A Pilot Study in Two West Coast Marine Fishing Communities, Astoria and Newport, Oregon: Perspectives From Fishing Community Members

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TABLE OF CONTENTS

Page

Acknowledgements 5
Executive Summary 7
Introduction 7
Methods 7
Issues Affecting Fishing Communities During Project Activities 8

Chapter

I Introduction 12
Methods 13

II What is Known about West Coast Fishing Communities 15
Fishing Community Descriptions 17
Astoria 18
History of the Fishing Industry 19
Fishing Community 20
Fishing Sectors 22
Newport 28
History of the Fishing Industry 29
Fishing Community 29
Fishing Sectors 31
Differences and Similarities between Astoria & Newport 36
Issues Affecting Fishing Communities during Project Activities 38

III Lessons Learned about Updating FEAM and Conducting Cost Earnings Survey 42
Background 42
Exploring FEAM 42
Fishing Community Perspectives on Approaches for Collecting Cost Earnings Data 47
Cost Earnings Studies 47
Perspectives on Collecting Cost Earnings Data 47

IV Discussion 53
Geographic Boundaries 53
Sampling Techniques 53
Informal Conversations 54
Direct Observation 55
Conclusion 55

Appendices

1. Introductory Letter. 56
2. US Census Data 57
3. Fishing Seasons 66
4A. Astoria: 2004 Species Landed by Pounds 67
4B. Newport: 2004 Species Landed by Pounds 69
5. Seafood Product Destinations 81

6A. Landing Taxes and Fees in Washington, Oregon, California 86
6B. Landing Permits in Oregon 88
7. Processors, Distributors and Wholesalers 89
8. Infrastructure 91

9A. FEAM: Harvesters 93
9B. FEAM: Processors 95
References 96

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EXECUTIVE SUMMARY

Introduction

The Economic Fisheries Information Network (EFIN), an economic group within Pacific States Marine Fisheries Commission (PSMFC), conducted a pilot project during the summer and fall of 2004 in the area ports of Astoria and Newport, Oregon. The impetus behind this project was two fold: first, to develop a community profile of Astoria and Newport and second, to explore methods of collecting economic data.

As of the start of this project, baseline socioeconomic data of West Coast (Washington, Oregon, and California) fishing communities does not exist at the city or port level. The need for this level of detail is to provide the Pacific Fisheries Management Council (Council) with a resource to better examine the social and economic importance of fisheries and communities potentially affected by management measures. To do so, the Council must first have identified fishing communities and assessed their differing levels of dependence on and engagement in the fishery being regulated. Another reason why baseline socioeconomic data is missing lies in the lack of understanding of the kinds of socioeconomic survey questions participants are willing to answer. This pilot project provided us with the opportunity to explore these information needs. Upon completion of the project, we were able to come away with the following:

- Fishing community profiles of Astoria and Newport area ports
    - Differences and similarities between Astoria and Newport area ports
    - Issues affecting fishing communities during project activities
- Lessons learned about updating the Fisheries Economic Assessment Model (FEAM) and conducting cost earnings surveys
- Fishing community perspectives on approaches for collecting cost earnings data

A collaborative approach with industry, fishing community members, and other knowledgeable members of Astoria and Newport area ports was taken to better understand information they are willing to share with researchers as well as the kinds of data they deem the most important to apply to fisheries management.

It should be noted that the information included in this report is representative of the perspectives, opinions, and recommendations from community members.

Methods

Over a five-month period from June to October 2004, various individuals from a broad cross section were consulted on a variety of subjects. A total of 79 informal conversations with community members were completed. Out of this population, 15 were harvesters (including charter boat operators), 15 were processors/wholesalers/distributors, 35 were community members, and 14 were academic associates and fish markets. Conversations lasted anywhere from ten minutes to three hours and took place in various locations throughout the communities. Informal conversations were selected over structured interviews because the aim of the project was explorative, qualitative, and descriptive. Because conversations were informal, a prescribed list of questions was not administered. Instead, conversations focused on information most pertinent to the sector of the industry they represented. The sampling method EFIN chose to select the population was based on snowball sampling techniques.

In addition to informal conversations, direct observation was applied throughout the project, which provided us with the opportunity to witness fishing community activities such as processing plants, shipyards, fishing vessels, support/infrastructure, and charter companies in operation.

Issues Affecting Fishing Communities During Project Activities

The topics below, Individual Fishing Quotas, Groundfish Buy Back Program, Groundfish Charter Boat Closure, and Country of Origin Label, were raised by fishing community members during the conversations. When considering the conclusions of the current project, results should be acknowledged within the context of these topics and prior events. The following discussion provides a limited background about the topic and comments made by Astoria and Newport area port community members about the issue.

Individual Fishing and Processing Quotas

Individual Fishing and Processing Quotas (IFQ's[1] and IPQ's[2]) for the West Coast groundfish limited entry trawl fishery came up in discussion with community members. Considerations for implementing fishing quotas have been around for several decades. A moratorium, however, was placed on IFQ's from the late 1990s to the early 2000s. Since the moratorium has been lifted, the Council is considering a proposal to establish a dedicated access privilege system for the groundfish limited entry trawl fleet. While discussions continue for IFQ programs, West Coast groundfish processors are requesting "processor recognition" if IFQ's are to be put in place.

Some processors believe that establishing some type of quota share program would recognize their significance and investment in the fishery. They feel that in order to ensure local processing jobs and employee benefits, "processor recognition" would need to be granted in order to guarantee supply of product. Additionally, the benefit of an IPQ program would enable processors to make further investments in the industry. Fishermen opposed to IPQ's, however, fear that "recognition" will encourage processors to purchase remaining permits, resulting in a large conglomerate or processing monopoly. Smaller processors operating on the West Coast share this fear, in that the current competitiveness and balance of price they create will disappear (Personal Communication, 2004).

On the subject of IFQ's, fishermen commented that only the owner of the boat will benefit from such a program. "Even the captain that has fished the boat for years and has an incredible catch record is not benefiting because it's not his boat" (Personal Communication, 2004). Others stated that IFQ programs will simply transfer a public resource to private ownership; and if put in place, a system needs to be established ensuring that vessels stay in the community. One comment made in support of IFQ's stated that they will be able to provide a better product to consumers under an IFQ system (Personal Communication, 2004).

[1] An IFQ is a federal permit allowing fishermen to harvest a percentage of the fisheries total allowable catch.
[2] An IPQ is the equivalent of IFQ's for processors. An IPQ program would establish an individual quota system with shares representing the opportunity to buy fish.

Groundfish Buy Back Program

A buy back program was established in 2003 by the National Marine Fisheries Service (NMFS) to reduce fishing capacity in the West Coast groundfish trawl fleet. The program involved purchasing fishing vessels and permits with a combination of government and industry funding, with the industry share being a loan that will be repaid by the remaining participants in each of the fisheries over time. The goal of the program was to reduce the fleet by 40-65% (Leipzig, 2001). The program resulted in a total of 91 limited entry trawl endorsed permits purchased out of a potential pool of 273 permits (www.nwr.noaa.gov).

Community members in Astoria and Newport area ports raised several concerns about the effects the buy back program had on fishing fleets and communities. In some cases, participants had a "wait and see" attitude about how the buy back program will affect the industry in the next five to ten years. Others, however, pointed to the immediate effects the buy back had on non-groundfish fleets, infrastructure, fishing employment, and the overall fishing community.

Some community members explained that they observed a shift in effort from the groundfish fishery to other fisheries. They attributed this shift to how the buy back program was structured. Because fishermen were able to purchase inactive permits as well as new boats and gear with funds they received from the sale of a vessel, fishing effort was simply transferred. For example, in some cases fishermen bought additional crab pots or upgraded vessels that did not participate in the program. Another shift in effort mentioned by a fisherman was that "it's not the boat, it's the fisherman"; meaning that if a fisherman moved from a vessel purchased in the program to one with an unsuccessful history, effort was transferred to the unsuccessful vessel (Personal Communication, 2004).

With regard to changes in infrastructure, vessels purchased in the buy back were not allowed to be used as fishing vessels in the future. Because of this, gear and equipment were stripped from these vessels and flooded the market. Shipyards, gear, and electronic suppliers noticed a change in the amount of new purchases fishermen made after the buy back. Other industry sectors such as processors and fuel suppliers also observed a decrease in the number of boats delivering and purchasing fuel (Personal Communication, 2004).

Finally, the structure of the industry is mixed with owner-operated vessels and non-owner-operated vessels. Because of this, boats that were not owner-operated affected jobs of captains, skippers, and crew. In situations where participating buy back vessel owners lived outside Astoria and Newport area ports, funds resulting from the sale of a vessel did not benefit the local fishing community. One fisherman commented that the buy back program "made the rich richer and didn't help the community" (Personal Communication, 2004). It was recommended that the buy back money should have been used for more research instead of buying groundfish vessels (Personal Communication, 2004).

At this point, it is difficult to determine how the buy back program ultimately affected these fishing communities. It may not be possible to calculate the effects for some time. Although it was not EFIN's goal to measure the effects the buy back program had on the fishing communities of Astoria and Newport, they should be acknowledged as an important element in the larger context of the current project.

Groundfish Charter Boat Closure

A closure of the West Coast groundfish sports fishery took place on September 3, 2004. The closure affected fishing in the ocean, estuaries, and from shore for all major groundfish species

including rockfish, lingcod, and greenling. This was the first time the decision to close down the groundfish sports fishery had taken place in history. In 2004 the Oregon sport catch cap was "…342 metric tons for black rockfish and 110 metric tons for lingcod. By August 29th, the landings for black rockfish were 334 metric tons and more than 108 metric tons for lingcod" (ODFW, 2004). By these calculations, if fishing were allowed to continue, it was predicted by ODFW that an overage would have ensued.

The largest effect the groundfish closure had on Astoria and Newport charter companies was in its timing. Labor Day is slated as the last busy weekend for the recreational charter industry. It is also the weekend most charter companies depend on financially during the winter months when they are not operating. Because of this closure, charter companies were required to cancel groundfish reservations, resulting in an economic loss. One charter boat owner reported a loss of $15,000, while another reported a loss of at least $20,000. In addition to the loss to boat owners, fisheries infrastructure such as shipyards, bait shops, restaurants, etc. also felt the effects (Personal Communication, 2004).

Country-Of-Origin Label

The Country of Origin Label (COOL) law was established by the Agricultural Marketing Service (AMS) enforcing that a mandatory country-of-origin label be placed on all red meat, seafood, produce, and peanut products bound for retail environments. COOL was to take affect September 30, 2004, however, lawmakers approved a two year delay. All fresh, frozen, canned and cooked fish and shellfish products, restaurant fish products, as well as restructured fish products are covered under the COOL guidelines (www.countryoforiginlabel.org).

Because of the direct effect COOL has on the fishing and processing industries, many community members expressed concern with this new regulation. The most frequently expressed complaint was the lack of guidelines provided in the regulation. A problem of more importance, however, is the difficulty in tracking product delivered from multiple locations and fishing vessels. For example, some West Coast processors receive crab from fishing vessels fishing in multiple locations in one day. The challenge lies in tracking those different deliveries from the boat to the plant, (being cooked, boxed, and shipped to a wholesaler), and then delivered to a supermarket. Labeling the shipment with the appropriate country-of-origin label presents a challenge if the box arriving at the supermarket contains crab from multiple locations (Personal Communication, 2004).

CHAPTER I

Introduction

The Economic Fisheries Information Network (EFIN), an economic group within Pacific States Marine Fisheries Commission (PSMFC), conducted a pilot project during the summer and fall of 2004 in Astoria and Newport area ports. The impetus behind this project was two fold: first, to develop a community profile of Astoria and Newport and second, to explore methods of collecting economic data.

At that time, baseline socioeconomic data of West Coast (Washington, Oregon, and California) fishing communities did not exist at the city or port level. The need for this level of detail is to provide the Pacific Fisheries Management Council (Council) with a resource to better examine the social and economic importance of fisheries and communities potentially affected by management measures. To do so, the Council must first have identified fishing communities and assessed their differing levels of dependence on and engagement in the fishery being regulated. This pilot project provided us with the opportunity to explore these information needs. Upon completion of the project, we were able to come away with the following:

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A collaborative approach with industry, fishing community members and other knowledgeable members of Astoria and Newport area ports was taken to better understand information they are willing to share with researchers as well as the kinds of data they deem the most important to apply to fisheries management.

It should be noted that the information included in this report is representative of the perspectives, opinions, and recommendations from participating community members.

Methods

The project followed the Magnuson-Stevens Act's definition of a fishing community, which concurs with the advice of the Council and National Marine Fisheries Service (NMFS) staff and fishing community members. Throughout this report, a fishing community is defined as:

> *"…a community which is substantially dependent on or substantially engaged in the harvest/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 community"* (62 FR 41911)..

Over a five-month period from June to October 2004, 79 informal conversations with community members including: commercial/charter/recreational fishermen, processor, and infrastructure

company employees, academic and research associates, fishermen's wives, and NOAA Observers, were completed. Out of the 79 informal conversations, 15 were with harvesters (including charter boat operators), 15 with processors/wholesalers/distributors, 35 with community members and 14 with academic associates and fish markets. Conversations lasted anywhere from ten minutes to three hours. Conversations took place in various locations throughout the communities. A digital recorder was used during conversations upon participant's approval.

The sampling method EFIN used to select the population was based on snowball sampling techniques. Snowball sampling relies on referrals from initial project participants to generate additional participants. Referrals from community members also led to a list of harvesters and processors that EFIN could consult with during the project. A letter was mailed to potential participants explaining project goals, objectives and prospective outcomes. In addition to the letter (Appendix 1), a stamped post card soliciting feedback about the project and contact information was included.

This broad section of individuals was consulted on a variety of subjects. Informal conversations were selected over structured interviews because the aim of the project was explorative, qualitative, and descriptive. Because conversations were informal, a prescribed list of questions was not administered. Instead, conversations centered on the sector of that industry of which they were part:

- Harvesters and processors were consulted on approaches for cost earnings surveys, updating the current FEAM[3] in the future, and general sociocultural topics.
  - Harvesters and processors have a greater level of understanding of the costs of running a fishing vessel or processing plant than other community members. They can also provide perspectives on the social and cultural structure of their fishing community.
- Infrastructure company employees, fishermen's wives and NOAA Observers provided general sociocultural information about the fishing community.
  - Specifically, infrastructure company employees and fishermen's wives can supply perspectives on community indicators and structure. NOAA Observers interact with harvesters on a trip basis and can offer general information about the community and fishing trips they participated in.
- Academic and research associates were solicited for feedback on project methodologies and general sociocultural information about the community.

In addition to informal conversations, direct observation was applied during the project, which provided opportunities to witness fishing community activities such as processing plants, shipyards, fishing vessels, support/infrastructure, and charter companies in operation. Direct observation methods are well suited for time-compressed projects and tend to be more attentive to specific, rather than general, elements.

[3] For information regarding FEAM please see Appendix 9.

CHAPTER II

What is Known About West Coast Fishing Communities

A limited number of sociocultural fisheries studies have been completed for the West Coast. However, most are focused on a particular subject of interest, community, or geographic area.

One study, presented by Jennifer Gilden and Flaxen Conway in 2002 explored *Fishing Community Attitudes Toward Sociocultural Research and Data Collection*. Based on findings from fishing community members, the authors discovered many opinions and perceptions that help shape the results of sociocultural surveys. Three of the most common were that:

- Managers already have the data they need to make effective management decisions,
- It's easier to not participate in the survey than provide the requested information, and
- There is a lack of understanding as to why sociocultural data is important to collect.

Based on these concerns, the authors recommended acknowledging the following points prior to project development: the relationship between the researcher and the subject; the effectiveness of the methodology; good communication about the project; the research population; timing of the survey, relevance of the data; the chosen methodological approach; the type of data sought, the use of collected data; the project sponsor; and who ultimately will have access to the data once it is collected. Gilden and Conway proposed that if the above points were addressed prior to research development, a more successful data collection process might emerge (2002).

The ad hoc Groundfish Habitat Technical Review Committee (TRC), created by the Pacific Fishery Management Council conducted a scientific assessment for the Pacific Groundfish Essential Fish Habitat Environmental Impact Statement (EFH EIS). One of the projects completed by the TRC involved gathering and producing a compilation of experience-based information needed to indicate fishing effort for areas off the West Coast. A collaborative team consisting of representatives from the fishing, scientific, and management communities designed a project to gather information from West Coast fishermen on parameters of fishing effort (time, gear type, area, and intensity). The parameters of fishing effort were recorded onto nautical charts, which were subsequently digitized into a GIS format. This information was then matched to logbook reported data from the trawl fleet. Results from the project revealed that focus sessions appear to be a reliable method for recording fishermen's knowledge. In addition it became clear that collecting information from fishermen could be accomplished through the use of a specific and documented methodology (Bailey et al., 2004).

In January of 2004 the Economic Fisheries Information Network (EFIN) completed a document titled: West Coast Marine Fishing Community Descriptions. This report described 2001 Pacific Fisheries Information Network (PacFIN) landings, 2000 census information, and county descriptions detailing general information about each county's current industry, how that industry changed over time, and a brief description of a port's commercial and recreational fishing industry. The methodological approach applied in the project utilized informal telephone interviews of one to two community members to gather information about the percentage of commercial versus recreational vessels moored in the port, a brief history of fishing practices, fishery related infrastructure, the dominant species fished, and gear utilized, just to name a few. From the conclusions of this project, it was realized that a larger sample size of interview participants, as well as the application of in-person interviews, would yield more valuable information. As discussed in the conclusion of this community report, it was suggested that a more in-depth analysis of a port would also provide a greater understanding of the fishing community as a whole (Langdon-Pollock, 2004).

Until the 2004 communities' document was completed, research examining both social and economic information on a large scale (the West Coast) had not been carried out. Those socioeconomic reports that were produced focused on a few fishing ports in one state rather than an examination of the entire West Coast. An example of this is Davis and Radtke's report from 1994 entitled *A Demographic and Economic Description of the Oregon Coast.* A more recent example, which did examine fishing communities West Coast wide, focused its analysis on economic data (Pacific Fishery Management Council document from 1999; *West Coast Fishing Communities*). Conversely, East coast community projects have been dominated by social research on a small scale. Two examples of these types of studies include: *New England Fishing Communities* by Hall-Arber, et al., and *Fishing Ports of the Mid-Atlantic* by McCay and Cieri.

The social science team at the Alaska Fisheries Science Center, Seattle, WA, completed a document profiling Alaska's fishing communities. The team profiled 130 Alaska communities significantly involved in commercial fisheries. The profiles are comprised of three sections, "Infrastructure", "Involvement in North Pacific Fisheries", and "People and Places". A combination of data sources was utilized to complete the Alaska profiles: 2000 US Census Bureau, Alaska Department of Economic Development (DCED), scholarly and popular works, Bering Sea Communities and Fisheries Organization, chambers of commerce, and Commercial Fisheries Entry Commission (Sepez et al., 2004).

Recently, Jennifer Gilden, with the Council, released a white paper titled: *Social Science in the Pacific Fisheries Management Council Process*, December 2004. The paper attempts to address social science research needs in the Council process and summarizes how management councils use sociocultural information. Gilden stresses the need that a long-term social science plan should be created in order to integrate community level information into the council process.

Astoria Area Ports

Astoria Area Ports

The Astoria Community Profile includes the Oregon cities of Astoria, Hammond, Warrenton, Seaside, Gearhart, and Cannon Beach. Two Washington cities, Ilwaco and Chinook, are also included because of their economic and social connection with the fishing Industry in Astoria, OR. From this point on, when referring to Astoria area ports, the additional seven communities mentioned above are included as part of Astoria's "fishing community".

The cities comprising Astoria's fishing community expand over Washington and Oregon state lines. The 28-mile radius encompassing the seven cities are located in Southwest Washington and Northwest Oregon.

The focus during this project was to explore how Astoria acts as the "hub" of fishing communities in the vicinity.

East Mooring Basin, Astoria, OR, 2004 ~ Photo by Geana Tyler

History Of The Fishing Industry

With the Astoria area ports direct access to the Columbia, Young, and Lewis and Clark rivers, a strong tradition rooted in fishing exists. As early as the 1850s, salmon and sturgeon fishing contributed in large part to the local economy with the establishment of gillnet fishing on the Columbia River (salmonforall.org). Some fishermen and their families were relocated to the Astoria area by local canneries. Canneries brought successful fishermen from Yugoslavia, Norway, Sweden, and Finland, housed them, and leased them a fishing boat. In addition to being an employer, they also acted as a banker, providing loans for boat and gear upgrades and replacements (Personal Communication, 2004).

Several canning and processing plants operated out of Astoria area ports over the years. Bumble Bee employed upwards of 100 processor employees but closed its doors in the 1970s. Other processors include: Barbie Packing, Kendrid, Union Fish, Bell Buoy (located in Seaside), Portland Fish Company, Ocean Foods, and Chinook Packers. The employee structure of these plants then differed greatly from today. During the 1920s, local processing plants and lumber mills employed a large Chinese population. By the 1960s, the majority of cannery positions were filled by residents of Philippine decent. These plants closed for a number of reasons with the main reason cited as the lack of available species and changes in markets and fishing regulations (Personal Communication, 2004).

The majority of historically fished species in Astoria area ports include: salmon, crab, tuna, shrimp, groundfish, and sardines. The sardine fishery has seen two major spikes of activity. The first was during the 1920s, while other regions like British Columbia, Canada and Monterey, CA were experiencing the same success. The second spike was in the early 2000s. This fishery, however, dissolved by the 1960s and did not reappear in the Astoria area until 1998 (McFarlane and McDougal, 2000).

During the 1950s, due to a shift in salmon availability, opportunities with various types of groundfish species surfaced. These fisheries, however, didn't really expand until the 1970s after the establishment of the exclusive economic zone (EEZ). After the Magnuson Stevens Act was passed in 1976, legislation like the Capital Construction Fund allowed fishermen to invest tax deferred money into better vessels and equipment. Due to the availability of these funds, the groundfish fishery was well on its way by 1980, resulting in a change to local processors and the industry. During the 1990s, the pacific whiting fishery transferred from an off shore to an on shore operation, which further concentrated groundfish processing in local plants (Personal Communication, 2004).

The 1980s also saw expansion of Astoria area fishermen into the shrimp fishery. Due to the lack of regulations and size limitations, boats were catching two million pounds of shrimp in three to four months. The mid to late 1980s marks the beginning of a steady decline in the shrimp, groundfish, and salmon fisheries due to rapid expansion and decline in resource accessibility (Personal Communication, 2004).

Alongside growth in the commercial fishing industry was the development of the charter and recreational fisheries. At one time in the 1980s, approximately 350 charter vessels were documented in the lower Columbia River. Charter boats during that time were active 300 days of the year (Personal Communication, 2004).

Infrastructure in Astoria area ports was also heavily focused on the fishing industry with Astoria area ports serving as home to multiple shipyards and marine suppliers. Astoria Marine

Construction Company (AMCO) built 165-foot Navy minesweepers and fishing vessels during the 1940s and 1950s. At its peak, AMCO employed over 400 people (http://geocities.com/crodhull3/astoria_ marine.htm).

For the most part, Astoria area ports have seen a steady presence of variability in the fishing industry. Upon discovery of salmon in the Columbia River, processors rose to meet demands of significant salmon landings. The expansion into other fisheries, such as shrimp and groundfish, also contributed greatly to the culture of the industry and influenced how Astoria area ports are structured today.

Fishing Community

Today, the Astoria area is comprised of about 27,000 people (including population from Warrenton, Seaside, Gearhart, Cannon Beach, Ilwaco, and Chinook). Occupations in Astoria were dominated by *Management, Professional, and Related Occupations* (21.8% to 34.9%). In addition, *Sales and Office* positions represent about 21.9% to 27.0% of the population. Following these sectors, *Service* jobs range from 16.2% in Chinook to 28.2% in Cannon Beach. Chinook contains the largest percent of *Farming, Fishing and Forestry* related jobs (6.6%), while Seaside contains the smallest percent in this sector (0.4%) (Appendix 2) (US Census Data, 2000).

