

**SUPPORTING STATEMENT**  
 West Coast Community Economic Data Collection  
 NOAA Fisheries - Northwest Fisheries Science Center  
**OMB CONTROL NO. 0648-xxxx**

**B. COLLECTIONS OF INFORMATION EMPLOYING STATISTICAL METHODS**

**1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g. establishments, State and local governmental units, households, or persons) in the universe and the corresponding sample are to be provided in tabular form. The tabulation must also include expected response rates for the collection as a whole. If the collection has been conducted before, provide the actual response rate achieved.**

Data will be collected from a random sample of the owners and operators of businesses, households, and visitors to 8 small fishing engaged communities on the West Coast. Table 1 provides population and commercial fish landings for all West Coast ports with commercial fish landings in 2006. The data in Table 1 indicates that there were 41 small (population less than 10,000) fishing engaged communities on the West Coast in 2006.

**Table 1 --- Population and Commercial Fish Landings for all West Coast Fishing Engaged Communities**

Region	Port Name	Population (2006)	Total Value of Commercial Fish Landings in 2006
N CA	ALBION	5,000	\$34,861.80
N CA	ALAMEDA	70,699	\$28,134.92
N CA	POINT ARENA	473	\$432,434.19
N CA	BERKELEY	101,555	\$55,716.24
N CA	BOLINAS	1,246	\$172,427.05
N CA	FORT BRAGG	6,785	\$5,326,336.88
N CA	CRESCENT CITY	4,006	\$22,755,525.73
N CA	EUREKA	25,435	\$11,662,259.10
N CA	FIELDS LANDING	5,000	\$53,195.10
N CA	OAKLAND	397,067	\$19,773.84
N CA	OTHER HUMBOLDT COUNTY PORTS	NA	\$84,126.80
N CA	OTHER MENDOCINO COUNTY PORTS	NA	\$5,835.08
N CA	OTHER S. F. BAY AND SAN MATEO COUNTY PORTS	NA	\$228,457.74
N CA	OTHER SONOMA AND MARIN COUNTY OUTER COAST PORTS	NA	\$61,607.61
N CA	PRINCETON / HALF MOON BAY	12,308	\$4,779,232.54
N CA	RICHMOND	102,120	\$11,955.25
N CA	POINT REYES	5,000	\$93,941.04

N CA	SAN FRANCISCO	744,041	\$6,962,700.82
N CA	SAUSALITO	7,207	\$31,026.08
N CA	TOMALES BAY	5,000	\$4,780.40
N CA	TRINIDAD	314	\$3,074,629.96
S CA	AVILA	5,000	\$1,022,452.63
S CA	BODEGA BAY	1,423	\$5,453,483.26
S CA	SANTA CRUZ	54,778	\$609,372.11
S CA	DANA POINT	35,945	\$1,547,747.92
S CA	PORT HUENEME	21,814	\$4,266,545.86
S CA	LONG BEACH	472,494	\$562,317.00
S CA	MONTEREY	28,803	\$869,063.04
S CA	MOSS LANDING	300	\$4,876,692.76
S CA	MORRO BAY	9,998	\$1,911,555.30
S CA	NEWPORT BEACH	70,032	\$724,598.06
S CA	OTHER SANTA BARBARA AND VENTURA COUNTY PORTS	NA	\$27,089.26
S CA	OTHER OR UNKNOWN CALIFORNIA PORTS	NA	\$65,693.46
S CA	OTHER SANTA CRUZ AND MONTEREY COUNTY PORTS	NA	\$35,264.49
S CA	OCEANSIDE	165,803	\$1,584,437.16
S CA	Other LA and Orange Cnty Ports	NA	\$940,495.66
S CA	OTHER SAN DIEGO COUNTY PORTS	NA	\$2,964,186.94
S CA	OTHER SAN LUIS OBISPO COUNTY PORTS	NA	\$7,752.75
S CA	OXNARD	184,463	\$2,927,576.59
S CA	SANTA BARBARA	85,681	\$6,499,934.72
S CA	SAN DIEGO	1,256,951	\$2,565,696.46
S CA	SAN PEDRO	100,000	\$18,217,183.39
S CA	TERMINAL ISLAND	100,000	\$10,880,334.54
S CA	VENTURA	106,000	\$5,255,403.88
S CA	WILLMINGTON	50,000	\$148,047.76
OR	ASTORIA	9,917	\$32,971,394.46
OR	BANDON	2,901	\$11,047.00
OR	BROOKINGS	6,344	\$8,067,632.89
OR	CANNON BEACH	1,720	\$19,025.25
OR	Charleston (Coos Bay)	15,999	\$20,187,661.01
OR	PSUEDO PORT CODE FOR COLUMBIA RIVER	NA	\$2,633,705.11
OR	DEPOE BAY	1,361	\$146,646.25
OR	FLORENCE	8,122	\$149,356.08
OR	GOLD BEACH	1,907	\$316,666.54
OR	GEARHART - SEASIDE	1,106	\$99,885.15
OR	NEWPORT	9,896	\$33,014,185.19
OR	NEHALEM BAY	208	\$5,303.25
OR	NETARTS BAY	744	\$3,304.80

