negotiating prices for crab and limiting the impacts from marine protected areas developed through the Marine Life Protection Act in 2012. However, much of the political activity is undertaken by just a few fishermen and, based on interviews with current and former members, there isn't always a consensus which issues and viewpoints are the most worthy of attention and advocacy.

Government bureaucracies are not easy to navigate, and it's even more difficult for fishermen to participate in governance because their work includes extended hours on the ocean and making it difficult to show up to public meetings. If more fishermen, including both commercial and recreational fishermen, were to become effectively engaged and educated in government decision-making, there would be more opportunity for fishermen to prosper in the future. The workings of many regulatory bodies can be difficult to decipher and currently only a few local fishermen truly know how to be an effective participant within government frameworks. To improve political capital, fishermen could adopt a "citizens academy" approach to teach new fishermen how to advocate for themselves and the industry. Citizens academies have been used by some local governments to teach residents about how their government works and how to interact with their local government (Morse, 2012). In a fishing community setting, a

citizens academy could help activate new cohorts of politically-interested fishermen with enough knowledge of political systems to affect change.

3.1.4 Human capital

Fishermen, boat mechanics, fish processors, truck drivers, and numerous other skilled professionals are required to make a port work. Matching those with the aptitude and interest to acquire the right skills to fill these jobs is a challenge. Fishermen in particular are a challenge to recruit, because the work is difficult and dangerous and the barriers to entry can be high. Not many interviewees discussed human capital as a port strength or weakness, but those who did were acutely aware of the potential negative impacts that would result from a lack of new entrants to the fishing community.

Among interview subjects, there was a concern that there is not a fully formed cohort of younger fishermen ready to take over when the current captains are ready to retire. When age data are contrasted with a normal distribution, as shown in Figure 3, a distinct gap in the presence of younger fishermen on the North Coast of California is apparent.

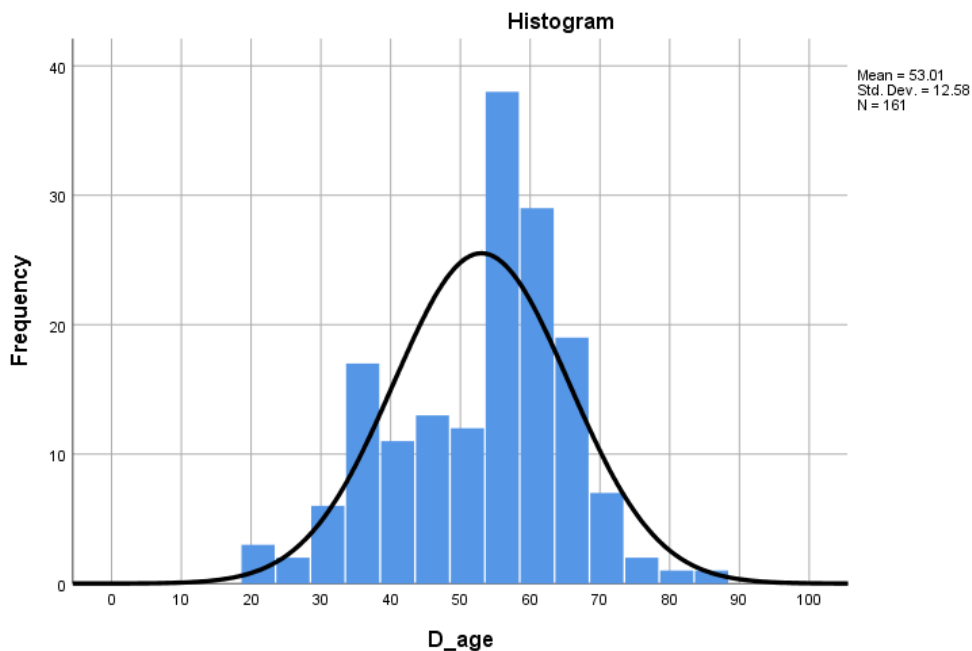


Figure 3: North Coast fishermen age distribution based on data collected by Hackett et al., 2017

The aging of the average fisherman, sometimes called the graying of the fleet, is a phenomenon found in both Eureka and ports around the country. Multiple studies have found that younger prospective fishermen have difficulty gaining entry to fisheries and making a living (Carothers, 2015; Donkersloot & Carothers, 2016; Russell et al., 2014). A study on the North Coast of California (which included Eureka) found that the average age of a boat captain was 53 years old (Hackett et al., 2017). A similar study in Alaska found that the average age of a state fishing permit holder was 50 years old (Donkersloot & Carothers, 2016), and a NOAA study on the Pacific Groundfish Fishery places the average age at 51.1 years old (Russel et al., 2014). For comparison, in 2017, the average

ages in the U.S. for other physically demanding professions were as follows: agriculture, 42.2; mining, 42.6; construction, 42.6; and manufacturing, 44.5 (LWC, 2018).

Many in Eureka's fishing community are concerned about who the next generation of fishermen are going to be. The problem was stated many times in many ways: "the dinosaurs are going to die and there's no one behind them" (ELECTED 1, 2017), "without young people this dies" (COMMFISH 4, 2017), "it's kinda gonna be a tough one when a lot of us leave, there's not many behind us" (PROCESS 2, 2017), "we've made it much more difficult for young people" (COMMFISH 1, 2017), and "we're missing a generation of fishermen" (MARSERV 1, 2018). The human capital problem is very clear. However, feasible solutions have proven difficult to identify and implement.

The integration of labor force development into any economic development planning done for the port and the surrounding jurisdictions should be a priority. Fishing groups need to create partnerships with other groups that have the capacity to deploy training like the local community college or even Eureka's Recreation Department. Pulling human capital into the fishing workforce will also likely require creating financial pathways to boat ownership and the purchase of permits. While there have been federal attempts to kickstart the recruitment of fishermen (i.e., the Young Fishermen's Development Act of 2017 (H.R.2079) which was not signed into law), it might be more successful to develop local programs aimed at keeping existing ports staffed.

3.1.5 Financial capital

Access to financial capital is an underlying concern throughout any fishing community and an important component of building other capitals within communities. Fishing community members see fishing as a positive source of financial capital and are optimistic that it will be a viable industry in the future. Stakeholders made comments like “the fishery is a boon for the economy” (RECFISH 1, 2017), “crab creates a lot of good paying jobs” (COMMFISH 9, 2017), and “I think fishing is going to be a big economic driver in our community” (RECFISH 2, 2017). One commercial fisherman frequently remarks that “hope springs eternal in my industry” (COMMFISH 10, 2017), and fishermen are hopeful that they will continue to be able to make a living as independent fishers. This optimism correlates with historic landings data for the port. Since 1990, commercial fishing has resulted in \$324 million in landings in Eureka, an average of \$12 million per year (LWC, 2018). Between 2012 and 2016, Eureka landed between 2-6% of the total catch in California by weight and 4-10% by value (LWC, 2018). Fish landings are supplemented by a strong mariculture industry which is estimated to have created \$9.8 million in revenues and \$19.3 million in total economic impact in 2016 (Richmond et al., 2019).

Although there is an undercurrent of financial hope, most interviewees expressed concerns that the port is financially undercapitalized. The lack of capital manifests itself in numerous ways. A lack of financial capital results in poorly maintained infrastructure, “they fix shit around here with Band-Aids and bubblegum, it isn’t long term solution based because there is no money” (COMMFISH 5, 2017). It is important to note that

while there are perceptions of a lack of financial investment in the port, there have, in fact, been large government funded projects completed to benefit the fishing fleet in recent years like the \$3.2 million in local and federal funds invested into the Fisherman's Terminal Building located on Eureka's waterfront (Greenway Partners, 2015).