PSMFC staff attempted to estimate the number of fishing related jobs in Astoria area ports. This estimate was based on those that participated in the project, as well as other references, including *Pacific Fishing* and Urner Barry. In addition, the Oregon Department of Employment was consulted on more specific estimates. However, due to confidentiality reasons, they do not have the ability to determine what percent of the population are employed in the fishing industry (Personal Communication, 2004). The estimated amount of Astoria area fishing jobs established by PSMFC staff ranges from 900 to 1,000. This number was reached primarily through conversations with community members who, in many cases, offered estimates as to how many employees worked in their business or operation (processing/distributing/wholesale plants, fish markets, commercial and charter fishing crews and industry support operations). The majority of community members provided a range of employees representing a number of filled positions accounting to both the lean and busy seasons of the year. However, it is believed that this estimate is largely underestimated, due to the small sample size of the population that participated in this project. Further investigations would be required to get a more accurate estimate of fishing related jobs in Astoria area ports.

Astoria area port fishing communities are widely distributed geographically. Reaching as far north as Ilwaco, WA and as far south as Cannon Beach, OR, members homeport, land, deliver, and recreate in all eight communities (Astoria, Warrenton, Hammond, Seaside, Gearhart, Cannon Beach, Ilwaco, and Chinook). The geographically arranged infrastructure of marinas for both commercial and recreational fishermen, the location of processors, marine support services, charter companies, and industry members results in a solid connection within all eight communities.

Astoria area ports can be broken into three major clusters. The first cluster includes the ports of Ilwaco and Chinook, WA. Both communities are built around their “working waterfronts” both recreationally and commercially. Specifically, Ilwaco is known for its ability to cater to the tourism industry in terms of charter fishing. In addition to the numerous charter companies operating out of this area, a large percentage of community residents are employed in local

processing plants. The plants also employ residents in neighboring communities such as Long Beach and Nasell, WA, and Astoria, OR. Both Oregon and Washington fishermen deliver product to Ilwaco and Chinook.

The second cluster includes the ports of Astoria, Warrenton, and Hammond. While Astoria attracts more tourists than Warrenton and Hammond, a strong commercial fishing presence also exists. A total of 11 processors operate out of these three communities, which are equally spread geographically. In addition to the commercial fishing sector, Buoy 10 is a popular recreational fishing spot, accessed by surrounding charter companies. Three major marinas cater to both recreational and commercial vessels in Astoria. The first marina, located on the east end of town, provides moorage to a large portion of the commercial vessels, while the west-mooring basin mainly accommodates recreational boats. The last marina, located in Youngs Bay, caters to salmon fishermen. In addition, salmon net pens are established in Youngs Bay and are maintained by the local gillnet fleet. Many fishermen that operate out of this cluster live in the Warrenton and Hammond area. While Warrenton and Hammond are dominated by commercial fishing, some recreational boats are moored there.

The last cluster includes the cities of Seaside, Gearhart, and Cannon Beach. While these three communities are traditional beach and tourist destinations, they continue to be impacted by the fishing industry that surrounds them. One reason why these communities are included in the Astoria region is because many fish are delivered to seafood markets, dealers, and restaurants in these three cities. While no commercial fishing operates out of these communities fishermen utilize the tourist market for their products. Industries, which were historically more active in the commercial sector, currently operate on a more service-oriented level. For example, one fish market has operated in this area for the last 56 years (www.bellbuoyofseaside.com). However, when it opened its doors in the mid 1940s, operations were focused more on fish processing compared to the retail outlet it services today. Nevertheless, this operation holds its place in the larger fishing community, as local fishermen supply product to the market for retail sale.

The three clusters mentioned above are all interrelated economically and socially. Community members, harvesters, processors, and marine support services depend on both the commercial and recreational sectors for survival. Each of the eight ports plays an integral role in Astoria area ports as a whole.

Fishing Sectors

Commercial Fishing Fleet

The commercial fishing fleet in Astoria area ports is diverse covering a variety of gear types and landed species. The majority of harvesters stay employed throughout the year by switching gear on their vessels to adapt to changing fishing seasons (Appendix 3). A small Alaska offshore fleet also homeports in this area, participating in both Oregon and Alaska fisheries. In addition, Washington and California fishermen participate in Astoria area port fisheries.

More recently the fishery that sets Astoria area ports apart from other Oregon fishing communities is the sardine fishery, which operates from June to October (Personal Communication, 2004). Within the last five years, Astoria area ports have seen tremendous growth in this fishery. Harvesters as far away as Bellingham, WA began commuting to Astoria area ports to access this resource (Pizzelo, 2002). In addition to being actively involved in the fishery, some established processing plants were designed specifically for the sardine fishing fleet (Personal Communication, 2004). Purse seiners are the primary gear used in this fishery

with vessels ranging in length from 60 to 85 feet. A school is identified with spotter planes and sonar. Once spotted, purse seine nets (positioned vertically) circle schooled fish with the aid of the skiff. The sardines are then pumped out of the net and held in refrigerated seawater. On average, a catch can range from 35 to 40 tons (Personal Communication, 2004 and OSU, 2003). While sardine markets continue to focus on the Asian bait market, a new development in this fishery involves widening the marketability for human consumption. One example of this development lies in the experimentation of sardine recipes by local chefs. Coinciding with this is the development of research into the benefits sardines have on human health due to their high lipid and omega three fatty acid content (Personal Communication, 2004).

In addition to the sardine, groundfish is an important resource for the community both socially and economically. Groundfish are predominantly targeted year round (Personal Communication, 2004; www.pacseafoods.com; www.tridendseafoods.com; and www.oregon.gov). The majority of groundfish catch is harvested by trawl vessels which range between 60 to 75 feet and are operated by a captain and two crewmembers. Trawlers target several different species including rockfish, whiting and flatfish.

Gillnet fishing has a long-standing history in Astoria area ports. Today, gillnetters typically land salmon, sturgeon, shad, and smelt in the Columbia River. The average gillnet boat ranges in size from 20 to 40 feet. A gillnet vessel is typically set up with either a stern-mounted reel and roller for setting and hauling nets over the stern or a bow roller that hauls nets over the bow (Personal Communication, 2004 and OSU, 2003). In addition to this fleet, gillnetters also include the salmon dory fleet. The dory fleet is traditionally mobile, hauling their boats from one fishing site to another.

The shrimp fishery is also an important fishery in Astoria area ports. On average, vessels range in size from 55 to 90 feet in length, operating two nets at a time along the ocean bottom. The small mesh size distinguishes shrimp nets from groundfish nets. The other distinguishing characteristic about shrimp nets is the use of an “Oregon Grate” or “excluder” placed at the bottom of the net. Currently about 80% of the shrimp fleet is utilizing the grate excluders. One advantage to using the excluders is their ability to effectively reduce hake by-catch, allowing fishermen to fish in locations they couldn’t fish before. During non-shrimp seasons, shrimp fishermen fish for tuna and/or crab or are involved in the limited entry fishery (Personal Communication, 2004 and www.oregon.gov).

During the winter months in Astoria area ports, the Dungeness crab fishery continues to be of great importance. Dungeness crabs are caught with pot gear baited with squid and razor clams. On average, boats fish with 300 to 500 pots in ocean depths from 300 to 600 feet. The crab fleet is comprised of small wooden trollers operated by two-person crews and large steel combination vessels operated by four-person crews. Fishing usually occurs for 24 to 48 hours at a time. Due to extreme winter weather conditions, crews take advantage of good weather so they can get done as quickly and safely as possible. The crab season traditionally takes place from December 1 to August 14. During the early season crab operations run their crews around the clock, with peak harvest occurring during the first eight weeks of the season (Personal Communication, 2004 and www.oregon.gov).

Landings

In 2004, the predominant species in landed pounds were pacific sardines (58.4%), pacific whiting (26.0%), and groundfish (8.912%). The remaining species included shrimp (3.5%), albacore (1.6%), crab (1.0%), coastal pelagic (0.2%), other species (0.2%), and shellfish (0.4%).

Although thought of as a salmon dominant fishing community, salmon represented only 0.2% of total pounds (Pacific Fisheries Information Network (PacFIN) Landings Data, 2004) (Appendix 4). Culturally, however, salmon persists as an important resource, which draws attention to the communities' fish markets and "working waterfront".

In 2004, the leading species in terms of revenue were groundfish (33.3%), pacific sardine (24.2%), crab (12.3%), albacore (10.4%), shrimp (8.6%) and pacific whiting (6.4%) (Appendix 4).

Fishing Gear

Fishing gear in the Astoria area can be classified into nine different categories (Table 1). The majority of these landings, however, are made up of trawl, net, pot, and hook & line gear. One reason for this fleet structure is due to harvesters' economic need to diversify catch. As a direct result of regulation changes, environmental conditions, etc., fishermen fish for multiple species throughout the year.

Table 1. Astoria area fishing sectors.

Fishing Categories	Vessel Count	Revenue	%	Landed Pounds	%
Trawl only	266	$ 9,257,717	46.27%	43,755,813	32.22%
Net only	72	4,998,343	24.98%	79,561,657	58.67%
Pot only	44	981,622	4.91%	597,884	0.44%
Pot and Trawl	72	2,832,681	14.16%	10,539,376	7.76%
Net, Pot and Trawl	5	86,505	0.43%	60,202	0.04%
Hook & Line	11	179,038	0.90%	82,113	0.60%
Hook & Line and Trawl	12	53,517	0.26%	30,876	0.22%
Hook & Line and Pot	63	1,245,631	6.22%	713,167	0.53%
Hook & Line, Pot and Trawl	22	373,314	1.87%	256,201	0.18%
Totals	**567**	**$20,008,368**	**100%**	**135,597,289**	**100%**

Two types of fishing gear caught the most poundage in 2004: *Net only* (58.7%), and *Trawl only* (32.2%). The combination of these two gear strategies represent 90.9% of the fleet, leaving remaining gear combinations to represent a very small portion (Appendix 4) (PacFIN, 2004).

Revenues for *Trawl only* (46.3%) and *Net only* (25.0%) remain as the top two gear strategies in 2004. However, *Pot and Trawl* (14.2%) follow with the third highest gear strategies in terms of revenue (Appendix 4) (PacFIN, 2004).

Charter Fleet

The Astoria area charter industry is concentrated in Ilwaco for the Buoy 10 fishery. However, approximately 17 major charter and river guide companies operate out of Astoria, Hammond, Warrenton, Seaside, Chinook, and Ilwaco. In addition to these companies, a great number of river guide tours operating outside of the Astoria area come to fish in the Columbia River as well. One charter company mentioned that approximately 200 guide boats fish the Columbia River (Personal Communication, 2004). Salmon, sturgeon, tuna, and bottomfish draw tourists to local fishing spots during the summer and fall months. The local economy is dependent upon this industry to boost tourist revenues during these months.

Tribal Fleet

Currently, a large tribal fishery presence does not exist in Astoria area ports. That is not to say, however, that it is absent from the region. Traditionally, Columbia River salmon are very important to several Columbia Basin tribes. Because of this importance, the Columbia River Inter-Tribal Fish Commission (CRITFC) was established in 1977 as an agency dedicated to providing technical support and aid in the coordination of fishery management policies. The tribes associated with CRITFC include: The Confederated Tribes of the Warm Springs Reservation in Oregon; the Confederated Tribes and Bands of the Yakama Indian Nation; the Confederated Tribes of the Umatilla Indian Reservation; and the Nez Perce Tribe. In the 1855 treaties with the United States, these tribes were reserved the right to anadromous fish (www.critfc.org, 2004).

Today tribal communities continue to fish for ceremonial, subsistence, and commercial purposes as well as work to restore sustainable fish populations throughout the Columbia Basin. A variety of fishing strategies are utilized, including wooden scaffolds, boats, set nets, spears, dip nets, poles, and lines. A dietary preference for salmon and its role in traditional ceremonies are currently maintained (www.critfc.org, 2004).

Processing Sector

A total of 12 processors are distributed geographically throughout Astoria area ports. These 11 processors include: Astoria Holdings, Astoria Pacific Seafoods, Bell Buoy Crab Company, Bornstein Seafoods, Fishhawk Fisheries, Jessie's Ilwaco Fish Company, Josephson's Smokehouse & Dock, Oregon Ocean Seafoods, Point Adams Packing Company, Pacific Coast, Sunrise Seafoods, and Warrenton Deep Sea. While some operations have been serving this community for decades, others established themselves more recently. The most recent processing sector introduced to the Astoria area caters to the sardine fishery. Today, approximately eight of the 12 processors freeze, box, and ship the majority of their sardines to Asia for tuna bait. At least two of these plants are dedicated sardine operations, closing their doors during non-sardine seasons. Other plants, however, participate in additional fisheries throughout the year (Personal Communication, 2004).

In addition to the sardine, more traditional seafood products are processed in the Astoria area. These products range from head and gutted pacific whiting, smoked and canned salmon, and whole cooked crab to Individual Quick Frozen (IFQ) shrimp (Appendix 5). The processing sector draws upon local residents as well as temporary employees to run their plants. One aspect of processing jobs that has changed the face of the industry lies in demographics. Traditionally, females dominated filleting lines. Today, many more male employees are participating in these roles. In addition to this gender change, the Hispanic community has replaced the traditional Philippine processor employee in Astoria area ports. Because of the rise and fall of plant activity throughout the year, Hispanics as well as temporary workers have filled plant openings during busy fishing seasons. This change in employee structure has replaced a once local employee base to a more migratory one. One reason for this change is because processing plants are forced to fill many plant openings for a shorter period of time (one to three months) depending on the fishing season. This change in processing activity is more in tune with fluctuating fishing seasons but difficult to staff (Personal Communication, 2004).

Processors purchasing product from a harvester are obligated to comply with state landing taxes and commodity commission fees. One element that makes a processor's fee structure so dynamic in Astoria area ports is the difference in state requirements. In some cases, these state differences influence harvesters to deliver a landing to one processor over another. One example of this is the preference to deliver landings to Washington state processors instead of Oregon

processors. The reason for this lies in the fact that Washington has fewer fees associated with a landing. Washington's fees are based on value, resulting in a fee of one to two percent of the delivery. Oregon, however, has a different structure in that some fees are set at a standard rate while others are *ad valorum*. In comparison to Washington, Oregon also has commodity commission taxes and a five-cent pound tax on all salmon (in addition to a value tax). This tax is a Restoration and Enhancement (R & E) tax that is not required in WA (for more information please see *Landing Taxes and Fees* Appendix 6A) (Personal Communication, 2004 and ODFW, 2004).

A description of the processing plants located throughout the Astoria area include: Bornstein Seafoods, Josephson's Smokehouse & Dock, Pacific Coast, and Sunrise Seafoods. Information about these operations was taken from company Internet web pages.

Bornstein Seafoods, a processing operation headquartered in Bellingham, WA, has two facilities located in the Astoria area. One facility is a dedicated processor, processing groundfish, salmon, sardine, albacore tuna, Dungeness crab, and cold-water shrimp (www.bornstein. com/locations/astoria.html). The other facility houses fresh Dungeness crab meat production, custom canning, a smokehouse, and retail shop (www.bornstein.com).

Josephson's Smokehouse & Dock, a family-owned business, has been in operation for over 80 years by four generations. Products that are processed, smoked and packaged in Astoria are shipped worldwide for individual mail order and wholesale customers. Some of the products Josephson's produces include: cold smoked Chinook salmon, hot smoked seafood, canned specialty seafood, fresh or frozen seafood, salmon jerky, and specialty seafood gifts (www.josephsons.com).

One of the largest processing and distributing companies in the Astoria area is Pacific Coast, a subsidiary of The Pacific Seafood Group. The Warrenton plant was the Pacific Seafood Group's first processing facility, established in 1983. Pacific Coast's 384-foot unloading dock is capable of unloading three fishing vessels at one time. In addition, the dock consists of three hoists, a 20,000 gallon fueling facility, and an ice plant. Within the processing facility, 30 fillet line stations are supported by two Trio skinning machines capable of filleting 120,000 pounds of product per day. Shrimp processing consists of four Laitrim peeling machines, processing up to 50,000 pounds of raw product per day. In addition to shrimp, approximately 80,000 pounds of crab can be processed per day. One automated system Pacific Coast added to its facility in 1995 was a Surimi, H & G (head and gut) fillet line, capable of processing 300 tons of whiting per day (www. pacseafood.com).

Sunrise Seafoods processes Dungeness crab and albacore tuna for bulk, retail, export, and wholesale. Sunrise Seafood's trade area is regional, national, and international, dealing with export markets such as Canada, Japan, and Spain (http://impact.wsu.edu).

Two sectors often lumped with the processing sector are distributing and wholesaling. In some cases, processors operate as distributors, and/or wholesalers in addition to processing seafood. In other cases, a distributor and/or wholesaler will function independently of processing. One such example in the Astoria area is Ocean Beauty Seafoods. Ocean Beauty, originally operating as a processor in the Astoria area, changed the company's focus to distribution in 1982. The distribution facility located in Astoria provides oysters, crab, wild salmon, halibut, sturgeon, shrimp, and other products to customers on the Oregon and Washington coasts (www. oceanbeauty.com).

Appendix 7 reports processing, distributing, and wholesale company information for 12 businesses in the Astoria area. The resource for this information is the *Prospector Update: A National Directory of Seafood Traders* by Urner Barry, 2004.

Support Services

A variety of support services (Appendix 8) are available to both commercial and recreational fishermen in the Astoria region. Among these are fuel docks, cold storage, icehouses, marine supply, bait and tackle shops, shipyards, marinas, trucking companies, fish by-product plants, and fish markets. Many of these services are distributed throughout the eight Astoria communities. While the number of support businesses has declined over the years, those remaining play a crucial role in the community.

While some of the communities' fishing-related businesses cater to local harvesters and processors, others provide services to additional West Coast fishing communities. For the same reason that harvesters and processors strive to diversify their operations, businesses such as boat yards, fish by-product plants, and marine supply operations function much in the same way. In the example of local boat yards, their customer base extends as far away as Alaska and Hawaii. Due to raw material quality constraints, however, fish by-product plants are restricted to a radius reaching north into Waldport, WA and south to Newport, OR (Personal Communication, 2004). This expansion into other regions of the Pacific Northwest or West Coast diversifies their product base, which is a requirement for a seasonal industry.

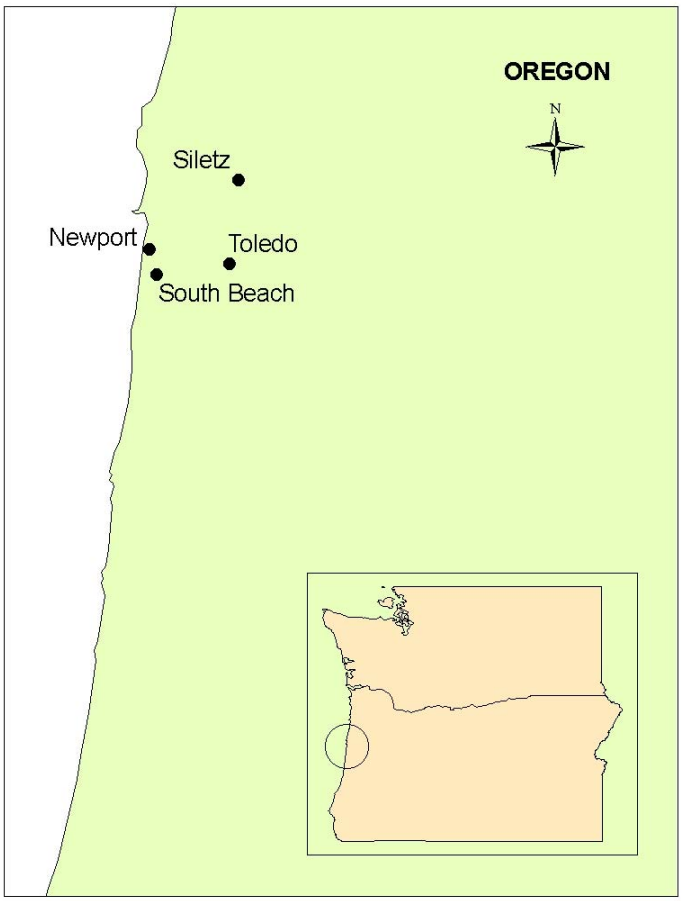
Newport Area Ports

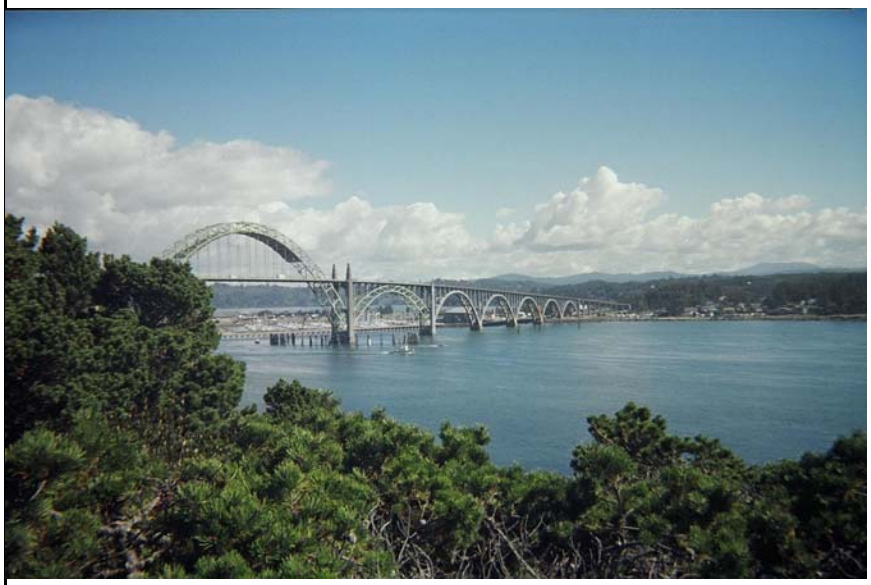
Newport Area Ports

The Newport Community Profile include the cities of Newport, South Beach, Toledo, and Siletz Oregon. These four cities are grouped together because of their economic and social connection with the fishing Industry. From this point on, when referring to Newport area ports, the additional three communities mentioned above are included as part of Newport's "fishing community".

The cities comprising Newport's fishing community are contained within a 12-mile radius of Mid-western Oregon.

The focus during this project was to explore how Newport acts as the "hub" of fishing communities in the vicinity.





Yaquina Bay Bridge, Newport, OR, 2004 ~ Photo by Geana Tyler

History of the fishing industry

Newport area ports have focused on local fishing, timber, and tourism opportunities since their incorporation in the late 1800s. With such an early development of these industries, Newport area ports remain collectively one of the largest fishing communities in Oregon. The

introduction of refrigeration in 1908 marked the rapid expansion into the seafood industry in the Newport area ports. Upon this discovery, bay front development followed with the growth of processing companies, marine supply stores, machine shops, charter operations, and fish markets. During the 1980s, Newport area ports recognized the importance to diversify the communities' fishing and tourism foundation into a strong resort and research center. Efforts resulted in multiple tourist-based community facilities in addition to research oriented facilities which include Oregon State University's Mark O. Hatfield Marine Science Center (www.newportchamber.org).

Like other West Coast fishing communities, salmon was an important resource economically and one that spawned other fishing efforts after the decline of fishery stocks. The majority of historically fished species in Newport area ports include: salmon, crab, tuna, shrimp, and groundfish. Fishermen throughout history have remained innovative to adapt to the cyclical nature of fishing. One example is the widow rockfish fishery, accidentally discovered by a local fisherman experimenting with a new mid water net. The result of this discovery was a 15-year fishery yielding tremendous volume. While some fishermen became dedicated groundfish trawlers, others were successful in the offshore Alaska fleet. In addition to the Alaska fleet, local fishermen participated in the hake and shrimp Joint Venture Fishery. Participation in the Joint Venture Fishery also resulted in the development of the pacific whiting fishery during the 1970s (Personal Communication, 2004).

