West Coast Marine Fishing Community Descriptions

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SECTION I

Introduction

This report is in response to a request made by the Pacific Fisheries Management Council (Council) to complete, update and expand the "West Coast Marine Fisheries Community Descriptions" document prepared by the Council, in September 1999. This report describes fishing communities on the West Coast of the United States and is intended to provide baseline community information for communities engaged in Council-managed fisheries, and other state-managed fisheries in Washington, Oregon and California. The report is a combination of Pacific Fisheries Information Network (PacFIN) and U.S. Bureau of Census data and County Descriptions. Analysis was extended beyond the Council document to include central and southern California counties. The county descriptions contain information on county location, reservations and trust lands (where applicable), historic and current industry (agriculture, manufacturing, logging, etc.) and fishing industry information. Additionally, descriptive geographic information systems (GIS) maps were developed using U.S. Census information including population, per capita income, educational attainment, unemployment and poverty levels, the median year houses were built, percent of vacant homes, recreational and commercial fishing ports and isolated cities. The Council initially produced this document in response to mandates from the Sustainable Fisheries Act of 1996. The Council manages salmon, groundfish, coastal pelagic species fisheries and highly migratory species and cooperates in the development of Pacific halibut allocations.

Purpose of Document

The purpose of having a document that outlines fishing communities in Washington, Oregon and California is to provide the 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. If a community is presented in this document that does not mean the community is dependent on fishing. Rather, this information will serve as a tool for analysts to determine dependence on fishing for future management action(s).

This document is divided into four sections. The first section provides a brief discussion of definitions and sociocultural indicators. The second section details the methods used in this report. Section III includes the results (GIS maps and county descriptions), while the last section provides a discussion on limitations of the current project and recommendations for future research of west coast fishing communities. Finally, you will find 2000 census tables for Washington, Oregon and California, 2001 PacFIN landings data, physical descriptions of coastal fishing ports and processor information in the appendices.

Definitions

What is a community?

The problem of determining how a community should be defined has been one of the dilemmas anthropologists and sociologists have attempted to resolve for decades. Today, this predicament still exists, while several definitions are in use. The following defines a community within the confines of the current project.

A community can be viewed from two different positions. The first position, as defined in the literature (Ecopolicy Center, 1998; Ogdin, 1998; Smith, 1996; and Ward, 2002), is a group of people who share common social, economic, and political interests. This concept of a community is not bound to a geographic area, but defines a community as a group of people who contain a unique social makeup, or a group of common interests. An example of this definition would be all trawlers regardless of where they fish (for a reference explaining this example further, please see Ecopolicy Center, 1998).

The second position views communities as a group of people living in a common geographic area. An example of this would be the community of Fort Bragg, CA. The Magnuson-Stevens Fisheries Conservation and Management Act (1996) places a fishing community in a geographic area and defines it 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".*

The present project follows the Magnuson-Stevens Act's definition of a community, which concurs, with the advice of the Pacific Fisheries Management Council (Council) and National Marine Fisheries Service (NMFS) staff and fishing community members. Throughout this report, a fishing community is defined as a place; however, the data is presented in a larger context. For reasons described below, all data regarding West Coast marine-fishing communities is aggregated at the county level.

Sociocultural Indicators

Examining sociocultural indicators of a community is key to effective fisheries management. The Magnuson-Stevens Fishery Conservation and Management Act requires conservation and management measures to "…take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities" (M-SFCMA, 16 U.S.C. 1851).

In the past, economic analyses have been the focus of community profiles because other social and cultural data were unattainable. It is possible that limiting analysis to economic data could be not only inadequate, but harmful as well (Hall-Arber et al., no date). Creating a more holistic analysis of a community involves the inclusion of social and cultural factors. The importance of social analysis lies in the dynamic that social ties ultimately influence and organize economic behavior. It is these behaviors, which are ultimately reflected in the results of economic analyses. It is also the case that not all fisheries-relevant behavior at the individual and community levels is economic behavior. Non-economic values, preferences and cultural models can have a significant influence on fishermen's behavior and fishing communities' reactions to management actions. This is an additional reason for conducting social analyses.