Briefly discussed in the human capital section of this paper, there is also a concern that a lack of access to financial capital stops new fishermen from entering the industry because they can't get money for boats and permits. One fisherman asked, "how do you (as a fisherman) come up with a quarter million when you're just starting out?" (COMMFISH 1, 2017), while a processor wondered "what bank is going to loan a 30-year-old kid \$5-600,000 for a boat and some permits?" (PROCESS 2, 2017). Dungeness crab is the largest fishery in Eureka and older fishermen were granted their permits, which can be sold, for free. This permitting scheme adds to the financial pressures felt by new entrants to the fishery and creates an intergenerational injustice within the fishing industry. While some wonder "why should I be able to profit from the sale of my permit when it was given to me for free?" (COMMFISH 9, 2017) – many others are hoping that the sale of their permits will help fund their retirement from the fishing industry. A former commercial fisherman now working an office job in a nearby city asked if "getting into the business is even practical at this point?" (GOV 1, 2017). He was acutely aware of the financial capital required to reenter the fishery and chose the safety of a job in town instead. Financial uncertainty is found all throughout the waterfront and has a pronounced impact across human and built capital in the port.

Entities within the fishing community can develop pathways to finance maintenance of infrastructure as well as the financing of entrepreneurs seeking to enter the fishing industry. The youngest captain the FCSP interview team spoke to remarked that “loans in this state (California) are damn near impossible” (COMMFISH 6, 2017), and that if he hadn’t been persistent in his pursuit of funding, he would not have been able to enter the industry. Some states, like Alaska, have taken a proactive approach that includes creating loan programs for commercial fishermen (State of Alaska, n.d.). One pathway the port could use is the formation of a community quota fund to help make fishing more accessible to new entrants that can’t access permits in other ways. Ports like Morro Bay and Monterey have adopted community quota fund models where a non-profit buys quota and then leases it to fishermen, many of whom would not have been able to purchase quota outright. It is also important that fishermen and fishing associations make partnerships with non-profits and local government agencies to apply for grant opportunities which can help pay for installation and maintenance of expensive fishing infrastructure.

3.1.6 Built capital

Built capital was a ubiquitous topic of conversation with only one interview subject not proffering opinions about the state of Eureka’s built environment. While positive comments about existing infrastructure were common, the overall perception appears to be that while Eureka has a lot of fishing infrastructure, it is not complete nor is it in great condition. Negative comments about built capital were the most commonly logged item in the analysis of the FCSP interview data.

Many fishing community members told our research team that, in general terms, “the infrastructure that we do have is working well” (PROCESS 2, 2017). The optimists told us that “we’ve (the Port of Eureka) kinda got everything we need” (COMMFISH 11, 2017). One former elected official thinks the port may even have too much infrastructure in relation to the amount of resource available to catch opining that “infrastructure exists here for the fisheries we don’t have” (ELECTED 2, 2017) meaning that the port has more docks, hoists, and processing capacity than it actually needs based on the sustainable activity of the fishing fleet. The availability of docks, marinas, hoists, storage areas, and other fishing infrastructure create many benefits for the fishermen who operate out of Humboldt Bay. A key piece of infrastructure that puts Eureka at an advantage over many ports is an operational fish processing plant. Kent & Himes-Cornell (2016) found a statistically significant link between the presence of fish processing plants and the amount of other support services found in a community.

Despite Eureka’s existing infrastructure, the majority of fishing community members that were either interviewed or participated in public meetings, complained freely about built capital in the port. The Port of Eureka was in the midst of a dredging crisis while interviews were underway. Boats were frequently getting stuck in the mud at marinas and at minus tides some slips would be completely drained exposing the silty bay bottom. Very tense community meetings were hosted by the two local government agencies responsible for dredging the marinas and non-federal channels in response to the dredging issue (federal navigation channels are dredged by the Army Corps of Engineers). Virtually every waterfront stakeholder saw dredging as a “nightmare for

every fisherman” (COMMFISH 6, 2017), and failure to dredge was seen as a threat that if unsolved could lead to there being no commercial fleet in Humboldt Bay. Silt accumulation is also a problem at the entrance to Humboldt Bay which has a famously dangerous bar at its entrance. Fishermen remarked in interviews that “nothing’s safe on the bar” (COMMFISH 10, 2017), and an elected official lamented that Humboldt Bay is “getting a reputation of being a port only available seven to eight months of the year” (ELECTED 3, 2017).

Within the umbrella of built capital, transportation infrastructure was a major problem highlighted by members of the fishing community. One interview described the situation like this: “here in Humboldt we’ve got crumbling highways and marinas full of mud” (COMMFISH 5, 2017). Eureka is remote and has limited ability to ship products to more populated locations. The port does not have a modernized container terminal, there is not an active rail system, air service is limited, and the road system servicing the port is prone to disruption by weather and landslides. The road network is also limited in that parts of it run through public lands that have massive old growth redwood trees that have constricted the growth of the roadway leaving it incapable of handling full-size semi-trucks. A fish processor simply stated that “we don’t have shit for transportation” (PROCESS 1, 2017). It is well understood that “we need redundancy for getting goods and materials in and out of Humboldt County” (ELECTED 4, 2017), but that would need to be funded and permitted by agencies that fishermen and local governments cannot easily influence.

Perhaps the most important recommendation for basic fishing infrastructure on Humboldt Bay is to expend money and effort on maintaining what is currently in place. The City of Eureka and the Humboldt Bay Harbor District both have a backlog of identified capital improvement projects waiting for a funding source. A waterfront stakeholder said it best when they remarked that “if you lose it all, it’s hard to get back” (COMMFISH 4, 2017). In regards to transportation infrastructure, Eureka’s fishermen should seek alliances with other industries which need access to better roads and modernized port equipment so as to combine their voices when advocating at higher levels of government. As explained in Richmond et al. (2019), fishing communities and FCSPs have a limited sphere of influence which means their ability to affect change diminishes the further they move geographically and politically from their homeport. If a fishing community wished to extend their influence in their advocacy for greater spending on built capital, they need to create partnerships that expand beyond the port.

3.1.7 Natural capital

Natural capital sets the foundation for any fishing community. The ecological setting of Humboldt Bay is readily acknowledged by waterfront stakeholders as an exceptionally valuable natural resource. Humboldt Bay and the Port of Eureka have access to many natural resources, however, not all of the region’s natural resources are healthy or sustainable. The enthusiasm for the natural environment was tempered by concerns about the sustainability of the fish resource. Some believe that the fishery is doing better than at any time in their fishing careers, like one drag boat captain who told our team that “there are more fish out here than I’ve seen in my lifetime” (COMMFISH

12, 2017). However, many others worry about the long-term sustainability of their fisheries. Dungeness crab has been afflicted in recent years with season delays and closures related to domoic acid which makes the crab toxic to humans if it exceeds certain levels (CDPH, 2016). Fishermen in the region have also seen dwindling numbers of salmon, formerly a staple of the fishing fleet. One fisherman told our researchers that “no fisherman wants to fish salmon right now... why would he want to go out and catch the last salmon?” (COMMFISH 13, 2017). Another waterfront stakeholder saw it this way, “crab and groundfish are okay. Salmon season is nonexistent. Humboldt Bay has seen a domino effect of collapsing resources” (OYST 1, 2017).

There is also concern for future ocean conditions which remain uncertain in the face of threats like sea level rise, climate change, and ocean acidification. Humboldt Bay is thought to be one of the vulnerable sections of California coastline to the effects of sea level rise (Laird, 2013; Anderson, 2015) and marine infrastructure would be particularly vulnerable to inundation. Mariculturists expressed strong concerns about changing conditions, especially ocean acidification because of what it could do to their seed operations (Richmond et al., 2018).