The number of processors operating out of Newport area ports has fluctuated over the years. At one time there were 13 or 14 cutting operations in Newport proper alone, located at one end of the bay front and stretching all the way down to the end of the terminal. Some plants that previously operated out of Newport include: Bornstein Seafoods, Bumblebee, Depoe Bay Fish Company, Johnson Keller, Newport Shrimp, Ocean Beauty, Oregon Coast Seafoods, Point Adams Packing Company, and Yaquina Bay Fish Company, (Personal Communication 2004 and http://uci.net). Like Astoria's processing sector, Newport area ports have seen a shift in processor employees. Traditionally, plants were staffed with local women operating on fillet and packing lines. In addition, plants historically operated more frequently throughout the year.

Fishing Community

The Newport area ports today are comprised of about 14,137 people. Many positions filled by Newport area residents are those in *Management, Professional, and Related occupations*; *Service, Sales and Office occupations*. Farming, Fishing and Forestry are represented by 3% of the population in Newport and Siletz, and 1% in Toledo according to 2000 US Census data (Appendix 2).

PSMFC staff attempted to estimate the number of fishing related jobs in Newport area ports. This estimate was based on those that participated in the project as well as other references, including *Pacific Fishing* and Urner Barry. In addition, the Oregon Department of Employment was consulted on more specific estimates. Due to confidentiality reasons, however, they do not have the ability to determine what percent of the population is employed in the fishing industry (Personal Communication, 2004). The estimated number of Newport area fishing jobs established by PSMFC staff ranges from 500 to 900. This number was reached primarily through conversations with community members. In many cases, community members offered estimates as to how many employees worked in their business or operation (processing/distributing/wholesale plants, fish markets, commercial and charter fishing crews and industry support operations). The majority of community members provided a range of employees representing a number of filled positions accounting to both the lean and busy seasons

of the year. However, it is believed that this estimate is largely underestimated. One of the reasons for this is because of the sample size of the population that participated in this project. Further investigations would be required to get a more accurate estimate of fishing related jobs in Newport area ports.

The fishing community that Newport area ports represent is composed of four cities -Newport, South Beach, Toledo, and Siletz - which can be divided into two main groups. The first group is represented by those cities that provide peripheral support to the fishing industry in terms of infrastructure, which includes where industry members live (South Beach, Toledo and Siletz). The second group is represented by the city of Newport itself. Newport contains the bulk of both commercial and recreational fishing activity as well as support structures for the industry. The majority of the fishing industry is concentrated along the bay front off Newport's Bay Street. This dense area is home to both tourist and commercial fishing related businesses. Along this stretch of bay front, both commercial and charter fishermen have access to marine supplies, fuel, storage, moorage (for about 450 commercial vessels), dockside vessel repair, bait, and ice. In addition, processors, buying stations, and a fish meal plant are also located in the area (Personal Communication and Direct Observation, 2004).

The working waterfront also attracts the tourism industry to the community. Tourists visit Newport to observe harvesters and processors on the bay front, participate in charter fishing activities, and purchase fresh fish directly from fishermen on the fishing vessels or from seafood markets. While the tourism industry does not provide many "living wage jobs" to local residents, it does produce a lot of revenue for the overall community (Personal Communication, 2004).

In addition to the bay front, the Oregon Coast Aquarium, and Mark O. Hatfield Marine Science Center, situated in South Beach, continue to draw tourists to the area by providing outreach and education about local industries, the environment, and marine biology. South Beach is also home to an 11-acre salmon release and recapture facility, 600 moorage slips, a four-lane launch ramp, and a public fishing pier (www.portofnewport.com).

Fishing Sectors

Commercial Fleet

The commercial fishing fleet in Newport area ports is diverse, covering a variety of gear types and species. The majority of harvesters stay employed throughout the year by switching gear on their vessels to adapt to changing fishing seasons (Appendix 3). An offshore Alaska fleet also homeports in this area, participating in both West Coast and Alaska fisheries. In addition, Washington and California fishermen participate in Newport area port fisheries.

Groundfish is an important economic resource for Newport area ports. Groundfish are predominantly targeted from January to October or November under a system of bi-monthly quotas (Personal Communication, 2004; www.pacseafoods.com; www.tridendseafoods.com; and www.oregon.gov). On average, trawl vessels range between 60 to 75 feet and are operated by a captain and two crew members. Trawlers target several different species including rockfish, whiting, and flatfish.

The gillnet fleet in Newport area ports is smaller compared to Astoria area fleet. Gillnetters typically land salmon in the Siletz River. The average gillnet boat ranges in length from 20 to 40 feet. A gillnet vessel is traditionally set up with either a stern-mounted reel and roller for setting

and hauling nets over the stern or a bow roller that hauls nets over the bow (Personal Communication, 2004 and OSU, 2004).

The shrimp fishery is also an important fishery in Newport area ports (please see shrimp fishery discussion on page 23).

One fishery that continues to be of great importance during the winter months in Newport area ports is the Dungeness crab fishery (please see Dungeness crab fishery discussion on page 23).

Another group of harvesters operating out of Newport area ports includes participants in the Alaska offshore fleet. This fleet has been operating out of Newport since the 1980s. Both the Joint Venture fisheries as well as the decrease in fishing resources off the Oregon coast during this time period influenced the growth of this fishery. Some of the same harvesters that started operations in Alaska during the 1980s are still participating today. One Alaska offshore fisherman commented that about half of the Kodiak fleet is from Newport (Personal Communication, 2004). While this is a substantial number of participants, several Alaska fishermen also fish off the Oregon coast. A lot of them split their operation 50/50 between Kodiak and Newport (Personal Communication, 2004).

Landings

Newport area harvesters predominantly participate in the groundfish (including pacific whiting), crab, albacore, shrimp, and salmon fisheries. The fishery that sets Newport apart from Astoria in terms of landed pounds is the Pacific whiting fishery. In 2004, the Pacific Fisheries Information Network (PacFIN) reported that pacific whiting represented 77.2% of the total landed pounds in Newport. In addition, Newport accounted for approximately 65.8% and 40.2% of all Oregon and West Coast whiting pounds landed in 2004 respectively. Following this, the principal species in landed pounds were crab (7.1%) and groundfish (excluding whiting) (5.0%) (Appendix 4).

In comparison to the dominant species of landed pounds, the leading species in revenue result in a different outcome. The top revenue generating species in 2004 were crab (40.0%), groundfish (excluding whiting) (14.6%), salmon (13.2%), albacore (13.1%), whiting (10.2%) and shrimp (7.5%) (Appendix 4).

Fishing Gear

Fishing gear in the Newport area can be classified into seven different categories (Table 2). The majority of these groups, however, are made up of *Trawl only* and *Pot and Trawl*. Like Astoria's fishing fleets, Newport harvesters have continually diversified gear and species strategies to adapt to fluctuations in seasons and management regulations. This diversification allows participation in multiple species throughout the year.

Table 2. Newport area fishing sectors

Fishing Categories	Vessel Count	Revenue	%	Landed Pounds	%
Trawl only	1,212	$ 9,637,744	32.51%	65,628,160	59.13%
Pot only	35	1,997,281	6.74%	1,343,430	1.21%
Pot and Trawl	332	11,193,959	37.76%	38,334,348	34.54%
Hook & Line	16	63,372	0.21%	37,834	0.03%
Hook & Line and Trawl	126	444,664	1.50%	221,299	0.19%
Hook & Line, Pot and Trawl	276	6,305,125	21.26%	5,414,984	4.87%
Other	6	3,476	0.01%	1,037	0.001%

Total	**2,003**	**$ 29,645,621**	**99.99%**	**110,981,092**	**99.97%**

Revenues for *pot and trawl* (37.8 %) remain as one of the top three gear strategies in 2004. Trawl only represents 32.5% of the total revenue, and *hook & line, pot and trawl* represent 21.3% of the total revenue landed by this fleet (Appendix 4) (PacFIN 2004).

Three types of fishing gear caught the most poundage in 2004: *trawl only* (59.1%) *pot and trawl* (34.5%) and *hook & line, pot and trawl* (4.9%). The combination of these three gear strategies represent over 98% of the fleet, leaving remaining gear combinations to represent a very small portion (Appendix 4) (PacFIN, 2004).

Charter Fleet

The Newport area charter industry has been supported by a steady number of companies for many years. One of these companies still in operation opened its doors on the bay front in 1949. Today, four charter businesses offer salmon, tuna, and bottomfish trips for Newport area visitors. While salmon draw a lot of attention to charter companies, tuna continues to attract recreational anglers. During the 1980s the charter industry shifted its focus from a salmon based industry to bottomfish. This shift in focus was the result of a decrease in available salmon. Bottom fishing remains popular today among anglers (Personal Communication, 2004).

Newport area ports see the bulk of charter business during the summer in July and August. Anglers typically travel from Washington, Oregon, California, and Idaho to take advantage of fishing opportunities off the Oregon Coast. For the most part, anglers will book a trip with a company contracted with a set fleet of charter vessels. At least 17 charter vessels serve Newport's four charter companies (Personal Communication, 2004).

Tribal Fleet

Unlike the Columbia Basin tribes (described above), the Coos and Lower Umpqua, Coquille, Cow Creek Band of the Umpqua, Grand Ronde, and Siletz tribes do not have a 50/50 fisheries management scenario. One reason for this is because they do not have treaty-fishing rights. When the Siletz tribe was reinstated in the 1970s, they signed a consent decree stating that they would rescind their treaty-fishing rights in exchange for federal recognition. Today, tribal members participate in pacific salmon fishing for ceremonial, subsistence, and recreational use at three unique tributary sites on the Siletz River. Using dip nets, grafts, and spears, the Siletz are allowed to catch 200 pacific salmon annually (Personal Communication, 2004).

During the late 1980s and early 1990s, tribal members were actively involved in commercial groundfish, salmon, and crab fisheries in Newport (Personal Communication, 2004). Today, Siletz tribal members no longer participate in this fishery. However, participation has shifted its focus to a partnership with *Oregon Smoked Foods, Inc*. offering *Siletz Tribal Smokehouse Smoked Salmon*. The Siletz receive a portion of all sales from smokehouse brand products. This contribution is available to tribal members and utilized for economic development (www.oregonsmokedfoods.com).

Processing Sector

A total of two processors[4] and three buying stations[5] operate out of Newport area ports. The two processors include Pacific Shrimp and Trident Seafoods. The three buying stations are Bornstein Seafoods, Carvalho Fisheries, and Hallmark.

Like Astoria area processors, Newport area plants participate in the processing of traditional seafood products such as head and gutted pacific whiting, smoked and canned salmon and tuna, and cooked crab (Appendix 5). Newport area processing facilities have also seen a shift in the demographics of employees. Today, migratory Hispanic males fill the vast majority of fish processing jobs in Newport area ports. One reason for this shift is because some fish plants operate on a more seasonal basis. Trident Seafoods is an example. Because their primary product is pacific whiting and the plant is only open for a short time of the year (March to June), the facility relies on temporary employees to fill positions (Personal Communication, 2004).

Processors purchasing product from a harvester are obligated to comply with state landing taxes and commodity commission fees. Unlike Astoria area ports, however, the multi-state dynamic influencing Astoria area harvesters to deliver to Washington processors over Oregon processors are less relevant in Newport area ports. Oregon fees are set at a standard rate while others are *ad valorum*. Oregon also has commodity commission taxes and a five-cent per pound tax on all salmon (in addition to a value tax). This tax is a Restoration and Enhancement (R & E) tax (For more information please see *Landing Taxes and Fees* in Appendix 6) (Personal Communication, 2004 and ODFW, 2004).

Below is a brief discussion profiling several processors and buying stations located throughout Newport area ports. The processing operations include: Pacific Shrimp and Trident Seafood, while the buying operation descriptions include: Bornstein Seafoods and Carvalho Fisheries. Information about these facilities was taken from company Internet web pages.

The Pacific Seafood Group purchased Pacific Shrimp, located on Newport's bay front, in 1996. The plant operates as one of the largest producers of whiting fillets on the West Coast. Additionally, Pacific Shrimp is a leader in groundfish, shrimp, crab, tuna, and salmon processing. The plant also lands herring, tuna, swordfish, and other species. Furthermore, the Pacific Seafood Group acquired Depoe Bay Seafood, a neighboring processing facility, in 2000. This acquisition expanded processing capabilities in the Port of Newport to a fresh seafood market and restaurant catering to local and tourist markets (www.pacseafood.com).

Trident Seafoods has a seasonal processing facility typically operating from June to September. This plant is a shore-based frozen seafood and fishmeal operation. The plant can process up to one million pounds of pacific whiting per day, yielding a combination of surimi, fillet blocks, mince, fishmeal, and oil. Approximately 120 people are employed at Trident's plant (www.tridentseafoods.com). During non-processing months, Trident operates as an unloading dock for several independent fish companies and sells ice to local area harvesters (Personal Communication, 2004).

Bornstein Seafoods operates a buying station in the Newport area. This facility purchases troll-caught salmon, Albacore tuna, Dungeness crab, and cold-water shrimp (www.bornstein.com).

[4] A processor is defined in this project as an operation or plant which processes fish and shellfish.
[5] A buying station in this project is defined as an operation that purchases fish and ships it to another location for processing.

Carvalho Fisheries, another buying station operating out of Newport, is a "first receiver of seafood", meaning they purchase product directly from the fishing boats. Once product is purchased, Carvalho utilizes its own trucking system to consolidate product and deliver it to processing plants (www.carvalhofisheries.com).

Appendix 7, reports processing, producer, and export company information for three businesses in the Newport area. This information is drawn from the *Prospector Update: A National Directory of Seafood Traders* by Urner Barry, 2004.

Support Services

A variety of support services (Appendix 8) are available to both commercial and recreational fishermen. Among these are fuel docks, cold storage, icehouses, marine supply, bait and tackle shops, marinas, trucking companies, fishmeal plants, and fish markets. Many of these services are concentrated along the bay front in Newport. The only shipyard located in the area operates out of Toledo. The Fred Wahl Marine Construction Company ties the community of Toledo to the communities of Newport, South Beach, and Siletz. Fred Wahl Marine Construction caters to both commercial and recreational fishing sectors, which includes distant water boats and the Alaska offshore fleet. Operating out of Toledo for the past six years, the shipyard is skilled in vessel repair, reconstruction, and new construction. Specifically the yard provides services including painting, fiberglass, metal fabrication and welding, repairs and conversions, engine and shaft alignments, carpentry, and hydraulics (Personal Communication, 2004 and http://www.fredwahlmarine.com/fulltoledo.html).

Two limited services for Newport area harvesters include ice and cold storage. With only two icehouses in town, one public and one private, ice is limited during busy summer months. In addition to restricted ice resources, cold storage is also lacking in the Newport area. The lack of cold storage space presents challenges to processing plants, small independent companies, and harvesters (Personal Communication, 2004).

Differences and Similarities Between Astoria and Newport Area Ports

Understanding the differences and similarities between fishing communities can shed light on how regulations can impact economic and social elements within a community. Fishing communities vary on many different levels including fleet structure, geography, infrastructure, and species fished. The following is a discussion about some of the differences and similarities between Astoria and Newport area ports provided by community members.

Similarities

Astoria and Newport area ports have a similar foundation in terms of demographics, and history of industry. In the past, both communities relied heavily on natural resources such as timber and fish for jobs and economic growth. While Astoria and Newport area ports continue to draw upon these two industries, they additionally depend on tourism dollars. The natural resources on which these communities are based draw visitors to the area. Both communities offer a wide range of recreational opportunities including charter fishing, river guides, and whale watching.

The fishing industries in Astoria and Newport area ports were initially founded on salmon. The focus shifted, however to other fisheries such as groundfish, crab, shrimp, and tuna when resource availability and fishing regulations changed. Both communities continue to target similar fish species. Another similar element between Astoria and Newport area ports results in fishing industry infrastructure. While infrastructure is distributed differently geographically in these two communities, they both have similar overall infrastructure, including access to fuel, supplies and maintenance services, marine research centers, and fish markets (Personal Communication, 2004). In Newport area ports infrastructure is concentrated more densely on the bay front in Newport proper with the infrastructure in Astoria area ports more widely located among all nine communities.

One element similar in both Astoria and Newport is the role the Oregon Commodity Commissions play in their respective area ports. These four commodity commissions include: Oregon Dungeness Crab Commission (ODCC), Oregon Salmon Commission, Oregon Albacore Commission, and Oregon Trawl Commission. The Oregon Dungeness Crab Commission (ODCC) was established in 1977 as an industry funded agency. One objective of the ODCC is to "…enhance the image of the Dungeness Crab industry and to increase opportunities for profitability through promotion, education, and research" (http://uci.net). ODCC's funding comes from the Dungeness Crab landing fees of one percent of the landed value paid by harvesters. The Oregon Salmon Commission functions as a promoter of Oregon salmon through industry funding. The commission was established in 1983 and focuses on marketability, education and research, regulatory action, and communication (http://oregon salmon.org). The Oregon Albacore Commission was established in 1999 to promote West Coast albacore tuna and provide education for consumers (www.oregon.gov). Lastly, the Oregon Trawl Commission was established in 1962. In addition to promoting trawl products and educating consumers, they also conduct nutritional studies, explore new ways of using trawl products, and fund research to increase yield from harvest (www.ortrawl.org). Fees collected by these commissions are applied to achieving commission goals and objectives. In addition, they work in concert supporting "Brand Oregon", a marketing campaign dedicated to promoting Oregon seafood.

Differences

Differences between Astoria and Newport area ports lie in the number of processors operating out of each community, geography, and the offshore Alaska fleet. Currently, Astoria area ports have 12 operating processing plants while Newport area ports have two.

Astoria and Newport also differ in geography. Since Newport's beginning, the waterfront has been a magnet for fishing related businesses to locate. In Astoria, fishing businesses are distributed throughout various 'pockets' on the river. The presence of the Columbia River has also had a large influence on Astoria area port fishing fleets as well. Because of the river, Astoria area ports have been rooted in the gillnet fishery for many years, resulting in a more dominant river fishing fleet. Even though Newport has a river fishery, it is smaller in scale and does not participate in the gillnet fishery (Personal Communication, 2004).

The Columbia River bar also makes Astoria unique from Newport. Many community members reported that the Columbia River bar is difficult to cross at times, requiring more time and distance before reaching the ocean. In addition to a shorter bar to cross, Newport is one of two deep draft ports located on the Oregon coast (Personal Communication, 2004).

The fishing fleets in Astoria and Newport area ports vary slightly. Newport area ports have a more dominant offshore Alaska fleet when compared with Astoria area ports (Personal Communication, 2004).

Another point where Astoria and Newport area ports differ is in the delivery of product in the tuna fishery. While both fishing communities target tuna more Astoria area harvesters provide blast-bled tuna to consumers compared with Newport ports that provide brine tuna. In terms of seafood marketability, Newport area harvesters take advantage of the tourism industry and operate with a limited fish seller's permit. This permit allows fishermen to sell their catch directly to the public. Fewer Astoria area harvesters participate in this market (Personal Communication, 2004).

In the past, fishing organizations and associations were more common among fishing communities. Today, however, few organizations are still active in the fishing industry. One organization that separates Newport from Astoria area ports is Newport's Fishermen's Wives Association. This association of women is dedicated to providing support for fishing families. They are involved in fisheries research and work collaboratively with Sea Grant, Oregon State University, and industry members and organizations.

Issues affecting fishing communities during project activities

The topics discussed below were raised by fishing community members during informal conversations (Individual Fishing Quotas, Groundfish Buy Back Program, Groundfish Charter Boat Closure, and Country of Origin Label). When considering the conclusions of the current project, results should be acknowledged within the context of these topics and prior events. The following discussion provides a limited background about the topic and comments made by Astoria and Newport community members concerning the issue.

Individual Fishing and Processing Quotas

Individual Fishing and Processing Quotas (IFQ's[6] and IPQ's[7]) for the West Coast groundfish limited entry trawl fishery came up in discussion with community members. Considerations for implementing fishing quotas have been around for several decades. A moratorium, however, was placed on IFQ's from the late 1990s to the early 2000s. Since the moratorium has been lifted, the Pacific Fisheries Management Council (Council) is considering a proposal to establish a dedicated access privilege system for the groundfish limited entry trawl fleet. While discussions continue for IFQ programs, West Coast groundfish processors are requesting "processor recognition" if IFQ's are to be put in place.

Some processors believe that establishing some type of quota share program would recognize their significance and investment in the fishery. They feel that in order to ensure local processing jobs and employee benefits, "processor recognition" would need to be granted in order to guarantee supply of product. Additionally, the benefit of an IPQ program would enable processors to make further investments in the industry and forecast the future. Fishermen opposed to IPQ's, however, fear that "recognition" will encourage processors to purchase remaining permits, resulting in a large conglomerate or processing monopoly. Smaller processors operating on the West Coast share this fear, in that the current competitiveness and balance of price they create will disappear (Personal Communication, 2004).

On the subject of IFQ's, fishermen commented that only the owner of the boat will benefit from such a program. "Even the captain that has fished the boat for years and has an incredible catch record is not benefiting because it's not his boat" (Personal Communication, 2004). Others stated that IFQ programs will simply transfer a public resource to private ownership, and that if put in place, a system needs to be established ensuring that vessels stay in the community. Conversely, one comment made in support of IFQ's stated that they will be able to provide a better product to consumers under an IFQ system (Personal Communication, 2004).

The issue of IFQ's and IPQ's is a hotly contested topic. Depending on whether one or both programs are established, the result will have different effects on fishermen, processors, and the communities themselves. Throughout the communities of Astoria and Newport, more views opposing IFQ and IPQ systems were expressed. However, further exploration of this topic might reveal different results.

Groundfish Buy Back Program

A buy back program was established in 2003 by the National Marine Fisheries Service (NMFS) to reduce fishing capacity in the West Coast groundfish trawl fleet. The program involved purchasing fishing vessels and permits with a combination of government and industry funding, with the industry share being a loan that will be repaid by the remaining participants in each of the fisheries over time. The goal of the program was to reduce the fleet by 40-65% (Leipzig, 2001). The program resulted in a total of 91 limited entry trawl endorsed permits purchased out of a potential pool of 273 permits (http://www.nwr.noaa.gov/1sustfsh/groundfish/gfNEPA.htm).

Community members in Astoria and Newport raised several concerns about the effects the West Coast Groundfish buy back program had on fishing fleets and communities. In some cases,

[6] An IFQ is a federal permit allowing fishermen to harvest a percentage of the fisheries total allowable catch.

[7] An IPQ is the equivalent of IFQ's for processors. An IPQ program would establish an individual quota system with shares representing the opportunity to buy fish.

participants had a "wait and see" attitude about how the buy back program would affect the industry in the next five to ten years. Others, however, raised immediate effects the buy back had on non-groundfish fleets, infrastructure, fishing employment, and the overall fishing community.

Some community members explained that they observed a shift in effort from the groundfish fishery to other fisheries. They attributed this shift to how the buy back program was structured. Because fishermen were able to purchase inactive permits as well as new boats and gear with funds they received from the sale of a vessel, fishing effort was simply transferred. For example, in some cases, fishermen bought additional crab pots or upgraded vessels that did not participate in the program. Another shift in effort mentioned by a fisherman was that ":it's not the boat, it's the fisherman", meaning that if a fisherman moved from a vessel purchased in the program to one with an unsuccessful history, effort was transferred to the unsuccessful vessel (Personal Communication, 2004).

Groundfish Charter Boat Closure

A closure of the West Coast groundfish sports fishery took place on September 3, 2004. The closure affected fishing in the ocean, estuaries, and from shore for all major groundfish species including rockfish, lingcod, and greenling. This was the first time the decision to close down the groundfish sports fishery had taken place in history. In 2004 the Oregon sport catch cap was "…342 metric tons for black rockfish and 110 metric tons for lingcod. By August 29th, the landings for black rockfish were 334 metric tons and more than 108 metric tons for lingcod" (ODFW, 2004). By these calculations, if fishing were allowed to continue, it was predicted by ODFW that an overage would have ensued.