OR	PORT ORFORD	1,164	\$3,155,756.49
OR	PACIFIC CITY	1,027	\$73,090.71
OR	TILLAMOOK/GARIB ALDI	4,424	\$4,120,818.90
OR	WINCHESTER BAY	488	\$1,298,485.38
OR	WALDPORT	2,051	\$65,409.85
WA	ANACORTES	16,633	\$7,022,950.28
WA	BELLINGHAM BAY	75,150	\$25,249,191.93
WA	BLAINE	4,508	\$6,009,712.51
WA	COPALIS BEACH	489	\$2,129,393.03
WA	EVERETT	98,514	\$1,968,435.94
WA	FRIDAY HARBOR	2,103	\$624,210.65
WA	GRAYS HARBOR	70,900	\$515,669.96
WA	LA CONNER	791	\$2,687,221.71
WA	LA PUSH	500	\$2,975,957.21
WA	ILWACO/CHINOOK	997	\$19,787,492.06
WA	NEAH BAY	794	\$6,610,814.68
WA	OTHER COLUMBIA RIVER PORTS	NA	\$2,761,172.79
WA	OLYMPIA	44,645	\$10,679,761.57
WA	OTHER NORTH PUGET SOUND PORTS	NA	\$2,061,058.97
WA	OTHER SOUTH PUGET SOUND PORTS	NA	\$10,675,507.53
WA	OTHER OR UNKNOWN WASHINGTON PORTS	NA	\$339,380.01
WA	OTHER WASHINGTON COASTAL PORTS	NA	\$6,942,789.90
WA	PORT ANGELES	18,984	\$419,800.34
WA	SEATTLE	582,454	\$9,391,682.60
WA	SEQUIM	5,688	\$1,355,369.58
WA	SHELTON	9,236	\$24,139,614.45
WA	TACOMA	196,532	\$3,731,873.14
WA	PORT TOWNSEND	9,134	\$3,078,973.90
WA	WILLAPA BAY	50,000	\$19,245,946.68
WA	WESTPORT	2,499	\$27,710,594.39

The 8 communities surveyed in this project were selected from the population of 41 small fishing engaged communities through the use of a stratified weighted random sampling method. Two communities were selected from each of four strata (Washington, Oregon, Northern California, and Southern California).

Each community's probability of selection into the study was weighted by the percentage of the total value of landings that are accounted for by the ports with populations fewer than 10,000 inhabitants. The probability of each port being selected with in each region was:

$$P_{nr} = l_n / L_r \quad (1)$$

where P is the probability of selection,  $l$  is the total landings in each port  $n$  within the given region  $r$ , and  $L$  is the total regional landings within region  $r$ . The total coast wide probability that any given port was selected for inclusion was:

$$P_n = (l_n/L_r)/k \quad (2)$$

where  $k$  is the number of regions (in this case 4).

Table 2 presents the total coast wide probability that any community will be selected for inclusion in the study. The communities will be randomly selected for inclusion in the study based on these probabilities.