There is a lot of pride and sense of place tied to the health of Humboldt Bay which was observed in interviews, public meetings, and through general participant observation. Fishermen, elected officials, tribes, environmental groups, and the public need to find ways to work together to maintain and improve the health of the Bay as it benefits all waterfront stakeholders. Groups with an interest in the health of the Bay could educate the public on how the health of the Bay can be maintained, seek grant

funding for restoration projects, and look beyond the water for potential environmental disasters which could be created by the inundation of low-lying industrial lands ringing the Bay.

4.0 Conclusion

This research shows that fishing community sustainability can be assessed through targeted outreach and the application of an appropriate framework for analysis. While fishing communities are complex socio-economic systems nested within dynamic ecological settings, their sustainability can be analyzed and sustainability planning recommendations improved through a process which combines strategic planning data and the CCF (Flora et al., 2015). This case adds to CCF scholarship showing that the CCF has sufficient flexibility to be applied to communities that are difficult to demarcate like fishing communities located within urban areas. Engaging Eureka's fishing community through a strategic planning process and filtering the analysis through a series of interdependent community capitals allowed our researchers to isolate threads of data related to various forms of capital and provide a thorough and usable analysis. Using this method, which relies on assessing many interdependent capitals, decreases the odds that one factor will overpower the rest and obscure potential strengths or weaknesses of a community.

In the Port of Eureka, a large percentage of planning process participants discussed concerns over dredging of the port's docks and marinas while substantially fewer addressed issues related to the port's workforce. A cursory review of the planning data would lead decision-makers to believe that the majority of the port's problems could be solved by dredging the marinas and implementing a better process for future dredge cycles. However, once analyzed via the CCF, different problems emerged that are in need

of attention, like the lack of human capital in the form of skilled and willing laborers capable of the work required to keep fishing boats and fish plants operating into the future. While dredging is an acute emergency with a well-defined solution, a lack of workers is a systemic problem which is much more difficult to solve. Segmenting the data highlights potentially hidden problems that could have a huge impact in the long-run.

The persistence of fishing communities is not guaranteed, they are very vulnerable and face numerous challenges. Because fishing communities are under constant assault from myriad external factors, these communities can end up spending more time attempting to defend the status quo than planning for the future. Matching proactive strategic planning with a broad and interdisciplinary approach to data analysis with the CCF, stakeholders may be able to identify the best, most sustainable paths forward that serve fishermen, fishing communities, and the fishery.

CHAPTER TWO – REGULATORY GHOSTS: A FISHING COMMUNITY’S PERCEPTIONS OF REGULATORY RELATIONSHIPS IN EUREKA, CALIFORNIA

1.0 Introduction

In 2017, maintenance dredging was on the verge of becoming an emergency in Humboldt Bay. If left unabated, sediment can accumulate around docks and in channels and marinas, making them dangerous or unusable for boaters. Dredging uses various mechanical methods to remove sediments and allow continued access to vital marine infrastructure. With many slips becoming too shallow to exit safely on a minus tide, many who made their living on the water were in a state of agitation. Many of those affected were looking to local government for answers. The City of Eureka (City) and the Humboldt Bay Harbor, Recreation & Conservation District (Harbor District) had made a dredging proposal to regulatory agencies which involved pumping dredge spoils from the Bay to an ocean-facing beach to be washed away by winter storms. This method had been used many times across many decades of dredging. The difference, this time, was that permits to deposit dredge spoils on the beach were denied by a regulatory agency. The Environmental Protection Agency (EPA) was identified in local media as the roadblock for permitting approval (Burns, 2017).

In May of 2017, the City and the Harbor District held a joint meeting to talk about the dredging of marinas, docks, and non-federal channels in Humboldt Bay. Agency staff spent about an hour making presentations while many in the audience became

increasingly discouraged, upset, and distrustful. During the question and comment period, a marine services provider stood up and asked, “how do we get the EPA here? We want to talk to the EPA, and we want to talk to the Coastal Commission. You guys (local government) are doing a great job, but we want to see these ghost riders that are ruining our lives. How do we see them?” Many in the audience bristled with a similar irritation. Why did an anonymous stranger from a regulatory agency based in a faraway office get to make decisions on how local governments in Eureka disposed of sediments dredged from the bottom of Humboldt Bay? He continued questioning, “is this one guy at the EPA that’s saying ‘no I don’t like it,’ or is it a panel of people?” City staff was able to name one EPA staffer, but indicated that they mainly interacted with the EPA through the Army Corps of Engineers, a different federal agency altogether. One more question was asked – “so how do we get this guy fired?”

In June of 2017, I was part of a team of planners and researchers that hosted an advisory committee meeting for a strategic planning project in the Port of Eureka. The committee included commercial fishermen, recreational fishermen, elected officials, local government staff, marine services providers, environmentalists, and mariculturists. As part of the planning process, I facilitated a group discussion on the state of the port. Repeatedly the group found its way back to the impacts regulations and regulators had on their livelihoods and the ability to complete development projects. While trying to describe his perception of the relationship regulators have with the port, one group member referred to them as “regulatory ghosts”. I drew a ghost on the board (Figure 4) and the ghost metaphor appeared to be immediately understood by the rest of the

participants who laughed and nodded as I drew the image on the paper. This concept of regulators as “ghosts” had been brought up in multiple distinct meetings with nods of agreements from other waterfront stakeholders. This led to a question: what do waterfront users mean when they refer to regulators as “ghosts?”

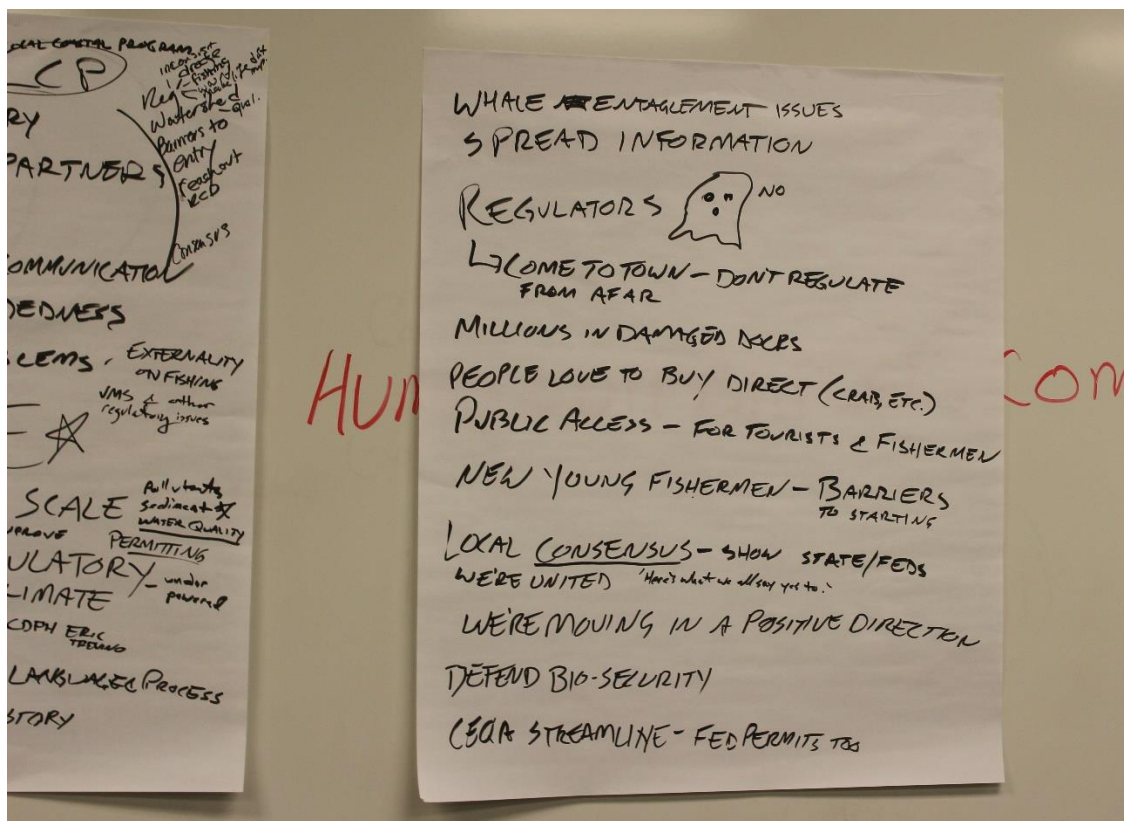


Figure 4: Photo from May 2017 planning meeting involving key stakeholders connected to the port of Eureka.

