SECTION IV

Discussion and Recommendations

The following discussion provides limitations of the current project and recommendations for future research of West Coast fishing communities. The topics below include the definition of a fishing community, additional communities to add to future projects, the limitations of dependency indices, the limitations of telephone interviews, current Census data and how GIS can be utilized in future fishing community projects.

What is a Fishing Community?

For the current report, Pacific States Marine Fisheries Commission (PSMFC) chose to define a fishing community as a group of people living in a common geographic area. One future consideration is how to define a fishing community on a more regional level. In reality, fishing communities include more attributes than a geographic location. These additional attributes include: gear type, fishery, common history and practices and shared knowledge and values. Additional examples of communities follow:

- An occupational community is a group of people involved in the same occupation, like the coast wide community of trawlers who engage in similar activities.
- A community of interest is made up of people who share similar interests - for example, people who are concerned about making the fishing industry safer (www.pcouncil.org).

These definitions address communities beyond a geographic location. Although these additional sociological or anthropological definitions are more difficult to conceptualize, applying these views to fishing communities would result in a greater understanding of socieconomic indicators.

Additional Communities

Several other communities should be included in future fishing community projects. These communities are located in California, Oregon and Idaho. In California, two counties (San Bernardino and Santa Clara) are absent from this report due to a lack of information regarding the recreational and commercial fishing industries. Even though information on the counties' history of industry, current industry and location were easily attainable, information on the fishing industry itself was not available. Additionally, interviewees were not located in these two counties, therefore current and historic fishing industry data was not collected. PSMFC recommends that San Bernardino and Santa Clara Counties be integrated into future west coast community analyses upon closer examination.

Aside from the two California Counties mentioned above, additional counties situated along the Columbia and Snake Rivers should be included in future analyses (counties east of Hood River County, OR). These two rivers are significant contributors to the

commercial and recreational fishing industry. In order to paint a more complete picture of fishing communities in the Pacific Northwest and West Coast, the counties located on these rivers need to be included.

Distant Water Fisheries

One aspect of importance that should be examined further in future community descriptions, are distant water fisheries. Including revenue, number of landed pounds, income, etc. generated from distant water fisheries will contribute to a more complete fishing community profile. One reference (*Sector and Regional Profiles* prepared by the Northern Economics Inc., and Edaw Inc., http://www.fakr.noaa.gov/npfmc/Northern Economics/NorthernEconomics.htm) that attempts to do this, however, focuses its study on the groundfish fishery.

Dependency and Engagement

The terms "…substantially dependent on and substantially engaged in…" as described in the Magnuson Stevens Act, are currently not operationally defined. Once working definitions exist, a dependency index might be created with better precision. Included in the dependency index, one might examine indicators such as the number of crew members and processor employees residing in a fishing community, commercially/ recreationally landed pounds and revenue and adaptation strategies, to name a few. Table 3 below is a list of social indicators that could supplement economic analyses in the future.

Table 3. Social indicators.

• Marine education programs	• Number of vessel owners that reside in the community
• Numbers of crew members and processor employees residing in a fishing community	• Number of vessel owners that land fish but do not reside in the community
• Reliance on other natural resources	• Adaptation strategies
• Changes in ownership over time	• Industry structure
• Descriptions of support industries	• Training institutions
• Commercially landed pounds and revenue	• Perceptions and descriptions of tourism
• Recreationally landed pounds and revenue	• Women's role in the fishing industries
• Fishing related social groups and organizations	• Processors and fishery support industries
• Subsistence fisheries	• History of fishing industries

Interviews

Below is a discussion of future recommendations when collecting socioeconomic information through an interview process. The three suggestions mentioned below, focus on expanding the interview population, conducting in-person (visiting communities) instead of telephone interviews and adding questions that would provide more meaningful information on the recreational and sport industries in the examined communities.

A total of 63 interviews were completed for this project. Approximately one individual per county provided information about the historic and current state of the commercial and recreational fishing industries in their area. The interviews were a reflection on the amount of time and budgetary restraints laid upon the current project. In the future, a more exhaustive survey of fishing industry participants is suggested. Interviewing about 20 to 30 interviewees per county would be a more representative approach to obtaining information on the fishing industry. This approach would broaden the scale of information and points of view, thus painting a more complete community profile.

During this project interviews were conducted over the telephone. Again, time and budgetary restraints dictated the research design for this project. More significant information would have been obtained through in-person interviews. In-person interviews are beneficial in several ways. First, a higher response rate will be obtained compared to telephone conversations and mail-out surveys; second, due to the existing lack of trust on the part of industry, in-person interviews may contribute to the resolution of this issue and other problems; and third, involving industry with current projects face-to-face might increase industries' willingness to participate in both discussing fishing industry topics in the future and involving themselves in the management process (Conway and Gilden, 2002).

The questions asked of the interviewees in this project were centered on the commercial fishing industry. After several telephone discussions, it was realized that more specific questions regarding the recreational and sport fisheries might have influenced where discussions went during the interviews and the resulting answers to some of the questions. Two specific questions that did not directly pertain to the recreational and sport industries include:

- Do you see any competition among fishermen in your marina?
- How are family members involved in the fishing industry and can you explain a little about women's roles in the fishing community?