**Table 2 --- Probability of Selection for Small West Coast Fishing Engaged Communities**

Region	Port Name	Overall (Coastwide) Probability of Selection
N CA	ALBION	0.000273
N CA	POINT ARENA	0.003381
N CA	BOLINAS	0.001348
N CA	FORT BRAGG	0.041639
N CA	CRESCENT CITY	0.177893
N CA	FIELDS LANDING	0.000416
N CA	POINT REYES	0.000734
N CA	SAUSALITO	0.000243
N CA	TOMALES BAY	0.000037
N CA	TRINIDAD	0.024036
S CA	AVILA	0.019271
S CA	BODEGA BAY	0.102786
S CA	MOSS LANDING	0.091915
S CA	MORRO BAY	0.036029
OR	ASTORIA	0.098695
OR	BANDON	0.000033
OR	BROOKINGS	0.024149
OR	CANNON BEACH	0.000057
OR	DEPOE BAY	0.000439
OR	FLORENCE	0.000447
OR	GOLD BEACH	0.000948
OR	GEARHART - SEASIDE	0.000299
OR	NEWPORT	0.098824
OR	NEHALEM BAY	0.000016
OR	NETARTS BAY	0.000010
OR	PORT ORFORD	0.009446
OR	PACIFIC CITY	0.000219
OR	TILLAMOOK/GARIBALDI	0.012335
OR	WINCHESTER BAY	0.003887
OR	WALDPORT	0.000196
WA	BLAINE	0.015472
WA	COPALIS BEACH	0.005482
WA	FRIDAY HARBOR	0.001607
WA	LA CONNER	0.006918
WA	LA PUSH	0.007661
WA	ILWACO/CHINOOK	0.050941
WA	NEAH BAY	0.017019
WA	SEQUIM	0.003489
WA	SHELTON	0.062145
WA	PORT TOWNSEND	0.007927
WA	WESTPORT	0.071339

Data collection will involve in-person interviews and/or mail questionnaires sent to selected members of each of the different survey groups. In many cases, individuals may receive the questionnaire in advance to allow them to prepare their responses but may be interviewed via telephone or in person to ensure the clarity of their responses. To the extent practicable, the data collected will be that which the respondents maintain for their own business purposes. Therefore, the collection burden will consist principally of transcribing data from their internal records to the survey instrument and participating in personal interviews. In addition, current data reporting requirements will be evaluated to determine if they can be modified to provide improved economic data at a lower cost to the Agency and with reduced burden on potential respondents.

The eight communities selected with this methodology were Westport, Blaine, Newport, Brookings, Crescent City, Fort Bragg, Bodega Bay, and Moss Landing. Table 3 provides population, number of households, number of businesses, total employment, payroll, and recreational visitors for each of these eight communities.

**Table 3 --- Eight Communities Selected for West Coast Community Economic Survey**

Zip Code - City	Population	Households	Businesses	Employment	Payroll	Recreational Visitation
98595 - Westport, WA	2,856	1,347	106	1,357	\$39,162,000	35,000
98230 - Blaine, WA	4,508	1,818	377	3,313	\$143,117,000	32,000
97365 - Newport, OR	9,896	4,398	634	5,609	\$134,103,000	64,220
97415 - Brookings, OR	6,344	2,758	480	4,293	\$103,766,000	16,000
95531 - Crescent City, CA	4,006	1,669	416	3,689	\$89,233,000	20,000
95437 - Fort Bragg, CA	6,785	2,887	535	4,203	\$102,290,000	24,500
94923 - Bodega Bay, CA	1,423	674	49	537	\$12,687,000	70,000
95039 - Moss Landing, CA	300	125	47	672	\$47,925,000	8,400

Data Source: Population figures are 2006 estimates prepared by each state, based upon 2000 Census values. Household figures were obtained by taking the persons per household from the 2000 Census and applying the figure to the 2006 population estimate to obtain an estimate of the number of households. Data on number of businesses, employment, and payroll was obtained from the Census Bureau's 2005 Zip Code Business Patterns. Visitation data is estimated from data taken from Wen-Huei Chang and R. Scott Jackson, Economic Impacts of Recreation Activities at Oregon Coastal and River Ports, ERD/EL TR-03-12, U.S. Army Corps of Engineers, August 2003.