SECTION II

Methods

Introduction

This document includes descriptions of fishing communities aggregated at the county level. A total of 48 counties located in Washington, Oregon and California are described below. Each county is situated on or near the west coast, and contains fishing communities. A fishing community is defined in this project as a group of people living in a common geographic area who participate in the fishing industry (*i.e.* Newport, OR). This definition was chosen for two reasons. First, it was Pacific States Marine Fisheries Commission's (PSMFC) goal to provide the Council with a "snapshot" of each county, rather than detailed descriptions of each fishing community, which would result in an encyclopedia of information. Second, even though this definition fails to identify that fishing communities can extend beyond the geographic boundary, it allows resource managers to begin thinking about communities in a cultural context (i.e. communities of interest). Table 1 contains a list of west coast counties included in this report.

Table 1. West Coast Counties.

Washington	**Oregon**	**California**
Clallam	Clatsop	Alameda
Clark	Columbia	Contra Costa
Cowlitz	Coos	Del Norte
Grays Harbor	Curry	Humboldt
Island	Douglas	Los Angeles
Jefferson	Hood River	Marin
King	Lane	Mendocino
Kitsap	Lincoln	Monterey
Lewis	Multonmah	Orange
Mason	Tillamook	San Diego
Pacific		San Francisco
Pierce		San Joaquin
San Juan		San Luis Obispo
Skagit		San Mateo
Skamania		Santa Barbara
Snohomish		Santa Cruz
Thurston		Solano
Wahkiakum		Sonoma
Whatcom		Ventura

To avoid an exhaustive list of communities along the west coast, certain thresholds were developed to determine which communities would be included in this report. As an initial cut, PSMFC used PacFIN port communities, which had greater than or equal to ten percent of their annual revenues in commercial fish landings. Communities with recreational landings were not selected based on annual revenues because what that

annual revenue or threshold might be for recreational landings is unclear. Recreational communities are included in this report because of information provided by interviewees. If interviewees stated that recreational boats occupy more than 95% of his/her slips in the port, then it is recorded as a recreational fishing community.

Why Descriptions at the County Level?

Fishing community descriptions were chosen at the county level for several reasons. First, U.S. Census Bureau data is most easily accessible and consistent at the county level. Because some census information is missing at the city level, PSMFC decided to report county information *only* for standardization purposes. Second, county descriptions were provided to reduce the amount of information the Council had to review.

PSMFC, however, acknowledges the drawbacks to presenting community information at the county level. For example, most of Lane County's economic activity does not take place on the coast. However, by presenting economic information at the county level, Lane's costal fishing communities are somewhat distorted (please see recommendations in section IV). Because fishing community information is described in the current document at the county level, this does not mean that a fishing community is a county. As previously stated, PSMFC is following NMFS, and the Magnuson-Stevens Act's guidelines to defining a fishing community as a place.

Sources of Information

The information provided in this report comes from several sources including: PacFIN, the U.S. Census Bureau, chambers of commerce, historical societies, books/articles, Internet sources and interviewees. Interviewees were acquired through random and snowball sampling methods.

Statistics Definitions:

- Random sampling: "is the purest form of probability sampling. Each member of the population has an equal and known chance of being selected. When there are very large populations, it is often difficult or impossible to identify every member of the population, so the pool of available subjects becomes biased" (StatPac, 2003).
- Snowball sampling: "is a special nonprobability method used when the desired sample characteristic is rare. It may be extremely difficult or cost prohibitive to locate respondents in these situations. Snowball sampling relies on referrals from initial subjects to generate additional subjects. While this technique can dramatically lower search costs, it comes at the expense of introducing bias because the technique itself reduces the likelihood that the sample will represent a good cross section from the population" (StatPac, 2003).

Data Management

PSMFC worked with five types of data management analyses, including: U.S. Census data, geographic information systems (GIS) analysis, community descriptions, PacFIN landings data and dependence on the fishing industry.

U.S. Census Data

During the first analysis of data development, PSMFC obtained the most recent available (2000) U.S. Census Bureau information. Census information was examined at the county level.

U.S. Census Definitions:

- Total Population of residents on Reservations and Trust Lands: this is the total population of residents on the reservation, not tribal enrollment (U.S. Census Bureau, 2002).
- Per Capita Income: the average income for every man, woman, and child in the nation if it is distributed equally (Pass et al., 1991).
- The median year a house was built: this is the average year all houses were built in a given county (U.S. Census Bureau, 2002).