This paper is focused on the Port of Eureka, the location of a fishing community in Northern California, where a bottom-up strategic planning process called a fishing

community sustainability plan (FCSP) took place in 2017 to 2018 (Richmond et al., 2019). The FCSP was specifically looking for strengths and weaknesses in the port which were used to develop recommendations for the future of the port. Regulations and regulatory relationships were frequently identified as challenges. Many of the challenges that didn't explicitly call out regulations still had strong a nexus to regulations and regulatory agencies. This paper will investigate the following questions: 1) How do waterfront stakeholders in Eureka perceive the regulatory environment? 2) How can waterfront stakeholders improve their connections to regulators and increase their influence over regulatory processes? In the process of answering these questions, I hope to unpack the various meanings wrapped up within the commonly-used metaphor of "regulatory ghosts".

1.1. Threats, vulnerability, and perceptions

Regulatory relationships in fishing communities are reliant on trust and social capital, while being heavily influenced by stakeholder perceptions. These relationships are difficult for both regulatory and regulated stakeholders to navigate and there is a great deal of literature focused on marine protected areas and natural resources planning which can give working-waterfront researchers some context as to what to expect in a fishing community-based planning process (Davenport, 2007; Pomeroy 2007; Bennett, 2016; Richmond et al., 2019).

At the outset, it is important to understand that fishing communities are subject to a large volume of threats and vulnerabilities. Fishing communities, like other resource

extraction communities, are quite vulnerable to exogenous forces like politics, regulations, environmental factors (i.e. climate change), economic markets, advances in technology, and workforce trends (Colburn & Jepson, 2012; Donkersloot & Carothers, 2016). In the fishing industry, a phenomenon called the “graying of the fleet” in which fishermen are getting older and few new fishermen are entering the industry is of particular concern – on the North Coast of California the average age of a fisherman is 54 years old (Hackett et al., 2017). Additionally, the act of fishing the open ocean from a small vessel is physically dangerous, leaving fishermen vulnerable to the weather and movements of the ocean. This danger has been a part of the profession for thousands of years and some anthropologists believe that “fishermen are psychologically adapted to the conditions they face” (Acheson, 1981, pg. 296). However, the insertion of regulations into this already precariously balanced lifestyle can cause great disruption to the livelihoods and social relationships of fishing community members (Clay & Olson, 2008). Fishermen are put in the unenviable position of having to safely and efficiently locate and harvest marine resources while also attempting to adapt to and navigate the everchanging and tightening regulatory environment.

Regulations are a particularly difficult threat to manage because while they serve a purpose in protecting resources, they also restrict the actions of fishermen and industrial waterfront developers. Fishing communities become increasingly vulnerable when restricted because regulations can reduce their ability to be resilient and adapt to change (Robards & Greenberg, 2007). When a large number of overlapping regulatory jurisdictions accumulate in coastal areas, the mix of regulations, which may or may not

be complementary to each other, increase vulnerability by moving many decisions outside of the fishing community's sphere of influence and into the hands of regulators that may not have a relationship with the community (Richmond et al., 2019). Davenport et al. (2007) noted that a big challenge is that regulatory agencies have mandates with a nationwide focus which often do not align with local needs in resource extraction communities. Local stakeholders have deep connections to the managed resource and are extremely vulnerable to the actions of agencies (Davenport et al., 2007). The cumulative impact of these threats is likely to cause increased distrust between fishermen and those who regulate or use the waterfront.

Research shows that levels of trust can be low in fishing communities (Hackett et al., 2017; Ordonez-Gauger et al. 2018). A recent study on the North Coast of California, which included Eureka fishermen, found that fishermen are highly distrustful of people, groups, and institutions with a connection to regulatory and environmental focused entities (Ordonez-Gauger et al., 2018). Distrust, as found in the Port of Eureka and throughout other natural resource dependent communities, is known to have negative effects on natural resource management processes, to include planning (Davenport et al., 2007).

Trust has many dimensions and there are many types of trust which have been explored in different ways by different academic disciplines. One definition provided by Rousseau et al. (1998) is that trust is "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (p. 395). Another definition provided by Molm et al. (2000), is that trust consists

of “expectations that an exchange partner will behave benignly, based on attribution of positive dispositions to the partner in a situation of uncertainty and risk” (p. 1402).

Stern and Coleman (2015) break trust down into four dimensions: dispositional trust, rational trust, affinitive trust, and procedural trust. These dimensions were used to evaluate trust in north coast fishing communities by Ordonez-Gauger et al. (2018) whose findings are very applicable to my discussion of regulatory relationships in the Port of Eureka. Of particular interest are dispositional and affinitive trust. Stern and Coleman (2015) define dispositional trust as “the general tendency or predisposition of an individual to trust or distrust another entity in a particular context,” (p. 122) and affinitive trust as “trust in an entity based primarily on the emotions and associated judgements resulting from either cognitive or subconscious assessments of the qualities of the potential trustee” (p. 122). Ordonez-Gauger et al. (2018) found fishermen were predisposed to distrust management entities that could, or have, negatively affected their ability to fish. Additionally, affinitive trust was low as fishermen saw themselves as having different values and lifestyle from those who regulated them (Ordonez-Gauger et al., 2018). Simply put, fishermen have already decided they don’t like regulators and they don’t see them as having the same interests or values, making it difficult to find common ground and build new trust relationships.

A major component to trust in fishing communities is fishermen’s perceptions of the various actors and entities that surround them. Bennett (2016) defines perceptions as “the way an individual observes, understands, interprets, and evaluates a referent object, action, experience, individual, policy, or outcome” (pg. 4). Perceptions are subject to a

stakeholder's worldview or experiences and different stakeholders are capable of perceiving the same situation in many different ways (Bennett, 2016). Perceptions are also important because they can influence compliance and the acceptance of planning actions (Agardy et al., 2011). Stakeholder perceptions have implications for social factors, ecological outcomes, and governance related to environmental conservation (Bennett, 2016). Negative perceptions of agencies and conservation actions were found to be a factor in the high levels of distrust found by Ordonez-Gauger et al. (2018). While their research, as well as my research, found that conservation actions like the designations of marine protected areas on the North Coast of California weren't as harmful as initially perceived by fishermen, they still harbored negative perceptions of the process and agency participants.

2.0 Methods

2.1 Study site – Port of Eureka

The Port of Eureka (Figure 5) is located in Northern California, approximately 85 miles south of the Oregon border. The port is centered on Humboldt Bay, the only deep-water port between San Francisco, CA and Coos Bay, OR (CalTrans, 2017). While the entrance to Humboldt Bay has a reputation as being dangerous, a reputation which was well supported by many mariners interviewed for this project, the Bay itself is well-protected and has large amounts of infrastructure for coastal dependent industrial uses. The Bay is home to a commercial fishing fleet, international wood products exporters, two large marinas, a modern fish processing facility, numerous docks and hoists, six mariculture operations, a fishermen's terminal building, and many other amenities. Although the port has many vital pieces of infrastructure, it does not include a modernized container shipping port, rail access, or a cold storage plant.