The largest effect the groundfish closure had on Astoria and Newport charter companies was in its timing. Labor Day is slated as the last busy weekend for the recreational charter industry. It is also the weekend most charter companies depend on financially during the winter months when they are not operating. Because of this closure, charter companies were required to cancel groundfish reservations, resulting in an economic loss. One charter boat owner reported a loss of $15,000, while another reported a loss of at least $20,000. In addition to the loss to boat owners, fisheries infrastructure such as shipyards, bait shops, restaurants, etc. also felt the effects (Personal Communication, 2004).

During informal discussions of the groundfish closure, several community members recommended solutions for next year's season. Some of the suggestions were to:

- Increase communication between fisheries management and the charter industry.
- Provide in-season notifications on quota status.
- Create a mechanism which would allow the industry to self-monitor prior to regulation change.
- Replace closures with reduced bag limits.
- Close the sport groundfish fishery (or fishery in danger of exceeding the quota) for the few weekdays prior to the Labor Day weekend, enabling fishing to occur on the weekend instead.

Although the number of charter participants consulted was limited, the aforementioned comments were repeated multiple times. The sport groundfish closure only affected those charter companies remaining open during the fall months. Some charter companies closed prior to this time period, and river guides were not impacted to a great extent from this closure, if at all (Personal Communication, 2004).

Country-Of-Origin Label

The Country of Origin Label (COOL) law was established by the Agricultural Marketing Service (AMS) enforcing that a mandatory country-of-origin label be placed on all red meat, seafood, produce, and peanut products bound for retail environments. COOL was to take effect September 30, 2004; however, lawmakers approved a two-year delay. All fresh, frozen, canned and cooked fish and shellfish products, restaurant fish products, as well as restructured fish products, are covered under the COOL guidelines (http://www.countryoforiginlabel.org/seafood.htm).

Because of the direct effect COOL has on the fishing and processing industries, many community members expressed views of contention with this new regulation. The most frequently expressed complaint was the lack of guidelines provided in the regulation. Because labeling standards were not provided, community members were left to create labels for products themselves. A problem of more importance, however, is the difficulty in tracking product delivered from multiple locations and fishing vessels. For example, some West Coast processors receive crab from fishing vessels fishing in multiple locations in one day. The challenge lies in tracking those different deliveries from the boat to the plant where they are being cooked, boxed, and shipped to a wholesaler and then delivered to a supermarket. Labeling the shipment with the appropriate country-of-origin label presents a challenge if the box arriving at the supermarket contains crab from multiple locations (Personal Communication, 2004).

This is not to say, however, that the entire population we consulted brought up frustrations with COOL. Some processing, wholesaling and/or distributing companies, prior to the inception of COOL, were taking steps to trace their products on their own. Tracking devices included such information as the date and location of landing and the utilized gear. The programs were developed as additional marketing tools to educate customers about their product.

CHAPTER III

Lessons Learned about Updating the Fisheries Economic Assessment Model (FEAM) and Conducting Cost Earnings Surveys

Background

FEAM is an input-output computer model which allows a user to estimate the economic impacts of commercial fisheries production at the state and community level. The model uses historic landings data, information on industry cost and margin structure (vessels and processors), and income multipliers. These pieces of information are generated by impact analysis for planning to "…produce estimates of 'regionalized' local income impacts after deducting for leakage payments to non-residents and to non-local suppliers, wholesalers, and manufacturers" (http://www.pcouncil.org/facts/acronyms.pdf, 2004). One of the inputs of FEAM is a series of fishing vessel and processor income statements for various types of operations. The fishing vessel types are based on gear and species specifications (Appendix 9). The processor sectors are The FEAM budgets for the processing sectors include fixed and variable operating costs as well as the plant's market value, number of employees, and the number of seafood products manufactured by the plant (Appendix 9). This sector is divided along product lines as well as market values and shoreside versus at-sea operations.

Exploring FEAM

The following results were discovered through consultations with a variety of community members in Astoria and Newport. Understanding how to collect information to update FEAM was discussed with harvesters and processors. Four major outcomes were the result:

1. Considerations to take during the collection of expense related information from harvesters and processors.
2. Suggestions on how to define fishing and processing fleet categories as related to FEAM.
3. Whether the fixed and variable costs listed in the model are appropriate, meet confidentiality requirements, or lack information.
4. Opinions on current expense values of harvesters and processors.

1. Considerations to take during the collection of expense related information from harvesters and processors.

Informal conversations regarding strategies for collecting economic information focused on the following: survey formats, issues of confidentiality, and timing of data collection.

Survey Formats

During informal discussions with harvesters, we focused on two elements: a) for future efforts to update FEAM, should we request harvesters provide feedback on a set of economic values or request that they provide the economic values themselves and b) should we ask harvesters to answer questions with a percent, exact value, or range of values.

a) Should we request harvesters provide feedback on a set of economic values or request that they provide the economic values themselves?

One solution is to present the participant with two scenarios; one containing current FEAM budgets including expenditure values, and one set of budgets excluding expenditure values.

These two scenarios would provide harvesters and processors with two options. Participants could either select the expenditure values that applied to them, comment on current values, and provide feedback; or provide updated expenditure values. One advantage to providing a blank budget as well as a completed budget is to accommodate harvesters' various record keeping methods (Personal Communication, 2004).

b) Should we ask harvesters to answer questions with a percent, exact value, or range of values?

A second element is whether questions regarding FEAM should require the participant to answer an expense question with a percent or exact value. One fisherman commented that providing percents was easier than providing values. The reason for this lies in diversity and seasonality in fishing fleets (Personal Communication, 2004). Fisheries economics are influenced by multiple factors annually. If exact values were collected for a series of years, the wide swings in seasonality would not allow for easy comparison between collected annual data. An example is the rising cost in fuel. In recent years, although fuel costs have increased, the percent that fuel represents of total vessel expenses has not changed. Requesting a percent of total revenue or total cost might more readily capture true expenses rather than fluctuating values.

Requesting a participant to respond to a series of ranges is also an additional approach to collecting expense data. Ranges offer analysts a minimum and maximum value on which to base decisions. In past management decisions, some harvesters felt that by analyzing averages, situations where data fell outside the average were more heavily impacted by a decision than those that fell within the average. In addition, some participants mentioned that they would be more comfortable providing ranges over values for confidentiality reasons (Personal Communication, 2004). Capturing a range of values from the industry would take into account both extremes observed in the industry and serve to mask sensitive data as well.

Issues of Confidentiality

Issues of confidentiality vary among harvesters and processors. While most harvesters mentioned they would not have a problem providing researchers and/or managers with economic data, others stated they would most likely decline to participate in future economic surveys. In reference to FEAM, most harvesters did not feel that many expense categories included in the model were confidential. On the other hand, some processors we consulted with objected to collecting all operating cost information about their plant. One processor felt that operating costs are proprietary and should not be available to competitors (Personal Communication, 2004).

Timing of Data Collection

One fisherman thought that expenditures of operating costs should be collected once a year. An advantage to collecting data once a year lies in diversity of the fleet. It was mentioned that because everyone has a different record keeping system, researchers would be asking too much if economic data was requested multiple times annually. One example of when to collect data could be at the conclusion of crab, troll, or shrimp season. Another example of when to collect economic information would be directly after tax season. At this time, participants will have completed their tax information, enabling them to more easily participate in an expense-related survey (Personal Communication, 2004).

2. Suggestions on how to define fishing and processing fleet categories as related to FEAM.

Harvesters and processors provided suggestions for three major topics: how to define vessels that are involved in numerous fisheries throughout the year (Combination Fleets); defining fishing

categories based on vessel length, horsepower, or vessel operation (Length of Vessel, Horsepower, and Owner-Operated versus Non-Owner-Operated); and how to more explicitly define existing categories (Definition of Existing Fishing and Processing Fleets and Definition of Existing Processing Fleets).

Combination Fleets

The existing FEAM budgets for each category include all fisheries in which the harvester is involved throughout the year. However, it is unclear what combination of categories captures the largest population. Several fishermen suggested that the following categories be included in future FEAM budgets: Hake/Groundfish, Crab/Groundfish, Salmon/Tuna/Groundfish, Blackcod/ Pot Groundfish, Fixed Gear/Groundfish, Fixed Gear/Crab, Crabber/Troller, Crabber/Shrimper, Crabber/Dragger, Dragger/Shrimper, and Longline (Personal Communication, 2004). These combination vessels would more explicitly define and account for fishermen involved in more than one fishery. One advantage to grouping combination fisheries lies in how fishermen track their own expenditures. Several fishermen commented that when they record expenses for tax purposes, they do so as a combination of fisheries they participated in that year (Personal Communication, 2004). Since one consideration is to create a survey that caters to the ease of participation, providing a space for expenses to be entered as a combination vessel achieves this goal. In contrast to the above approach, one fisherman suggested creating four categories: Large Combination, Medium, Small, and Non-Combination. This alternative would address whether a harvester does or does not participate in multiple fisheries as well as define the varying intensities involved.

Length of Vessel, Horsepower, and Owner-Operated versus Non-Owner-Operated

Other informal conversations with harvesters revealed that existing FEAM categories are sufficient but should be delineated by either vessel length, horsepower, or vessel operation (owner-operated versus non-owner-operated). In the example of the Large, Medium, and Small Groundfish Trawler, it was suggested that vessel length would be an effective way to define these three categories. In other words, the Small Groundfish Trawler would be defined as a vessel that is 65 feet in length or less (Personal Communication, 2004).

Horsepower was suggested as an alternative to vessel length. However, the demarcation of horsepower for the Large, Medium, or Small Groundfish Trawler was not provided (Personal Communication, 2004).

The last recommendation was one defining existing FEAM categories based on whether the vessel was operated by the owner or by a hired skipper/captain. The reason for this suggestion lies in the different revenue and landing outcomes an owner-operator might have in contrast to a non-owner-operated vessel. It was argued by one fisherman that a vessel operated by its owner would have higher revenues than one operated by a hired skipper/captain (Personal Communication, 2004). However, while this distinction is useful, knowing whether a vessel is owner-operated or skipper-operated is currently unknown.

Definition of Existing Fishing Fleets

An alternative to expressing Groundfish Trawlers defined by vessel length, horsepower, or vessel operation is to define them based on region and species fished. A harvester suggested the following definitions:

- A Large Groundfish Trawler is a vessel involved in the Alaska and West Coast whiting fishery.
- A Medium Groundfish Trawler participates in the shrimp and groundfish fisheries. However, it should be noted that this vessel is not involved in the whiting fishery.

- A Small Groundfish Trawler is a vessel that traditionally fishes near shore.

The reason for defining a Small Groundfish Trawler in this manner is because many Small Groundfish Trawlers home ported in Newport were converted from 52-foot salmon trollers (Personal Communication, 2004).

Definition of Existing Processing Fleets

It was discovered through conversations with community members that processors operating on the West Coast are very unique. Each processor focuses on different products and tailors their operation to meet customer demands. One distinction among processors is that some are involved in distribution while others focus only on production. This distinction results in vastly different operating costs and expenses. After discussing current FEAM budgets with processors, they said because of variability, many will fall between existing processor categories.

Over the last five years, Astoria and Newport have experienced a growth in small independent processors and direct marketing ventures. Many of these small businesses are involved in custom canning, production of their own label, and value- added products. This growth in the small scale processing sector makes creating broad processing fleet categories more difficult. One suggestion aimed at remedying this dilemma is to add a processing fleet category to FEAM that would capture small independent processors and direct marketing ventures (Personal Communication, 2004).

3. Whether the fixed and variable costs listed in the model are appropriate, meet confidentiality requirements or lack information.

A total of 15 fixed and variable costs are included in FEAM to estimate the economic impact to 30 fishing vessel classes (Appendix 9). The variable costs include: vessel/engine repair, gear repair/replacement, fuel and lubricants, food and supplies, ice and bait, dues and fees, transportation, crew shares, and miscellaneous. The fixed costs include: insurance, moorage, interest expense, depreciation, licenses, and miscellaneous. Feedback we received indicated that the fixed and variable costs in FEAM were appropriate and complete. When the topic of confidentiality was raised, harvesters and processors did not give any indication that FEAM contained sensitive details about operating expenses. The only additional cost suggested by a harvester to include in the current model were advertising costs (Personal Communication, 2004). The reason for this was based on the fact that harvesters are becoming more involved in direct marketing ventures and seeking avenues for their products (Personal Communication, 2004). From this finding, similar fixed and variable costs, like the ones included in FEAM, could be requested in future economic surveys. However, because these costs only result in summaries, applications of this data are limited.

4. Opinions on current expense values of harvesters and processors.

On average, most expenses existing in FEAM were stated as being underestimated. In addition, because of the existing values, many had difficulty placing themselves in a budget category. For example, some processors thought they should be classed as a “Small Processor”; however, they did not have between 20 and 35 employees nor did they produce 20 different seafood products. Based on this example, they recommended that FEAM either establish a new processing category reflecting small processors or adjust existing values in the budget to better define processors today (Personal Communication, 2004).

In addition to the underestimation of current operating expenses in the budgets, harvesters and processors suggested qualifying the months the FEAM budgets represent. For example, the

number of employees currently displayed in FEAM is accurate during the height of plant operation. Typically plants are reduced to just a handful of employees during non-fishing seasons (Personal Communication, 2004). One way to address this fluctuation in change is to prepare budgets that would reflect both fishing and non-fishing months.

Fishing Community Perspectives on Approaches for Collecting Cost Earnings Data

Cost Earnings Studies

While it is impossible to discuss all economic surveys and studies conducted on the West Coast, the most recent completed by EFIN/PSMFC follows. Most of these, however, focused their survey population on a particular fishing sector (commercial or charter operators) or gear and species categories.

In 2000, PSMFC completed the *West Coast Charter Boat Survey Summary* report. This economic survey consisted of applying interview techniques to collected information on annual costs and vessel characteristics. One objective of the survey was to understand the cost structures of large, medium, and small vessels. This information was crucial in the development of a financial profile of a Commercial Passenger Fishing Vessel (CPFV).

PSMFC also concluded in 2001 the *Alaska Halibut Charter Fishing Vessel Effort and Economic Data Survey*. The telephone survey included questions regarding trip length, distance traveled, targeted species, and how passengers paid for their trip. The project sought to gather information about consumer preferences and the significance of the halibut charter fleet. Project designers quickly realized it was more cost effective to interview charter boat operators than anglers. A survey that focused its questions on cost earnings information was the 1999 *West Coast Cost, Earnings, and Employment Survey of the Groundfish Trawl Fleet*. Questions concerning vessel ownership and characteristics, permit information, operating costs, capital costs and other expenses, typical trip length, crew size, revenue, gear loss, fuel costs, and crew share systems were included on the mailed survey.

Perspectives on Collecting Cost Earnings Data

Several community members in Astoria and Newport provided feedback on how to approach collecting cost earnings data. Many of these suggestions focused on survey methodologies and strategies. Community members raised the following subjects to consider during the development and implementation of future surveys: communication, application of collected data, collaboration, in-person surveys, simplified surveys, and survey compensation. Lessons learned from exploring FEAM with community members is also discussed below.

Communication

Communication or a lack thereof, was one of the most frequently raised complaints among industry members consulted in this project. Many participants felt that communication between industry and managers needs improvement. Comments specifically related to economic surveys were focused on *who* has access to collected data and *how* that information is applied to fisheries management.

One method that might facilitate improved communication about an economic survey is by mailing participants an introductory letter. A letter can provide a project description, goals, how

and by whom the collected data will be accessed, as well as invite questions or comments about the project. One community member mentioned that the reason why he didn't participate in a past survey was due to a lack of information about the project. The individual felt that if he had received a written explanation about who would have access to the data and how it would be used, he would have participated in the survey (Personal Communication, 2004).

Another reason why some participants did not contribute to a survey was because they felt the data they provided in previous surveys was used against them. This comment was expressed on multiple occasions. Although it is difficult to eliminate such concerns, it was suggested that the researcher should provide a detailed explanation of project goals and how the collected information would be applied (Personal Communication, 2004). This could be done in the form of an introductory letter, project description, or public notice.

An additional point made by community members regarding communication was to keep participants apprised of project conclusions and results. Several mentioned that after they participated in a survey, they did not receive any information regarding project results or application of collected data. In cases like these, participants felt they contributed needlessly or wasted efforts. Many community members conveyed that they would appreciate receiving a copy of the final results or a thank you letter expressing appreciation for their contributions (Personal Communication, 2004).

In general, industry would like to see an increase in communication on the part of management and fisheries researchers. They feel that because of their specialized experience and current knowledge of fisheries, they should be more readily consulted for their expertise (Personal Communication, 2004). Many steps such as introductory survey letters, detailed project descriptions, and a means of contacting researchers can more explicitly express project goals, which in turn can contribute to improved fisheries information.

Application of Collected Data

Another reason survey response rates may not be as high as expected results from the lack of data application in past surveys. In some cases, data takes an extended amount of time to process, ultimately causing the information to become outdated. In other situations, the collected data may not be applied at all.

When data analysis takes an inordinate amount of time, the collected data becomes stale and inapplicable. Additionally, survey participants may feel that the information they provided cannot be applied to current problems because it has become outdated. Because fishing season outcomes change from year to year in terms of landed pounds, revenue, and resource availability, the collection and application of timely data is crucial. It was often mentioned that implemented regulation changes or decisions based on dated information were not effective in managing current problems (Personal Communication, 2004).

The lack of data application to a specific management problem or concern may also contribute to why some economic surveys are not successful. While some events prohibit data from being finalized or applied, this scenario does not contribute positively to future data gathering efforts.

Collaboration

Collaborating with the industry on project development and data collection efforts can positively impact survey results. As outsiders to the communities, working with an industry or community member can provide a level of understanding that could not be achieved by working

independently. Two ways this can be done is by consulting with port liaisons and fishermen's wives.

Port Liaisons

"I would think that you would need an intermediary person, someone who knows what the fishermen's complaints are" (Personal Communication, 2004).

Oregon Sea Grant and the National Marine Fisheries Service currently have a program in place that enlists the expertise of several Oregon fishermen to help with fisheries research projects. The Port Liaison project's main goal is to encourage researchers and the fishing industry to work more closely by making it easier for researchers to find industry partners. Other goals of the project are: to establish fishing community members as industry coordinators during research projects; establish a precedent of compensating industry cooperators for their time and expertise by bringing them to the table as valued partners in the arena of fisheries research; establish a means by which the fishing industry can feed information back into the system about research needs; and to create an environment by which "…true cooperative research can occur" (Goblirsch, 2003).

The other contribution Port Liaisons bring to fisheries research is their ability to endorse the project or survey. Port Liaisons offer a level of trust that members outside of the community do not bring with them to the table. By enlisting the assistance of Port Liaisons, quality and quantity of needed data may improve. Additionally, Port Liaisons play a vital role in the success of industry meetings. One community member stated that if PSMFC calls a meeting, attendance might be very low. However, if a Port Liaison or Sea Grant Extension Agent calls the meeting, attendance might improve (Personal Communication, 2004).

One example that further illustrates the positive impact Port Liaisons can bring to fisheries research is the Fish Biological Sampling project that took place in Port Orford, Oregon from January 2004 to December 2004. The main objective of the project was to collect and sample cabezon, kelp greenling, and china rockfish to determine length to weight ratio, age at maturity, fecundity, and genetic makeup of each species. This objective was achieved through the collaboration of the Port Liaison Project and the Port Orford Ocean Research Team (POORT). Fishermen were paid for their time to complete the following work: 1) develop clearly articulated and agreed upon project goals and complete biological sampling training, 2) perform port sampling fish research work for future research projects and 3) expand logbook information collected by an industry participant (Personal Communication, 2005).

As a result of this project, fishermen proved to be excellent participants this project. With their unique experience from years of fishing, participating fishermen developed a keen interest in the port sampling work and coordinated with scientists to develop better methods for targeting species. This collaboration helped achieve project goals resulting in fishermen's awareness and improved stewardship of the resource (Personal Communication, 2005).

Fishermen's Wives

Fishermen's wives play an integral role in their husband's fishing business. Often times they support the business as the bookkeeper. One community member mentioned that because of this role, a fisherman might not be able to answer a lot of cost earning questions requested of them in an economic survey (Personal Communication, 2004). One suggestion would be to request in the introductory letter (or survey directions) that the information be passed to their wife, bookkeeper, or accountant if the fishermen themselves are unable to provide the requested information.

In-Person Surveys

"Don't send them anything in the mail - they won't do it. You have to go out there and take the time and spend a couple hours following them around, having a questionnaire of what you want to know and getting a hold of them or calling them a day before or a week before and telling them 'here I am, I want to talk to you for a minute'. Tell them what it's about. Some might not cooperate but some will. You will be surprised at how much they will share with you about their operation as to how much they make. They would probably tell you a lot" (Personal Communication, 2004).

"You are going to get better answers by meeting with them in person" (Personal Communication, 2004).

In order to improve survey results, community members suggested surveys be done in-person. They mentioned that they would be more likely to participate in a face-to-face interview than one that took place over the telephone or on paper. In-person surveys can also develop rapport between participants and researchers in addition to creating an environment in which difficult questions can be asked or where topics of relevance can be raised.

Another advantage to conducting in-person surveys is the ability to create an environment in which difficult economic questions can be asked. One hypothesis as to why response rates may be lower in economic surveys may be due to the nature of the requested information. Traditionally, economic surveys ask questions which industry members regard as personal or proprietary such as income, profit margins, employee expenditures, etc. In situations where in-person techniques are used, questions about specifics of the survey, confidentiality, or areas of contention can be discussed between researcher and participant prior to data collection. Discussing these issues, may also contribute to more accurate data collection than surveys conducted by mail (Personal Communication, 2004).

Finally, some fishermen mentioned that they are not paperwork-oriented people (Personal Communication, 2004). This sentiment follows closely with their occupation and the social foundation of being a fisherman. Because of this, some harvesters commented that they would be more likely to participate in an in-person survey than one sent to them in the mail (Personal Communication, 2004).

Simplified Surveys

Creating a survey that is not burdensome to the industry will ultimately influence both the quantity and quality of collected data. When drafting an economic survey, consider the following points:

- Length of time required to complete the survey
- Industry members receiving multiple survey requests

Length of time required to complete a survey:

"The biggest problem I had with it was the time it would take out of my life…." (Personal Communication, 2004).

One complaint mentioned by numerous community members was the amount of time required to complete surveys they had received in the mail. Because many fishermen relish their "in-port time" and don't enjoy bookwork, surveys that request a great deal of information or are time-consuming are typically left incomplete. One approach to decreasing the time it takes to

complete a survey focuses on questionnaire wording. It was suggested by one harvester that if survey questions could be asked more directly, more useful information could possibly be collected (Personal Communication, 2004). Alternatively, if multiple researchers piggybacked questionnaires together and requested participation once instead of multiple times, response rates might improve.

Multiple survey requests received:

"*Try and cut out the thinking for the fishermen…***"** (Personal Communication, 2004).
"…He was doing it, I was just kicking it off the top of my head, but I think it was pretty accurate" (Personal Communication, 2004).
One element to remember is that the industry is bombarded by telephone and mail surveys on a monthly basis. Academic, private, and public agencies request a variety of information from the industry year-round. One way to reduce this burden is to create a survey that is short and easy for the participant to complete (as limited by the information sought). One harvester commented that short surveys that were easy to answer "off the top of my head" were completed more often than those that involved answering pages of questions requiring number crunching (Personal Communication, 2004).

When to conduct surveys
In some situations, surveys do not get a good response rate because of the time of year they are conducted. Several harvesters suggested that September, October and November were the best months to collect information from the industry. They felt that if research were put off until after April, data collection would be a lot more difficult to complete (Personal Communication, 2004). However, timing a survey depends on which fishery the researcher is targeting. Because each fishery operates during different months of the year, the survey should be designed with this in mind.