The total sample universes for businesses and households are the total numbers of each in each of eight small fishing engaged communities. Total number of households have been determined from U.S. Census records and addresses were obtained from public records searches. The total number of businesses by ZIP code and by 2-digit North American Industry Classification System (NAICS) was obtained from the U.S. Economic Census and from County Business Patterns. The sample universe of recreational visitors is estimated from a study of visitors to Oregon ports done by the U.S. Army Corps of Engineers (Wen-Huei Chang and R. Scott Jackson, Economic Impacts of

Recreation Activities at Oregon Coastal and River Ports, ERD/EL TR-03-12, U.S. Army Corps of Engineers, August 2003).

**2. Describe the procedures for the collection, including: the statistical methodology for stratification and sample selection; the estimation procedure; the degree of accuracy needed for the purpose described in the justification; any unusual problems requiring specialized sampling procedures; and any use of periodic (less frequent than annual) data collection cycles to reduce burden.**

### **Households and business**

Households and businesses within each of the selected communities will be randomly selected for inclusion in the study. Names, address, and telephone numbers for businesses and households will be obtained from local government records and from public record searches. The formula for calculating the sample size for a simple random sample without replacement is as follows:

$$n = \left( \frac{z\sigma}{E} \right)^2 = \left( \frac{z}{m} \right)^2$$

where,

$z$  is the  $z$  value (e.g., 1.645 for 90% confidence level, 1.96 for 95% confidence level, and 2.575 for 99% confidence level);

$\sigma$  is the standard deviation of the population;

$E$  is the acceptable bound on the error or the “margin of error”

$m$  is the margin of error expressed as a proportion of the standard deviation (e.g., .05 = + or – 5%, .07 = + or – 7%, and .1 = + or – 10%);

For the purposes of this study, we are using a 95% confidence level and a allowable error of +/- 10%.

The Finite Population Correction (FPC) factor is routinely used in calculating sample sizes for simple random samples. In fact, many sample size formulas for simple random samples include the FPC as part of the formula. It has very little effect on the sample size when the sample is small relative to the population but it is important to apply the FPC when the sample is large (10% or more) relative to the population. The sample size equation solving for  $n'$  (new sample size) when taking the FPC into account is:

$$n' = \frac{n}{1 + \frac{n}{N}}$$

where,

$n$  is the sample size based on the calculations above, and  
 $N$  is population size.

The  $n$ ' estimate of sample size will then be multiplied by the estimated response rate to obtain the actual number of surveys that will need to be mailed out.

Table 4 provides the number of households, the household sample size  $n$ ' calculated using the FPC factor, the expected response rate, and the corresponding number of expected respondents to the household survey in each community. Table 5 provides the number of business establishments, the business establishment sample size  $n$ ' calculated using the FPC factor, the expected business response rate, and the corresponding number of expected respondents to the business survey in each community.

**Table 4 --- Household Survey Sample Size, Response Rate, and Respondents**

Zip Code - City	Number of Households	Household Sample Size	Household Response Rate	Number of Responses
98595 - Westport, WA	1,347	299	.6	179
98230 - Blaine, WA	1,818	317	.6	190
97365 - Newport, OR	4,398	353	.6	212
97415 - Brookings, OR	2,758	337	.6	202
95531 - Crescent City, CA	1,669	312	.6	187
95437 - Fort Bragg, CA	2,887	339	.6	203
94923 - Bodega Bay, CA	674	245	.6	147
95039 - Moss Landing, CA	125	84	.6	57
TOTAL	15,676	2,297	.6	1,378