In the future, the above two questions should be modified or dropped during discussion with recreational fishermen.

Census Data

Although census data is useful for creating a more holistic community profile, it does contain some limitations. One limitation is the lack of separation between fishery and forestry employment data. Being able to report the percent of fishery employment in a given area in addition to other types of employment would be beneficial. A second

limitation to the census data is that many fishing community members fish part time, or hold other jobs while they fish. The existing census data does not allow analysis for this kind of situation. This factor furthers the difficulties of obtaining a representative sample of part time employment in a given county. A third limitation is that many fishing communities are located in unincorporated areas. These unincorporated areas are not included in the census information; therefore they are not included in current analyses.

These limitations do not allow the complete picture of fishing communities to be made. It is suggested for future community profiles, that other sources of fishery sector employment and income information be utilized.

Geographic Information Systems (GIS)

Geographic Information Systems (GIS) maps included in the current report are purely descriptive in nature. Direct Census data was imported into GIS to create the maps presented in this document. It is recommended that further steps beyond descriptive map-making be included in future studies. For example, GIS has the ability to display patterns in mapped features, observe relationships and concentrations of features and determine what is occurring within a given distance of several features. GIS also has the capability to see how features change over time, anticipate or model future needs, and examine the impacts before and after an event. For example, GIS might be a good modeling tool when applied to examining the effect(s) a regulation may have on a fishing community. The key advantage of GIS is the ability to link existing databases of Census, PacFIN, and Dependency Indices to probabilistic models. This may result in the means to predict the impacts from fisheries management decisions and regulations.

Geographic Isolation

The geographic isolation of fishing communities should be examined more closely in the future. Specifically, changing the parameters to identify isolated communities resulted in significant outcomes for Oregon. After the buffer was moved from 30 miles to 35 and 40 mile buffers around large cities with a population equal to or greater than 25,000 people, cities previously identified were not included in these results. This change suggests that setting different parameters in Oregon is relatively sensitive, compared to changing the parameters for Washington and California (which resulted in no change). More formal analysis might be beneficial for establishing parameters to identify isolated communities in Oregon. Additionally, future research in understanding the difference between commuting by boat or car would help establish more significant parameters that identify geographically isolated communities.

An additional matter to address with geographically isolated communities involves how cities are geographically grouped. For example, in Oregon, three cities: Nehalem, Manzanita, and Wheeler are located in a cluster along the North Coast. Because of their distance to one another, the question arises: should these cities be treated as a group or individually? It is recommended that future analyses of geographically isolated communities should be subjected to a parameter that addresses those cities that fall within

a certain distance from each other. For instance, three cities that are located within a five-mile radius could be treated as one city. This parameter might contribute to the clarification of whether a city is geographically isolated or not.

The last issue that needs to be dealt with in this discussion presents itself in Figure 8a. This figure contains all geographically isolated communities in Washington and Oregon regardless of whether they are fishing communities. Based on Pacific Fisheries Information Network (PacFIN) landings data, the cities of Tahola, WA, Barview, OR and Powers, OR, do not contain registered commercial fishermen. Because this exercise simply focused on identifying geographically isolated communities, future analyses might consider reporting only those cities containing registered commercial and recreational fishermen.

Upcoming Projects

In the near future, a second appendix containing landings of vessels home ported on the west coast, but landing fish in Alaska will follow the appendices section of this document. It is important to include these landings information because they might help to shed light on a greater socioeconomic understanding of west coast marine fishing communities.

In addition to the Alaska landings data, PCMFC's Economic Fisheries Information Network (EFIN) program will be conducting a study exploring the best way to collect socioeconomic data from fishing community members. This pilot project will consist of informal interviews of community members in Astoria and Newport, OR. The conversations will be focused on seeking community member's guidance on how best to collect socioeconomic data. Results of the project will be in the form of a white paper based on the projects findings.

Summary

The current report is an attempt to complete, update and expand the "West Coast Marine Fisheries Community Descriptions" document prepared by the Council. The definition of a fishing community was examined and approached in this case as a geographic location. Future attempts at applying this definition to a community were recommended to reach beyond the geographic definition to a more regional one.

A total of eleven maps were produced utilizing both Census Data information and GIS in a descriptive format. These maps display frequencies and patterns in county population, per capita income, unemployment, poverty, housing and educational characteristics, geographic isolation and commercial and recreational fishing ports. Additionally, county "snapshots" are provided to present general information about each counties current industry, how that industry has changed over time, and a brief description of a port's commercial and recreational fishing industry. These county descriptions were included to supply the Council with a baseline of community information rather than an encyclopedia of fishing ports.

Finally, a discussion centered on current limitations and future recommendations of fishing community profiles is provided. These limitations and recommendations examined the definition of a community, additional communities to add to future projects, the issues of dependency indices, the limitations of telephone interviews and current census data and how GIS can be utilized in future fishing community projects.

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