In regard to the frequency of data collection, several industry members suggested that annual surveys would be sufficient. However, one processor added that if possible request a group of participants to commit to a five or ten-year study yielding longitudinal data (Personal Communication, 2004). He felt that having a series of data would be more useful than "one shot in time".

Survey Compensation
"Have you thought about a reward? I have to honestly say that the things that have come in the past and we get things from everybody, associations, and the ones that have the little benefit involved are the ones that get taken care of first…" (Personal Communication, 2004).

For the most part, the decision for a researcher to compensate the survey participant monetarily is based on available funding. However, community members suggest that offering an incentive might help to increase response rates. One community member recommended paying the individual for their time to participate in the survey or pay someone else to complete the survey for them. For example, compensation could be made to the fisherman's wife to complete the survey since she might be the one responsible for tracking the finances and bookkeeping items of the fishing business. If budgets do not allow for compensation fees, simply scheduling the survey around a meal can be enough incentive (Personal Communication, 2004). Using the current project as an example, several conversations took place over a cup of coffee, lunch, or dinner. This not only compensates the participant for their time but also creates a more relaxed environment for all participants.

CHAPTER IV

Discussion

The following is a brief discussion of applied methods - lessons learned from the project as well as recommendations for future projects or research.

Geographic Boundaries

The communities tied to Astoria and Newport's commercial fishing industry are numerous. Where commercially harvested shellfish and crab are included in the realm of other commercial fisheries in the area, the geographic area expands as far north as South Bend, WA and as far south as Garibaldi, OR. The focus during this project was to explore how Astoria and Newport act as the "hub" of fishing in relation to the active fishing communities in the vicinity. One of the most important reasons why cities located outside of Astoria and Newport's geographic boundary are defined as part of these fishing communities is because of fishermen's dependence on infrastructure. In some cases, support services such as processors, fishmeal plants, and shipyards are not located in the cities of Astoria or Newport. Additionally, fishermen are highly mobile, following fish along the West Coast. They traditionally perceive their fishing community as including the surrounding cities of Astoria and Newport (Personal Communication, 2004). For this project, we used the Magnuson Stevens Act's definition of a fishing community from Section 312 which states that a fishing community is one that is defined by a "geographic area encompassing a specific locale where residents are dependent on fishery resources or are engaged in the harvesting or processing of these resources" (62 FR 41911).

Sampling Techniques

One advantage to using snowball sampling is that it more readily identifies community members who may not have been identified in previous projects. Often studies require previous "knowledge of insiders" in order to identify project participants. Such prior knowledge may not be available to researchers. Additionally, it may be very time consuming and labor intensive to acquire this knowledge of the community. Under these circumstances it is possible that some community members in positions of relative authority or proximity to the population may be able to provide access to potential participants (StatPac, 2003 and Rowland and Flint, 2001).

Snowball Sampling

Snowball sampling was the sampling method applied during the selection of community members in Astoria and Newport area ports. It must not be ignored, however, that this technique does result in some level of selection bias, limiting the validity of the sample. As participants are not drawn randomly, most snowball sampling populations are biased, hindering researchers to make claims of generality from a particular population. Additionally, snowball samples may be biased toward the inclusion of community members with inter-relationships, thus over emphasizing cohesiveness in social networks (Rowland and Flint, 2001).

With these biases aside, the types of information sought (explorative and descriptive) make it difficult to reach proper representation. One way to overcome this problem is by consulting with a larger sampling pool. In the current project, 79 informal conversations were completed. This population size was reached due to repeated comments we heard from community members during discussions. Another way to overcome the representation issue is through the application

of additional testing methods. In other words, triangulation[8] techniques including direct observation, US Census data, Pacific Fisheries Information Network (PacFIN) landings data, and literary and Internet resources were applied. The combination of these methods resulted in a cross section of the communities relating to the population as a whole.

Another advantage to using snowball sampling in the Astoria/Newport project specifically is because the sampling method is well suited for informal project methodologies. In part, the aim of the project was explorative, qualitative, and descriptive. Therefore, a sampling strategy was selected for its compatibility with qualitative research designs (Rowland and Flint, 2001). Furthermore, snowball sampling is an effective method to apply in situations where a large degree of trust is required. Often this level of trust can only be built up slowly. Part of this trust is that participants need to be reassured that the information they provide will remain confidential. Because of this element, snowball sampling techniques were utilized to identify participants (Rowland and Flint, 2001).

Informal Conversations

Informal conversations were chosen over structured interviews primarily for their flexibility and type of information sought. Because one of our main goals was to understand alternative methods to economic data collection, it was important to invite the participant to raise topics or subjects they felt were particularly important rather than having to stick to a rigid interview format. Informal conversation led us to a variety of concepts and paths that we might not have had the opportunity to discover in a formal interview setting. Specifically, issues affecting fishing communities during project activities would not have been discovered if a formal interview process was used instead. This methodology also allowed for a more relaxed environment from which to discuss more difficult topics.

Direct Observation

One advantage to staying in Astoria and Newport for days or weeks at a time was the opportunity to observe the underlying pulse of the community. If conversations had taken place over the phone or outside the community, a lack of understanding of community dynamics would result. By simply being present in the ports, PSMFC had a more enriching "hands on" experience. In this case, Direct Observation led to a greater understanding of Astoria and Newport area fishing communities. In the future, more time spent in these communities would further illustrate the dynamics existing in Astoria and Newport area ports.

Conclusion

Upon completion of this pilot project, fishing community profiles of both Astoria and Newport area ports were completed in addition to gaining a greater understanding of the differences and similarities between these communities. One product not anticipated at the onset of the project was a set of topic points community members raised during discussions. These topic points lay the groundwork for this report in terms of issues affecting fishing communities during the summer and fall of 2004. In addition to the community profiles, PSMFC came away with a greater understanding of how to approach the industry for both social and economic information. Specifically, lessons were learned about updating the FEAM model and conducting future cost earnings surveys.

[8] Triangulation can be defined as a combination of methodologies designed to test the same hypothesis.

The community descriptions and knowledge of collecting economic information could not have been successfully obtained without the collaborative approach we took with industry, fishing community members, and other knowledgeable members of the Astoria and Newport area ports. Community members consulted with in this project provided insight on how to approach them for cost earnings data. Many of the recommendations they offered provide a foundation from which to begin survey design and are good reminders of sound procedures to follow.

The combination of informal conversations and direct observation also lead to a more complete picture of the Astoria and Newport area fishing communities. Community members contributed a wealth of information about fishing seasons, seafood product destinations, landing taxes and fees, history of industry, and general information regarding commercial, charter, and tribal fishing fleets, and fishing infrastructure. Without the participation of the community, this level of understanding would not have been achieved.

With the design of the current project as a pilot, this allowed methodologies and techniques to be tested. Lessons learned from these tests will strengthen future project designs aimed at developing cost earnings surveys as well as future community profiles of West Coast fishing communities.

Appendices

Appendix 1. Introductory Letters

Pacific States Marine Fisheries Commission
Economic Fisheries Information Network
205 SE Spokane Street, Suite 100
Portland, OR 97202
Phone: 503-595-3100
Toll Free: 888-421-4251
Website: www.psmfc.org/efin

August 2004

Dear Mr./Ms. Fisherman,

We want to invite you to participate in a pilot project being carried out this fall in Astoria and Newport, Oregon. Our main goals for this project are to understand the types of business related questions you are willing to answer in future surveys and to develop a better understanding of your fishing community. We expect to generate information through a collaborative process that will be used to inform management.

The impetus behind this project was because of industries request that more social and economic information be collected about West Coast fishing communities. In order to address this request, this project is made up of two parts. The first part is to understand the types of expense and revenue information you think are the most important for managers to know. We won't be asking you to supply expense and revenue information but will be asking for your input on how best to collect it. The second part focuses on creating a more detailed description of your community through three guided topics: where fish go once they are landed, why Astoria or Newport is the port you land fish or homeport, and what a typical fishing trip looks like. Because you and other community members are the only ones that can provide this information, by working together we will be better able to shed light on how communities might be impacted by management decisions.

Two of us, Geana and Jennifer will be doing this work in Astoria and Newport this summer and fall. What we want is the opportunity to talk to you about the topics mentioned above. The information you provide will remain strictly confidential. We will combine it with knowledge provided by other participants, and report it in summary form so that no individual can be identified. The final product will be a report we will send to participants, policy-makers and other interested parties in early 2005.

If you would like to learn more about this work, or are interested in participating please complete and return the enclosed post card at your earliest convenience or give us a call.

Thank you for your consideration.

Sincerely,

Dave Colpo
dave_colpo@psmfc.org
(888) 421-4251

Geana Tyler
geana_tyler@psmfc.org

Jennifer Langdon-Pollock
jennifer@psmfc.org

Pacific States Marine Fisheries Commission
Economic Fisheries Information Network
205 SE Spokane Street, Suite 100
Portland, OR 97202
Phone: 503-595-3100
Toll Free: 888-421-4251
Website: www.psmfc.org/efin

August 2004

Dear Mr./Ms. Processor,

We want to invite you to participate in a pilot project being carried out this summer and fall in Astoria and Newport, Oregon. Our main goals for this project are to understand the types of business related questions you are willing to answer in future surveys and to develop a better understanding of your fishing community. We expect to generate information through a collaborative process that will be used to inform management.

The impetus behind this project was because of industries request that more social and economic information be collected about West Coast fishing communities. In order to address this request, this project is made up of two parts. The first part is to understand the types of expense and revenue information you think are the most important for managers to know. We won't be asking you to supply expense and revenue information but will be asking for your input on how best to collect it. The second part focuses on creating a more detailed description of your community through three guided topics: where fish go once they are landed, why Astoria or Newport is the port you process fish, and what a typical processing day looks like. Because you and other community members are the only ones that can provide this information, by working together we will be better able to shed light on how communities might be impacted by management decisions.

Two of us, Geana and Jennifer will be doing this work in Astoria and Newport this summer and fall. What we want is the opportunity to talk to you about the topics mentioned above. The information you provide will remain strictly confidential. We will combine it with knowledge provided by other participants, and report it in summary form so that no individual can be identified. The final product will be a report we will send to participants, policy-makers and other interested parties in early 2005.

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Sincerely,

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(888) 421-4251

Geana Tyler
geana_tyler@psmfc.org

Jennifer Langdon-Pollock
jennifer@psmfc.org

Appendix 2. US Census Data

Population

Astoria had the largest population, with 9,813 people, followed by Seaside with 5,900 and Warrenton with 4,086. Chinook had the smallest population, with just 457 residents. The age groups listed in the table below report the number of residents 18 years and over, 21 years and over, 62 years and over, and 65 and over.

Newport had the largest population, of 9,532, followed by Toledo with 3,472 and Siletz with 1,133. The age groups listed in the following table report the number of residents 18 years and over, 21 years and over 62 years and over, and 65 and over.

Total population and population by age.

City	Total Population	18 Years & Over	21 Years & Over	62 Years & Over	65 Years & Over
Astoria	9,813	7,454	7,045	1,777	1,565
Warrenton	4,096	3,008	2,864	649	535
Seaside	5,900	4,640	4,420	1,283	1,127
Gearhart	995	797	7,69	224	168
Cannon Beach	1,588	1,311	1,187	317	265
Ilwaco	950	720	696	210	190
Chinook	457	369	359	130	106
Newport	9,532	7,409	7,075	1,914	1,639
Toledo	3,472	2,445	2,339	434	369
Siletz	1,133	805	765	158	137

Note: South Beach, OR is not reported alone, because it is a neighborhood sharing the 97366 zip code with Newport (which has an additional zip code of 97365) (Personal Communication, U.S. Census Bureau Population Division, 2005).

Percent of male and female population by community

City	Male	Female
Astoria	48%	52%
Warrenton	51%	49%
Seaside	48%	53%
Gearhart	49%	51%
Cannon Beach	47%	54%
Ilwaco	48%	53%
Chinook	49%	51%
Newport	49%	51%
Toledo	49%	51%
Siletz	51%	49%

With the exception of Warrenton and Siletz, the remaining communities (Astoria, Seaside, Gearhart, Cannon Beach, Ilwaco, Chinook, Newport and Toledo) have a larger percent of female residents compared with males. Warrenton and Siletz both had three percent more males that females (Table x).

Ethnicity

The community with the largest population of Hispanic residents was Cannon Beach, representing 10.5% of the population. Seaside follows Cannon Beach with 6.5%, followed by Astoria with 6.0%. The smallest Hispanic population resides in Warrenton representing 2.9% of the population.

Over 90% of the population in Newport, Toledo and Siletz were comprised by non-Hispanics or Latinos. Newport, however, had the highest percent of Hispanic residents (9.0), while Siletz had the lowest percent (1.9).

Percent Not Hispanic or Latino and Hispanic by community.

City	Not Hispanic or Latino	Hispanic
Astoria	94.0%	6.0%
Warrenton	97.1%	2.9%
Seaside	93.5%	6.5%
Gearhart	99.5%	0.5%
Cannon Beach	89.5%	10.5%
Ilwaco	94.7%	5.3%
Chinook	98.0%	2.0%
Newport	91.0%	9.0%
Toledo	97.4%	2.6%
Siletz	98.1%	1.9%

Note: *Not Hispanic or Latino* and *Hispanic* percent sum to 100 by community.

The table below contains the percent of *White, Black or African American, American Indian & Alaska Native, Asian, Native Hawaiian & Other Pacific Islander* and *Other* represented by the communities. In each community, over 90% of the population is made up of *White* residents.

City	One Race	White	Black or African American	American Indian & Alaska Native	Asian	Native Hawaiian & Other Pacific Islander	Other
Astoria	97.5%	91.1%	0.5%	1.1%	1.9%	0.2%	2.7%
Warrenton	97.2%	92.5%	0.2%	1.3%	1.8%	0.1%	1.3%
Seaside	97.9%	93.1%	0.3%	1.0%	1.1%	0.3%	2.2%
Gearhart	99.0%	98.4%	0.0%	0.3%	0.3%	0.0%	0.0%
Cannon Beach	97.2%	92.6%	0.2%	0.9%	0.3%	0.0%	3.3%
Ilwaco	97.1%	92.8%	0.5%	1.4%	0.4%	0.1%	1.8%
Chinook	98.2%	96.5%	0.0%	0.9%	0.7%	0.0%	0.2%
Newport	97.0%	88.6%	0.5%	2.2%	1.7%	0.2%	3.9%
Toledo	96.6%	91.9%	0.2%	3.4%	0.6%	0.0%	0.5%
Siletz	93.9%	71.2%	0.4%	21.0%	0.7%	0.1%	0.4%

Note: White, Black or African American, American Indian & Alaska Native, Asian, Native Hawaiian & Other Pacific Islander and Other percent sum to 100 by community.

Housing Characteristics

Warrenton contains the largest percent of occupied housing units (90.1%) when compared with the remaining six communities. With only 9% of the homes in Warrenton being vacant, it also falls second to last in the category of occasional use homes (2.9%). Half of the housing units located in Gearhart and Cannon Beach are reserved for occasional use, 53.6% and 50.5%. In contrast, Astoria has the smallest amount (1.9%) of occupational use homes.

Both Toledo and Siletz have housing units that are occupied by 89% of the population. Newport, however, contains more houses used for seasonal, recreational or occasional use (8.7%), as well as a higher vacancy rate (18.3%).

Occupied Housing Units.

City	Occupied Housing Units	Vacant Housing Units	Seasonal, Recreational, or Occasional Use
Astoria	87.2%	12.8%	1.9%
Warrenton	90.1%	9.9%	2.9%
Seaside	65.1%	34.9%	18.7%
Gearhart	42.7%	57.3%	53.6%
Cannon Beach	43.3%	56.7%	50.5%
Ilwaco	79.4%	20.6%	10.1%
Chinook	79.8%	20.2%	16.3%
Newport	81.7%	18.3%	8.7%
Toledo	89.0%	11.0%	0.5%
Siletz	89.7%	10.3%	2.4%

Note: Occupied housing units percent sum to 100 by community.

Educational Attainment

The majority of residents are represented by those that attended some college, but don't have a degree (24.6% to 33.9%). Gearhart, Cannon Beach and Newport, however, have a larger number of residents with bachelor's, graduate, and professional degrees.

City	Less than 9th Grade	9th to 12th Grade, no Diploma	High School Graduate (includes equivalency)	Some College, No Degree	Associate's Degree	Bachelor's Degree	Graduate or Professional Degree
Astoria	4.1%	10.2%	26.1%	28.8%	9.1%	14.1%	7.6%
Warrenton	4.1%	13.7%	31.4%	32.4%	6.0%	8.1%	4.6%
Seaside	4.5%	13.0%	27.6%	30.4%	6.1%	13.2%	5.3%
Gearhart	1.4%	7.4%	19.8%	33.9%	7.4%	17.4%	12.7%
Cannon Beach	2.7%	5.3%	15.7%	32.9%	8.4%	22.4%	12.5%
Ilwaco	5.9%	11.4%	31.0%	25.9%	5.3%	13.9%	6.6%
Chinook	10.0%	16.2%	24.6%	24.6%	4.9%	9.4%	10.4%
Newport	4.6%	10.8%	24.1%	28.3%	5.5%	14.9%	11.9%
Toledo	3.5%	16.2%	35.5%	24.5%	5.7%	10.5%	4.2%
Siletz	4.5%	16.3%	42.9%	24.0%	5.2%	5.4%	1.7%

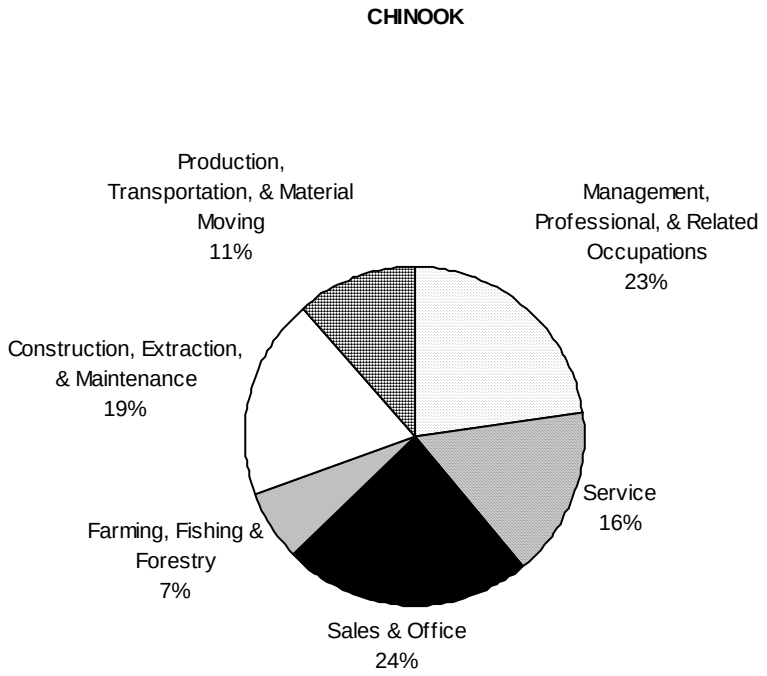
Note: Educational Attainment percent sum to 100 by community.

In 2000, the US Census reports unemployment ranging from 1.8 % (Chinook) to 5.7% (Newport).

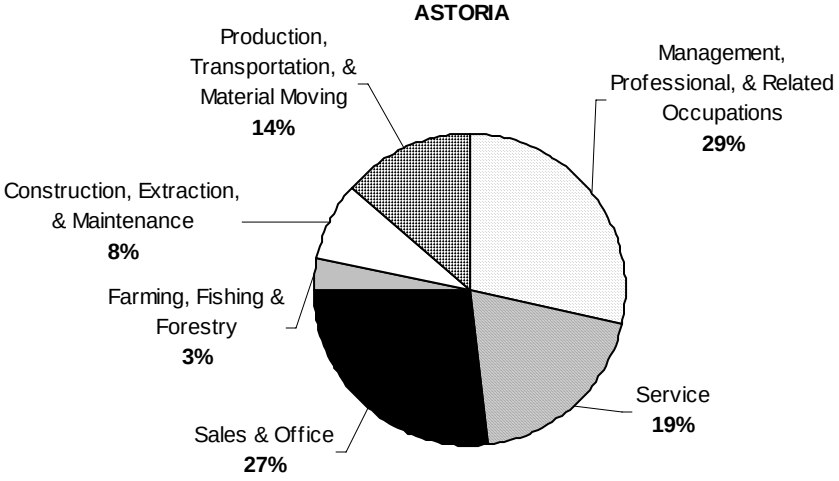
Unemployment Rate.

City	Unemployment Rate
Astoria	4.3%
Warrenton	2.3%
Seaside	2.6%
Gearhart	3.5%
Cannon Beach	3.1%
Ilwaco	3.7%
Chinook	1.8%
Newport	5.7%
Toledo	5.0%
Siletz	3.2%

Percent of Occupational Sectors by Community. (Note: Occupational sector percent sum to 100 by community.) (US Census Bureau, 2000).