The City of Eureka, with a population of under 30,000 people, is a micropolitan city which serves as the urban hub of a remote and rural portion of California's north coast. Eureka is home to most of the working waterfronts in Humboldt Bay, however coastal industrial infrastructure is spread throughout a series of small unincorporated towns such as King Salmon, Fields Landing, Fairhaven, and Samoa. These towns provide additional space for fisherman, mariculturists, and other industrial waterfront users to run their businesses.



Figure 5: Map of Humboldt Bay and the Port of Eureka (base map source: Google Maps)

Eureka's fishing community is deeply embedded in the social fabric of the Humboldt Bay metro area. The commercial fishing fleet is largely found at Woodley Island marina, located on an island near Eureka's Old Town area. A second marina, which is also home to a smaller number of commercial vessels, is located in an industrial area along Eureka's coastline. The commercial fleet consists of approximately 147 vessels (Hackett et al., 2017) and lands species including Dungeness crab, sablefish, sole, tuna, salmon, rockfish, halibut, and hagfish (LCW, 2018; stakeholder interviews). While the fleet is smaller than it was in previous decades, it is still very economically productive with about \$12 million in landings each year (LWC, 2018). Additionally, Eureka has a

vibrant mariculture industry which makes up ~70% of California's oysters (HBHRC, 2016). Although oyster growing is not fishing, we still include them in the fishing community because mariculturists are harvesting seafood and there is a great deal of overlap in the needs of fishermen and mariculturists to include coastal infrastructure and marine services.

2.2 Regulatory context

The Port of Eureka exists within a complex web of regulatory jurisdictions that includes numerous local, state, regional, and federal agencies with different interests and missions. With so many agencies layered upon each other, those being regulated have difficulty understanding regulations and moving forward with development becomes an arduous process. Not only are many regulations difficult to comply with, the agencies themselves can be difficult to work with. There are low thresholds for what constitutes a development in California's coastal zone and projects in or under the water tend to involve long, drawn-out, multi-agency, discretionary approval processes which are neither fast nor inexpensive. The California Coastal Act, which created and drives the actions of the California Coastal Commission, defines a development as follows:

“Development” means, on land, in or under water, the placement or erection of any solid material or structure; discharge or disposal of any dredged material or of any gaseous, liquid, solid, or thermal waste; grading, removing, dredging, mining, or extraction of any materials; change in the density or intensity of use of land, including, but not limited to, subdivision pursuant to the Subdivision Map Act (commencing with Section 66410 of the Government Code), and any other division of land, including lot splits, except where the land division is brought about in connection with the purchase of such land by a public agency for public recreational use; change in the intensity of use of water, or of access thereto; construction, reconstruction, demolition, or alteration of the size of any structure, including any facility of any private, public, or municipal utility;

and the removal or harvesting of major vegetation other than for agricultural purposes, kelp harvesting, and timber operations which are in accordance with a timber harvesting plan submitted pursuant to the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 (commencing with Section 4511). As used in this section, "structure" includes, but is not limited to, any building, road, pipe, flume, conduit, siphon, aqueduct, telephone line, and electrical power transmission and distribution line. (California Public Resources Code, Division 20 – California Coastal Act, § 30106)

The above definition of development is extremely broad and allows the Coastal Commission to consider almost anything a development for regulatory purposes, even a change in land use designation that doesn't result in any physical change to the land.

One example of a coastal development which proved difficult to permit and complete, despite the consensus on its urgency, was dredging of Eureka's public marina which was so loaded with sediments on minus tides that boats were left completely out of the water (Figure 6). The City of Eureka led the permitting for the dredging of this public marina which involved nine separate agencies, only five of which consulted directly with the City. Agencies involved include: the Army Corps of Engineers, California Coastal Commission, California Department of Fish and Wildlife, Environmental Protection Agency, Humboldt Bay Harbor District, National Marine Fisheries Service, North Coast Regional Water Quality Control Board, State Lands Commission, and US Fish and Wildlife Service.



Figure 6: Eureka Public Marina at low tide on April 28, 2017 with the bottom of the marina exposed and boats resting in the mud

There are similar regulatory concerns for fishermen and the restrictions placed on them in regards to what species, what times, what locations, and how much they are allowed to fish. Fishermen are dependent on resources that disregard jurisdictional lines and move between state and federal waters with no regard for borders or regulatory frameworks. These factors combine to make a precarious situation for fishing communities because of their need for industrial infrastructure located in sensitive coastal areas and the ability to take public trust resources from the ocean for personal profit.

2.3 Data collection & analysis

Data for this paper were acquired through a strategic planning process which took place in the Port of Eureka and focused on fishing community sustainability (Richmond et al., 2019). Our research team conducted a bottom-up planning process in the port that involved document review and secondary data analysis; stakeholder interviews; public engagement through meetings and workshops; and participant observation.

Throughout the project, the team collected and reviewed documents. Because so many government agencies have an interest in Humboldt Bay and the Port of Eureka, there have been many plans, feasibility reports, environmental review documents, permits, and contracts written which give insight into the actions and aspirations of the various agencies. The team also used landings data and other secondary data sources to develop a picture of the economic status of the port.

Researchers completed 47 semi-structured interviews with 61 total individuals. Interview subjects were waterfront stakeholders including commercial fishermen, recreational fishermen, fish processors, environmental advocates, government agency staff, planning consultants, and elected officials. The semi-structured interviews revolved around a standard set of questions: 1) What is going well in the port? 2) What are the biggest challenges in the port? 3) What have you seen work well in other ports? 4) If you had \$5 million to invest in the port, what would you spend it on?

The research team also held meetings in the Port of Eureka to gather data from waterfront stakeholders. The first meeting was an invite only advisory committee meeting with a small group representing a wide range of waterfront-related interests. This meeting

involved participants breaking into smaller groups to do planning exercises where the groups generated lists of ideas related to the fishing community sustainability project. The second meeting was an open-house style meeting which was open to the public and featured posters and discussions based on data collected in the semi-structured interview phase of the project as well as secondary data sources. The final meeting was a reconvening of the advisory committee to discuss results and recommendations from the preceding months of data collection and analysis.

As part of the research process, the team also conducted participant observation. Team members attended various public meetings held by local government and state-level agencies, spent large amounts of time in the two marinas on Humboldt Bay, and attended events held by waterfront stakeholders. I was also employed in local government (the City of Eureka) throughout the period of time in which the research project was underway and completed some work related to the city's harbor and coastal development projects.

3.0 Results

The results for this research are broken into the following sections: stakeholder perceptions of challenges created by the regulatory environment, powerlessness, disconnect, and regulatory successes.

3.1 Stakeholder perceptions of challenges created by to the regulatory environment

During interviews, many waterfront stakeholders had difficulties outlining port strengths or how they would invest to improve it for the future. Most stakeholders had no difficulty identifying problems. Figure 77 shows the top challenges identified in the semi-structured interview process. Notably, regulations and agency relationships are explicitly found within the top three results. However, many of the other top choices have a strong regulatory nexus.