One point to make clear is that census data of the fishing sector alone is unattainable from the U.S. Census Bureau. The bureau groups census information of the fishing sector with forestry and mining. Therefore, employment, and income data of the fishing sector is not included in this report (please see section IV for further discussion).

Geographic Information Systems (GIS) Analysis

The second analysis of data development involved mapping the census data in a GIS database. Information "queried" was at the state and county level. This data was then analyzed in a GIS environment in terms of the three states' population, per capita income, median year house built, vacant housing units, unemployment, and poverty levels.

Within the GIS database, the geographic isolation of each community was examined. Geographic isolation (explained below) may help determine which communities have fewer economic resources available to them. It is assumed that smaller and more remote communities have fewer economic choices, influencing the ways in which they depend on the local industry (Interior Columbia Basin Ecosystem Management Project [ICBEMP], 1998).

The ICBEMP project attempted to identify isolated communities by establishing some basic parameters. These parameters identified a community as isolated if it had less than 1,900 people, was not near a major highway, and was 35 miles away from a city with a population greater than 20,000 people. In the current project, ICBEMP parameters and parameters created by PSMFC, were used. For this analysis, a buffer function, which allows users to create a zone of equal width around a point, was used in GIS. A 35-mile circle was drawn around communities with a population greater than 20,000, highlighting communities outside the 35-mile buffer.

One of the problems using ICBEMP's parameters is that they are applied to road mileage rather than travel by boat. For example, it is unclear what the average distance a fishing vessel might travel to deliver fish to a processor, seek out repairs for his/her vessel, or go

for fuel and supplies. Because of this problem, PSMFC applied additional buffers (30 and 40 miles) around cities with a population greater than 25,000 to examine if larger or smaller buffers around cities with a higher population identified a significant amount of isolated cities when compared to the 35-mile buffer around cities with a population of 20,000. Applying these different parameters identified a slight variation in the results of isolated communities in Oregon and Washington (for more information, please see pages 27-29). Future exploration might shed light on what a reasonable commuting distance by boat may be.

Community Descriptions

Researching the characteristics of counties in Washington, Oregon and California encompasses the third analysis of this project. Various resources were utilized to obtain information at the county level. The descriptions contain information on each county including: location, reservations and trust lands (where applicable), historic industry, current industry and fishing industry. The questions listed below were used as a guide to generate discussion with harbormasters and other knowledgeable community members regarding the fishing industry in a given port or area.

1. What percentage of boats in your harbor/port are recreational and commercial?
2. How long have people been fishing in your community, what have they been fishing for, and what gear was historically utilized?
3. When people think about your fishing community, what is it known for or what is the first thing that comes to mind?
4. What species and gear are typically represented in your harbor/port?
5. Are there any fishing community groups or clubs?
6. Does the fishing community host any events related to the fishing industry?
7. Do you see any competition among fishermen in your harbor/port?
8. How are family members involved in the fishing industry, can you explain a little about Women's roles in the fishing community?
9. Are there any processors, suppliers, icehouses, fuel docks, bait and tackle shops, etc. in your community? Do people sell fish off their boat?
10. How many berths are in your harbor/port, and what size range of boat/vessel can you accommodate?
11. Do you have any additional comments about your community?

The purpose of discussing the above topics was to generate industry information as well as opinions' regarding what a fishing community is, and which socioeconomic factors are most valid in including in a community description. The resulting 63 interviews were conducted from March to June through telephone conversations lasting anywhere from five to 60 minutes each. Due to a lack of time and budgetary restraints, telephone interviews were utilized as a primary source for information instead of physically visiting the communities (please see section IV for future recommendations). The reservation and trust lands section of each community description simply describes the location and resident population on the reservations. A discussion of subsistence or tribal commercial fishing is not included in the present analysis. Including this information in great detail is PSMFC's hope in the future.

PacFIN Landings Data

The fourth analysis involved obtaining 2001 landings data from PacFIN. PacFIN's "…central database includes fish-ticket and vessel registration data provided by the Washington, Oregon, and California (W-O-C) state fishery agencies. In addition the W-O-C data sources supply species-composition and catch-by-area proportions developed from their port sampling and trawl logbook data systems" (http://www.psmfc.org/pacfin/overview.html).