ASTORIA



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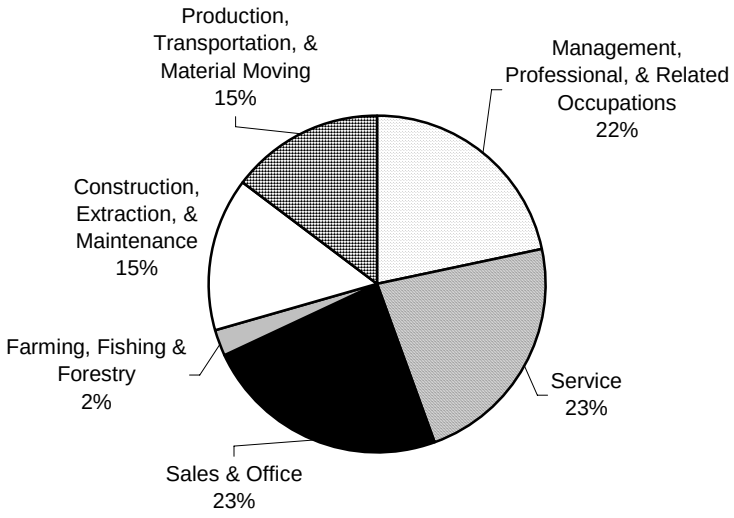

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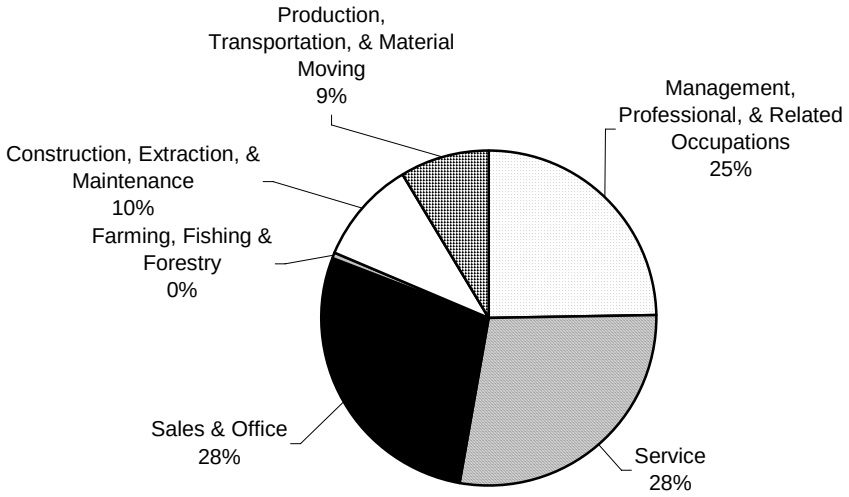
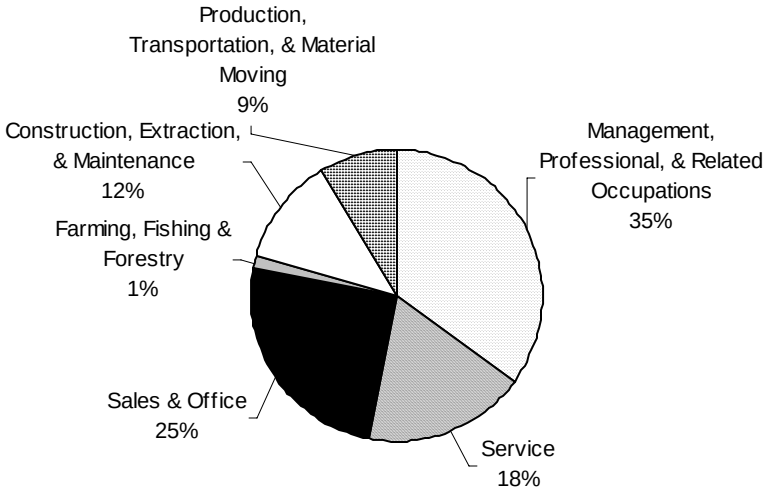
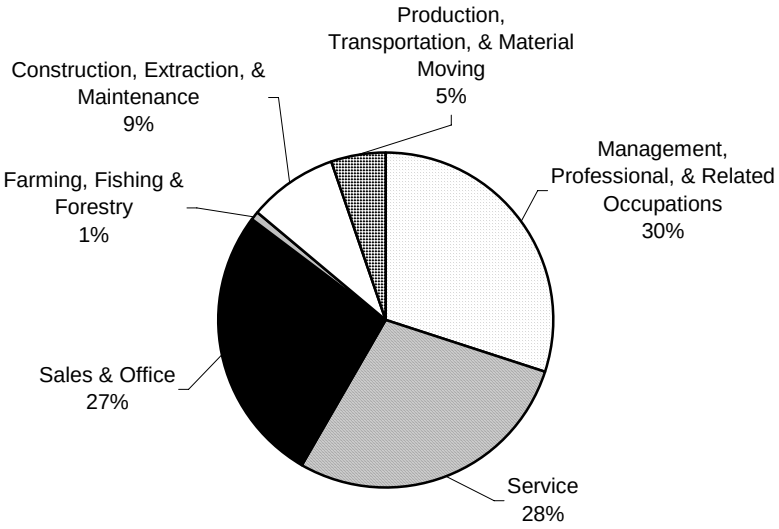


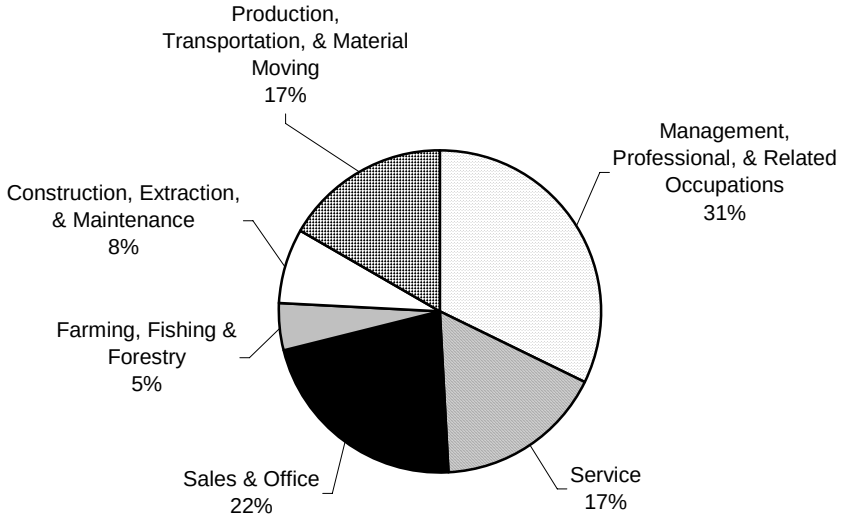
GEARHART



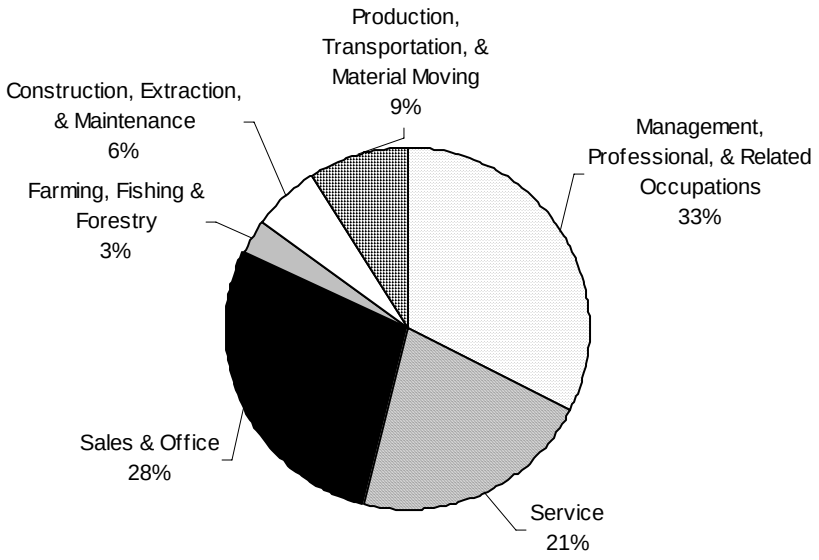
CANNON BEACH



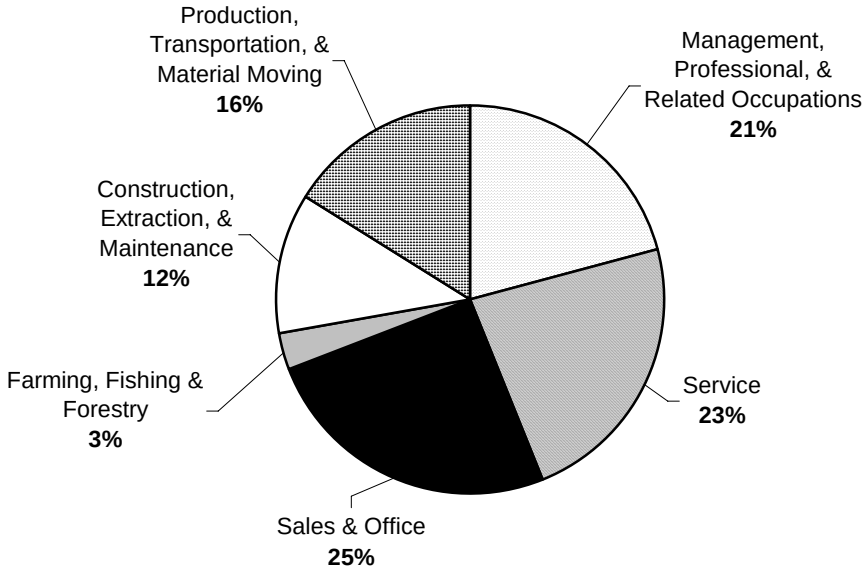
ILWACO

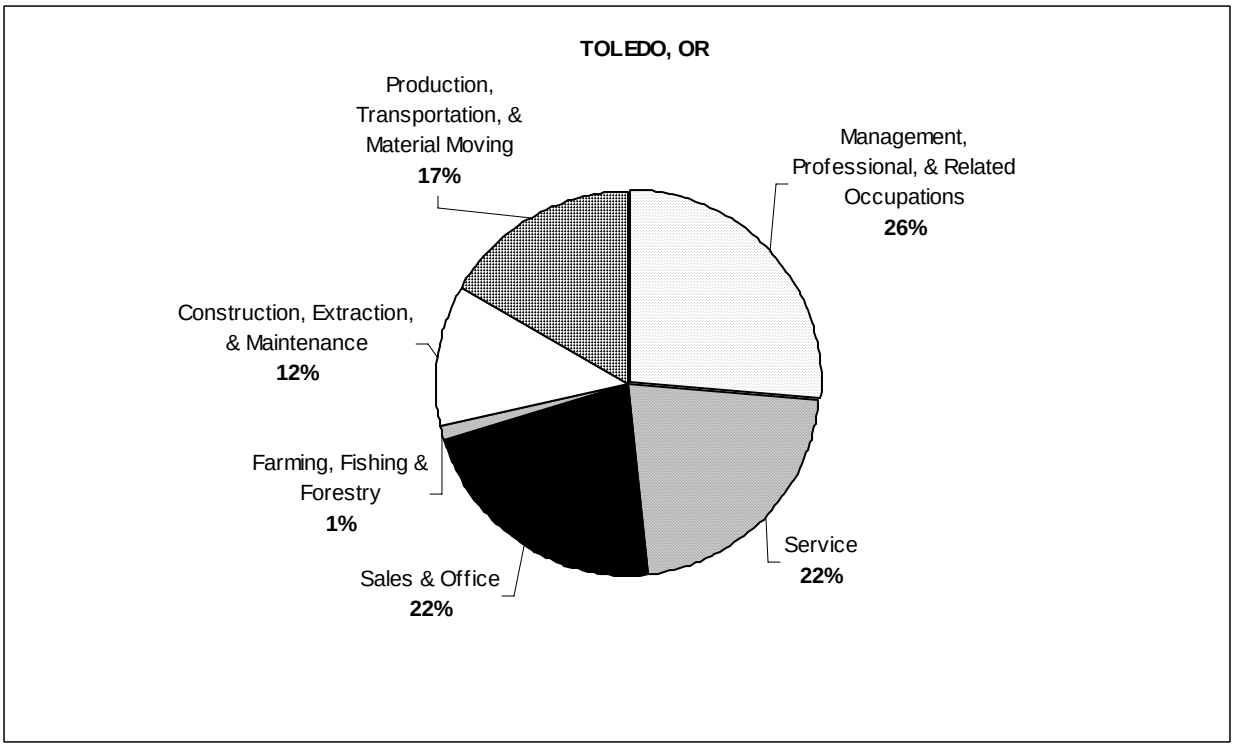


NEWPORT



SILETZ, OR




TOLEDO, OR
Production, Transportation, & Material Moving
17%
Management, Professional, & Related Occupations
26%
Construction, Extraction, & Maintenance
12%
Farming, Fishing & Forestry
1%
Service
22%
Sales & Office
22%

Appendix 3. Fishing Seasons

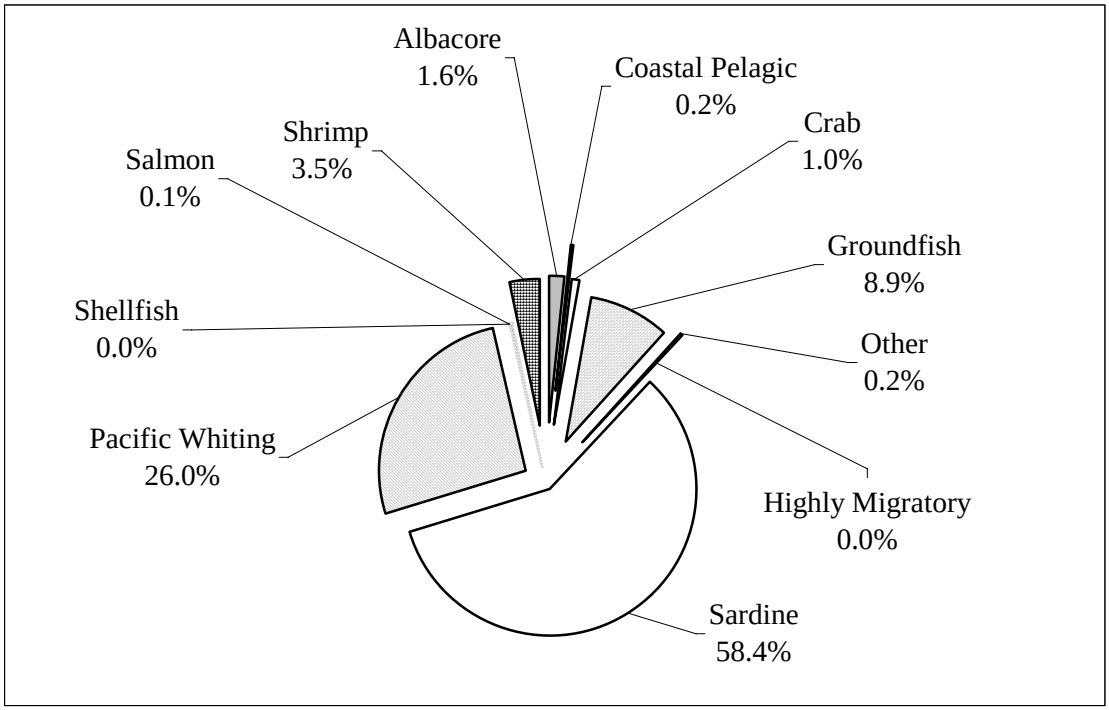
The table below describes a typical fishing season in a given year. The table is broken out by species and the month they are actively targeted by Oregon harvesters. The information in this table was taken from three sources: informal conversations with Astoria and Newport community members, Pacific Seafood's Internet web page, www.pacseafoods.com, Trident Seafood's Internet web page, www.tridentseafoods.com and http://www.oregon.gov/BRANDOREGON/commissions.shtml/shtml.

Table 4. Fishing Seasons in Oregon.

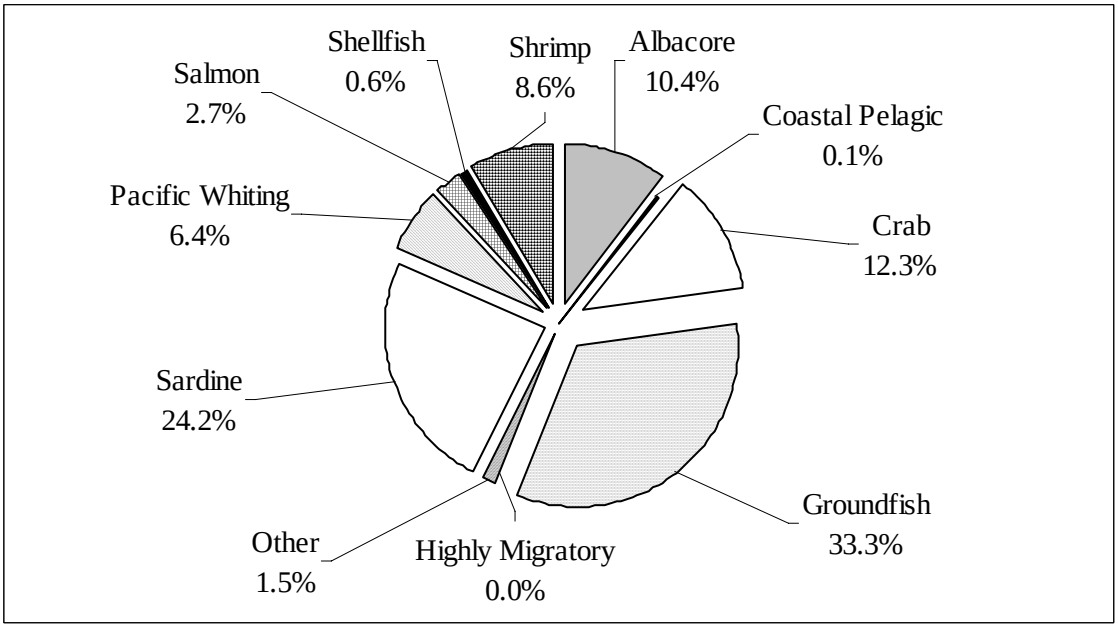
Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
									Squid		
Oysters								Oysters			
Petrale										Petrale	
Dungeness crab (DC)											DC
Groundfish											
	Pacific cod										
	Sandabs/Flatfish										
		Black cod/Sablefish									
			Pink shrimp								
			Halibut								
			Dover sole								
				King salmon/Chinook							
				Lingcod							
					Pacific sardine						
					Pacific whiting						
		Salmon (general)									
						Sockeye salmon					
						Silver salmon/Coho					
						Chum salmon					
						Albacore tuna					

Appendix 4. Pacific Fisheries Information Network (PacFIN) Landings Data, 2004

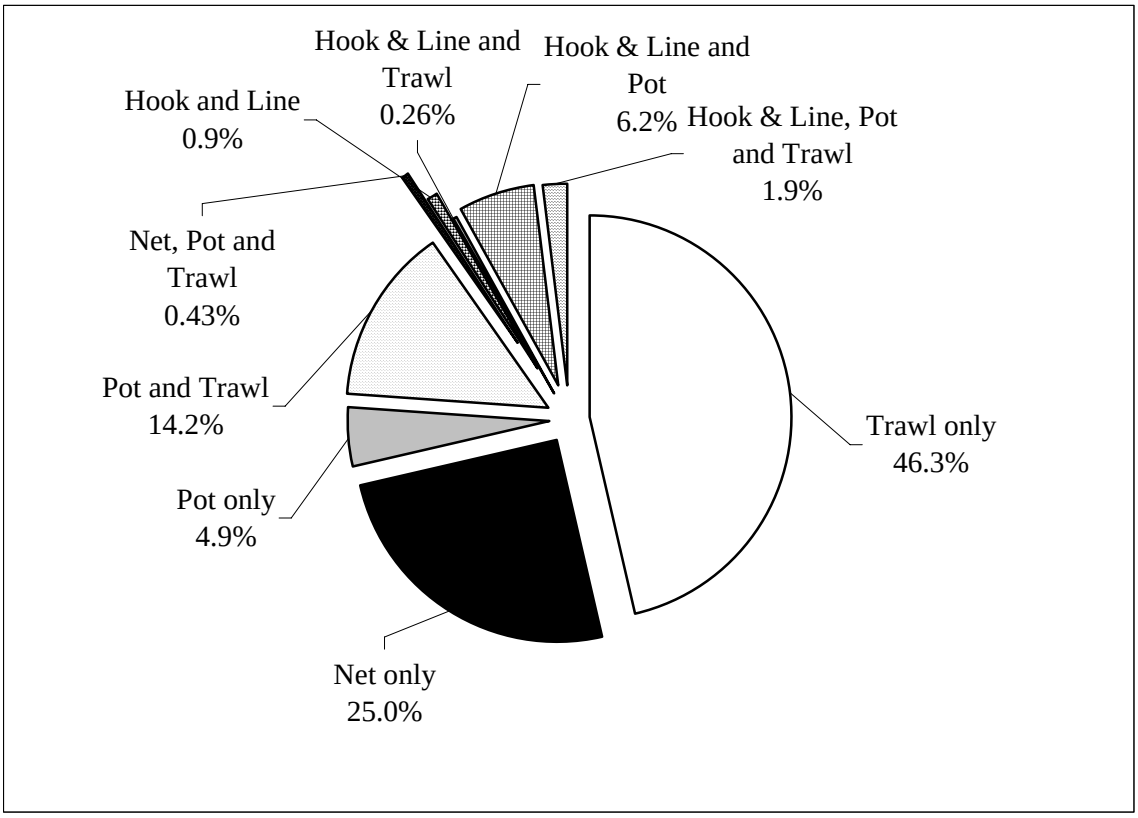
Astoria Area Ports: 2004 Species by Landed Pounds.



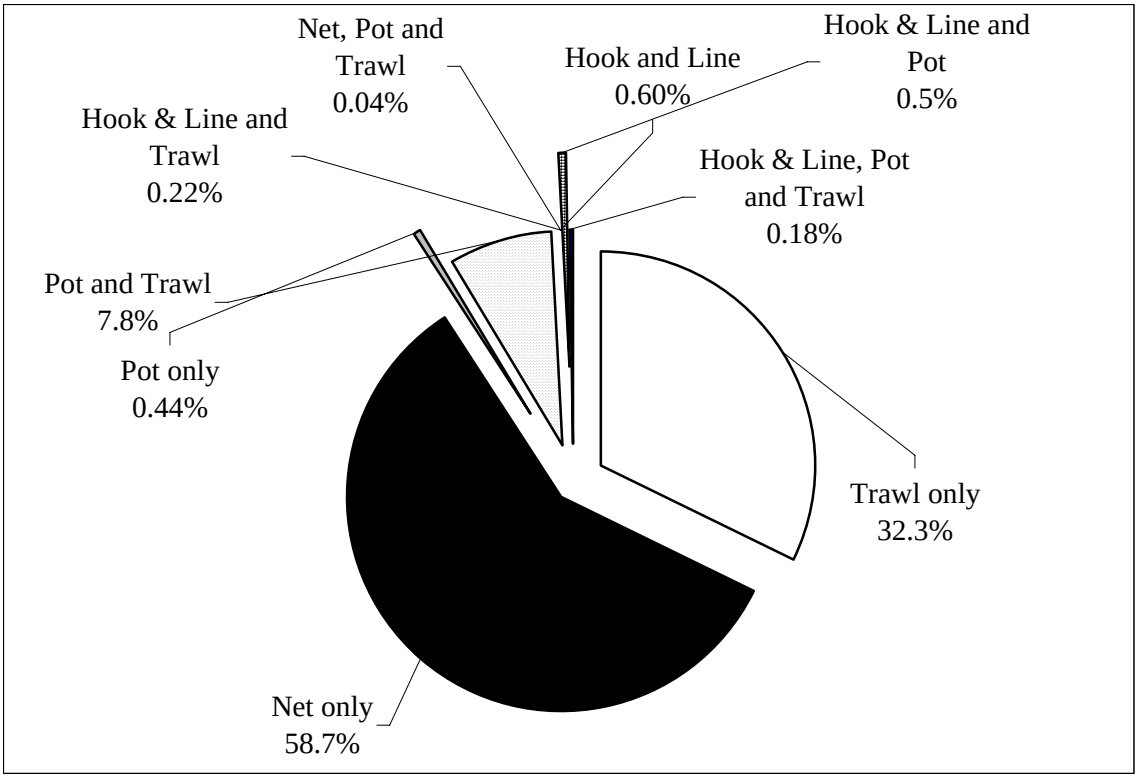
Astoria Area Ports: 2004 Species by Revenue.



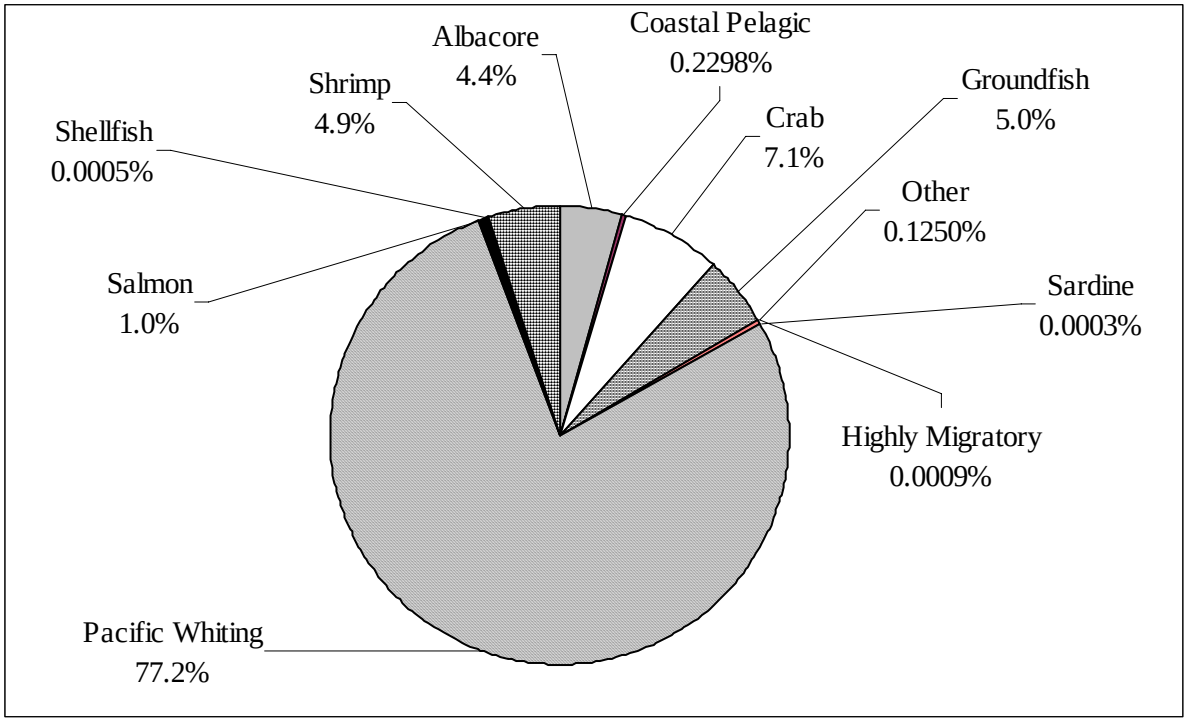
Astoria: 2004 Revenue by Gear Combination.