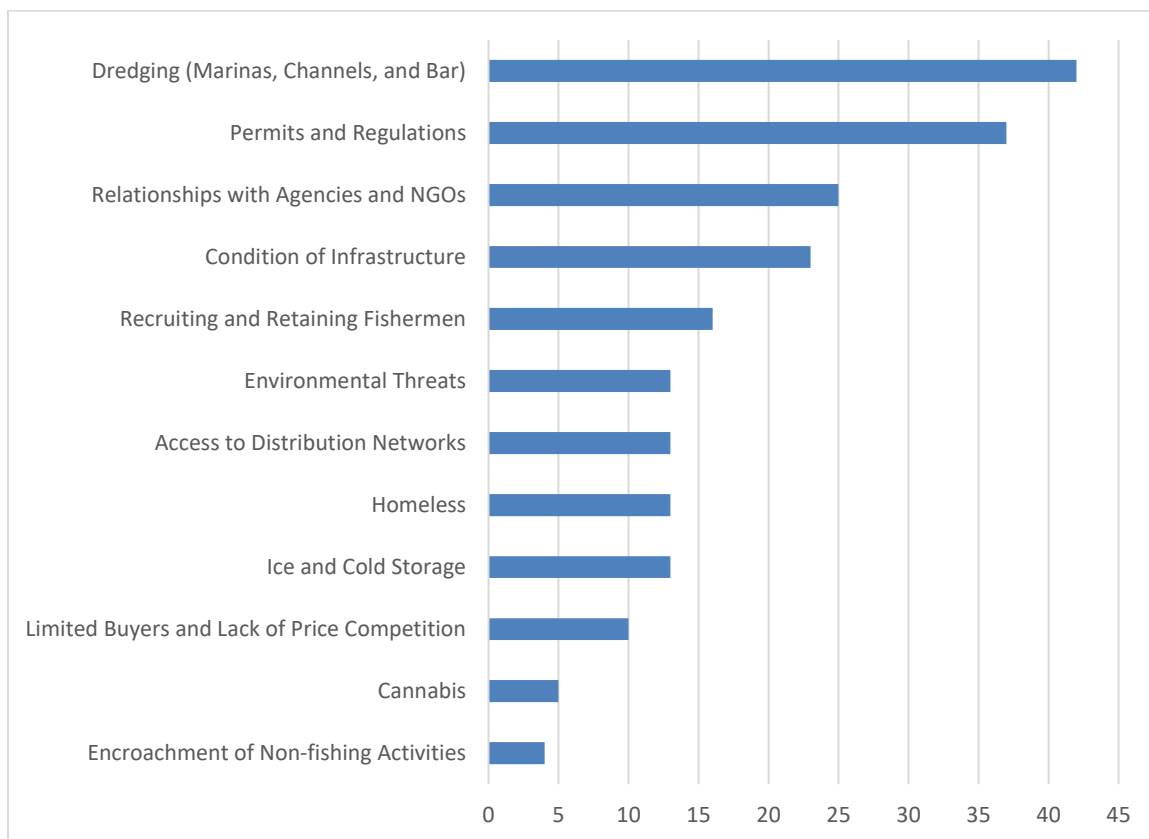


Figure 7: Top challenges for the Port of Eureka from semi-structured interviews completed in 2017 as part of a fishing community sustainability planning project

Dredging, the number one challenge according to waterfront stakeholders in 2017, was constrained by two things – regulations and money. The dredging of Humboldt Bay is split into two sections: 1) federal navigation channels 2) everything else (marinas, docks, boat ramps, non-federal channels, etc.). Local governments are responsible for the non-federal dredging projects but must get approval from state and federal agencies in order to perform the dredging and disposal of dredge spoils. Regulatory decisions by the EPA stopped local government from being able to move forward with their original

dredging plans. Ultimately the City of Eureka was able to partially dredge its portions of the Bay in the fall of 2017 and again in fall 2018, but in a less efficient fashion and at a greater cost than what the city had originally proposed in order to meet the EPA's demands.

Recruitment of fishermen is another challenge with a strong nexus to regulations. Permits have become a barrier to entry for many fishermen. Permits can be difficult to acquire, and if they are available, they are likely to be expensive. If a new fisherman were to have a boat, crew, and gear but no permits they would be extremely constrained in what they are able to fish. Additionally, permits can be difficult to transfer. A young commercial fisherman complained to our researchers that "old men have these very valuable permits" (COMMFISH 6, 2017). Some of those "old men" agree, with one asking, "why should I be able to profit from the sale of my permit when it was given to me for free?" (COMMFISH 3, 2017). Solutions to this problem continue to be elusive with current elected officials wondering "why we did what we did with those permits" (ELECTED 1, 2017).

Cannabis is a unique challenge for Eureka in that the port is in the heart of a region known as the "Emerald Triangle," a tri-county area famous for cannabis production. While cannabis isn't a coastal dependent industry, a large amount of Eureka's industrial and commercial lands that have and could be utilized for the cannabis industry are within the coastal zone and legal cannabis has brought three more state agencies into the port's regulatory mix (Bureau of Cannabis Control, California Department of Public Health, and California Department of Food and Agriculture). The legalization of cannabis

in California created pressures on existing businesses and commercial property prices as manufacturers, indoor cultivators, and distributors began to seek space in which to build legal businesses. One local government staffer said that “the weed industry is moving in and willing to pay 20-times more than someone who has been here for 20 years” (GOV 1, 2017). In Eureka cannabis uses are not allowed (with some limited exceptions) by zoning regulations in waterfront commercial or waterfront industrial districts (Eureka Municipal Code, Chapter 158 and Article 30), however some on the working waterfront are concerned that they will be displaced by the financially powerful cannabis industry. Some are also concerned with the potential environmental impacts of cannabis cultivation as related chemicals and sediments flow downstream to the Bay from farms located in rural parts of Humboldt County. Representatives from a local tribal government were very concerned about this threat and their ability to combat it as “we -- the tribe -- don’t generate as many votes as the marijuana industry” (GOV 6, 2017).

Beyond cannabis, there are other uses which would like to encroach upon parts of the waterfront traditionally held by fishing and coastal dependent industrial interests. Fishermen lobby the Eureka City Council for zoning regulations which protect their ability to fish and restrict the expansion of tourism and residential development into coastal industrial zones. One very politically active commercial fisherman sees the “existing and potential incursion of non-water dependent uses in the CDI (coastal dependent industrial) zoning from C to Commercial Street (the core of the working waterfront for commercial fishing in the city)” as the biggest threat to the persistence of the fishing fleet in the port (COMMFISH 9, 2017). He believes that changes to zoning

regulations by local government could mean permanent displacement from the waterfront. Other fishermen share this concern, particularly in regards to the potential for rezoning of Woodley Island, the location of the commercial marina, to allow more visitor-serving uses (COMMFISH 11, 2017). This concern was also present in a Harbor Revitalization Plan published in 2003 which stated the following “Diversification efforts have succeeded in bringing people and other businesses closer to the water, but they have contributed to a sense among the commercial fishery that it is subject to displacement (pg. 97).”

3.2 Powerlessness

At a local scale, fishermen have political capital to expend on influencing developments, regulations, and spending within their sphere of influence (Richmond et al., 2019). Political capital is built through the relationships fishermen have developed with government officials and the public. Fishing is also an element of the community character and sense of place. There is a general political support for commercial fishermen in the port. Once a decision is pushed outside of the fishermen’s local sphere of influence, their ability to engage with and influence port decision-makers that reside at regional, state, or federal levels is greatly decreased leaving fishermen to feel powerless to affect actions that impact their livelihoods. Calling back to the metaphor of a “regulatory ghost” introduced earlier in this thesis, these decision makers are perceived to be invisible and inaccessible while having all the power in contrast with the virtually helpless fisherman who has no leverage in the decision-making process.

Some fishermen have a defeatist attitude and see regulations as the end to their livelihood. Regulatory constrictions or closures for targeted species are seen as a “death nail” (COMMFISH 1, 2017) and fishermen conjecture that “if we get any more regulations, we’re dead” (COMMFISH 7, 2017). Regulations are something that happen to fishermen, there is no sense that they have control over the application of these rules to their actions. One commercial fishman told us that “as fishermen we’ve been kicked every minute of every day” (COMMFISH 11), again showing that fishermen believe regulations are something that happen to them, not something in which they participate.