**Table 5 --- Business Survey Sample Size, Response Rate, and Respondents**

Zip Code - City	Number of Business Establishments	Business Sample Size	Business Response Rate	Number of Responses
98595 - Westport, WA	106	83	.7	58
98230 - Blaine, WA	377	190	.7	133
97365 - Newport, OR	634	239	.7	167
97415 - Brookings, OR	480	213	.7	149
95531 - Crescent City, CA	416	200	.7	140
95437 - Fort Bragg, CA	535	224	.7	157
94923 - Bodega Bay, CA	49	43	.7	30
95039 - Moss Landing, CA	47	42	.7	29
TOTAL	2,644	1,235	1,201	864

**Visitors**

Estimates of the total number of recreational visitors will be determined by collecting data on total visitor occupancy in local hotels and then surveying respondents at numerous locations and times throughout the city to determine the ratio of visitors staying in hotels and those not staying in hotels. The total number of visitors (*N*) can then be determined by the following calculation:

$$N = HT * \frac{TS}{HS}$$

Where *HT* is the total number of visitors staying in hotels, *TS* is the total number of visitors surveyed, and *HS* is the number of visitors surveyed that stayed in hotels. This method uses two pieces of information --- the number of visitors staying in hotels and the percentage of visitors staying in hotels --- to estimate the total number of visitors. The total number of visitors staying in hotels will be determined from locally available hotel occupancy rates and by surveying hotel guests (to determine the number of visitors per occupied hotel room). The percentage of visitors staying in hotels will be determined from the visitor survey. It is important that the sample for the visitor survey be representative of the visitor population in terms of the percentage of visitors staying in hotels. As a result, the visitor survey will be fielded in each community at multiple locations and at multiple times of the day and days of the week.

The initial questionnaire for visitors contains only four short questions which are estimated to take less than a minute to answer in total. If the respondent is willing the surveyor would ask the individual the four questions. The respondent would then be asked if they would be willing to answer an additional longer 15 minute questionnaire in exchange for a token gift (NOAA Fisheries tee shirt). If the respondent is not willing they will be asked if they would take the questionnaire home and complete it at their leisure, then return it in a prepaid envelope that is provided. If they are not willing to do this, we thank them for their time and wish them a pleasant day. Impartiality in selection for interviewing is stressed in interviewer training.

Table 6 provides the estimated number of visitors, the visitor sample size, the expected visitor response rate to the initial short questionnaire, the number of short survey respondents, and the number of longer questionnaire respondents for each community. Using the same sample size calculation from above, the total number of visitor interviews needed is as follows (potential



universe size is estimated from Wen-Huei Chang and R. Scott Jackson, Economic Impacts of Recreation Activities at Oregon Coastal and River Ports, ERD/EL TR-03-12, U.S. Army Corps of Engineers, August 2003). The response rate for the longer survey (not shown in the table) is assumed to be the same 60% as the response rate for the initial short questionnaire. That is, the estimates in Table 6 assume that 60% of the visitors contacted will complete the short questionnaire, and that *of those visitors completing the short questionnaire*, 60% will complete the longer follow-up questionnaire.

**Table 6 --- Visitor Survey Sample Size, Response Rates, and Respondents**

Zip Code - City	Annual Recreational Visitors	Visitor Sample Size	Visitor Response Rate	Initial Visitor Questionnaire Responses	Longer Visitor Questionnaire Responses
98595 - Westport, WA	35,000	380	.6	228	137
98230 - Blaine, WA	32,000	380	.6	228	137
97365 - Newport, OR	64,220	382	.6	229	137
97415 - Brookings, OR	16,000	375	.6	225	135
95531 - Crescent City, CA	20,000	377	.6	226	136
95437 - Fort Bragg, CA	24,500	378	.6	227	136
94923 - Bodega Bay, CA	70,000	382	.6	229	138
95039 - Moss Landing, CA	8,400	367	.6	220	132
TOTAL	270,120	3,021	.6	1,813	1,088

Expected Response Rates:

Based on previous studies of households and businesses, a response rate of about 60% for households and 70% for businesses is expected. These response rates are consistent with those reported in Dillman (1974), Dillman (2007), and Fox et al. (1988). For visitors, it is expected that 60% of the people contacted will be willing to answer the short four question survey. It is then expected that 60% of the people who answer the initial questionnaire will respond to the longer survey. These are similar to response rates that the USDA Forest Service (2002) received with their National Visitor Use Monitoring (NVUM) study. Additionally, the aforementioned Wen-Huei Chang and R. Scott Jackson study also received a 60% response rate for visitors to Oregon ports.