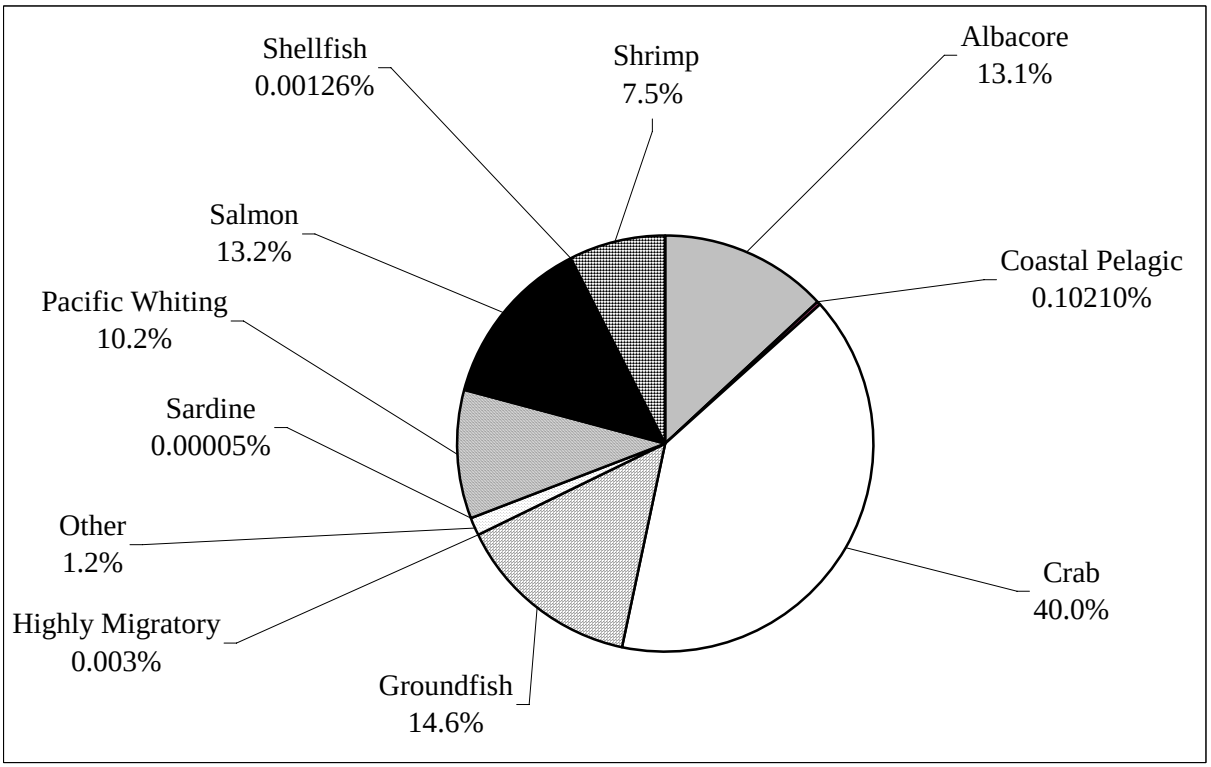
Astoria: 2004 Landed Pounds by Gear Combination.


Net, Pot and Trawl 0.04%
Hook and Line 0.60%
Hook & Line and Pot 0.5%
Hook & Line and Trawl 0.22%
Hook & Line, Pot and Trawl 0.18%
Pot and Trawl 7.8%
Pot only 0.44%
Trawl only 32.3%
Net only 58.7%

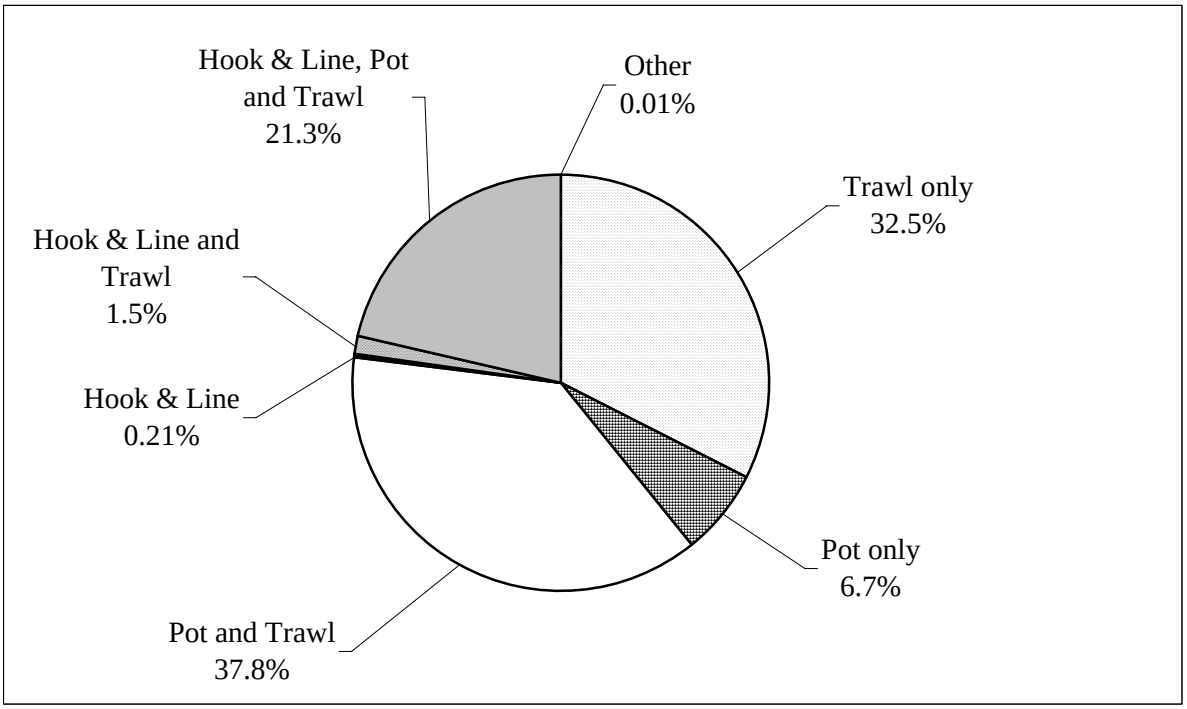
Newport Area Ports: 2004 Species by Landed Pounds.



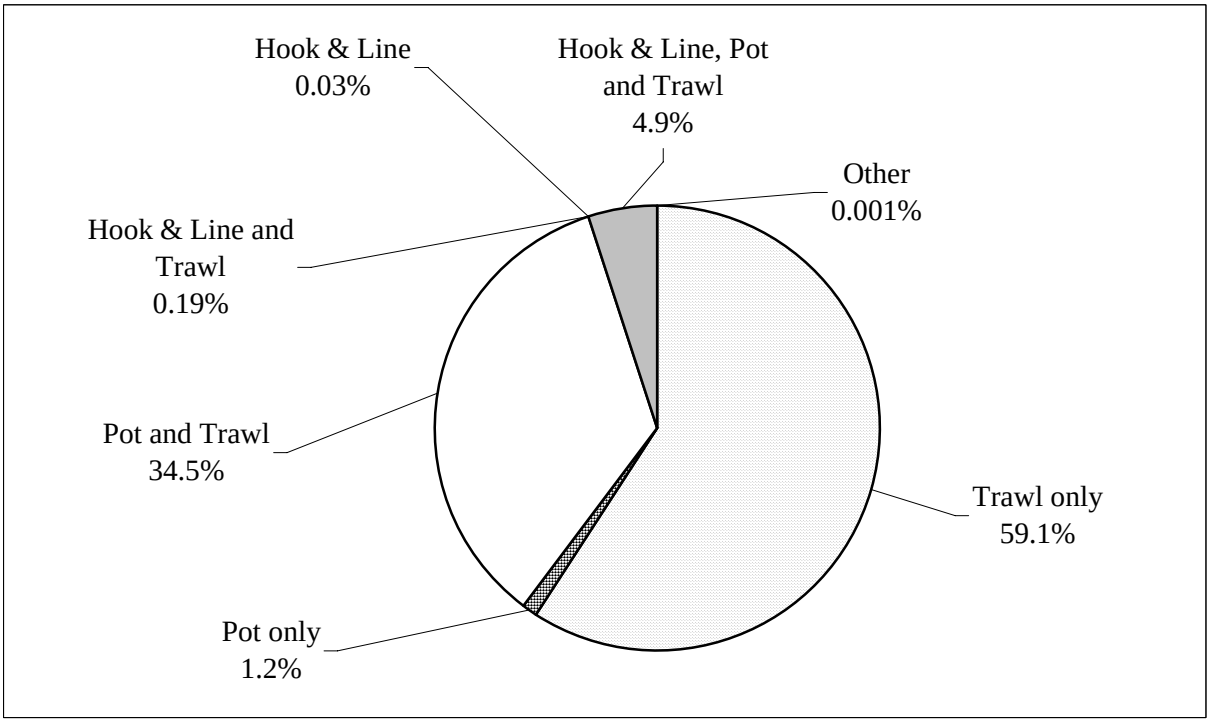
Newport: 2004 Species by Revenue.



Newport: 2004 Revenue by Gear Combination.



Newport: Landed Pounds by Gear Combination.



Appendix 5. Seafood Product Destinations

Understanding the final destination of Astoria and Newport seafood products can contribute to greater knowledge in how fish are distributed within and beyond a community. Currently, consulting with community members is the only way to understand where fish go once they are landed[9]. One resource that contains the port of delivery is the Pacific Fisheries Information Network (PacFIN) database. PacFIN contains a record of fish tickets (bill of sale or receipt) attributed to each West Coast (WA, OR, CA) landing. These fish tickets provide information about a specific landing such as which processor or buyer the fish was delivered to, what gear was used to catch the fish, revenue and pounds of landing, as well as other information attributed to a specific landing. Both processors and harvesters are listed in such as way as to mask their identification. PacFIN does contain the location of delivered catch (i.e. 100 lbs of Dungeness Crab was delivered to Astoria), however, it does not reveal the final destination beyond the port of landing. Attempting to gain a greater understanding of where fish go is the focus of the following discussion.

Harvesters delivering in Oregon and Washington must do so to a licensed permit holder. The following three types of licenses are required in the state of Oregon. Similar licenses are required in Washington.

1. The *wholesale fish dealer's license* allows fish to be delivered to a specific location. If landings are purchased away from the dealers licensed location, both the fish buyer's license and the wholesale fish dealer's license is required.
    - Four different fish buyer's licenses allow landings to be made at any location.
        i. Individual license (licensing a person)
        ii. Vehicle license (this licenses a vehicle if it is unknown who will drive the vehicle)
        iii. Vessel buyers license (i.e. a gillnetter that delivers to a tender anchored in the Columbia River)
        iv. Station license.
2. The *wholesale bait dealer's license* is required for those delivering bait to a buyer.
3. The *limited fish seller's permit* allows fishermen to sell their catch directly to the consumer.

A person interested in buying or selling fish is allowed to purchase any of the three licenses mentioned above. Each license is issued on an annul basis and requires a fee and bond payment. License renewal is available for those who have fulfilled commodity commission and landing fees throughout the year. In addition, the wholesale license holder is required to issue monthly dealer reports and complete fish tickets for each transaction (ODFW, 2004).

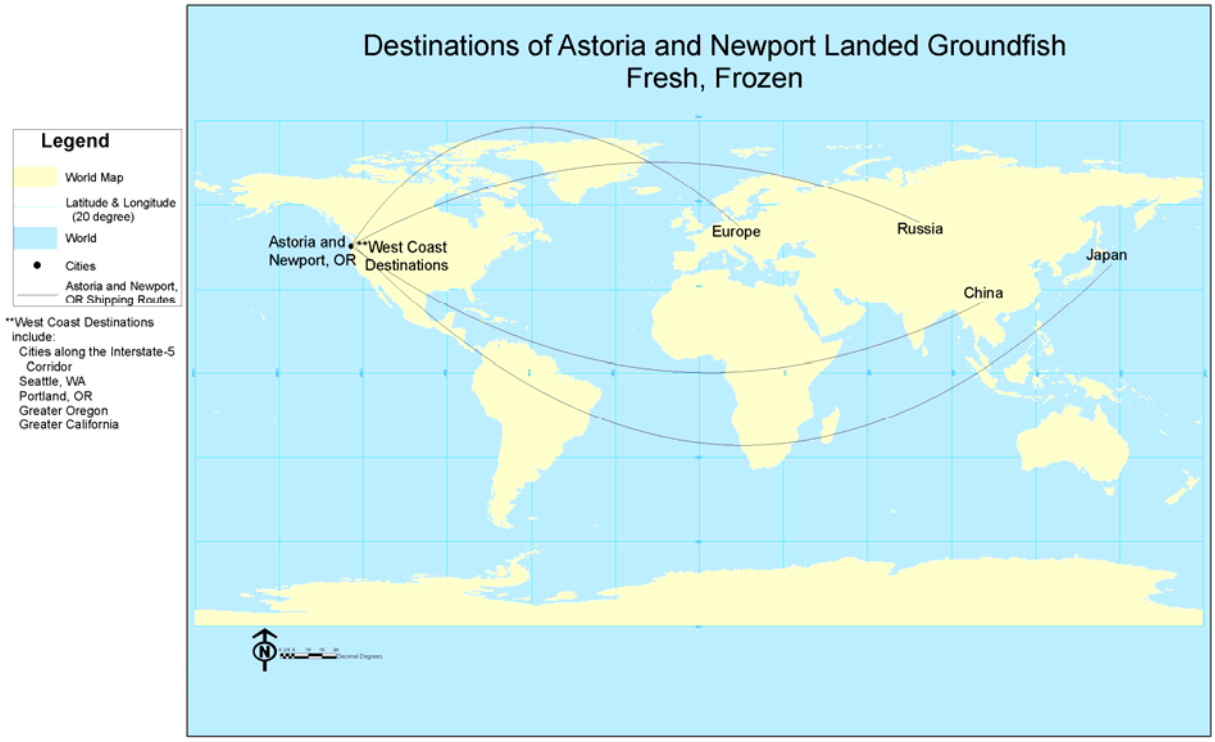
Once a fishing vessel crosses state waters (outside of a three mile range of the state line) and into another, deliveries must be made in that state. For example, if a vessel catches[10] fish in Oregon and crosses outside of the Oregon three-mile limit, into Washington's three-mile limit, deliveries must be made in Washington (ODFW, 2004). Processors, wholesalers, distributors, harvesters, cash buyers, or fish markets are typical license holders. Retail operations are only allowed to purchase fish from licensed wholesale dealers.

[9] Landing in this project is defined as the catch of fish brought to shore to sell.
[10] Catch is the fish brought onto the commercial boat.

The figures below (1-8) map the final destination of crab, groundfish, salmon, sardines, shrimp, surimi, tuna, and whiting once delivered to either the Astoria or Newport region.

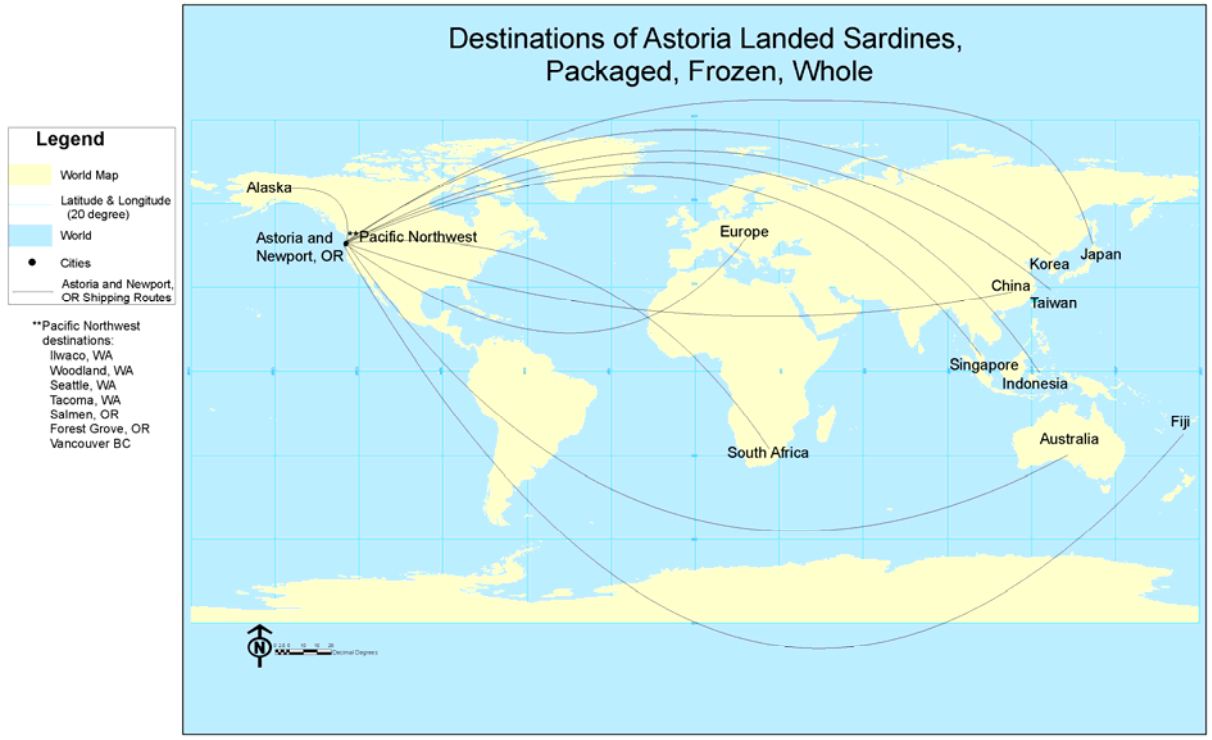
Fresh, Frozen, Crab.

Fresh, Frozen, Groundfish.



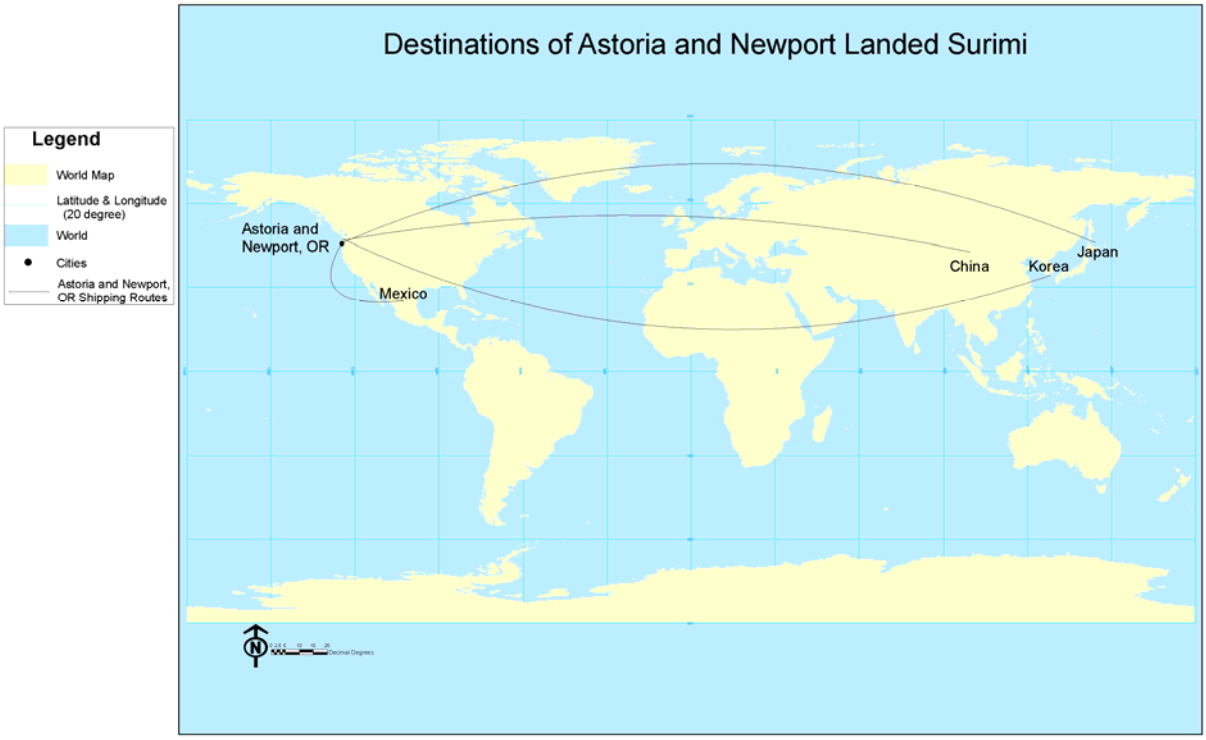
Fresh, Frozen, Smoked, Canned, Salmon.

Packaged, Frozen, Whole, Sardines.



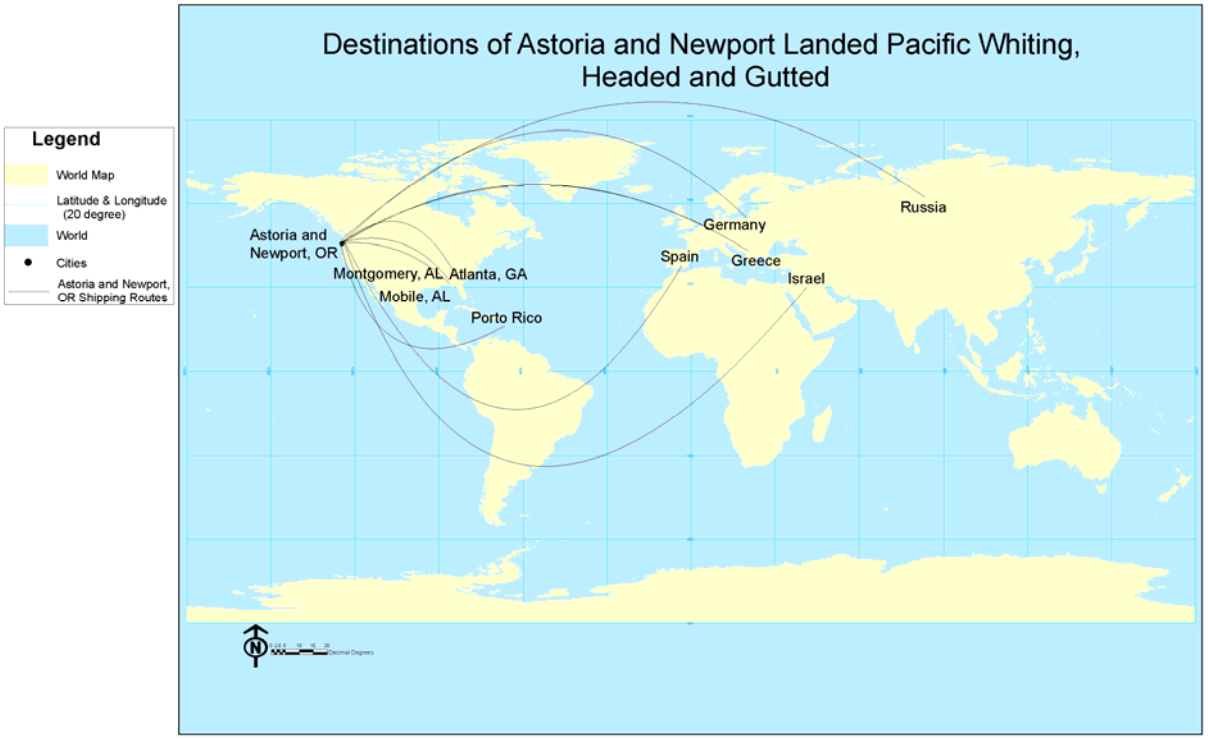
Fresh, Clean, Frozen, Shrimp.