While fishermen see themselves at odds with regulators, they tend to see environmental groups as having more leverage with agencies. There is a perception that government and environmental groups have grown in power and work together to hold back fishing and waterfront development. A fish processor summarized the situation by saying, “the amount of bureaucracy has grown and grown” while “this whole section of the coast has just been hammered by regulations and environmental groups” (PROCESS 1, 2017). One commercial fisherman saw environmental groups as being very influential over groups like the EPA, Coastal Commission, and California Department of Fish and Wildlife saying that it was an “easy win for environmental groups” when they lobbied government agencies (COMMFISH 1, 2017). Another commercial fisherman viewed environmental groups in a more conspiratorial light saying that “the people who are not on our side, they’re conniving devils... they come with lawyers and sue before anything can get started” (COMMFISH 8, 2017).

Local governments saw environmental groups in a somewhat adversarial light as well. A local government employee felt that “environmental agencies create an animosity between operators and users of facilities” (GOV 1, 2017). An elected official who fears the Army Corps of Engineers may someday stop dredging Humboldt Bay’s federal channels told us that if environmental groups get too much influence, “you’ll have a lagoon” instead of a deep-water port (ELECTED 3, 2017). Contrary to what many waterfront stakeholders might expect, an environmental advocate had empathy for the fishing community with a feeling that “fishing and mariculture regulations are not grounded in reality. No one knows how decisions are reached and things are really complicated for both industries right now” (NGO 1, 2017).

In our interviews, waterfront stakeholders brought up dual specters in the port’s regulatory ecosystem – powerful regulators and influential environmental groups. Fishermen expressed that they felt powerless against these groups once they left the familiarity of local government decision-making bodies. Many fishermen can’t visualize scenarios in which they have meaningful leverage over these anonymous, distant, and well-funded adversaries who have an out-sized impact on their livelihoods. Again, threats associated with agencies and environmental groups are being reclassified as ghosts, or in the case of one fisherman “devils” (COMMFISH 8, 2017). Most fishermen don’t have relationships with specific people at regulatory agencies or NGOs and perceive a power imbalance which influences how they think about and talk about these waterfront stakeholders.

3.3 Disconnect

Waterfront stakeholders frequently shared with interviewers a feeling that regulators were far away and disconnected from the realities of the Port of Eureka. Many felt disconnected from both the people making regulatory decisions as well as the regulatory processes involved. One fish processor flatly said, “agencies won’t come talk to us” (PROCESS 1, 2017). When this disconnect is matched with the amount of power regulators have over the various livelihoods found in and along Humboldt Bay, it causes a great deal of anxiety, uncertainty, and conflict between the regulators and the regulated.

Regulatory bodies at higher and less accessible levels of government ultimately increase the social and political distance between waterfront stakeholders and decision-makers. Because of Eureka’s small population and rural location, many agencies with jurisdiction over the port either lack a presence in the region completely or they have satellite offices with staff that don’t have the authority to make big decisions. For instance, an Army Corps of Engineers field office in Eureka is not in a position to override a federal interpretation of what constitutes “waste” when dealing with dredge spoils of different compositions of fine and coarse sediments.

Many of Eureka’s decision-makers are located in places such as San Francisco (270 miles away), Santa Rosa (215 miles away), or Sacramento (315 miles away). Frequently, waterfront stakeholders are unaware of who specifically is in charge of making regulatory decisions for the port and how to engage with them. This one place

where the metaphor of a ghost again enters the conversation among those being regulated.

Table 4 shows a sampling of regulatory agencies with an interest in Humboldt Bay, the location of their local office (if applicable), and the next level up in their organizational hierarchy.

Besides physical distance, there is a social distance between fishermen and regulators. The fishing fleet largely consists of numerous entrepreneurs running small businesses out on the water. Regulators in the public sector don't necessarily have similar experiences with running a business or even being on the water. A regulatory agency staffer is more likely to be an environmental scientist, natural resources management specialist, or policy analyst than an experienced fisherman. Regulators are in a position of applying laws and regulations to a wide range of situations while meeting the mission of their organization. Fishermen are trying to catch enough fish to make a living. This difference in interests is creates conflict and disconnects between the groups. This disconnect may also be exacerbated by perceptions of differences in values which also have negative impacts on relationships (Davenport et al., 2007).

Table 4: Selected regulatory agencies connected to the Eureka waterfront with locations of local offices and higher-level offices

Agency	Local Office	State or Regional Offices
California Coastal Commission	North Coast District Office – Arcata, CA (<10 miles)	State HQ – San Francisco, CA (~270 miles)
California Department of Fish and Wildlife	Field Office – Eureka, CA	Northern Region Main Office – Redding, CA (~150 miles); State HQ – Sacramento, CA (~315 miles)
California Fish and Game Commission	N/A	Sacramento, CA (~315 miles)
National Oceanic and Atmospheric Administration	Field Office – Arcata, CA (<10 miles)	West Coast Regional Office – Portland, OR (~410 miles)
State Water Resources Control Board	N/A	North Coast Regional Water Control Board – Santa Rosa, CA (~215 miles); State HQ – Sacramento, CA (~315 miles)
State Lands Commission	N/A	Sacramento, CA (~315 miles)
US Army Corps of Engineers	Field Office – Eureka, CA	District HQ – San Francisco, CA (~270 miles)
US EPA	N/A	Region 9 HQ – San Francisco, CA (~270 miles)
US Fish and Wildlife Service	Field Office – Arcata (<10 miles)	Pacific Southwest Region HQ – Sacramento, CA (~315 miles)

Fishing community stakeholders would like to see more present and engaged regulatory agencies at all levels of government. Our interview subjects felt that regulators are not sufficiently present in the port considering the power they hold over the actions that take place there. Some thought that fishery managers should spend time on the water to get more hands-on experience (COMMFISH 4, 2017), while others complained that local harbor commissioners weren't fishing- or water-oriented enough (COMMFISH 5, 2017). Despite these perceptions, within the last five years there have been elected officials with the following professions on the Harbor Commission or Eureka City Council: mariculture business general manager, commercial fisherman, consulting fisheries biologist, and US Coast Guard reservist.

To bridge the existing or perceived disconnects, some stakeholders thought it would be a worthwhile investment to spend funds to educate the public on the fishing industry and how regulations impact the fleet (COMMFISH 5, 2017). Shining a light on fishing, fishermen, regulations, and regulators could go a long way in demystifying the interests of each group and why certain decisions are made.

3.4 Regulatory successes

While there is much cynicism related to regulation on the waterfront, it's important to acknowledge that many interview respondents saw the benefit of regulating their industries. Commercial and recreational fishermen, as well as fish processors, believe in the value in regulating fishing. Commercial fishermen remarked that regulations had "made us be more accountable for our fishing practices" (COMMFISH 2, 2017). Older fishing industry professionals understood that previous methods and

volumes of overfishing weren't sustainable and weren't coming back. A fish processor with decades of experience characterized fishing as going from "balls out to oh shit!" (PROCESS 2, 2017) and felt that many regulations should have been enacted earlier to avoid the abrupt decrease in fishing limits.

There were also bright spots related to cooperation between governments and regulators, from the perspective of government staff and elected officials. A state-level government staffer observed that when fishing communities voice concerns, regulators and local governments listen (GOV 2, 2017), while a local government staffer felt the relationship between his agency and the waterfront was the "strongest it's ever been" (GOV 3, 2017). A consultant who formerly worked in local government thought that there was positive engagement with regulatory agencies like the Coastal Commission and the Regional Water Quality Control Board (CONSULT 1, 2017). Staff for local tribes also found that cooperation with agencies has improved over time. There was a feeling that the tribes had "become a trusted partner" (GOV 6, 2017). Discussion of cooperation between the fishing community and city government was largely positive, however interviewees indicated that it was dependent on who was in key elected and staff positions within the city (PROCESS 2, 2017).