Additionally, adherence to the Dillman method, the use of social exchange, and garnered support from local officials and business leaders will ensure high response rates.

**3. Describe the methods used to maximize response rates and to deal with nonresponse. The accuracy and reliability of the information collected must be shown to be adequate for the intended uses. For collections based on sampling, a special justification must be provided if they will not yield "reliable" data that can be generalized to the universe studied.**

Cooperation from industry representatives has been garnered as well as support of government officials, commercial leaders, and the local population. A “social exchange” framework was utilized to emphasize the potential benefits of responding (greater understanding of the local economy and how to foster desired levels of economic growth) and to reduce the potential time cost to the boat owners. Social exchange is mentioned by Dillman (2007) as a crucial component of any social research survey and is intended to highlight the benefits of responding to the survey

while stating how the survey has been designed to reduce the time and effort costs to the respondents.

A modified Dillman Tailored Design Method (Dillman 2007) will be employed to for the household survey and the business survey. Personalizing correspondence, a respondent friendly questionnaire, multiple contacts with survey participants through multiple modes, and a stamped return envelope will be utilized to increase response rates. The business survey and the household survey will utilize the following protocols:

1. Mailing of an information letter three to five days prior to the mailing of the survey. This letter describes the kind of information that the survey will ask, describes how the information will be used, and highlights the benefits of the survey to the respondent. Correspondence will be personalized wherever possible. The household survey correspondence will be addressed to the head of household. The business survey correspondence will be directed (where appropriate) to the business owner. In cases where the business owner is deemed unlikely to be at the local mailing address (such as a large national chain store), the letter will be sent to the store manager rather than a specific individual.
2. Three to five days after the information letter is mailed, the actual survey instrument will be mailed with a detailed cover letter explaining the purpose of the study, the survey population, and the expected benefits.
3. Two weeks after the survey is mailed, a thank you/reminder post card is mailed
4. Two weeks after the post card is mailed, a replacement survey and cover letter will be mailed to nonrespondents
5. Two weeks after the replacement surveys are mailed, calls will be made to nonrespondents. Nonrespondents to the household survey will be asked if 1) they have received the survey, 2) whether the survey was sent to the correct person in the household, and 3) if they need help in completing the survey. Up to a maximum of five attempts (made at different times of the day on different days of the week) will be made to contact household survey non-respondents. Messages will be left only on odd numbered attempts. Nonrespondents to the business survey will be asked if 1) they have received the survey, 2) whether the survey has been sent to the correct contact person, and 3) if they need any help in completing the survey. If the survey was not initially sent to the correct contact person, information on the correct contact person will be collected and survey materials will be mailed directly to that person. While only five attempts will be made to contact household survey non-respondents when no answer is obtained, more than five calls may be made to business survey recipients in cases where improved contact information is obtained.

To reduce the possibility of unit non-response bias, a chi square test for structural differences will be employed to ensure that non-respondents from the survey of businesses are not systematically different from the population as a whole in known attributes such as business size (as measured by number of employees) and business type (as measured by NAICS code). A similar analysis will be performed on households to ensure that respondents are not systematically different from non-respondents in known attributes such as household size and income stratification.

Sample post-stratification methods will then be used to generate weighting classes if structural differences are found.

For the visitor survey, a token gift will be offered to respondents willing to fill out the 15 minute survey. The token gift will be a tee shirt designed for this project, the total value not exceeding \$5.

Data collection will begin approximately two months after OMB approval is received. If approval is received by September 1, 2008, data collection will begin in November 2008. Data collection will be completed in all eight communities by the end of summer 2009.

**4. Describe any tests of procedures or methods to be undertaken. Tests are encouraged as effective means to refine collections, but if ten or more test respondents are involved OMB must give prior approval.**

None

**5. Provide the name and telephone number of individuals consulted on the statistical aspects of the design, and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and/or analyze the information for the agency.**

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