Surimi.



Fresh, Frozen, Albacore Tuna.

Head and Gutted Pacific Whiting.



Appendix 6A. Landing Taxes and Fees in Washington, Oregon and California

State Landing Tax	Commodity Commission
Washington	
1. Chinook, coho & chum salmon, anadromous game fish & eggs=5.62% of total value 2. Sea urchins & cucumbers=4.95% of total value 3. Pink & sockeye salmon & eggs=3.37% of total value 4. Other food fish & eggs & shellfish=2.25% 5. Oysters=0.09% of total value	None
Oregon	
1. Salmon & Steelhead R & E tax -Round=$0.0500/ lb -Dressed=$0.0575/lb	1. Albacore=0.0075 of ex-vessel value (Fisherman=0.00375)

-Dressed Heads Off=$0.6500/lb 2. Salmon & Steelhead value of fish including eggs/ parts=$0.0315 based on value 3. Nearshore/Blue & Black Rockfish=$.05 based on value 4. All other Fish and Shellfish=$0.0109 based on value 5. Commercial Fish Imported into OR=$0.0100	(Dealer=0.00375) 2. Dungeness Crab=0.01 of ex-vessel value 3. Salmon=0.015 of ex-vessel value 4. Trawl=0.005 of ex-vessel value
California	
1. Thresher Shark*=$.0013 per lb 2. Mako/Bonito Shark*=$.0013 per lb 3. Angel Shark*=$.0013 per lb 4. Swordfish*=$.0125 per lb 5. Salmon*=$.07 per lb 6. Herring including Herring for Roe=$.0125 per lb 7. Sea Urchin Management and Enhancement Tax=$.0013 per lb 8. Abalone Resource Restoration and Enhancement Tax=$.2075 per lb 9. Mollusks & Crustaceans (Except Squid and Crab) including Clam (fresh & salt water), Lobster, Prawn, Shrimp (fresh & salt water), Octopus and Others=$.0125 per lb 10. Crab=$.0019 per lb 11. Squid=$.0019 per lb 12. Yellowtail, Barracuda, Worms (salt water), Flying Fish, Frogs, Halibut, Sea Bass (giant/white) =$.0125 per lb 13. Anchovies=$.0013 per lb 14. Mackerel=$.0013 per lb 15. Sardines (irrespective of use) =$.0063 per lb 16. All Other=$.0013 per lb *Weight in the round	None

(Tax information supplied by the Washington State Department of Revenue, Oregon Department of Fish and Game and the California Department of Fish and Game, 2005)

Appendix 6B. Landing Permits

Processing product is just one option companies have as the next step after harvesting. However, purchasing fish, unloading it on the dock and shipping it to a buyer doesn't add a lot of value (Personal Communication, 2004). Within the last five years, fishermen have acknowledged the importance of value added products, and have piloted their own direct marketing ventures. Today, fishermen are not only harvesting fish, but also processing, smoking, canning, selling and shipping product to markets around the Nation (Personal Communication, 2004).

One example of direct marketing in the Newport area is a group of fishermen operating with a *limited fish seller's permit.* This permit allows harvesters to sell their catch directly off their vessel to the consumer. Today, around 15 to 20 boats are operating with *limited fish sellers permits* both year round and seasonally selling tuna, crab and salmon to tourists visiting Newport's docks (Personal Communication, 2004).

In addition to harvesters selling product off their boat, others are operating small processing facilities and creating their own niche markets. This is carried out through fish markets, micro canning operations, participating in farmers markets, or establishing markets through other avenues. One local fisherman owns two retail fish markets, which he stocks himself in addition to purchasing fish from other harvesters. These small operations are growing in number, reaching restaurant and Internet markets. Another emerging sector of direct marketing involves micro canning. Some Newport area fishermen have branched into canning and labeling their own tuna for Internet, retail outlet and catalog markets. These growing ventures are changing the face of the processing sector. With more of these businesses competing with large processors, new value added products are being produced locally (Personal Communication, 2004).

Appendix 7. Processors, Distributors and Wholesalers

Astoria

Company	Function	Location	Established	Employees	Products	Forms	Brands
Bell Buoy Crab Company	processor wholesaler distributor	Chinook	1999		Dungeness Crab, salmon, sturgeon	canned, cooked, fresh, frozen, meat (shelled), vacuum packed	
Bio-Oregon	producer	Hammond			seafood		
Bornsteins Seafoods		Astoria			black cod, cod, crabmeat, dogfish, Dungeness Crab, flounder/sole, fresh fish/shellfish, frozen fish/shellfish, grenadier, halibut, ocean perch, pollock, rockfish, salmon, seafood, shad, shrimp, shrimp meat, skate wing, smelt, snapper, snapper/ pacific, sturgeon, turbot, whiting	cooked, fillets, fresh, frozen, IQF, live, meat (shelled), vacuum packed ,whole	Bornsteins
Fishhawk Fisheries	processor wholesaler distributor	Astoria			black cod, butterfish, cod, Dungeness Crab, flounder/sole, fresh fish/shellfish, halibut, ocean perch, rockfish, salmon (farmed and wild), seafood, shad, shrimp, shrimp meat, smelt, smoked fish, snapper, snapper/pacific, sturgeon, tuna, turbot	fillets, fresh, frozen, IQF, salted/smoked, whole	Fishhawk
Jessie's Ilwaco Fish Col, Inc.	processor exporter retailer	Ilwaco	1930	100	anchovy, black cod, cod, crab meant, Dungeness Crab, flounder/sole, hake, mackerel, rockfish, salmon, sardines, shrimp, shrimp meat, smelt, snapper/ pacific, sturgeon, tuna, whiting	cooked, fillets, fresh, frozen, further processed, IQF, meat (shelled), whole	
Josephson's Smokehouse and Dock	processor	Astoria	1920	10	black cod, cod, Dungeness Crab, fresh fish/shellfish, frozen fish/shellfish, halibut, oysters, salmon (farmed and wild), scallops, seafood, shark, smoked fish, sturgeon, tuna	Canned, fresh, frozen, roe, salted/smoked, tray packed, vacuum packed	
Ocean Beauty Seafoods	wholesaler distributor	Astoria		16	seafood		
Oregon Ocean Seafoods	processor wholesaler distributor	Warrenton		4-9	Flounder/sole, fresh fish/ shellfish, frozen fish/ shellfish, rockfish, salmon (farmed and wild), seafood, shad, shark, smelt, smoked fish, sturgeon, whiting	Canned, fillets, fresh, frozen, roe, salted/ smoked, tray packed, vacuum packed	Skipanon Brand
Pacific Coast Seafood Company	processor	Warrenton		140	black cod, cod, Dungeness Crab, flounder/ sole, fresh fish/shellfish, frozen fish/shellfish, grenadier, hake, halibut, mackerel, ocean perch, octopus, oysters, pollock, rockfish, salmon, seafood, shad, shrimp, shrimp meat, skate wing, snapper, snapper/ Pacific, Spanish mackerel, surimi based, tuna, turbot, whiting	Blocks, fillets, fresh, frozen, IQF, whole	Pacific Fresh Snow Mist Sea Rock
Point Adams Packing Company		Hammond					
Sunrise Seafoods, Inc.	processor	Ilwaco	1990	20	Dungeness Crab and Tuna	fresh, frozen live	
Warrenton Deep Sea, Inc.	producer processor retailer wholesaler distributor				Dungeness Crab, fresh fish/shellfish, frozen fish/shellfish, salmon (farmed and wild), seafood, smoked fish, tuna, crab	canned, fresh, frozen, salted/smoked	

Newport

Company	Function	Location	Established	Employees	Products	Forms	Brands
Oregon Oyster		Newport			seafood		

Company							
Pacific Shrimp Company	producer processor	Newport			Dungeness Crab, shrimp, shrimp meat	frozen	
Carvalho Fisheries	producer processor exporter	Newport	1990		Black cod, Dungeness Crab, rockfish, salmon, smelt, stone crab, tuna	blocks, canned, cooked, fresh, frozen, IQF, live, meat (shelled), whole	

Appendix 8. Infrastructure

Astoria

Infrastructure Type	Count	Name
Charter Companies	20	A Coho Charters, Beacon Charters, Charlton Deep Sea Charters, Columbia River Discovery Tours, Corkey's, Dielman's Northwest River Guides, Free Willy Bait Tackle & Charters, Gale Force Guides, Hiline Guide Service, Len Self Professional Fishing Guide, Norsk Charters, Pacific Salmon Charters, Salmon Master Guide Service, Sea Breeze Charters, Tackle Time Bait Shop, Thunderbird Charters, Tiki Charters, Buoy 10 Fishing Guides, Columbia River Fishing Guides, Martin's Big Fish Adventures,
Cold Storage	1	Astoria Pacific Seafood/West Bay Processing Inc.
Commodity Commissions	4	Oregon Trawl Commission, Oregon Dungeness Crab Commission, Oregon Salmon Commission, Oregon Albacore Tuna Commission
Distributors	6	Bell Buoy Crab Company, Fishhawk Fisheries, Ocean Beauty Seafood's, Oregon Ocean Seafood's, Pacific Coast Seafood's, Warrenton Deep Sea, Inc.
Fish Buying Stations	?	Unable to identify
Fish Markets & Retail Outlets	13	Bell Buoy of Seaside, Coast Seafood's, Crab Pot, Ecola Seafood Restaurant & Market, Uniontown Fish Market, Fish Landing, Josephson's Smokehouse, Longfin Seafood's, Nahcotta Seafood, P & K Seafood Market, Pacific Seafood Company, Sunrise Seafood, Tsunami Seafood's, Warrenton Deep Sea Crab & Fish Market
Fish Monuments	2	Fisherman's Memorial, Astoria, OR Fisherman's Memorial, Warrenton, OR
Fish Processors' Equipment	1	Autio Company
Fish Smoking and Curing	1	Sturgeon Paul's Smokehouse
Fishing Commercial Supplies	1	Astoria Airport Crabpot Company
Fishing Events	7	Blessing of the Fleet, Warrenton Crab Feed, Warrenton Fish Fry, Fisher Poets Gathering, Astoria Yacht Club Opening Day Festivities, Astoria-Warrenton Crab and Seafood Festival, Silver Salmon Celebration.
Fishing Organizations and Associations	9	Columbia River Fishermen's Protective Union, International Pacific Halibut Commission, Midwater Trawler Cooperative, National Fisheries Institute, Oregon Fishermen's Cable Committee, Pacific Coast Federation of Fishermen's Association, Salmon For All, Shrimp Association, West Coast Seafood Processors Association
Fishing Sport Tackle & Supplies	8	Agate Shop, Bud's Campground & Grocery, Charlton Deep Sea Charters, Chinook Bait & Tackle, Chinook Country Store, Ed's Bait & Tackle, Englund Marine Supply, Trucke's 1-Stop Bait & Tackle
Fishmeal Plant	1	Bio-Oregon
Fuel Docks	2	Wilcox and Flegel, Mimi's
Icehouse	?	Unable to identify
Marinas	6	East Mooring Basin, West Mooring Basin, Hammond, Warrenton, Chinook, Ilwaco,
Shipyards	1	Astoria Marine Construction Company
Processors	13	Astoria Holdings, Astoria Pacific Seafood, Bell Buoy Crab Company, Bornstein Seafood's, Fishhawk Fisheries, Jessie's Ilwaco Fish Company, Josephson's Smokehouse & Dock, Oregon Ocean Seafood's, Pacific Coast Seafood's, Point Adams Packing Company, Sunrise Seafood's, Warrenton Deep Sea, Inc., West Bay Processing
Trucking Companies	3	H & G Trucking, Ocean Beauty Seafood's, Pacific Seafood's
Wholesalers	9	Bell Buoy Crab Company, Blue Ocean Seafood's, Fishhawk Fisheries, Ocean Beauty Seafood's, Oregon Ocean Seafood's, Pacific Coast Seafood's, Point Adams Packing Company, Sunrise Seafood's, Warrenton Deep Sea, Inc.

References: (Dex Yellow Pages, 2004 and Urner Barry, 2004)

Newport

Infrastructure Type	Count	Name
Charter Companies	4	Blue Pacific Ocean Fishing Charters, Newport Marine Store & Charters, Newport Tradewinds, Sea Gull Charters
Cold Storage	1	Pacific Shrimp
Commodity Commissions	4	Oregon Trawl Commission, Oregon Dungeness Crab Commission, Oregon Salmon Commission, Oregon Albacore Tuna Commission
Distributors	?	
Fish Buying Stations	3	Bornstein Seafood's, Carvalho Fisheries, Hallmark Fisheries
Fish Markets & Retail Outlets	5	Bay Street Crab Company, Gino's Seafood & Deli, Lighthouse Deli & Fish Co., Inc., Oregon Oyster Farm, Inc., Pacific Seafood Company,
Fish Monuments	1	Fishermen's Memorial
Fish Processors' Equipment	0	Unable to identify
Fish Smoking and Curing	0	Unable to identify
Fishing Commercial Supplies	2	Foulweather Trawl, Pacific Disc Inc.
Fishing Events	1	Blessing of the Fleet
Fishing Organizations and Associations	7	International Pacific Halibut Commission, Midwater Trawler Cooperative, National Fisheries Institute, Pacific Coast Federation of Fishermen's Association, Newport Fisherman's Wives Association, Shrimp Association, West Coast Seafood Processors Association
Fishing Sport Tackle & Supplies	4	Bittler Brother's Sport Center, Englund Marine Supply, Harry's Bait & Tackle, Newport Marina Store & Charters
Fish Meal Plant	1	Pacific Coast Seafood's
Fuel Docks	2	Port Dock, South Beach
Icehouse	1	Yaquina Bay Ice
Marinas	3	Port of Newport, Port of Toledo, South Beach Marina
Shipyards	1	Fred Wahl Marine Construction Company
Processors	2	Pacific Shrimp, Trident Seafood's
Trucking	1	Pacific Shrimp
Wholesalers	3	Carvalho Fisheries, Hallmark Fisheries, Pacific Shrimp

References: (Qwest Dex Yellow Pages, 2004 and Urner Barry, 2004)

Appendix 9A. Fisheries Economic Assessment Mode (FEAM): Harvesters

The tables below present annual budgets for 14 of the 30 fishing sectors represented in FEAM. These 14 fishing vessel income statements were explored in the current project. Due to time and budgetary constraints, the remaining 16 fishing vessel income statements were not included in the study. Specifically, WA JV/Groundfish, Sm. Dive/Multipurpose, Oyster Culturing, Dip Net, CS Large Gillnet, Dive Vessel, Whiting On and Off Shore, Factory Trawler, Alaska Crab/Longline/Groundfish, Alaska Gillnetter, Oyster/Clams/ Other, Small Trap/Pot, Alaska Vessel, Combination Troller/Crabber, CS Small Gillnet, and S. Wetfish Seiner budgets will be examined at another time.

	Large Groundfish Trawler		**Small Groundfish Trawler**		**Sablefish Fixed Gear**		**Other Groundfish Fixed Gear**	
	Expense	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**
Vessel/Engine Repair	$12,109	4.5%	$4,520	5.5%	$6,622	4.3%	$3,544	3.7%
Gear Repair/Replace	$11,678	4.3%	$6,499	7.9%	$7,178	4.5%	$2,650	2.8%
Fuel & Lubricants	$15,821	5.7%	$6,832	8.3%	$8,454	5.4%	$3,731	3.6%
Food & Supplies	$4,500	1.7%	$4,000	4.9%	$2,667	1.7%	$1,874	2.1%
Ice & Bait	$0	0.0%	$4,000	4.9%	$3,033	2.0%	$2,480	2.8%
Dues & Fees	$1,336	0.5%	$899	1.1%	$900	0.6%	$1,000	1.5%
Transportation	$1,053	0.4%	$2,000	2.5%	$1,500	1.0%	$1,000	1.5%
Miscellaneous	$3,764	1.4%	$993	1.2%	$2,500	1.6%	$1,000	1.5%
Crew Shares	$104,196	39.0%	$31,873	39.0%	$61,983	39.0%	$34,022	39.0%
Insurance	$28,333	10.8%	$13,333	16.5%	$17,500	11.1%	$12,833	14.2%
Moorage	$833	0.3%	$900	1.1%	$867	0.6%	$1,333	2.2%
Interest Expense	$4,867	1.7%	$2,878	3.5%	$5,733	3.9%	$1,938	3.0%
Depreciation	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%
Licenses	$392	0.1%	$467	0.6%	$500	0.3%	$240	0.4%
Miscellaneous	$500	0.2%	$1,000	1.2%	$200	0.1%	$1,000	1.5%

	Other Small General		**Shrimper**		**Crabber**		**Salmon Troller**		**Salmon Netter**	
	Expense	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**
Vessel/Engine Repair	$200	5.6%	$8,203	4.5%	$6,123	5.2%	$395	2.0%	$1,793	10.2%
Gear Repair/Replace	$100	2.8%	$9,891	5.7%	$6,690	5.6%	$395	2.0%	$2,214	12.5%
Fuel & Lubricants	$200	5.6%	$17,870	10.3%	$4,718	4.0%	$1,145	5.7%	$396	2.3%
Food & Supplies	$200	5.6%	$5,000	3.0%	$2,500	2.1%	$611	3.0%	$581	3.1%
Ice & Bait	$200	5.6%	$4,500	2.7%	$8,000	6.9%	$203	1.0%	$255	1.7%
Dues & Fees	$100	2.8%	$1,048	0.6%	$600	0.5%	$167	0.8%	$267	1.4%
Transportation	$200	5.6%	$1,500	0.9%	$2,000	1.7%	$631	3.1%	$420	2.4%
Miscellaneous	$100	2.8%	$744	0.4%	$2,500	2.2%	$656	3.3%	$120	0.7%
Crew Shares	$1,504	39.0%	$67,663	39.0%	$45,824	39.0%	$8,012	39.0%	$6,819	39.0%
Insurance	$1,000	28.1%	$17,333	8.0%	$12,333	10.4%	$2,167	10.6%	$2,000	11.6%
Moorage	$500	14.1%	$933	2.4%	$1,067	0.9%	$600	3.0%	$299	1.8%
Interest Expense	$0	0.0%	$5,642	6.1%	$2,163	1.8%	$796	4.2%	$379	2.2%
Depreciation	$0	0.0%	$0	1.0%	$0	0.0%	$0	0.0%	$0	0.0%
Licenses	$400	11.3%	$467	1.1%	$467	0.4%	$400	2.0%	$397	2.3%
Miscellaneous	$200	5.6%	$800	0.5%	$300	0.3%	$100	0.5%	$242	1.3%

	Part Time Salmon Troller		Purse Seiner		Migratory Troller/ Netter		Pelagic Longliner		Gillnetter	
	Expense	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**	**Expense**	**Percent of Total Revenue**
Vessel/Engine Repair	$200	6.1%	$11,597	7.2%	$8,077	8.6%	$30,000	5.4%	$7,027	26.3%
Gear Repair/Replace	$100	3.1%	$13,264	8.7%	$8,293	8.9%	$31,000	5.6%	$8,546	32.0%
Fuel & Lubricants	$200	6.1%	$14,930	9.8%	$9,379	10.2%	$60,000	10.8%	$4,883	18.3%
Food & Supplies	$200	6.1%	$9,930	6.1%	$2,000	2.2%	$62,000	11.2%	$1,351	5.1%
Ice & Bait	$200	6.1%	$0	0.0%	$7,879	8.7%	$55,000	9.9%	$6,104	22.9%
Dues & Fees	$100	3.1%	$5,625	3.3%	$400	0.4%	$3,000	0.5%	$100	0.4%
Transportation	$200	6.1%	$3,000	2.0%	$1,000	1.1%	$33,000	6.0%	$420	1.6%
Miscellaneous	$100	3.1%	$2,333	1.5%	$1,000	1.1%	$32,000	5.8%	$120	0.4%
Crew Shares	$1,274	39.0%	$56,408	37.7%	$36,161	39.0%	$171,823	31.0%	$9,071	34.0%
Insurance	$1,000	30.6%	$20,000	13.4%	$10,000	11.0%	$30,000	5.4%	$3,000	11.2%
Moorage	$500	15.3%	$2,000	1.4%	$800	0.8%	$6,000	1.1%	$400	1.5%
Interest Expense	$0	0.0%	$2,490	1.8%	$4,022	4.1%	$6,000	1.1%	$0	0.0%
Depreciation	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%
Licenses	$400	12.2%	$533	0.4%	$400	0.4%	$6,000	1.1%	$400	1.5%
Miscellaneous	$200	6.1%	$1,667	1.2%	$200	0.2%	$6,000	1.1%	$50	0.2%

Appendix 9B. Fisheries Economic Assessment Model (FEAM): Processors

The tables below present annual budgets for nine processing sectors represented in FEAM.

	Large		Medium		Small		Sea Urchin		Factory Trawler	
Market Value	$10,000,000		$2,000,000		$1,000,000		$500,000		$28,000,000	
Minimum # Employees	100		60		20		10		35	
Maximum # Employees	150		80		35		30		65	
Number of Different Products	20		20		20		1		5	
Fraction of Plant Operations	1		1		1		1		1	
Admin Salaries	$450,000	48.8%	$200,000	46.3%	$65,000	37.8%	$60,000	33.3%	$120,000	12.5%
Maintenance & Repairs	$100,000	10.8%	$50,000	11.6%	$25,000	14.6%	$25,000	13.9%	$82,000	8.6%
Utilities	$65,000	7.0%	$35,000	8.1%	$15,000	8.7%	$15,000	8.3%	$0	0.0%
Telephone	$50,000	5.4%	$35,000	8.1%	$15,000	8.7%	$12,000	6.7%	$0	0.0%
Insurance	$45,000	4.9%	$25,000	5.8%	$12,000	7.0%	$12,000	6.7%	$72,500	7.6%
Business/Prop. Taxes	$35,000	3.8%	$20,000	4.6%	$10,000	5.8%	$10,000	5.5%	$3,000	0.3%
Admin. Supplies	$45,000	4.9%	$20,000	4.6%	$15,000	8.7%	$15,000	8.3%	$120,000	12.5%
Misc. Administrative	$30,000	3.3%	$20,000	4.6%	$10,000	5.8%	$10,000	5.5%	$22,500	2.4%
Interest Expense	$102,197	11.1%	$26,662	6.2%	$4,820	2.8%	$21,433	11.9%	$237,000	24.8%
Depreciation	$0	0.0%	$0	0.0%	$0	0.0%	$0	0.0%	$300,000	31.3%

	Fish Meal Plant		Whiting Shoreside		Mother Ship		Shellfish	
Market Value	$3,000,000		$4,000,000		$20,000,000		$100,000	
Minimum # Employees	2		50		50		2	
Maximum # Employees	4		150		175		20	
Number of Different Products	2		5		5		3	
Fraction of Plant Operations	1		1		1		1	
Admin Salaries	$45,000	10.9%	$385,000	39.6%	$130,000	7.1%	$5,500	34.0%
Maintenance & Repairs	$5,000	1.2%	$35,000	3.6%	$185,000	10.0%	$2,500	15.4%
Utilities	$5,000	1.2%	$45,000	4.6%	$0	0.0%	$1,500	9.3%
Telephone	$6,000	1.5%	$30,000	3.1%	$0	0.0%	$1,500	9.3%
Insurance	$85,000	20.6%	$185,000	19.0%	$180,000	9.8%	$1,200	7.4%
Business/Prop. Taxes	$8,500	2.1%	$13,000	1.3%	$2,000	0.1%	$1,000	6.2%
Admin. Supplies	$5,000	1.2%	$25,000	2.6%	$280,000	15.2%	$1,500	9.3%
Misc. Administrative	$3,000	0.7%	$55,000	5.7%	$38,000	2.1%	$1,000	6.2%
Interest Expense	$250,000	60.6%	$200,000	20.6%	$728,000	39.5%	$500	3.1%
Depreciation	$0	0.0%	$0	0.0%	$300,000	16.3%	$0	0.0%