4.0 Discussion

4.1 Perceptions of the regulatory environment and regulatory ghosts

Almost every action in a port environment is affected by a regulatory network that has local, regional, state, and federal levels of control. Everything from recreational fishing aboard a charter boat to hauling commercial crab pots and habitat restoration projects to dredging of marinas has numerous levels of regulatory restrictions that must be cleared before acting. Waterfront stakeholders perceive the regulatory environment as being overly restrictive although many of the outcomes can be positive to both industry and the general public. At a high-level, I found that stakeholders tended to appreciate the limited development in California's coastal zones, sustainably managed fisheries, and continued access for the public to the coast. It's when regulations begin to hinder individuals from taking specific actions that they begin to chafe at the concept of being regulated. This feeling is evident in a comment from a commercial fisherman who said, "the ocean is healthy, it'd be nice if the guys could make a living" (COMMFISH 7, 2017).

Waterfront stakeholders perceive the regulatory environment as one that is a potential threat to their livelihood, one in which regulators can take things away from them. The regulatory environment is perceived to be full of what fishermen have termed "regulatory ghosts," a metaphor that reflects how fishermen feel about the way they are regulated. Fishermen operate in an environment in which unknown and largely anonymous people have a great deal of power over the activities within the port and little

responsibility to answer to the individuals within it. The use of a metaphor like regulatory ghosts is instructive. Hitchner et al. (2016) found that “people are more likely to remember words and phrases that evoke clear images and strong emotions than abstract concepts” (p. 213). The introduction of an anonymous regulator into a project or process undertaken by a waterfront stakeholder is likely to be associated with fear, loss, and haunting – all uncomfortable feelings which are difficult to influence or avoid. The perception is that there is no stopping or influencing a regulatory “ghost,” all you can do is fear it.

4.2 Exorcising regulatory ghosts and gaining regulatory influence

Waterfront stakeholders want freedom to act and make decisions that benefit their businesses and livelihoods. Many have working relationships with local government staff and elected officials but lose influence once they leave the Humboldt Bay area. This geographic, social, and political distance creates opportunities for disconnects which result in the creation of perceived anonymous adversaries within regulatory systems. The longer a regulator goes without engaging community members, the more sinister it becomes in the minds of those being regulated. I believe the reason that regulatory ghosts are so frightening is that communities feel they have little recourse against decision-makers and don't know how to influence their actions.

There are ways in which fishermen and other waterfront stakeholders can begin to break down the distance between themselves and regulators while, at the same time, decreasing the perception that the regulatory environment is haunted by ghosts and other apparitions against which they have no control:

1. Develop small working groups with fishermen and agency staff to build trust. This recommendation was provided at a public meeting held in 2017 at a location in the City of Eureka. The idea is that the creation of working groups will create opportunities for local waterfront stakeholders and agency staff to mix, get to know each other as people, allow for locals to better understand how government organizations work and what their interests are. This close collaboration would hopefully lead to less fear, less uncertainty, and more collaboration before final decisions are made. Research by Davenport et al. (2007) found that personal relationships are a major basis for trust in regulatory agencies and that increased interaction will increase trust.

2. Long-term planning that includes agency staff. The Port of Eureka is not a stranger to public planning processes. At this time (spring 2019), agencies within the region are engaged in numerous planning processes and projects. The fishing community sustainability plan which provided data for this paper is nearing completion, the City of Eureka just adopted a new General Plan and is close to adopting a new zoning code, the City is also completing a waterfront strategic plan to create manufacturing and industrial jobs, and Humboldt County is doing an analysis of coastal dependent industrial lands around Humboldt Bay. All of these planning processes would be strengthened by the inclusion of representatives from agencies that have regulatory jurisdiction over the port and its surroundings. Typically, participation by agencies consists of comments on documents which are then considered by the local government agency going through the planning process. This suggestion calls for more personal interaction which could include regulatory staff participating with the public in engagement events like public meetings,

workshops, and charettes. This participation humanizes the regulators and gives them new perspective on the people who are regulated by their agencies.

3. Perform a social network analysis of port relationships with government agencies. This social network analysis could be used to identify where the disconnects are within the port's regulatory system. I believe that analysis would find strong connections between fishermen, mariculturists, and local government officials. I anticipate that the number and the strength of the bonds would drop precipitously as we move to state, regional, and federal levels of government. If the gaps in connection can be identified, then perhaps waterfront stakeholders can focus their lobbying powers to create relationships with what were previously perceived as regulatory ghosts.

4. Create a fisherman's or working waterfront citizens academy. A citizens academy is used in some communities to educate residents on the inner workings of a local government agency (Morse, 2012). This model could be expanded to teach waterfront stakeholders who regulates their port, what their missions/interests are, and how to effectively participate in the public parts of their regulatory processes.

5.0 Conclusion

This paper analyzed data collected from a strategic planning process with an eye towards fishing community perceptions of regulators and how to influence them. In several occasions, stakeholders brought up the concept of the “ghost” to describe their relationship with regulators who were involved in waterfront projects that affect their livelihoods.

Regulatory ghost is a metaphor that can explain concept of an unknown regulator who makes substantial decisions for a locality without being physically present or interacting with those affected by the outcome. Regulators at higher levels of government frequently oversee large geographic regions and take no or minimal input from the public and lower levels of government. The lack of relationships between agencies and the waterfront decreases trust and dehumanizes both the regulator and those being regulated. Fishermen, feeling frustrated and powerless, perceive these individuals within the regulatory environment who have the most power but the least social connections to their port into metaphorical ghosts.

Having identified the Port of Eureka as being a location haunted by many perceived regulatory ghosts, this paper also laid out recommendations for way to build trust, change perceptions, and demystify the people and processes involved in government decision making. Working groups, long range planning, social network analysis, and citizens academies are all potential avenues to improving the relationships

and the efficacy of port stakeholders within the regulatory frameworks that govern their livelihoods.

While this research found waterfront stakeholders experiencing many challenges, including feelings of powerlessness and disconnectedness, it also found evidence of cooperation and successes in the regulatory environment. If waterfront stakeholders can work together to understand and engage their regulatory agencies, I believe that they will be able to increase their power and connectedness in ways that benefit the port and the fishing community. There is difficulty in engaging regulators, the existing bureaucracy can be difficult to navigate and governments can be slow to adapt to changing needs, however, I believe that the perception of powerful and disconnected ghosts in regulatory systems can be defeated with strategic action and stakeholder education.

CONCLUSION

Fishing community sustainability is important because it not only impacts the social systems many coastal towns are built upon, but it also has economic and environmental impacts which are felt on a much larger scale. Additionally, fishing communities are complex socioeconomic and socioecological systems that can be difficult to engage with because of high levels of distrust caused by many years of real and perceived losses, powerlessness, and a disconnect from the institutions that govern them. This research uses an economic development framework, the Community Capitals Framework (CCF), and matches it with fishing community sustainability planning to lay out new ways to evaluate sustainability in a fishing community. The work done in the Port of Eureka, discussed here and in Richmond et al. 2019, provides an easy to understand and repeatable pathway for researchers and planners to conduct their own assessments. The recommendations in this thesis can be used to demystify political processes, reduce fears of the mythical “regulatory ghost”, and create a foundation for successful and sustainable community planning. By promoting more engagement with fishing communities through pro-active, bottom-up planning processes that are future-focused there is a chance that relationships can be created, fostered, and repaired between fishermen and regulatory agencies.

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