The 2001 landings results are located in the appendices section of this report (starting on page 102). The following PacFIN tables from the database were utilized: Vessel Summary by Year (pacfin.vsy), State Vessels (pacfin.sv), US Coast Guard Vessels (pacfin.cg), Species (pacfin.sp) and Gear (pacfin.gr). In addition to these PacFIN tables, one EFIN table was also used, efin.county. This table contains port code (pcid), state (agid) and county information. The aforementioned tables were used to aggregate the 2001 revenue, landed pounds, processor and vessel count by state, county and species.

The species groupings in this report follow PacFIN's species management categories. These categories are: crab, coastal pelagic, highly migratory, groundfish, salmon, shellfish, shrimp and other. In addition to these eight management groups, this document also reports pacific whiting landings separate from groudfish landings where possible given confidentiality constraints. For more detailed information about which individual species comprises PacFIN's management categories, please see Table 10a located in the appendices section. Additionally, a hierarchical table describing gear categories is also provided in the appendices section as Table 10b.

Before the data was reported, tests for confidentiality were applied. If species landings by county were confidential, the species were rolled into the species category of "other". For example, a confidential landing of groundfish in Mendocino County, CA was added to "other" in Mendocino County, CA. The confidential species are rolled into the species category "other" if:

- Fewer than three fish processors processed the landings,
- Fewer than three vessels made the landings (Some vessels are reported as unidentified in the PacFIN database. Because of this, these unidentified vessels were not counted in this test for confidentiality. However, the unidentified vessels revenue and landed pounds are reported in the PacFIN landings tables.),
- Greater than or equal to 75 % of the market was dominated by a single processor,
- Greater than or equal to 75 % of the market was dominated by a single vessel.

The resulting tests for confidentiality helped to ensured that no one processor or vessel would be revealed in the landings section of this report. In one case (Thurston County), simply adding the confidential species to the "other" species group in Thurston County still resulted in confidential data. To solve this issue, Thurston county's species landings were added to the species landings in the county: "Other or Unknown Washington Counties".

Counties grouped in this document are in some cases reported differently from the PacFIN database. In one instance, PacFIN reports Madera County, CA as having

landings in 2001. However, the revenue and catch information for this county are not reported in the appendices because the county was not included in this coastal county analysis (this county is not included in the community descriptions section of this document). In another case, some counties are reported as having no landings in 2001. This might be due to either one of two reasons: 1) the county did not have any landings in 2001, or 2) PacFIN attributed the counties landings to a different county. For example, PacFIN reports that landings were not made in Multnomah County, OR in 2001 (please see Oregon County Landings Table in the appendices). The reason for this may be because PacFIN coded Multnomah County's landings as a "Columbia River Ports" landing instead.

Prior to running the above four confidentiality tests, however, a revenue threshold was applied to all landings in 2001. A species group was rolled into the "other" species category if the revenue accounted for less than ten percent of the total revenue for that county. For example, if the groundfish landings in Mendocino County, CA were nine percent of its total revenue in groundfish, the groundfish landings were added to the "other" category in Mendocino County, CA. This arbitrary ten percent rule was created to decrease the amount of species groups that needed to be rolled into the "other" category due to confidentiality reasons. The tables in the PacFIN landings appendices section identifies which species or counties are confidential.

Dependence on the Fishing Industry

During the last phase of the project, dependency and engagement in the fishing industry were examined. Initially it was hypothesized that an index could be created from various attributes of fishing communities that would indicate how dependent or substantially engaged a community was in the fishing industry. Data elements thought to provide information on the dependence and engagement in fishing included: population, poverty, unemployment, per capita income, the year a house was built, the percent of vacant houses in a given location, number of industries outside of fishing, number of berths in a marina, the percent a harbor or port is filled with commercial and/or recreational boats/vessels, landings data and the number of suppliers, processors, community fishing organizations and community fishing events in a community. Upon collecting this data, it was determined that creating a dependency index was impractical given the available information. Because PSMFC could not produce a sufficient index, the information is simply presented in the Appendix as "Physical Description".

The following pages contain results from the U.S. Census GIS analysis and community descriptions by county for Washington, Oregon and California. The Appendices include tables with PacFIN landings data and demographic information as well as tables and maps describing attributes of dependence.